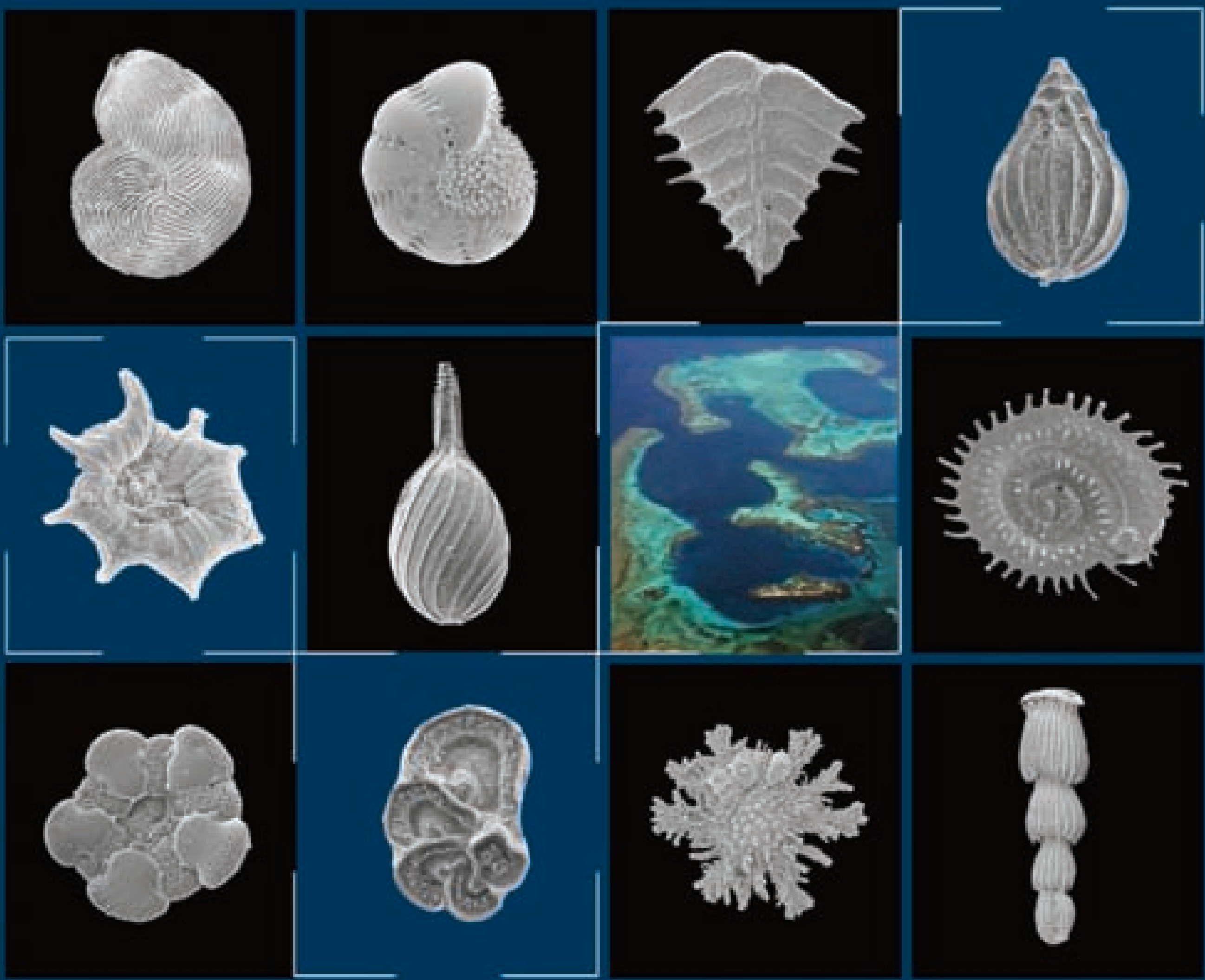
Jean-Pierre Debenay

A Guide to 1,000 Foraminifera

from Southwestern Pacific
New Caledonia



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Contents/*Sommaire*

To Guy Cabioch
without whom this book would not have been possible.

A Guy Cabioch
sans qui cet ouvrage n'aurait pas vu le jour.

Foreword/*Avant-propos*

The story began 35 years ago, in 1976, when I joined the geological team of the ORSTOM center of Nouméa (presently IRD [Institut de recherche pour le développement]). I was teacher in a high school, but had the opportunity to participate in a research program on the sediments of the southwest lagoon of New Caledonia, in collaboration with F. Dugas. Using the newly arrived R/V *Vauban*, more than 800 samples were collected, over an area about 3,000 km^2, and analyzed – mostly grain size analysis and microscopic observation. The result was the publication of sedimentological maps together with maps showing the contribution of foraminifera and mollusks to the sediment. Four sets of two maps at 1/50,000 were published concerning the areas of Tontouta, Nouméa, Mont Dore and Prony, from north to south, complemented by substantial explanatory notes. A synthetic map was also published in the *Atlas of New Caledonia* (1981). These maps may be downloaded on the site: <http://www.cartographie.ird.fr/sphaera/>.

This work coincided with a growth in scientific research programs focalized on the marine environment, which led to the publication of numerous thematic charts, such as those included in the *Atlas of New Caledonia* (1981).

Later, an extensive study of the foraminifera from the fraction 0.5-2 mm of all the samples led to the writing and defense of a PhD thesis (Debenay, 1986) and to the publication of several related papers, between 1985 and 1988, while I had a position at the university of Dakar... Unfortunately, foraminifera from the fraction 0.125-0.5 mm are still in their boxes and have never been studied.

I came back in New Caledonia in 1997 for a sampling campaign in mangrove swamps, with a view to a more general work on foraminifera from paralic environments (Debenay & Guillou, 2002).

In 2006, together with G. Cabioch, we listed the works related to foraminifera from New Caledonia, and made the inventory of the 585 species reported from the area in previous works (Debenay & Cabioch, 2007). At the same time, I came back on a position at the IRD center of Nouméa where I carried out several works on foraminifera.

Foraminifera are one of the most abundant groups in the lagoon of New Caledonia, as shown in the Compendium of marine species from New Caledonia (Payri & de Forges, eds, 1987): foraminifera (6%), algae (5%), molluscs (23%), arthropods (22%) and vertebrates dominated by fish (19%). Moreover, their tests often constitute the predominant part of the lagoonal sediments.

L'histoire a débuté il y a 35 ans, en 1976, quand j'ai rejoint l'équipe de géologie du centre Orstom de Nouméa (actuellement IRD, Institut de recherche pour le développement). Professeur dans un lycée, j'ai eu l'opportunité de participer à un programme de recherche sur les sédiments du lagon sud-ouest de Nouvelle-Calédonie, en collaboration avec F. Dugas. Profitant de l'arrivée du N/O Vauban, *plus de 800 échantillons ont été prélevés, sur une zone d'environ 3 000 km^2, et analysés – principalement granulométrie et observation microscopique. Il en résulta la publication de cartes sédimentologiques accompagnées de cartes montrant la contribution des foraminifères et mollusques à la constitution du sédiment. Quatre jeux de deux cartes au 1/50 000 ont été publiés pour les zones de Tontouta, Nouméa, Mont Dore et Prony, du nord au sud, complétés par des notices détaillées. Une carte synthétique a également été publiée dans l'*Atlas de Nouvelle-Calédonie *(1981). Ces cartes peuvent être téléchargées sur le site : <http://www.cartographie.ird.fr/sphaera/>.*

*Ce travail a coïncidé avec le développement de programmes dédiés à l'environnement marin, ce qui a conduit à la publication de nombreuses cartes thématiques, telles que celles de l'*Atlas de Nouvelle-Calédonie *(1981).*

Plus tard, une étude détaillée des foraminifères de la fraction 0,5-2 mm des échantillons a abouti à la rédaction et la soutenance d'une thèse (Debenay, 1986), et à la publication de plusieurs articles, entre 1985 et 1988, alors que j'étais en poste à l'université de Dakar… Malheureusement, les foraminifères de la fraction 0,125-0,5 mm sont toujours dans leur boîte et n'ont jamais été étudiés.

Je suis revenu en Nouvelle-Calédonie en 1997 pour une série d'échantillonnages dans les mangroves, en vue d'un travail plus général sur les foraminifères des environnements paraliques (Debenay et Guillou, 2002).

En 2006, avec G. Cabioch, nous avons répertorié les travaux portant sur les foraminifères de Nouvelle-Calédonie et inventorié les 585 espèces citées par les auteurs précédents (Debenay et Cabioch, 2007). Je suis alors revenu sur un poste au centre IRD de Nouméa où j'ai réalisé plusieurs études sur les foraminifères.

Les foraminifères constituent l'un des groupes les plus abondants dans le lagon de Nouvelle-Calédonie, comme cela a été montré dans le Compendium des espèces marines de Nouvelle-Calédonie (Payri et de Forges, eds, 1987) : foraminifères (6 %), algues (5 %), mollusques (23 %), Adding the fact that the Lagoons of New Caledonia have been inscribed on UNESCO World Heritage List that will need an increase of the ongoing research, and will increase public interest and appreciation for marine biodiversity, it appeared necessary to provide a synthetic work on the present knowledge about New Caledonian foraminifera.

arthropodes (22 %) et vertébrés, dominés par les poissons (19 %). De plus, leurs tests constituent souvent une part prédominante des sédiments. Si l'on ajoute l'inscription des lagons de Nouvelle-Calédonie sur la Liste du patrimoine mondial de l'Unesco, qui va nécessiter un développement de la recherche et va accroître l'intérêt du public et sa compréhension de la biodiversité marine, il apparaissait nécessaire de fournir un ouvrage synthétique sur la connaissance actuelle des foraminifères néo-calédoniens.

Acknowledgements/*Remerciements*

The bulk of this work was scientifically and financially supported by ORSTOM (Office de recherche scientifique et technique outre-mer), later becoming IRD (Institut de recherche pour le développement). Many people have provided help and encouragement over the years, without which this book would not have been possible. My first thanks are for F. Dugas who, in 1976, gave me the opportunity to participate in the bottom sediment mapping of the lagoon, and to J. Récy for accepting me in his research group during the three years it took me to complete this project. I am grateful to the captain P. Furic and the crew of the R/V *Vauban* for their assistance during the sampling cruises in the lagoon. Later, I benefited from the help and encouragement of L. Blanc-Vernet and B. Thomassin who co-supervised my thesis work, and J.-P. Margerel made available to me his unpublished work on the foraminifera of the bay of Saint Vincent.

For the second phase of my research in New Caledonia, since 2006, my grateful acknowledgements are due to L. Ortlieb and G. Cabioch for offering me a position in their research unit, and in the research team of Nouméa . . . despite my impending retirement. During this period, I had fruitful collaboration with several colleagues. Among them, G. Cabioch gave me core samples for studying foraminiferal assemblages at a geological time scale; D. Wirrmann took me on to collect, process and study sediment cores; C. Payri allowed me to get rich foraminiferal assemblages from algal substrates; L. Della-Patrona provided me with samples from shrimp farms and, together with C. Marchand, samples from mangrove swamps; J.-M. Fernandez gave me surface samples and core samples from potentially contaminated areas; B. Richer de Forges allowed me to get deeper samples from the northern lagoon; and J.-L. Justine gave me the rare opportunity to open a number of fish guts. . ., for him to collect parasites, and me foraminifera. All of them are warmly thanked for that, and for lively discussion on various research topics.

During all this time, I also benefited from a large amount of technical help. Scanning electron micrographs were taken by, or with the help of M. Ndao, using the facilities of the university of Dakar, M. Lesourd, using the facilities of the university of Angers, O. Boudouma, using the facilities of university Pierre and Marie Curie (UPMC Paris), and mostly S. Caquineau, using the facilities of LOCEAN, IRD, Centre Île-de-France, Bondy. Underwater sample collection of algae was made by C. Payri, J.-L. Menou and J. Butscher, the deep-water specimens being collected by J.-L. Menou and S. Beata during special high tech TRIMIX divings, down to 125 m. Underwater fish collections are

L'essentiel de ce travail a été soutenu scientifiquement et financièrement par l'Orstom (Office de recherche scientifique et technique outre-mer), devenu IRD (Institut de recherche pour le développement). Nombreux sont ceux qui m'ont aidé et encouragé pendant ces années. Sans eux, ce livre n'aurait pas vu le jour. Mes premiers remerciements sont pour F. Dugas qui, en 1976, m'a permis de participer à la cartographie sédimentaire du lagon, et à J. Récy qui m'a accepté dans son équipe de recherche pendant les trois ans qu'a duré ce projet. Je remercie P. Furic, capitaine du N/O Vauban, *et son équipage pour leur aide pendant les campagnes de prélèvement dans le lagon. Ensuite, j'ai bénéficié de l'aide et des encouragements de L. Blanc-Vernet et B. Thomassin qui ont codirigé ma thèse, et J.-P. Margerel m'a confié un exemplaire de son travail inédit sur les foraminifères de la Baie de Saint-Vincent.*

Concernant la seconde phase de mes recherches en Nouvelle-Calédonie, depuis 2006, je remercie sincèrement L. Ortlieb et G. Cabioch pour m'avoir recruté dans leur unité de recherche et dans l'équipe de Nouméa… malgré la proximité de mon départ à la retraite. Pendant cette période, j'ai pu avoir de fructueuses collaborations avec plusieurs collègues : G. Cabioch m'a confié des échantillons de forages pour des études à l'échelle géologique ; D. Wirrmann m'a embauché pour collecter, préparer et étudier des carottes sédimentaires ; C. Payri m'a permis d'observer les nombreux foraminifères vivant sur des algues ; L. Della-Patrona m'a procuré des échantillons de fermes crevetticoles et, avec C. Marchand, des échantillons de mangrove ; J-M. Fernandez m'a donné des échantillons de surface et de carottes issus de zones potentiellement polluées ; B. Richer de Forges m'a permis d'accéder à des échantillons plus profonds du lagon nord ; J.-L. Justine m'a donné la rare opportunité d'ouvrir un nombre respectable de poissons… pour collecter, lui les parasites et moi les foraminifères. Tous sont chaleureusement remerciés pour cela et pour les discussions stimulantes sur divers sujets de recherche.

Pendant toute cette période, j'ai aussi bénéficié d'une considérable aide technique. Les photos au microscope électronique ont été prises par, ou avec l'aide de M. Ndao, à l'université de Dakar, M. Lesourd, à l'université d'Angers, O. Boudouma, à l'université Pierre et Marie Curie (UPMC Paris), et surtout S. Caquineau, au centre Île-de-France IRD de Bondy (unité LOCEAN). Les algues ont été collectées en plongée par due to M. Clarque, G. Mou-Tham and J. Butscher, while S. Tereua and N. Colombani both captains of the R/V *Coris* provided technical assistance during the cruises. Back to the laboratory, A. Di Matteo, A. Sigura and C. Dupoux provided assistance for opening and processing fish guts. I thank T. Potiaroa and H. Goguenheim for their help in preparing photographic plates, and J.-M. Boré and M. Vilayleck for making a movie about foraminifera.

I owe a great debt of gratitude to a number of people from administrative, technical and research staffs, and to my students who helped me over years during my work. Unfortunately, it is impossible to mention them all here. Finally, I thank my wife, family and friends for having been patient with me, especially during the last months of writing this book.

The outcome of this book was possible thanks to the editorial committee of IRD that accepted this publication, to T. Mourier and his collaborators for their valuable editorial advices and work, and to two anonymous referees for their thorough and careful reading and the detailed remarks that helped to improve significantly the initial manuscript.

C. Payri, J.-L. Menou et J. Butscher, les échantillons profonds étant collectés par J.-L. Menou et S. Beata au cours de plongées spéciales TRIMIX, jusqu'à 125 m de profondeur. La capture sous-marine des poissons est due à M. Clarque, G. Mou-Tham et J. Butscher, alors que S. Tereua et N. Colombani tous deux capitaines du N/O Coris *assuraient l'assistance technique à bord. Au laboratoire, les intestins de poissons étaient ouverts et préparés avec l'aide d'A. Di Matteo, A. Sigura et C. Dupoux. Je remercie T. Potiaroa et H. Goguenheim pour leur aide dans la préparation des planches photographiques, et J.-M. Boré et M. Vilayleck pour la réalisation d'un film sur les foraminifères.*

Je suis également redevable à de nombreux personnels administratifs, techniques et de recherche, et à mes étudiants qui m'ont aidé pendant ces années de recherche. Malheureusement, il est impossible de tous les nommer. Enfin, je remercie mon épouse, ma famille et mes amis pour leur patience à mon égard, particulièrement pendant les derniers mois de rédaction.

La réalisation finale de l'ouvrage a été possible grâce au comité des éditions de l'IRD qui a accepté cette publication, à T. Mourier et ses collaborateurs pour leurs précieux conseils et travail éditoriaux, et à deux rapporteurs anonymes pour leur lecture approfondie et leurs remarques détaillées qui ont permis d'améliorer significativement le manuscrit initial.

Introduction

Why benthic foraminifera?

Foraminifera have an evolutionary history that extends back to the Cambrian, more than 525 million years ago. Since then, they have radiated and evolved. To date, approximately 60,000 fossil and modern species have been validly recognized (LANGER, 2011), and an estimated 10,000 species (including only 40-50 planktonic species) are still living (VICKERMAN, 1992), constituting the most diverse group of shelled microorganisms in modern oceans (SEN GUPTA, 1999). These small-sized organisms, usually 0.1 to 1 mm, may be very abundant, and tens of thousands living specimens per square meter may be found in some environments (WETMORE, 1995). Their mineralized tests (shells) usually get preserved in the sediment after the death of the organism and may constitute a major, sometimes the dominant, part of many modern or fossil sediments (fig. 1). They are easy to collect, and their high-density populations provide an adequate statistical base, even in small volume samples, to perform environmental analyses, making them a powerful tool for environmental assessment.

Why this book?

The aim of this book is to give an overview of the present knowledge on foraminifera from New Caledonia. In order to make this knowledge accessible to people who are not familiar with New Caledonia, and/or with foraminifera, two introductory parts describe the regional setting and the characteristics of New Caledonia, and a third one provides an introduction to foraminifera. The fourth part gives a synthesis of the main results published on Recent foraminifera from New Caledonia, and the last and most important part presents the 1043 species in the form of an illustrated atlas with photos and information about the morphology and taxonomy of most of the species.

This inventory will be helpful to professional micropaleontologists, researchers, and students, but its main objective is to offer environmental managers and all person interested in lagoonal environment and protection the access to this invaluable tool for environment monitoring that are benthic foraminifera. It will

Figure 1
Sand from a beach of Grande Terre. Arrows show some foraminifera, but much more can be seen.

also contribute to feeding international database programs, increasingly needed with the growing interest in biodiversity.

Previous works about foraminifera from New Caledonia

The first study of foraminifera from the southwestern Pacific near New Caledonia was carried out by Brady (1884) during the voyage of H.M.S. Challenger (1873-1876), updated by Barker (1960). The nearest station was station 177, near Vanuatu (16°45'S-168°5'E). However, studies concerning directly New Caledonia began much later, with partial and local inventories in coastal samples (Gambini, 1958, 1959; Renaud-Debyser, 1965; Toulouse, 1965, 1966). Samples of recent and fossil sediments collected during the Singer-Polignac mission (1960-1965) were further used for several studies of foraminiferal assemblages (Coudray & Margerel, 1974; Coudray , 1976; Margerel, 1981). These samples allowed Margerel (1984) to make the first detailed inventory of foraminifera from the Baie de Saint-Vincent (southwest of New Caledonia). This inventory, unfortunately still unpublished, described 289 species. On the occasion of the sedimentological study carried out by the IRD in the southwestern lagoon of New Caledonia, mentioned above, more than 800 surface sediment samples were collected (fig. 2). They allowed the first exhaustive study of large foraminifera (> 0,5 mm), with the description of 168 species. Most of them are deposited at the Museum d'Histoire Naturelle de Genève (Debenay & Decrouez, 1989). Several papers were published (Debenay, 1985a, 1985b, 1986, 1988a, 1988b, 1988c). During the same period, the foraminifera of Quaternary reefal paleoenvironments were studied (Cabioch *et al.*, 1986; Cabioch , 1988), as well as the benthic (Vincent, 1986; Vincent & Laurin, 1988; Vincent *et al.*, 1991) and planktonic (Lambert *et al.*, 1991) foraminifera of the Loyalty basin. Two PhD theses also provided inventories of foraminifera from New Caledonia and Polynesia (Adjas, 1988), and from New Caledonia including Chesterfield islands (Degaugue-Michalski, 1993). Samples have been collected in coastal marshes and mangrove swamps for a more comprehensive study about the foraminifera of paralic environments (Debenay & Guillou, 2002). Finally, an illustrated catalogue of the species from the Baie de Saint-Vincent has been prepared by Margerel and is available on the web site of the University of Provence: http://mdp.cerege.fr/forams-index.php?position=0&der=&nbr=10. All the works reported above were used to prepare an inventory of the foraminifera species that live in the waters from around New Caledonia (Debenay & Cabioch, 2007). At that time, 585 species were identified. Since 2009, several works have been published about epiphytic foraminifera (Debenay & Payri, 2010), predation by fish (Debenay *et al.*, 2011), foraminifera as indicator of environmental changes (Debenay & Fernandez, 2009), colonization of new environments by foraminifera (Debenay *et al.*, 2009a), and foraminifera in shrimp ponds (Debenay *et al.*, 2009b).

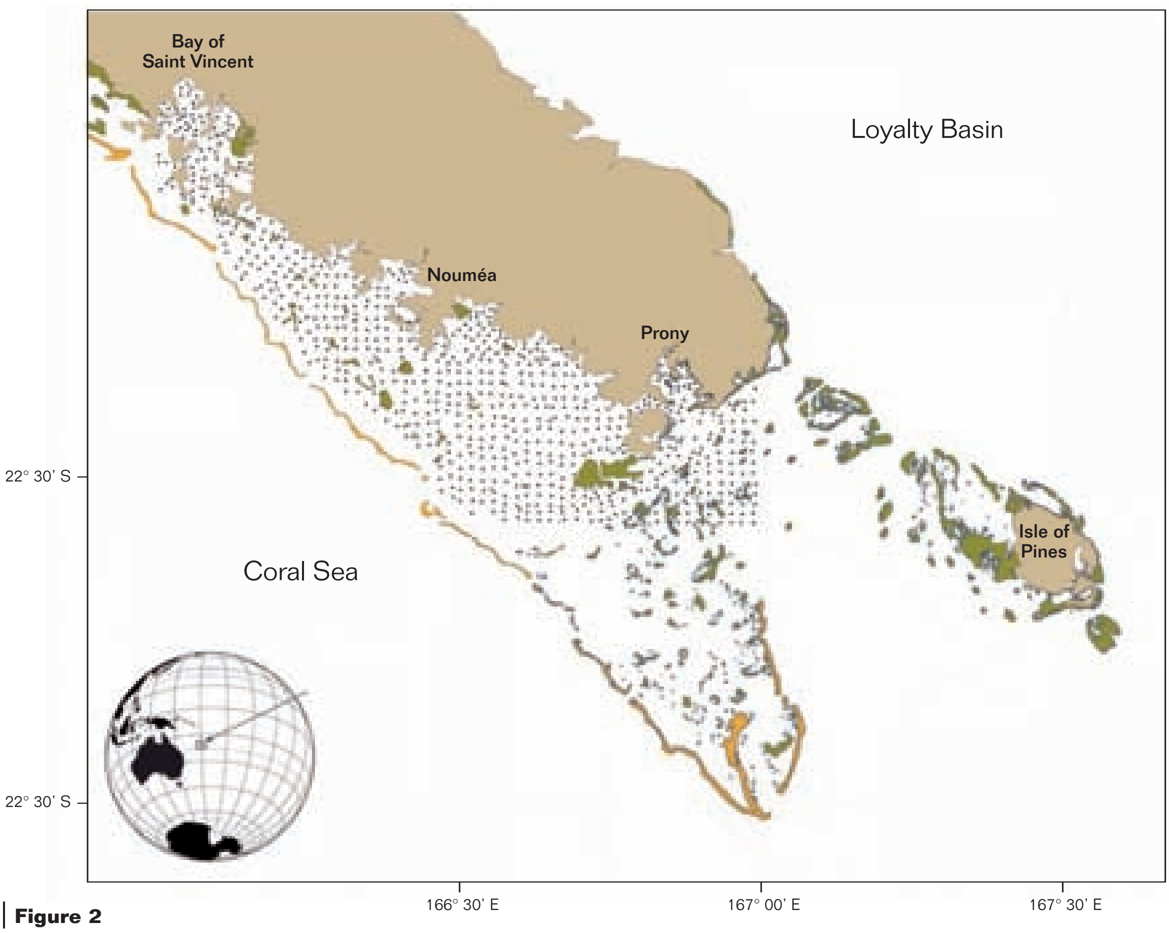


Figure 2
Location of stations collected between 1976 and 1978.

Regional setting

Geographic and geological setting

Located in the Southwest Pacific Ocean, about 1,500 km East of Australia, the exclusive economic zone (EEZ) of New Caledonia covers around 1,400,000 km^2, extending over 1,200 km N-S (between latitudes 15° and 26° S) and 1,800 km W-E (between longitudes 156° and 174° E) in the Southwest Pacific. It is schematically composed of a series of NW-SE trending ridges and basins, formed during the geological history of the area, which began around mid-Cretaceous time.

The New Caledonia archipelago comprises: the Grande Terre (the largest island, 400 km-long and 50 km wide), extending to the Belep islands and the d'Entrecasteaux Reefs to the north and the Isle of Pines to the south (fig. 3), and supported by the New Caledonia Ridge, which is the northern extension of the Norfolk Ridge; the Loyalty islands, on the Loyalty Ridge; Chesterfield and Bellona plateaus, supported by the Lord Howe volcanic chain; Lansdowne Bank and Fairway Ridge; and seamounts along the Loyalty, Norfolk and Lord Howe ridges. Matthew and Hunter volcanic islands are located father to the southeast, on the southern part of the Vanuatu volcanic arc.

The main island, Grande Terre, is the third largest island in the Pacific (after New Guinea and New Zealand). It is of continental origin and has a mountainous axis that reaches a maximum altitude of 1,629 m. The Belep islands and Isle of Pines are also mostly continental islands. The Loyalty islands are uplifted atolls built on a line of volcanic seamounts, nowhere rising much higher than 130 m. Maré in the south has some volcanic rocks but is primarily composed, as the others islands, of uplifted limestone. The Chesterfield islands and Bellona reefs are coral cays along the perimeter of the plateaus, forming large atolls. The wide Landsdowne Bank is mostly sandy and 70-80 meters in depth, but includes a small reef in the north, while the Fairway reefs, supported by the Fairway Ridge come close to the surface and dry at low tide (fig. 3).

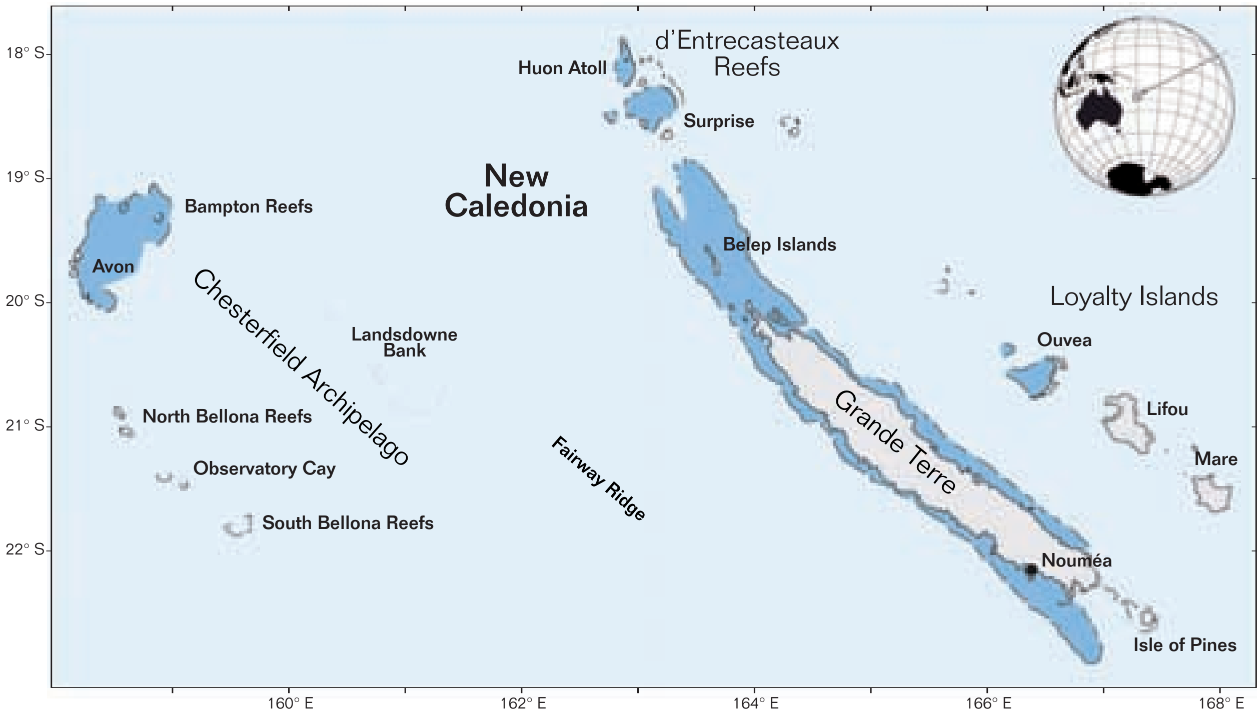


Figure 3
Location of the main islands and reefs of the New Caledonia archipelago. In dark blue: the main lagoons.

A prominent dynamic regional feature is the subduction zone between New Caledonia and Vanuatu, where the Australian plate dips under the Vanuatu volcanic arc. The resulting lithospheric deformation (bulge) of the Australian plate explains the uplifted reefs of Grande Terre, Isle of Pines and Loyalty Islands (DUBOIS *et al.*, 1974).

Oceanography and climate

Hydrological conditions in the southwest Pacific Ocean

Water circulation in the southwest Pacific follows complex pathways due to its strong interaction with the complex bathymetry of the region. The southern part of the South Equatorial Current divides into jets: North/South Vanuatu Jet, and North/South Caledonian Jet. Those jets feed the western boundary current system: the East Australian Current to the south and the New Guinea Coastal Current that itself feeds the Equatorial Undercurrent to the North, through the Solomon Straits (fig. 4; GANACHAUD *et al.*, 2007).

Surface waters of the EEZ are fed to the south by a branch of the East Australian Current that brings cold and salted waters and to the north by warm and less salted waters coming from the South Equatorial Current. The result is that the west coast receives cooler waters (1-2°C) than the east coast (ROUGERIE, 1986). The characteristics of these waters are strongly influenced by the seasonal variability of the water circulation (VEGA *et al.*, 2005).

Strong cooling events off the western barrier reef of New Caledonia have been attributed to wind-driven coastal upwelling. ALORY *et al.* (2006) developed a simple one-dimensional model based on a heat budget in the mixed layer. This model suggests that upwelling is the dominant process at daily timescale, and that the surface heat fluxes have a smaller influence than upwelling on daily Sea Surface Temperature (SST) variations. This process, however, is strongly modulated by the seasonal variations of the subsurface stratification.

Climatic conditions in the southwest Pacific Ocean

The climate of the southwest Pacific region, primarily oceanic, is controlled by large-scale atmospheric circulation features that include the trade wind regimes, the Hadley and Walker circulations, the seasonally varying tropical convergence zones, the semi-permanent subtropical high-pressure belt, and the zonal westerly winds to the south (fig. 5).

In January, the prominent feature is the trough of low pressure that extends eastward from the monsoonal low centered over northern Australia, while a high-pressure dome sits over southern Australia in July. The resulting monsoon regime is felt west of 170°W throughout the Vanuatu archipelago and the northern part of New Caledonia. The South Pacific Convergence Zone (SPCZ) that extends from east of Papua New Guinea southeastward toward 120°W, 30°S maintains one of the most expansive and persistent cloud bands on earth. South of 30°S, the atmospheric circulation is characterized by the presence of an anticyclonic belt (MAES *et al.*, 2007). Under the combined effects of the seasonal shifts in the SPCZ and the monsoon regime, the climate in New Caledonia has typically a wet season that extends from January to April with a transition season from June to July and then a dry season from August to December.

The main signals at interannual timescales are linked to the variability of the ENSO phenomenon. The signature of El Niño events in the oceanic region around New Caledonia is characterized by a 20-50% decrease in precipitation (NICET & DELCROIX, 2000), which may be related to the shifts in the position of the SPCZ in response to ENSO anomalies (FOLLAND *et al.*, 2002; FISCHER *et al.*, 2004).

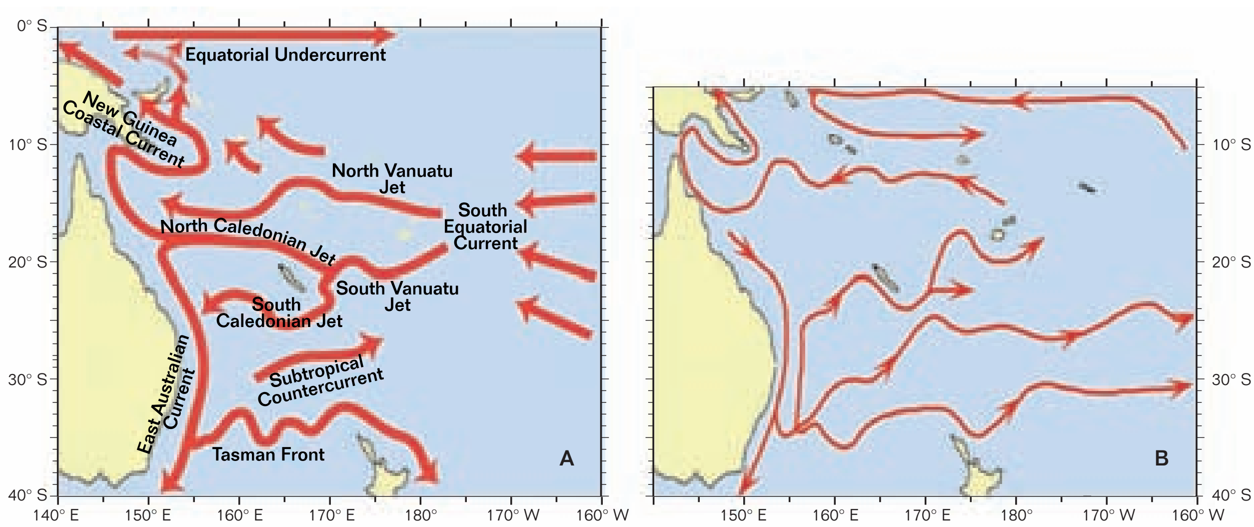


Figure 4
A) General circulation in the southwest Pacific (from GANACHAUD *et al.*, 2007);
B) Average surface water circulation (from Kesler in VEGA *et al.*, 2005).

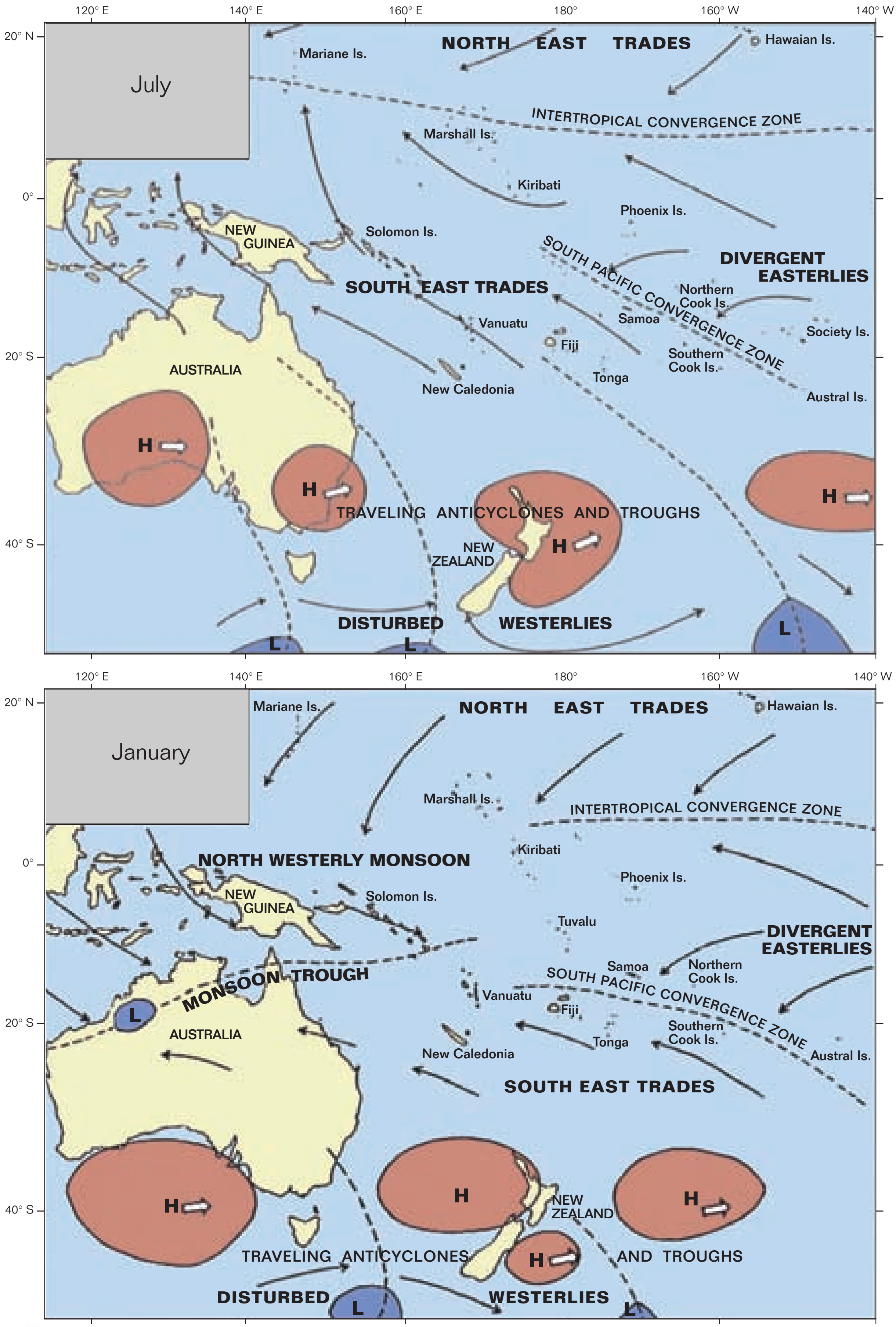


Figure 5

The southwest Pacific climatic conditions. Dashed lines represent the seasonal position of the convergence zones (from Salinger *et al.*, 1995; in Maes *et al.*, 2007).

New Caledonia, located in the trade wind zone typically experiences easterly to south easterly winds of 10 to 20 knots, but local topography has strong effects on local wind patterns. The axial mountain range also affects rainfalls and, excluding the mountains, the East Coast and the southeast parts of New Caledonia are the wettest.

Sea-level variations

During the last million years, sea level had 100 kA cyclic high (sometimes 5 to 10 m above present-day sea level) and low (120-130 m below present-day sea level) stands, leading to several emersions and submersions of the reefs and lagoons (Chevillotte *et al*., 2005; Chardon *et al*., 2008; Le Roy *et al*., 2008). These drastic environmental changes obviously had significant effects on the New Caledonia marine biodiversity. Modern reefs could start growing when the substratum began to be flooded by the post-glacial sea-level rise. Their morphology results from i) substrate availability (preexisting reefs), ii) the postglacial rate of sea-level variations from around - 120 m at 20/23 ka to the present sea-level with a peak up to + 2 m at 5,5 ka due to isostatic readjustment, and iii) the growth strategy of living communities. During the same time, species progressively colonize the lagoon. However, in the region, sea surface temperatures may not have been suitable for corals before around 8 ka, which can explain the late (8,2 ka) formation of postglacial reefs in New Caledonia (Cabioch, 2001). Another alternative hypothesis is the lack of suitable substrate (accommodation space) before 8 ka.

Study area

Lagoons and reefs

Reefal structures follow the eastern and western coast of Grande Terre, and extend beyond the island, 50 km southward and 200 km northward. Bounded offshore by a barrier reef built on the border of the island shelf, the lagoons cover a total area of 23,400 km^2 (TESTAU & CONAND, 1983) (fig. 3).

They have an average depth of 40 m along the east coast and of 25-40 m along the west coast. They are connected to the sea by deep passes opened at the mouth of submarine valleys downcut by the rivers during the last glacial regression 20,000 years ago. Extended lagoons are also found in the Chesterfield Archipelago, d'Entrecasteaux Reefs and Loyalty Islands (mainly Ouvea).

New Caledonian reefs include both oceanic (d'Entrecasteaux, Loyalty and Chesterfield) and continental reefs (Grande Terre and Isle of Pines). These reefs offer a large diversity of formations, explained by the diversity of environmental forcing, and provide a rich framework that itself supports a large diversity of shallow modern habitats and communities. There are 8 times more lagoonal and sedimentary areas (~31,300 km^2) than reef areas (~4,500 km^2). New Caledonia is clearly a region of high complexity, a hotspot of reef diversity, though it is not the most complex area (ANDRÉFOUËT *et al*., 2007, 2009).

The prominent feature of New Caledonia is its 1,500 km long barrier reef, cut by deep passes, and including a 1,300 km long subtidal domain. This is the longest stretch of barrier reef worldwide, since the Great Barrier Reef in Australia is not a linear barrier reef for most of its length, but an assemblage of platform reefs of various sizes and shapes. The spatial organization of Grande Terre reefs is not very diverse with an onshore-offshore sequential zonation of fringing-patch-barrier reefs for most of its perimeter, but more complex spatial organizations are found in the south lagoon due to higher abundance of patch reefs and wide shallow lagoons. The north sector is characterized by a very wide lagoon (Grand Lagon Nord) bounded by a continuous barrier reef, but depleted from patch reefs (ANDRÉFOUËT *et al*., 2007).

The southwest lagoon

General features

The southwestern lagoon of New Caledonia has been extensively studied and therefore deserves a particular presentation. It covers approximately 2,000 km^2, with a mean depth of 17.5 m. It widens progressively towards the southeast from 8 km wide north of Baie de Saint-Vincent, reaching 20 km near Nouméa and a maximum of 65 km at its southern end. The barrier reef consists of a series of arched reefs separated by deep passes (> 60 m). It curves sharply to the north at its southern extremity, following the edge of the great axial thalweg that prolongs the Bay of Prony (fig. 3).

The lagoon can be subdivided into an external zone that comprises a series of shallow (10-20 m) indurated plateaus downcut by the submarine valleys, and an internal zone, which corresponds to the large and deep (40 m) lagoonal depressions. The back-reef area is characterized by large hydraulic sand dunes. The large bays, which indent the shoreline, are characteristic of a submerged coastline. The numerous intra-lagoonal reefs are arranged along three alignments roughly parallel to the coast (THOMASSIN, 1984).

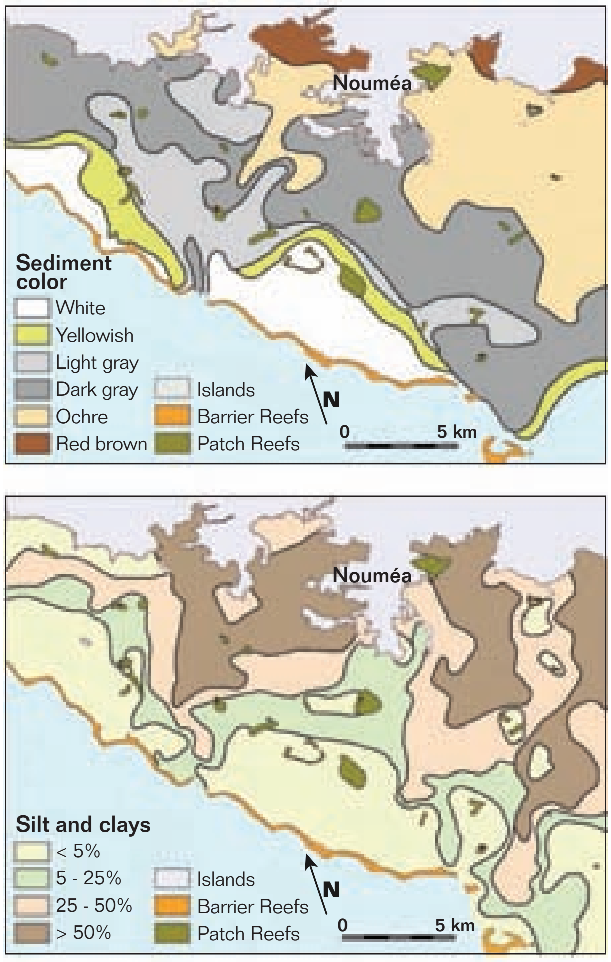
Hydrodynamics

Water movements in the southwestern lagoon of New Caledonia are controlled mainly by tidal and wind forcings. The semi-diurnal tide (maximum tidal range = 1.8 m) propagates from the south to the north (DOUILLET, 1998), while southeasterly trade winds drive a general northwest drift (DOUILLET *et al*., 2001). Models suggest that oceanic waters enter the lagoon at its southern end, emptying through the passes. Field observations have shown that the wind-driven surface current to the northwest, which enters the lagoon mostly through scattered reefs of the southeast, is balanced by a subsurface return current to the southeast. During each rising tide, oceanic water inflows mostly through the passes, but also to a lesser extent over the barrier reef, and between the scattered reefs of the southeast. Except when trade winds blow suddenly stronger, a reversal of surface currents and undercurrents can be observed in some passes and in the lagoon during the shift of tidal flow: during flood tides the flow is E or NE in the passes, NW or W in the lagoon; during ebb tides, the flow is SW or W in passes and SE in the lagoon (ROUGERIE, 1986).

At a long-term scale, models indicate that tidal water mainly enters the southwest lagoon at the south, between Ouen Island and the barrier reef. One part flows directly to the ocean through Boulari pass while the other part flows northwards and leaves the lagoon through Dumbéa pass. The velocity of the long-term transport generated by the tidal circulation is around 1 cm s^{-1}, whereas wind-induced velocity is 10 cm s^{-1} or higher (Ouillon *et al*., 2010). Over the reef, the tidal flow may alternatively enter and leave the lagoon during trade wind episodes, but oceanic water may flow continuously toward the lagoon under west wind or weak wind. Freshwater inputs are mainly from the Dumbéa River, Boulari River, and Pirogues River. Inside the southwest lagoon, the inter-annual variability is less marked than the seasonal one, which is well marked for most parameters (Leborgne *et al*., 2010).

Sediments

Sedimentary deposits are mainly of bioclastic origin. The finest sediments occur between the river mouths and the passes, in the depression and the submarine valleys, where the proportion of silt and clays is the higher (fig. 6). Coarser sediments are found near the patch reefs, due to the direct input of coarser grains from the reefs, and in shallower areas, including back reef areas, due to the winnowing of the sediment by waves and currents. According to the color of sediments, the lagoon appears to be divided into four main areas roughly parallel to the coast and the barrier reef (fig. 6). The color was shown to be directly related to continental iron-rich inputs, the zonation showing a decrease of these inputs seaward (Debenay, 1987).

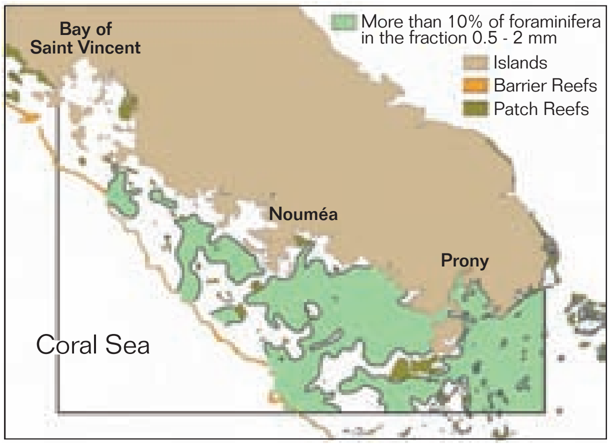


| **Figure 6**
Color of the sediment and silt and clays content (from Debenay, 1987).

In the inner bays, the sediment is red or brown in color, with more than 8% of Fe_2O_3. In the outer bays, the depressions and the submarine valleys, it is ochre as long as the percentage of Fe_2O_3 is over 2%. In the external parts of the depressions and of the submarine valleys bioclasts are colored in grey by iron pyrites. At the transition between the depression and the external plateaus and sand dunes, sediments are yellow, due to the oxidation of bioclasts previously colored by iron pyrites after reworking of sediments (Debenay, 1987). The back reef hydraulic sand dunes are white. Continental inputs are stocked close to the river mouths and in the bays, elsewhere remaining noticeable only in submarines valleys.

In the coarsest fractions (> 0.5 mm), Mollusks (Gastropods, Pelecypods) and Foraminifers constitute the bulk of bioclastic material with locally coralline algae, *Halimeda* and/or coral detritus (Debenay, 1985a). The contribution of coral debris to the sediment is significant only close to the reefs. Generally, sedimentation of grains coarser than 63 µm within the lagoon is the result of *in situ* organic production combined with low hydrodynamic control that lead to only weak sediment transport, as reported from other lagoons of New Caledonia (Chevillon, 1996).

Tests of foraminifera are often among the major constituents of the sediment. Even in the coarser fraction (> 0,5 mm), they are abundant, frequently making up more than 10% of the sediment (fig. 7), this proportion sometimes reaching 80% or more.



| **Figure 7**
Contribution of foraminifera to the coarser (> 0.5 mm) fraction of the sediment (after Debenay, 1985a).

Introduction to Foraminifera

Abridged History

The first mention of foraminifera can be found in the antiquity, when Herodotus, in the Vth century before Christ, reported the accumulation of lentil-like forms in the pyramids of Gizeh, ignoring that they were large fossil foraminifera (*Nummulites*). The organic origin of these fossils was discovered far later, by Leonardo da Vinci (XVth century), and the first specific study was carried out by Linaeus (1766), who recognized 15 species. In 1826, Alcide d'Orbigny produced the first classification of foraminifera that included 5 families, 52 genus and 552 species. He regarded them as minute cephalopods, whose chambers communicate by pores (foramina) and not siphons, giving them the name "foraminifères". Later on (1835), F. Dujardin discovered their true nature and recognized them as protozoa. Works on foraminifera developed during the end of the 19th century and the 20th century, involving numerous scientists. Among them must be mentioned workers such as Carpenter, Brady, Cushman, Loeblich and Tappan, who carried out much pioneering works.

Foraminifera have been extensively studied by geologists, and particularly used in oil industry, to find potential oil deposits. Due to their abundance, the good preservation of their mineralized tests in the sediments, their fairly continuous evolutionary development since the Cambrian, they can be used for accurately dating rocks. They have long been ignored by marine biologists, and if biological studies began at the end of the 19th century, they only developed in the 1980s, little being known about their biology.

Resulting from their extensive use by geologists, emphasis was given to the mineralized test of the foraminifera that were mainly known as shelled organisms living in marine and paralic environments. Recent studies, however, revealed the presence of naked species (lacking test) living in freshwater environments and even in damp rainforest soil (e.g., Pawlowski *et al.*, 1999; Meisterfeld *et al.*, 2001; Holzmann *et al.*, 2003).

General characteristics

Foraminifera are single-celled organisms (protoctists). Their size typically ranges from 0.1 to 1 mm, although some species may be as large as several centimeters, sometimes exceeding 10 cm in diameter. In most species, the cell is protected by a test (shell), which may be uni- or multilocular. The shell is referred to as a test because it is covered by some of the protoplasm of the unicellular

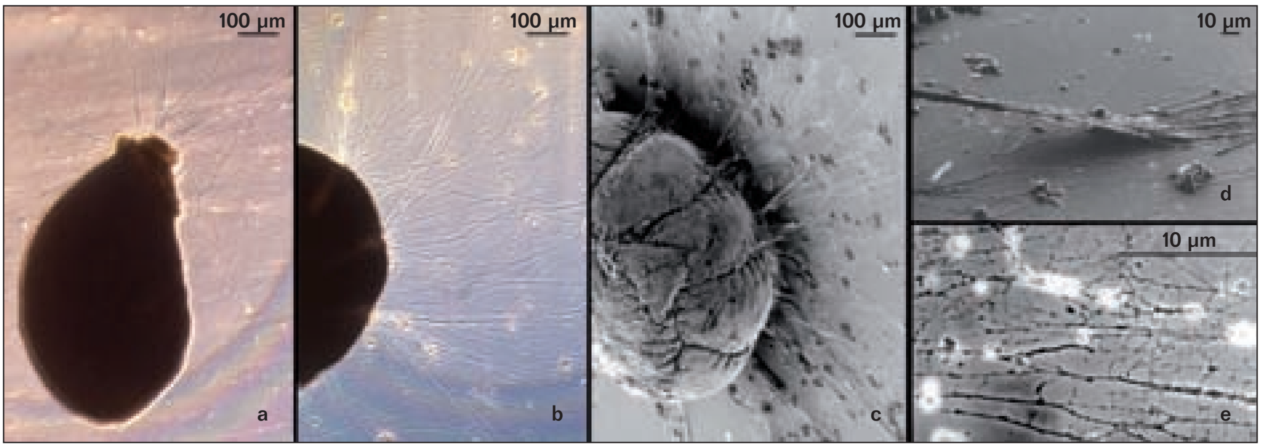


Figure 8
Pseudopodia. a) phase-contrast microscope image of *Massilina secans* showing pseudopodia extruding from the single aperture of the test;
b) phase-contrast microscope image of *Ammonia beccarii* showing bunches of pseudopodia extruding from sutural spaces;
c) same as (b), but under a Scanning Electron Microscope;
d) detailed view of (c) showing pseudopodia anchoring the test on the substrate;
e) phase-contrast microscope image showing the pseudopodial network of *Heterotheca lobata*
(photos c and d from V. Le Cadre; photo e from K. G. Grell in Debenay *et al.*, 1996).

organism. The protoplasm of the cell is composed of endoplasm and ectoplasm. The endoplasm is the central part of the protoplasm that contains the nucleus or nuclei and in which the major metabolic processes take place. The ectoplasm is the outer zone of cytoplasm, from which a reticular network of pseudopodia, reinforced by a micro-tubular cytoskeleton, may emerge through a single or many openings in the test – but never through the pores (fig. 8). This pseudopodial network is used for locomotion, anchoring, catching and transport of food, removal of excretory products, gas exchange, test building, and many other functions. Pseudopodia characteristically have small granules streaming in both directions, and as they form a network, they are called granuloreticulopodia.

Position in the trophic web

Foraminifera are heterotrophic protists that are often considered as a key group in the marine food web (Altenbach, 1992) since they are one of the dominant members of benthic communities in both shallow and deep-sea environments (Alongi, 1992; Gooday *et al.*, 1992; Moodley *et al.*, 2000), and are often major contributors to meiofaunal biomass (Murray, 2006). They exhibit a great variety of feeding mechanisms, which are in relation with their ecology and their test morphology. Many benthic foraminifera are omnivorous opportunistic feeders that consume organic detritus, unicellular algae, protists (including other foraminifera), and metazoans (Haynes, 1981). Some branching forms are suspension feeders and utilize their pseudopodia to capture food from the water column. Sediment dwellers may absorb dissolved organic matter *via* their pseudopodia, but they are mostly deposit feeders, gathering organic detritus and bacteria with their pseudopodia. Some species may form a "spiders web" with their pseudopodial network and capture small metazoans, such as copepods. Despite this variety of diet, most of the foraminifera are deposit feeders (Lipps, 1983), and bacteria constitute an important element in their diet (Goldstein & Corliss, 1994), due to their high nutritional value. They also have a prominent role in cycling indigestible organic detritus and making them available to deposit feeders. Several littoral benthic foraminifera have been shown to selectively ingest bacteria (Lee *et al.*, 1966; Lee & Muller, 1973), and even a bacteria farming strategy has been inferred by Langer & Gehring (1993).

A number of benthic and planktonic foraminifera that inhabit the photic (lighted) zone, mostly in tropical waters where sunlight is plentiful and trophic resources somewhat restricted, host unicellular algae that provide the foraminifera with carbohydrates. It is thought the large size of some tropical benthic foraminifera partly results from these endosymbiotic associations. Endosymbiotic algae may be from diverse lineages such as the green algae, red algae, golden algae, diatoms, and dinoflagellates. Some foraminifera are kleptoplastic, retaining chloroplasts from ingested algae to conduct photosynthesis (Bernhard & Bowser, 1999). This diversity in the endosymbionts and the resulting diversity of the photopigments used by the algae allow the symbiont-bearing foraminifera to successfully utilize a wider range of the light spectrum and thus to colonize most of the photic water column.

Parasitism by foraminifera has been reported for several species since it was first documented by Le Calvez in 1947. In New Caledonia, a small species, *Metarotaliella tuvaluensis*, may potentially parasite several miliolid species. It attaches to the tests of partially grown miliolid individuals, resulting in malformation of the chambers added after the attachment and modification of the test morphology (fig. 9).

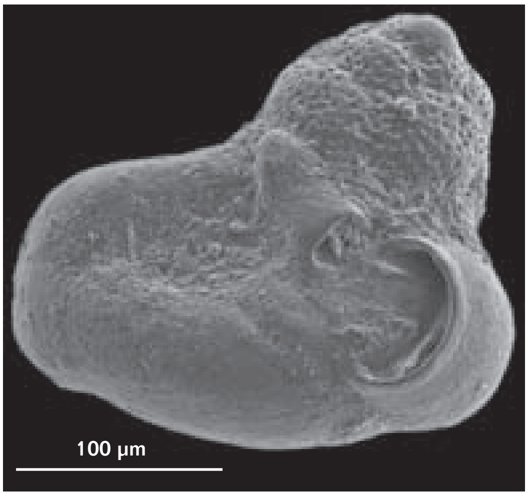


Figure 9
Metarotaliella tuvaluensis on a deformed test of miliolid.

The status of foraminifera as a key group in the marine food web does not result only from their abundance, but is also due to the fact that their feeding sources are mostly inaccessible for the macrofauna. In turn, foraminifera are preyed upon by many different organisms. Incidental predation is common, due to deposit feeders ingesting sediment-dwelling foraminifera or herbivorous organisms that ingest epiphytic foraminifera. Some more or less selective predators have been identified, including nematodes (Sliter, 1971), polychaetes (Lipps & Ronan, 1974), mollusks (e.g., Langer *et al.*, 1995; Glover *et al.*, 2003), echinoderms (e.g., Mateu, 1969), arthropods (e.g., Rainer, 1992), and fish (e.g., Todd, 1961; Lipps, 1988; Debenay *et al.*, 2011). This predation may have a significant impact on foraminiferal populations as demonstrated for deep-sea scaphopods (Langer *et al.*, 1995) and fish (e.g., Palmer, 1988).

Reproduction and growth

The life cycles of only a few species are known among the approximately 10,000 living species of foraminifera. There are a great variety of reproductive strategies, but foraminiferal life cycle commonly involves an alternation between haploid and diploid generations. This type of alternation of generations is known mostly in plants. Although they are mostly similar in form, the generations differ in the size of the initial chamber, known as the proloculus (fig. 10).

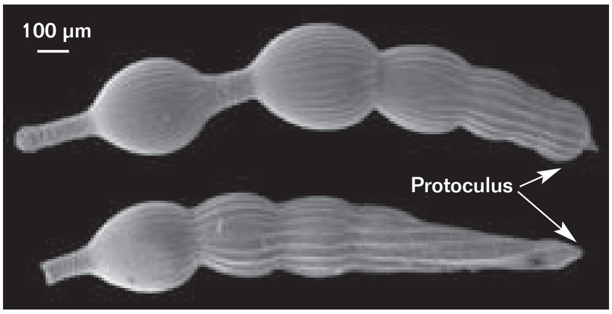


Figure 10
A classical example of dimorphism in foraminifera with the macrospheric – or megalosheric – form (big proloculus – top) and the microspheric (small proloculus – bottom) in *Amphicoryna scalaris*.

Haploid individuals, named gamonts are usually uninucleate. They divide to produce numerous amoeboid or flagellated gametes that fuse to produce zygotes. Zygotes develop into diploid, generally plurinucleate, individuals, and named agamonts. The agamonts tend to have a small proloculus and are therefore termed microspheric (fig. 10). After meiosis they fragment to asexually produce new gamonts, which commonly form a larger proloculus and are therefore termed megalospheric or macrospheric. Generally, they also are smaller in size. Multiple rounds of asexual reproduction between sexual generations are not uncommon in benthic forms. In this case, the agamont undergoes a mitotic division instead of meiosis and produces another diploid generation, called schizont (fig. 11; see also *Marginopora vertebralis* on fig. 42). The schizont may undergo meiosis and form gamonts or it may enter a cycle of successive asexual reproductions by multiple fission of a diploid multinucleated cytoplasm. These processes are complex and their explanation is often confusing and sometimes erroneous, even in specialized literature. For a detailed description, see Lee *et al*. (2000).

In some species, the foraminifera change their way of life during the life cycle. For example, several species of *Rosalina, Neoconorbina* and *Cymbaloporetta* that live in tropical areas have a benthic agamont, while the gamont constructs a float chamber and becomes planktonic before releasing the gametes (fig. 12).

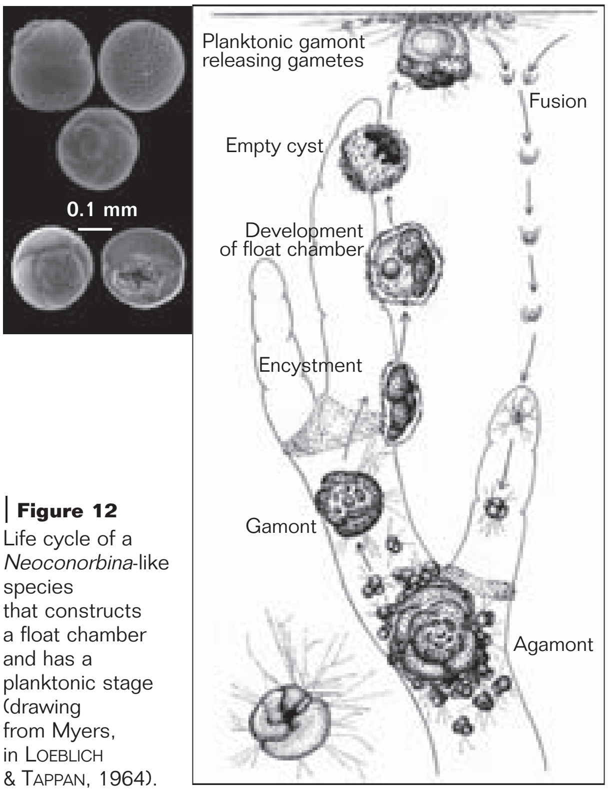


Figure 12
Life cycle of a *Neoconorbina*-like species that constructs a float chamber and has a planktonic stage (drawing from Myers, in Loeblich & Tappan, 1964).

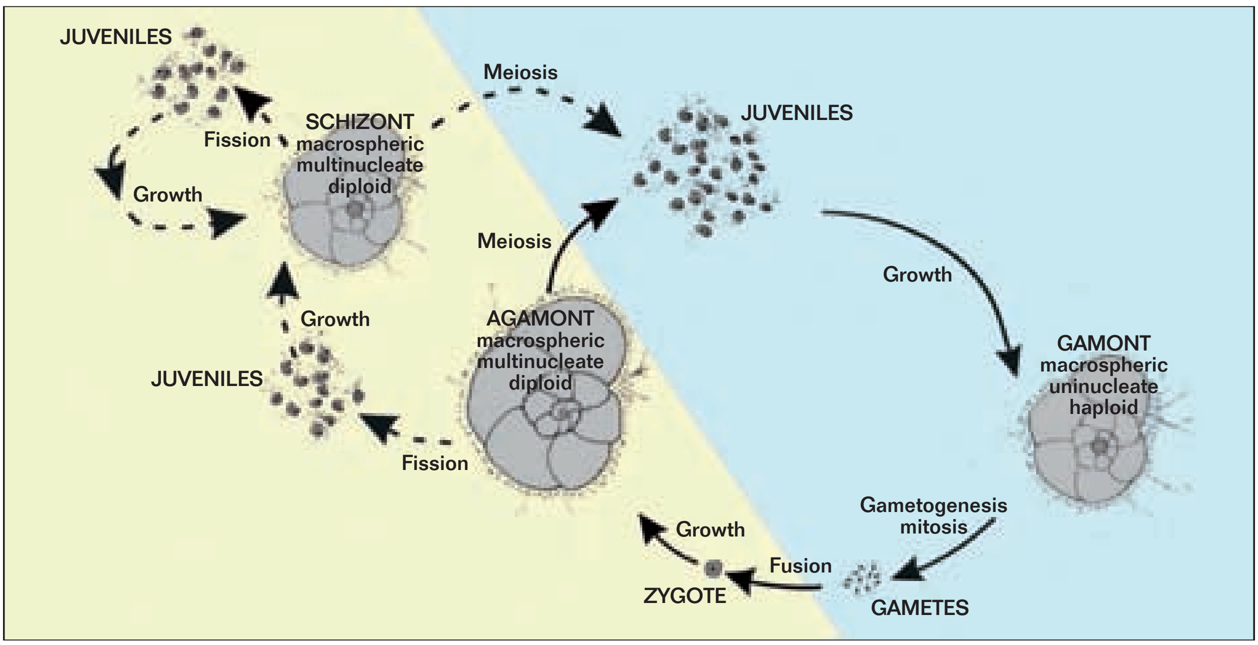


Figure 11
Schematic representation of the life cycle of foraminifera with the usual alternation of generation (solid lines), and the alternative multifission (broken lines) (simplified from Lee *et al.*, 2000).

Three types of sexual reproduction are known in foraminifera: gametogamy, gamontogamy (or plastogamy), and autogamy. In gametogamy, the biflagellate gametes are released into the surrounding seawater and fuse outside the gamontic test. In gamontogamy, two or more gamonts join their apertural faces that partially dissolve, forming a limited space where the flagellated or amoeboid gametes fuse (fig. 13). In autogamy, the gametes produced by the same gamont fuse inside the gamontic test.

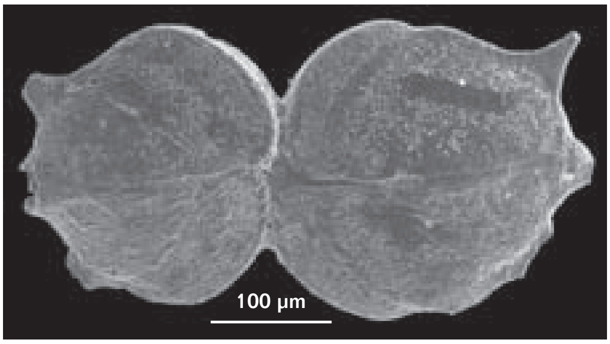


Figure 13
Plastogamic pair of *Punctobolivinella unca*.

Some species of foraminifera live only a few weeks before death or reproduction, while large tropical species such as *Marginopora vertebralis* may live several years.

After the fusion of gametes or the fission of the mother cell, the zygotes or the daughter cells of shelled species construct a small initial chamber (proloculus), calcified around the protoplasm (fig. 14). While the cell grows, the chamber increases in size in monolocular species, and new chambers are added in multilocular species. At the beginning of the growth, one chamber is built almost every day. The construction of new chambers involves complex processes, including the participation of pseudopodia, and differs depending on the nature of the test. It is impossible to present these processes in this book, even if some aspects will be evoked in the following chapter about the test.

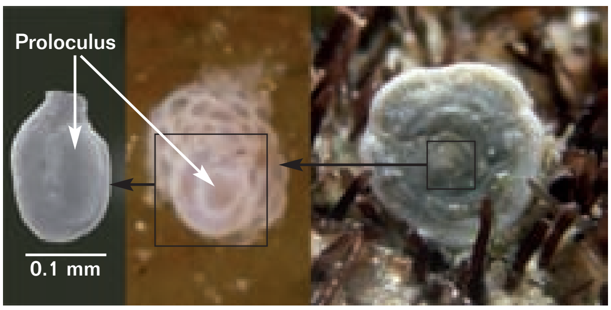


Figure 14
Growth of *Sorites orbiculus*:
left, the proloculus and its tubular extension (flexostyle);
center, the first chambers adding around this "embryo" attached on a macroscopic alga;
right, an adult specimen on *Gelidium* sp.

The test

Composition and structure

Some naked foraminifera have recently been identified, but most of the known species have a test. Because foraminifera were first studied by geologists, their classification has been based primarily on characters of the test, mainly wall composition and structure, chamber shape and arrangement, the shape and position of the apertures, surface ornamentation.

Three basic wall compositions are recognized: organic, agglutinated, and secreted calcium carbonate. An exception is the genus *Miliammellus*, the only genus of the Suborder Silicoloculinina, which as the name suggests has a test composed of silica. Some organic specimens were observed living in algae, but owing to the peculiarity of these species and to the fact that organic tests are not preserved in dried samples, they are not taken into account in this study.

Agglutinated tests are made of accumulated foreign particles collected in the sediment and cemented together by a variety of cements, e.g., organic, calcareous or made of ferric oxide (fig. 15). Some species use all particles available, selecting them randomly, while others pick specifically selected grains (e.g., sponge spicules, coccoliths, mica flakes) (fig. 16).

Calcareous tests may be subdivided into three major groups: microgranular (an extinct group that will not be considered here), porcelaneous, and hyaline. Two peculiarities must also be mentioned: the test of the suborder Spirillinina is constructed of an optically single crystal of calcite and the suborder Carterinina is believed to secrete spicules of calcite, which are then cemented together to form the test. Porcelaneous tests are opaque, due to the refraction of light by the thick, randomly arranged middle layer of crystal needles, enclosed between the thin inner and outer well-ordered veneers (fig. 15). They are imperforate and composed of high magnesium calcite. Hyaline tests are glassy. They are termed perforate because the wall is penetrated by fine pores (fig. 15). The pores are closed on the inner face of the wall by an organic membrane, and hence do not allow direct communication with the exterior, but facilitate gas exchanges. Hyaline tests of recent foraminifers are mainly calcitic, rarely aragonitic (order Robertinida).

Basically, calcareous tests are composed of colloidal crystallites that result from nucleation in oversaturated media controlled by the cell (see discussion in Debenay *et al*., 1996). In porcelaneous tests, nucleation occurs in the Golgi vesicles, and crystallites group into needles. Needles are transported toward the area of test wall construction where they are deposited in random arrangement (Hemleben *et al*., 1986), and secondarily form the platelet layer (Debenay *et al*., 1996). In hyaline tests, nucleation occurs on an organic membrane (e.g., Towe & Cifelli, 1967; Hottinger, 1986), where crystallites group into radial columns to form the test wall. A new lamella may be added to the initial wall when a new chamber is constructed, resulting in multilamellar tests (fig. 15).

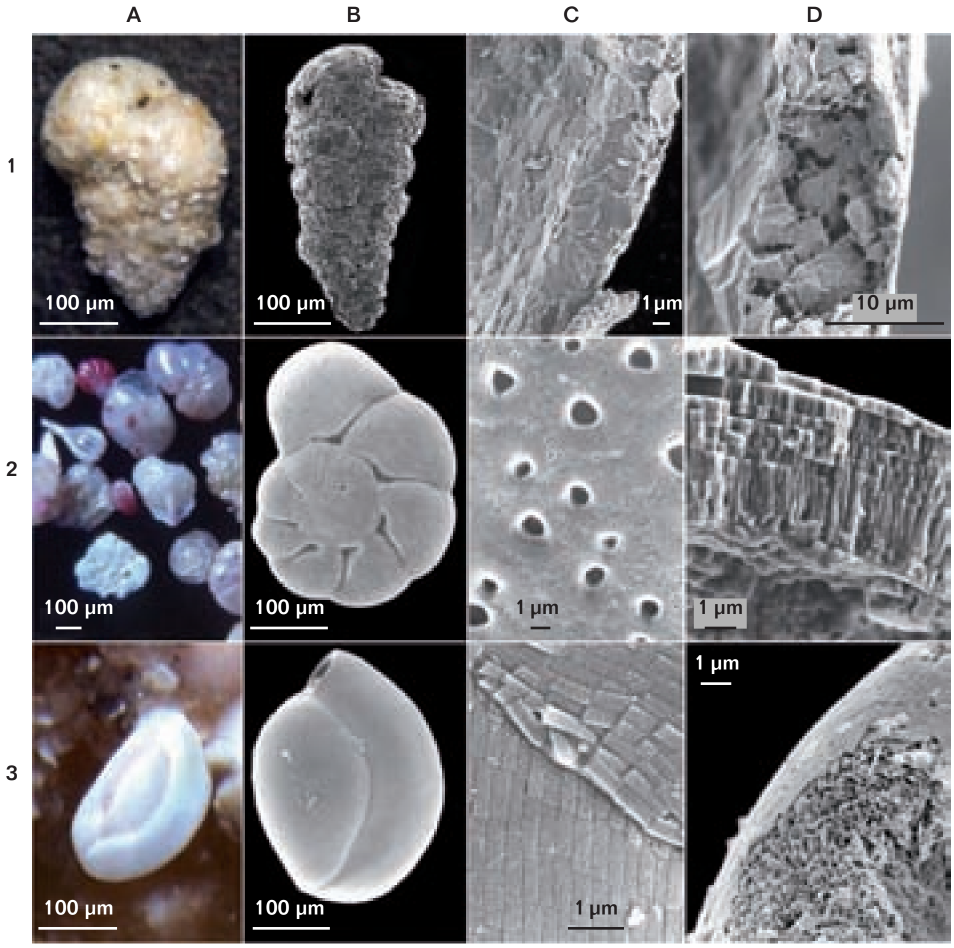


Figure 15
Nature and structure of the test. 1) agglutinated; 2) calcareous hyaline; 3) calcareous porcelaneous - A) light microscopy; B) SEM view of a test; C) detailed view of the surface showing the glue between foreign grains on an agglutinated test, the pores on a hyaline test, and the rhombohedral platelets on a porcelaneous test; D) sections showing the foreign grains in an agglutinated test, the lamellae in a hyaline test, and the irregularly arranged calcitic needles covered with rhombohedral platelets in a porcelaneous test.

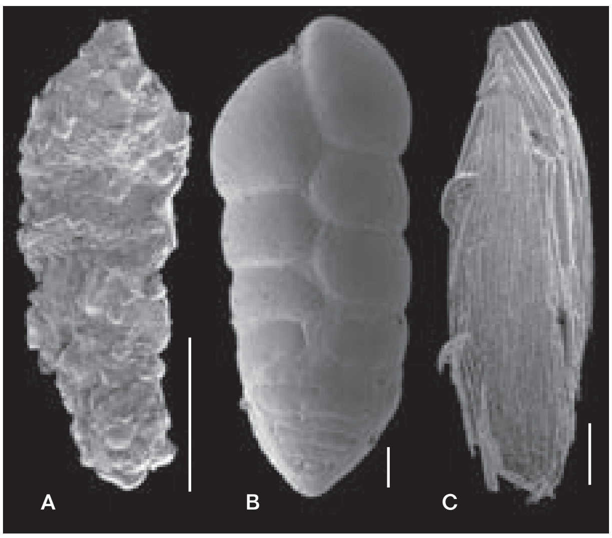


Figure 16
Examples of agglutinated tests:
A) with irregular coarse grains;
B) with fine grains;
C) with selected sponge spicules.
Scale bar = 100 µm.

Chamber arrangement

Some species build tests with a single chamber (unilocular), but most species build multilocular tests with multiple chambers that are added as the cell grows. Chambers are connected with each other by small openings called foramina (Foraminifera got their name from these foramina). The final chamber communicates with the exterior through one or several openings called apertures. The living cell fills all the chambers except for one or two of the most recently constructed. While the cell grows, the chamber increases in size in unilocular species, and new chambers are added in multilocular species, following a great variety of arrangements. The most common types of chamber arrangements are shown on figure 17.

Besides these general categories, there are many variations in the test morphology. For example, planispiral tests may be involute (the chambers in a coil cover laterally those of the preceding coil, the chambers of the last coil only visible) or evolute (all coils visible) (fig. 18 A, B). Chambers may be irregularly added as illustrated in a few examples in figure 18 (C, D, E). In milioline

Monolocular
The living cell is enclosed in a chamber of variable morphology, generally with an aperture, which is here at the end of a neck (1).

Monolocular tubular
The unique chamber is a tube, which can be straight, planispirally enrolled (2) or irregularly (streptospirally) enrolled (3).

Serial
The chambers of the plurilocular test are arranged in a unique linear series (uniserial - 4), two series (biserial - 5) or three series (triserial -6). The aperture is on the last chamber.

Spiral
Chambers are spirally arranged, either in one plane, the test being symetrical (planispiral - 7), or in three dimensions, giving the test a trochoid morphology, like a snail shell (low trochospiral -8 and high trochospiral - 9).

Milioline
Tubular chambers are spirally arranged, each chamber being one-half coil in length.
The coil may be within a single plane (spiroloculine - 10), or each successive chamber may be placed at an angle from the previous one, leaving visible the three (triloculine - 11) or the five (quinqueloculine) last chambers.

Discoidal
After a generally planispiral initial stage, annular chambers divided into chamberlets are added within a single plane(12).

Complex morphology
The morphologies described above may combine into more complex morphologies. For example, a triserial initial stage may change into an uniserial arrangement during growth (13), a spherical chamber may be added to a trochospiral test (14), planispirally arranged chambers may be followed by uncoiled, uniserially arranged chambers (15).

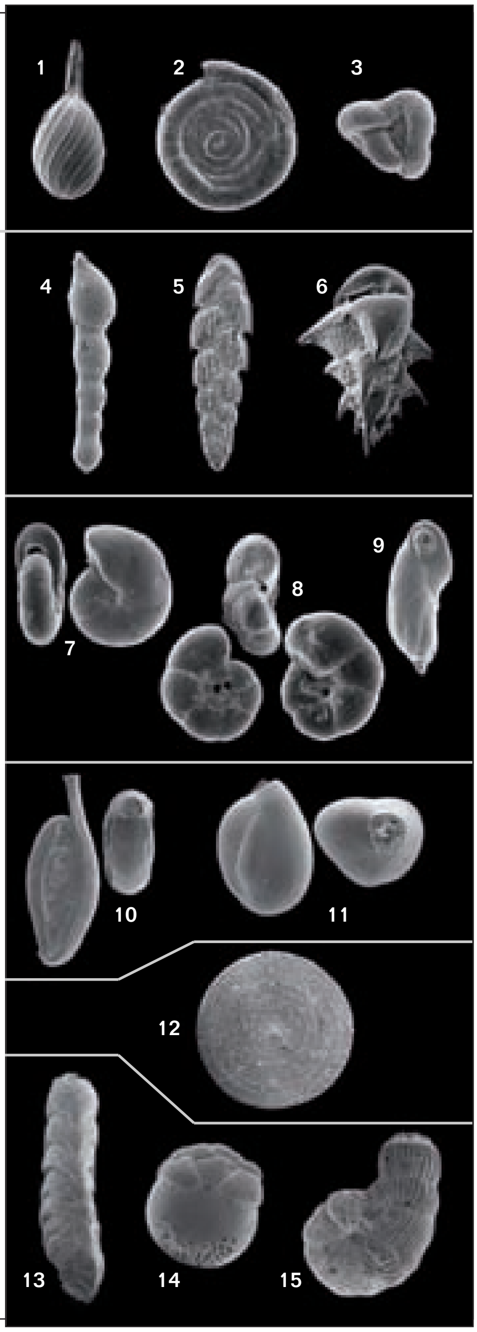
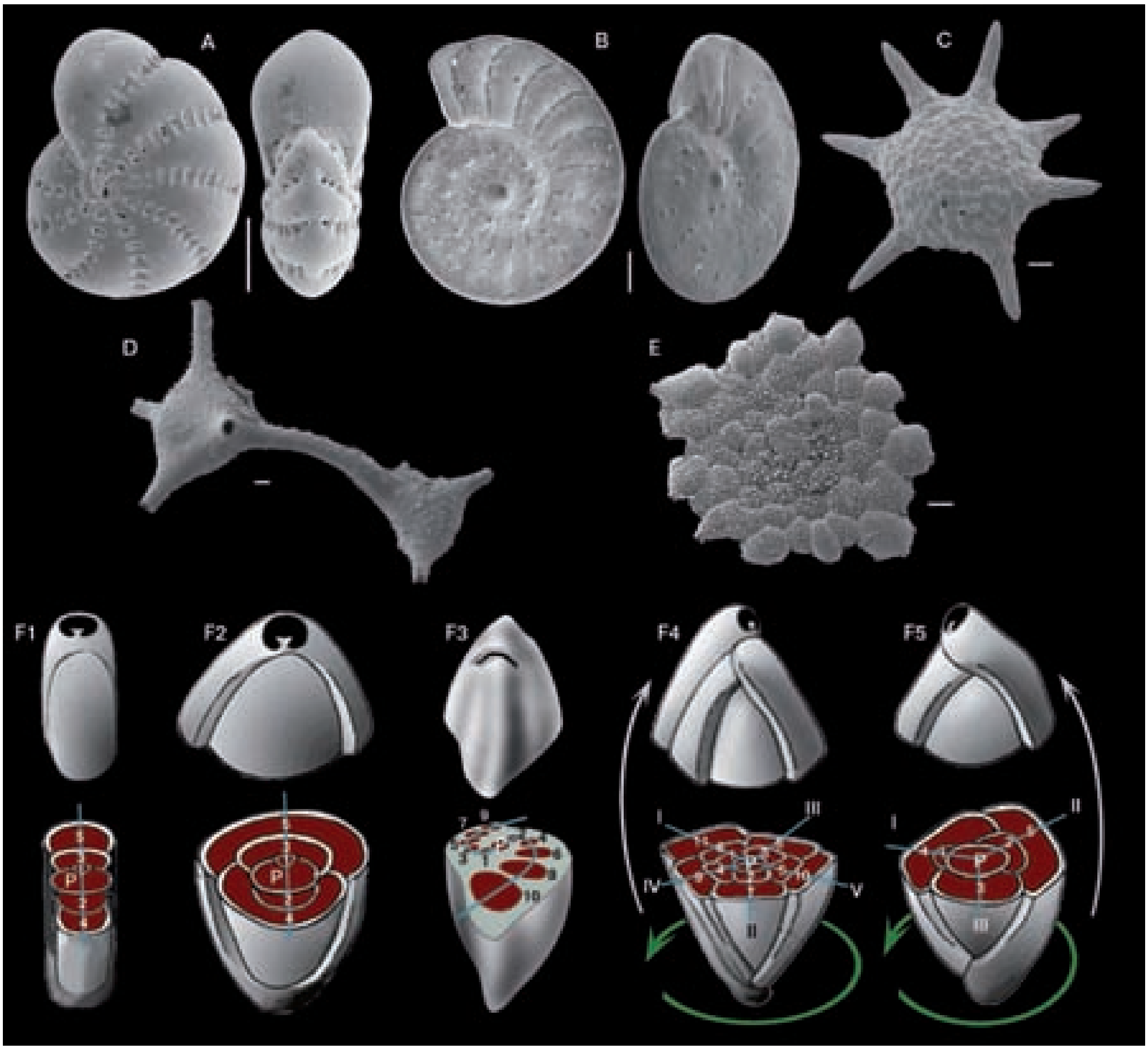


Figure 17
Most common types of chamber arrangements (from Debenay & Della-Patrona, 2009).

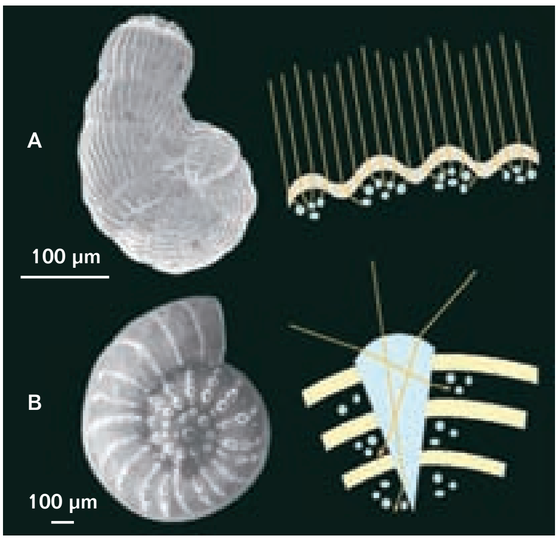
arrangements, spiroloculine enrolments may be evolute (*Spiroloculina* – fig. 18 F1) or involute (*Pyrgo* – fig. 18 F2). In quinqueloculine enrolments, successive chambers are added at an angle less than 180° (fig. 18 F3), and in triloculine arrangements they are added at an angle more than 180° (fig. 18 F4).

The internal structure of the test may be very complex, resulting from various patterns of addition of chambers, their subdivision into chamberlets, and complex communications with each other. This is particularly obvious in large discoid foraminifera (e.g., Hottinger, 1978), but even small tests may reveal a complex organization when they possess a canal system (e.g., Billmann *et al*., 1980). The function of these structures in the biology of foraminifera is still poorly known.

Various morphological adaptations of the test are known. As an example, it is possible to mention two test morphologies interpreted as adaptations for conducting light to the internal algal symbionts. In peneroplids, blunt ribs roughly parallel to the periphery of the shell concentrate light by refraction, and symbionts group in these areas of light concentration (fig. 19 A). In operculinids, transparent pillars conduct light to the symbionts, even in involute tests where the first coils are covered by following ones (fig. 19 B).



| **Figure 18**
More information on chamber arrangement.
A) planispiral involute;
B) planispiral evolute;
C) numerous domelike chambers added in successive layers, alternating in position, with prominent radial spines;
D) somewhat irregular chambers separated by stolonlike necks;
E) chambers added in irregular cycles;
F) milioline arrangements:
1- spiroloculine evolute, 2- spiroloculine involute, 3- sigmoid,
4- quinqueloculine and 5- triloculine,
chambers are numbered and successive planes are indicated (blue); white arrow = growth of the last chamber, green arrow = direction of coiling. Scale bar = 100 µm.



| **Figure 19**
Adaptation of the test for conducting light to endosymbionts:
A) concentration of light by refraction through ribs of the test;
B) conduction of light through transparent pillars.

Apertures

As shown above, foraminiferal tests are characterized by their morphology and chamber arrangement, but they are also characterized by their aperture, which allows the cell to communicate with the exterior. Apertures may have a great variety of positions on the test. Some of the common apertural positions are shown in figure 20.

Apertures also have a great variety of morphology, the role of which in the biology of foraminifera has to be elucidated. Some of these morphologies are illustrated in figure 21.

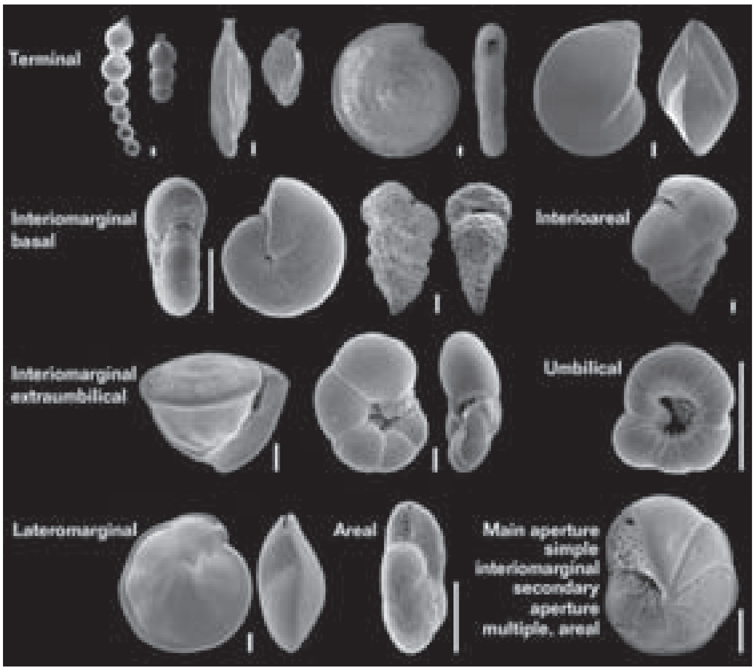


Figure 20
Some of the common positions of the aperture:
Terminal, at the end of the last formed chamber;
Interiomarginal, at suture between the distal wall of the last formed chamber and the preceding coil – basal, at the base of the distal wall in planispiral and serial tests – extraumbilical, at the suture of the last formed chamber on the umbilical side of a trochospiral test, but not connected with the umbilicus;
Interio-areal, near the base of the distal wall, but not at the suture with the preceding coil;
Umbilical, located into the umbilicus;
Latero-marginal, at the periphery of the last formed chamber, but slightly on one side of the test;
Areal, on the distal wall of the last formed chamber.
Scale bar = 100 μm.

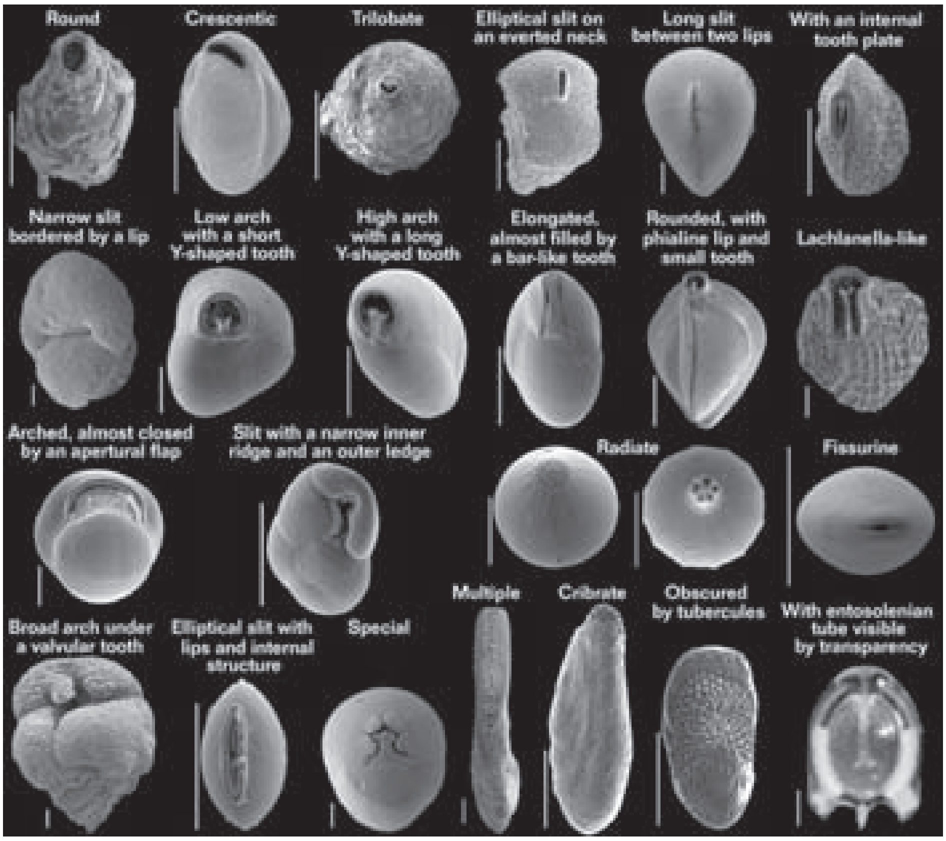


Figure 21
Some of the morphologies of the test aperture. Scale bar = 100 μm.

Unfortunately, it was not possible, within the scope of this guide, to provide more detailed information about test structure and morphology. The reader will find this information in the "Illustrated glossary of terms used in foraminiferal research" (Hottinger, 2006), also available online: <http://paleopolis.rediris.es/cg/CG2006_M02/>.

Where and how to collect foraminifera

As indicated above (fig. 1), foraminifera tests are abundant in tropical sands. They can be easily observed and picked under a dissecting microscope. For small specimens, and if they are too rare to be picked from the gross sample, they can be concentrated by selective flotation using sodium polytungstate solution, or perchloroethylene, easier to get in local stores. The dry sand is poured over the heavy liquid. Then the floating tests are collected on filter paper and dried in an aired place. The number of tests collected with this method is often amazing. After they have been picked, they can be ordered in special microslides.

Observation of living foraminifera is easy when considering large species that can be seen even by snorkeling. They are abundant on sea grass (fig. 22), and large individuals can be found on the sediment. The presence of detritus, gathered by the pseudopodia around the test, indicates that they are living. Large foraminifera are also visible by naked eye on coral rubble or shells, where they can be quite abundant.

The observation of smaller species needs a dissecting microscope. Some species are quite easy to observe, like *Amphistegina radiata*, but most species constitute a cyst with the detritus gathered by the pseudopodia. They live hidden in this cyst that is both a protection and a nutritional reserve (fig. 23). In this condition, it becomes quite difficult to detect their presence.

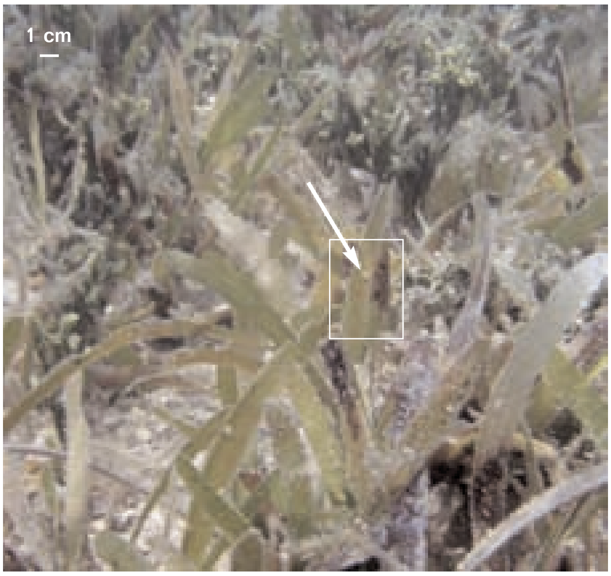


Figure 22
Living *Marginopora vertebralis* on sea grass (the arrow indicates one of the tens of individuals).

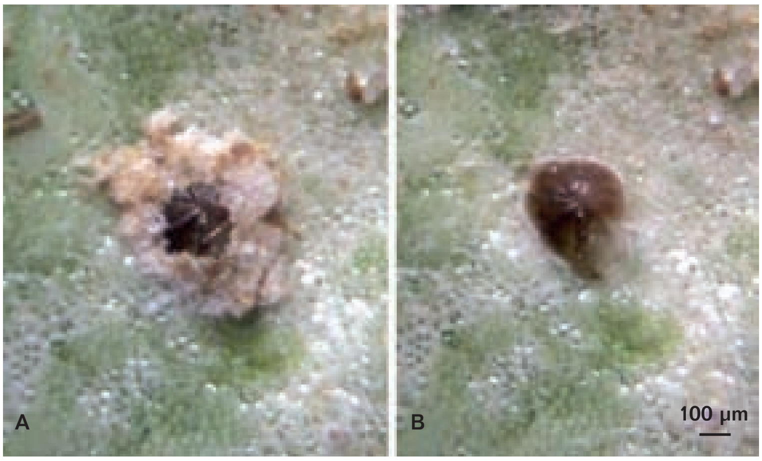


Figure 23
Lobatula lobatula attached on *Halimeda*:
A) the cyst has been partly destroyed;
B) the cyst has been entirely cleaned off.

Foraminifera, their distribution and bevahior

This part summarizes results obtained during a first comprehensive study in the SW lagoon (1976-1979), and in a series of studies carried out since 2006 in various parts of New Caledonia. For ancient works, species names have been changed, when necessary, in agreement with actual species concepts.

Material and methods

During the first studies, more than 800 samples were collected over an area of about 3,000 km^2 in the southwestern lagoon and on the southern shelf (fig. 2). Each was subjected to grain size analysis, a general observation of sand grains under a dissecting microscope, counting of the tests according to their nature in the fraction 0.125-0.5 mm, and a detailed specific analysis of foraminiferal fauna in the fraction coarser than 0.5 mm. In this fraction, one hundred and sixty eight species were found, and their distribution over the 800 samples was examined.

Since 2006, several hundreds of samples were collected in mangrove swamps, shrimp farms, in the deeper parts of the northern lagoon and on the northern shelf (down to 700 m), on macroalgae, and even within fish guts (fig. 24). The results of these studies, published in several papers are summarized below, together with unpublished data.

Sediment samples collected since 2006 were washed through a series of three sieves with mesh size 2 mm, 0.5 mm, and 0.063 mm; macroalgae were examined under a dissecting microscope for observing attached foraminifera, then washed over the sieves for collecting free-living species; gut contents of reef fish were observed under a dissecting microscope. All the three fractions (> 2 mm, 0.5-2 mm, and 0.063-0.5 mm) were observed.

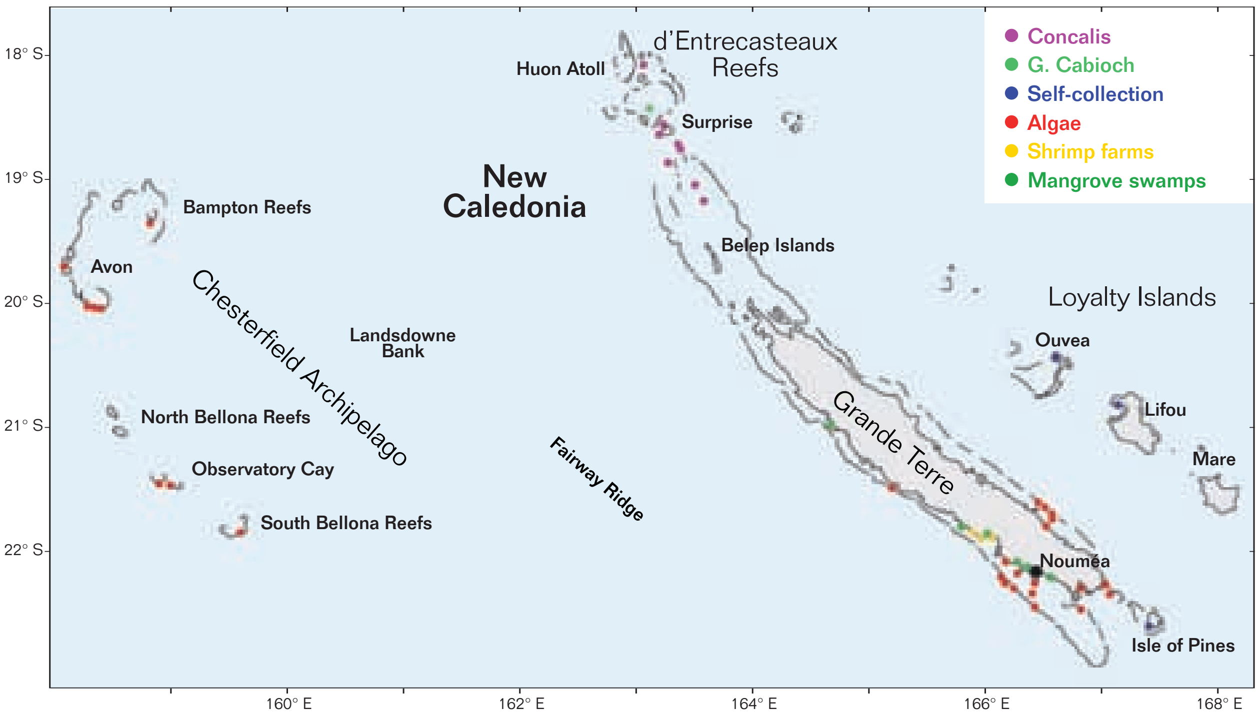


Figure 24
Location of samples collected since 2006: Concalis, samples from the northern shelf provided by B. Richer de Forges; G. Cabioch provided samples from Surprise Island (d'Entrecasteaux reefs); macroalgae were provided by C. Payri; shrimp-farm samples were provided by L. Della Patrona; mangrove samples were collected during several field trips, and provided by C. Marchand.

Foraminifera in the southwestern lagoon

General distribution

The global contribution of foraminifera to the sediment has been presented above (fig. 7). In the fraction > 0.5 mm, the species richness appears to be related to oceanic influence with more than 25 species on the southern shelf, near the passes, and in the axis of the lagoon. The lower richness is found in the bays, with fewer than 5 species in the bays of Saint Vincent and Prony. Diversity provides consistent information on the impact of marine influence with Shannon index above 3.5 in areas of higher richness (fig. 25). This shows that foraminiferal assemblages are sensitive to marine influence, and that they can be used to indicate the areas of maximum marine influence on the bottom of the lagoon. This information will be complemented below by the observation of the distribution of some selected species.

Considering the nature of the test in the fraction coarser than 0.5 mm, hyaline tests are more abundant in bays, deeper depressions and on the southern shelf while porcelaneous tests are dominant in the external part of the lagoon and in the back-reef zone (fig. 26) (Debenay, 1985a, 1987). Agglutinated species are less abundant and more irregularly distributed, from back-reef areas to the southern shelf.

This distribution is partly explained by the influence of depth and mud content, as it can be seen on ternary plots (Debenay, 1988a). Porcelaneous species are dominant in the shallower areas while the proportion of hyaline tests increases with increasing depth. The proportion of agglutinated species increases significantly in the deepest samples. In the lagoon, porcelaneous tests are dominant in sands (< 5% silt and clay) but, when mud content increases, they are rapidly replaced by hyaline tests, which become dominant (> 50%) when the proportion of silt and clay reaches 25%. On the island shelf, where the mud content of the sediment is often > 25%, hyaline tests are always dominant. The proportion of agglutinated tests increases with decreasing mud content.

This distribution also clearly appears along transects through the lagoon (figs 27 and 28). The transects also show change in the assemblages from north-west to south-east, with an increasing proportion of hyaline species.

The distribution of foraminifera in the fraction 0.125-0.5 mm is somewhat different with a higher proportion of agglutinated species widely distributed in the lagoon, except in the bays and on the southern shelf. Porcelaneous species are abundant in back-reef areas and around patch reefs while hyaline species are dominant in the bays and on the deeper parts of the southern shelf (fig. 29).

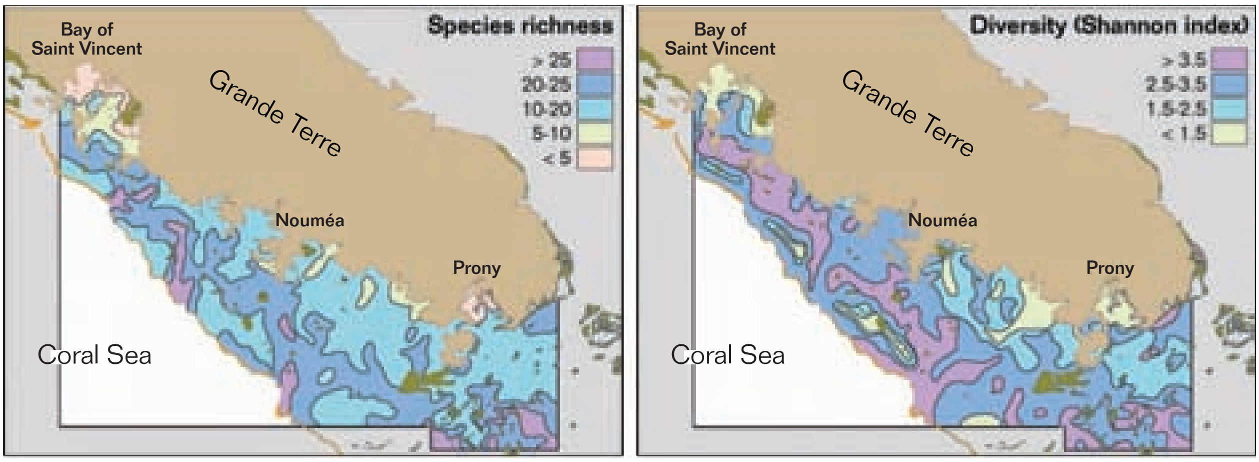


Figure 25
Species richness and diversity (Shannon index) of foraminiferal assemblages in the fraction > 0.5 mm (from Debenay, 1986, 1988a).

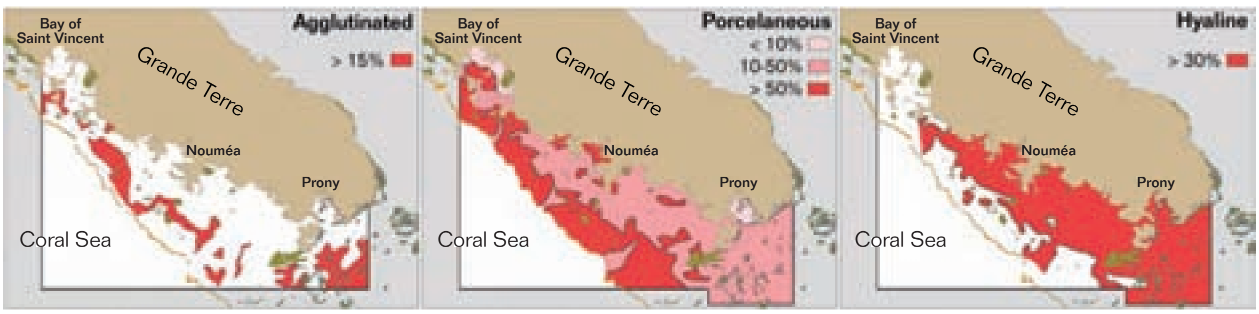
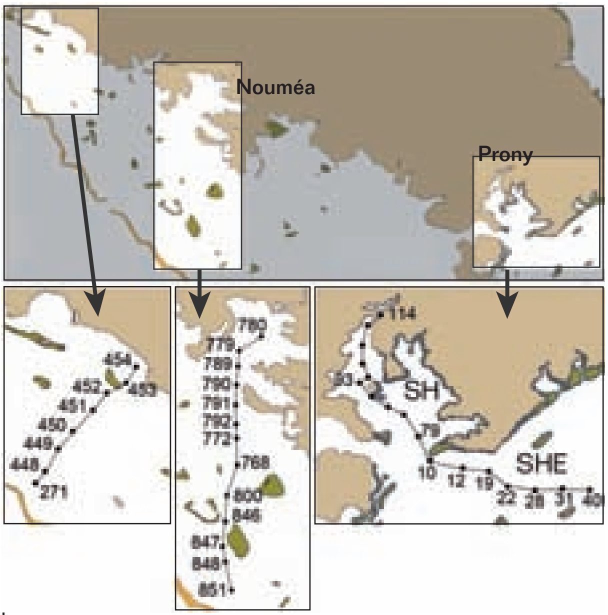
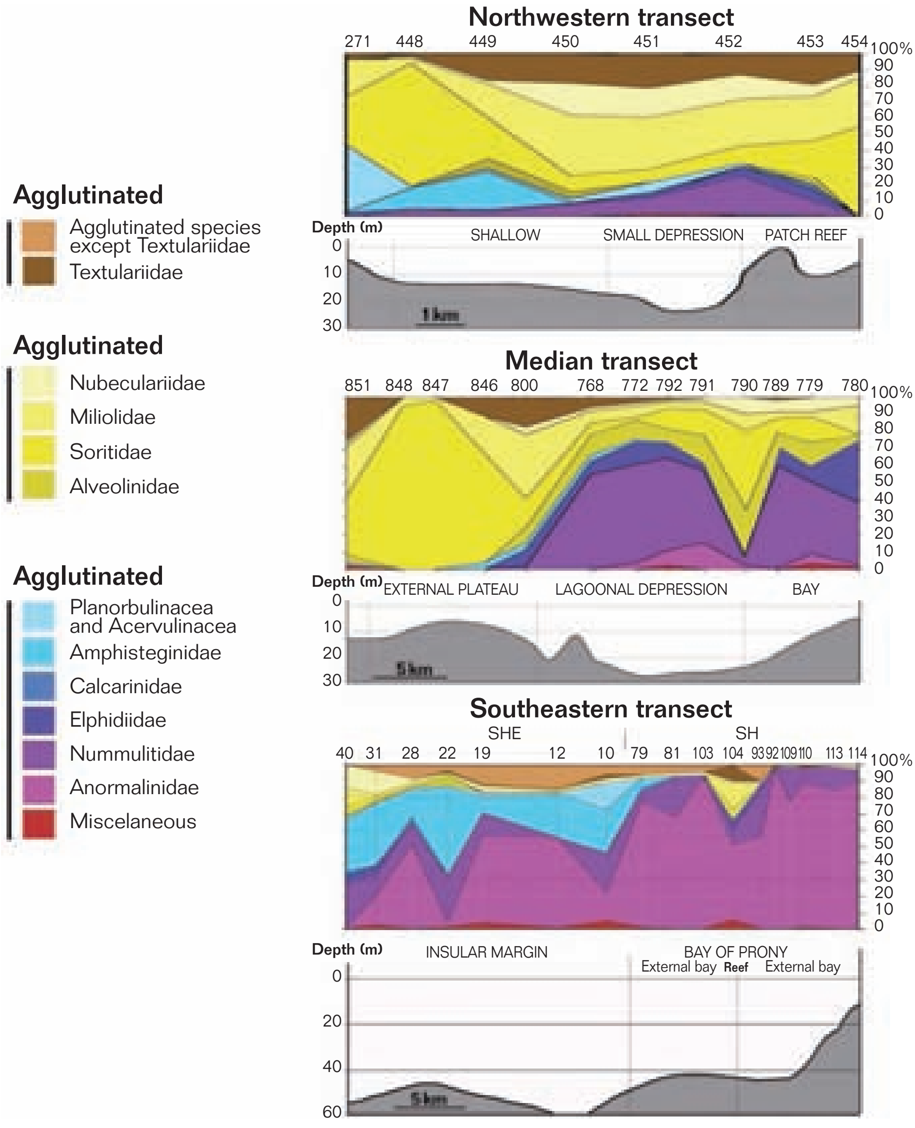


Figure 26
Distribution of agglutinated, hyaline and porcelaneous foraminifera in the fraction > 0.5 mm (from Debenay, 1985a).



| **Figure 27**
Location of the three transects.

As for the coarser fraction, this distribution is partly explained by the influence of depth, as shown by a ternary plot (Debenay, 1986). Hyaline species are dominant in the shallower areas, which correspond mostly to the bays. In the other samples, the proportions of porcelaneous and agglutinated tests are similar, with an increasing proportion of hyaline tests with depth. The increase of mud content in the sediment also leads to an increasing proportion of hyaline tests, but this trend is less obvious than in the coarser fraction (Debenay, 1986).



| **Figure 28**
Distribution of foraminifera coarser than 0.5 mm along the three transects (from Debenay, 1985a).

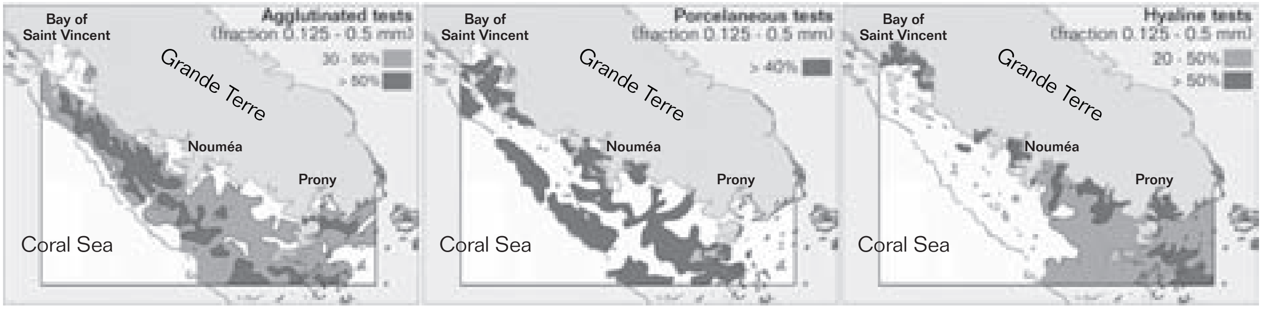


Figure 29
Distribution of agglutinated, porcelaneous and hyaline foraminifera in the fraction 0.125-0.5 mm.

Distribution of selected species

The better represented species have been grouped according to their location in the lagoon, on the basis of factor analyses carried out on their relative abundance in several sets of samples (Debenay, 1985a, 1988a) (table 1).

These groupings, however, are of limited value due to the highly complex environment, with an enormous variety of ecological niches and of environmental parameters that are acting in this wide carbonated lagoon with reefs, deep depressions and various continental inputs. For example, the two dominant species in bays: *Flintina bradyana* is dominant in the bays opening into the lagoon while *Operculina philippinensis* (as *O. bartschi*) is limited to the bay of Prony and its vicinity. More detailed analyses will be necessary to relate species to environmental factors that, unfortunately, were not available at the time of this study.

The distribution of forty-seven, frequent enough species has been mapped. Maps have been grouped according to the location of the species, even if this grouping is debatable due to the high complexity in the distribution of some species (figs 30 to 36). The first set of maps concerns species found on the southern shelf, or in the south-western part of the lagoon, subjected to marine influence resulting from the prominent SE to NW drift of waters and from penetration of marine waters through the passes (fig. 30). Hyaline species are dominant, and species of *Amphistegina* are well represented.

Other species are more widely distributed in the lagoon, but their distribution areas are still connected to the southeast and/or to the passes, which indicates, on the one hand, the influence of the penetration of oceanic water on these species, and on the other hand the areas of the lagoon subjected to oceanic influence (fig. 31).

Another set of species is mostly distributed in the back-reef area, or around patch reefs (fig. 32). They are dominated by porcelaneous species.

The two most abundant species in the lagoon are *Marginopora vertebralis* and *Alveolinella quoyi*, which are widely distributed, together with a few species (fig. 33), while other species, also distributed all over the lagoon, are present only in discontinuous patches (fig. 34).

Southern shelf	Depressions	Reef environments
Amphistegina papillosa	***Heterolepa praecincta***	***Amphistegina lessonii***
Ammobaculites reophaciformis	*Elphidium craticulatum*	***Textularia oceanica***
Nubeculina advena	*Operculinella* sp.	*Marginopora vertebralis*
Heterolepa praecincta	*Spiroloculina communis*	*Spirosigmoilina bradyi*
Neoeponides procerus	*Operculina gaimardi*	*Schlumbergerina alveoliniformis*
Placopsilina bradyi		*Sahulia barkeri*
Baggina indica	Bays	
Lenticulina gibba	***Flintina bradyana***	Coastal areas
Lenticulina vortex	***Operculina philippinensis***	***Coscinospira hemprichii***
Pegidia dubia	*Heterolepa praecincta*	*Peneroplis pertusus*
Planulina ornata	*Elphidium craticulatum*	*Peneroplis planatus*
		Textularia agglutinans
High energy areas		*Triloculina tricarinata*
Amphistegina radiata		
Septotextularia rugosa		

Table 1
Groups of species determined by factor analyses (from Debenay, 1985a, 1988a).
Bold = dominant species; small letters = accessory species.

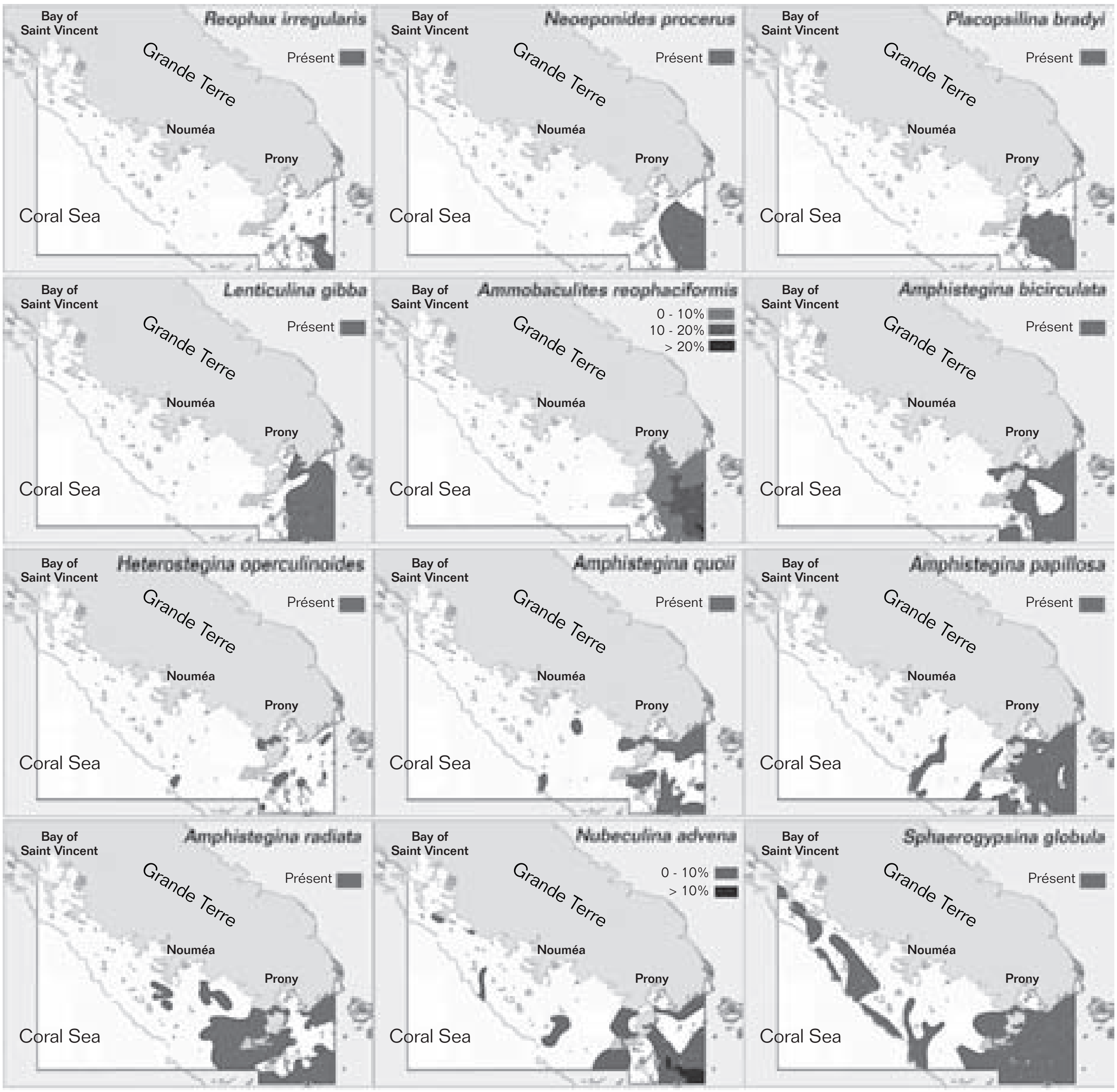
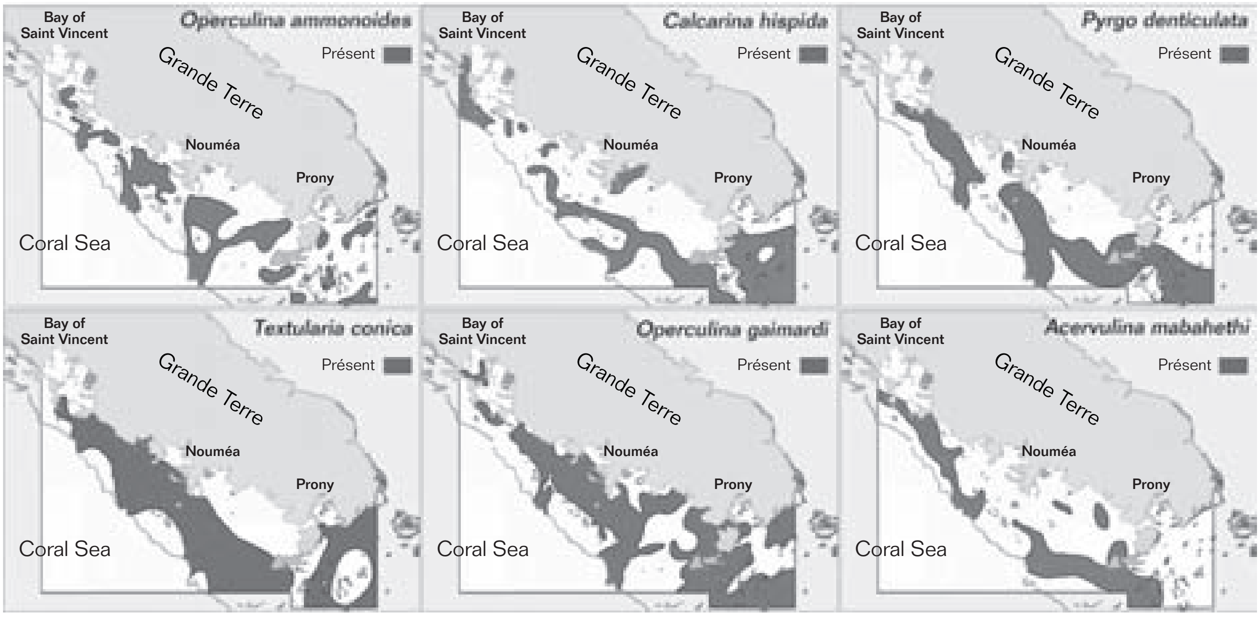


Figure 30
Species from the southern shelf directly influenced by the open sea,
and from areas of the lagoon mostly under marine influence coming through SE reefs and passes.

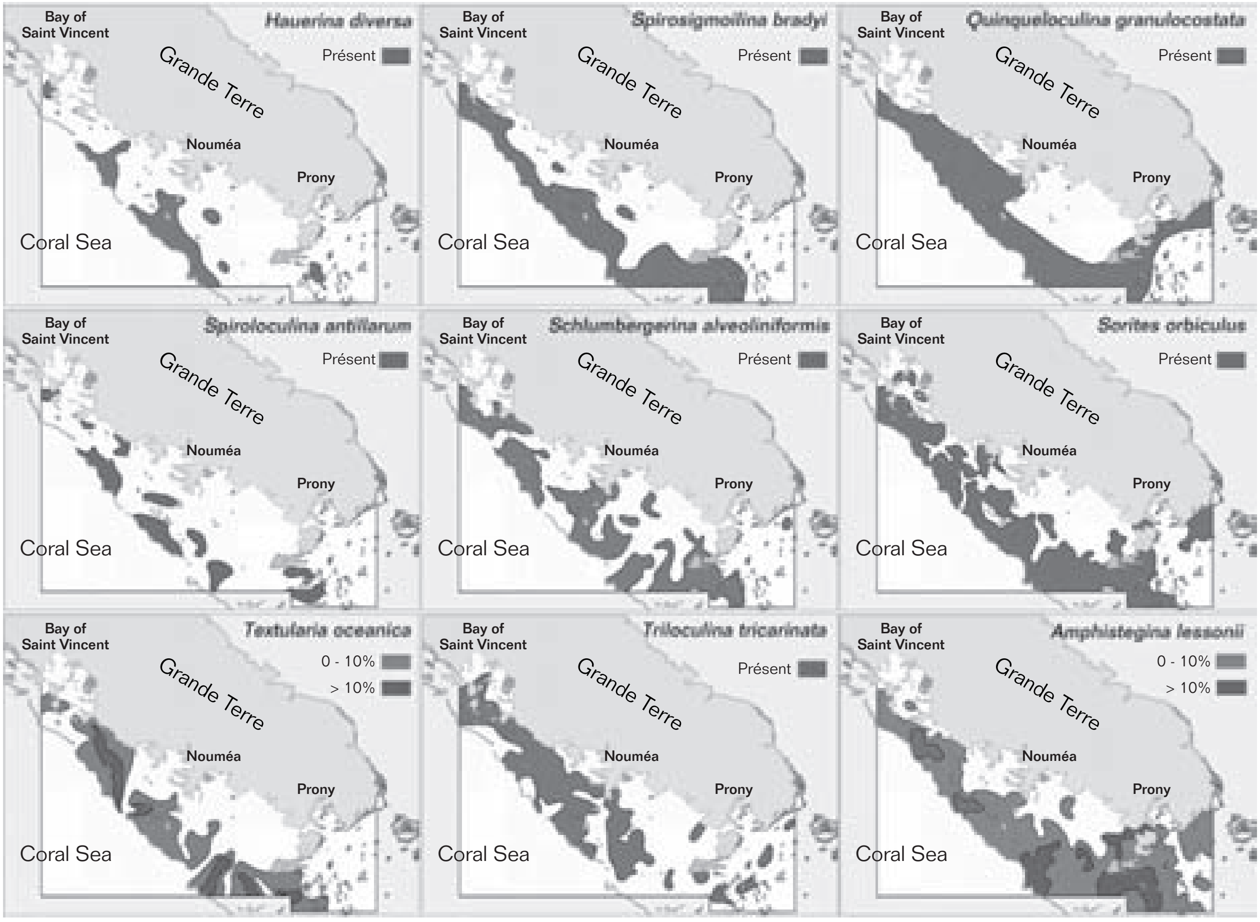
As shown by the factor analyses (table 1), *Flintina bradyana* is dominant in the bays that open into the lagoon. Its distribution area also extends in the submarine valleys that prolong the bays and in the adjacent depressions. Another species, *Heterolepa praecincta,* has a similar distribution, but to the south of the lagoon (fig. 35). *Nummulites venusta* is mostly found in the depressions of the lagoon, together with other, most widely distributed species.

Heterolepa praecincta is hardly found farther northwest than Nouméa peninsula. Other species, such as *Amphistegina radiata*, show the same tendency (fig. 30) while others (e.g., *Pseudomassilina australis* and *Quinqueloculina agglutinans*) have an inverse distribution, being hardly found farther southeast than Nouméa peninsula (fig. 36).

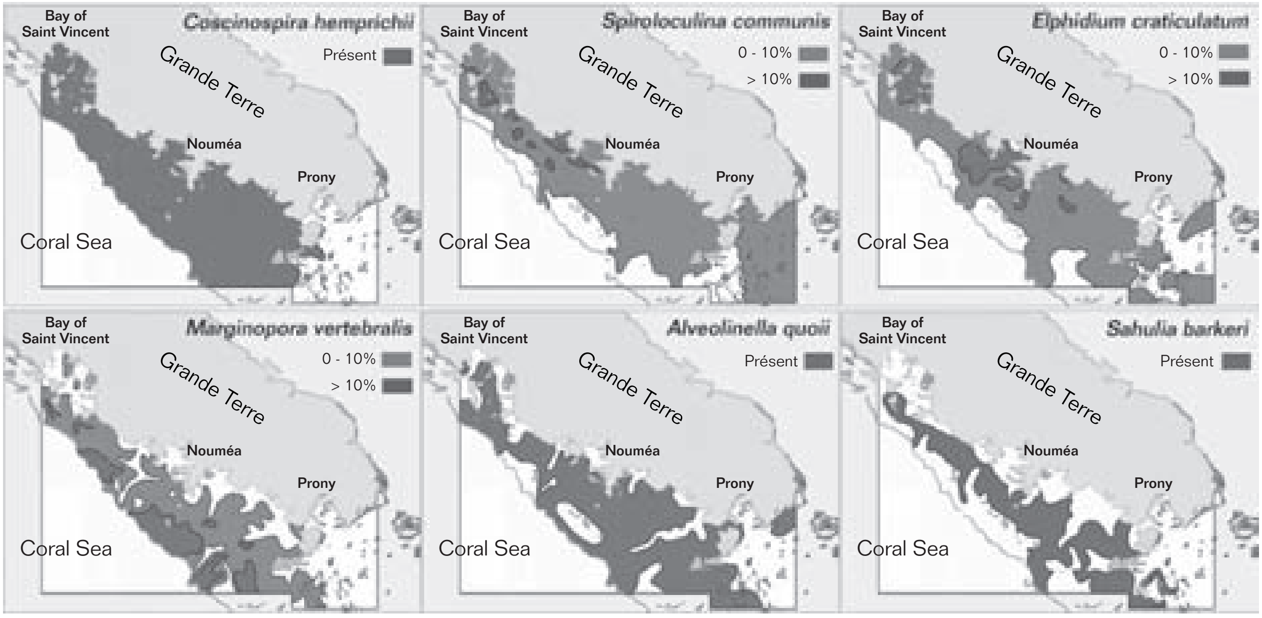
The information given by the maps is synthesized in table 2. This distribution, as it appears on the maps, results from the combined influence of all environmental parameters. Among them, the oceanic influence appears to have a prominent role. Two other parameters are known to influence foraminiferal assemblages: depth and grain size of the sediment, which are somewhat interrelated due to decreasing energy with depth. Both data were available and the distribution of the most abundant and frequent species with depth and grain size was examined. For graphing the distribution of species with these two parameters, samples were grouped into classes with a class interval of 5 m for depth, and of 5% for grain size. The frequency of each species (% of samples where the species is represented) was calculated for each class of samples.



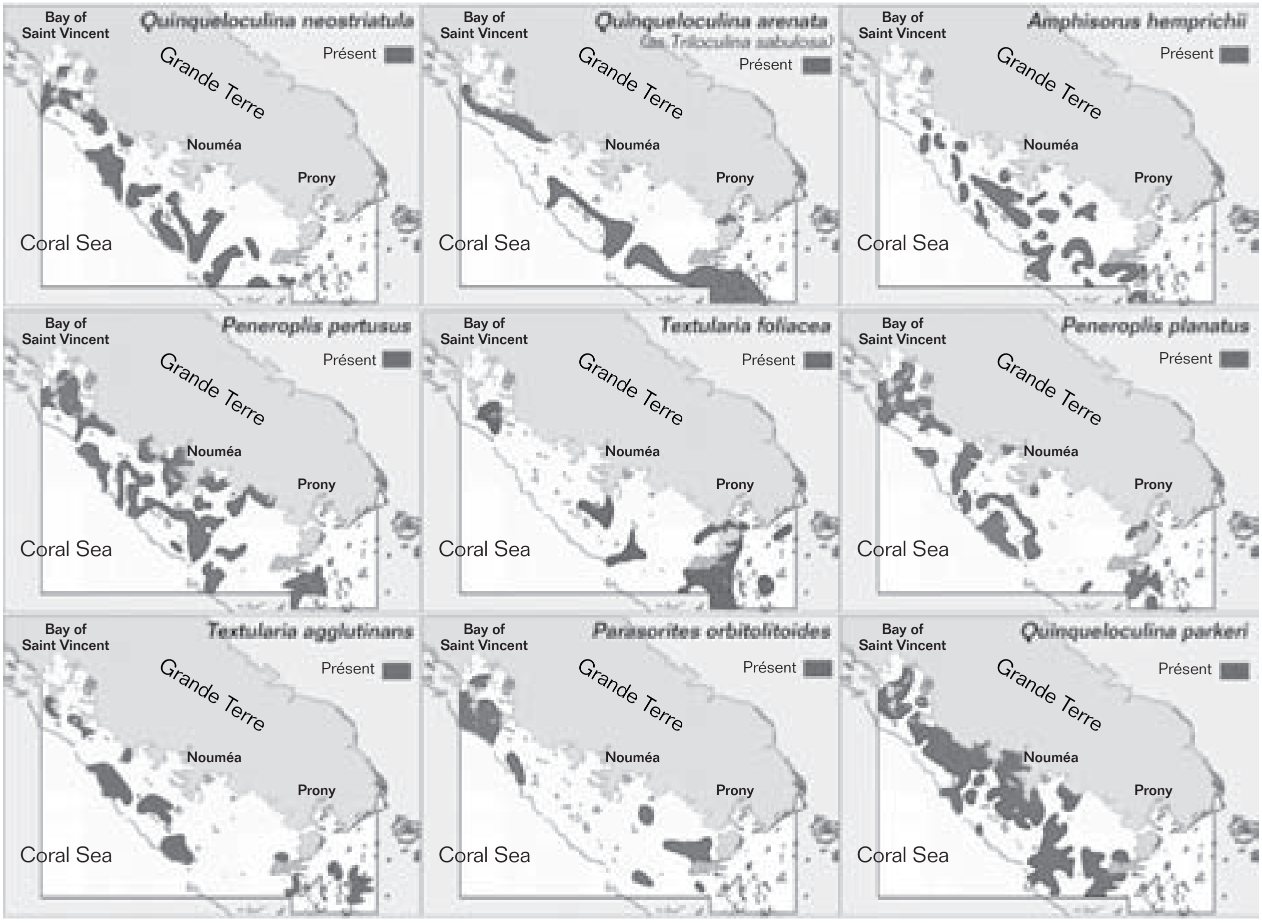
| Figure 31
Species widely distributed, but mostly connected to the SE open area and to passes.



| Figure 32
Species mostly found behind the barrier reef and/or around patch reefs.



| **Figure 33**
Species widely distributed over the study area.



| **Figure 34**
Species irregularly distributed in discontinuous patches.

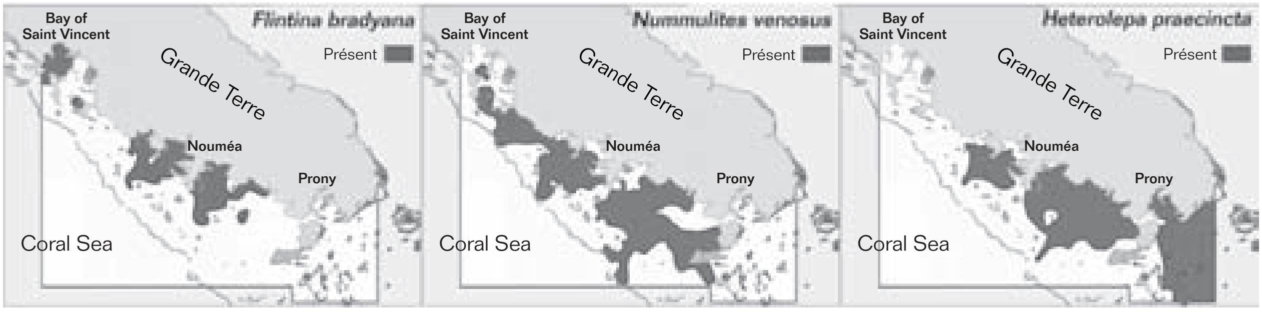


Figure 35
Species mostly found in bays and depressions.

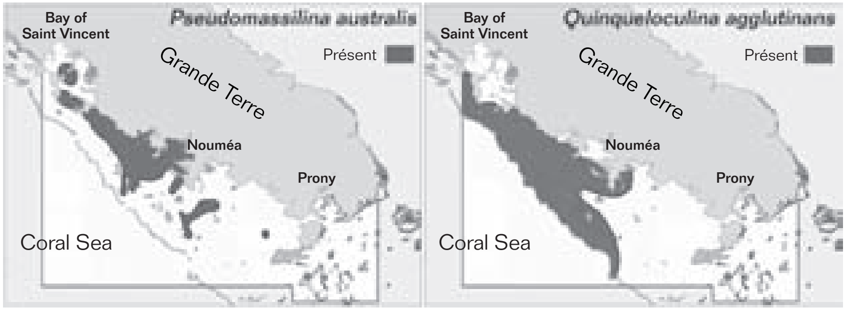


Figure 36
Species mostly found to the NW of Nouméa.

Insular margin

Ammobaculites reophaciformis
Amphistegina bicirculata
Amphistegina papillosa
Heterolepa praecincta
Lenticulina gibba
Neoeponides procerus
Nubeculina advena
Placopsilina bradyi
Reophax irregularis

Lagoon under oceanic influence

Acervulina mabahethi
Amphistegina papillosa
Amphistegina quoii
Amphistegina radiata
Calcarina hispida
Sphaerogypsina globula
Heterostegina operculinoides
Nubeculina advena
Operculina ammonoides
Operculina gaimardi
Pyrgo denticulata
Textularia conica

Barrier reef and patch reefs

Amphistegina lessonii
Hauerina diversa
Marginopora vertebralis
Spirosigmoilina bradyi
Quinqueloculina granulocostata
Schlumbergerina alveoliniformis
Sorites orbiculus
Spiroloculina antillarum
Textularia oceanica
Triloculina tricarinata

Wide distribution

Alveolinella quoii
Elphidium craticulatum
Marginopora vertebralis
Coscinospira hemprichii
Spiroloculina communis
Sahulia barkeri

Scattered species

Amphisorus hemprichii
Parasorites orbitolitoides
Peneroplis pertusus
Peneroplis planatus
Quinqueloculina parkeri
Textularia agglutinans
Textularia foliacea
Quinqueloculina arenata
Quinqueloculina neostriatula

Bays and depressions

Flintina bradyana
Heterolepa praecincta
Nummulites venosus

NW of Nouméa

Pseudomassilina australis
Quinqueloculina agglutinans

SE of Nouméa

Amphistegina radiata
Heterolepa praecincta

Table 2
Species ordered following their distribution as it appears on the above maps.
Some species may appear in two environments.

Distribution related to depth

Thirty species have a distribution strongly related to depth (fig. 37). Shallow-water species, limited to the lagoon, are rarely found deeper than 40 m: *Textularia pseudogramen, Spiroloculina antillarum, Pseudomassilina macilenta, Peneroplis planatus, Spirosigmoilina bradyi, Marginopora vertebralis, Quinqueloculina neostriatula, Pseudomassilina australis, Pseudohauerina orientalis, Amphisorus hemprichii, Schlumbergerina alveoliniformis, Peneroplis pertusus,* and *Flintina bradyana*. Most of them are encountered on the plateaus behind the barrier reef or around the patch reefs (e.g., *S. bradyi* and *S. antillarum* [fig. 32]), but others are found in shallow bays (e.g., *F. bradyana* [fig. 35]). Some species are found at intermediate depths: *Alveolinella quoii, Nummulites venosus, Amphistegina lessonii, Heterostegina depressa, Anomalinella rostrata,* and *Operculina ammonoides*. Other species are rare in the lagoon, found only in the deepest areas: *Amphistegina quoyi, Heterolepa praecincta, Amphistegina papillosa, Amphistegina radiata, Amphistegina bicirculata, Lenticulina gibba, Ammobaculites reophaciformis, Nubeculina advena, Heterostegina operculinoides, Neoeponides procerus,* and *Cycloclypeus carpenteri*. These species are found mostly on the southern shelf (fig. 30).

Distribution related to mud content

Eighteen species have a distribution related to the mud (silt and clay) content of sediments (fig. 38). Seven are primarily associated with sand: *Pseudomassilina macilenta, Textularia agglutinans, Amphistegina lessonii, Spirosigmoilina bradyi, Pseudomassilina australis, Textularia oceanica,* and *Schlumbergerina alveoliniformis*. Eight are found in silty sand: *Quinqueloculina neostriatula, Pseudohauerina orientalis, Alveolinella quoii, Amphisorus hemprichii, Operculina gaimardi, Nummulites venosus, Amphistegina bicirculata* and *Ammobaculites reophaciformis*. Three species are more abundant in silty clay: *Lenticulina gibba, Placopsilina bradyi,* and *Flintina bradyana*. Typical species from sandy areas are found on the indurated plateaus or around the patch reefs, e.g., *Spirosigmoilina bradyi* (fig. 32). *Quinqueloculina neostriatula*, more irregularly distributed in the same area, can also be found near the fringing reefs (fig. 34). Species present in silty clay can be abundant on the deep island shelf, e.g., *Placopsilina bradyi* and *Lenticulina gibba* (fig. 30), or in the bays and the inner lagoonal depression, e.g., *Flintina bradyana* (fig. 35).

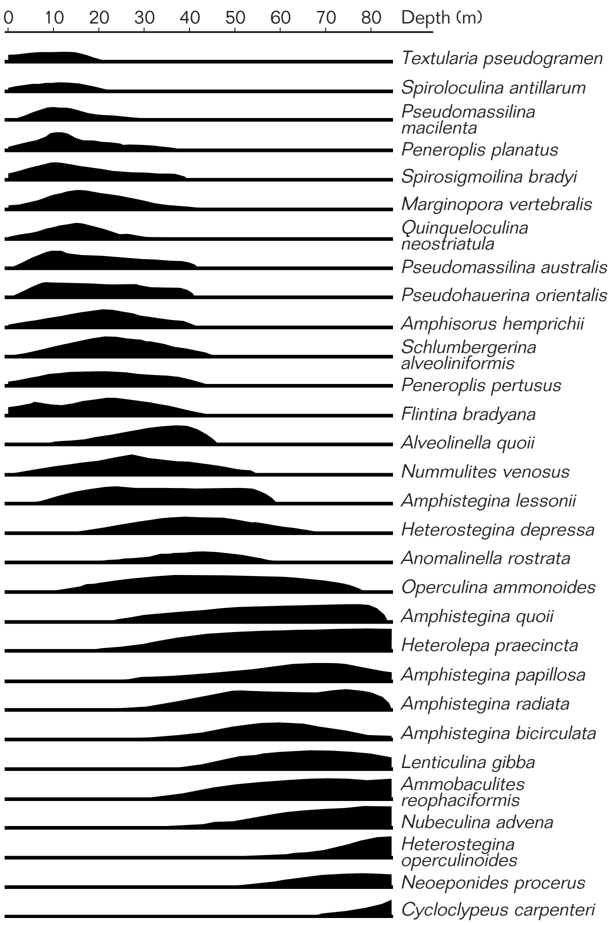


Figure 37
Distribution of species with depth (from Debenay, 1988a).

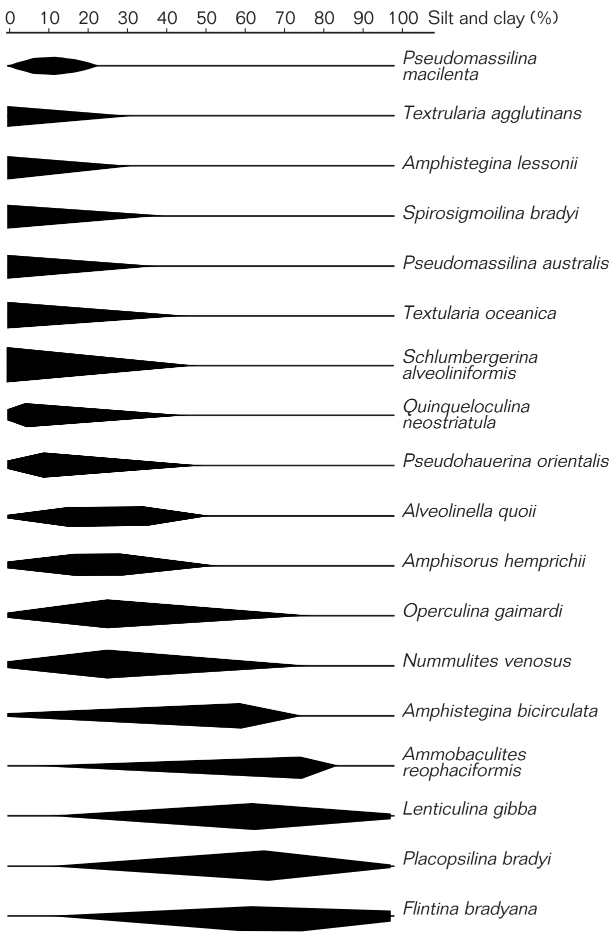


Figure 38
Distribution of species with the proportion of silt and clay (from Debenay, 1988a).

Foraminifera indicators of water circulation

The distribution of several species led to the distinction of four foraminiferal biofacies and to the partition of the studied area into four zones from the southeast to the northwest, which were interpreted as the result of decreasing oceanic influence, with a major role of Nouméa peninsula (DEBENAY, 1988b). The above chapters show that the distribution of several species follows this trend, with *Heterolepa praecincta* and *Amphistegina radiata* that extend hardly farther northwest than Nouméa peninsula, while *Pseudomassilina australis* and *Quinqueloculina agglutinans* have an inverse distribution, being hardly found farther southeast than Nouméa peninsula (fig. 36). The hypothesis of decreasing oceanic influence is further reinforced by the distribution of planktonic tests in the 0.125-0.5 mm fraction (DEBENAY, 1988b). Relatively abundant on the southern shelf, they rarely compose more than 10% of the thanatocoenoses in the lagoon itself, but are frequent in submarine depressions and valleys located between Ouen Island and Nouméa peninsula, and connected to the pass of Boulari. Northwest of Nouméa, their only distribution area is connected to the pass of Dumbea.

This distribution is obviously related to low energy deep and/or protected environments. It also indicates that surface oceanic waters, which transport the planktonic tests, mainly come through the scattered reefs located south of Ouen Island and are pushed up to the Bay of Boulari. Most of the planktonic tests are deposited before reaching Nouméa peninsula and its seaward extending shallows. The connection of distribution areas with the passes of Boulari and Dumbea indicates that surface waters also penetrate through these passes. The water circulation deduced here from the distribution of foraminifera is in good agreement with the hydrodynamics described by Rougerie (in DUGAS & DEBENAY, 1981b).

The distribution of several benthic species appears to be more closely related to oceanic influence, and among them *Gypsina globula* and *Pyrgo denticulata* are the most significant (figs 30 and 31). The distribution of their tests on the southern shelf, in connection with the passes, and even behind the barrier reef for *Gypsina globula*, shows their dependence on oceanic inputs. Comparison between their distribution areas, elongated and curved to the NW, and the water circulation described by ROUGERIE (1986) suggests that they are distributed along the trajectory of subsuperficial oceanic water penetrating the lagoon through passes (fig. 39).

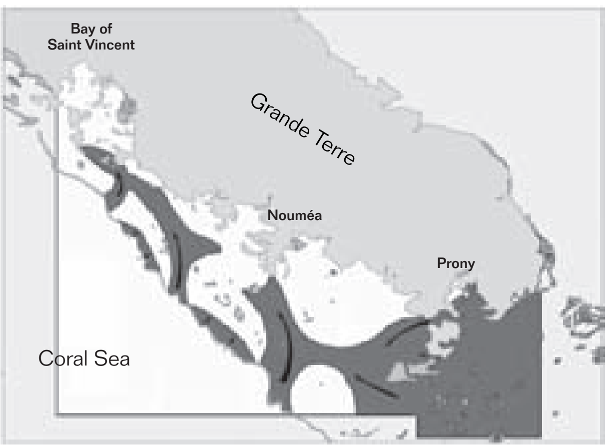


Figure 39
Marine influence, as shown by foraminifera, mainly *Pyrgo denticulata* and *Gypsina globula* (from DEBENAY, 1988b).

The distribution patterns of foraminifera illustrate the double water circulation prevailing in the lagoon (ROUGERIE, 1986). Planktonic foraminifera, living in the open sea, are transported into the lagoon by superficial water masses pushed toward the NW, through the scattered SE reefs, by the SE dominant trade winds. This constitutes the main penetration axis of oceanic waters into the lagoon. On the other hand, benthic species are under the influence of subsurface waters, that penetrate mainly through the passes and circulate at the bottom of the lagoon. Their distribution gives a clear picture of the impact of these waters on the benthos, with a flow curved towards the NW by the general drift that affects the external part of the lagoon, following the external edge of lagoonal depressions.

Since foraminiferal tests will be preserved in the sediment, the image of the double water circulation given by foraminiferal thanatocoenoses will be fossilized. It shows how, in turn, fossil foraminifera may provide a valuable tool for understanding hydrodynamics of fossil lagoonal environments.

Foraminifera indicators of sediment transport

As it has been discussed above, it is highly probable that only weak postmortem displacement of tests occurs inside the lagoon, and that the distribution of thanatocoenoses reflects the position of living assemblages. In bays, however, strong river flows during storms or cyclones may lead to seaward sediment transport, including the transport of foraminiferal tests. In the Bay of Prony, a foraminifera, *Operculina philippinensis*, is abundant in the fraction > 0.5 mm where it can compose up to 65% of the assemblages. The tests are generally well preserved and living specimens are frequent, suggesting that this species lives in the bay (DEBENAY, 1988c). Outside the bay, eroded tests have been found, their relatively bad preservation suggesting that they are allochthonous, presumably transported out from the bay (fig. 40 left).

The distribution of the test, west and east of the entrance of the bay can be explained by the strong alternating tidal currents through Woodin channel and along the southern coast of Grande Terre. The presence of tests on the deeper southern shelf, to the south, suggests a gravity-driven sediment transport on the southern shelf, down to deeper low energy areas. The last area of test deposition, along the south-east coast of Ouen Island, indicates a southward longshore transport. The distribution of silt and clay is consistent with the sediment transport direction deduced from the distribution of *O. bartshi*, and the combination of both sets of information allows a better comprehension of sedimentary dynamic in front of the bay (fig. 40 right). This approach should be of interest owing to the Goro Nickel Mining Project that is developing in the area and will require an extensive environmental assessment.

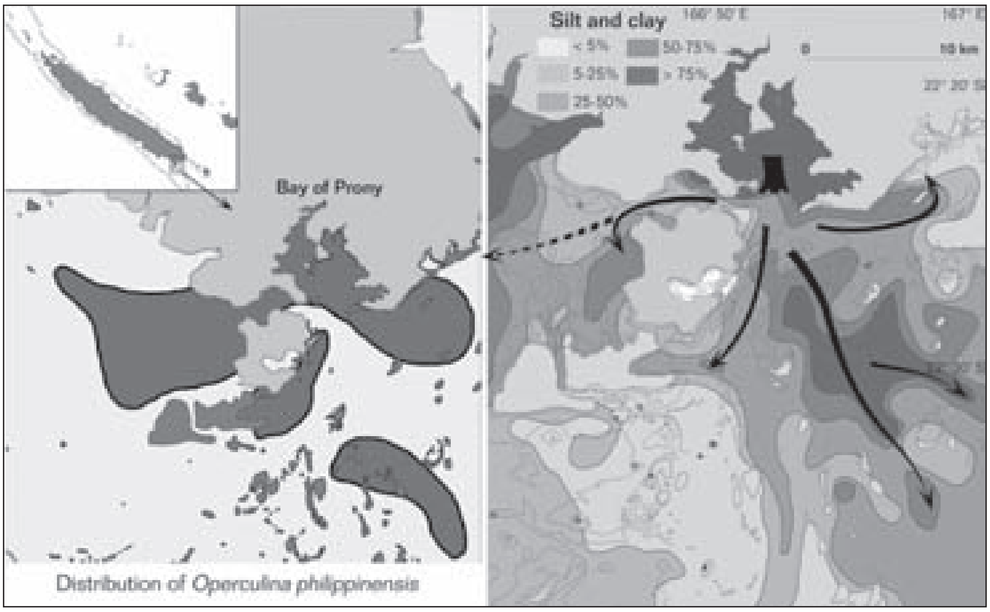


Figure 40
Sediment transport from the Bay of Prony (arrows),
deduced from the distribution of *Operculina philippinensis* (as *O. batschi*),
the color of the sediment, and the silt and clay content (from Debenay, 1988c).

Foraminifera in paralic environments

At the time of redaction of this book, studies are in progress about foraminifera living in estuaries, coastal lagoons and mangrove swamps. A set of samples of foraminifera from mangrove swamps were collected in 1997, and their distribution was used for a more general study about foraminifera in paralic environments (Debenay & Guillou, 2002).

Together with foraminifera collected in mangrove swamps of Queensland (Australia), they allowed to establish a general sketch of the foraminiferal zonation in these environments. Calcareous species are dominant in the external part of the mangrove swamp open to the sea, where *Rhizophora* grows (fig. 41). Among them, *Helenina anderseni* is abundant in areas of low salinity. Inside the mangrove forest, agglutinated species are dominant, with mainly *Arenoparrella mexicana, Haplophragmoides wilberti* and *Caronia exilis*, but in the hypersaline *Avicennia* zone, porcelaneous miliolids (*Quinqueloculina seminula*), associated with the tolerant hyaline *Ammonia tepida,* become abundant. They are also dominant in small hypersaline pools of the salt marshes. *Jadammina macrescens* and *Trochammina inflata* are dominant in upper marshes. The change from the subtidal microfauna to the fauna living on the marsh corresponds to a water-to-land transition that is sometimes used, in fossil deposits, for reconstruction of past sea level. However, this approach, which seems highly reliable in temperate salt marches, is doubtful in mangrove swamps (Debenay & Guiral, 2006).

Foraminifera and algae

A study was carried out in 2007-2008 with two objectives: 1) to provide the first inventory of epiphytic foraminifera living on a large number of well identified macroalgae (Rhodophyta, Chlorophyta, and Phaeophyceae) in reefal environments; 2) to compare data

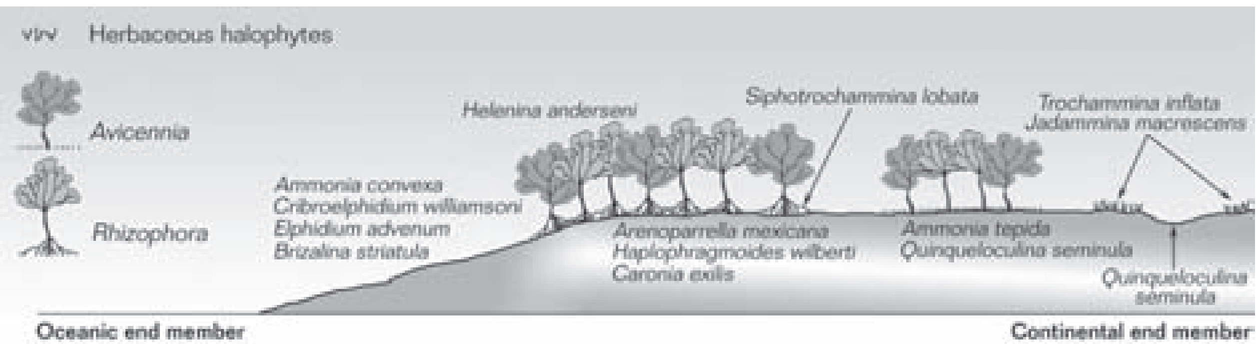


Figure 41
Schematic representation of foraminifera distribution in mangrove swamps.

from the same macroalgae collected in different settings in order to enhance the knowledge of epiphytal foraminiferal ecology (Debenay & Payri, 2010).

A total of 152 species of epiphytic foraminifera were identified on 81 substrates (75 samples of macroalgae belonging to 55 species and 6 samples of coral rubble) (fig. 42).

Only four of the 75 macroalgae were devoid of foraminifera. On the other specimens, average density was 10 individuals per cm^2, with higher densities, whatever the depth, on thalli consisting of a tridimentional network of branches or filaments (*Gelidiopsis intricata*, *Caulerpa cupressoides* var. *lycopodium*, *Melanthalia concinna*, Rhodomelacae and Sphacelariacea), as well as on the flabellate *Udotea geppiorum*. Species richness, recorded by *in situ* counts on fresh thalli preserved in seawater (average = 9), was the lowest on *Sargassum* spp. (< 5), and the highest on a *Distromium*/*Homeostrichus* association (26). Fifty-five species were recorded on the same sample after washing and sieving the macroalgae.

When considering the entire dataset, the only strong relationship (even if not a strict one) between macroalgae and foraminifera was the presence of spinose rotaliids, soritids and *Amphistegina* in filamentous thalli and three-dimensional mats. Apart from this exception, the nature of the substratum is generally overshadowed by other factors such as light, depth and hydrodynamics in governing the distribution of foraminiferal assemblages. For instance, macroalgae that have a wide bathymetric range harbor completely different communities at different depths. Among them, thalli of *Homeostrichus* sp. collected at 30 and 60 m had only 3 of their 33 species in common, thalli of *Halimeda discoidea* from 3 and 38 m had only 2 of their 27 species in common, and thalli of *Udotea geppiorum* from 1 and 24 m had only 3 of their 30 species in common. Typically observed were the dominance of large symbiont-bearing miliolids or rotaliids at shallow depths, the presence of smaller rotaliids at all depths, and the occurrence of cryptic species adapted to shaded environments in deeper samples.

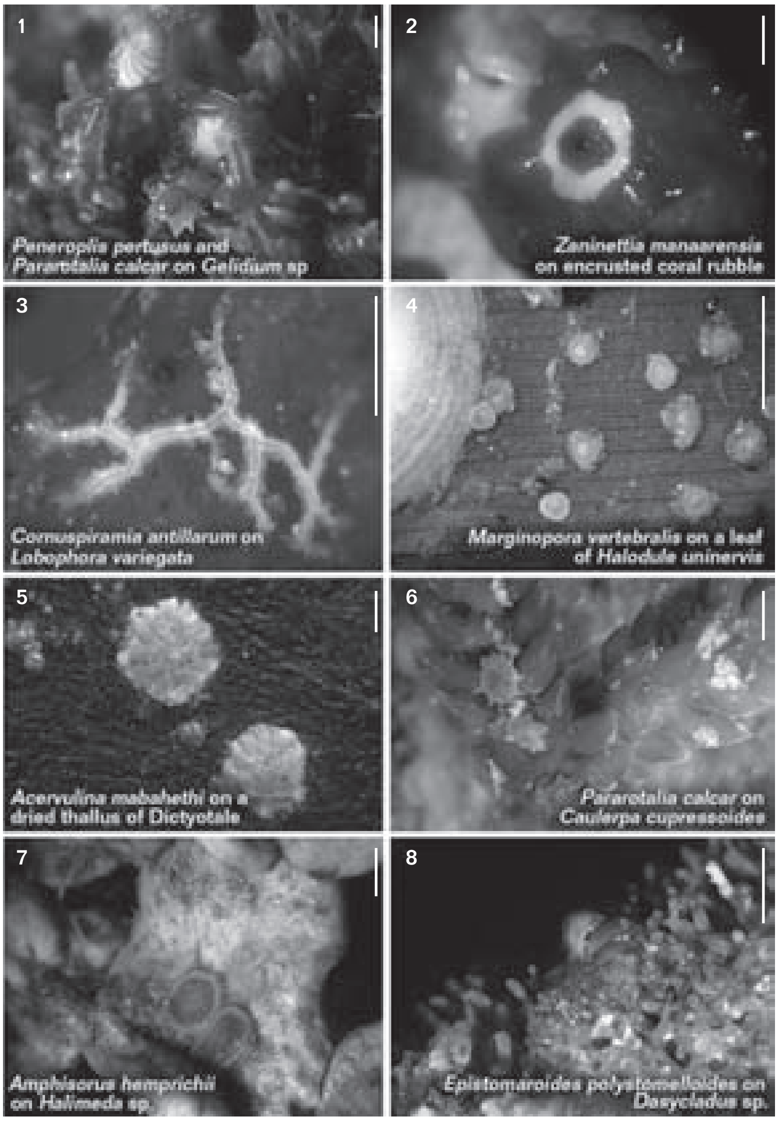


Figure 42
Examples of epiphytic foraminifera on their substrates.
Scale bar = 0.5 mm except for figure 4 where scale bar = 5 mm.

Comparisons of different types of macroalgae from the same depth did not reveal any relationship between structural characteristics of the macroalgae and foraminiferal communities. Geographic origin appears to have a greater impact, as shown by the Q-mode hierarchical clustering of selected foraminifera living on shallow (0-3 m) macroalgae (Debenay & Payri, 2010). Cluster 1 included samples from coastal areas impacted by organic enrichment, and cluster 2 samples were from areas of low anthropic impact off Grande Terre. Clusters 3 and 4 group all the macroalgae collected in the Chesterfield Archipelago, a high-energy oceanic atoll.

This study also reveals that some foraminiferal species might have quite different life modes between environments and regions. For example, *Sorites orbiculus* was considered to use only a limited number of macroids with bare, flat surfaces in Florida Bay and on the Great Barrier Reef (Fujita & Hallock, 1999; Lobegeier, 2001), and to be permanently fixed to the blades of macroalgae and seagrasses in Japan (Saraswati, 2002). In New Caledonia, it was found on a variety of substrata and appeared to have the same free-living behavior as *Marginopora* and *Amphisorus*. In accordance with the results of Wilson & Ramsook (2007), this study also shows that temporal availability of the substratum (e.g., seasonal growth of algae) might play a role.

Foraminifera in fish diet

During 2007-2008, a systematic investigation of foraminifera in the gut contents of coral reef fish was carried out. It was the first investigation on a large number of individuals: 247 fish, belonging to 83 species (Debenay *et al*., 2011). The objectives were to: provide information on the ingestion and digestion of foraminifera by fish; determine the impact of predation on foraminiferal assemblages; determine if some fish species could be considered as selective consumer of Foraminifera; determine if the consumption of Foraminifera can provide significant biomass to fish.

The abundance of benthic Foraminifera in marine environments, where they are often major contributors to meiofaunal biomass (Murray, 2006), makes them a potential food source. Some predators have been identified, including nematodes, polychaetes, mollusks, echinoderms, arthropods and fish. However, most are incidental predators that ingest foraminifera together with their food (e.g., deposit feeders, herbivorous), and little is known about selective predation of foraminifera. The presence of foraminifera in the gut of coral reef fish had already been incidentally reported, but only two systematic studies had been carried out (Todd, 1961; Lipps, 1988). Based on a small number of fish, they mostly detected incidental predation. One study, however, reported a noticeable contribution of foraminifera in the diet of a nocturnal surface-feeding fish (Hobson & Chess, 1973).

During the study reported here (Debenay *et al*., 2011), 291 species of Foraminifera were identified from more than 20,000 specimens examined. The only significant nutritional input from Foraminifera to fish was given by the planktonic *Tretomphalus* phase of some benthic species (fig. 13), which was selectively ingested by *Pomacentrus amboinensis*. This territorial fish protects its territory against other fish, allowing foraminifera, mostly *Cymbaloporetta* to grow in the algal turf (fig. 43 left). Before reproduction, individuals of this foraminifera genus reach their *Tretomphalus* phase by constructing a float chamber, and then becoming planktonic (fig. 43 right).

The fish feeds by combing the protected algal turf with its teeth, catching the small organisms (including Foraminifera) that live in the filamentous thalli. As it feeds during the day, the *Tretomphalus* are collected before becoming planktonic, at night. As the individual biomass provided by Foraminifera is very small, a great number of individuals must be ingested to provide a significant nutritional input. An average of 1,600 tests was found in the digestive tract of the three individuals of *Pomacentrus amboinensis* studied, which represents about 0.025 g of biomass (fig. 44 left). However, the diet of the fish also comprises other organisms, such as worms (fig. 44 right), and seasonal studies will be necessary to determine how *Pomacentrus amboinensis* adapts to the seasonal changes in its feeding resources, since the production of *Tretomphalus* is seasonal.

Sediment feeders, which accidentally ingest great quantities of empty tests (up to 4,000 in a fish gut), have no impact on the foraminiferal population, but play a prominent role in the dispersion of empty tests. They may introduce significant changes in the thanatocoenoses, potentially introducing some bias in paleoenvironmental interpretations. Incidental predators of living foraminifera are either herbivorous, which do not digest the foraminifera or carnivorous, which ingest and digest insignificant foraminiferal biomass. Foraminifera, still living after their transit through the digestive tract of herbivorous fish, are defecated with a significant effect on the dispersion of living individuals over

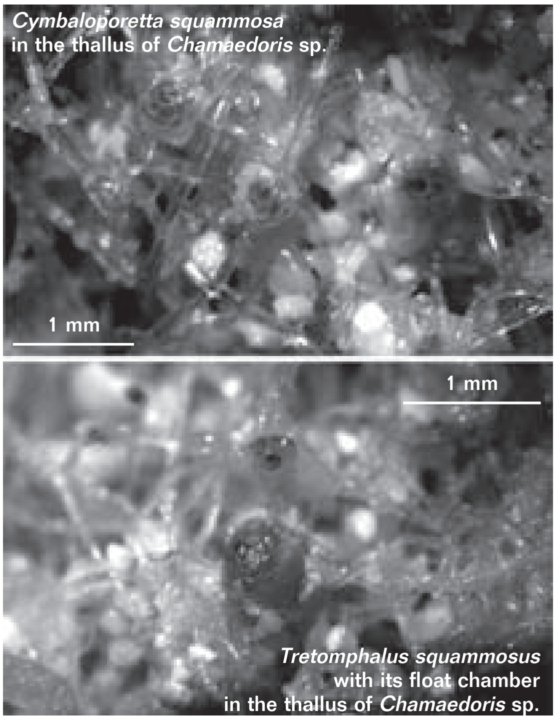


Figure 43
Cymbaloporetta growing in an algal turf, at its benthic stage and at its *Tretomphalus* stage (from Debenay *et al*., 2011).

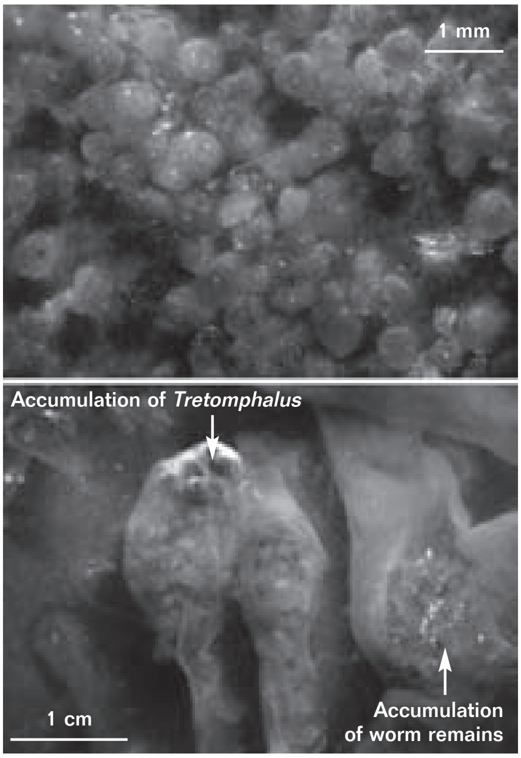


Figure 44
Top: *Tretomphalus* collected in the gut of *P. amboinensis*; bottom: digestive tract of a specimen of *P. amboinensis*.

larger areas. Such dispersion probably plays a major role during the seasonal periods of growth of algae and seagrass, and the subsequent colonization by epiphytic communities. Carnivorous fish ingest a small number of tests, which are generally altered by the acidic phase of digestion and have no impact on foraminiferal assemblages. The selective predation does not seem to significantly impact upon foraminiferal populations. Even if *Tretomphalus* spp. are selectively preyed on, the populations of their epiphytic benthic phases (*Rosalina, Neoconorbina* and *Cymbaloporetta*) are still highly abundant (Debenay & Payri, 2010) and do not show any negative impact of predation.

Environmental assessment using foraminifera: an example in shrimp farms

Morphological abnormalities in foraminiferal tests have long been reported, and considered as related to environmental stress, with emphasis on pollution. Both organic and inorganic (mostly heavy metal) pollutants are often suspected to have a major impact on test deformation. Conversely, authors dealing with this topic consider that foraminiferal abnormalities are potentially valuable indicators of pollution, despite the uncertainties still existing about the relationship between the level of morphological abnormalities and the nature and magnitude of pollution. These uncertainties result mostly from the fact that the response of foraminifera to stress from highly changing natural parameters such as salinity, temperature or pH superimposes onto the impact of pollution.

Shrimp farming often produces a flow of effluent, containing feces, uneaten feed and a large number of chemicals that are used to prevent and treat infections. It contributes to serious organic and chemical pollution of water and bottom sediment in the surrounding environment, but also leads to self-pollution problems in pond production.

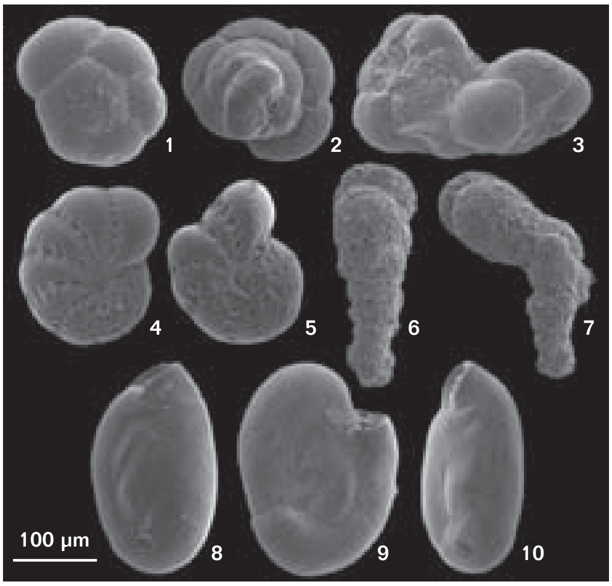
Semi-intensive shrimp farming is widely distributed along the west coast of New Caledonia Main Island (Grande Terre). Seawater pumped from the nearby ocean filled the ponds at the beginning of the growth cycle. Its daily renewal varies with increasing shrimp biomass, from 0% to 30% per day, keeping salinity between 32‰ and 39‰ and supplying the ponds with smaller, mostly juvenile, foraminifera. The growing cycle lasts about four months. Shrimp postlarvae are introduced at a density of 18-20 individuals m^2 about two weeks after the ponds have been filled, and are fed with pelleted food that comprises 0.025% of mineral premix (Zn sulfate, Mn sulfate, Cu sulfate). Feeding rates range from about 6 kg per ha per day at the time of introduction of post larvae to about 60 kg per ha per day before shrimp harvest. Chemicals such as Copper compounds (elimination of external protozoans and filamentous bacterial diseases in post-larval shrimps), formalin (antifungal agent and control of ectoparasites), or antibiotics are not used, contrary to what is generally done. Nevertheless, the risk of environmental- and self-pollution by the accumulation of organic matter exists, and an impact assessment is needed outside the ponds, as well as inside.

A study using foraminifera as bioindicators is actually in progress, in mangrove swamps receiving effluent from a shrimp farm. Another study was carried out in 2006-2007 in three selected shrimp farms with different characteristics. Sediment samples were collected weekly at ten stations during a whole growing cycle. This study showed how foraminifera colonized the ponds (Debenay *et al.*, 2009a), and how foraminifera are impacted by organic accumulation (Debenay *et al.*, 2009b).

The pioneering species are *Ammonia tepida* (dominant species) and *Quinqueloculina seminula*, which appeared a few days after the initial filing and increased during the first 10 weeks, due to their high reproduction rates. Their populations then stabilized due to drop of redox and consumption by shrimp. Only a few colonizers subsequently appeared despite the high rate of water renewal, which was attributed to the isolation of the pond. Despite the number of environmental parameters measured, only oxygen and reactive organic matter correlated with the microfauna on a weekly timescale. *Ammonia tepida* was the most tolerant of organic influx, but its relative abundance dropped once the organic matter flocculated and settled, leading to disoxic conditions in the sediment. Conversely, *Q. seminula* was able to climb through the floc and reach the oxygenated layer, where its relative abundance increased (Debenay *et al.*, 2009a).

The most remarkable feature was the proportion of abnormal foraminiferal tests collected in the shrimp ponds of New Caledonia (fig. 45). It exceeded what had ever been reported from other areas subjected to pollution or environmental stress, often exceeding 50% and even 80% (Debenay *et al.*, 2009b).

Previous studies that also reported high rates of test abnormalities sometimes suggest the role of organic matter as responsible



| **Figure 45**
Foraminifera from shrimp ponds
1-2: *Ammonia tepida*, spiral side,
1) normal test, 2) abnormal test;
3 *Ammonia tepida*, complex abnormal test;
4-5: *Elphidium excavatum*, 4) normal test, 5) abnormal test;
6-7: *Caronia exilis*, 6) normal test, 7) abnormal test;
8-10: *Quinqueloculina seminula*, 8) normal test, 9) abnormal test, last chambers making less than half a whorl,
10) abnormal test, last chamber making more than half a whorl.
Scale bar = 0.1 mm (from Debenay *et al*, 2009b).

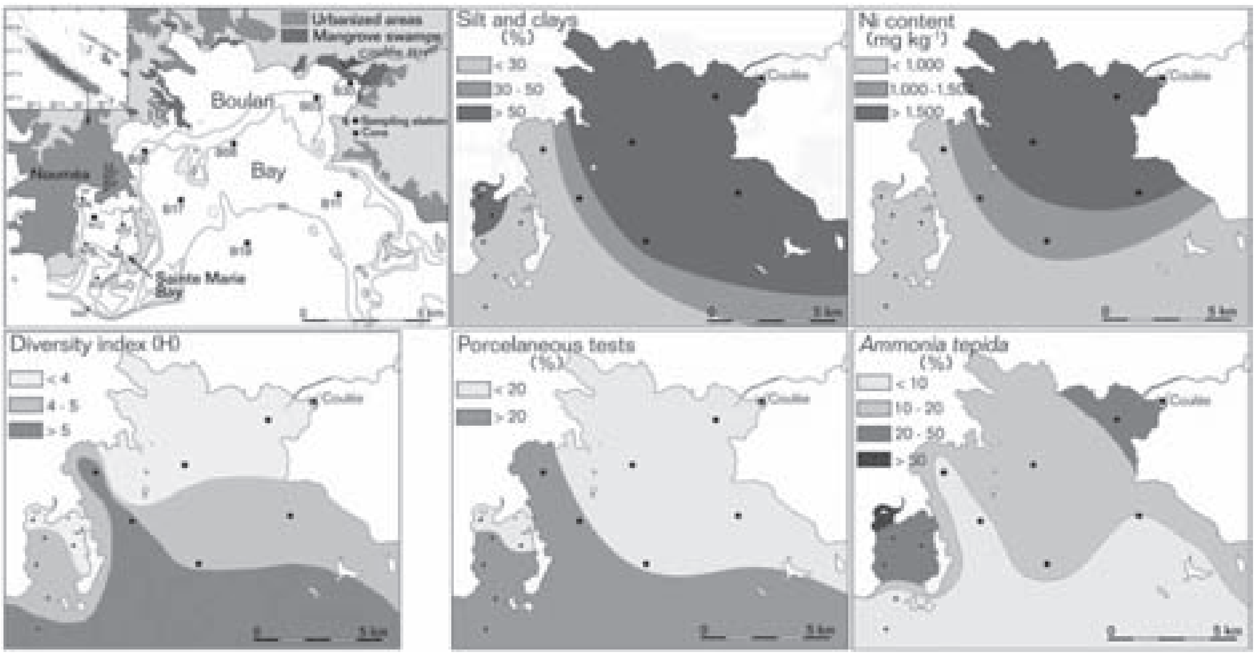
for increased abnormalities. In this study, it appeared that the nature of organic matter rather than its quantity acts on test abnormalities. Reactive organic matter deposited on the bottom of the ponds (e.g., dead algae, shrimp faeces and feed residues), which comprises most of Easily Oxidized Material and induces a high oxygen demand, appears as the most likely responsible for the high proportion of deformed tests. This finding should help in better management of aquaculture ponds, foraminifera being used as early warning bioindicators for noxious effects of the accumulation of Easily Oxidized Material, before it leads to shrimp mortality.

Foraminifera and environmental changes

At a human scale

A 54 cm long core was collected in the Bay of Sainte Marie, adjacent to the town of Nouméa, in order to investigate human impact on sedimentation rates, inputs of contaminants due to mining activity, and the impact of urbanization on this coastal environment (Debenay & Fernandez, 2009). The area selected is subjected to urban effluent, and to the input of sediments and brackish water that are transported by wind-driven currents from the estuary of the Coulée River (Fernandez *et al*., 2006). During the 1950's, open-cast mining exploration for nickel led to an increasing input of heavy-metal-rich terrigenous particles in the bays near Nouméa. Simultaneously, the population of Nouméa increased dramatically, which may have impacted the neighboring bays.

In surface samples, corresponding to the present conditions, sedimentary inputs from the Coulée River clearly appear in the



| **Figure 46**
Boulari and Sainte Marie bays: location map; distribution maps of silt and clay, and Ni, indicative of river input; distribution maps of the diversity index of foraminiferal assemblages, porcelaneous species and *Ammonia tepida*.

distribution of silt and clay, and Ni content (fig. 46). The influence of the river on foraminiferal assemblages can be seen in a lower diversity in front of the estuary, and a lower proportion of porcelaneous tests in the Boulari Bay. The proportion of *Ammonia tepida*, known to be tolerant to adverse conditions, including organic and chemical pollution, and to fresh water input, increases towards the mouth of the Coulée River. In Sainte Marie Bay, high relative abundances of *A. tepida* are associated with organic matter content close to or over 20%, which may be (at least partly) related to the sewage origin of labile organic matter.

Sediment accumulation rates were determined from the decrease in excess ^{210}Pb radioactivity (fig. 47). Two linear regressions of excess ^{210}Pb versus accumulated sediment yield different sedimentation rates and allow this major environmental change to be dated at 1956 ± 5 years taking into account the overlaying potentially bioturbated layer. In the core samples, the strengthening impact of terrigenous loadings from La Coulée River upward is revealed by an increasing proportion of silt and clay, and of Ni (fig. 47). The concomitant increase of organic-bound Zn results from the growth of Nouméa city with an extensive use of galvanized corrugated iron roofs.

On the basis of the observations on recent sediment, and of previous knowledge about foraminiferal behavior, the trends expected for foraminiferal assemblages were: a progressive decrease of species diversity, a concomitant decrease of porcellaneous tests, and an increase of *A. tepida*, correlative with increasing contamination. The exact opposite trends were found instead (fig. 47), indicating a change towards less restricted environmental conditions, i.e. under stronger marine influence and lesser freshwater and pollutant impact.

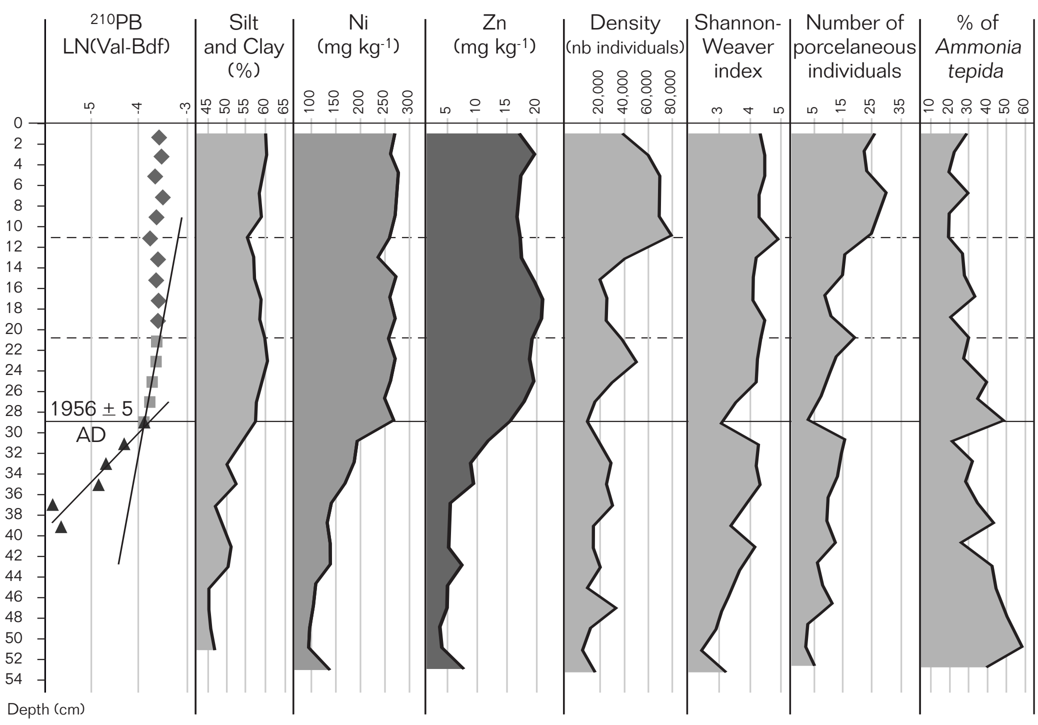
These paradoxical results may be explained by the partial closure of the connection between the Bay of Sainte Marie and the Bay of Boulari by embankments and sediment accumulation. The resulting decrease of the water input from the Bay of Boulari, and consequently from the Coulée River, led to a decrease of freshwater influence and a correlated increase of marine influence in Sainte Marie Bay. The extension of Nouméa city that was accompanied by improvement of the sewage system, a better control of the runoff, and embankments in coastal marshes led to a decrease of freshwater and pollutant inputs and enhanced this process.

Even if the correlation is doubtful, due to the uncertainties in the sedimentation rates, major rainy events that took place in Nouméa since 1940 are correlated with an increase of *Haynesina depressula*, a species tolerant to low salinity. It is inferred that *H. depressula* indicates a stronger freshwater impact in the Bay of Sainte Marie.

Finally, the general trend (that can be divided into four main stages) may be explained by both changes in anthropogenic influences and natural conditions (Debenay & Fernandez, 2009). This study showed that anthropic activities, associated with climatic events, may have multiple and contradictory impacts on coastal environments that could be assessed only by a set of complementary tools (*i.e.* geochemistry and bioindicators)

At a geological scale

Foraminifera were part of a multiproxy analysis of three littoral cores from western New Caledonia (Wirrmann *et al.*, 2011). This study showed that, since the late Holocene sea-level rise, the main controlling factors of environmental changes were sea-level

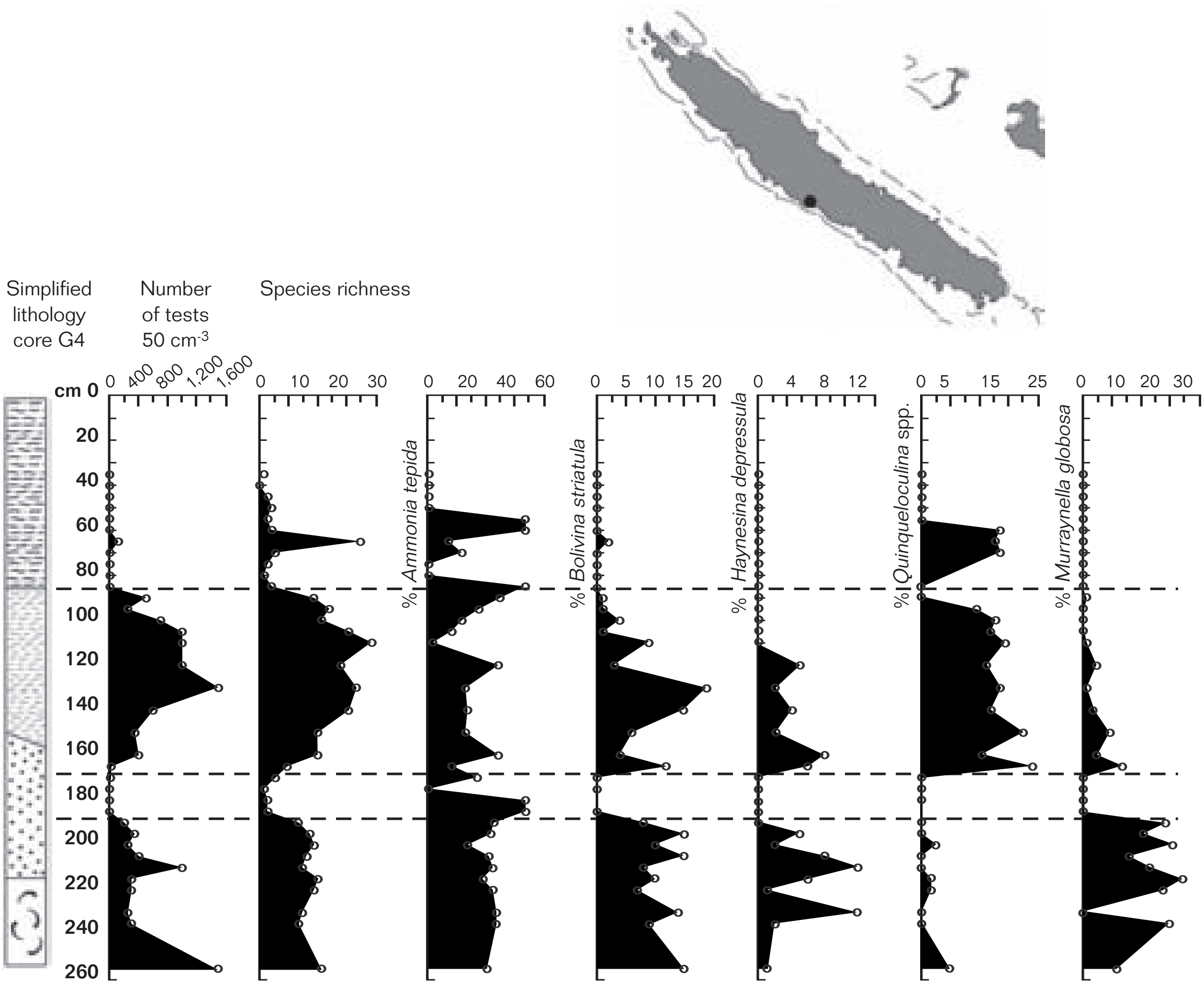


| **Figure 47**
Changes in chemical and foraminiferal parameters along the core N12 in Sainte Marie bay (modified from Debenay & Fernandez, 2009).

change, ENSO variability and extra-tropical phenomena, such as the Medieval Warm Period (MWP) marked by a tendency for La Niña-like conditions in the tropical Pacific.

The foraminiferal assemblages, which were mostly represented in one of the cores, are typical of coastal bays subject to alternating variable inputs of freshwater and seawater. They contributed to the results of this study by giving indications on sea-level changes (fig. 48).

At the base of the core, the foraminiferal assemblage is dominated by *Ammonia tepida* and *Bolivina striatula*, characterizing coastal environments subject to the influence of continental waters. The lack of foraminifera between 185-165 cm together with the absence of thecamoebians suggests a drying out of the water body. Between 160-90 cm, the noticeable proportion and the variety of *Quinqueloculina* spp. and *Elphidium* spp. indicate a noticeable marine influence in an open bay. The lack of foraminifera around 85-80 cm suggests a drying out of the water body. The presence of gypsum in the sediment is consistent with this hypothesis. In the section 80-35 cm, an organic-rich sediment containing rare fragments of foraminiferal tests dominated by *Ammonia tepida* with a few *Quinqueloculina* spp. indicates a separation from the sea. It could represent a eutrophic brackish pond, but reworking of tests from underlying sediments is also possible. Among this section, the abnormally rich assemblage with marine species, between 70-65 cm, indicates a landward transport of sediments presumably due to a cyclone or a tsunami. This event is consistent with the observation of an extreme event in the south of the Grande Terre dated around 4,000 cal yr BP (STEVENSON *et al.*, 2001).



| **Figure 48**
Changes in foraminiferal assemblages along a core extracted on the western coast of the Grande Terre (adapted from WIRMANN *et al.*, 2011).

Taxonomy

Introduction

The main purpose of this guide is to illustrate with SEM and light microscope photographs most of the species found hitherto around New Caledonia, and to allow consistent identification of the taxa.

The guide illustrates and describes 1,043 taxa. Among them, 665 had not been reported around New Caledonia before the compilation published in 2007. They are marked with a + in the taxonomic list. Two new species are described: *Triloculina elongotricarinata* and *Hoeglundina neocarinata*, a new species name is proposed for *Calcarina exuberans*, and a new genus name is proposed for *Quirimbatina rimosa* instead of *Mimosina rimosa*. More than 140 taxa have not been determined at a specific level and are recorded under open nomenclature. A high proportion of them are presumably new species, but more specimens are needed before proposing new species names. Including the 158 species reported before this work, and not found during this study (noted in bold and marked with a * in the taxonomic list), the number of benthic foraminifera species found hitherto around New Caledonia reaches 1,201. Some of the previously reported species have been synonymized with species illustrated here. Their name is indicated between square brackets in the taxonomic list. Other previously reported species could probably be synonymized, such as *Borelis pulchra* d'Orbigny with *Borelis schlumbergeri* (Reichel), or *Alveolinella boscii* Defrance with *Alveolinella quoii* (d'Orbigny), but illustrations often lack and comparisons are not possible.

Most of the species collected in New Caledonia had been reported from the central and western Pacific, and/or the Indo-Pacific area. Species from these areas are figured in several studies of taxonomic importance from Australia (e.g., Collins, 1958; Baccaert, 1987; Yassini & Jones, 1995; Parker, 2009), New Zealand (e.g., Hayward *et al*., 1999, 2010), Sahul shelf and Timor sea (Loeblich & Tappan, 1994), Papua New Guinea (Haig, 1988), South China sea (Szareck, 2001), East China (Zheng, 1979, 1988), Japan (e.g., Ujiié, 1990; Hatta & Ujiié, 1992a, b). They are also figured in other studies, for example, from Solomon Islands (Hughes, 1977), French Polynesia (Le Calvez & Salvat, 1980, Venec-Peyré & Salvat, 1981; Bicchi *et al*., 2002), the Maldives (Parker & Gischler, 2011). Some species had been reported from remote areas, such as the spectacular *Quinqueloculina erinacea* Mikhalevich, reported from the tropical Atlantic (Mikhalevich, 1983; thanks are due to V.I. Mikhalevich for checking this species), or *Rotaliammina siphonata* (Seiglie), reported from Venezuela. It shows that some species have a high dispersal potential, while others have not (e.g. Bicchi *et al*., 2002; Parker & Gischler, 2011).

How is the guide organized?

The mode of presentation aims to facilitate the identification of foraminiferal species, even by non-specialists. In this objective, species are not presented in accordance with the usual classification of foraminifera, which would be obscure to non-specialists, but they are grouped on the basis of (1) the nature of the test and (2) the dominant morphological feature as it appears at first sight. The nature of the tests remaining the major criterion, sections are devoted to each of the main type of test: agglutinated, porcelaneous, and hyaline. In each section, species are arranged in alphabetical order.

In order to facilitate a preliminary determination, a photographical summary is provided. The name indicated near the pictures allows the reader to get, *via* the alphabetical index, to the description of the species. Each species is illustrated by SEM pictures, supplemented by light microscope photographs when observations through the transparent test are useful. Brief descriptions of external morphological characters are given to assist in the correct identification of species and its generic placement. As often as possible, the description is directly based on the original type description, or on a publication that has referred to the original description and figures. Even if some illustrations may slightly differ from the description, due to intraspecific or ecophenotypic variation, the descriptive information has not been altered, since it would be very useful having all of the descriptive information at hand to check identifications when using this book as a guide, as it is intended. Information is also given on the ecological distribution of the species, but it must be considered as merely indicative since it is based on a very heterogeneous set of data: for example, the distribution of shallow larger species have been investigated over 800 samples, deeper species have been collected in about 10 samples. After the name of each species, is given the page number where the systematics of the species can be found. It has been separated from the description in order to lighten the presentation for non-specialists. Supra specific descriptions (e.g., genera, families) are not given in this guide since they can be found in Loeblich & Tappan (1988) or on the site of the geological survey of Iran: http://www.gsi.ir/Product/Lang_en/Page_48

At the end of the Taxonomy section, the taxonomic list mostly follows the suprageneric classification of LOEBLICH & TAPPAN (1992). Agglutinated foraminifera, however are classified following KAMINSKI (2004), except for the subfamilies *Carterininae* and *Zaninettinae*, both considered as families and grouped in the order Carterinida. Generic assignments are mostly based on the concepts of LOEBLICH & TAPPAN (1988), taking into account some specialized works such as PATTERSON & RICHARDSON (1987) for unilocular forms, NOMURA (1983) for Cassidulinidae, HAYWARD *et al*. (1997) for Elphidiidae, REVETS (e.g., 1991, 1992, 1993, 1996) for various groups, and following PARKER (2009) in including *Affinetrina*, *Agglutinella*, *Cycloforina*, *Lachlanella*, *Praemassilina*, *Siphonaperta*, and *Varidentella* into *Quinqueloculina*. The thorough discussions provided by this author about the taxonomic attribution of most of his 404 species were also very useful. The list of synonymies is provided with up to four references for each species (except a few species that needed a little more), including reference to the original type description, and publications that have illustrated the species.

How to use the guide?

First, the nature of the test must be determined. The characteristics of each type of test are described above (fig. 15), but observations must be careful since nature is never as simple as we would like it to be: hyaline tests that are generally transparent and shiny when the foraminifera is living, may become milky-white and nearly opaque after death. On the other hand, porcelaneous tests, usually milky-white and opaque may be thin and translucent, particularly in paralic low-pH environments. Consequently, it is sometimes difficult to make the difference between hyaline and porcelaneous tests (fig. 49).

Agglutinated foraminifera with brownish organic cement are quite easy to recognize, but agglutinated tests with calcareous cement may be difficult to distinguish from porcelaneous tests that are covered with a surface layer of arenaceous material. Generally, however, the milioline arrangement of the porcelaneous species makes the distinction easy, except two particular cases: 1) *Nubeculina advena*, a porcelaneous species can be difficult to distinguish from some rectilinear agglutinated tests such as *Reophax* if its porcelaneous neck is not well developed (fig. 50); 2) *Miliammina* spp. have a milioline arrangement, as *Quinqueloculina* spp., and may be confused with the species of *Quinqueloculina* that bear agglutinated material, particularly in SEM pictures (fig. 51). The distinction can be done by the agglutinated tooth of *Miliammina*, and the brownish color of its cement when the observation is done under a dissecting microscope.

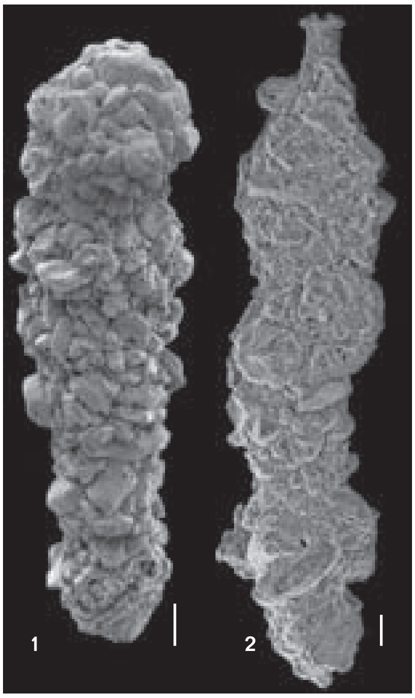


Figure 50
1 *Reophax*, an agglutinated foraminifera;
2 *Nubeculina*, a porcelaneous foraminifera with a coating of agglutinated grains.
Scale bar = 100 µm.

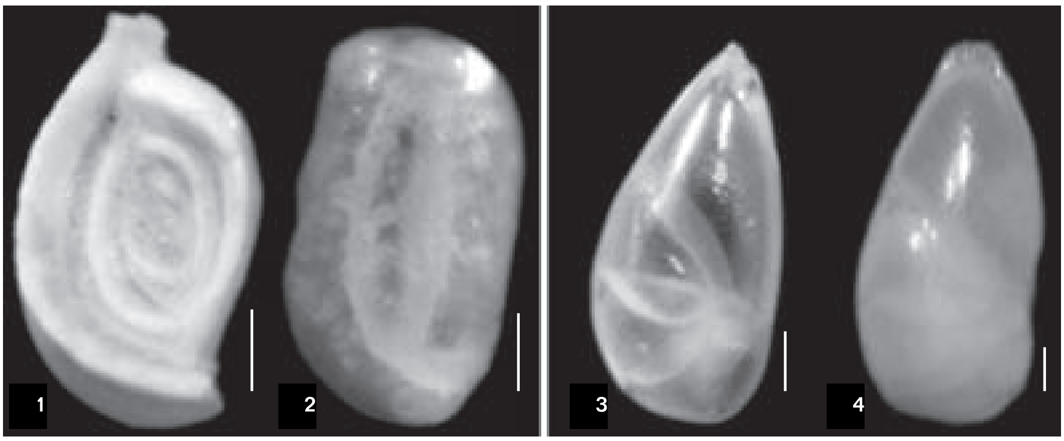
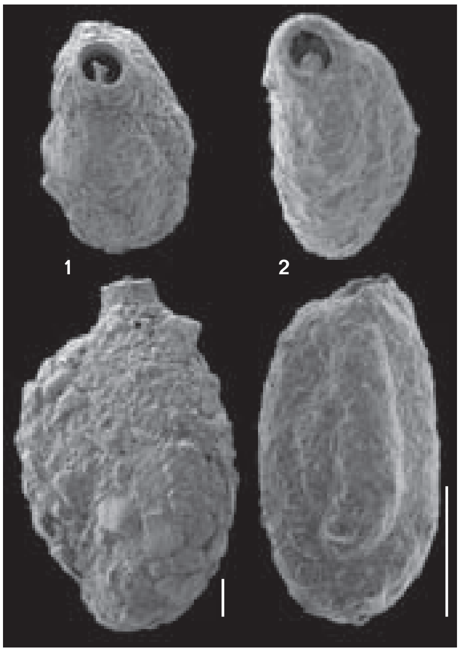


Figure 49
1 Typical white and opaque porcelaneous test;
2 Translucent porcelaneous test;
3 Typical transparents and shiny hyaline test;
4 Whitish and translucent hyaline test. Scale bar = 100 µm.



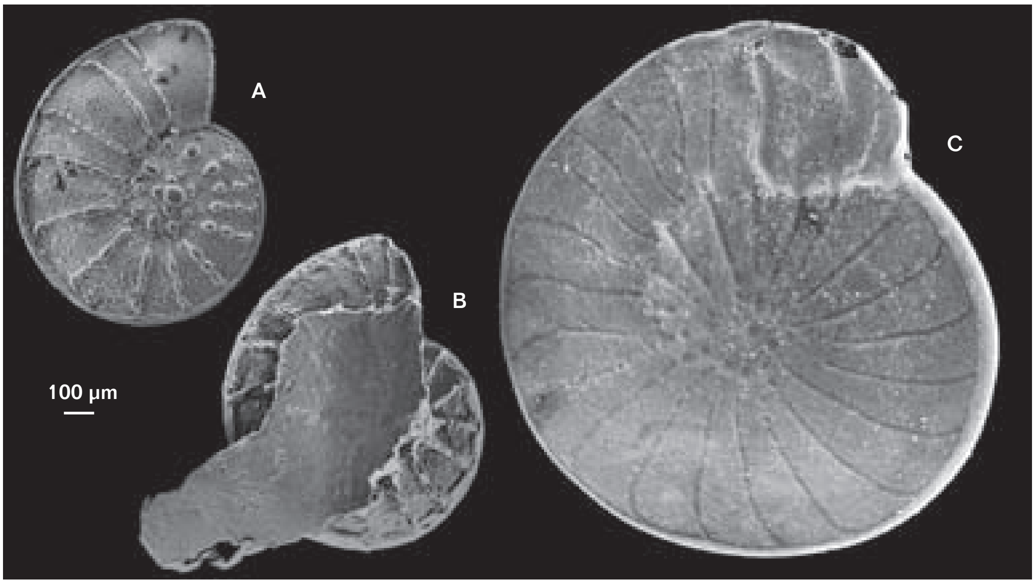
| **Figure 51**
Foraminifera with a milioline arrangement of chambers:
1 *Quinqueloculina*, a porcelaneous foraminifera with a coating of agglutinated grains;
2 *Miliammina*, an agglutinated foraminifera.
Scale bar = 100 µm.

When the nature of the test has been recognized, a preliminary determination of the species can be made using the photographical summary. The summary is organized in sections: the first one for agglutinated tests, the second one for the porcelaneous tests. The very diversified hyaline species are presented in different sections based on the dominant morphological feature, and grouping respectively unilocular, uniserial, biserial, triserial, trochospiral and planispiral tests, or tests with different arrangement, but appearing so at first sight. The tests of some species have complex or obscured architectures and cannot be placed in either of the above groups. A specific section has been devoted to these species. Comparing the studied species with the illustrations displayed in the summary will allow a preliminary identification. The validity of this identification will be confirmed or not by consulting the description that can be reached through the alphabetical index of taxa at genus and species level.

The scale bar on each photo (0.1 mm) helps in comparing the species. Taking into account the size of the test is particularly important when the morphology changes during the growth (ontogeny). An example may be given by *Nummulites venosus*. Adult tests of this species are almost involute with smooth surface and sutures limbate, very slightly raised (fig. 52C) while young specimens are more evolute, have a rough surface and sutures strongly raised (fig. 52A).

What might be puzzling to specialists and non-specialists?

The classification used in this guide, based on the morphology as it appears at first sight, is believed to facilitate the determination of species for non-specialists, even if it may lead to some contradictions. For example, the species of *Amphistegina*, which are lenticular and generally appear symmetrical, are classified as planispiral, while they really are low trochospiral. Similarly, the symmetrical evenly flattened sides of the species of *Nonionoides* give the impression that the coiling is planispiral while it is low trochospiral. Conversely, the test of *Conicospirillinoides* is planispirally enrolled, but the wall, extending on one face into a high spiraling band surrounding a deep umbilical depression, results in a dissymmetrical test. It gives the impression of a trochospiral coiling, justifying the placement of this genus in the section "Hyaline species Trochospiral (or appearing so)".



| **Figure 52**
Growth of *Nummulites venosus*:
A juvenile; B dissected adult showing a younger stage corresponding to a previous whorl; C adult.

The following example shows that serious ambiguities still exist in foraminiferal classification. The gamonts of some species of the Rosalinidae (simple trochospiral tests) and Cymbaloporidae (a trochospiral stage followed by annular series of chambers) develop a subhemispherical final float chamber and adopt a planktonic stage of life (fig. 13). The genus *Tretomphalus* was originally proposed by Moebius (1880) for species that differed from *"Discorbina"* (forms with a simple trochospiral test) only in possessing the float chamber. The type species was *T. bulloides* = *Rosalina bulloides* d'Orbigny, 1839 (Banner *et al*., 1985).

The inflated float chamber was such a conspicuous feature of the test of *Tretomphalus* that subsequent identifications have been mostly based upon it, including in this genus species of Rosalinidae as well as species of Cymbaloporidae. Cushman (1934) recognized two groups of species, one with a trochospiral coiling, very definitely connected with "*Discorbis*", and the other that would probably be described as *Cymbaloporetta* in the early stages. Despite that, there is still much confusion about *Tretomphalus*, all the more that Le Calvez (1977) illustrated *Rosalina bulloides* (= *Tretomphalus bulloides)* with specimens that were not topotypes, and that were Cymbaloporidae with a balloon chamber instead of Rosalinidae. More recently, Banner *et al*. (1985) grouped the species with a float chamber into four taxa depending on the chamber arrangement of the coiled portion, and on the structure of the float chamber. Two (two subgenera) belonged to Rosalinidae: *Rosalina (Tretomphalus*) and *Neoconorbina* (*Tretomphaloides*); and two (one genus and one subgenus) belonged to Cymbaloporidae: *Cymbaloporetta* and *Cymbaloporetta* (*Millettiana*). Hansen and Revets (1992) suggested that the float chamber is not a taxonomically valid characteristic. They considered *Tretomphaloides* a junior synonym of *Neoconorbina* and *Tretomphalus* a junior synonym of *Rosalina*. Parker (2009) suggested reinstating *Tretomphalus* for *Rosalina-Neoconorbina*-like species that develop a float chamber with *Tretomphaloides* as a junior synonym. He observed that the apertural position in these species, inset slightly from the periphery, is intermediate between *Neoconorbina* and *Rosalina*. This short summary about the status of *Tretomphalus* clearly shows that only future studies that combine lifecycle studies with morphological and molecular systematics can truly resolve this issue.

Actually, only the planktonic stage of *Millettiana milletti* (Cymbaloporidae) is easily distinguished from other species with a float chamber due to its vermicular overgrowths and irregularly positioned pores. Its benthic stages have thickened, limbate sutures on the spiral side and chambers are mushroom-shaped on the umbilical side. Other species with a float chamber have been tentatively attributed to species of *Neoconorbina* (trochospiral hyaline forms) or *Cymbaloporetta* (other hyaline forms) on the basis of only morphological characteristics of the coiled portion.

This example, which is not unique in Foraminifera, shows that a substantial improvement of nomenclatorial stability is still necessary.

Photographical summary

Agglutinated species

The 174 agglutinated species are presented on three pages (plates 1 to 3). They are arranged in order of increasing complexity of the tests. First are the unilocular tests: tubular rectilinear, tubular coiled, flask-like and subspherical. The following plurilocular tests are successively:

– uniserial throughout;

– mostly uniserial but with a different initial portion either biserial, triserial or spiral;

– biserial throughout;

– mostly biserial but with a different initial portion either triserial or spiral;

– triserial throughout;

– trochospirally coiled;

– planispirally coiled;

– with a milioline arrangement;

– trochospiral, but with a particular test made up of agglutinated spicules.

The last species have irregular attached tests, the morphology of which greatly depends on the substrate.

Porcelaneous species

The 233 porcelaneous species are presented on five pages (plates 4 to 8). Owing to the complexity of this group, morphological subgroups have been made. They are successively:

– spiral, surface smooth or slightly ornamented;

– discoidal;

– elongated, mostly rectilinear;

– planispiral, elongated along the axis of coiling;

– planispiral, then uncoiled, striate;

– milioline, then spiral, a few chambers per whorl, later may be uncoiled, aperture simple;

– milioline, then spiral, a few chambers per whorl, aperture multiple, a trematophore;

– milioline, then spiral, two chambers per whorl or more than two chambers per whorl;

– planispiral evolute;

– planispiral involute;

– triloculine;

– quinqueloculine, test smooth or moderately rough;

– quinqueloculine, test ornamented;

– quinqueloculine test striate / costulate;

– cryptoquinqueloculine;

– quinqueloculine, test agglutinated or distinctly rough;

– milioline with apertural flap;

– milioline, more than 5 chambers visible;

– attached or irregular.

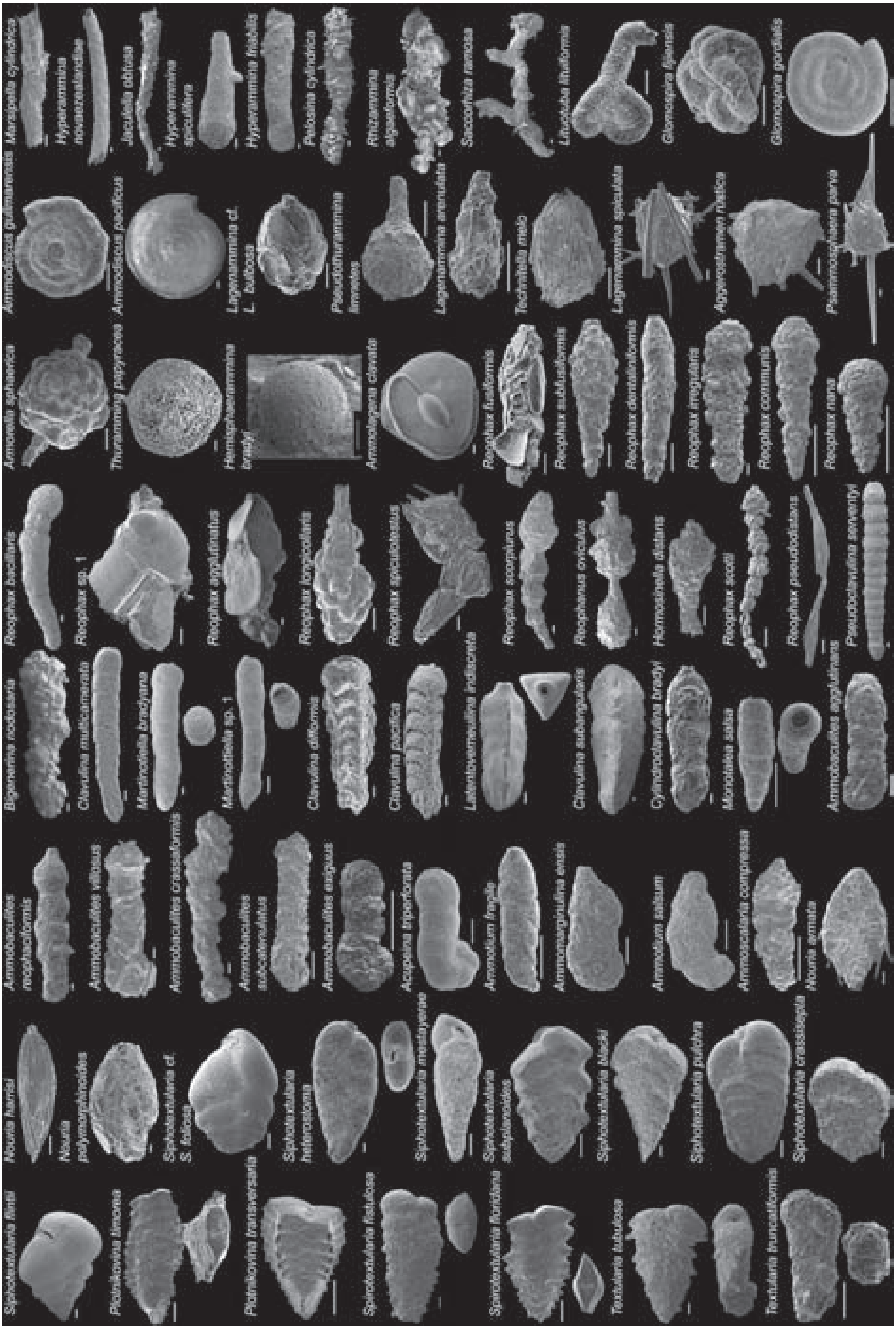


Plate 1
Agglutinated species. Scale bar = 0.1 mm.

Plate 2
Agglutinated species. Scale bar = 0.1 mm.

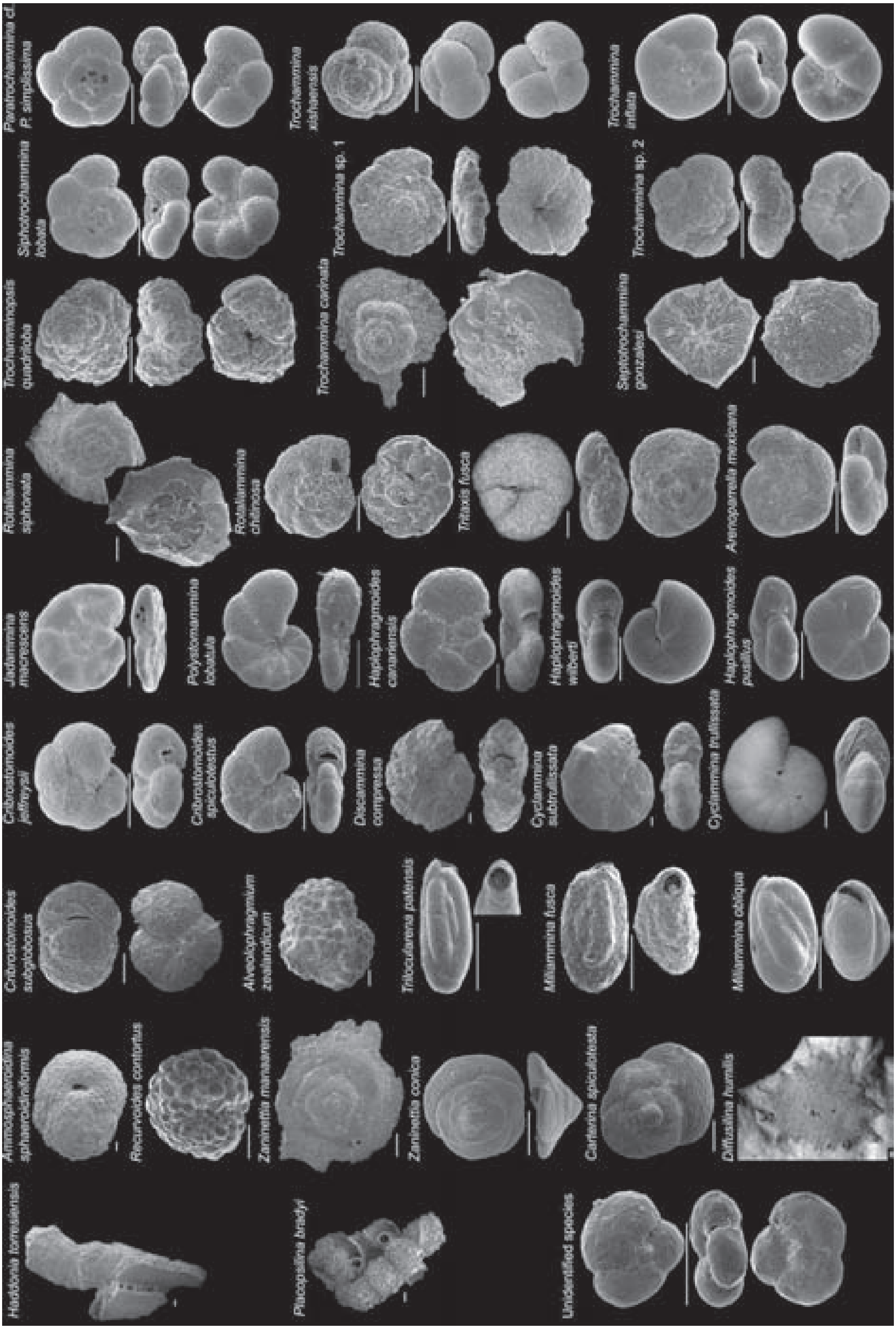


Plate 3
Agglutinated species. Scale bar = 0.1 mm.

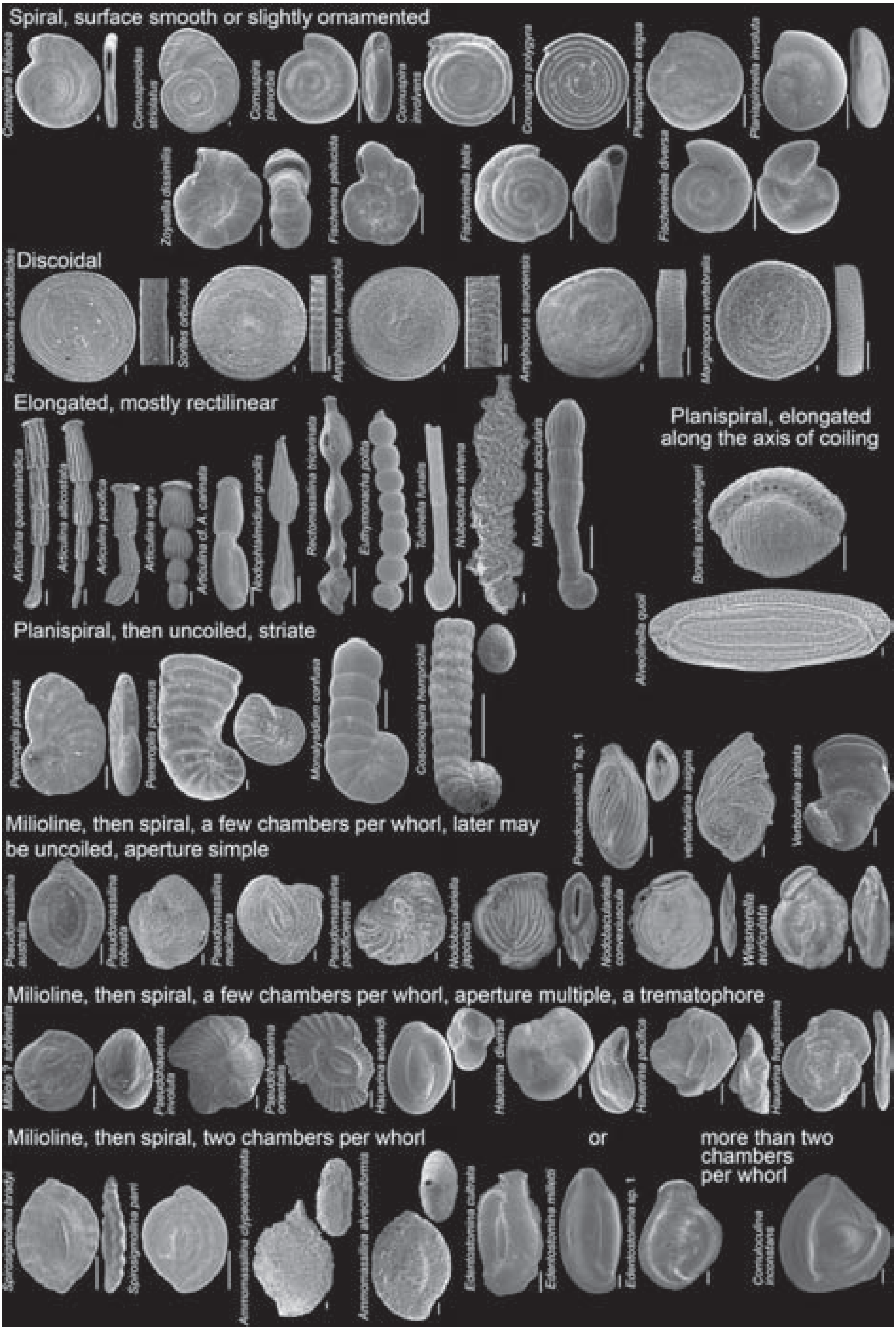


Plate 4
Porcelaneous species. Scale bar = 0.1 mm.

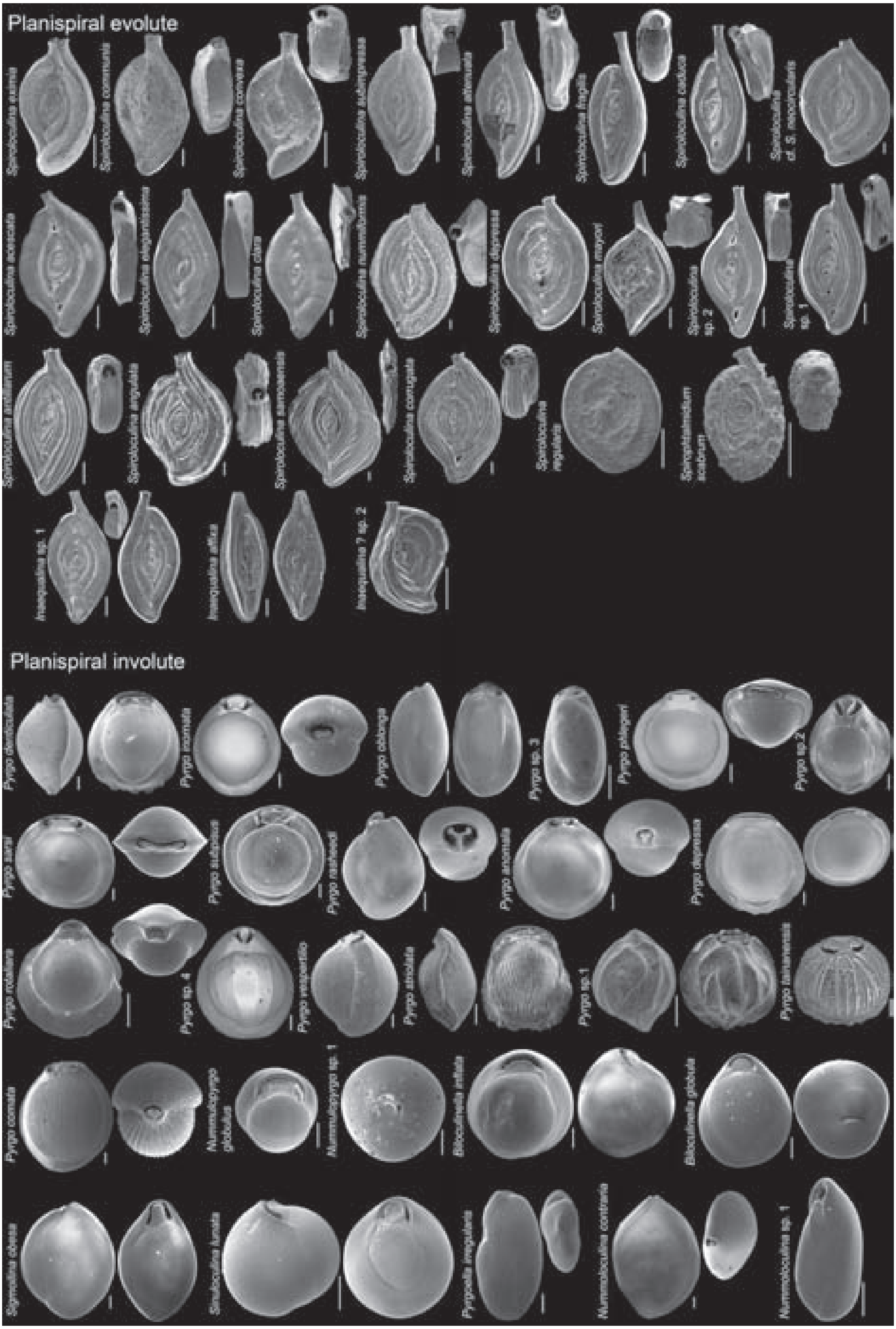


Plate 5
Porcelaneous species. Scale bar = 0.1 mm.

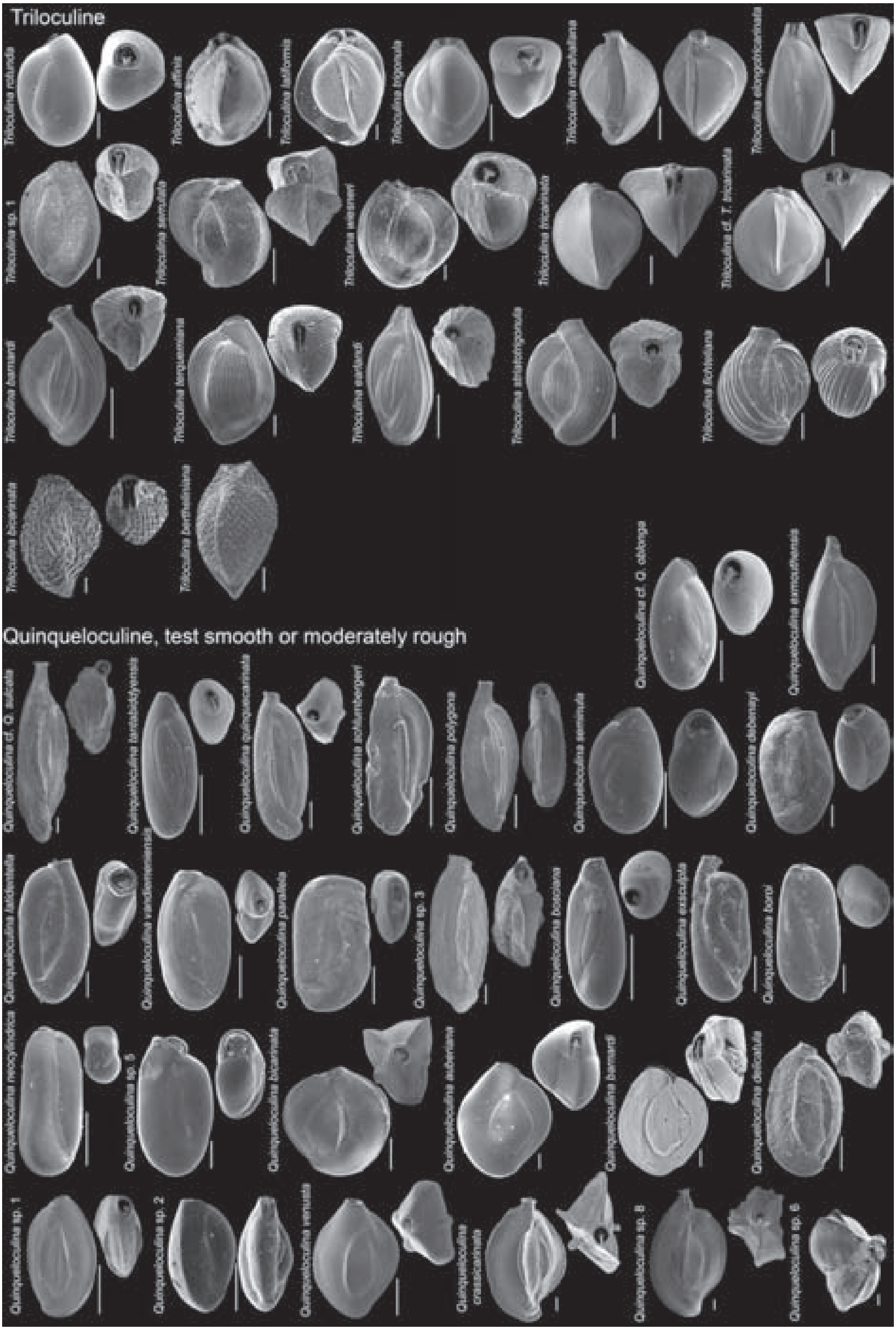


Plate 6
Porcelaneous species. Scale bar = 0.1 mm.

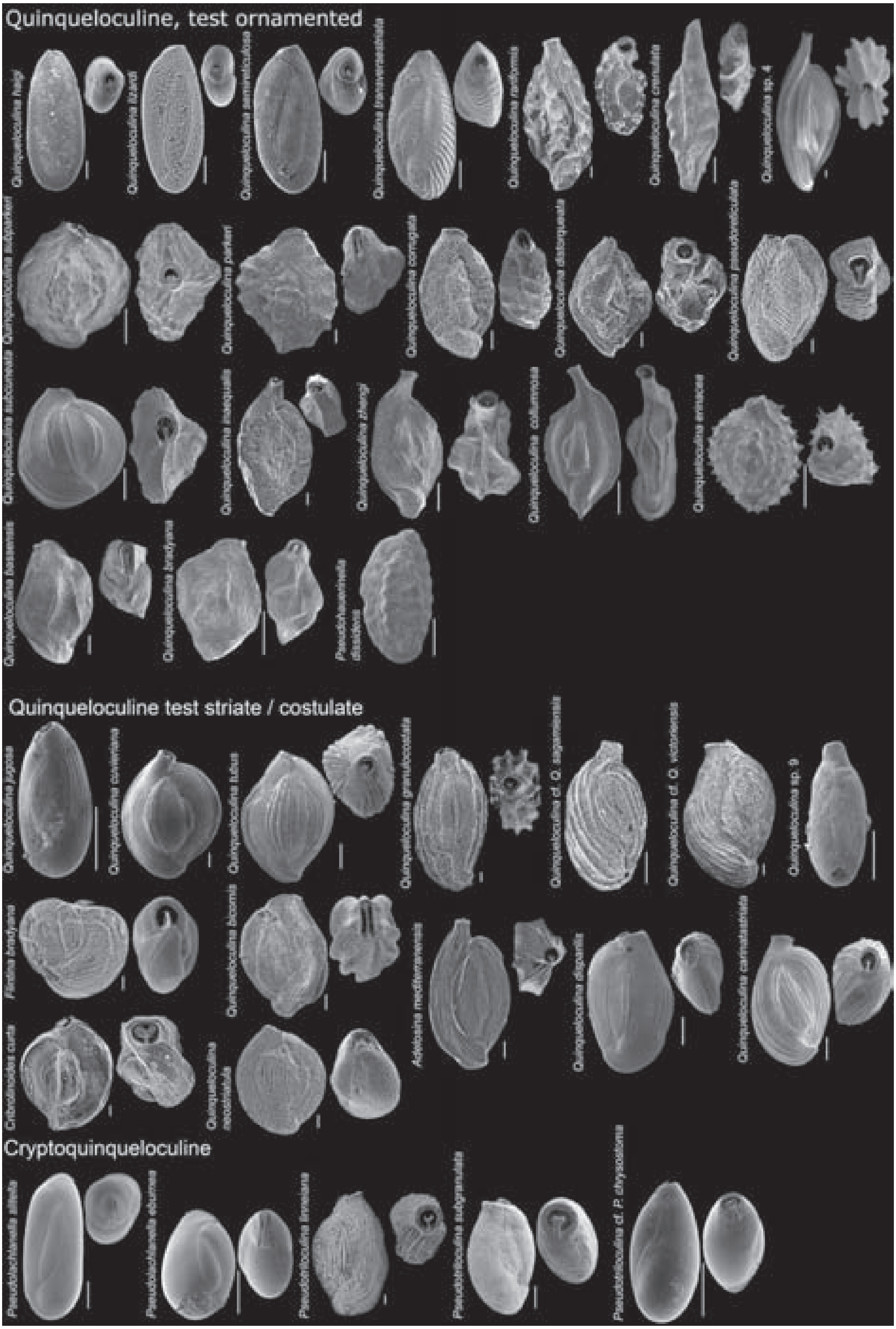


Plate 7
Porcelaneous species. Scale bar = 0.1 mm.

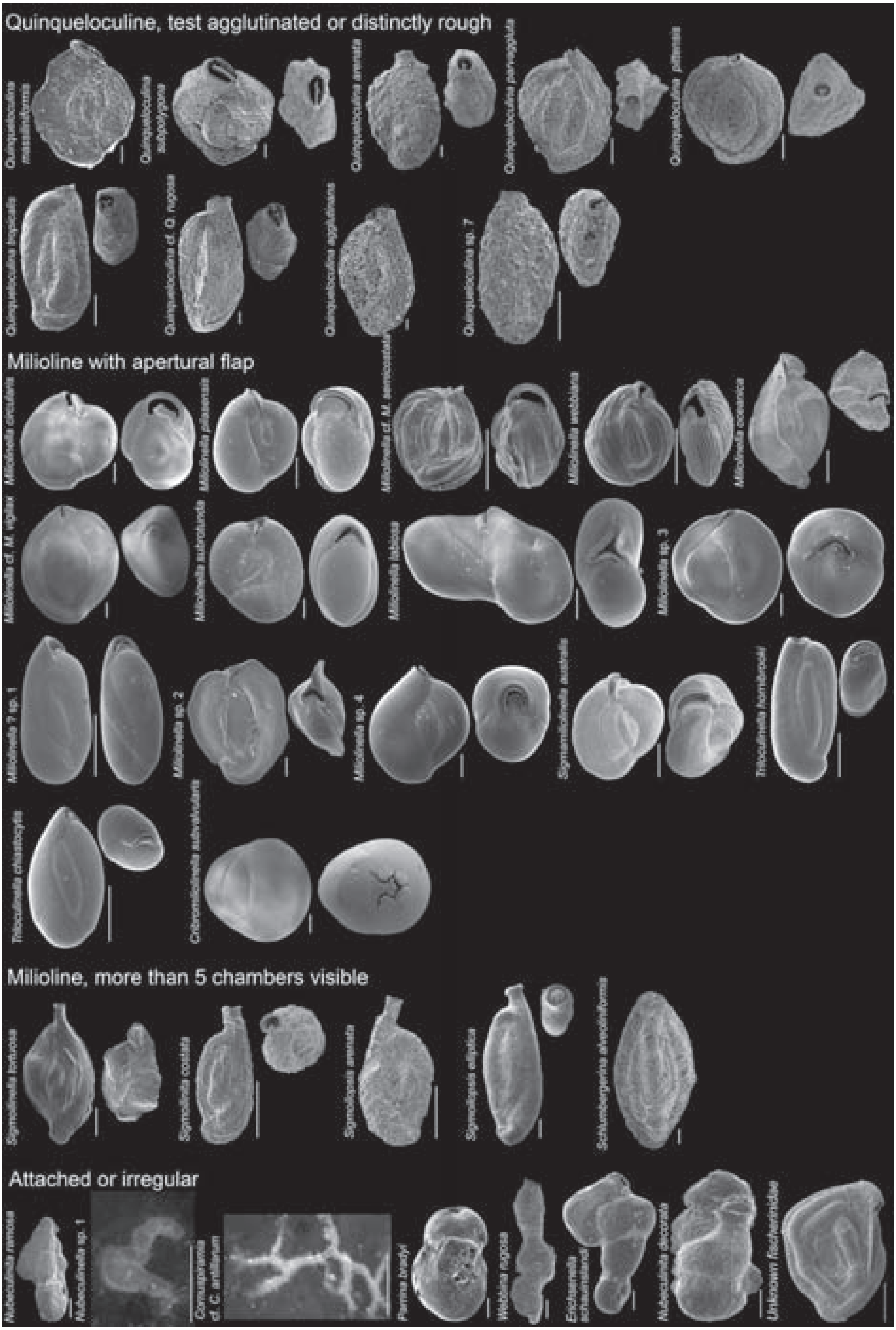


Plate 8
Porcelaneous species. Scale bar = 0.1 mm.

Hyaline unilocular species

The 128 hyaline unilocular species are presented on two pages (plates 9 and 10). They are arranged roughly in the following order:

– test compressed, flask-shaped, the aperture produced, rounded, with or without a neck;

– test compressed, subcircular to ovate in side view; aperture symmetrical, flush or slightly produced, with or without lips;

– test compressed, subcircular to ovate in side view; aperture asymmetrical, flush or slightly produced, with or without lips;

– test globular, circular in cross section, with a very short neck, surface ornamented by longitudinal costae;

– test elongate circular in cross section, with a long cylindrical neck, surface smooth or ornamented by longitudinal costae;

– test compressed, subcircular to ovate in side view; aperture produced on a lipped neck;

– test elongate circular in cross section, with a long cylindrical neck, paired costae separated by a deep depression subdivided by bridges into oval segments;

– test globular circular in cross section, with a very short neck, if at all, surface ornamented by a reticular pattern of costae;

– test globular, the apertural end somewhat truncated.

The last species are plurilocular, but generally appear as if they were unilocular and for this reason have been grouped with unilocular species.

Hyaline uniserial species

The 50 hyaline uniserial species are presented on one page (plate 11). Most of the species are typically uniserial, elongated, rectilinear or slightly curved. However, are also included in this group some tests with particular characteristics:

– chambers strongly overlapping, the last chamber occupying most of the test surface;

– test compressed with chambers increasing rapidly in width giving the test a flabelliform shape;

– initial portion with a different arrangement, mostly planispiral.

Hyaline biserial species

The 53 hyaline biserial species are presented on one page (plate 12). Most of the species placed in this group are obviously biserial, with typically the two series of chambers.

The non-typical species have:

– a test biserially arranged, but simultaneously twisted (e.g., *Fursenkoina*);

– an early portion typically biserial, but later chambers becoming cuneate and tending to be uniserial (e.g., *Sagrinella, Siphouvigerina*);

– a very low trochospiral test that appears as if it was biserially arranged (*Krebsina*).

Hyaline triserial species

The 28 hyaline triserial species are presented on one page (plate 13). In all the species placed in this group, the triserial arrangement is dominant and clearly observed, even if the last chambers of some species are more loosely arranged, tending to become biserial, or even uniserial.

Hyaline trochospiral species

The 181 hyaline trochospiral species are presented on five pages (plates 14 to 18). Typically trochospiral species have been tentatively grouped on the basis of the following criteria:

– tests very transparent, shiny due to their composition made up of a unique crystal of calcite; the whole test or at least its initial stage made up by an undivided coiled tubular chamber that may be asymmetrically planispiral (e.g., *Conicospirillinoides*), low trochospiral (e.g., *Mychostomina*), or high trochospiral (e.g., *Patellina*);

– tests with the umbilical face ornamented with radial rows of granules (e.g. *Pileolina*, *Glabratella*);

– test low trochospiral with flattened umbilical face (e.g. *Ammonia*, *Neoconorbina*);

– spiral side partially involute (e.g., *Pseudononion*);

– surface of the test with depressed, thinner areas (e.g. *Mississippina*);

– chambers increasing rapidly in size as added in a flaring trochospiral coil (e.g., *Cancris*);

– spiral side flattened and umbilical side convex (e.g., *Planulina*, *Cibicides*);

– test biconvex (e.g. *Hoeglundina*);

– aperture surrounded by radiating groves (e.g. *Heronallenia*);

– test high trochospiral (e.g. *Elongobula*);

– surface strongly ornamented, the ornamentation obscuring the sutures and even the chambers (e.g. Calcarina);

– chambers distinct, strongly hispid and may be spinose (e.g., *Murrayinella*);

– test with a subspherical balloon chamber.

Unfortunately, due to the complexity of this group, this grouping is only tentative and does not include all the species. A careful observation will be necessary.

Hyaline planispiral species

The 111 hyaline planispiral species are presented on two pages (plates 19 and 20). They can be grouped on the basis of the following criteria:

– test composed of a proloculus followed by a unique tubular, planispirally arranged chamber;

– test compressed, involute, chambers increasing slowly in size as added, sutural bridges over the sutures;

– test compressed, involute, chambers increasing slowly in size as added;

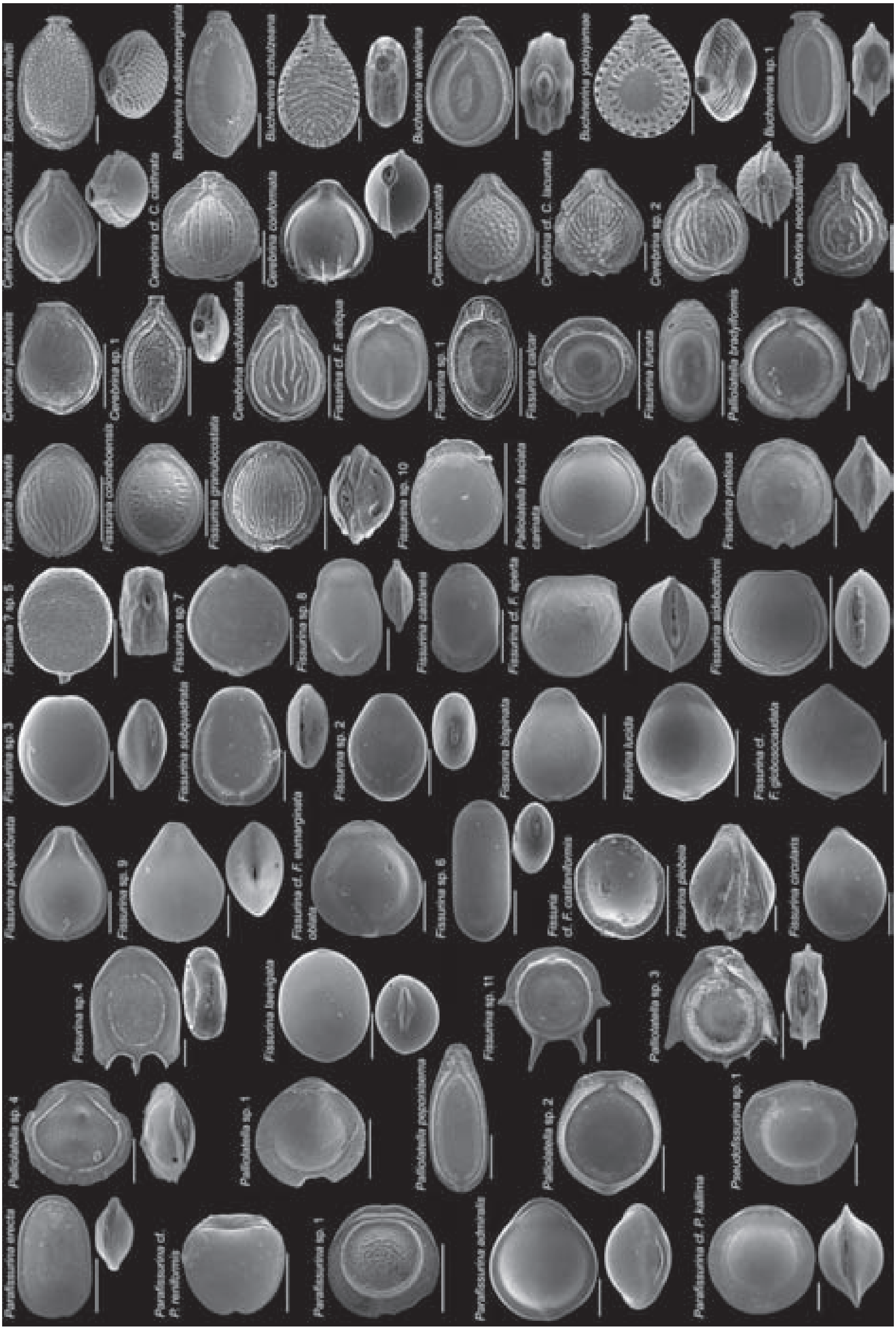


Plate 9
Hyaline unilocular species. Scale bar = 0.1 mm.

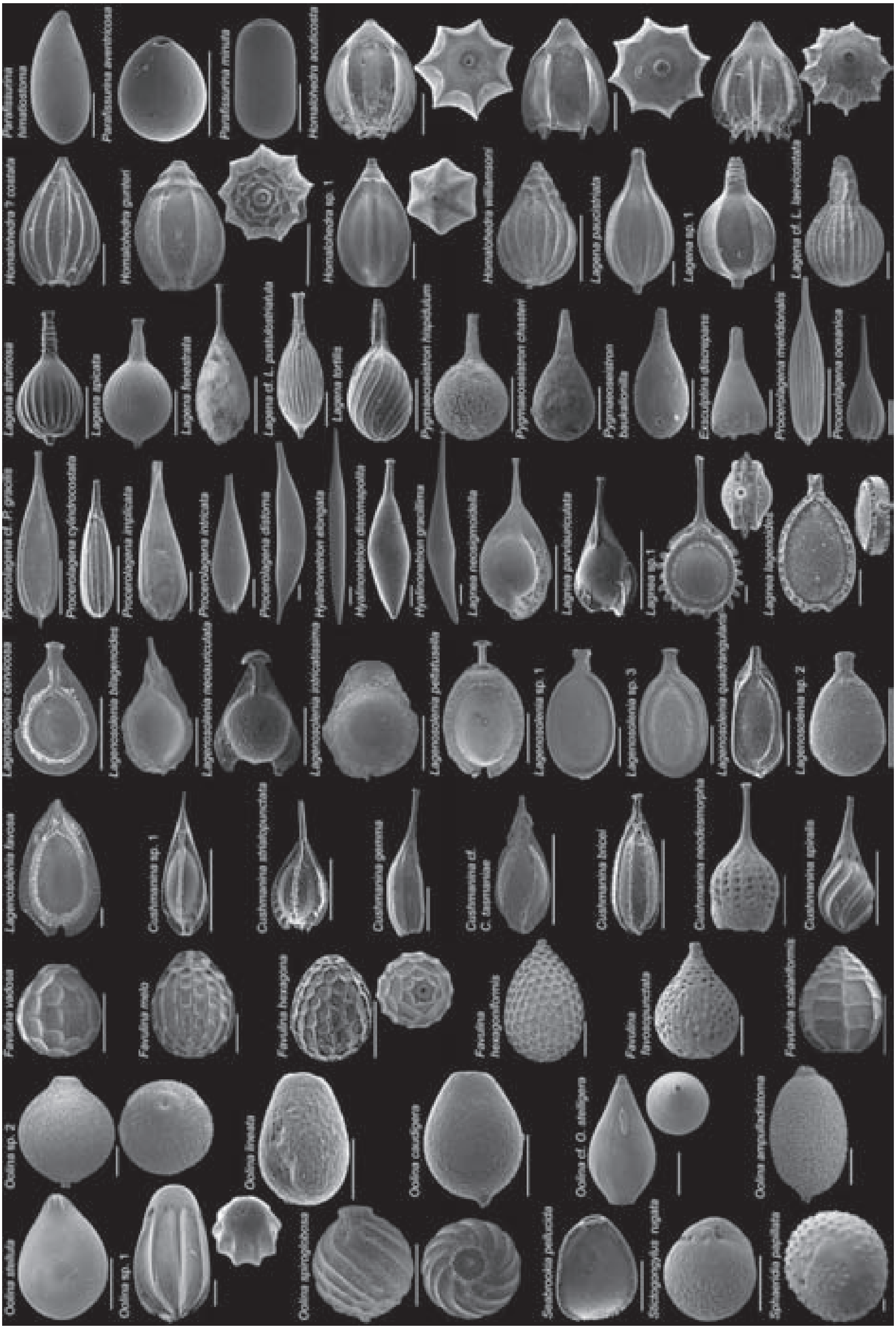


Plate 10
Hyaline unilocular species. Scale bar = 0.1 mm.

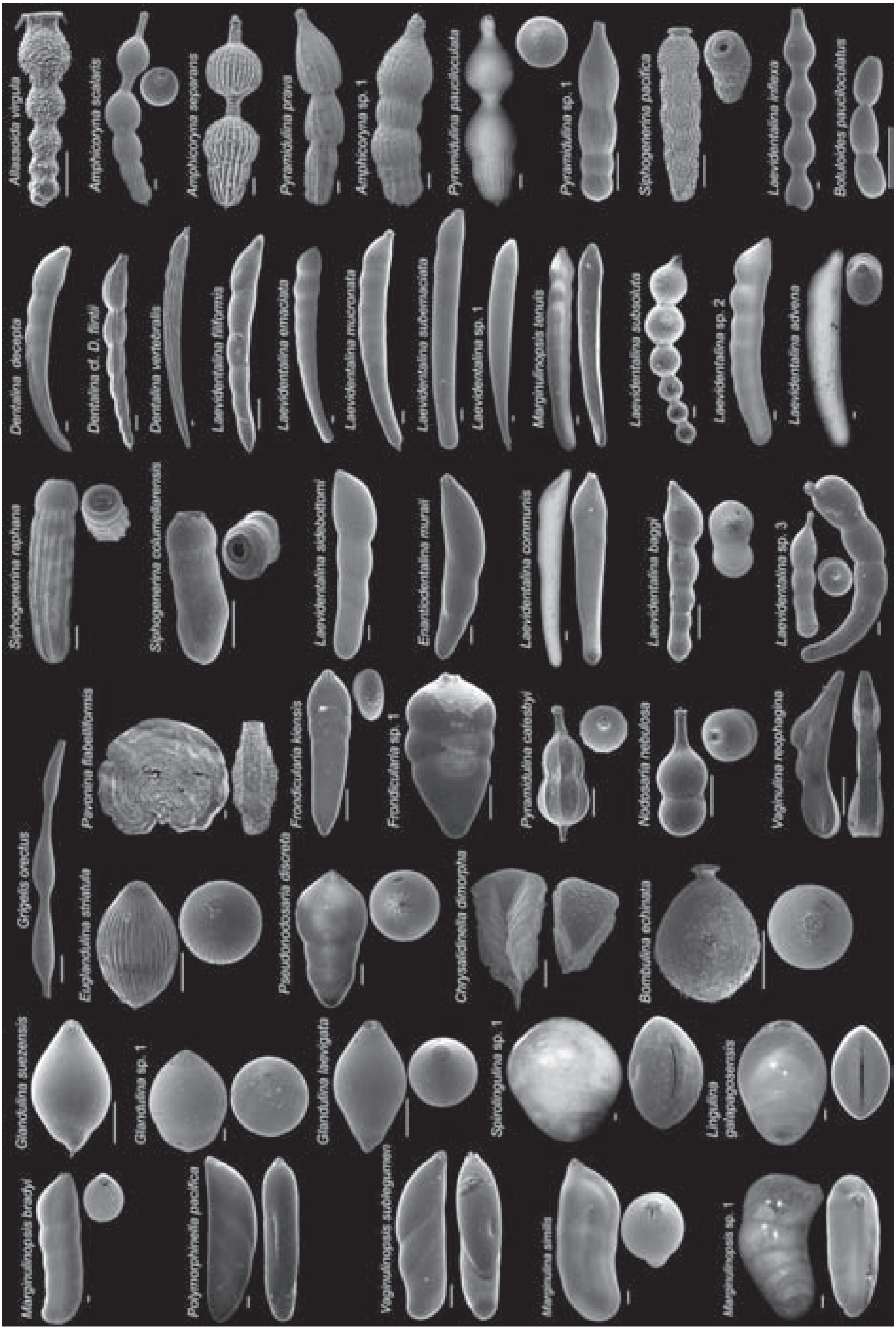


Plate 11
Hyaline uniserial species. Scale bar = 0.1 mm.

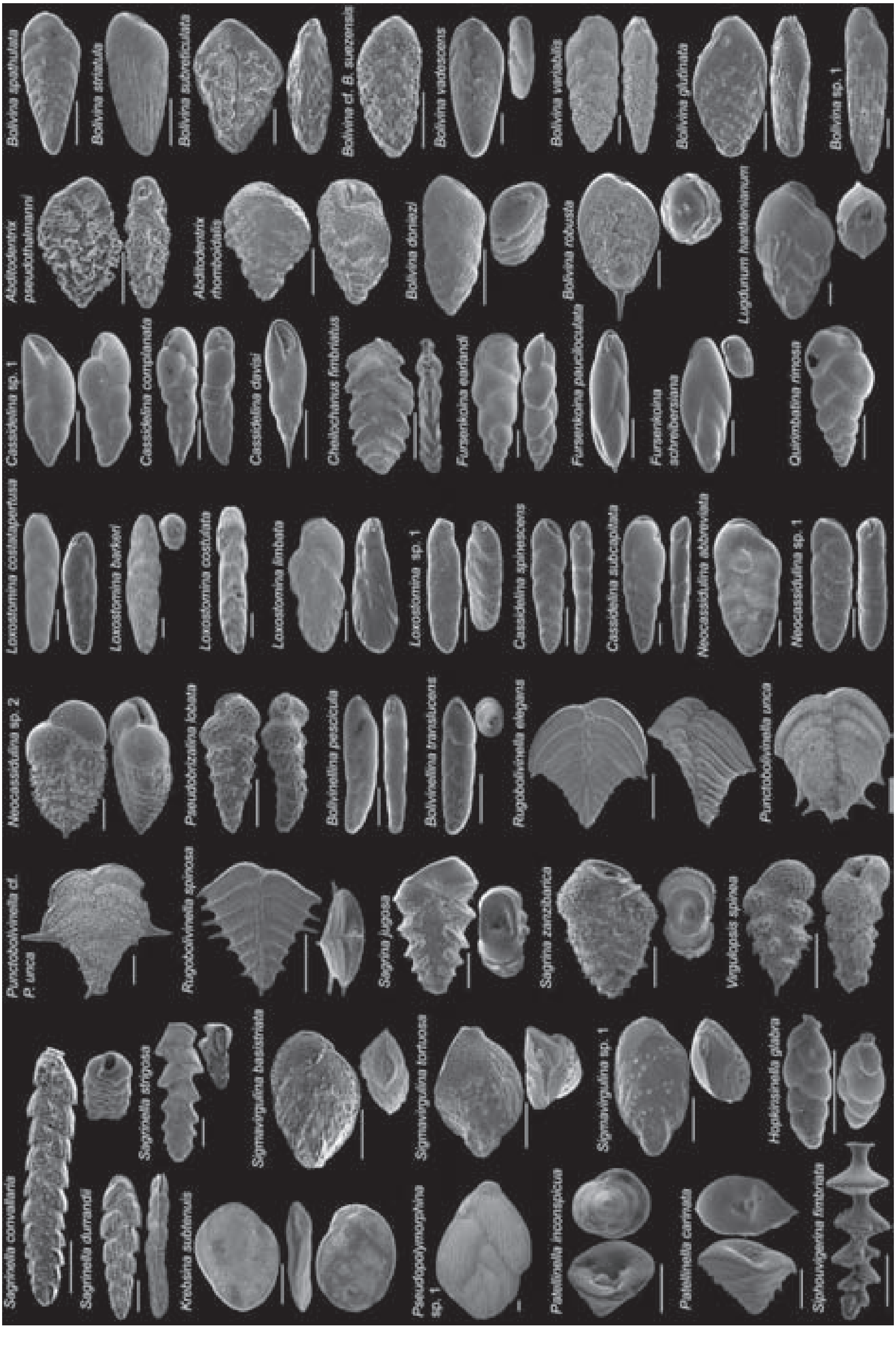


Plate 12
Hyaline biserial species. Scale bar = 0.1 mm.

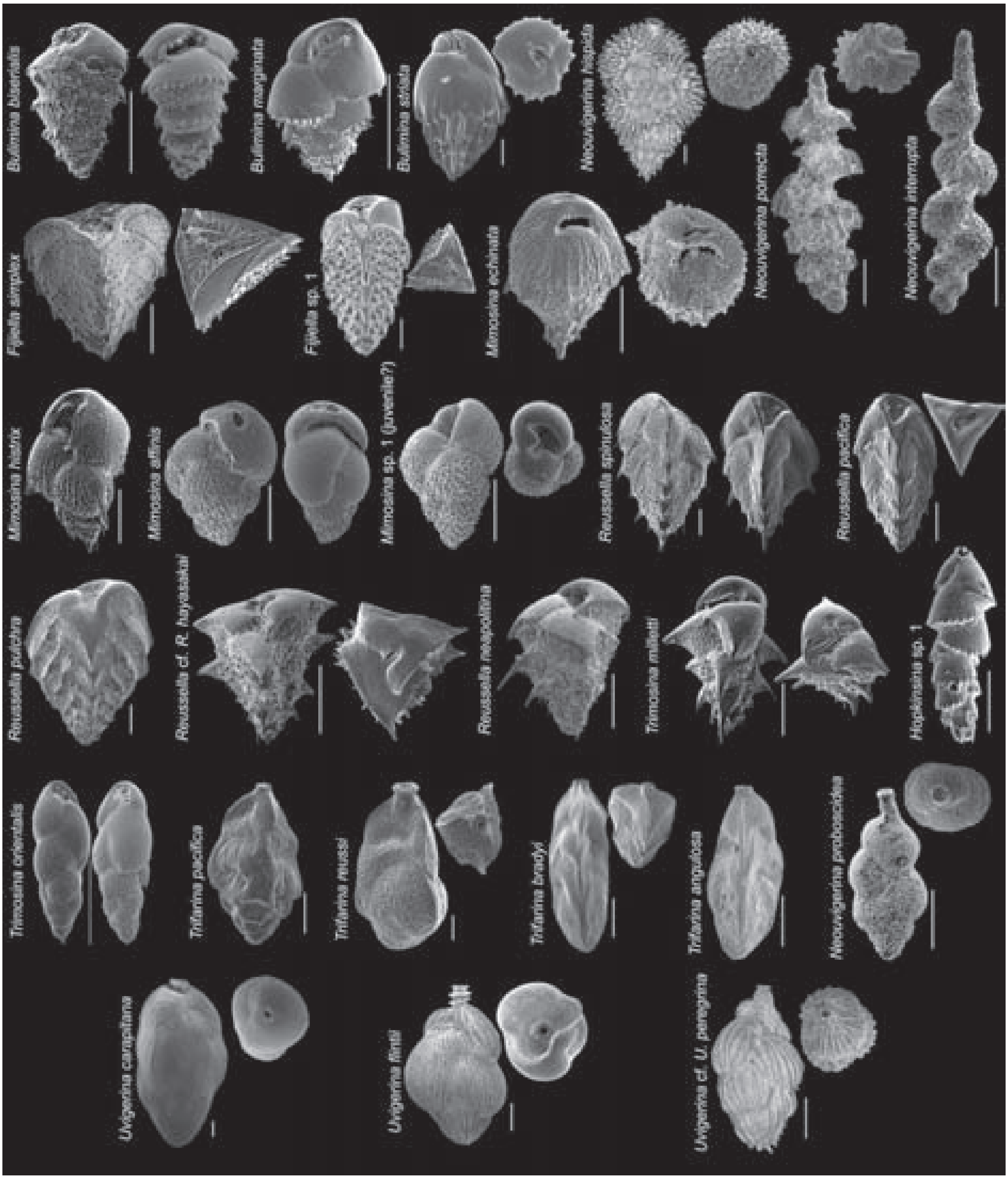


Plate 13
Hyaline triserial species. Scale bar = 0.1 mm.

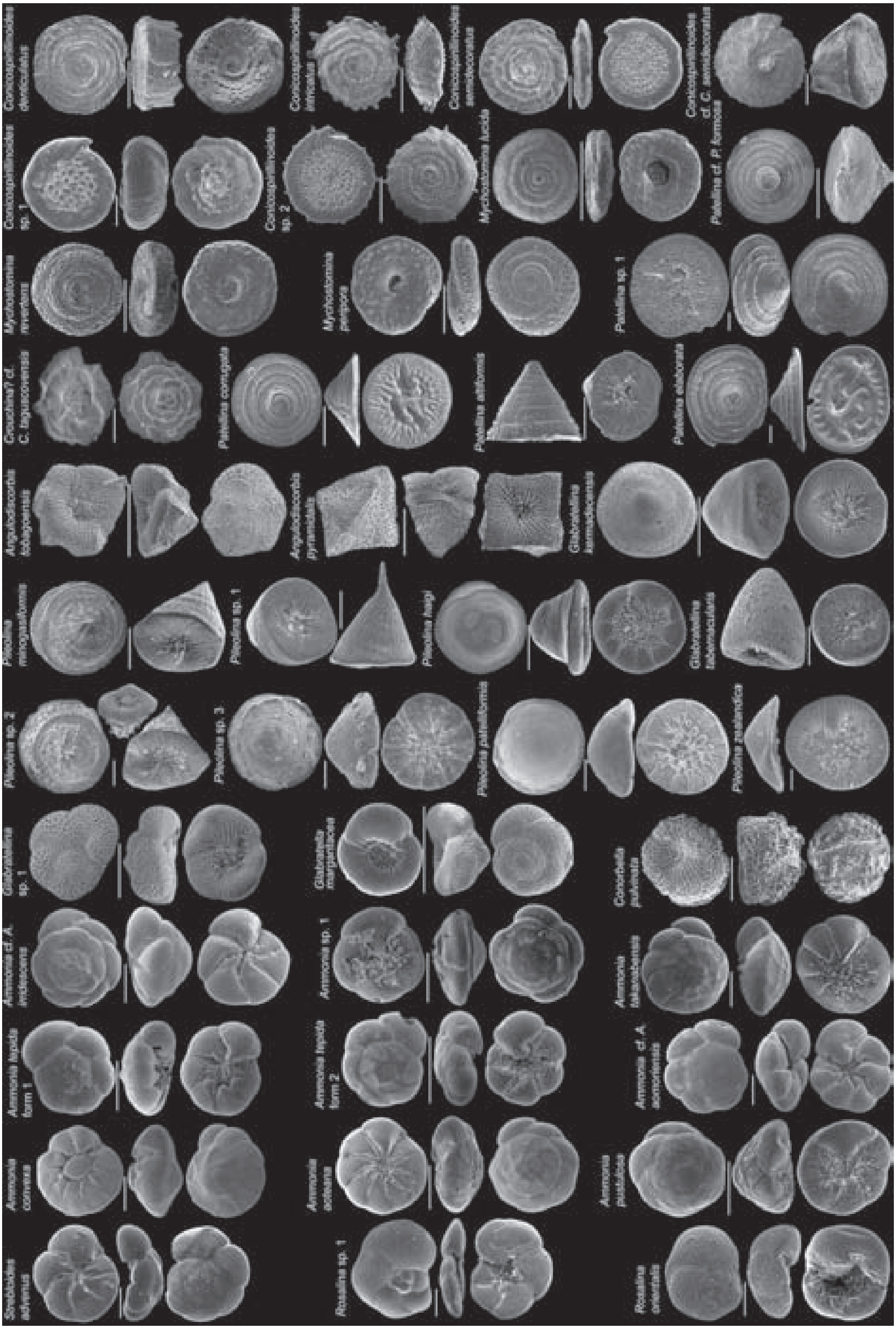


Plate 14
Hyaline trochospiral species. Scale bar = 0.1 mm.

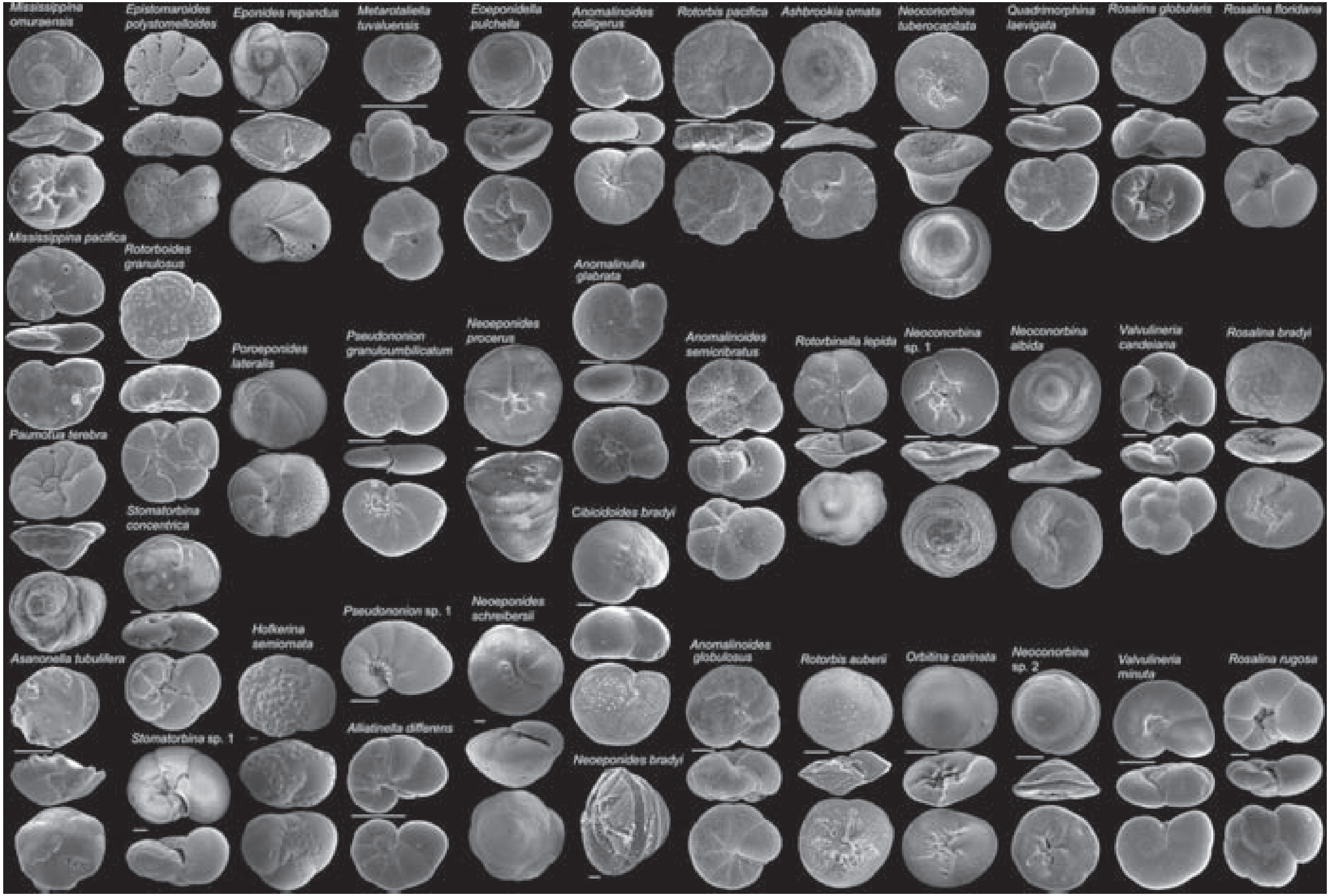


Plate 15
Hyaline trochospiral species. Scale bar = 0.1 mm.

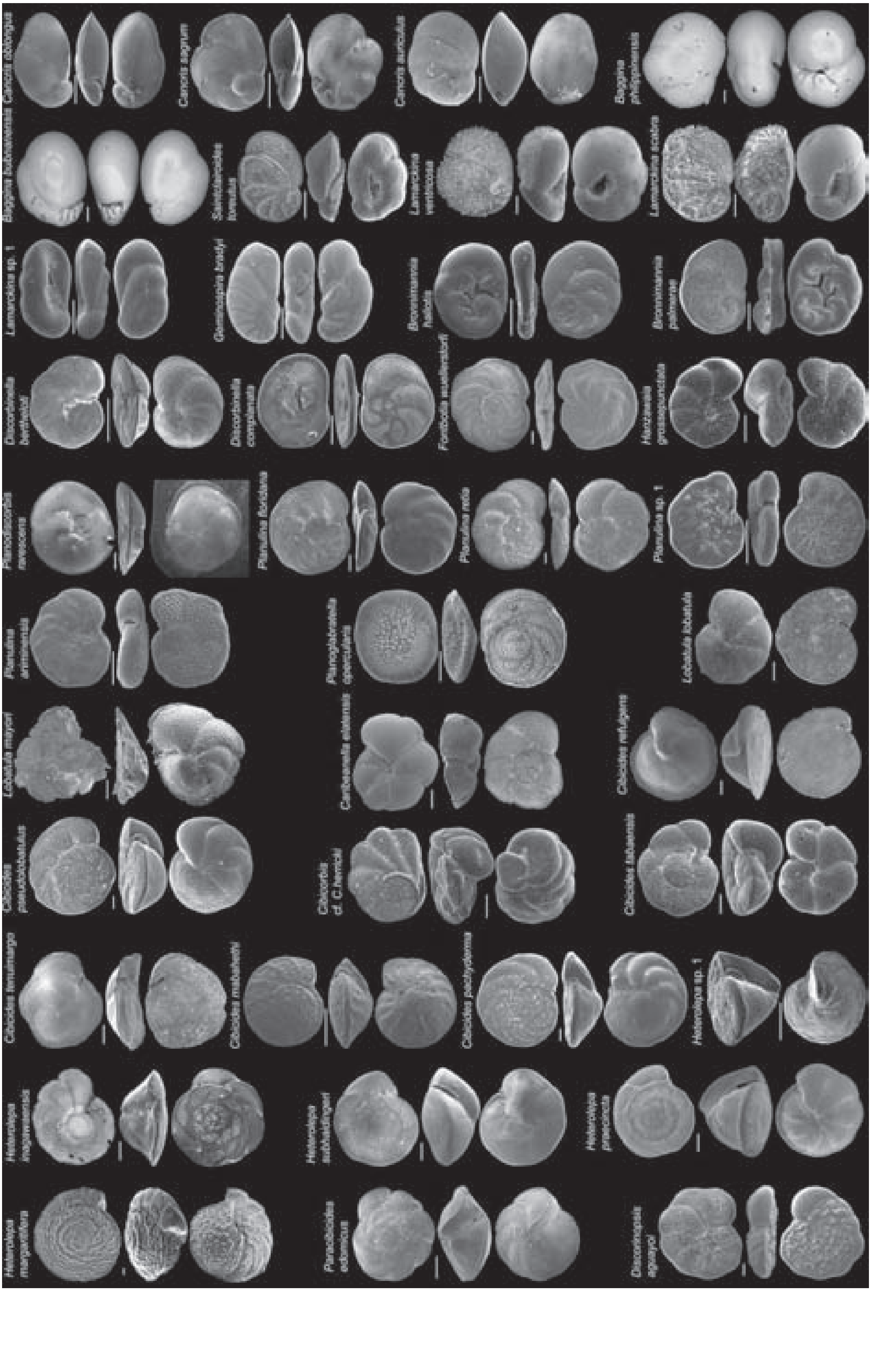


Plate 16
Hyaline trochospiral species. Scale bar = 0.1 mm.

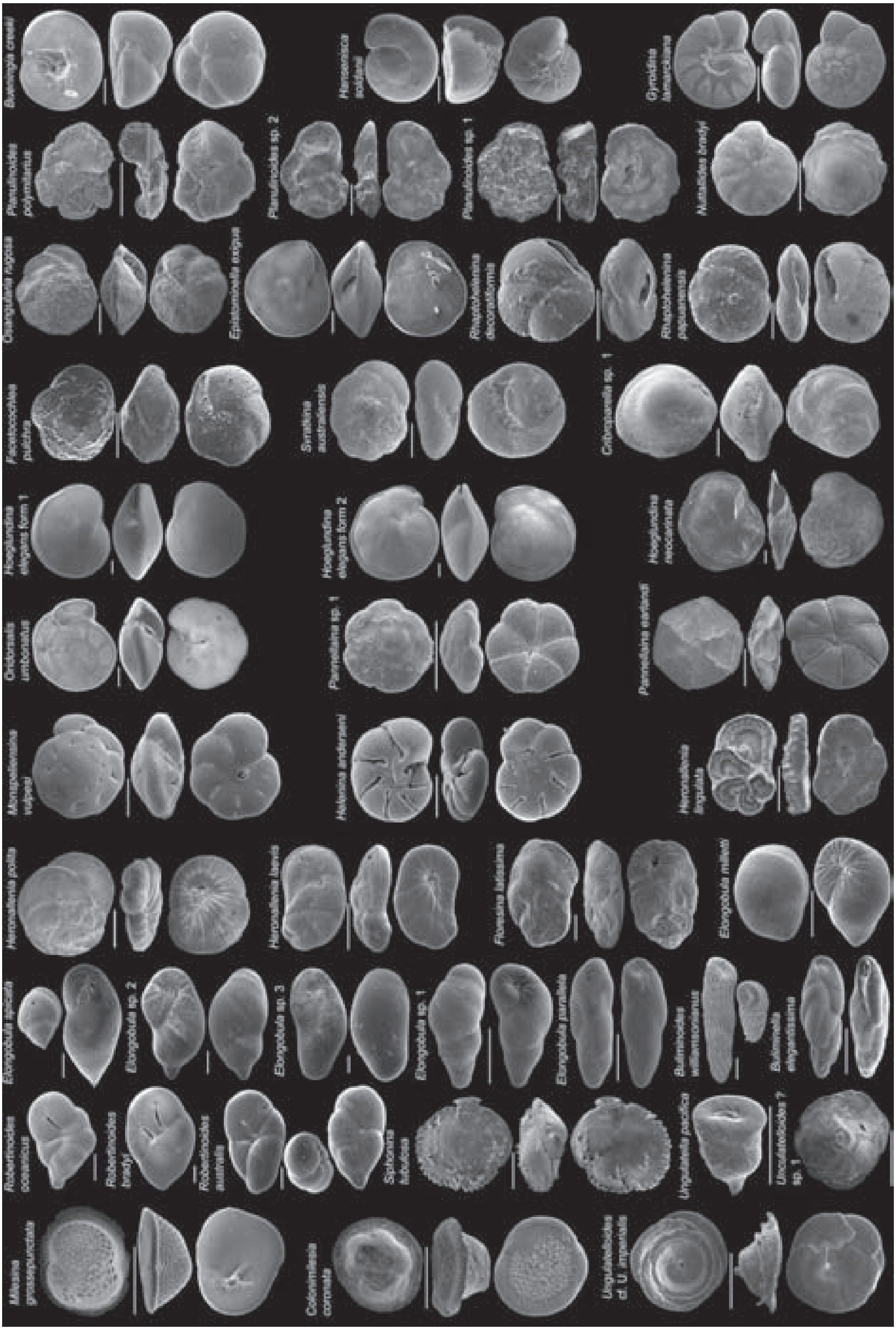


Plate 17
Hyaline trochospiral species. Scale bar = 0.1 mm.

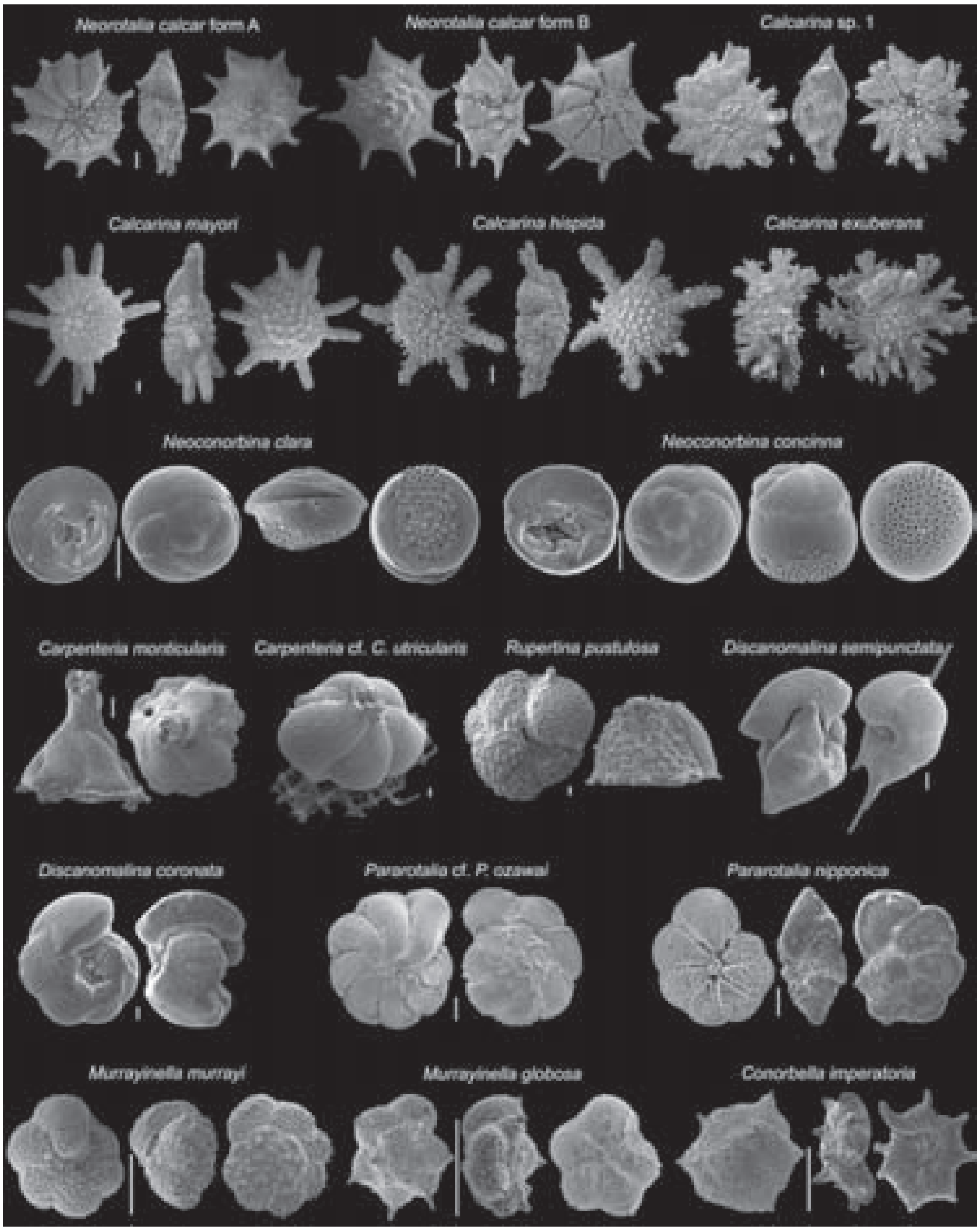


Plate 18
Hyaline trochospiral species. Scale bar = 0.1 mm.

– test compressed, involute, chambers increasing rapidly in size as added in a flaring coil;

– test much compressed, flattened, evolute, at least in the later portion;

– test compressed, involute, lenticular, aperture terminal, radiate, with a larger slit on the apertural face;

– test lenticular, very low trochospiral, appearing as if it was planispiral (*Amphistegina*);

– test planispiral in the early portion, tending to uncoil, becoming uniserial in the later portion.

Other hyaline species

The 85 hyaline species that could not be included within the preceding groups are presented on two pages (plates 21 and 22). They include:

– test biserially arranged and spirally enrolled (e.g., *Globocassidulina*);

– test biserially arranged, coiled in the early portion, later uncoiled biserial (e.g., *Ehrenbergina*);

– test with uniserial or biserial arrangements, but twisted or distorted, which make the arrangement difficult to be identified;

– test composed of multiple chamberlets variously arranged into discoidal, spherical, branching or irregular tests.

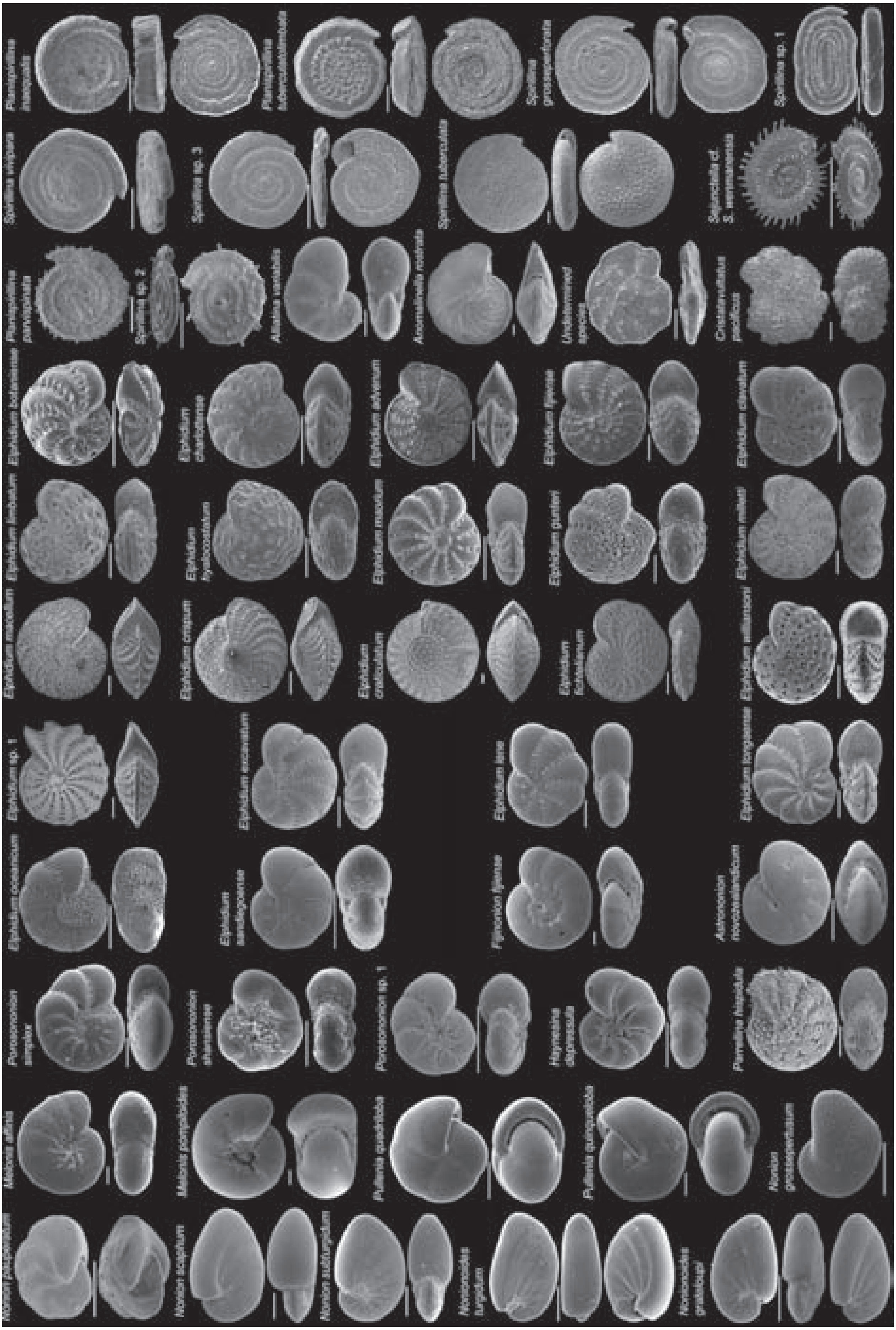


Plate 19
Hyaline planispiral species. Scale bar = 0.1 mm.

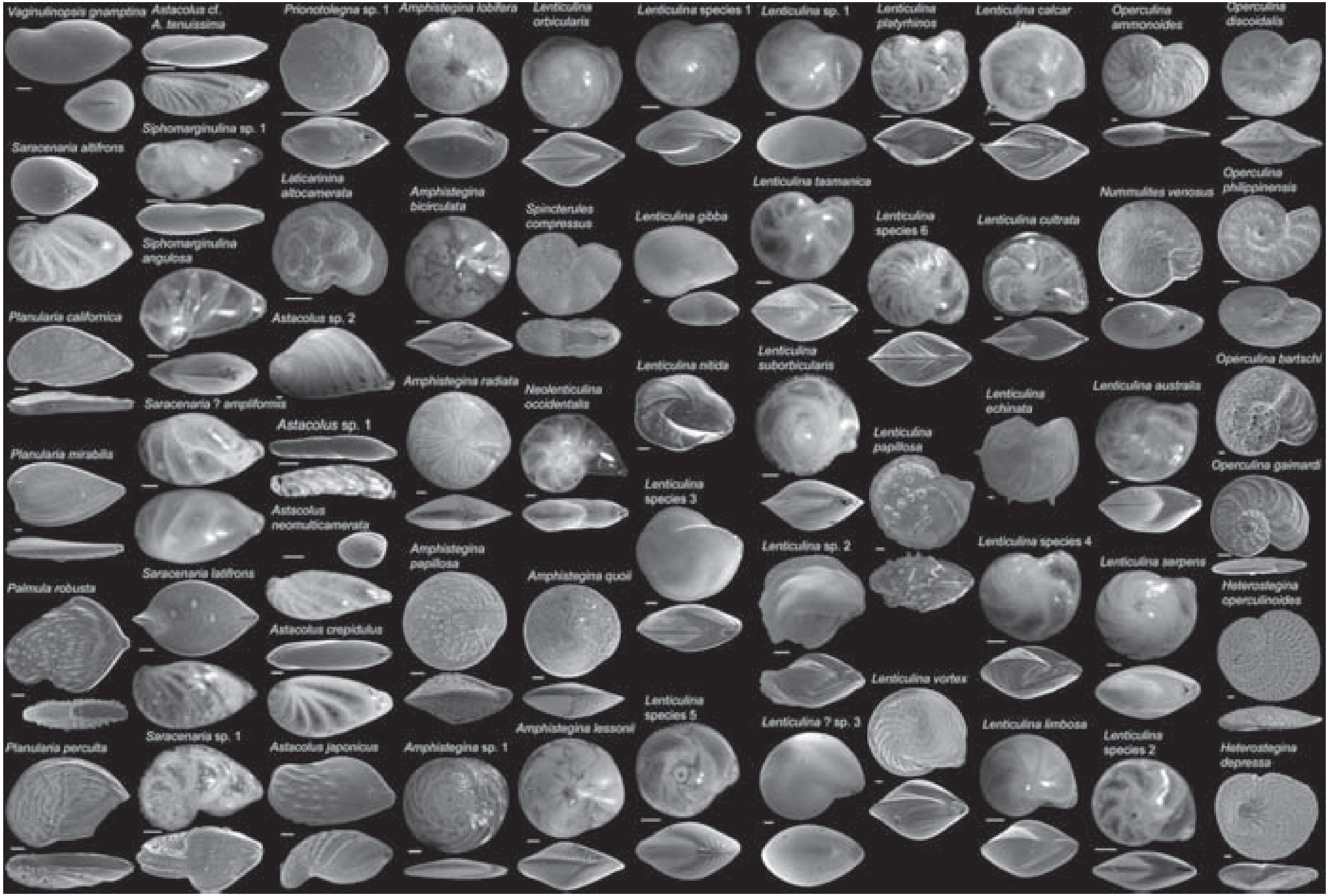


Plate 20
Hyaline planispiral species. Scale bar = 0.1 mm.

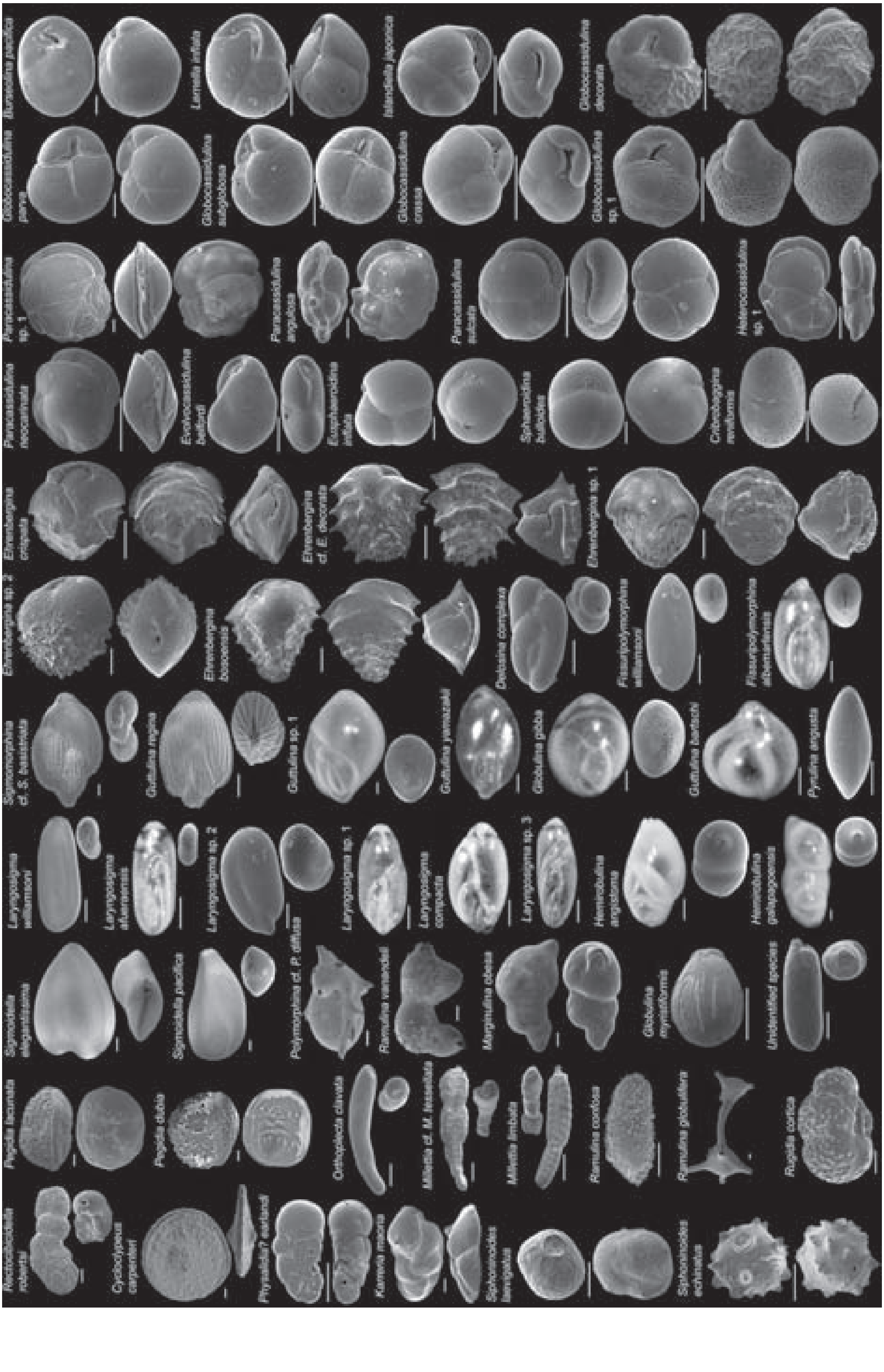


Plate 21
Other hyaline species. Scale bar = 0.1 mm.

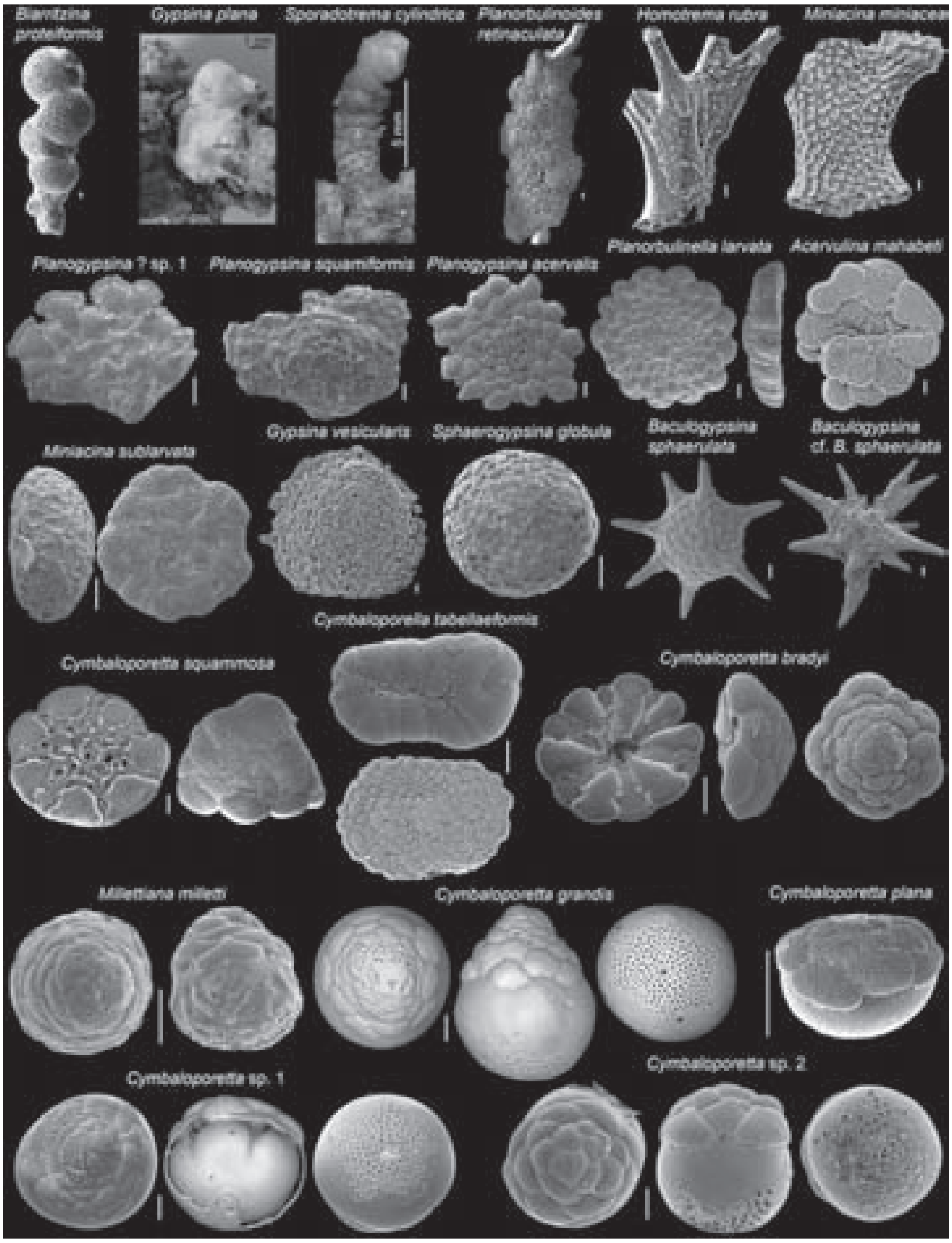


Plate 22
Other hyaline species. Scale bar = 0.1 mm.

Description of agglutinated species

All scale bars = 0.1 mm (for SEM)

Acupeina

Acupeina triperforata

Test elongate, large, early stage coiled, chambers enlarging gradually as added, later stage uncoiled and rectilinear, sutures radial, curved and depressed in the early stage, nearly straight in the adult; wall finely agglutinated; aperture single and interiomarginal in the enrolled stage, becoming terminal and multiple in the uncoiled stage, with often three rounded openings.

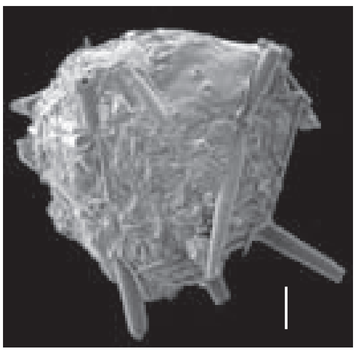
Mangrove swamps.
Systematics p. 257.

Aggerostramen

Aggerostramen rustica

Only isolated chambers of this multilocular test have been collected. Chambers polyhedral, more or less angular, constructed almost entirely of sponge spicules neatly cemented together, with some long spicules that project beyond the chamber itself; in the early stages, chambers attached to the substrate in uniserial series, later chambers somewhat irregular in arrangement, interconnected by tubular stolons; aperture a simple opening, or at the end of stolon-like necks.

Northern shelf, 600 m.
Systematics p. 253.

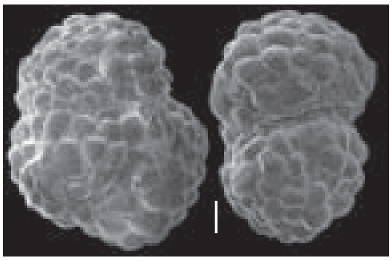


Alveolophragmium

Alveolophragmium zealandicum

Test spheroidal, planispiral involute with slightly depressed umbilical areas; around 6 chambers in the last whorl; wall coarsely agglutinated, surface rough; aperture an elongate slit at the base of the last formed chamber with a thin lip.

Northern shelf, 500 m.
Systematics p. 260.

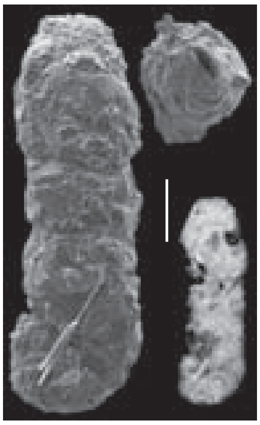


Ammobaculites

Ammobaculites agglutinans

Test elongate, early planispiral portion relatively small, compressed, excavated at the umbilici, with rounded periphery; linear portion cylindrical, slightly increasing in size toward the distal end, up to 6-7 chambers; wall made up of coarse sand grains, surface rough; aperture terminal, central, simple.

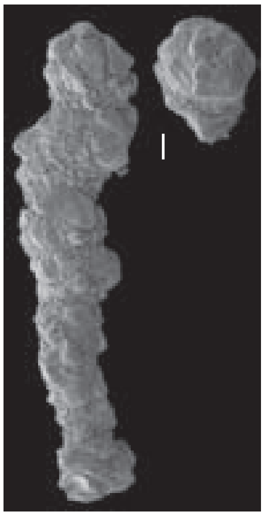
Bays, coastal lagoons.
Systematics p. 256.



Ammobaculites crassaformis

Test elongate, early coiled portion slightly compressed, diameter wider than rectilinear portion; chamber not distinctly marked, rectilinear ones of about equal size, usually slightly longer than wide; sutures of the coiled section not distinct, those of the rectilinear portion slightly depressed; wall made up of coarse sand grains, surface rough; aperture terminal, central, of irregular shape.

Northern shelf, 500 m.
Systematics p. 256.



Ammobaculites exiguus

Test small, elongate, early portion close coiled, later rectilinear, rounded in section; wall coarsely agglutinated; aperture terminal, rounded.

Coastal lagoons, mangrove swamps, estuaries.
Systematics p. 256.

Ammobaculites reophaciformis

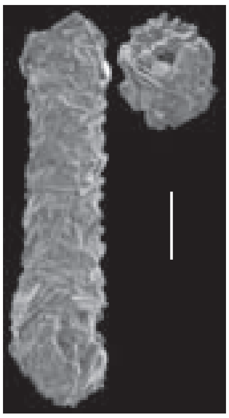
Test elongate, early portion a small, indistinct coiled stage, later and by far the larger part uncoiled, linear, circular in transverse section, and progressively increasing in size; chambers fairly distinct; sutures slightly depressed; wall composed of angular fragments, smoothly finished; aperture circular, terminal, simple, occasionally on a slight neck.

Southwestern lagoon, strong currents, 40 m.
Systematics p. 256.

Ammobaculites cf. A. subcatenulatus

Test small with an elongate cylindrical rectilinear stage of constant diameter, positioned symmetrically above the coiled initial stage; coil somewhat compressed, slightly larger in diameter than the rectilinear stage; wall coarsely arenaceous, mostly composed of fragments of sponge spicules, inflated and circular in cross section; chambers indistinct, sutures obscured by the coarse agglutinate; aperture terminal, in the middle of the apertural face. This species resembles *Ammobaculites* cf. *A. subcatenulatus*, but differs in the less distinct chambers and the agglutinated sponge spicules.

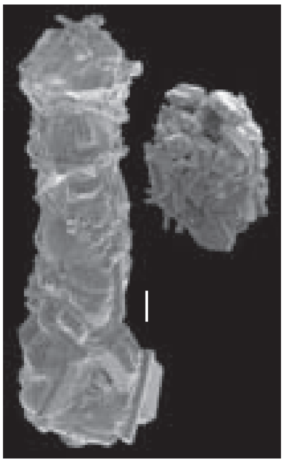
Coastal bays.
Systematics p. 256.



Ammobaculites villosus

Test elongate; early coiled part larger in diameter than the later uniserial part; uniserial part with a constant diameter throughout; chambers indistinct, except the last ones, which are slightly inflated; wall coarsely agglutinated, the agglutinated grains including sponge spicules; aperture terminal somewhat obscured by the agglutinated grains.

Northern shelf, 600 m.
Systematics p. 256.



Ammodiscus

Ammodiscus gullmarensis

Test free, small, consisting of several slightly overlapping whorls; sutures distinct; test flattened, slightly biconcave, tending to irregular coiling in last whorls; periphery rounded; wall agglutinated with fairly large amount of cement; aperture semicircular at the open end of the tubular chamber.
Southwestern lagoon, 30 m.
Systematics p. 253.

Ammodiscus pacificus

Very large test, often more than 2 mm in diameter; globular proloculus followed by planispirally enrolled, undivided tubular second chamber, later coils covering about two fifths of the previous ones; tubular chamber not compressed, increasing slightly in diameter as growing; wall agglutinated smoothly finished, with a great amount of reddish-brown cement; aperture semicircular at the open end of the tubular chamber.

Northern shelf, 600 m.
Systematics p. 253.

Ammolagena

Ammolagena clavata

Test commonly attached to shell fragments, up to 1 mm in length, large ovoid proloculus followed by a narrower tubular chamber, generally rectilinear at it first stage; wall finely agglutinated, smoothly finished, reddish-brown in color; aperture terminal, rounded.

Northern shelf, 600 m.
Systematics p. 253.

Ammomarginulina

Ammomarginulina ensis

Test much compressed, enrolled and planispiral in early stage, later uncoiled with oblique sutures; wall coarsely arenaceous, surface rough; aperture terminal, produced on a neck.

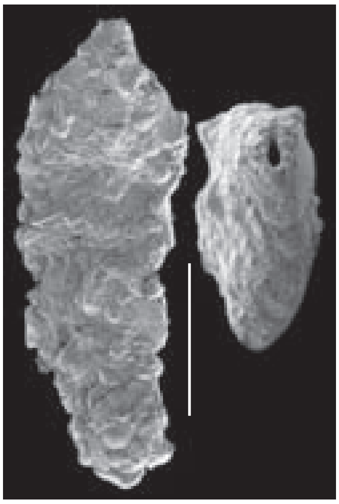
Northern shelf, 600 m.
Systematics p. 256.

Ammoscalaria

Ammoscalaria compressa

Test elongate, much compressed; periphery subacute; chambers indistinct, increasing rapidly in size as added, later becoming broad and chevron-shaped; wall coarsely agglutinated, surface rough; aperture narrow, terminal, elongate, produced.

Northern shelf, 600 m.
Systematics p. 256.

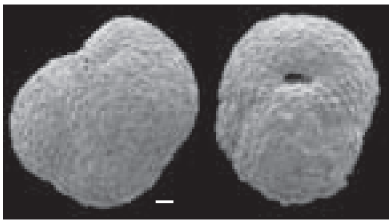


Ammosphaeroidina

Ammosphaeroidina sphaeroidiniformis

Test free composed of a spiral earlier portion, the later portion of the adult made-up of usually three large globose chambers, a large one on one side and two smaller ones on the other side; wall rather coarsely agglutinated; aperture at the inner side of the last formed chamber.

Northern shelf, 600 m.
Systematics p. 257.

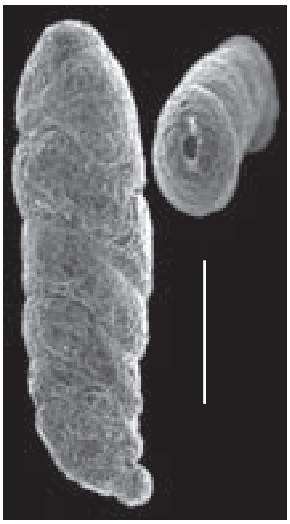


Ammotium

Ammotium fragile

Test small, compressed, planispirally enrolled and evolute in the early stage, later uncoiled, rectilinear; sutures distinct, curved back toward the proloculus at the inner margin, becoming chevron-like in the later chambers; wall thin, fragile finely agglutinated; aperture ovate, terminal, at the dorsal angle of the final chamber.

Coastal lagoons, mangrove swamps.
Systematics p. 256.



Ammotium salsum

Test free, compressed, ovate in outline, planispirally enrolled and evolute in the early stage, with a tendency to uncoil; sutures strongly oblique, later chambers extending back toward the proloculus at the inner margin; wall coarsely agglutinated; aperture simple, rounded, terminal, at the dorsal angle of the final chamber.

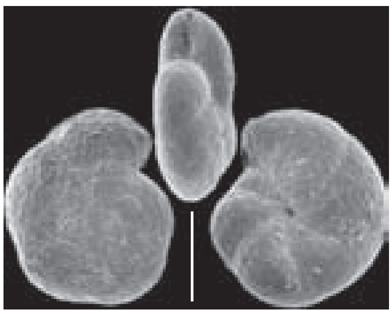
Coastal lagoons, estuaries, mangrove swamps.
Systematics p. 256.

Arenoparrella

Arenoparrella mexicana

Test free, in a low trochospiral coil, chambers increasing gradually in size, sutures radial, periphery rounded; wall finely agglutinated, surface smooth and polished; primary aperture a straight to curved slit surrounded by a thin and delicate lip, beginning near the base of the apertural face and directed upward across the median plane with an angle to the plane of coiling, supplementary openings present at the apex of the final chamber.

Mangrove swamps, marshes.
Systematics p. 259.

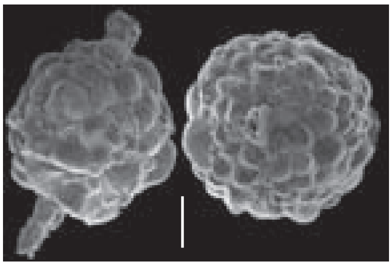


Armorella

Armorella sphaerica

Test free, unilocular, approximately spherical, furnished with a variable number of extended tubes of different length, with an aperture at the end of each tube, but frequently does not possess characteristic appendages, broken tube leaving little trace; wall firm, but thin, constructed of fine sand, generally smooth owing to its homogeneous construction, but incorporated sand grains may be larger than the thickness of the wall, projecting and giving a rough appearance to the test.

Northern shelf, 600 m.
Systematics p. 252.

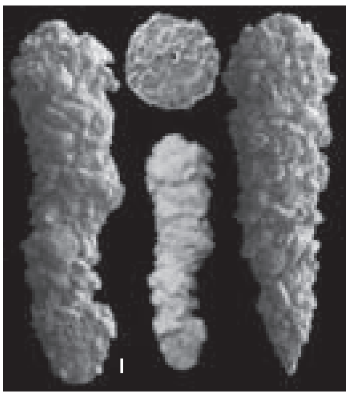


Bigenerina

Bigenerina nodosaria

Test elongate, the early portion composed of a biserial group of chambers, considerably flattened, increasing progressively in size; later portion composed of an uniserial series of chambers, circular in cross section, usually less in width than the biserial portion; wall usually coarsely arenaceous; aperture terminal, small, rounded.

Northern shelf, 200 m.
Systematics p. 263.

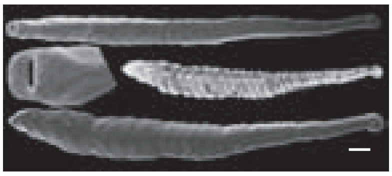


Bolivinopsis

Bolivinopsis elongata

Test very long; early planispiral portion small and compressed, composed of 7-8 chambers; biserial rectilinear portion very long with numerous chambers, increasing gradually in width and in thickness, thickest along the median line and thinning toward the margin that is subacute; sutures oblique, slightly depressed; wall finely arenaceous, polished; aperture an arch at the base of the last-formed chamber.

Northern shelf, 600 m.
Systematics p. 257.

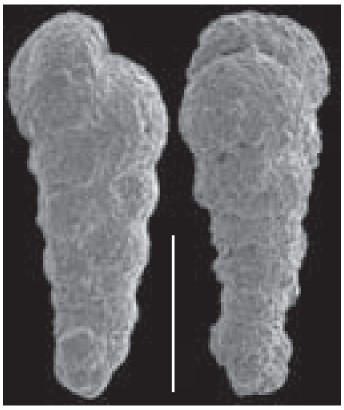


Caronia

Caronia exilis

Short triserial initial stage with minute subglobular chambers; later biserial with about 6 pairs of appressed globular chambers separated by depressed sub-horizontal sutures; test rather coarsely agglutinated; aperture a symmetrical interiomarginal elongate arch at the base of the last chamber.

Coastal lagoons, mangrove swamps, estuaries.
Systematics p. 259.

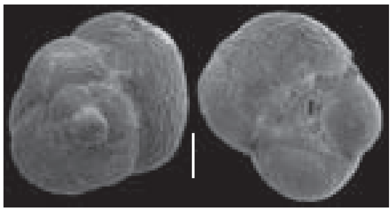


Carterina

Carterina spiculotesta

Tests trochospiral throughout with chambers increasing rapidly in size; the last whorl comprises only 2-3 chambers; deep umbilicus that may be filled up with a spicular mass that may extend into a peripheral flange; the first (about 10) chambers are brownish in color, the other ones been yellowish or white; wall made of spicules that are elongated, fusiform, somewhat parallel to the periphery on the spiral side and radial on the umbilical side.

Coral-reef lagoon and outer reef 10-100 m, crawling under coral rubble or algae, protected from sunlight.
Systematics p. 282.

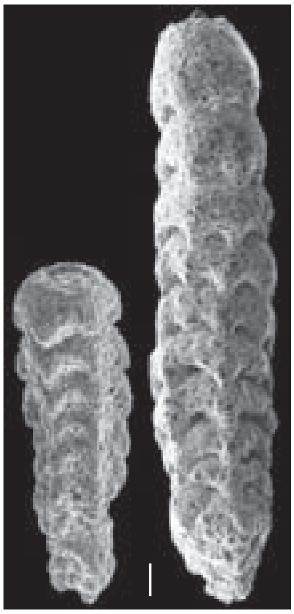


Clavulina

Clavulina difformis

Test elongate with a short triangular triserial stage; the later uniserial stage polygonal to rectangular in cross section; chamber walls slightly concave, extending back along the angles of the test, resulting in a lobate outline; sutures distinct, depressed; wall roughly textured; aperture terminal, centered, with a single valvular tooth.

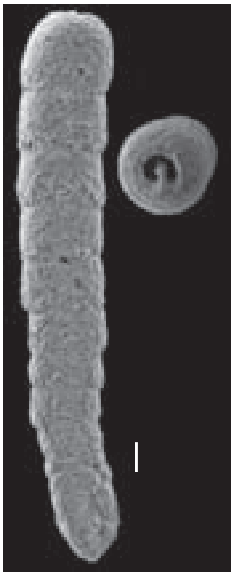
Coral-reef lagoon, mostly near coral reefs.
Systematics p. 262.



Clavulina multicamerata

Test elongated with an initial trihedral section with sharp periphery, later becoming cylindrical; early portion triserially arranged; the rectilinear stage is circular in cross section, with chambers uniform in size and separated by distinct, depressed sutures; wall coarsely arenaceous; aperture rounded with a tooth on the last formed chamber.

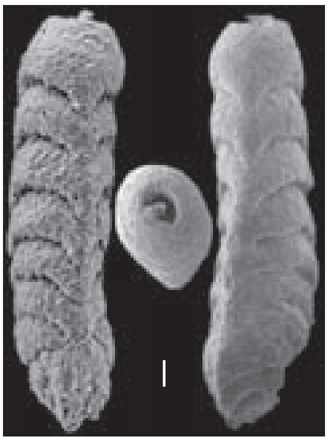
Coral-reef lagoon, Bay of Prony, 10-30 m, rare.
Systematics p. 262.



Clavulina pacifica

Test elongated with an initial portion triserial becoming uniserial at about one third from the pointed apical end; test triangular in cross section; chambers slightly inflated and strongly curved backwards at each corner; sutures distinct in the triserial portion, depressed in the uniserial part; wall finely arenaceous; apertural face slightly convex; aperture central, rounded with a simple toothplate.

Coral-reef lagoon, mostly near coral reefs.
Systematics p. 262.



Clavulina subangularis

Test elongated with an initial portion triserial becoming uniserial; test triangular in cross section, the angles carinate; sides slightly concave; sutures weakly distinct; chambers strongly curved backwards at each corner; wall rather coarsely arenaceous, smoothly finished; apertural face convex; aperture central, rounded with a simple toothplate.

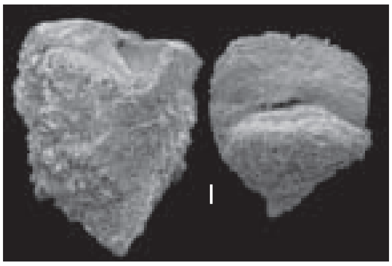
Northern shelf, 600 m.
Systematics p. 262.

Connemarella

Connemarella rudis

Test conical, with early triserial arrangement followed by broad and low biserial chambers that increase rapidly in breadth and height in the early portion, less rapidly later; apertural face flattened, circular; sutures horizontal obscured by the agglutinate material; wall coarsely agglutinated with calcareous cement; aperture a broad low arch, in a reentrant at the base of the apertural face.

Northern shelf, 600 m.
Systematics p. 262.

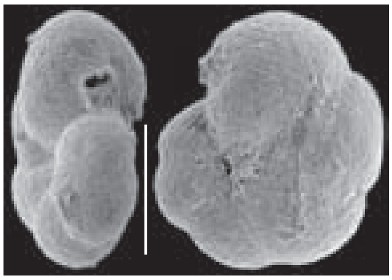


Cribrostomoides

Cribrostomoides jeffreysii

Test free, discoid, planispirally enrolled, and partially evolute; wall thick, coarsely agglutinated, and firmly cemented; aperture an oval to slitlike areal opening slightly above the base of the apertural face, bordered by a well-developed lip.

Rare, but widely distributed in areas opened to the sea.
Systematics p. 257.



Cribrostomoides spiculotestus

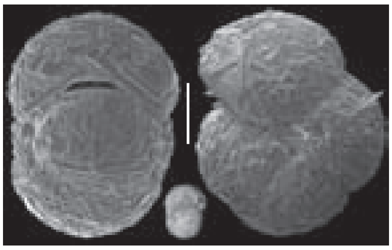
Test free, compressed, planispiral, not completely involute; umbilical region depressed, periphery rounded, broadly lobulate; chambers slightly inflated, increasing gradually in size as added; sutures distinct, slightly depressed and slightly curved; wall thin, composed of fine sand grains and sponge spicules of various sizes, surface neatly finished; aperture crescentic, areal, slightly above the base of the apertural face, bordered by a well-developed lip.

Outer coral reef, 100 m.
Systematics p. 257.

Cribrostomoides subglobosus

Test subglobose, initially streptospirally coiled, later planispiral involute; umbilical area usually depressed; 5-7 broad chambers; periphery moderately lobulate; sutures radial; aperture an elongated slit at the base of the apertural face

Northern shelf, 700 m.
Systematics p. 257.

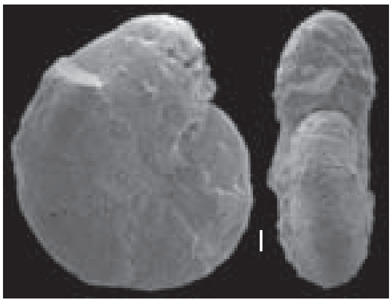


Cyclammina

Cyclammina subtrullissata

Test nautiloid, compressed, planispiral, involute, slightly depressed in the umbilicus; peripheral margin more or less rounded; 6-9 chambers in the last whorl, separated by slightly depressed, somewhat sinuate sutures; wall arenaceous with heterometric grains, surface smoothly finished, colour brown; aperture crescentic, at the base of the last-formed chamber.

Northern shelf, 600 m.
Systematics p. 260.



Cyclammina trullissata

Test nautiloid, biconvex, flat centrally, planispiral, involute, distinctly depressed in the umbilicus; peripheral margin more or less rounded; 9-11 chambers in the last whorl, separated by slightly depressed, straight to slightly sigmoidal sutures; wall arenaceous, very smoothly finished, polished, except the apertural face; color brown; aperture crescentic, at the base of the last-formed chamber.

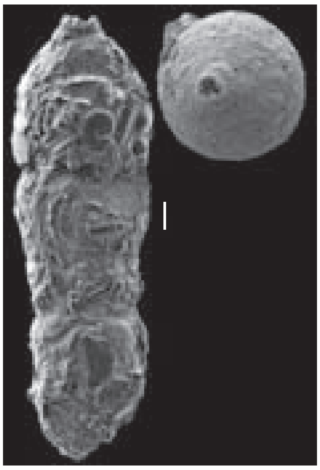
Northern shelf, 700 m.
Systematics p. 260.

Cylindroclavulina

Cylindroclavulina bradyi

Test stout, cylindrical, the early triserial portion not well shown exteriorly, the later uniserial section large, with distinct depressed sutures; wall composed of heterometric sand grains, usually with a smooth exterior; aperture at the end of a short neck, usually 3 or 4 radiate slits.

Bay of Prony 10-30 m.
Systematics p. 263.

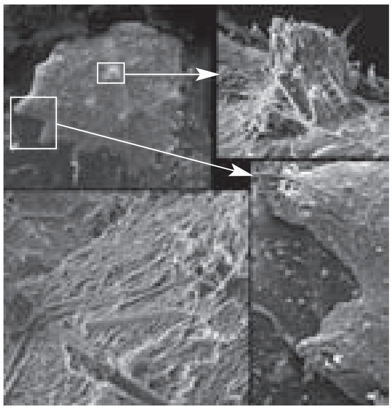


Diffusilina

Diffusilina humilis

Test attached, irregular in outline, up to 3 mm or more in diameter, flattened; wall agglutinated, including sponge spicules, smoothly finished; upper surface with a few scattered pustules constructed of sand and mud particles similar to the rest of the wall but lacking cement, so that the interstitial pores could serve as an aperture.

Widely distributed, 0-100 m.
Systematics p. 251.

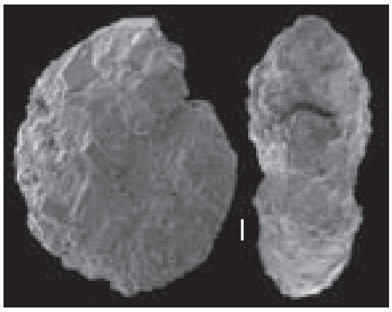


Discammina

Discammina compressa

Test planispiral, compressed, lenticular, somewhat involute, depressed in the umbilicus; peripheral margin acute or somewhat rounded; chambers and sutures not distinct; wall coarsely agglutinated, surface rough, color brown; aperture crescentic, at the base of the last-formed chamber.

Northern shelf, 600 m.
Systematics p. 256.

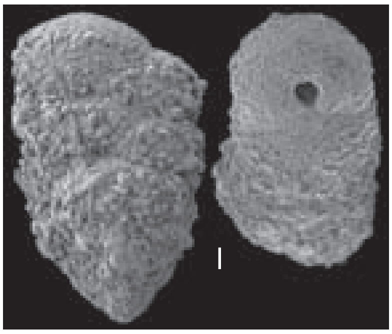


Dorothia

Dorothia pseudoturris

Test elongate, tapering, circular in end view; apex bluntly pointed, apertural end concave; early stage trochospiral enrolled, then reduced to biserial; chambers numerous, slightly inflated increasing very slowly in size so that test has nearly parallel sides; sutures indistinct, very slightly depressed; wall coarsely agglutinated, rough; aperture a rather small arch, in the center of the inner margin of the last formed chamber.

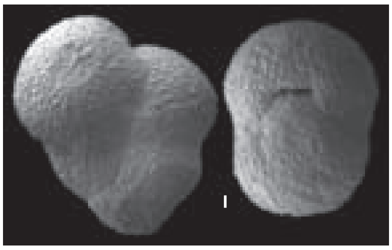
Northern shelf, 200 m.
Systematics p. 261.



Dorothia rotunda

Test short, stout and subrotund; earlier triserial chambers globose, quickly followed by biserial subglobose chambers, slightly compressed laterally; wall arenaceous, mostly rounded grains; aperture a crescentic slit in a slight depression of the apertural face.

Northern shelf, 300 m.
Systematics p. 261.



Dorothia sp. 1

Test free, elongate, early stage trochospiral enrolled, then reduced to biserial and rounded in section; biserial portion slightly arched, with numerous distinct chambers; sutures depressed; wall agglutinated, solid; aperture an arch at the inner margin of the final chamber.

Northern shelf, 200 m.
Systematics p. 261.

Duquepsammia

Duquepsammia bulbosa

Test compressed, the early portion coiled, involute, nearly circular, the later portion narrower, biserial, rectilinear; wall smoothly finished; aperture at the base of the last-formed chamber tending to become terminal.

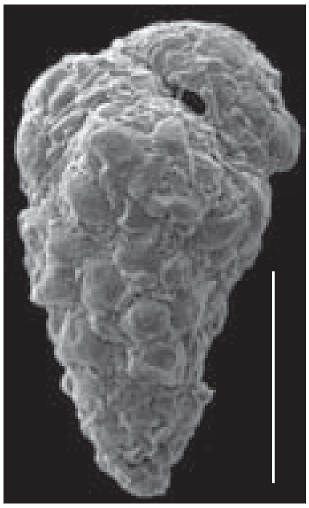
Northern shelf, 700 m.
Systematics p. 258.

Eggerella

Eggerella australis

The test is small, conical and with early chambers obscure, trochospirally arranged, then becoming triserial, inflated; wall rather coarsely arenaceous; aperture at the inner margin of the apertural face.

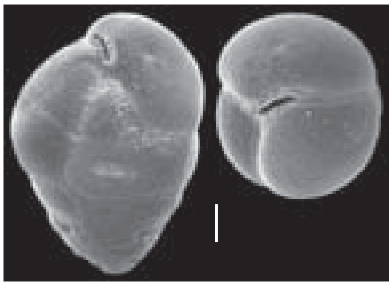
Northern shelf, 600 m.
Systematics p. 261.



Eggerella bradyi

Test pyramidal, rounded in transverse section, trochospiral then triserial; chambers distinct, inflated, subsphaerical, increasing regularly in size as added; sutures distinct, depressed; wall very finely arenaceous, smooth, light gray in color; aperture an elongated slit at the inner margin of the last formed chamber, occasionally with a thickened lip.

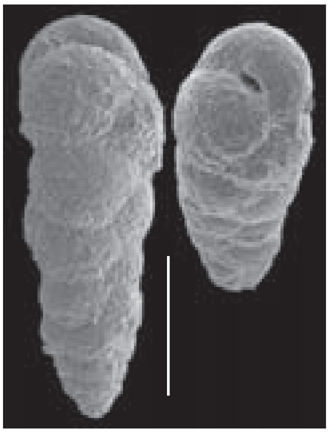
Northern shelf, 600 m.
Systematics p. 261.



Eggerella pusilla

Test elongate, slightly tapering, rounded in transverse section, sides nearly parallel for most of their length; arrangement trochospiral in the earliest stage, soon becoming triserial; chambers distinct, slightly inflated, increasing very slightly in size as added in the adult; sutures distinct, depressed, sometimes filled and obscured; wall finely arenaceous; aperture arched, at the inner margin of the last formed chamber.

Coastal bays.
Systematics p. 261.



Gaudryina collinsi

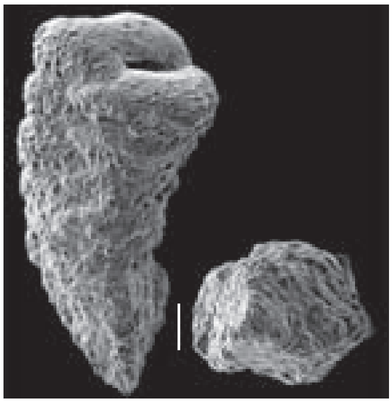
Test elongate; large triserial early stage, with almost triangular shape in transverse section and bluntly rounded angles; sutures indistinct; biserial portion of nearly uniform width throughout, rounded or broadly oval in section composed of 4-5 pairs of the same size; chambers, with distinct, slightly depressed sutures; wall coarsely arenaceous, roughly finished; aperture high, narrow, in a deep re-entrant of the inner margin of the last chamber.

Northern shelf, 600 m.
Systematics p. 260.

Gaudryina quadrangularis

Test elongate, tapering abruptly at the initial end; early stage triserial and triangular in section with acute angles and sutures obscure, later becoming biserial and quadrangular in cross-section; apertural end of the test abruptly truncated; wall agglutinated, solid, more or less smoothly finished; aperture an elongate orifice at the inner margin of the final chamber with in end view a sort of rounded lip above and a depression on either side.

Deeper parts of the coral-reef lagoon and outer reef, 30-100 m.
Systematics p. 260.

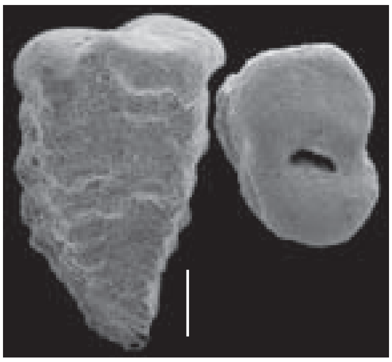


Gaudryina

Gaudryina attenuata

Test elongate, somewhat sinuate or twisted, commencing with a sharply triangular series of chambers arranged triserially, followed by an irregular biserial arrangement and finally by two or three pairs of subglobular chambers; wall roughly finished; aperture a low opening at the base of the last-formed chamber.

Outer reef, 100 m.
Systematics p. 260.



Gaudryina convexa

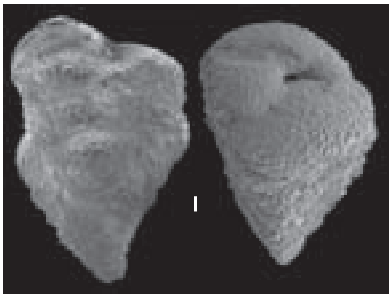
Test triangular in outline, broad at the apertural end and rapidly tapering to the initial end, one face nearly flat, the other strongly convex and with deeper sutures; apertural end obliquely truncate; wall rather coarsely arenaceous; aperture elongate, at the base of the last chamber in a distinct depression.

Northern shelf, 600 m.
Systematics p. 260.

Gaudryina robusta

Test large, stout, early portion sharply triangular, triserial, sides somewhat concave; later chambers biserial, rounded; wall made up of fine sand grains; surface somewhat rugose; sutures slightly depressed; aperture a low slit at the base of the last chamber, in a deep re-entrant.

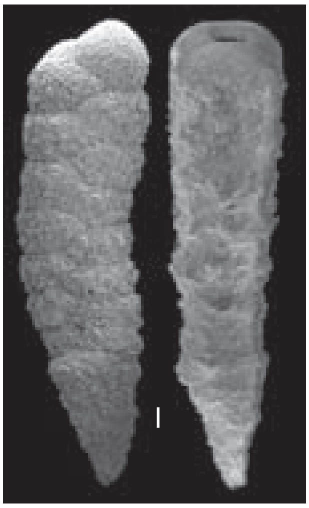
Northern shelf, 600 m.
Systematics p. 260.



Gaudryina tenuis

Test elongate, composed of numerous chambers; early portion triserial, triangular in cross section, with sharp angles; biserial chambers numerous, nearly as high as broad, in later development each chamber running nearly to the opposite side of the test; wall roughly finished; aperture at first a slit at the base of the last formed chamber, becoming more nearly circular in the chambers reaching the opposite side.

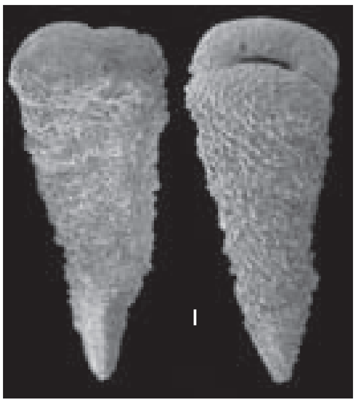
Northern shelf, 600 m.
Systematics p. 260.



Gaudryina sp. 1

Test elongate, conical, early stage triserial and subtriangular in section, later becoming biserial and rounded in section; chambers increasing regularly in size as added, giving a very regular conical shape to the test; wall agglutinated, roughly finished; aperture an arch at the inner margin of the final chamber,

Northern shelf, 600 m.
Systematics p. 260.



Gaudryina sp. 2

Test elongate, tapering abruptly at the initial end; early stage triserial and triangular in section with keeled angles and sutures obscure; later becoming biserial, one keel dividing so that a quadrangular cross section with acute angles results; apertural end of the test abruptly truncated; wall agglutinated, solid, smoothly finished; aperture an elongate orifice at the inner margin of the final chamber with a narrow lip.

This species resembles *G. austinana* Cushman, from the cretaceous.

Northern shelf, 600 m.
Systematics p. 260.

Glomospira

Glomospira fijiensis

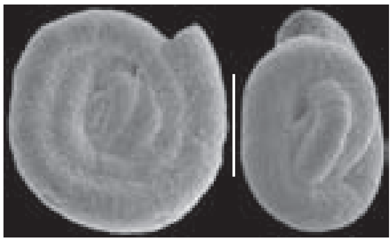
Proloculus followed by an undivided tubular chamber that is irregularly streptospirally coiled; wall finely agglutinated; aperture at the open end of the tube. Sometimes referred to *G. glomerata*, but differs from this species in lacking the meandering enrolment of the tube.

Coastal lagoons, mangrove swamps.
Systematics p. 254.

Glomospira gordialis

Proloculus followed by undivided tubular second chamber that is streptospirally coiled to somewhat irregularly planispiral; wall finely agglutinated; aperture at the open end of the tube.

Coastal lagoons, estuaries.
Systematics p. 254.

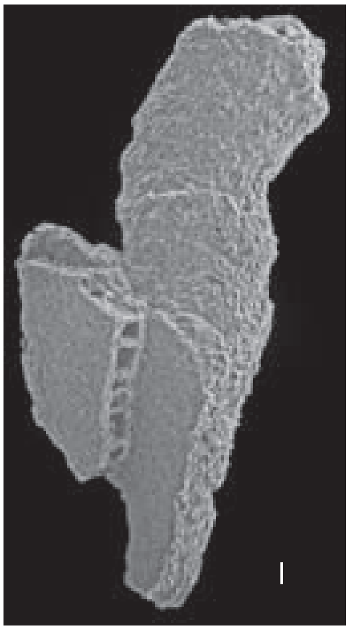


Haddonia

Haddonia torresiensis

Test large, attached, early stage coiled, later uncoiled, uniserial, irregular, but complete specimens are missing; chambers broad and low, irregular in size and shape, at least twice as wide as high; wall coarsely agglutinated, with considerable cement, wall pierced by numerous large pores aligned perpendicular to the surface; aperture terminal, areal, an irregular slit.

Southwestern lagoon, outer reef, 50-100 m.
Systematics p. 261.



Haplophragmoides

Haplophragmoides canariensis

Test planispiral and partially involute, laterally compressed; peripheral edge rounded and slightly lobulate; chambers slightly inflated and with rounded periphery, 5-9 in the last whorl; sutures distinct in the early stage later becoming depressed; umbilical area depressed; wall finely arenaceous, usually thin and smoothly finished; aperture arched, situated at the inner margin of the last chamber, surrounded by a projecting border. The relatively large aperture observed in the specimens from New Caledonia corresponds to the initial description by d'Orbigny.

Outer reef, 100 m.
Systematics p. 255.

Haplophragmoides pusillus

Test small, planispirally enrolled, involute becoming slightly evolute, compressed and biumbilicate, chambers inflated and margin distinctly lobulate; wall thin, with moderately coarse agglutinate, exterior slightly rough; aperture an elongate low equatorial slit at the base of the apertural face, with a slight lip.

Coastal bays, shallow coastal areas.
Systematics p. 256.

Haplophragmoides wilberti

Test planispirally enrolled, involute, biumbilicate, sides somewhat flattened, chambers inflated and margin weakly lobulate; wall thin, finely agglutinated, smoothly finished; aperture an elongate equatorial slit at the base of the apertural face.

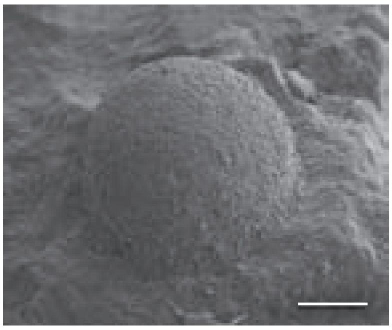
Coastal lagoons, mangrove swamps, marshes.
Systematics p. 256.

Hemisphaerammina

Hemisphaerammina bradyi

Test attached, a single hemispherical chamber; wall agglutinated, smooth due to considerable cement; no apparent aperture, communication with the exterior probably occurs through interstitial pores.

Southwestern lagoon, 40 m.
Systematics p. 252.



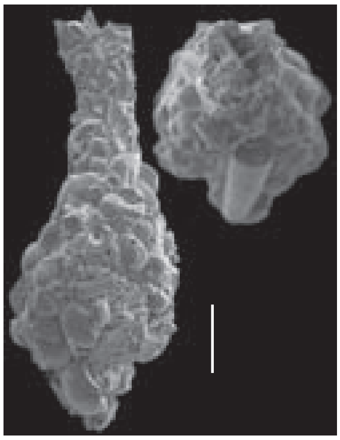
Hormosinella

Hormosinella distans

Test elongate; chambers distinct, fusiform, tapering at the two ends into long and slender stolonlike tubes; aperture terminal.

Because of the elongate slender tubes between adjacent chambers, the tests are delicate and only isolated chambers were found.

Northern shelf, 700 m.
Systematics p. 254.

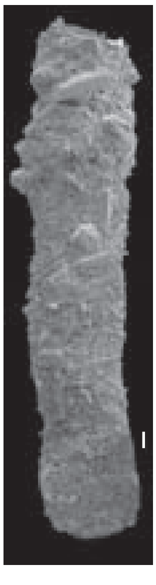


Hyperammina

Hyperammina friabilis

Test elongate, subcylindrical, straight, often tapering toward the apertural end; rather large globular proloculus followed by an elongate, sub-cylindrical second chamber, slightly less in diameter than the proloculus; wall thick, loosely cemented, composed of sand grains with a varying amount of sponge spicules; aperture rounded, at the end of the chamber.

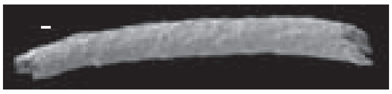
Northern shelf, 600 m.
Systematics p. 253.



Hyperammina novaezealandiae

Test elongate, cylindrical, unbranched, internally undivided; wall agglutinated formed of cemented sponge spicules longitudinally arranged on the outer surface; aperture at the end of the tube.

Northern shelf, 250 m.
Systematics p. 253.



Hyperammina spiculifera

Test elongate, basal end clavate, cylindrical portion slightly and gradually tapering to the apertural end; lines of growth distinct, slightly depressed; wall consisting of broken sponge spicules; external surface rough; aperture terminal rounded.

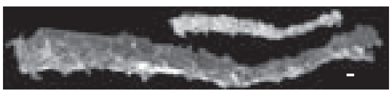
Northern shelf, 600 m.
Systematics p. 253.

Jaculella

Jaculella obtusa

Test elongate, tubular, proximal end closed, obtusely rounded, distal end slightly broader; wall thick, agglutinated, with firmly cemented grains, surface rough; aperture at the open end of the tube.

Northern shelf, 700 m.
Systematics p. 253.

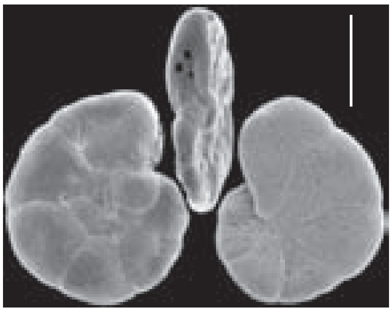


Jadammina

Jadammina macrescens

Test free, a flattened trochospiral coiling that tends to be nearly planispiral in the adult, chambers increasing gradually in size as added, sutures radial to slightly curved, periphery rounded; wall finely and sparsely agglutinated on a proteinaceous base; primary aperture a low interiomarginal equatorial slit, with one or more supplementary areal openings in the lower portion of the apertural face, each bordered by projecting lip.

High marshes.
Systematics p. 259.



Karreriella

Karreriella bradyi

Test stout, somewhat elongate, tapering very slightly until near the initial end where it tapers abruptly to the somewhat blunt end; triserial portion nearly circular in cross section, of few chambers; the later biserial portion making up about three fourths of the test, slightly compressed; chambers overlapping, broadly elliptical in cross section, inflated; sutures depressed; wall finely arenaceous, smooth; aperture oval, slightly back from the inner margin of the last chamber, with a border raised somewhat and thickened, supplementary apertures present on the apertural face.

Northern shelf, 600 m.
Systematics p. 261.

Karreriella sp. 1

Test elongate, stout, early stage trochospiral enrolled, with up to five chambers per whorl, then reduced to triserial and later biserial, increasing very slowly in size so that test has nearly parallel sides, circular in section; wall finely agglutinated and canaliculate; aperture slightly above the base of the apertural face, surrounded by a distinct lip.

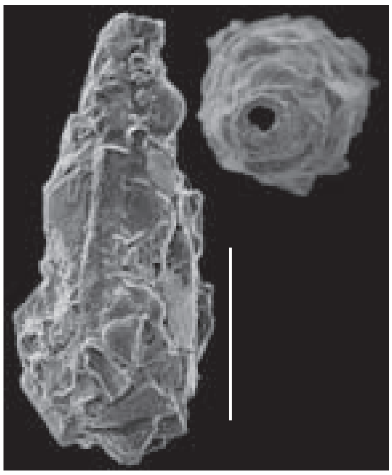
Northern shelf, 600 m.
Systematics p. 261.

Lagenammina

Lagenammina arenulata

Test free consisting of a single oval, flask-shaped chamber; wall coarsely arenaceous, formed of closely agglutinated sand grains of variable size and roughness; aperture a terminal, rounded, projecting opening, without a distinct neck.

Outer coral reef, 100 m.
Systematics p. 252.



Lagenammina cf. *L. bulbosa*

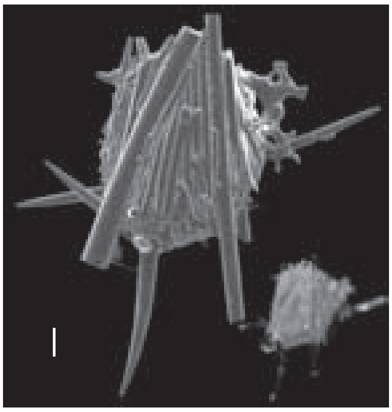
Test free consisting of a single oval chamber; wall coarsely agglutinated, formed of big fragments of shells; aperture terminal, rounded, on a slender neck. This species resembles *L. bulbosa* as shown by Hayward *et al*. (2010), but lives in shallower waters.

Outer coral reef, 100 m.
Systematics p. 252.

Lagenammina spiculata

Test unilocular, rounded or oval; wall agglutinated, mostly composed of sponge spicules, including projecting spicules; aperture somewhat produced.

Northern shelf, 700 m.
Systematics p. 252.



Latentoverneuilina

Latentoverneuilina indiscreta

Test triserial throughout, but becoming more loosely triserial with growth, until the final chamber appears uniserial, triangular in section but with distinctly rounded angles, septa somewhat obscure externally; wall very thick, agglutinate of varied sized particles, with a smoothly finished and polished surface; aperture in the adult terminal, rounded, simple and slightly produced on a thick-walled apertural neck.

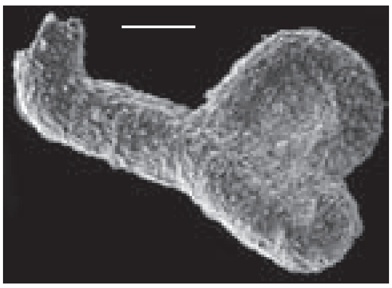
Northern shelf, 600 m.
Systematics p. 260.

Lituotuba

Lituotuba lituiformis

Test free, early portion with irregular to planispirally coiled tubular chamber, finally becoming uncoiled and irregularly rectilinear; wall finely agglutinated with a yellowish-brown cement, surface smoothly finished; aperture rounded at the open end of the tubular chamber.

Southeastern coast of the Grande Terre 30 m.
Systematics p. 255.

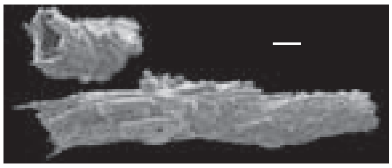


Marsipella

Marsipella cylindrica

Test tubular, slender of nearly uniform diameter; wall composed almost entirely of sponge spicules, usually in fragments, laid side by side lengthwise of the test and strongly cemented; apertures at the end of the tube.

Outer reef, 100 m.
Systematics p. 251.

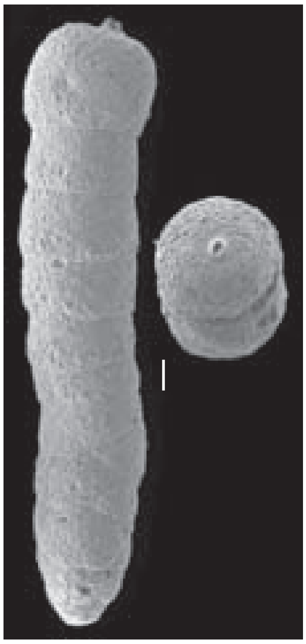


Martinottiella

Martinottiella bradyana

Test elongate, cylindrical, not tapering; early trochospiral coil with four to five chambers per whorl, later reduced to triserial, biserial, and an elongate final uniserial stage with chambers numerous, fairly distinct, increasing somewhat in height as added; sutures distinct, but very slightly depressed; wall arenaceous, slightly roughened; apertural face convex, aperture terminal, central, rounded, produced on a distinct neck.

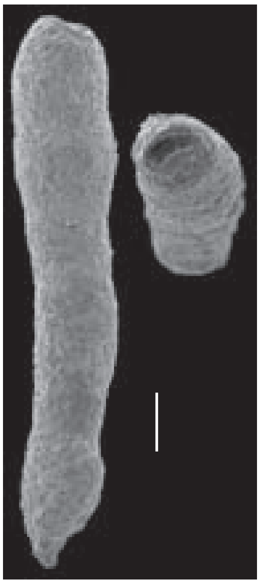
Northern shelf, 600 m.
Systematics p. 261.



Martinottiella sp. 1

Test elongate, cylindrical; early trochospiral coil with four to five chambers per whorl, later reduced to triserial, biserial, and an elongate final uniserial stage with chambers numerous; sutures indistinct; wall finely arenaceous; apertural face convex, aperture terminal, a large arcuate slit with a prominent lip, but without a distinct neck.

Northern shelf, 500 m.
Systematics p. 261.

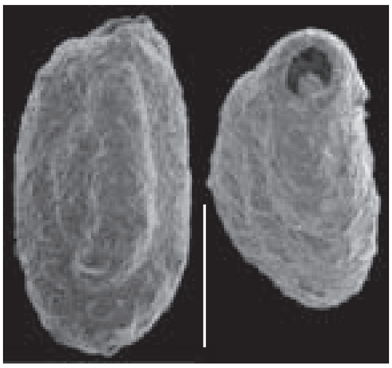


Miliammina

Miliammina fusca

Test with a quinqueloculine arrangement, elongate and ovate in section, with a rough surface; wall composed of well-sorted agglutinated grains; aperture terminal ovate with a small simple, agglutinated tooth.

Low salinity estuaries and coastal lagoons.
Systematics p. 254.



Miliammina obliqua

Ovate quinqueloculine test with early chambers lying oblique to the central axis; sutures depressed and distinct, periphery rounded; wall thin made up of well-cemented fine grains; aperture terminal and crescentiform.

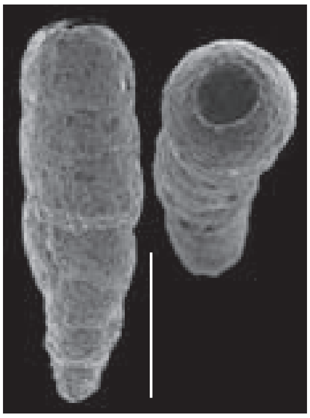
Estuaries, marshes, coastal lagoons.
Systematics p. 254.

Monotalea

Monotalea salsa

Early stage biserial, later uniserial and rectilinear; uniserial cylindrical chambers radially-symmetrical in cross section, separated by horizontal sutures; uniserial stage increasing only little in size in course of growth; wall finely agglutinated, thin; aperture terminal, large, rounded.

Mangrove swamps, marshes.
Systematics p. 258.

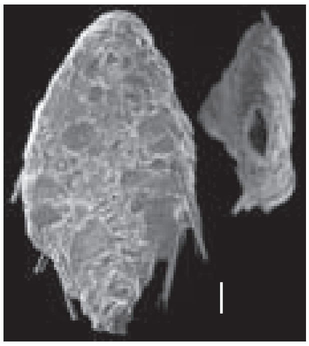


Nouria

Nouria armata

Test highly compressed, 3 to 5 chambers visible, rapidly increasing in size and arranged biserially; sutures nearly flush and obscure; wall consisting of coarse and irregular fragments neatly cemented together; smooth surface; marginal edges acute and usually smooth with sponge spicules built into the test and projecting at the periphery, directed backward from the aperture; aperture a terminal slit, sometimes with a slightly raised border.

Deep coastal bays, and southwestern lagoon.
Systematics p. 258.



Nouria harrisi

Test fusiform, circular to sub-circular in section; only two or three chambers visible, spirally arranged around the long axis of the test, the ultimate chamber terminating in a somewhat produced neck; sutures slightly depressed, but well marked, owing to the divergent angles at which the spicules are arranged in adjacent chambers; wall constructed entirely of sponge spicules, arranged roughly parallel to the long axis of the test; aperture terminal, rounded.

Southeastern coast of the Grande Terre and northern shelf, 60-600 m.
Systematics p. 258.

Nouria polymorphinoides

Test elongate, oval in cross section, early part spirally arranged around the long axis of the test, later biserial with strongly overlapping chamber sides; sutures flush but distinct; wall coarsely agglutinated, but usually neatly cemented; aperture terminal, ovate.

Southwestern lagoon, near the barrier and patch reefs.
Systematics p. 258.

Paratrochammina

Paratrochammina cf. P. simplissima

Test free, chambers in a trochospiral coil, periphery rounded; generally 3 coils with 4-5 chambers in the last-formed coil; sutures slightly depressed, oblique on the spiral side, radial on the umbilical side; wall agglutinated, smoothly finished; aperture single, interiomarginal, umbilical-extraumbilical, extending across the umbilicus over the margin of the penultimate chamber, but often obscured by agglutinated material deposited in the umbilical depression.

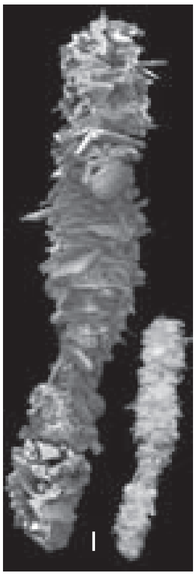
Southwestern lagoon and outer reef, 20-100 m.
Systematics p. 258.

Pelosina

Pelosina cylindrica

Test elongate, cylindrical, straight or slightly curved; diameter nearly uniform from end to end, extremities rounded; wall thick formed of fine grains and embedded shell fragments arranged perpendicular to the axis; interior surface quite smooth. Aperture simple, situated at the end of the test.

Northern shelf, 300 m.
Systematics p. 251.

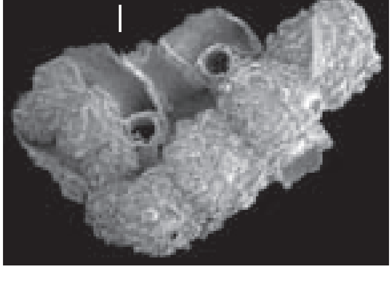


Placopsilina

Placopsilina bradyi

Test attached, early stage planispirally enrolled, later uncoiled, uniserial, in an irregular course over the base of attachment; chambers distinct, regularly added, inflated, rounded in section, increasing very little as added; wall coarsely agglutinated, but surface fairly smooth; aperture terminal, rounded.

Coral-reef lagoon and outer reef, 30-90 m.
Systematics p. 257.

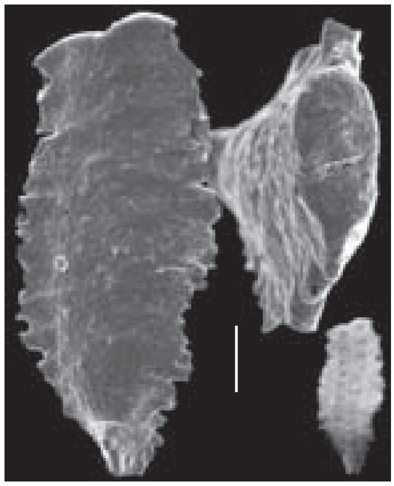


Plotnikovina

Plotnikovina timorea

Test elongate, broadest about half to two thirds the distance from the proloculus; early stage triserial, triangular in section, later biserially arranged; peripheral parts of biserial chambers cut off from the main chamber lumen, and commonly broken to appear as supplementary openings; sutures nearly horizontal; wall smoothly finished; aperture a low arch at the base of the final chamber.

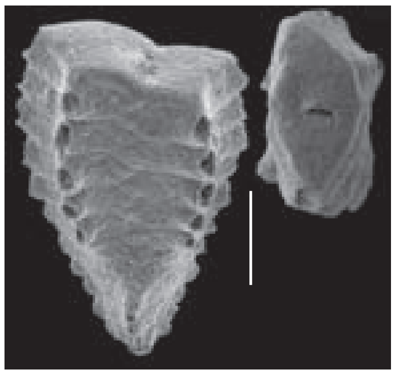
Outer reef, 100 m.
Systematics p. 262.



Plotnikovina transversaria

Test elongate, with short early triserial and triangular stage and later biserial stage, with a rhomboid section, chambers broad and low, lateral extremities distinctly produced at the chamber angle, an internal vertical partition then isolating a small distal chamberlet, the tip of the chamberlets commonly broken to leave a small opening at the surface; sutures slightly depressed, straight, at a slight angle from the horizontal; wall finely agglutinated; aperture a low basal arch with a distinct lip.

Outer reef and deep parts of the lagoon, 30-100 m.
Systematics p. 262.



Polystomammina

Polystomammina lobatula

Test low trochospiral of 2-3 whorls; periphery rounded, lobulate; spiral side somewhat involute, umbilical region depressed; chambers inflated, elongate, increasing rapidly in size as added; umbilical ends of chambers flaplike; sutures distinct, depressed, slightly curved; wall finely arenaceous, smoothly finished; primary aperture slitlike, at the base of the final chamber, supplementary aperture an arched opening at the proximal side of the umbilical chamber extension.

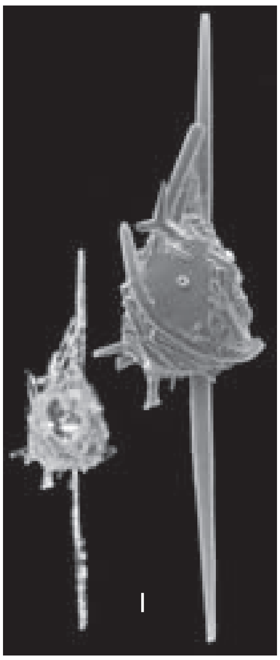
Northern shelf, 600 m.
Systematics p. 259.

Psammosphaera

Psammosphaera parva

Test unilocular composed of a small subsphaerical chamber; wall agglutinated, the agglutinate including an elongated spicule projecting on both sides of the test.

Northern shelf, 600 m.
Systematics p. 252.

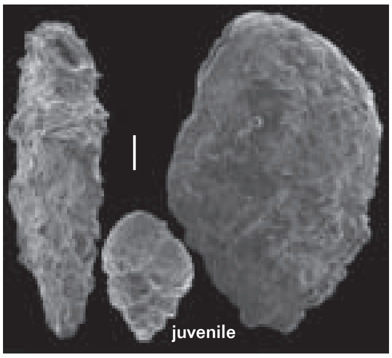


Pseudobolivina

Pseudobolivina brevis

Test leaf-shaped, median portion thickest, thinning towards the periphery that is narrowly rounded; chamber not very distinct, increasing rapidly in size as added, the final pair making up more than half the length of the test; wall thick composed of sand grains; surface rough; aperture a high interiomarginal arch extending up the final chamber face.

Northern shelf, 600 m.
Systematics p. 258.



Pseudobolivina cf. P. nasostoma

Test slender and elongate, biserial, tending to become uniserial, slightly compressed, slightly twisted and curved; periphery round, initial end acute; chambers numerous, the early ones small and compressed, increasing rapidly in width but slowly in height, the later chambers inflated, increasing rapidly in height; sutures depressed; wall finely agglutinated, thin, delicate; aperture subcircular, at the end of an elongated projection.

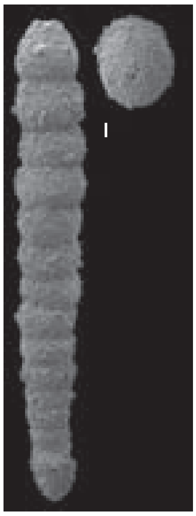
Northern shelf, 700 m.
Systematics p. 258.

Pseudoclavulina

Pseudoclavulina serventyi

Test elongate and composed by numerous chambers; initial trihedral portion small; uniserial part subcylindrical, slightly tapering, and consisting of numerous globular chambers; sutures horizontal, fairly distinct, depressed; wall coarsely arenaceous and roughly finished; aperture terminal that may consist of more than one opening in the middle of the rounded apertural end, but may be obscured by the agglutinated material.

Northern shelf, 600 m.
Systematics p. 262.

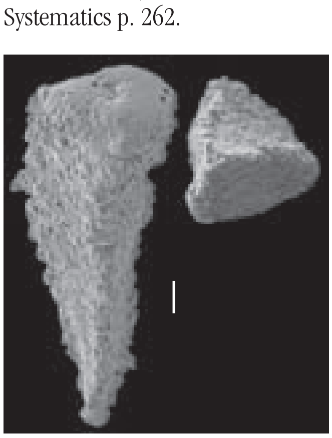


Pseudogaudryina

Pseudogaudryina concava

Test triangular in section throughout with slightly concave faces and sharp, somewhat serrate edges; chambers not inflated, sutures indistinct, later chambers developing a slightly overhanging margin giving the appearance of excavations in the lower part of the chamber; wall agglutinated; aperture a slit in a shallow re-entrant in the middle of the inner margin of the last chamber.

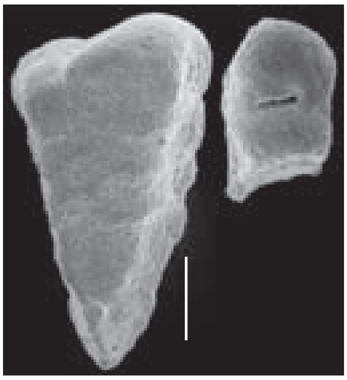
Northern shelf, 600 m.
Systematics p. 262.



Pseudogaudryina pacifica

Test elongate, triangular in section with acute angles, tapering gradually from the blunt initial end to the broadly rounded apertural end; triserial portion short, biserial portion with dissimilar chambers, one series being roughly triangular in section and the other quadrangular in section, maintaining the triangular test shape; chambers distinct, not inflated, sutures nearly horizontal; the last formed chamber often rounded; wall arenaceous, rather smoothly finished; aperture elongate, slightly arched, in a deep reentrant of the inner border of the last chamber.

Northern shelf, 600 m.
Systematics p. 262.

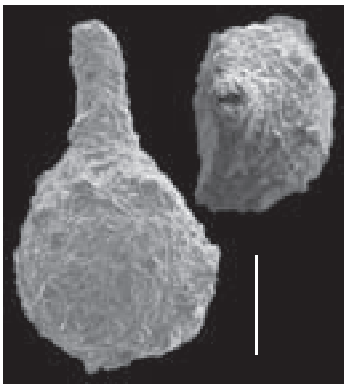


Pseudothurammina

Pseudothurammina limnetes

Test unilocular, subglobular with finely agglutinated silt grains; aperture at the end of 1 to 3 tubular projections projecting from the chamber.

Low salinity coastal lagoons and low marshes.
Systematics p. 252.

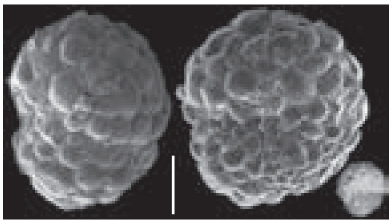


Recurvoides

Recurvoides contortus

Test free, subglobular, streptospirally enrolled, with few chambers per whorl, later whorls may tend to be trochospiral or planispiral, or may show an abrupt change in plane of coiling from previous whorls, earliest chambers not visible externally from either side; wall agglutinated, thin, surface may be roughly finished; aperture small, areal, with bordering lip.

Northern shelf, 600 m.
Systematics p. 257.

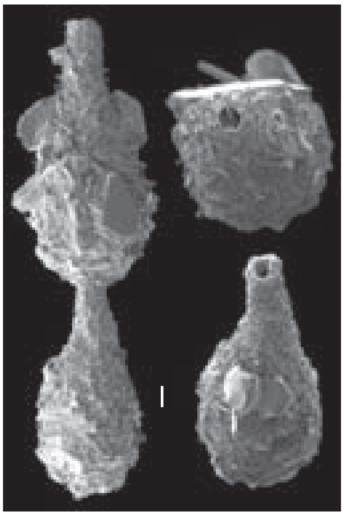


Reophanus

Reophanus oviculus

Test composed of a few pyriform chambers arranged in a rectilinear series, each having a more or less prolonged tubular neck; tests often broken with no more than three chambers found together; wall arenaceous, often rough externally with projecting sponge spicules incorporated with the sand; aperture terminal rounded, at the end of a long neck.

Northern shelf, 600 m.
Systematics p. 254.



Reophax

Reophax agglutinatus

Test large and stout, composed of several chambers, obscured by the coarse agglutinate; wall composed almost entirely of agglutinated foraminiferal tests held together with a light grayish cement; aperture at the end of a slightly protuberant neck.

Northern shelf, 700 m.
Systematics p. 254.

Reophax bacillaris

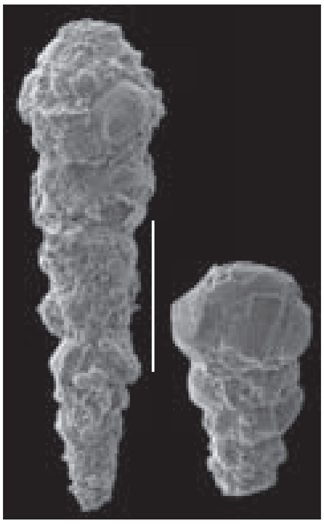
Test elongate, regularly tapering, somewhat curved in the megalospheric form, with a decided angle in the microspheric form; microspheric form very tapering to the initial end, megalospheric form with early chambers larger than those immediately succeeding, giving to the test the appearance of *Clavulina*; chambers numerous (up to 30), short, indistinct in the earlier portion, later separated by depressed sutures; wall finely arenaceous; aperture terminal indistinct. The figure represents a megalospheric form.

Northern shelf, 600 m.
Systematics p. 254.

Reophax communis

Test small, elongate; 7-8 chambers gradually and uniformly increasing in size; sutures horizontal, depressed; wall arenaceous, rough; aperture terminal, not clearly defined.

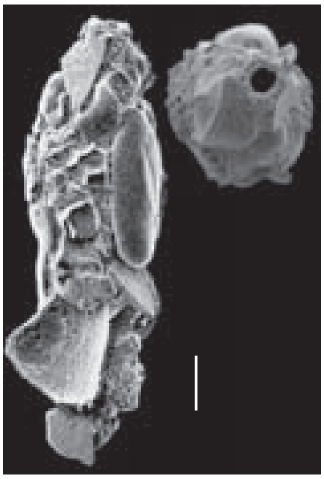
Northern shelf, 600 m.
Systematics p. 255.



Reophax fusiformis

Test elongate, subcylindrical, consisting of a round proloculus followed by three elongated chambers; wall agglutinated, formed of coarse shell fragments, cemented with fine matrix; surface rough and sutures often obscured by the agglutinated particles; aperture is round and terminal.

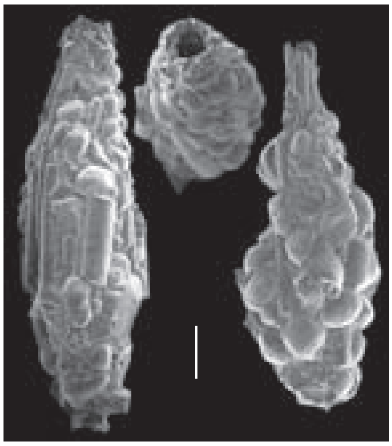
Southwestern lagoon, 30-40 m.
Systematics p. 255.



Reophax longicollaris

Test straight or slightly curved; chamber few, usually 3; proloculus small; chambers increasing rapidly in size as added, the last one tapering very early and drawn out into an elongated neck; sutures oblique, slightly constricted, obscured by the agglutinated grains; wall consisting of grains of different sizes, surface rough; aperture elliptical at the end of the neck.

Northern shelf, 600 m.
Systematics p. 255.



Reophax dentaliniformis

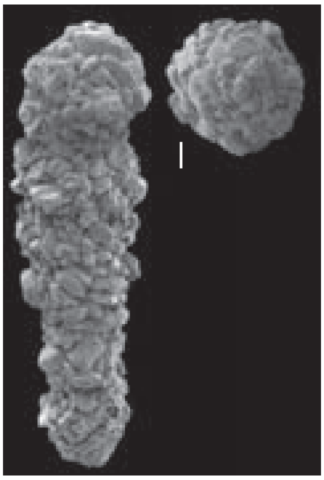
Test long, arranged in a straight line, slender and tapering, circular in cross section; around 6 subcylindrical chambers that have a little overlap onto the preceding chambers; ultimate chamber tapering gradually into a distinct neck; wall irregularly agglutinated, but neatly finished; aperture terminal, rather large, produced, rounded.

Northern shelf, 600 m.
Systematics p. 255.

Reophax irregularis

Test large, straight, almost cylindrical; chamber gradually increasing in size, apertural end slightly tapered; horizontal sutures faintly indicated; wall rough with large to small particles; aperture terminal, produced, centered.

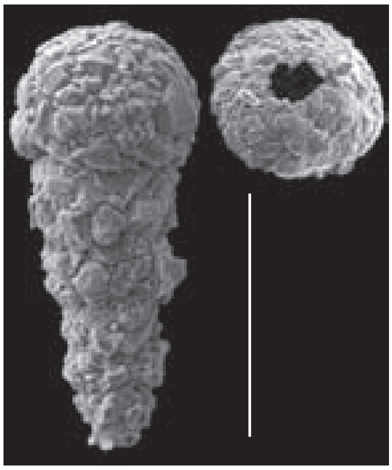
Northern shelf, 600 m.
Systematics p. 255.



Reophax nana

Test small elongate, with few rounded chambers in slightly irregular series; wall coarsely agglutinated; aperture terminal, rounded, produced on a slight neck.

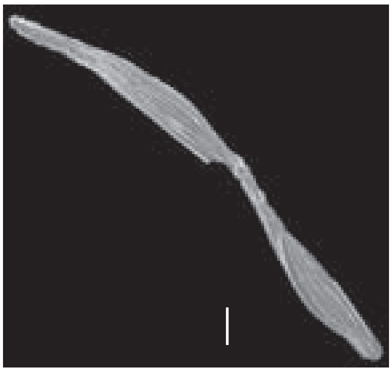
Coastal lagoons, estuaries, shrimp ponds.
Systematics p. 255.



Reophax pseudodistans

Test elongate, straight or arcuate, consisting of a few subcylindrical chambers connected by long and slender stolonlike tubes; wall composed of sponge spicules firmly cemented side by side longitudinally; aperture terminal.

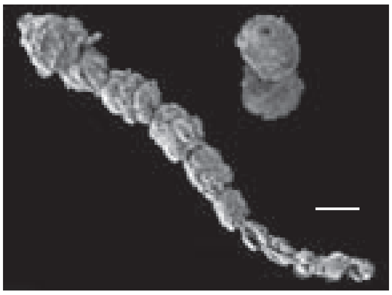
Northern shelf, 600-700 m.
Systematics p. 255.



Reophax scotti

Test small, elongate, flexible when moist, easily broken; chambers inflated, subcircular to slightly compressed in cross section, subtriangular in appearance with flat to slightly concave base, sides initially parallel tapering rapidly towards apertural end; chambers increasing slowly in size; coarse agglutinate; aperture terminal, lipped, slightly protruding.

Muddy, deep coastal bays, very rare.
Systematics p. 255.



Reophax subfusiformis

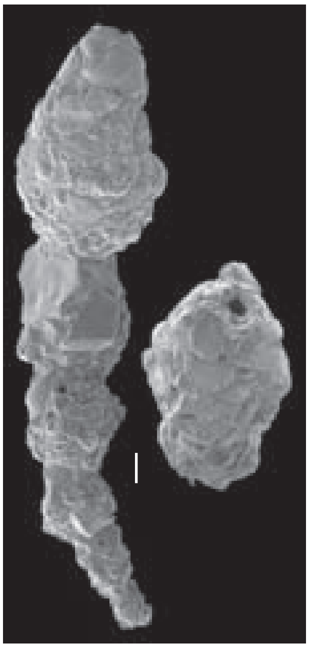
Test elongate, fusiform, straight or arcuate; chambers 3 to 6, rapidly increasing in size so that the last-formed one makes up a large part of the test; wall composed of numerous large sand grains, surface rough; aperture terminal, at the end of a short tapering neck.

Northern shelf, 600 m.
Systematics p. 255.

Reophax scorpiurus

Test uniserial, composed by 4-6 chambers. The early ones are generally slightly and irregularly arcuate, indistinct, later separated by horizontal depressed sutures, becoming more globular; chambers increasing rapidly in size, final chamber often fusiform, tapering gradually to the aperture; wall coarsely arenaceous; aperture simple, terminal and rounded, at the end of a short neck.

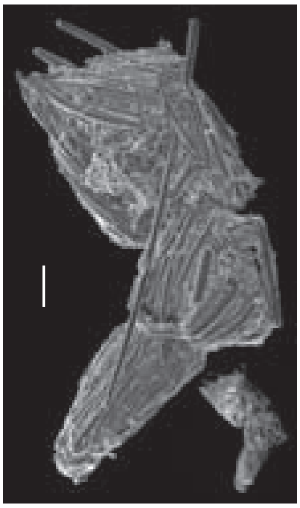
Northern shelf and Bay of Prony, 15-200 m.
Systematics p. 255.



Reophax spiculotestus

Test consisting of a linear series of oval chambers in a straight or curved line, increasing rapidly in size towards the apertural end; ends of chambers contracted; walls rough externally, composed largely of sponge spicules, for the most part laid lengthwise of the test; aperture fairly large, terminal.

Northern shelf, 700 m.
Systematics p. 255.



Reophax sp. 1

Structure of the test obscured by the coarse shell fragments cemented on the surface; aperture terminal, at the end of a distinct neck.

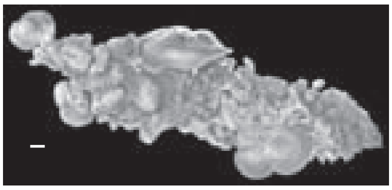
Northern shelf, 600 m.
Systematics p. 255.

Rhizammina

Rhizammina algaeformis

Test tubular, branching but usually broken; wall thin, flexible, with embedded sand grains, tests of planktonic foraminifera and fragments of other small organisms; aperture at the end of the tube.

Northern shelf, 600 m.
Systematics p. 252.

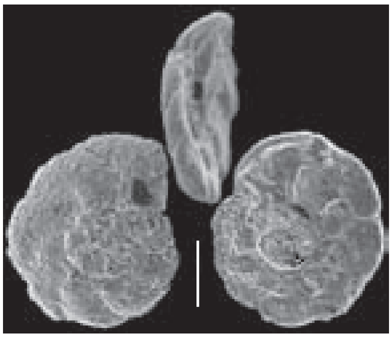


Rotaliammina

Rotaliammina chitinosa

Attached test, dark brown in color, with chambers arranged in trochospiral coiling, increasing gradually in size throughout four whorls; only 5 to 8 chambers in the final whorl; chambers with a petaloid shape on the umbilical side, but chamber walls often collapsed or missing; walls made of relatively coarse and irregular agglutinated material, entirely organic on the umbilical side; test surrounded by a thin organic flange with agglutinated material that is rapidly destroyed after death; aperture hardly distinguishable, terminal on the produced end of the chambers and facing the umbilicus.

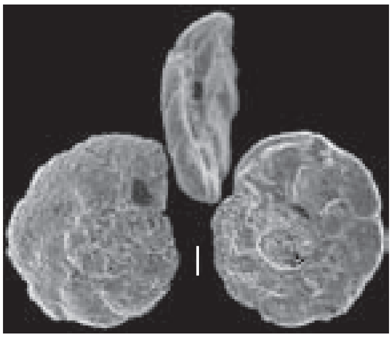
Outer reef, and Bay of Prony, 10-100 m.
Systematics p. 259.



Rotaliammina siphonata

Test attached, low trochospiral, with a spiral side slightly convex and evolute, dark brown in the first whorls, becoming light brown later; 6-10 chambers in the final whorl, increasing gradually in size as added; umbilical side concave with a depressed umbilicus; mushroom shaped on the umbilical side, often with collapsed chamber walls and with siphon-like projections towards the umbilicus; normally the siphon-like projections do not have sutures in common with adjacent projections; wall thin, flexible with little or no agglutinated material; apertures, at the end of each siphon-like projection.

Outer reef, 50-100 m.
Systematics p. 259.



Saccorhiza

Saccorhiza ramosa

Test free with an ovoid proloculus that is generally broken; the following tubular chamber branches irregularly; wall agglutinated with sand grains and sponge spicules, some of them arranged perpendicular to the wall so that they project laterally; apertures at the end of the tubes.

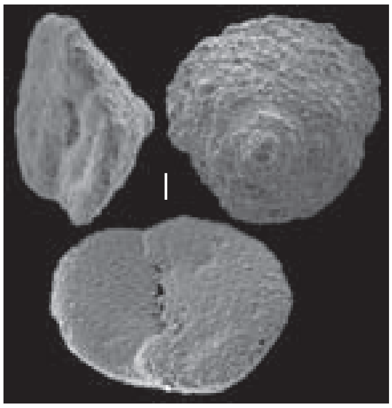
Outer reef, 80 m.
Systematics p. 253.

Sahulia

Sahulia barkeri

Test free, biserial throughout and forming a low cone with circular outline, sutures nearly horizontal; chambers very broad and low; wall finely agglutinated, thin; aperture a low and nearly straight slit across the center of the flattened terminal face, with a distinct flaplike lip bordering the opening, apertural reentrant present at the ends of the lip.

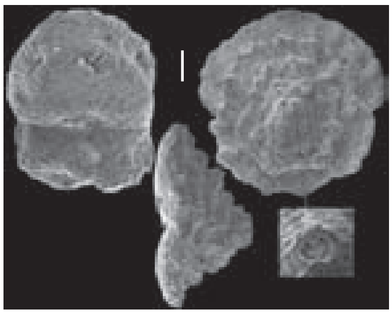
Southwestern lagoon, 15-50 m.
Systematics p. 263.



Sahulia peritubula

Test a low cone, broader than high; sutures fairly distinct, marked by the openings of a single row of short peripheral tubes; wall coarsely arenaceous, surface rough; apertural face nearly circular, aperture a short slit at the base of the last-formed chamber, with a narrow lip.

Northern shelf, 200 m.
Systematics p. 263.

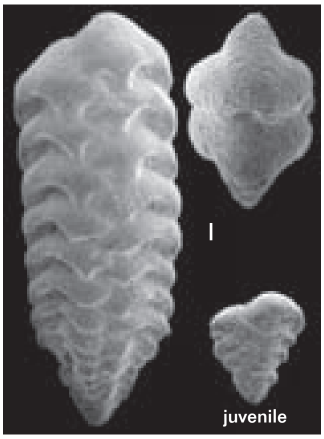


Septotextularia

Septotextularia rugosa

Test large, up to 2 mm in length, stout, biserial throughout, the lower margin of each chamber deeply incised just anterior to the septa, and with about four backward directed projections on each chamber that overlap the sutures; sutures slightly arched; wall agglutinated, canaliculate, thick, coarse grained; aperture a low arch at the base of the apertural face.

Southeastern coast and southwestern lagoon, 15-30 m.
Systematics p. 265.

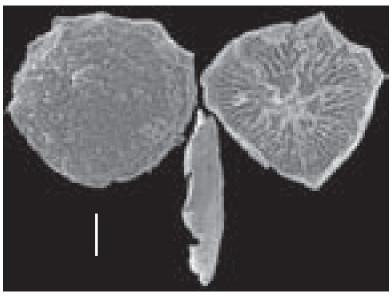


Septotrochammina

Septotrochammina gonzalesi

Test attached, depressed trochospiral, chambers numerous, umbilicus open, numerous radial secondary septa of four to five orders produced by invaginations from the peripheral wall; wall thin, flexible, proteinaceous, incorporating a very small amount of agglutinated silt; aperture interiomarginal, at the umbilical tip of the final chamber.

Outer reef, 100 m.
Systematics p. 259.

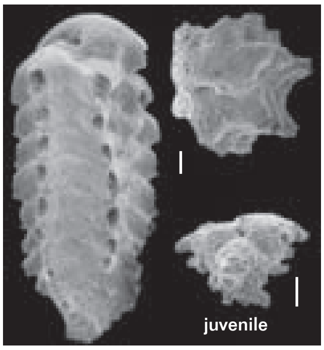


Siphoniferoides

Siphoniferoides siphoniferus

Test elongate, early stage triserial and sharply triangular, later biserial, chambers with fistulose projections at the lateral angles, and later chambers with similar projections on the chamber faces, that form small chamberlets external to the main chamber wall and cavity, chamberlets closed to the exterior in well-preserved specimens but commonly broken; wall agglutinated, that of the sides of the test itself distinctly canaliculate but wall of the tubular projections, septa, and apertural face non-canaliculate; aperture a low arch at the base of the apertural face.

Southwestern lagoon, near the passes.
Systematics p. 262.



Siphotextularia

Siphotextularia blacki

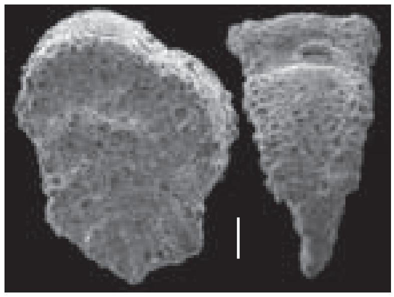
Test large, widening regularly from the acute initial end, compressed; faces of the test concave, borders of chambers much thickened and appearing as rounded keels; wall finely agglutinated, coarser agglutinate on the keels; aperture elongate, above the inner base of the last chamber, with a raised lip.

Northern shelf, 600 m.
Systematics p. 265.

Siphotextularia crassisepta

Test broad, much compressed, in end view quadrangular, composed of relatively few chambers, the earlier low and broad, the later comparatively high; borders of chambers much thickened, and appearing as raised portions with depressed areas between; wall coarsely agglutinated; aperture a short slit, some distance from the inner base of the last chamber, with a raised lip.

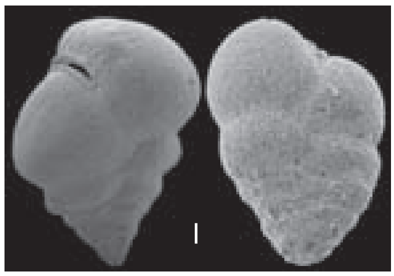
Northern shelf, 600 m.
Systematics p. 265.



Siphotextularia flintii

Test triangular in outline, irregularly rhombic in end view, somewhat compressed laterally, rapidly enlarging in size from the early portion; chambers low and broad, inflated, separated by rather deep sutures; wall finely agglutinated, smoothly finished; aperture slightly above the inner base of the last chamber, with a slightly raised lip.

Northern shelf, 600 m.
Systematics p. 265.



Siphotextularia cf. S. foliosa

Test compressed, leaf-shaped, initial end narrowly rounded; test thickest in the median line, narrowing out towards the periphery; chambers distinct, slightly inflated; later chambers increasing rapidly in height but slightly in width as added; sutures depressed, sigmoid; wall finely arenaceous, surface smooth; aperture slightly above the base of the apertural face, oblique, lipped. This species differs from the typical *S. foliosa* in having a larger aperture.

Northern shelf, 600 m.
Systematics p. 265.

Siphotextularia heterostoma

Test elongated, laterally compressed, particularly in the median line, triangular in lateral view, with rounded edges in end view; chambers increasing in breath, more rapidly in height in later stages; some specimens have a triserial initial stage; most of the tests appear twisted with respect to the axis; sutures distinct, oblique; wall rather smoothly finished; aperture an elliptical slit parallel to the lateral compression, at the end of an everted neck.

Northern shelf, 600 m.
Systematics p. 265.

Siphotextularia mestayerae

Test biserial throughout, compressed with gently convex sides; chambers rounded, somewhat quadrangular in section; sutures straight and sloping, depressed in the later chambers; wall finely agglutinated; aperture areal, a short oblique slit, produced on a tubular neck.

Northern shelf, 600 m.
Systematics p. 265.

Siphotextularia pulchra

Test compressed, periphery rounded throughout, lobulate, initial end broadly rounded; chambers wider than high, increasing gradually in width, slightly inflated; sutures depressed, curved, those of the early portion not very distinct; wall finely arenaceous, smooth, coarser agglutinate in the initial portion; aperture a transverse elliptical slit, slightly above the base of the apertural face, with prominent lips.

Northern shelf, 600 m.
Systematics p. 265.

Siphotextularia subplanoides

Test biserial throughout, quadrangular in section, median region concave; initial end obtuse, chambers rapidly widening and increasing rapidly in height; periphery truncate with peripheral angles subacute to acute; sutures distinct, depressed; wall finely agglutinated; aperture an elongate slit, slightly above and perpendicular to the base of the apertural face, with a lip.

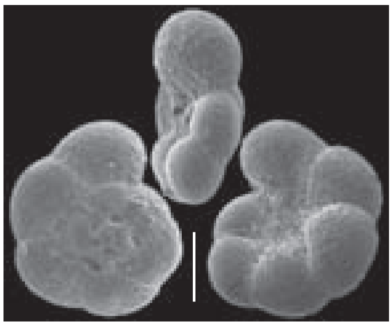
Northern shelf, 600 m.
Systematics p. 265.

Siphotrochammina

Siphotrochammina lobata

Test free, low trochospiral, chambers ovate, increasing gradually in size as added, sutures gently curved, periphery rounded, much lobulate; wall light brown in color, finely and sparsely agglutinated on a proteinaceous base, the early whorl darker brown and with very little agglutinated material; aperture interiomarginal, at the end of a siphon-like lobe projecting from the umbilical margin of the chamber and directed forward.

Mangrove swamps, crawling on the aerial roots of the mangrove trees.
Systematics p. 259.



Spiroplectammina

Spiroplectammina biformis

Test free, elongate, compressed; large early planispiral coil of few chambers followed by biserially arranged chambers, the coil of greater breadth than the first few pairs of biserial chambers; wall coarsely agglutinated; aperture a low arch at the inner margin of the final chamber.

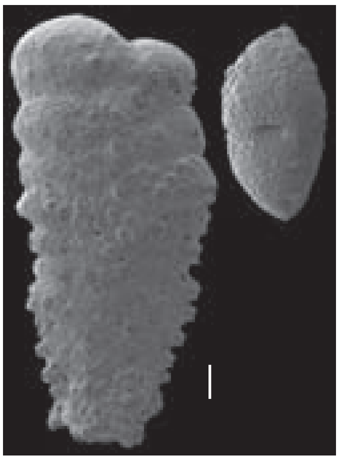
Northern shelf, 600 m.
Systematics p. 257.

Spirotextularia

Spirotextularia fistulosa

Test with planispiral coil of one whorl, then biserial; each chamber laterally produced, forming a distal chamberlet separated from the main chamber lumen by a secondary septum; wall agglutinated, surface smoothly finished; aperture interiomarginal, a low arch against the previous chamber.

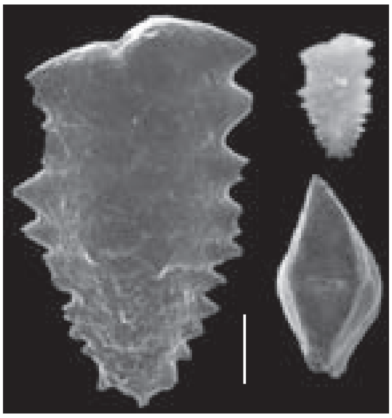
Southwestern lagoon and northern shelf, 20-600 m.
Systematics p. 258.



Spirotextularia floridana

Test elongate, two to three times as long as wide in the adult, much compressed, periphery acute, the ends of the chambers forming tubular projections, often broken, showing a hollow truncate area; the initial end rather sharply pointed, the apertural end broadly rounded; chambers numerous, thickest near the center, increasing somewhat in height toward the apertural end; sutures indistinct, slightly if at all depressed; wall finely arenaceous, smooth; aperture small, at the base of the inner margin of the last-formed chamber.

Southwestern lagoon and northern shelf, 50-600 m.
Systematics p. 258.

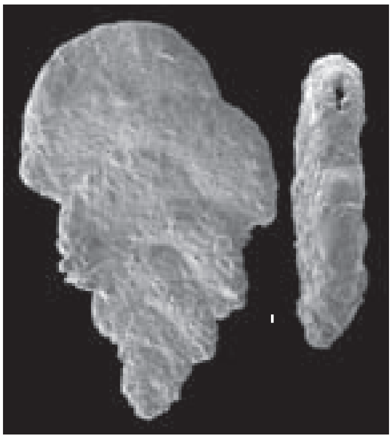


Tawitawia

Tawitawia immensa

Test biserial, flattened, very large, more than 4 mm in length; chambers low, strongly overlapping in the axial area; wall coarsely agglutinated; aperture a slit on the apertural face of the last chamber.

Northern shelf, 600 m.
Systematics p. 265.

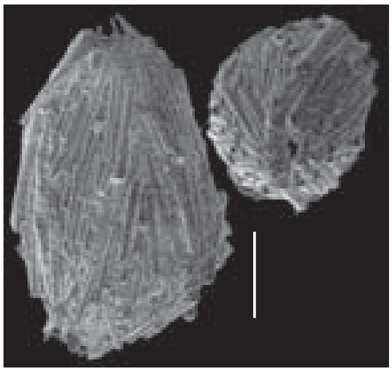


Technitella

Technitella melo

Test unilocular, oval, slightly tapering at the ends; wall composed almost entirely of long sponge spicules arranged lengthwise of the test, firmly cemented; color grayish-white; aperture small, subcircular at one end of the test, surrounded by the end of spicules.

Northern shelf, 600 m.
Systematics p. 252.



Textularia

Textularia agglutinans

Test elongate, tapering, very little compressed, periphery rounded; chambers inflated, increasing in width and height toward the apertural end rather uniformly; sutures distinct, depressed, usually about right angles to the long axis of the test; wall rather coarsely agglutinated, but smoothly finished; aperture an elongate slit in a well-marked depression of the inner margin of the last-formed chamber.

Widely distributed in the southwestern lagoon and southern shelf, 0-80 m.
Systematics p. 263.

Textularia calva

Test very large, elongate, roughly triangular in outline, broadly ovate in end view; initial portion slightly compressed; chambers numerous, low and broad, increasing in height regularly as added; sutures somewhat depressed, straight and slightly oblique; wall coarsely arenaceous, roughly finished except on the apertural face where it is rather smoothly finished; aperture a low broad opening at the base of the inner margin of the last-formed chamber.

Northern shelf, 600 m.
Systematics p. 263.

Textularia candeiana

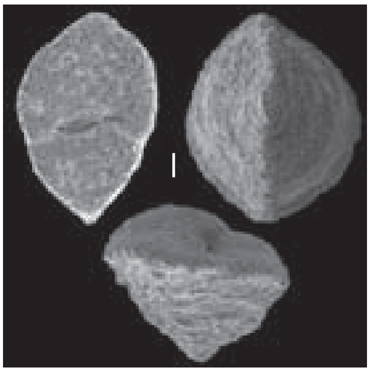
Early portion of the test narrow, much compressed, the edges almost carinate, tapering gradually to the apex; chambers numerous, those of the early portion somewhat compressed, later ones enlarging rapidly, with the final ones much inflated; sutures of the later portion fairly distinct and oblique, depressed; wall rather coarsely arenaceous; aperture a broad, low arch at the base of the last chamber, bordered by a narrow lip on the upper margin.

Widely distributed in the southwestern lagoon and on the northern shelf, 20-200 m.
Systematics p. 263.

Textularia conica

Test usually wider than high, triangular in outline, broadly oval in end view, slightly compressed, apex bluntly pointed; sutures slightly arched, nearly horizontal, chambers broad and low; wall arenaceous, smooth or slightly roughened; aperture a low and nearly straight slit at the base of the apertural face, with a distinct flaplike lip bordering the opening.

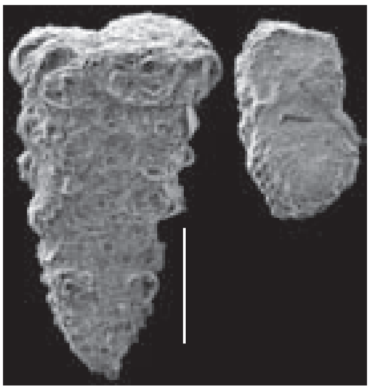
Widely distributed in the southwestern lagoon, in areas under open-sea influence.
Systematics p. 263.



Textularia cushmani

Test elongated, slender, narrowly triangular in lateral view, sub-quadrangular in cross section with rounded margins, biserial throughout; about 20 chambers increasing rapidly in the earlier portion, more gradually so in the later portion, the peripheral margins becoming nearly parallel; sutures depressed, nearly perpendicular to the axis, often indistinct; aperture a short low slit at the base of the inner margin of the last formed chamber.

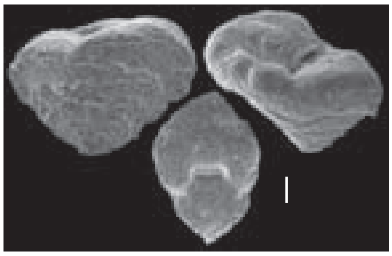
Northern shelf, 200 m.
Systematics p. 264.



Textularia dupla

Test compressed, about as broad as or broader than high, triangular in side view; apertural face flattened or slightly concave (convex in young stages); periphery subacute, irregularly serrate; chambers low and broad, much overlapping, later ones becoming slightly inflated; sutures indistinct in the early part, becoming slightly depressed; nearly horizontal; wall finely granular, surface somewhat rough; aperture a low arched slit at the base of the last chamber, bordered by a lip.

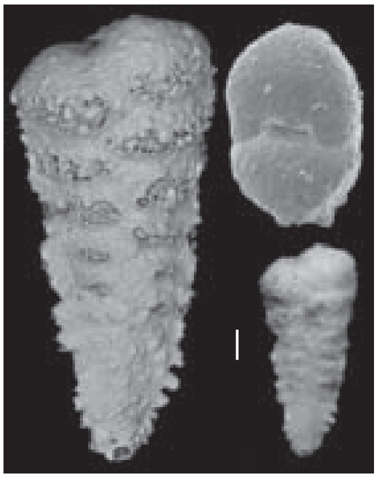
Northern shelf, 200 m.
Systematics p. 264.



Textularia fistula

Test elongate, the early chambers somewhat compressed, later rounded in section; early chambers with lateral fistulose projections that become extended into a projecting peripheral border in later chambers; wall coarsely arenaceous; aperture slitlike in a well marked depression of the inner border of the last-formed chamber.

Northern shelf, 600 m.
Systematics p. 264.



Textularia foliacea

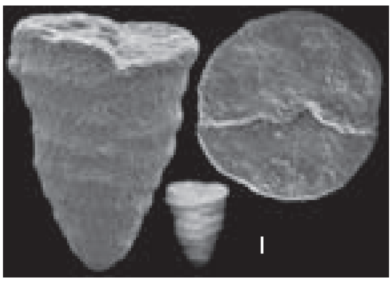
Test elongate, biserial throughout, narrow, laterally compressed, oval in end view; periphery rounded; seven to nine pairs of chambers increasing regularly in width so as to give a leaf-shaped outline to the test; sutures depressed but at time very obscure, straight and oblique; wall coarsely agglutinated with agglutinated material highly heterogeneous in size, surface rough; aperture small, a low arch at the base of the apertural face.

Widely distributed in the southwestern lagoon.
Systematics p. 264.

Textularia goessi

Test broadly conical in outline, tapering abruptly to the apex with margins slightly convex, subcircular in end view; chambers low and broad without internal division; sutures limbate, distinct; wall more or less coarsely agglutinated, but usually smoothly finished; aperture linear in a depression at the base of the apertural chamber.

Northern shelf, 600 m.
Systematics p. 264.



Textularia kerimbaensis

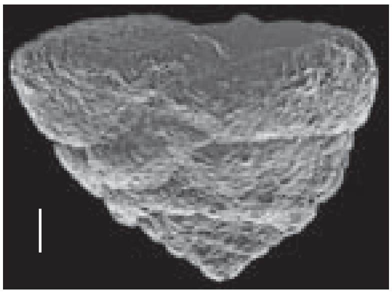
Test V-shaped in outline, somewhat laterally compressed, with the periphery subacute; suboval to subcircular in apertural view; chambers relatively low and strongly embracing, with a lateral concavity just above the suture; sutures curved backwards near the margin; wall composed of rounded agglutinated grains, smoothly finished; aperture a slit in a depression at the base of the apertural face, with a distinct flaplike lip bordering the opening.

Widely and irregularly distributed, 5-200 m.
Systematics p. 264.

Textularia lateralis

Test characterized by a sub-triangular shape with a neat, even outline; chambers broad and low; sutures horizontal and slightly depressed; wall finely agglutinated.

Southwestern lagoon, rare, 5-40 m.
Systematics p. 264.



Textularia occidentalis

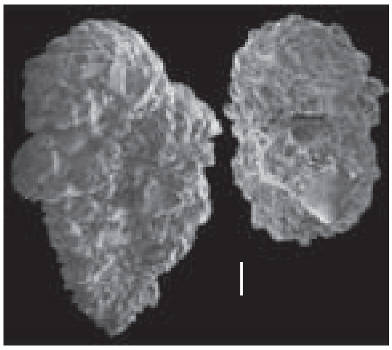
Test biserial throughout, laterally compressed, increasing gradually in width, with a triangular outline in lateral view, sub-rectangular cross section with rounded margins; chambers wider than high, sutures depressed, oblique; wall coarsely agglutinated, roughly finished; aperture an arch at the base of the apertural face, in a slight re-entrant. Differs from *T. foliacea* by a much more flaring test.

Widely distributed in the southwestern lagoon, 5-50 m.
Systematics p. 264.

Textularia oceanica

Test biserial throughout; laterally compressed; chambers wider than high, rounded, increasing gradually in size; sutures depressed, oblique obscured by the agglutinated material; wall coarsely agglutinated, very roughly finished; aperture an arch at the base of the apertural face, in a slight re-entrant.

Southwestern lagoon and southern shelf, in the back-reef area and near patch reefs, 5-60 m.
Systematics p. 264.



Textularia porrecta

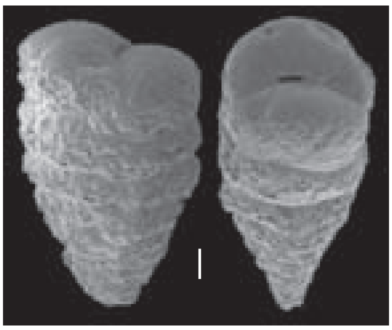
Test elongate tapering very gradually towards the initial end; peripheral margin rounded, lobulate; 11-13 pairs of rounded chambers in biserial arrangement on a sometimes curved axis; sutures depressed, almost perpendicular to the longitudinal axis; wall composed of angular fragments fitted edge to edge; surface smoothly finished; aperture small crescentic at the base of the last chamber.

Northern shelf, 600 m.
Systematics p. 264.

Textularia pseudogramen

Test biserial, large, elongate, chambers rapidly increasing in size in the earlier portion, then remaining of almost constant dimension for 2/3 of the test; periphery subacute in the early portion, later thickening; chambers numerous (about 10 pairs) separated by distinct sutures; wall coarsely agglutinated, surface rough; apertural face smoothly finished; aperture a low arch at the base of the apertural face.

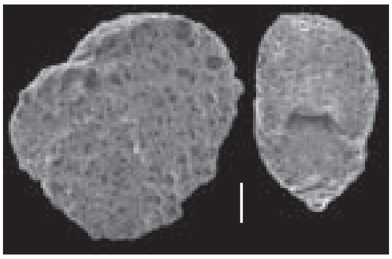
Southwestern lagoon and northern shelf, 5-500 m.
Systematics p. 264.



Textularia pseudosolita

Test compressed, flabelliform, periphery subacute; initial end narrowly rounded, rapidly widening toward the apertural end; chambers distinct, broader than high, not inflated, the upper margin slightly protruding; sutures slightly depressed, curved upwards; wall finely agglutinated with a small amount of coarse grains, surface neatly finished; apertural face with the middle portion depressed; aperture an elongated slit in this depressed portion.

Northern shelf, 600 m.
Systematics p. 264.



Textularia semialata

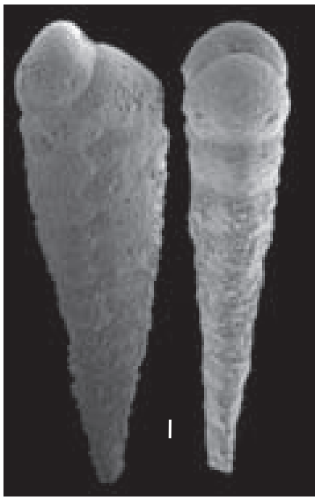
Test compressed, rapidly broadening, triangular in side view; chambers broader than high, the proximal outer angle of the adult chambers more or less projecting and extending backward; wall of fine sand, very smoothly finished; aperture an arched opening at the inner margin of the chamber, with a distinct overhanging lip; color gray.

Southwestern lagoon and northern shelf, 10-200 m.
Systematics p. 264.

Textularia stricta

Test long and narrow, up to 6 mm long, composed of numerous high chambers; early portion somewhat compressed, the later portion almost circular in cross section with inflated chambers giving a lobular outline to the test; sutures depressed; wall arenaceous, smoothly finished; apertural end somewhat acute; aperture an elongated slit along the base of the last chamber.

Northern shelf, 600 m.
Systematics p. 264.



Textularia subantarctica

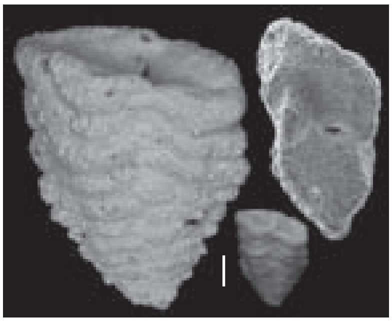
Test a low cone, as broad as high, strongly compressed laterally, periphery acute to carinate; initial end broadly rounded in side view; sutures distinct, very slightly depressed; wall finely arenaceous, surface smooth; apertural face ovate, aperture a short slit in a depression at the base of the last-formed chamber, with a narrow lip.

Northern shelf, 600 m.
Systematics p. 264.

Textularia cf. *T. truncata*

Test biserial throughout, subtriangular in side view, subrhomboidal in end view and provided with a subrounded keel; chambers increasing rapidly in the earlier portion, more gradually so in the later one; sutures slightly depressed; apertural end truncated, subrhomboidal; aperture a low arch at the base of the apertural face, with a distinct flaplike lip bordering the opening.

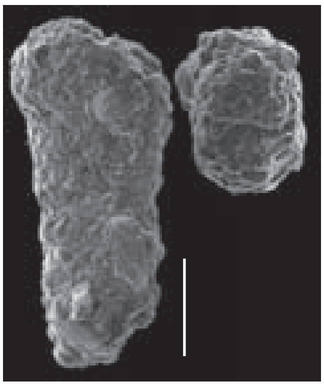
Northern shelf, Chesterfield, Bay of Prony, 10-200 m.
Systematics p. 265.



Textularia truncatiformis

Test elongate, slightly compressed, initial end rounded, increasing slightly in width and thickness; periphery broadly rounded, a great part of the test of almost equal width, the two sides being nearly parallel; chambers numerous, the early ones not distinct, the later ones distinct, wider than high; wall composed of very coarse grains; apertural end obliquely truncate, aperture a low slit at the base of the last chamber.

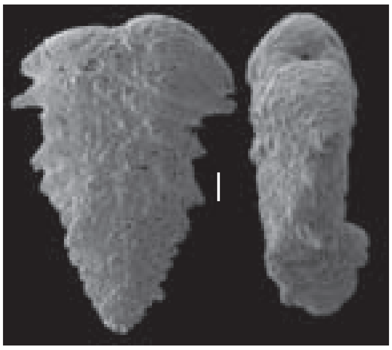
Northern shelf, 600 m.
Systematics p. 265.



Textularia tubulosa

Test compressed, increasing rapidly and constantly in breadth, initial end rounded, apertural end truncate; chambers numerous, low and broad; sutures obscure in the earlier portion, later slightly depressed; periphery of each chamber with an elongate, conical projection, often broken at the tips, those of the early portion directed backward, the later ones extending straight outward; wall arenaceous, with sand-grains of various sizes and much cement; surface rough; aperture small, at the inner border of the last-formed chamber, in a reentrant.

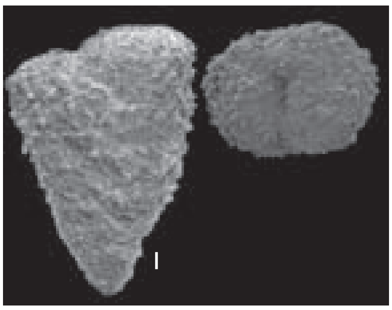
Northern shelf, 600 m.
Systematics p. 265.



Textularia sp. 1

Test stout, biserial throughout, subconical in general shape, subcircular in end view; periphery broadly rounded; about 10 chambers in the adult, not inflated; sutures indistinct, slightly depressed, slightly curved, nearly perpendicular with the test axis; wall coarsely agglutinated, roughly finished, even on the flattened apertural end; agglutinated material composed of large grains interspersed with finer grains; aperture a low arch at the base of the inner margin of the last formed chamber, in a re-entrant. This species is quite similar to *Textularia* sp. "M" of Hottinger *et al.* (1993).

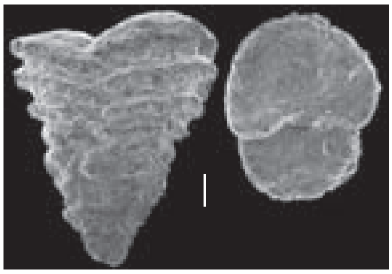
Northern shelf, 600 m.
Systematics p. 265.



Textularia sp. 2

Test elongate, the early chambers somewhat compressed, later rounded in section; numerous low and broad chambers, excavated just above the suture, with a projecting peripheral border in their upper part; sutures straight, nearly horizontal, slightly oblique upwards; wall coarsely arenaceous but smoothly finished; aperture a short slit-like opening in a well marked depression of the inner border of the last-formed chamber, with a lip.

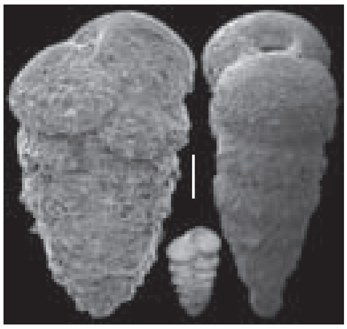
Northern shelf, 600 m.
Systematics p. 265.



Textularia sp. 3

Test elongate, tapering, very little compressed, periphery rounded; chambers inflated, increasing in width and height toward the apertural end rather uniformly; sutures indistinct in the early portion, deeply incised in the later portion, about right angles to the long axis of the test; wall coarsely agglutinated, surface rough; aperture a slit in a well-marked depression of the inner margin of the last-formed chamber.

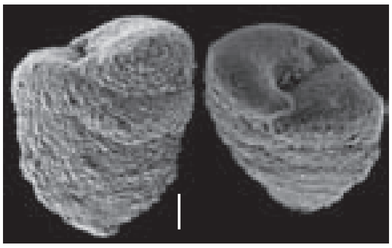
Northern shelf, 600 m.
Systematics p. 265.



Textularia sp. 4

Test biserial throughout, subtriangular in side view, ovate in end view; chambers increasing rapidly in the earlier portion, more gradually so in the later one, so that the sides are nearly parallel; sutures slightly depressed, nearly horizontal; apertural end truncated, subcircular; aperture a low arch at the base of the apertural face, with a distinct flaplike lip bordering the opening.

Northern shelf, 600 m.
Systematics p. 265.



Textularia sp. 5

Test broadly conical in outline, with straight margins, subcircular in end view; chambers numerous, low and broad; sutures limbate, distinct; wall more or less coarsely agglutinated, smoothly finished, but the smooth surface coating often eroded; aperture a long rectilinear slit at the base of the apertural chamber.

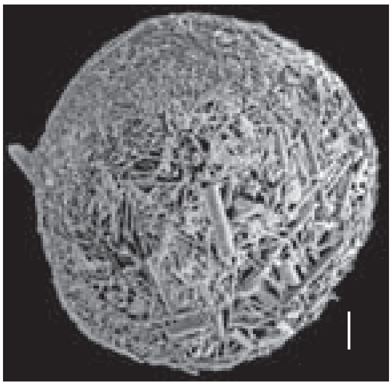
Northern shelf, 600 m.
Systematics p. 265.

Thurammina

Thurammina papyracea

Test spherical; wall extremely thin and delicate, composed of fine sand grains and sponge spicules, rather smoothly finished; apertures very small and inconspicuous.

Southwestern lagoon, 40 m.
Systematics p. 252.



Trilocularena

Trilocularena patensis

Test ovate in outline, elongate tubular chambers a half coil in length added in triloculine arrangement, only the final three more rarely four visible at the exterior; wall finely agglutinated; aperture large, rounded or ovate, at the end of the final chamber.

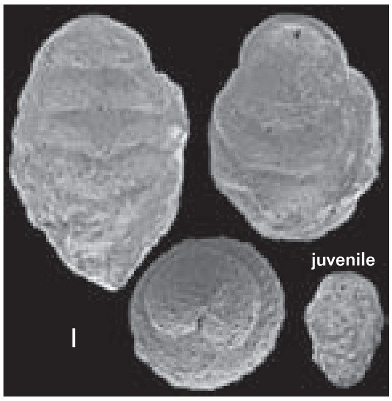
Mangrove swamps, brackish coastal lagoons.
Systematics p. 254.

Tritaxilina

Tritaxilina caperata

Test free, elongate, early stage triserial, roughly triangular in cross section, later becoming biserial or uniserial and circular in cross section; wall thick, finely agglutinated, smoothly finished; surface with a wrinkled appearance due to the thickening of the chamber wall just above the sutures; aperture like textularia in the early stage, later terminal, and rounded, with peripheral teeth projecting into the aperture.

Northern shelf, 600 m.
Systematics p. 262.

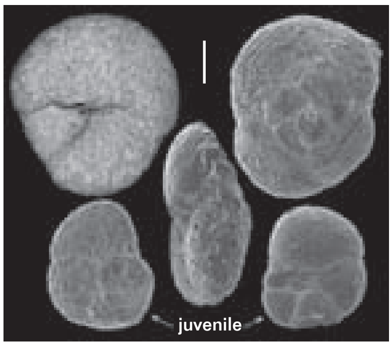


Tritaxis

Tritaxis fusca

Test typically attached, low conical, circular in outline, umbilical face concave; chambers trochospirally arranged with only three chambers per whorl in the adult; wall finely arenaceous, smooth; aperture slit like at the inner basal margin of the last formed chamber, protected by a valvular lip.

Outer reef, 100 m.
Systematics p. 258.

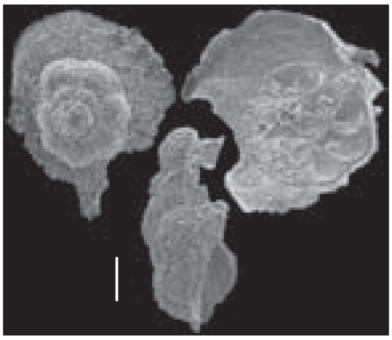


Trochammina

Trochammina carinata

Attached test, planoconvex with relatively high chambers arranged in trochospiral coiling, increasing slowly in size throughout four whorls; only 5 to 7 inflated chambers in the final whorl; sutures distinct, radial; wall made of relatively coarse and irregular agglutinated material, smoothly finished; test surrounded by a thin broad flange of the same material as that of the wall; aperture hardly distinguishable, ventral, at the inner end of the margin of the last-formed chamber.

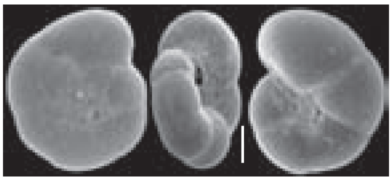
Outer reef, 50-100 m.
Systematics p. 258.



Trochammina inflata

Test trochospiral, chambers inflated, sutures radial depressed, distinct; periphery rounded; wall finely agglutinated, surface smooth; aperture an interiomarginal, umbilical-extraumbilical arch with narrow bordering lip.

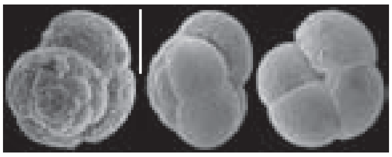
High marshes, mangrove swamps, coastal lagoons rich in organic matter.
Systematics p. 258.



Trochammina xishaensis

Test small, high trochospiral of 4-5 whorls; periphery broadly rounded, lobulate; ventral side more or less flattened, umbilical region depressed, closed; chambers subglobular increasing gradually in size as added, four in the final whorl; sutures depressed, radial; wall finely agglutinated, incorporating a few sponge spicules, the umbilical side more neatly finished than the spiral side; aperture a low arch at the base of the final chamber on the umbilical side.

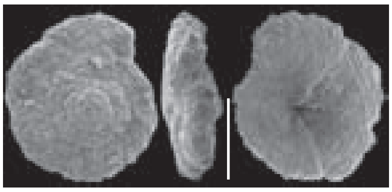
South of the Grande Terre, 50 m.
Systematics p. 259.



Trochammina sp. 1

Test low trochospiral, chambers low, increasing gradually in size as added, sutures radial, periphery rounded; wall coarsely agglutinated; aperture an interiomarginal, umbilical-extraumbilical arch with narrow bordering lip.

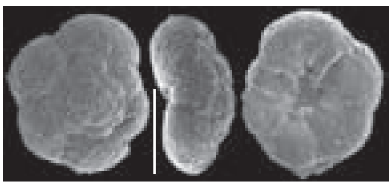
South of the Grande Terre, 50 m.
Systematics p. 259.



Trochammina sp. 2

Test trochospiral, chambers rounded in section, increasing gradually in size as added, sutures radial, periphery rounded; wall with moderately coarse agglutinate; aperture an interiomarginal, umbilical-extraumbilical arch with narrow bordering lip.

South of the Grande Terre, 50 m.
Systematics p. 259.

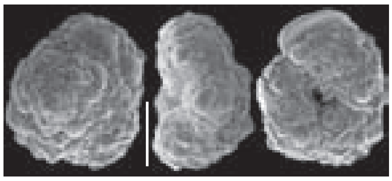


Trochamminopsis

Trochamminopsis quadriloba

Test trochospiral, chambers increasing gradually in size as added, chambers indistinct on the spiral side due to a very coarse agglutinate, four chambers with radial sutures on the umbilical side, periphery rounded; aperture an interiomarginal, umbilical-extraumbilical arch obscured by the coarse agglutinate.

South of the Grande Terre, 50 m.
Systematics p. 259.

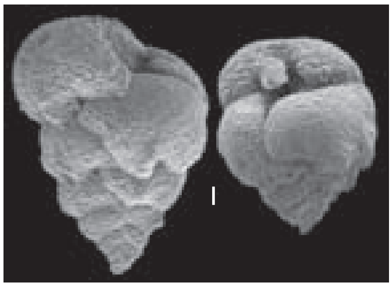


Valvulina

Valvulina oviedoiana

Test subconical, stout, triserial, triangular in section; about 15 chambers, initially with angular margins, becoming rounded; chambers increasing rapidly in size as added; sutures depressed; agglutinate composed of well-sorted, rounded particles; aperture an interiomarginal arch, at the junction of the chambers of the final whorl with a prominent flaplike tooth projecting from the midpoint of the apertural rim.

Chesterfield, in algal thalli, 15 m.
Systematics p. 263.

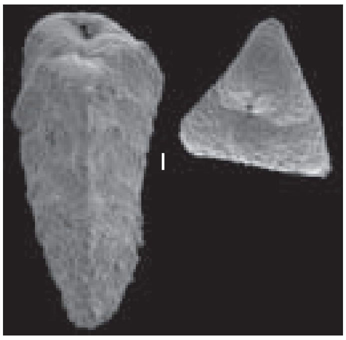


Verneuilina

Verneuilina novozealandica

Test elongate, tapering, sharply triangular throughout, sides flattened or concave, angles somewhat carinate; chambers fairly distinct, not inflated, of uniform shape, regularly increasing in size; sutures distinct, slightly depressed, strongly curved; wall coarsely arenaceous, roughly finished; aperture a narrow opening at inner margin of the last formed chamber, with a slight lip.

Northern shelf, 600 m.
Systematics p. 260.

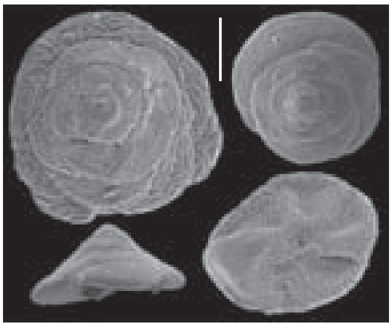


Zaninettia

Zaninettia conica

On the spiral side, the first stage of the test is a small, high, conical trochospire, consisting of about 2 whorls, flattening out toward the periphery, with a subcircular outline; it is dark brown to blackish; test shallow-concave on the umbilical side, with a deep axial depression. The following chambers are yellowish or white, they make up the flattened second ontogenetic stage, at first also in a trochospire, are crescentic with secondary septa; the chambers become increasingly elongated and irregularly added, giving an irregularly lobed outline to the test; no peripheral flange was observed; chambers symmetric, petal-shaped, on the umbilical side; walls made up of typically "rounded-rectangular" truncated spicules arranged irregularly.

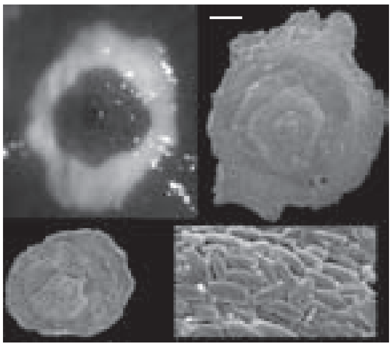
Coral-reef lagoon and outer reef, 10-100 m, crawling under coral rubble or algae, protected from sunlight.
Systematics p. 282.



Zaninettia manaarensis

Test beginning with a very low-convex trochospiral stage of about 10 chambers increasing in size slowly, arranged in 2 coils, with oblique sutures; second stage with chambers added irregularly, becoming rapidly elongate-crescentic, subdivided by secondary septa; last stage an irregularly contoured flange with spicules irregularly dispersed; the first stage and part of the second stage are dark brown, then becoming yellowish or white; wall made up of typically "rounded-rectangular" truncated spicules arranged irregularly.

Coral-reef lagoon and outer reef, 10-100 m, crawling under coral rubble or algae, protected from sunlight.
Systematics p. 282.



Unidentified species

Test very low trochospiral; chambers few, three in the last whorl; spiral side partially involute; sutures depressed, radial; wall rather coarsely agglutinated, but very smoothly finished, polished; aperture an interiomarginal extraumbilical slit.

Outer reef, 100 m.

Description of porcelaneous species

All scale bars = 0.1 mm (for SEM)

Adelosina

Adelosina mediterranensis

Test elongated, about 2 times as long as broad; oral and aboral ends protruding; periphery bicarinate; wall imperforate, ornamented by parallel, longitudinal striae; aperture produced on a long neck, rounded with a peristomal rim and a small bifid tooth.

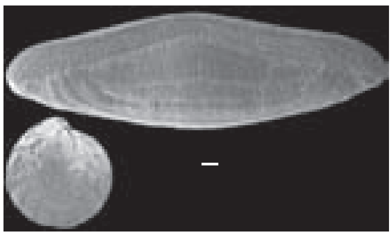
Southwestern lagoon, rare.
Systematics p. 268.

Alveolinella

Alveolinella quoii

Test large (up to 20 mm in length), fusiform, planispiral, involute, elongated along the coiling axis; chambers narrow, spanning the width of the test, thickening toward the poles and gradually increasing in size as added; more than 15 chambers per whorl in adult specimens; wall with numerous longitudinal costae; apertural face with several rows of openings.

Widely distributed in the southwestern lagoon, 0-50 m.
Systematics p. 281.

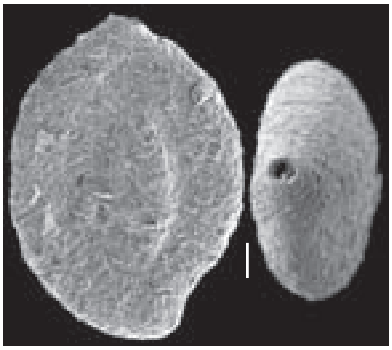


Ammomassilina

Ammomassilina alveoliniformis

Early stage quinqueloculine, latter chambers planispiral, one-half coil in length; periphery rounded; wall porcelaneous, with an agglutinated surface layer; aperture at the end of the final chamber, with a short tooth, or becoming multiple, with a trematophore.

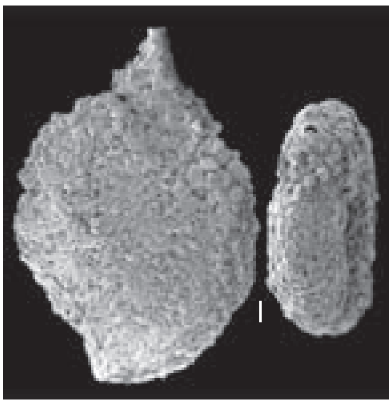
From bays to outer reef, 5-30 m.
Systematics p. 279.



Ammomassilina clypeoarenulata

Test flattened, sutures obscured by the coarse agglutination; periphery broadly rounded, planispiral arrangement obscuring any early quinqueloculine chambers; wall coarsely agglutinated, roughly finished; aperture terminal, rounded, with a small bifid tooth, at the end of short neck that is agglutinated as the rest of the test.

Northern shelf, 600 m.
Systematics p. 279.



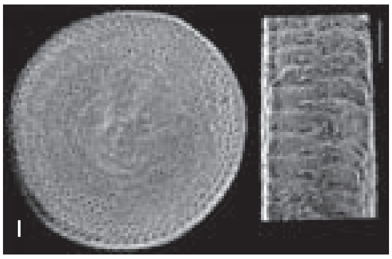
Amphisorus

Amphisorus hemprichii

Test discoidal biplane or with moderately thickened margins; Chambers annular, concentric in the adult, subdivided into two layers of chamberlets by alternating radial partitions (septula); early stage planispiral with about six undivided chambers and up to ten additional spiral chambers subdivided by septula before becoming annular; aperture of numerous slits on the peripheral margin, elongated across the margin, and aligned in two alternating rows.

After death, the external wall of the chamberlets is often eroded, leaving concentric series of minute cavities.

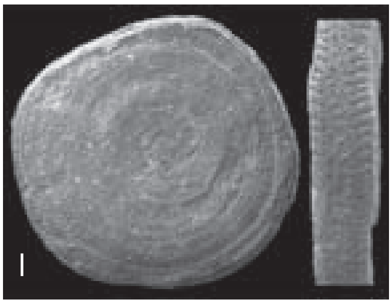
Dispersed in the southwestern lagoon, mostly between 15 and 25 m.
Systematics p. 282.



Amphisorus sauronensis

This species differs from *A. hemprichii* by additional medial rows of apertures on the peripheral apertural face. These apertures vary from irregularly shaped, often fusing with neighboring apertures to circular. They are absent in juveniles, both species having similar juvenile stages.

Outer reef and Chesterfield, 5-45 m.
Systematics p. 282.

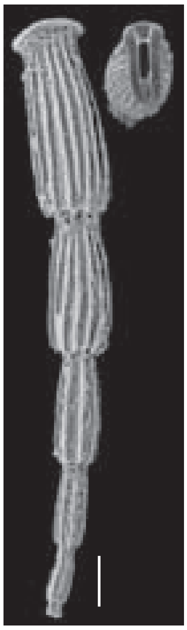


Articulina

Articulina alticostata

Test elongate, early portion milioline, latter a linear series of elongate chambers, each chamber tapering towards the distal end and somewhat rounded at the proximal end; section circular with slightly compressed final chambers; several longitudinal costae; aperture terminal, highly compressed, with a thickened lip.

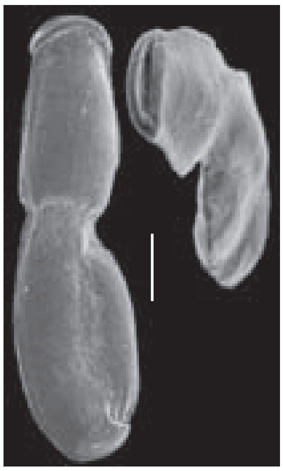
Dispersed in the southwestern lagoon and Bay of Prony, 5-30 m.
Systematics p. 280.



Articulina cf. A. carinata

Test elongate, laterally compressed; early ovoid portion milioline, latter with a few uncoiled, elongate, flattened chambers; wall imperforate, surface smooth or with faint costae; aperture terminal, ovate, bordered by a prominent everted lip.

Bay of Prony, 15 m.
Systematics p. 280.



Articulina pacifica

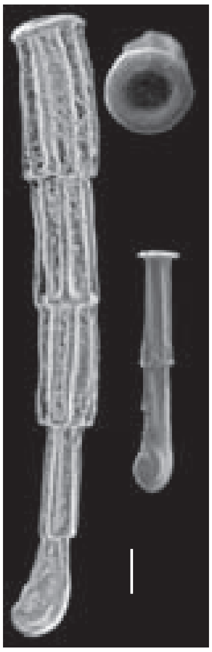
Early portion milioline, latter with a few vase-shaped chambers laterally compressed; test covered with prominent longitudinal costae, usually 13 to 15; apertural end slightly contracted, and then expanded into a strong, very prominent everted lip.

Widely distributed in the southwestern lagoon, 5-30 m.
Systematics p. 280.

Articulina queenslandica

Test elongate; early portion milioline, latter uniserial with up to 4 cylindrical chambers, slightly, if at all, widened at the base; wall porcelaneous; 4 or 5 longitudinal costae on the first uniserial chamber, up to 12 on the last one; aperture terminal, rounded, with a narrow everted lip.

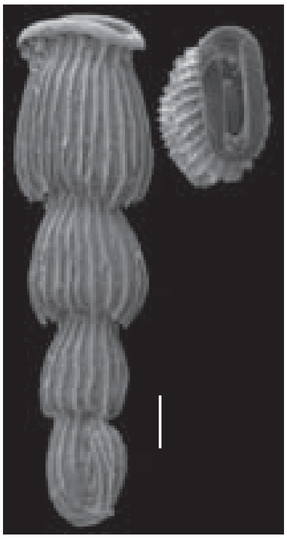
Dispersed in the southwestern lagoon, 5-30 m.
Systematics p. 280.



Articulina sagra

Test elongate, composed of two portions: a milioline earlier section, and later an uniserial one; triloculine portion generally elliptical, the uniserial portion compressed, consisting of 1-3 vase-shaped chambers, increasing progressively in size; wall longitudinally costate; aperture elliptical, with a thick everted lip.

Outer reef, 30 m.
Systematics p. 280.

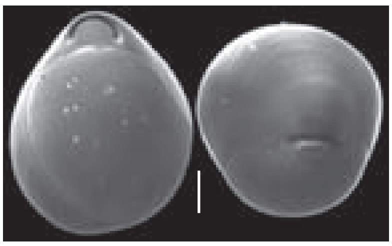


Biloculinella

Biloculinella globula

Test biloculine in front view oval with greatest width at two thirds distance from the aperture, in end view globular; chambers much inflated, sutures slightly depressed; wall smooth; aperture semicircular with a simple flat tooth filling a large part of the opening.

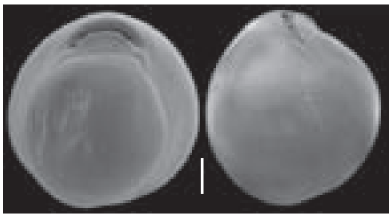
Northern shelf, 200 m.
Systematics p. 274.



Biloculinella inflata

Test biloculine in the adult, chambers wide, shallow, periphery rounded; wall smooth; aperture terminal with a broad apertural flap, leaving only a thin opening.

Northern shelf, 200 m.
Systematics p. 274.



Borelis

Borelis schlumbergeri

Test planispiral involute elongate along the coiling axis; surface ornamented by low wavy ridges located along the chamberlet sutures, and by faint pustules in between the ridges; 4-6 chambers per whorl separated by depressed sutures; chambers divided into 20-40 chamberlets in the adult; apertural face with one basal row of circular to irregularly quadrangular apertures; each aperture rimmed with peristomal material; a rectangular to faintly bifid mask hides partly each apertural opening.

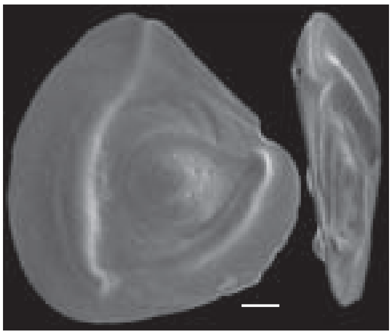
Lifou, Loyalty Islands, 5 m.
Systematics p. 281.

Cornuloculina

Cornuloculina inconstans

Test free, thin; early portion a planispirally coiled, non-septate tube, later tending to becoming spiroloculine in arrangement (2 chambers per whorl), or forming convolutions of several irregularly arcuate chambers; periphery bordered by a broad thin wing; aperture terminal, rounded.

Northern shelf, 600 m.
Systematics p. 268.



Cornuspira

Cornuspira foliacea

Test flattened, early portion of the tubular chamber of nearly uniform dimensions, but in later development rapidly increasing in height and forming a broad flat test; wall smooth except for occasional thickening over the lines of growth; aperture a long slit at the end of the tubular chamber.

Northern shelf, 600 m.
Systematics p. 266.

Cornuspira involvens

Test slightly biconcave with a rounded peripheral edge, composed of a proloculus followed by an undivided, planispiral, somewhat embracing, second chamber; tubular chamber increasing gradually in size; number of coils greatly variable; adherent specimens may be irregular in shape; surface often irregular; aperture terminal.

Northern shelf, 200 m.
Systematics p. 266.

Cornuspira planorbis

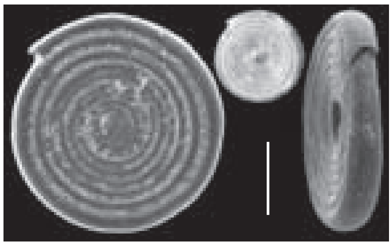
Test circular composed of a globular proloculus followed by an undivided, planispiral, evolute second chamber; wall with a smooth imperforate surface; aperture at the open end of the tube.

From coastal lagoons to outer reef, 0-50 m.
Systematics p. 266.

Cornuspira polygyra

Test small, flattened, circular in outline; composed of a globular proloculus followed by an undivided, planispiral, slightly embracing second chamber increasing very slowly in diameter, with up to 12 convolutions; surface smooth; aperture terminal.

Northern shelf, 200 m.
Systematics p. 266.

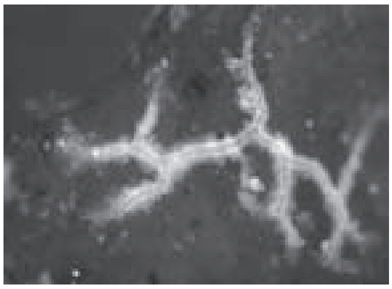


Cornuspiramia

Cornuspiramia cf. *C. antillarum*

Test attached; globular proloculus followed by a spiral tubular second chamber; later chambers irregularly uncoiled and branching, elongate, cylindrical to pyriform, attached side flattened, with a marginal keel, free surface convex; wall imperforate, milky-white at the periphery; aperture terminal. The uncoiled chambers are hardly preserved in the sediment.

Southern lagoon and outer reef, 3-125 m.
Systematics p. 267.



Cornuspiroides

Cornuspiroides striolatus

Test large, flabelliform; proloculus followed by an undivided tubular second chamber in numerous planispiral whorls that gradually enlarge at first, later whorls enlarging more rapidly, flaring and uncoiling, as test becomes wide, flattened, and flabelliform; wall milky white in color, surface with distinct transverse growth lines that are strongly arched in the flabelliform stage of growth, also with numerous fine longitudinal striae; aperture a narrow elongate slit at the open end of the flattened tube.

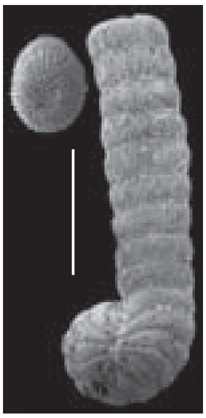
Northern shelf, 600 m.
Systematics p. 266.

Coscinospira

Coscinospira hemprichii

Crosier-shaped test with a shallow umbilical depression in the early involute portion; uniserial portion cylindrical; sutures radiate, curving backwards near the margin in the coiled portion, straight, transverse in the uncoiled portion; surface covered with strong acute ribs, perpendicular to the sutures, alternating irregularly from one chamber to the other; the ribs fuse with the peristomes of the multiple aperture that occupy the center of the apertural face.

Widely distributed in the southwestern lagoon, 0-45 m.
Systematics p. 281.



Cribrolinoides

Cribrolinoides curta

Test quinqueloculine, subcircular in lateral view, triangular in cross section; wall imperforate, smooth, surface ornamented with longitudinal costae more prominent at the peripheral margins than on the sides of the chambers; aperture terminal, arched, with peristomal rim; protruding tooth, simple in the juvenile stage, later bifid, increasingly complex during ontogeny. The ultimate stage has been described as resulting in a complex cribrate opening. This ultimate stage was not observed in New Caledonia.

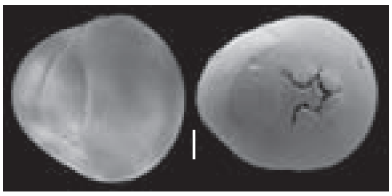
Southern shelf, 60-70 m.
Systematics p. 268.

Cribromiliolinella

Cribromiliolinella subvalvularis

Test ovate in outline, rounded in section; three chambers visible from the exterior; wall imperforate; aperture terminal, with a flap, the opening extending around the flap and up the chamber as an irregularly triradiate opening, the rays of the opening also secondarily bifurcating in well-developed specimens

Northern shelf, 600 m.
Systematics p. 274.



Edentostomina

Edentostomina cultrata

Test compressed, planispirally enrolled, ovate in outline, with a carinate periphery; chambers elongate and narrow, rapidly enlarging, one-half coil in length; aperture terminal, oval, with an everted lip; no tooth.

South of the Grande Terre, 40 m.
Systematics p. 268.

Edentostomina milletti

Test compressed, ovate in outline, periphery acute; planispirally enrolled with the antepenultimate chamber only just visible between the embracing later chambers; sutures slightly excavate; chambers rapidly enlarging, one-half coil in length; aperture terminal, elliptical, surrounded by a thickened lip, with no tooth.

Bay of Prony, 30 m.
Systematics p. 268.

Edentostomina sp. 1

Test compressed, ovate in outline; rapidly enlarging; chambers of one-half coil in length, planispirally enrolled; last two chambers visible from both sides of the test; periphery carinate; wall smooth, with faint transverse striae; aperture terminal, produced on a short neck, simple, oval, with an everted lip. This form is larger than *E. cultrata* and *E. milletti*, and chambers are relatively shorter.

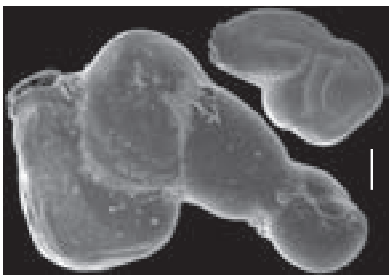
Northern shelf, 200 m.
Systematics p. 268.

Erichsenella

Erichsenella schauinslandi

Test cryptoquinqueloculine in the early chambers, later chambers uniserial, more or less regularly arranged; early-coiled stage usually inflated; later chambers flattened on one side and inflated on the other side with a rounded peripheral margin; aperture *Miliolinella*-like in the early stage, a large terminal opening that is bordered by a crenulate lip in the adult stage.

Isle of Pines, 5 m.
Systematics p. 280.

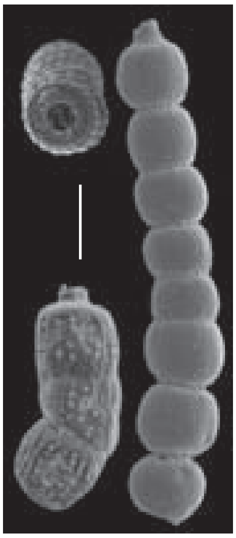


Euthymonacha

Euthymonacha polita

Test made up of an irregular row of loosely attached chambers, cylindrical in shape and typically of uniform size; sutures deeply incised; no initial coil observed; numerous pseudopores aligned parallel to the longitudinal axis giving a striated appearance; aperture terminal with an everted, crenulated lip that projects out of the test.

Widely distributed in the southwestern lagoon and Chesterfield, 0-30 m.
Systematics p. 281.

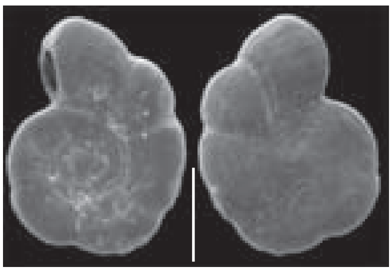


Fischerina

Fischerina pellucida

Test discoidal, planispirally enrolled; globular proloculus followed by enrolled nonseptate tubular chamber of about one whorl, then by two or more whorls with up to eight chambers each; sutures radial to slightly curved; each whorl partially overlapping the earlier one on both sides of the almost symmetrical test; wall thin and imperforate, smooth; aperture at the open end of the final chamber, often arcuate in form due to the slightly involute coiling.

South of the Grande Terre, 50 m.
Systematics p. 266.

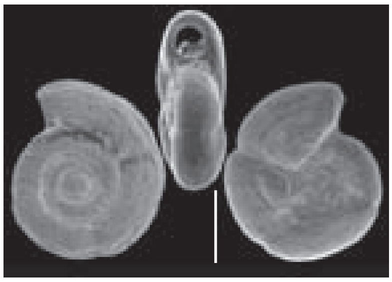


Fischerinella

Fischerinella diversa

Proloculus followed by a spiral chamber of nearly a complete whorl; latter trochospirally enrolled chambers, gradually enlarging and progressively more numerous per whorl; only the final whorl visible from the umbilical side, sutures radial; aperture ovate at the open end of the final chamber.

Submarine valleys in the southwestern lagoon, bay of Prony, southern shelf, 20-70 m.
Systematics p. 266.



Fischerinella helix

Test conical, globular proloculus followed by spiral chamber of nearly a complete whorl, then with gradually enlarging trochospirally enrolled chambers, progressively more numerous per whorl, up to four or five in the final one; spiral side convex evolute with all whorls visible; only chambers of the final whorl visible on the flattened umbilical side with slightly depressed umbilicus; spiral suture depressed, sutures between chambers flush to slightly depressed, radial; wall imperforate, smooth or ornamented with faint striae; aperture rounded or ovate at the open end of the final chamber.

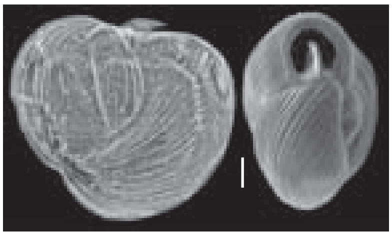
From 50 to 600 m.
Systematics p. 266.

Flintina

Flintina bradyana

Test ovate with a broadly rounded periphery, early stage with a triloculine arrangement, latter becoming planispiral, with 2-3 chambers per whorl; surface with longitudinal striae; aperture large with a bifid tooth in the early stage, latter becoming more complex.

Shallow muddy bays, 5-20 m.
Systematics p. 275.



Hauerina earlandi

Test globular to sub-globular or slightly compressed; coiling triloculine to quinqueloculine in early stages, becoming almost planispiral in the final whorl; aperture a complex trematophore that protrudes from the end of the last chamber.

Bays, 5-15 m.
Systematics p. 270.

Hauerina pacifica

Test robust, early quinqueloculine chamber arrangement becoming almost planispiral with two chambers per whorl during ontogeny; acute to angular periphery; wall roughly textured with weak ribbed ornament; cribrate aperture becoming more complex during ontogeny.

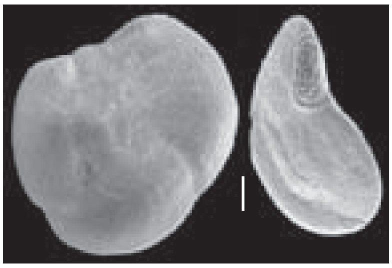
Dispersed in the southwestern lagoon, 5-30 m.
Systematics p. 270.

Hauerina

Hauerina diversa

Test with rounded outline, slightly biconvex, periphery subacute; initial stage quinqueloculine, adult stage planispiral with 3-4 crescent-shaped chambers in the last coil, increasing gradually in size, slightly overlapping those of the preceding coil; surface ornamented with longitudinal anastomosing and transverse microstriae; aperture terminal, elliptical, cribrate.

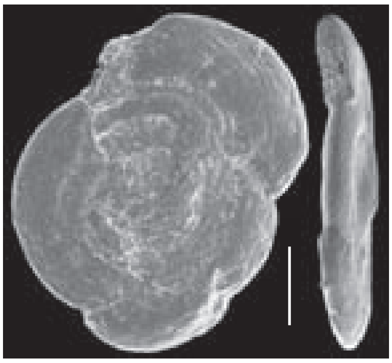
Back reef areas and around patch reefs, 5-20 m.
Systematics p. 270.



Hauerina fragilissima

Test partially involute with a highly compressed discoid shape; surface of the wall unevenly pitted; aperture terminal, cribrate.

Southwestern lagoon, rare, 20-30 m.
Systematics p. 270.

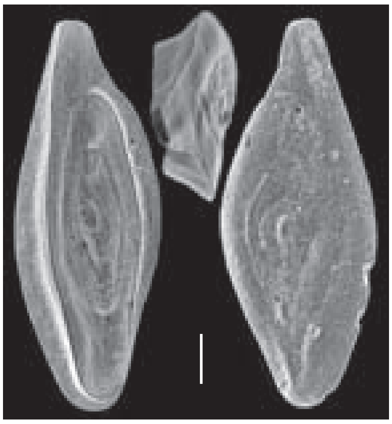


Inaequalina

Inaequalina affixa

Test elongated with tapering ends; one side flat, the other deeply concave; periphery carinate; chambers triangular in cross section, with concave sides, planispirally enrolled, increasing rapidly in size as added; wall smooth and polished; aperture rectangular at the end of a compressed extension of the last chamber, without tooth.

Bay of Prony and outer reef, 10-30 m.
Systematics p. 268.



Inaequalina? sp. 1

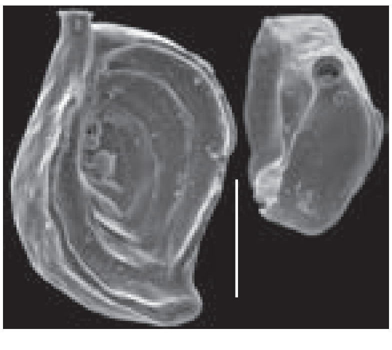
Test elongate, asymmetrical, slightly concavo-convex, with a long neck and a produced aboral end; coiling planispiral, evolute, with two chambers per whorl, visible on both sides; chambers with an oblique outer margin; sutures depressed; surface ornamented by irregular longitudinal costae that may continue on the neck; aperture rounded, produced on neck, with a small lip and a short tooth. This species is retained in *Inaequalina* despite the presence of a distinct tooth, uncharacteristic for the genus. As discussed by Parker (2009), the bilateral asymmetry is considered as the prominent characteristic.

Southwestern lagoon, 35 m.
Systematics p. 268.

Inaequalina? sp. 2

Test ovate, concavo-convex, with a very deep concave side; oral and aboral ends produced; coiling planispiral, evolute, with two chambers per whorl, visible on both sides; chambers subtriangular in section, with an acute edge on the concave side; sutures depressed; wall smooth, but surface irregular; aperture rounded, produced on neck, with a small lip and a short tooth. This species is retained in *Inaequalina* despite the presence of a distinct tooth, uncharacteristic for the genus. As discussed by Parker (2009), the bilateral asymmetry is considered as the prominent characteristic.

Southwestern lagoon, 35 m.
Systematics p. 268.

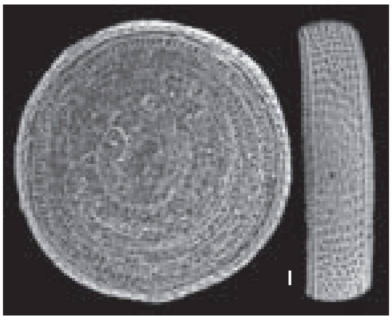


Marginopora

Marginopora vertebralis

Test discoidal, large, biconcave; cyclic chambers subdivided into a complex set of chamberlets; larger tests commonly with a central hole due to the erosion of the thinner early portion; wall calcareous, imperforate; aperture of numerous small circular openings randomly scattered over the peripheral wall.

Southwestern lagoon, 0-45 m.
Systematics p. 282.

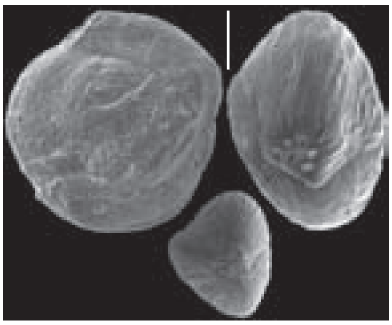


Miliola

Miliola? *sublineata*

Test rounded in outline, elliptical in end view, periphery broadly rounded; chambers in the adult spirally arranged, about 3 chambers in a whorl, irregular in outline; sutures depressed; wall ornamented with thin longitudinal costae; aperture terminal, cribrate. This species possesses the cribrate aperture characteristic of the genus, but the pitted surface, also considered as characteristic, is not visible on all specimens (here visible on the left specimen, not on the right one), making the position of this species questionable.

Northern shelf, 600 m.
Systematics p. 280.

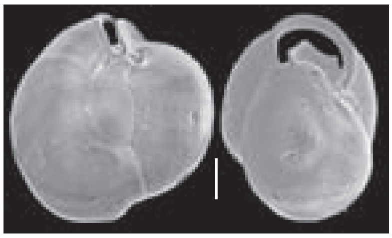


Miliolinella

Miliolinella circularis

Test milioline with 3 inflated chambers visible; test circular in outline, periphery rounded; wall smooth; aperture terminal, a large, low arch opening surrounded by a flared, well-developed lip and with a plate-like tooth.

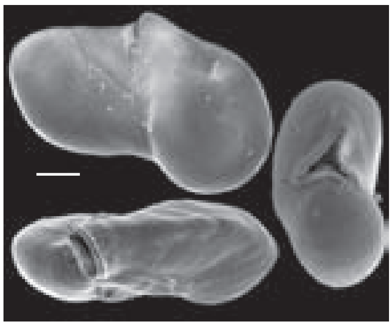
Bays, 0-20 m.
Systematics p. 275.



Miliolinella labiosa

Test much broader than long, irregular in outline, surface largely composed of the two last-formed chambers; chambers often somewhat irregular; periphery rounded; surface smooth but dull; aperture irregular, a sinuous arch, with a smoothly finished narrow bordering lip but without a true tooth.

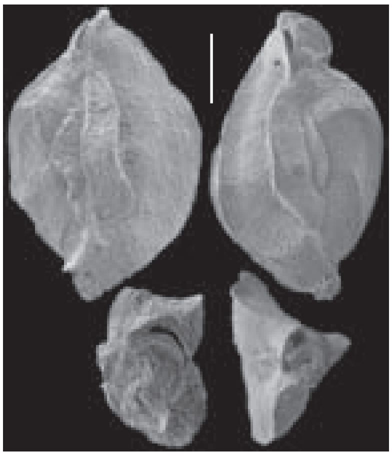
Northern shelf, Chesterfield, 2-200 m.
Systematics p. 275.



Miliolinella oceanica

Coiling quinqueloculine throughout; chambers angular with one carina or two carinate shoulders; wall roughly textured; large aperture at the end of the final chamber bordered by an everted lip surrounded by irregular minute ribs, and almost closed by an irregularly shaped flap-like tooth. The form with one carina was considered as a different species (*M. quinquangula*) by LOEBLICH & TAPPAN (1994).

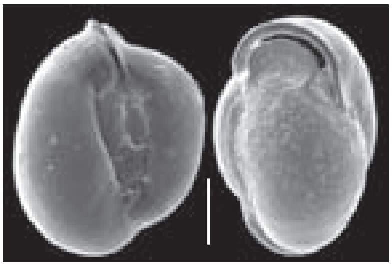
Chesterfield, outer reef, 2-45 m.
Systematics p. 275.



Miliolinella pilasensis

Test subcircular in lateral view, somewhat compressed; periphery rounded; sutures depressed; last formed chamber inflated at its initial end, tapered towards the aperture; wall imperforate, smooth and polished; aperture a low arch with an apertural flap that leaves only a long narrow opening.

Southwestern lagoon and bays, 2-45 m.
Systematics p. 275.

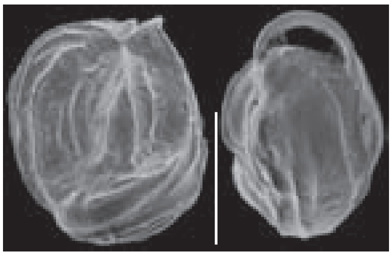


Miliolinella cf. *M. semicostata*

Test milioline with five chambers visible, ovate to subcircular in lateral view, ovate in cross section; margins broadly rounded; chambers inflated, widest towards the aboral end that is slightly produced, rounded to flattened; sutures depressed; wall smooth, dull; several low, somewhat anastomosing longitudinal costae extending along the periphery; aperture large with prominent lip, provided with an apertural flap.

This species differs from the typical *Miliolinella semicostata* in the lack of the typical prominent angular longitudinal costae

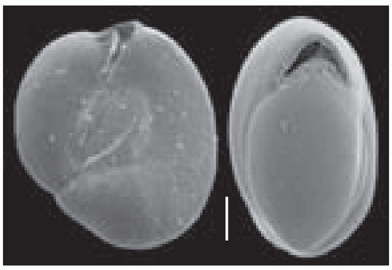
Southwestern lagoon, 30 m.
Systematics p. 275.



Miliolinella subrotunda

Test milioline; 3-5 inflated chambers visible, strongly overlapping previous ones, arranged almost planispirally in adults; wall smooth, sometimes translucent; aperture somewhat triangular in profile; low and broad flap-shaped tooth in front of the aperture, that may lack in some specimens.

From coastal lagoons to passes, 0-40 m.
Systematics p. 275.



Miliolinella cf. *M. vigilax*

Test large, oval in front view, roughly triangular in end view, with a rounded periphery; sutures distinct but not depressed; wall opaque and smooth; aperture broad with large apertural flap that leaves only a narrow opening.

Northern shelf, 200 m.
Systematics p. 275.

Miliolinella webbiana

Test circular in outline, compressed, with a prominent longitudinal costate ornament; arrangement quinqueloculine in early stages, latter almost planispiral; chambers triangular in cross section; large aperture at the end of the final chamber bordered by an everted lip, provided with a prominent flap-like tooth that occupies about one half of the apertural base.

Bay of Prony, 25 m.
Systematics p. 275.

Miliolinella? sp. 1

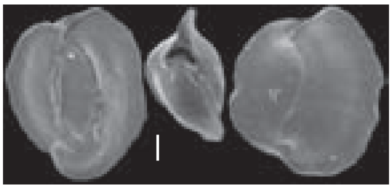
Test surectangular in outline, somewhat compressed, periphery rounded, 5 chambers visible; apertural end bent, overlapping the aboral end of the previous chamber; wall imperforate, smooth; aperture terminal, an arch, with a thickened peristome and a very low apertural flap.

Bay of Prony, 30 m.
Systematics p. 275.

Miliolinella sp. 2

Test subcircular in side view; in end view, center of the test oval, but with two very high and thick carinae; wall smooth, polished; aperture triangular, at the end of the final chamber, under a crest-like carina, provided with a relatively small triangular flap-like tooth.

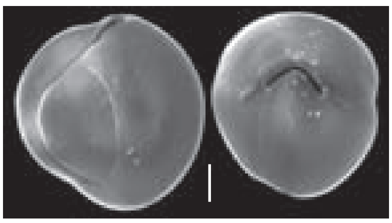
Northern shelf, 200 m.
Systematics p. 275.



Miliolinella sp. 3

Test subsphaerical with 3 chambers visible externally, increasing regularly in size as added; surface smoothly finished; aperture a narrow slit between the edge of the aperture and the robust triangular flap-like tooth, flush with the surface of the test.

Northern shelf, 500 m.
Systematics p. 275.



Miliolinella sp. 4

Test ovate in side view, subcircular in end view, with 3 chambers visible externally, the last two chambers making up most of the test; surface smoothly finished; aperture at the truncated end of the last chamber, a narrow slit between a slightly thickened rim and the robust semicircular flap-like tooth.

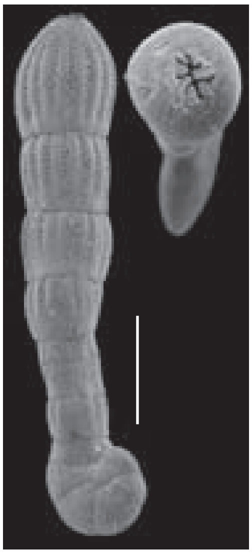
Northern shelf, 600 m.
Systematics p. 275.

Monalysidium

Monalysidium acicularis

Early stage planispiral, biconvex with inflated chambers, somewhat compressed, latter uniserial, cylindrical, long and thin; wall with longitudinal costae separated by irregular rows of large pseudopores; aperture becoming increasingly complex with growth, with crenulations folding irregularly inwards, forming a dendritic pattern.

South of the Grande Terre, 40 m.
Systematics p. 281.



Monalysidium confusa

Test compressed, planispirally enrolled and involute in the early stages, later uncoiled; about height chambers in the coiled section with sutures radial, slightly arcuate, thick; chambers of the uncoiled section low, but more inflated; wall calcareous, with faint ribs aligned with the direction of coiling, separated by regular rows of large pits; aperture areal, centered, with a prominent lip, radiate with several teeth projecting centrally.

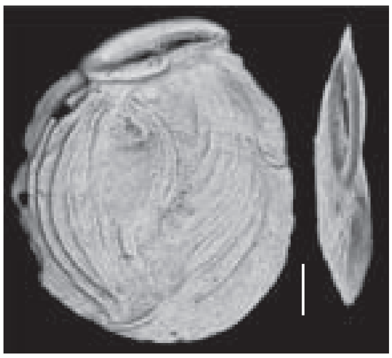
Chesterfield, 1 m.
Systematics p. 281.

Nodobaculariella

Nodobaculariella convexiuscula

Test compressed, broadly elliptical or nearly circular, slightly biconvex; peripheral edge sharp or carinate; chambers few in number, broad, embracing, sutures obscured; surface marked by partial, irregular, longitudinal costae; aperture placed at one side of the median peripheral line, oval, bordered by a thickened or everted lip.

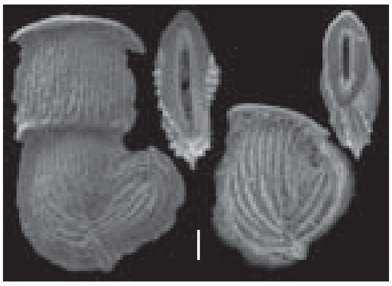
Northern shelf, 200 m.
Systematics p. 266.



Nodobaculariella japonica

Test flattened, broad, with carinate periphery; chambers of one-half coil in length, slightly overlapping in the latter whorls, final chamber uncoiled in adult; wall imperforate, with longitudinal costae; aperture elongate, terminal on the final chamber, with a bordering everted lip.

Back reef sands, 15 m.
Systematics p. 267.

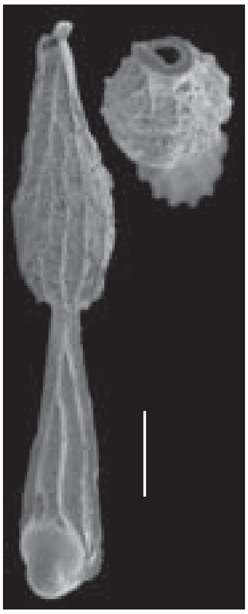


Nodophthalmidium

Nodophthalmidium gracilis

Test elongate; initial stage globular (proloculus followed by a planispirally enrolled second chamber); latter a few uncoiled and rectilinear flasklike chambers strongly tapering towards the distal end; wall imperforate, thick with longitudinal costae; aperture ovate, terminal and somewhat produced.

Coastal bay, 10 m.
Systematics p. 267.



Nubeculina

Nubeculina advena

Test elongate, chambers of the initial stage hardly visible, followed by a somewhat irregular series of chambers with distinct sutures; coarsely agglutinated wall with porcelaneous cement and a distinct porcelaneous neck; aperture terminal at the end of the neck, with an everted peristomal rim that has a few teeth projecting inward.

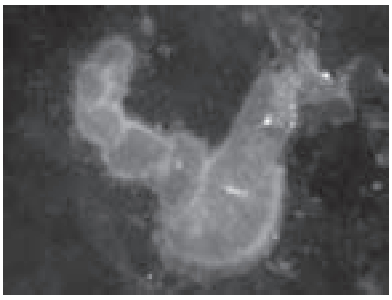
South of the Grande Terre, 20-80 m.
Systematics p. 267.

Nubeculinella

Nubeculinella sp. 1

Test attached; proloculus followed by a first chamber coiling around it, a half coil in length; later chambers irregular in size and shape, uniserially arranged; wall imperforate, smooth milky-white; aperture terminal, semicircular, against the substratum. This fragile test was not found in the sediment.

Southwestern lagoon, 30 m.
Systematics p. 267.

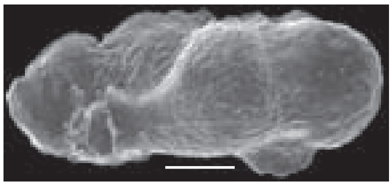


Nubeculinita

Nubeculinita decorata

Test attached, elongate, early stage enrolled, later irregular chambers forming two or more branches attached throughout; wall imperforate, milky white; aperture terminal, against the attachment.

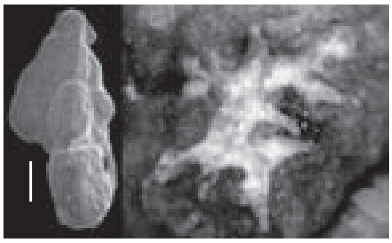
Southwestern lagoon and outer reef, 3-100 m.
Systematics p. 267.



Nubeculinita ramosa

Test attached, elongate, early stage enrolled, later irregular chambers forming two or more branches growing upright, free of the attachment; wall imperforate, milky white; aperture consists of one or more terminal openings.

Passes of the southwestern lagoon and Chesterfield, 3-90 m.
Systematics p. 267.



Nummoloculina

Nummoloculina contraria

Test ovate in outline, biconvex; periphery broadly rounded, with two to five chambers per whorl added in a single plane in adult; lateral wall extensions from each chamber overlap the preceding chambers; wall thick, surface smooth and polished; aperture semicircular to subtriangular, at the end of the final chamber, with a small flap.

Northern shelf, 200 m.
Systematics p. 279.

Nummoloculina sp. 1

Test ovate in outline, biconvex; periphery broadly rounded, with two to five chambers per whorl added in a single plane in adult; lateral wall extensions from each chamber overlap the preceding chambers; wall thick, surface smooth and polished; aperture semicircular at the end of the final chamber with a thick peristome marked by shallow, radial grooves, and provided with a broad spatulate tooth extending from the base of the opening.

Northern shelf, 200 m.
Systematics p. 279.

Nummulopyrgo

Nummulopyrgo globulus

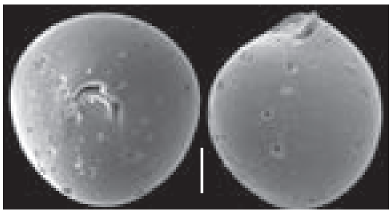
Test subspherical, chambers one-half coil in length with a rounded periphery; wall imperforate, smooth; aperture terminal, broad, nearly closed by a broad apertural flap, leaving only a thin crescentic opening.

South of the Grande Terre, 35 m.
Systematics p. 268.

Nummulopyrgo sp. 1

Test biloculine in the adult, spherical; 2 last chambers visible, the last one making up more than 3/4 of the test surface; sutures flush, indistinct; wall imperforate, smooth; aperture semicircular, nearly closed by a broad apertural flap with a thickened margin, leaving only a thin crescentic opening.

SNorthern shelf, 600 m.
Systematics p. 268.



Parasorites

Parasorites orbitolitoides

Test discoidal, flat, and smooth; thickness hardly increased towards the periphery; planispiral coiled early stage, later chambers annular, subdivided into one layer of chamberlets by alternating radial partitions; wall smooth and polished; apertures small, round, in one row, sometimes in a slight depression, at the periphery.

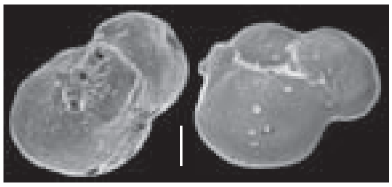
Southwestern lagoon and Chesterfield, 0-60 m.
Systematics p. 282.

Parrina

Parrina bradyi

Test elongate, early stage quinqueloculine, latter with a few irregular uncoiled chambers; wall imperforate, smooth; aperture terminal with two or more openings usually produced on short necks on the final chamber.

Southern shelf, 60 m.
Systematics p. 280.

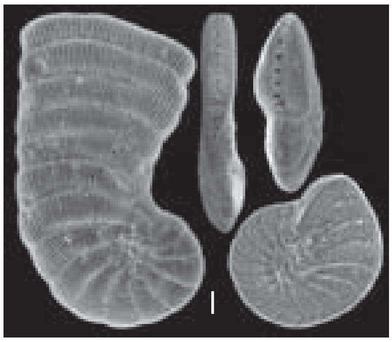


Peneroplis

Peneroplis pertusus

Highly variable morphology characterized by a compressed biconvex planispiral coil, often becoming fan-shaped or uniserial in latter stages; test with numerous low costae perpendicular to the sutures; apertures multiple, terminal, a series of irregular vermicular slits in young specimens that may become a row of square to rectangular openings in larger specimens.

Dispersed in the southwestern lagoon and Chesterfield, 0-40 m.
Systematics p. 281.



Peneroplis planatus

Test very flat; early stage planispiral and involute; last whorl fanning out, chambers rapidly increasing in width with nearly constant height; test with numerous blunt or faint ribs perpendicular to the sutures, with no ribs in the umbilical depression; ribs separated by a single row of large pits with circular outline; apertural face and its shoulders covered with numerous small pits; aperture a linear arrangement of irregularly oval openings.

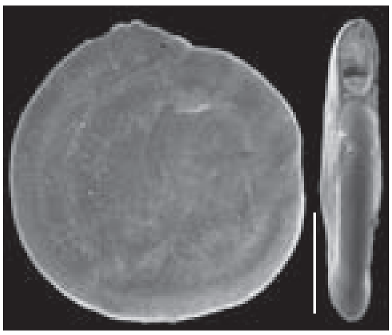
Dispersed in the southwestern lagoon and Chesterfield, 0-40 m.
Systematics p. 281.

Planispirinella

Planispirinella exigua

Test discoidal, flattened, planispirally coiled with about three, hardly visible, chambers per whorl; whorls partially evolute, becoming more so in latter chambers; an additional lamella covers the umbilical areas with subsequent chamber additions, obscuring the previous whorls; wall imperforate, smooth; aperture a high ovate opening in the face of the final chamber.

Southwestern lagoon, 20 m.
Systematics p. 266.



Planispirinella involuta

Planispirinella involuta differs from *P. exigua* in its more involute test throughout growth; additional lamellae obscure the previous whorls; wall imperforate, smooth; aperture terminal, slit-like, at the end of the final chamber.

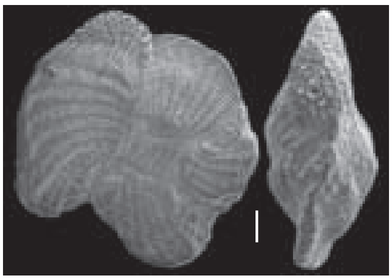
Dispersed in the southwestern lagoon and Chesterfield, 0-40 m.
Systematics p. 266.

Pseudohauerina

Pseudohauerina involuta

Test subcircular in outline, lenticular, chambers in the early stage milioline, latter planispiral with usually more than two chambers per whorl, distinctly involute; interior partially subdivided by numerous radial septula; wall ornamented with slightly curved ribs that correspond to the internal septula and numerous longitudinal striae; aperture terminal, in the juvenile stage an opening with simple tooth, in the adult stage a convex cribrate aperture.

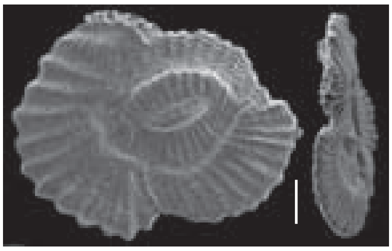
Southwestern lagoon, 0-40 m.
Systematics p. 280.



Pseudohauerina orientalis

Test oval in outline; early chambers inflated, with a quinqueloculine arrangement, latter planispiral with usually more than two chambers per whorl, partially evolute; reticulate ornament more intense than in *P. involuta* with transverse ribs that correspond internally to septula; apertures lyre-shaped in the juveniles, a full cribrate trematophore in the adults.

Southwestern lagoon, 0-40 m.
Systematics p. 281.



Pseudohauerinella

Pseudohauerinella dissidens

Test small robust, elongated, fusiform to sub-polygonal in contour; both ends truncated and not produced; chamber arrangement quinqueloculine with gradually increasing angle between successive chambers; chambers slightly compressed, strongly plicated; sutures depressed; walls rough, ornamented with irregular microstriae and irregularly distributed pits; aperture at the end of the last chamber, truncated, subcircular with an elongate bifid tooth; the thickened peristomal margin may produce two lateral infolds.

Northern shelf, 600 m.
Systematics p. 281.

Pseudolachlanella

Pseudolachlanella eburnea

Test cryptoquinqueloculine, elliptical in lateral view, slightly compressed, with rounded periphery; aboral end strongly overlapping preceding chambers; sutures depressed; wall smooth and polish; aperture an elongate slit almost completely filled by a large projecting tooth.

Coastal lagoons, bays.
Systematics p. 275.

Pseudolachlanella slitella

Test elongate, periphery subrounded; chambers one-half coil in length, early stage cryptoquinqueloculine latter nearly planispiral; chambers broadly overlapping; wall imperforate, surface smooth; aperture a very narrow, curved, elongate slit with parallel sides, provided with a long slender tooth with short, thickened termination.

Bays, 5-20 m.
Systematics p. 275.

Pseudomassilina

Pseudomassilina australis

Test elliptical to circular in lateral view, strongly flattened; initial milioline coiled chamber arrangement, latter planispiral with two to three chambers per whorl, slowly increasing in width; wall penetrated by numerous minute pits; aperture large and compressed, without tooth but with an everted margin.

Southwestern lagoon, 5-45 m.
Systematics p. 275.

Pseudomassilina macilenta

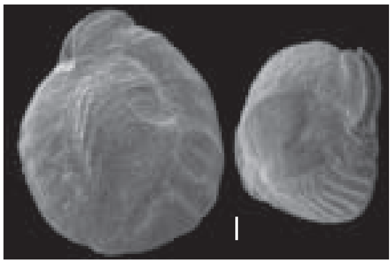
Test elliptical to circular in lateral view, flattened; early stage quinqueloculine, latter planispiral with two to three chambers per whorl, slowly increasing in width; wall ornamented with longitudinal, somewhat oblique costae; aperture large and compressed, without tooth but with an everted margin.

Southwestern lagoon, 5-30 m.
Systematics p. 276.

Pseudomassilina pacificiensis

Test sub-elliptical to circular in lateral view, broadly subtriangular in end view; the early quinqueloculine stage indistinct, latter stage planispiral with two to three chambers per whorl, laterally embracing the previous chambers; wall transversally plicated; aperture large and compressed, without tooth but with an everted lip.

Southwestern lagoon, 20 m.
Systematics p. 276.



Pseudomassilina robusta

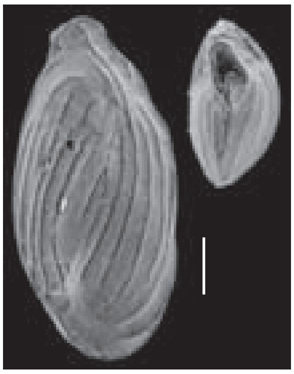
Test elliptical in lateral view, triangular in end view; early stage milioline, latter planispiral with two chambers per whorl, slowly increasing in width; wall thick, very roughly finished, with an anastomosing ornamentation and numerous large pits; aperture large and compressed, without tooth but with a slightly everted margin.

Southwestern lagoon, 15 m.
Systematics p. 276.

Pseudomassilina? sp. 1

Test elliptical in lateral view, lenticular in end view; chambers arranged planispirally with two somewhat oblique chambers per whorl, slowly increasing in width; wall thick, with smooth longitudinal costae, roughly finished and pitted between the costae; aperture compressed, with a slightly everted margin that is folded at the contact with the penultimate chamber. This species resembles some young stages of *Pseudomassilina* spp., but differs in the folded margin of the aperture.

SNorthern shelf, 200 m.
Systematics p. 276.



Pseudotriloculina

Pseudotriloculina cf. *P. chrysostoma*

Test cryptoquinqueloculine, ovate in lateral and end views, somewhat compressed; periphery broadly rounded; 3 chambers visible, with the last two making up most of the test surface; aboral end rounded with chambers tapering towards the aperture; sutures distinct but very slightly depressed; wall smooth and shiny; aperture slightly produced, a high arch that does not extend down to the suture of the penultimate chamber, narrowing along the stem of the long tooth that has a T-shaped extremity. The shape of the aperture, with the lips extending towards the stem of the tooth, is different from the specimens shown by Hayward *et al*. (1999). However, the difference in size suggests that the specimens found in New Caledonia may be juveniles.

Bay of Prony, 20 m.
Systematics p. 276.

Pseudotriloculina linneiana

Test cryptoquinqueloculine typically with three visible chambers, elongate, tapering toward either end; surface ornamented by a few very prominent, raised, longitudinal ridges, with deep depressions between; periphery rounded or slightly ovate; aperture large with thickened peristomal rim and large bifid tooth.

Dispersed in the southwestern lagoon, 5-30 m.
Systematics p. 276.

Pseudotriloculina subgranulata

Test cryptoquinqueloculine with usually only three chambers visible in the final whorl; chambers inflated, wall finely granular, with surface undulations resulting in a rough surface; aperture large with thickened peristomal rim and large bifid tooth.

Dispersed in the southwestern lagoon, 5-30 m.
Systematics p. 276.

Pyrgo

Pyrgo anomala

Test ovate in outline, slightly produced towards the aperture, inflated and subcircular in cross section; periphery obtusely angled to subrounded; wall smooth; aperture terminal, subcircular, with a pronounced bifid tooth.

Northern shelf, 600 m.
Systematics p. 276.

Pyrgo comata

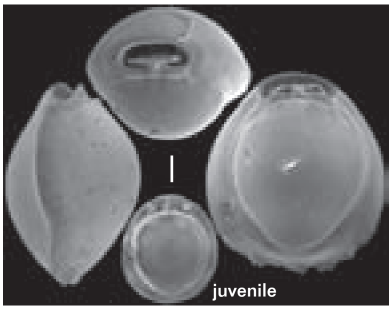
Test biloculine, involute, subglobular, the chambers very much inflated, in end view subcircular; sutures distinct, incised; wall ornamented with numerous, fine, longitudinal costae; aperture oval, with a tooth provided with winglike extensions.

Northern shelf, 600 m.
Systematics p. 276.

Pyrgo denticulata

Test biloculine, involute, sub-circular in outline, with a carinate peripheral margin and a serrated aboral margin; wall smooth; aperture at the end of the last chamber, ovate, provided with a broadly T-shaped tooth with prominent lateral extensions and a narrow base.

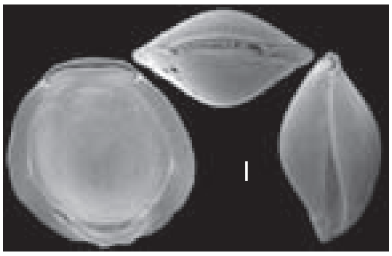
Southwestern lagoon in areas under open-sea influence, 10-60 m.
Systematics p. 276.



Pyrgo depressa

Test nearly circular in front view, compressed, toward the periphery extending out into a thin carina; median portion rotund, in end view lenticular; wall smooth; aperture broad, the tooth extending nearly the whole width of the aperture, living only a slit-like opening.

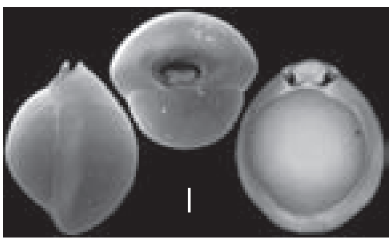
SNorthern shelf, 600 m.
Systematics p. 276.



Pyrgo inornata

Test biloculine, involute in the adult, ovate in outline, slightly produced towards the aperture, strongly biconvex and subcircular in cross section; periphery rounded; surface smooth; aperture oval, provided with a broad tooth with lateral extensions and a wide base.

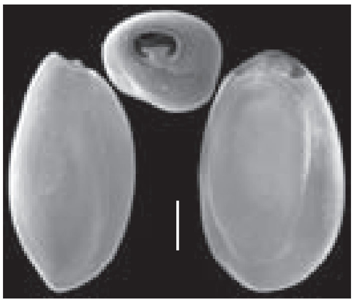
Systematics p. 276.



Pyrgo oblonga

Test biloculine, involute in the adult, pear-shaped in outline, with a rounded peripheral margin; wall smooth; aperture at the end of the last chamber, ovate to subcircular, provided with a T-shaped tooth with a relatively narrow base.

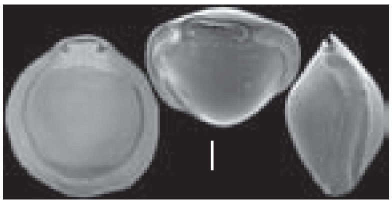
Outer reef, 30 m.
Systematics p. 276.



Pyrgo phlegeri

Test biloculine, involute, subcircular in outline, biconvex lenticular in end view, somewhat truncated at the aboral end; periphery acute, subcarinate; surface smooth; aperture distinctly produced, an elongated slit restricted by a highly protruding, elongated bifid tooth with two short pointing extensions.

Northern shelf, 600 m.
Systematics p. 277.



Pyrgo rasheedi

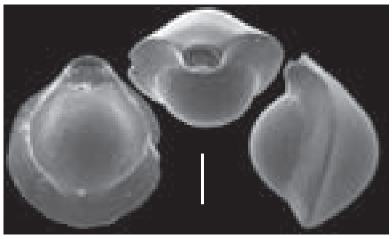
Test ovate in young to spherical in adult specimens, biloculine; periphery rounded; last chamber envelops half of penultimate chamber; wall smooth; aperture rounded with a tooth projecting from the apertural face; tooth changes from slightly bifid through hoof-shaped bifid to reindeer horn-shape toward the full-grown adult stage. Only young specimens were found in this study.

Northern shelf, 600 m.
Systematics p. 277.

Pyrgo rotaliara

Test biloculine, involute, subcircular in outline, strongly biconvex; chambers helmet-shaped in cross section; periphery acute, subcarinate, the carina of the previous chambers sometimes visible along the suture; surface smooth; aperture at the end of a distinct and compressed neck, with a thickened rim connected with the carina, and provided with a narrow bifid tooth.

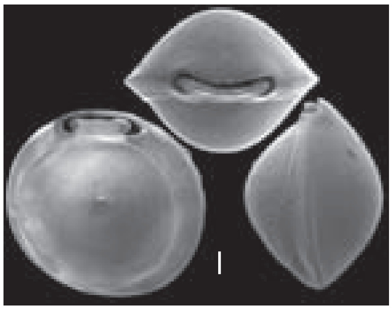
Northern shelf, 600 m.
Systematics p. 277.



Pyrgo sarsi

Test nearly circular in end view, ellipsoid in end view, the ends slightly truncated and the periphery angled, somewhat produced; wall smooth; aperture broad, with the tooth curved, concave in the middle, the ends extended and the aperture curving in a circle about them.

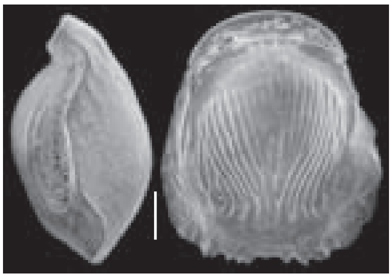
Northern shelf, 600 m.
Systematics p. 277.



Pyrgo striolata

Test biloculine, involute in the adult, almost rectangular in outline; chambers thicker towards the aboral end with a carinate peripheral margin and a serrated aboral margin; sutures sigmoidal in lateral view; ornamentation highly variable with distinct longitudinal costae; aperture low and wide at the end of the last chamber, provided with a peristomal lip and a broad plate-like tooth with prominent lateral extensions.

Southwestern lagoon and Bay of Prony, 10-30 m.
Systematics p. 277.



Pyrgo subpisus

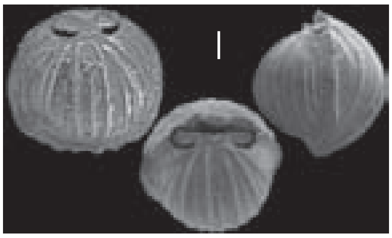
Test biloculine, involute in the adult, globular, circular in outline, periphery acute; wall smooth or with fine striae; aperture elongate, broadly elliptical, with a raised rim and a large plate-like tooth with the ends broadly rounded; apertural opening narrow, sinuate.

Northern shelf, 600 m.
Systematics p. 277.

Pyrgo tainanensis

Test biloculine, involute in the adult, subspherical; chambers very much inflated and rotund; wall with about ten longitudinal costae, only some of them reaching the end of the test; aperture wide at the end of the last chamber, provided with a small peristomal lip and a broad plate-like tooth with large wing-like developments at the ends.

Northern shelf, 600 m.
Systematics p. 277.



Pyrgo vespertilio

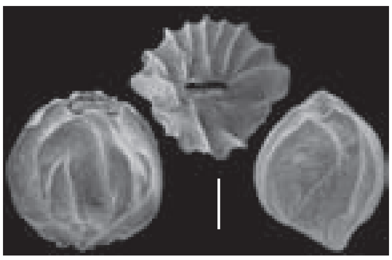
Test subspherical, the apertural end broadly truncate; wall smooth except for a few small longitudinal ridges; aperture elongate partially closed by a large flat tooth with broadly rounded ends. This species, with longitudinal ridges is very similar to the species illustrated by Cushman (1921).

Southern shelf, 70 m.
Systematics p. 277.

Pyrgo sp. 1

Test biloculine, involute in the adult, subspherical; wall with 4-6 high irregular costae; aperture low and wide at the end of the last chamber, provided with a broad plate-like tooth with prominent lateral extensions

Northern shelf, 600 m.
Systematics p. 277.



Pyrgo sp. 2

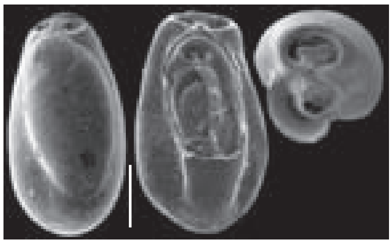
Test biloculine, involute in the adult, ovate in outline, slightly produced towards the aperture, inflated and subcircular in cross section; periphery obtusely angled to subrounded; aperture terminal, subtriangular, with a thick Y-shaped tooth.

Northern shelf, 600 m.
Systematics p. 277.

Pyrgo sp. 3

Distinguishing features:
Test biloculine, involute in the adult, ovate, elongate, tapering gradually to the apertural end, somewhat truncate; chambers somewhat obliquely added; periphery rounded, sutures depressed; wall imperforate, smooth; aperture elliptical provided with a flattened T-shaped tooth with a thick base in the adult, a simple tooth in younger stages.

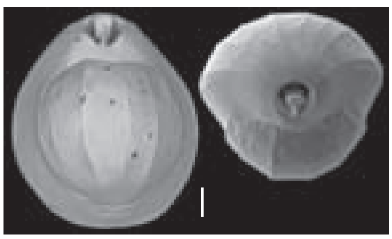
Northern shelf, 600 m.
Systematics p. 277.



Pyrgo sp. 4

Test biloculine, involute in the adult, subcircular in outline, slightly produced towards the apertural end, inflated and subcircular in cross section; periphery obtusely angled, sutures depressed; surface ornamented by a few longitudinal costae; aperture subtriangular provided with T-shaped tooth with a thin base.

Northern shelf, 600 m.
Systematics p. 277.



Pyrgoella

Pyrgoella irregularis

Test biloculine, involute in the adult, subglobular; hardly visible suture line at the contact between the last chamber and the previous one; wall smooth and highly polished; aperture a triangular opening almost completely closed by a plate like tooth bent outward all along its free margin. This deformed specimen shows more than two chambers.

Northern shelf, 600 m.
Systematics p. 277.

Quinqueloculina arenata

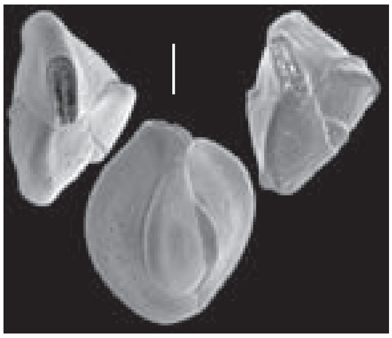
Test quinqueloculine; periphery rounded; Chambers broadly rounded, tapering towards each end; wall coarsely agglutinated, the agglutinate often obscuring sutures and chamber arrangement; aperture terminal, circular, at the end of a distinct neck, provided with a slightly protruding tooth, thickened at the tip.

Southwestern lagoon and Chesterfield, 5-60 m.
Systematics p. 270.

Quinqueloculina barnardi

Test robust, oval in lateral view and triangular in cross section; margins acutely rounded to truncated, or even bicarinate; wall ornamented with numerous fine striae; aperture compressed, *Lachlanella*-type with a long simple tooth.

Widely distributed in the southwestern lagoon, 5-75 m.
Systematics p. 270.



Quinqueloculina

Quinqueloculina agglutinans

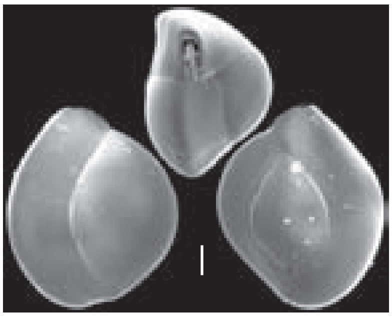
Test slightly elongate, quinqueloculine, with broadly rounded, somewhat truncated periphery; chambers distinct, rounded in transverse section; sutures visible although often obscured by the arenaceous material; wall with the surface coarsely arenaceous and roughly finished; aperture slightly produced, lachlanella type, with a slight lip and a bifid tooth.

Southwestern lagoon, 5-25 m.
Systematics p. 270.

Quinqueloculina auberiana

Test broadly oval; chambers sharply angled to slightly sub-rounded, faint carina may be present; faces curved, or S-shaped in end view; sutures distinct; wall smooth; aperture an arch of variable height, with a simple tooth which may protrude slightly above the periphery.

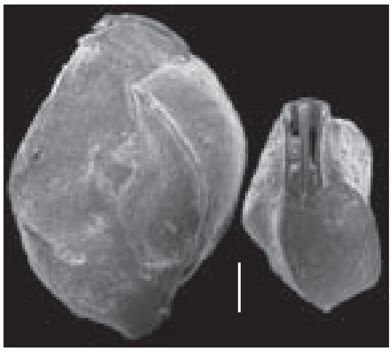
Northern shelf, 600 m.
Systematics p. 270.



Quinqueloculina bassensis

Test with a cryptoquinqueloculine coiling; chambers sudquadrangular in section with two carina and a convex peripheral margin between the carina; wall matte, ornamented with weak anastomosing striae; a small amount of finely agglutinated matter may be attached to the test surface; aperture compressed, *Lachlanella*-type with a distinctly bifid tooth and a peristomal lip.

Islet in the southwestern lagoon, 5 m.
Systematics p. 270.



Quinqueloculina bicarinata

Test quinqueloculine, subcircular in lateral view, triangular in cross section; described by CUSHMAN (1921) with "two somewhat rounded carinae at the outer border of each chamber that coalesce towards either end", but shown by HAIG (1988) to range from strongly bicarinate to acutely monocarinate; wall occasionally slightly striate longitudinally; aperture ovate, flush or slightly protruding, with a weakly reverted lip and a strong T-shaped tooth.

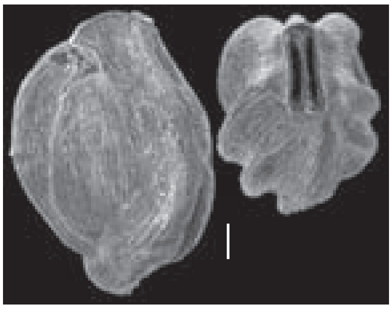
Southwestern lagoon, 5-30 m.
Systematics p. 270.

Quinqueloculina bicornis

Test quinqueloculine, broad, of moderate to large size, ovate in lateral view; chambers quadrangular in cross section, with three strong longitudinal carinae; surface densely ornamented by fine, but strong, longitudinal costae; aperture terminal, elongated, narrow and keyhole-shaped bordered by a low flange with a long tooth, bifid at the tip.

This species resembles *Q. bicornis* by its general shape, its surface ornamentation and its aperture. It differs by the three strong carinae.

Northern shelf, 200 m.
Systematics p. 271.



Quinqueloculina boroi

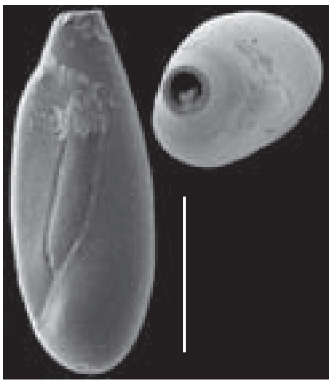
Test elongate, slightly compressed, ovate in cross section, periphery rounded, with 3 to 5 chambers visible from the exterior of the test; sutures depressed; chambers with the greater width at the basal end that is somewhat extended; apertural end truncated, compressed; wall smooth; aperture a narrow arch without tooth.

Near an islet of the southwestern lagoon, 5 m.
Systematics p. 271.

Quinqueloculina bosciana

Test elongate, truncated at the apertural end, rounded at the aboral end, periphery rounded; sutures distinct; aperture terminal, circular, produced on a broad short neck with a short bifid tooth. As noticed by HAIG, 1997, this species resembles *Quinqueloculina haigi* in its chamber arrangement (being cryptoquinqueloculine to quinqueloculine in New Caledonia), and apertural detail, but lacks the distinct pseudopores that give *Q. haigi* a pitted surface.

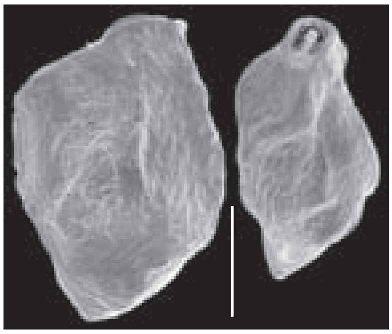
Coastal areas, bays, shrimp ponds, 0-10 m.
Systematics p. 271.



Quinqueloculina bradyana

Test robust, slightly longer than broad; chambers angular, somewhat plicated laterally with the outer peripheral angle sinuous; apertural end truncated, aboral end angular; aperture narrow, *Lachlanella*-type with a simple tooth, which allows the distinction with *Q. distorqueata*.

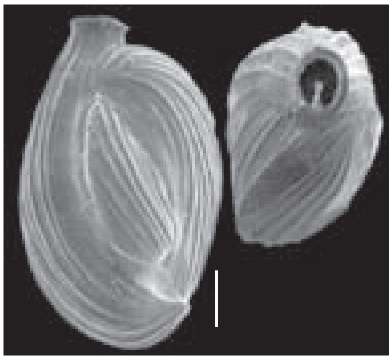
Southwestern lagoon, 20 m.
Systematics p. 271.



Quinqueloculina carinatastriata

Test elongate, oval in side view, subtriangular in cross section; ornamented with slightly oblique costae and a pronounced peripheral carina; aperture terminal, circular to slightly oval, produced on a short neck with a peristomal lip and a short tooth that thickens towards the tip.

Bays, outer estuaries, shrimp ponds, 0-20 m.
Systematics p. 271.



Quinqueloculina collumnosa

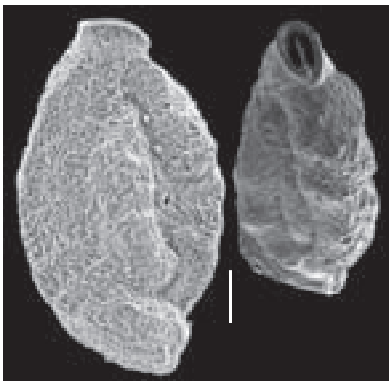
Test elongate, periphery angled and projecting, the last formed chamber extending out beyond the outline of the test at both ends; chambers undulate; wall smooth; apertural end much contracted, ending in a narrow, angled, cylindrical neck; aperture small, rounded with an everted lip and a small tooth.

Southwestern lagoon, 10 m.
Systematics p. 270.

Quinqueloculina corrugata

Test quinqueloculine, elongated, periphery truncated; sutures depressed; surface marked by a series of transverse ridges and alternating excavations; aperture elongated, slightly produced and recurved, with a peristomal lip and a long tooth that may be bifid at the tip. Differs from *Q. parkeri* in the truncated periphery and the produced aperture.

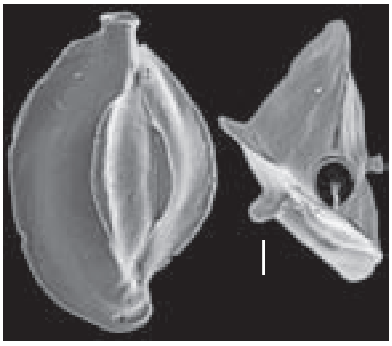
Southwestern lagoon, 5-30 m.
Systematics p. 270.



Quinqueloculina crassicarinata

Test subcircular in lateral view, triangular in cross section; very prominent, acute, keels; wall smoothly finished; aperture produced on a short neck, circular with an everted apertural lip and a short simple tooth.

South of the Grande Terre, 30 m.
Systematics p. 270.



Quinqueloculina crenulata

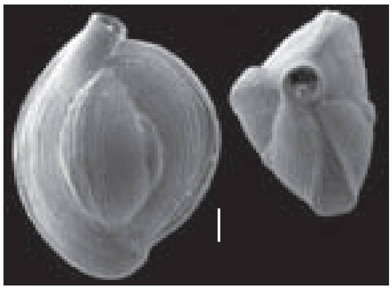
Test elongate, slender, about three times as long as broad; chambers not much inflated; sutures distinct; wall ornamented by very coarse, obliquely curved, short costae, extending inward from the peripheral angle, and sloping toward the base of the chamber; aperture produced on a prominent neck.

Southwestern lagoon, 35 m.
Systematics p. 270.

Quinqueloculina cuvieriana

Test ovate to subcircular in side view; chambers not inflated, periphery acutely angled; sutures distinct, slightly incised; surface ornamented with longitudinal striae that run along the entire length of the test and are slightly anastomosing; aperture flush with the peripheral margin, without a neck, a rounded arch provided with a simple tooth.

Southwestern lagoon, 5-30 m.
Systematics p. 270.



Quinqueloculina debenayi

Test fusiform in side view, laterally compressed. Chambers one-half coil in length, slightly inflated, arranged in a quinqueloculine pattern; five chambers visible from the exterior; sutures slightly depressed; chamber margins subrounded in early stages, later tending to become carinate; surface with minute anastomosing microridges; aperture terminal, subcircular, bordered by a thickened collar-like peristomal rim and provided with a tooth with short bifid termination.

Bays of the southwestern lagoon, 0-5 m.
Systematics p. 270.

Quinqueloculina delicatula

Test elongate with angular peripheral margins that are typically convex; margins acutely rounded or truncate; basal end broadly rounded, apertural end produced and truncated with a short neck; surface rough; aperture rounded, provided with a thickened rim and a small bifid tooth.

Southwestern lagoon, 5-35 m.
Systematics p. 271.

Quinqueloculina disparilis

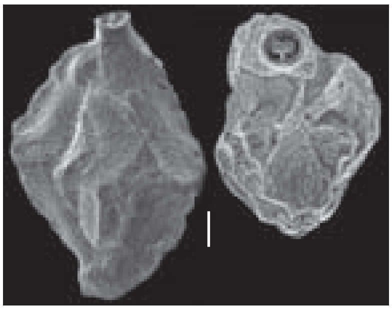
Test short and broad, periphery broadly rounded or somewhat truncate, the outer side of the chamber with longitudinal costae, the sides almost smooth, with fine, indistinct striae; aperture not produced, subcircular, provided with a bifid tooth.

Northern shelf, 600 m.
Systematics p. 271.

Quinqueloculina distorqueata

Test quinqueloculine, subelliptical in lateral view, nearly as broad as long; chambers longitudinally distorted, giving the test an irregular twisted shape; aboral end produced, with two distinct carinae that merge about the middle of the test into a single carina; test rough, covered irregularly with agglutinated material; aperture terminal rounded, at the end of a short neck, with a slightly everted lip and a stout bifid tooth.

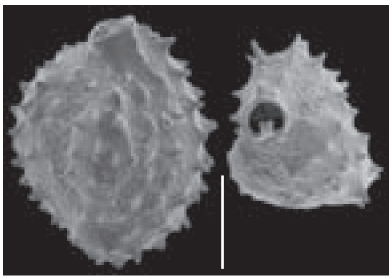
Dispersed in the southwestern lagoon, 5-30 m.
Systematics p. 271.



Quinqueloculina erinacea

Test small, elliptical in lateral view; periphery rounded; prominent spinose ornament, with 4-5 longitudinal rows of conical spines; aperture rounded, slightly produced, with a small thick tooth somewhat bifurcated at the tip.

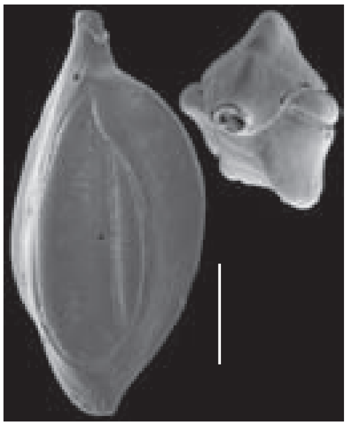
Southwestern lagoon, 25 m.
Systematics p. 272.



Quinqueloculina exmouthensis

Test small, robust, elongate, about one and a half to two times higher than wide, broadly oval in lateral view, broadly triangular in cross section; peripheral margins truncated; oral end produced, aboral end rounded; coiling distinctly quinqueloculine with five chambers visible in the final whorl; chambers maintain approximately even width and height over length, becoming restricted at the oral end; sutures distinct, incised; wall smoothly finished, matte, ornamented with faint striations; aperture terminal, circular, produced on neck that may be quite long, provided with a small bifid tooth.

Northern shelf, 600 m.
Systematics p. 272.



Quinqueloculina exsculpta

Test elongated, quinqueloculine; chambers inflated and sutures deeply excavated; wall smoothly finished; aperture produced on a neck that may be long and curved in adults, ovate, provided with a very short, bifurcate tooth.

Lifou, Loyalty Island, 5 m; Bay of Prony, 15 m.
Systematics p. 272.

Quinqueloculina granulocostata

Test elongated, quinqueloculine, but the last two chambers almost in the same plane; chambers with 4-5 strong costae, three on the peripheral margin, two of them making carinated shoulders that reach the aboral end of the chamber and join towards the aperture; aperture subtriangular, slightly produced, with a peristomal lip, provided with a protruding, U-shaped bifurcated tooth.

Southwestern lagoon, 5-30 m.
Systematics p. 272.

Quinqueloculina haigi

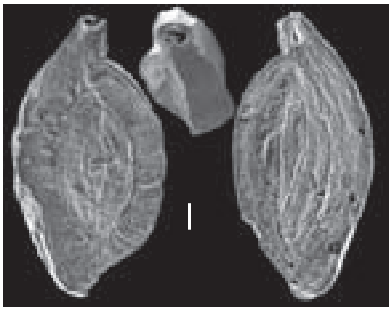
Test elongated, periphery rounded, ovate in cross section; chambers one half coil in length, early stage cryptoquinqueloculine later with 3-4 chambers visible from the exterior; sutures very slightly depressed, hardly visible; wall finely pitted; aperture circular at the projected end of the last chamber, provided with a non pitted rim and a short simple tooth with thickened termination.

Northern shelf, 200 m.
Systematics p. 272.

Quinqueloculina inaequalis

Test elongated, somewhat compressed; chambers with a quadrangular periphery. Test with 2 strong costae making carinated shoulders that reach both ends of the chamber; aperture rounded, with a peristomal lip, provided with two opposite T-shaped teeth.

Lifou, Loyalty Islands, 5 m.
Systematics p. 272.



Quinqueloculina jugosa

Test quinqueloculine, elliptical in lateral view, elongated with a rounded periphery; wall imperforate, ornamented by numerous, low, longitudinal costae somewhat anastomosing; aperture terminal, circular, produced on a short neck, bordered by a peristomal rim and provided with a short T-shaped tooth.

Coastal lagoons, shrimp ponds.
Systematics p. 272.

Quinqueloculina latidentella

Test ovate in outline, flattened, periphery broadly rounded; chamber arrangement quinqueloculine; sutures depressed, slightly oblique; chambers maintaining a roughly even width over their length, only slightly inflated at the aboral end; surface smooth to moderately rough; aperture terminal, flush with the oral end of the test or slightly projected, surrounded by a peristomal rim and provided with a low bifid tooth.

Northern shelf, 200 m.
Systematics p. 272.

Quinqueloculina lizardi

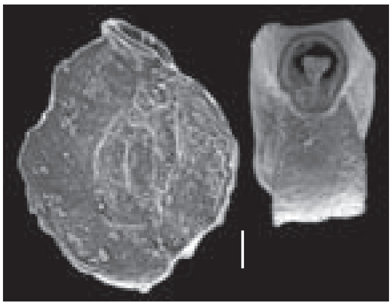
Test elongate, compressed, elliptical in lateral view, quinqueloculine, 3-5 chambers visible; test surface strongly pitted; aperture terminal, slightly compressed with a small tooth.

Bay of Prony, 20 m.
Systematics p. 272.

Quinqueloculina massiliniformis

Test sub-circular in lateral outline in adult tests, higher than wide; coiling quinqueloculine in early stage, becoming spiroloculine in final stage; peripheral margin truncated with angular edges; oral end truncated, aboral end slightly produced; sutures depressed, curved; wall matte, smooth but with a fine rough finish; aperture flush, sub-circular, with thickened peristomal rim, provided with a tooth about half the height of the apertural opening, T-shaped in the adults.

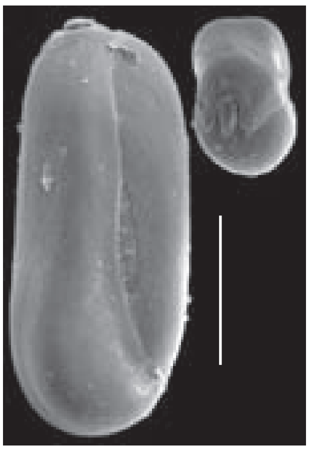
Southwestern lagoon, coastal areas, 5-10 m.
Systematics p. 272.



Quinqueloculina neocylindrica

Test small, elongate, subcylindrical, slightly compressed, subcircular in cross section, with nearly parallel sides and periphery broadly rounded; chambers strongly overlapping leaving 3 chambers visible externally; chambers widest at the basal end, subglobose, gradually narrowing towards the apertural end; sutures slightly depressed; wall smooth; apertural end truncated; aperture highly arched, almost filled by a massive tooth.

Bay of Prony, 20 m.
Systematics p. 272.



Quinqueloculina neostriatula

Test highly variable in shape, broadly subelliptical in lateral view, quinqueloculine with last chambers overlapping; periphery rounded to angular; chambers may be weakly to strongly transversely plicated; wall ornamentation varies from faint microstriae to more prominent longitudinal anastomosing costae; aperture terminal, a large crescentic opening with a smooth peristomal ring and a small flattened bifurcate tooth.

Widely distributed in the southwestern lagoon, 0-35 m.
Systematics p. 272.

Quinqueloculina cf. *Q. oblonga*

Test elongate, subelliptical in lateral view, oval in cross section, quinqueloculine; sutures slightly depressed; wall smooth and shiny; aperture terminal, ovate, without thicken rim and provided with a bifid tooth with long base and short branches.

Southwestern lagoon, 30 m.
Systematics p. 272.

Quinqueloculina parallela

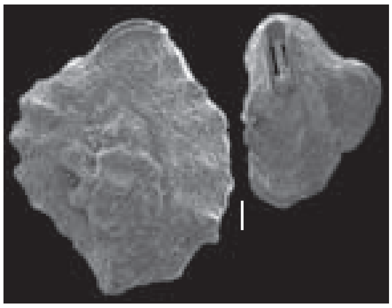
Test roundly quadrate, compressed, periphery rounded; in side view the two sides of the test nearly parallel. Chambers inflated, rather straight, widest and curved at the basal end; sutures slightly depressed; wall smooth with faint transverse lines; apertural end truncate, aperture highly arched with a broad slightly bifid tooth that is broken on the illustrated specimen.

Isle of Pines, 5 m.
Systematics p. 272.

Quinqueloculina parkeri

Test robust, periphery subacute; sutures depressed; aboral end produced; surface with pronounced transverse ribbing; aperture rectangular, *Lachlanella*-type with a lip that can be slightly everted; large single tooth that is thickened to slightly bifid at the tip. Differs from *Q. corrugata* in the acute periphery and the truncated apertural end.

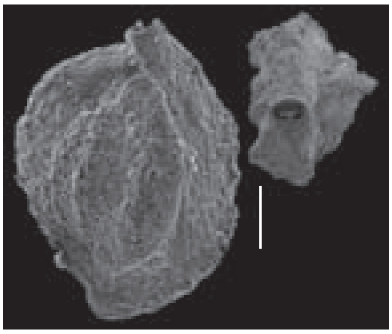
Southwestern lagoon, 5-25 m.
Systematics p. 272.



Quinqueloculina parvaggluta

Tests ovate in side view, subtriangular in end view; chambers distinct, with constant width throughout their length, quadrate in cross section with straight sides and truncated periphery; wall with agglutinated matter present mostly along the sides and the central portion of the peripheral face of each chamber; aperture ovate to rounded, produced on a short cylindrical, smoothly finished neck; provided with a small bifid tooth.

Southwestern lagoon, 30 m.
Systematics p. 273.



Quinqueloculina polygona

Test elongate; chambers distinct; sutures slightly depressed; each chamber polygonal in cross section, the periphery usually concave, with a projecting carina at either angle; surface usually dull; apertural end extending into a cylindrical neck, aperture circular with an everted lip, and a single bifid tooth.

Lifou, Loyalty Island, 5 m.
Systematics p. 273.

Quinqueloculina quinquecarinata

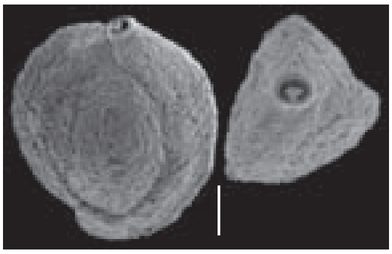
Test small and elongated; chambers with sharply acute and carinate peripheral margins; wall smooth and glossy; aperture produced on a short neck, sub-circular, provided with a small bifid tooth.

Bay of Prony, 10-30 m.
Systematics p. 273.

Quinqueloculina pittensis

Test quinqueloculine, ovate to subcircular in side view; peripheral margins angular to subacute; chamber sides slightly convex; sutures slightly to deeply depressed; wall surface roughly finished with agglutinated grains incorporated into the wall; aperture a low arch with a peristomal rim and a short bifid tooth.

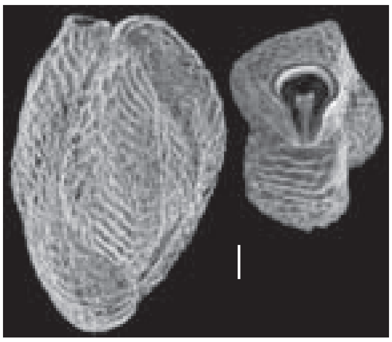
Southwestern lagoon, 5-60 m.
Systematics p. 273.



Quinqueloculina pseudoreticulata

Test elongate, quinqueloculine; periphery broadly rounded to sub-acute; surface showing a broad range of ornament with basically rather regular reticulation on the periphery that may become obsolescent on the side of the chambers; apertural end projecting and contracted to form a neck, variable in length, ending in an almost circular aperture, surrounded by a phialine lip and provided with a bifid tooth.

Southwestern lagoon, 15 m.
Systematics p. 273.



Quinqueloculina rariformis

Test quinqueloculine, elongate, fusiform; periphery rounded; sutures concealed; wall imperforate; ornamentation irregular; longitudinal ridges in coarse reticular pattern covering the entire test; aboral end produced; aperture produced on a distinct neck, rounded, with a peristomal ring, lacking distinct tooth.

Southwestern lagoon, 10-30 m.
Systematics p. 273.

Quinqueloculina cf. *Q. rugosa*

Test quinqueloculine, subrectangular in lateral view; chambers acutely angled, quadrangular in cross section, periphery and sides flattened or slightly concave; wall with anastomosing broken lines, extremely rugose, but without agglutinated material; aperture terminal, produced on a neck, bordered by a peristomal rim and provided with two teeth, a long bifid one at the inner margin and a shorter bifid one at the outer margin.

The specimens from New Caledonia have two teeth, as those from New Guinea (HAIG, 1988), while Cushman indicates a simple tooth in the north Pacific and draws a single bifid tooth in the Philippine.

Southwestern lagoon, 5-60 m.
Systematics p. 273.

Quinqueloculina cf. *Q. sagamiensis*

Test elongate, slightly compressed, nearly twice as long as broad, irregularly triangular in end view; chambers inflated, periphery rounded; sutures obscured by the ornamentation, sinuous; surface ornamented by several prominent longitudinal costae, running from the base of the chamber to the base of the stout cylindrical neck; aperture subcircular, with a single tooth,

Southwestern lagoon, 20 m.
Systematics p. 273.

Quinqueloculina schlumbergeri

Test elongate with five chambers visible; chambers carinate, carinae typically thickened and truncate; surface smooth; aperture at the end of a short neck, round, provided with a short, distinctly bifid tooth.

Northern shelf, 200 m.
Systematics p. 273.

Quinqueloculina seminula

Test elongate, 2 times as long as broad, cryptoquinqueloculine to quinqueloculine, ovate in lateral view, ovate in cross section, with rounded periphery; oral end truncated, aboral end inflated, slightly produced; sutures slightly depressed; wall is smooth, polished and glossy; aperture without a neck, arched-shaped with a thickened rim but no lip, provided with a small tooth, often bifid.

Coastal lagoons, marshes, estuaries, bays.
Systematics p. 273.

Quinqueloculina semireticulosa

Test small, two to three times as long as broad, periphery rounded, the basal end broadly rounded, the apertural end somewhat more contracted; chambers distinct, slightly inflated; sutures slightly depressed; wall ornamented by a somewhat reticulate pattern, the main elements of which are composed of oblique costae, somewhat irregularly sinuous, the depressed areas between broken up by transverse ridges into a series of elongate pits; aperture very slightly produced, occasionally with a very short neck; aperture nearly circular with a very short, simple tooth.

Shallow bay in the southwestern lagoon, 0-5 m.
Systematics p. 273.

Quinqueloculina subcuneata

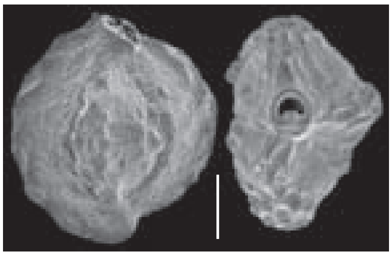
Test short, almost circular in side view, subtriangular in end view with five chambers visible from the exterior; chambers wedge-shaped, almost sharp at the peripheral angles; wall polished, ornamented with raised costae irregularly distributed on the test; aperture an oval arch with a simple tooth thickened at the tip.

Southwestern lagoon, 25 m.
Systematics p. 273.

Quinqueloculina subparkeri

Test subcircular to elliptical in lateral view, compressed, subtriangular in end view, quinqueloculine, approaching spiroloculine in the later stages; wall matte, with slightly roughened appearance; dominant ornament a transverse ribbing that may be associated to a weak longitudinal costate ornament at the periphery, appearing almost reticulate; aperture without a neck, but with a thickened peristomal lip, arch-shaped with a short protruding tooth, often bifid.

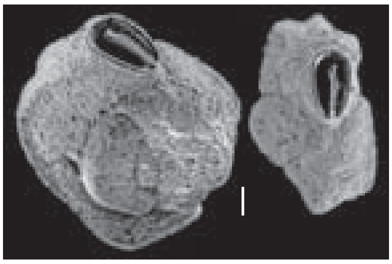
Southwestern lagoon, 35 m.
Systematics p. 273.



Quinqueloculina subpolygona

Test elongate, somewhat compressed, about 2 times as long as broad; chambers with a quadrangular periphery; test with 3-5 strong costae, two of them making carinate shoulders that reach the peristomal and aboral ends of the chamber; aperture subquadrangular, *Lachlanella* type, with a peristomal lip, provided with a long narrow tooth with a small bifid end.

Southwestern lagoon, 5-35 m.
Systematics p. 273.



Quinqueloculina cf. *Q. sulcata*

Test elongate, chambers distinct, early stages with a single angle at the periphery, later becoming truncate with two angles, and in the adult typically with three raised costae; sutures not depressed but fairly distinct; both ends of the last-formed chamber protruding; apertural end considerably extended, tapering with a rounded opening, a definite lip, and a simple to slightly bifid tooth, slightly protruding. The status of this species is rather unclear.

Bay of Prony, 20 m.
Systematics p. 274.

Quinqueloculina tantabiddyensis

Test small, elongate, about 3 times as long as broad, typically quinqueloculine with five chambers visible in final whorl; rounded periphery; sutures depressed, subparallel to test axis; oral end truncated, aboral end rounded; wall smooth and glossy; aperture produced, *Lachlanella*-type, without peristomal lip, provided with an elongate tooth terminally thickened or slightly bifurcate at the tip.

Bay of Prony, 15-25 m.
Systematics p. 274.

Quinqueloculina transversestriata

Test elongate, compressed, 2-3 times as long as broad; periphery subacute; surface ornamented by numerous obliquely transverse costae; aperture produced on a short neck, rounded, with a small simple tooth.

Southwestern lagoon, 25 m.
Systematics p. 274.

Quinqueloculina tropicalis

Test elongate, slightly compressed, periphery rounded, but last chamber may be somewhat truncated; chambers subcylindrical with their maximum diameter at the aboral end, giving a rectangular outline to the test; wall dull, surface ornamented with irregular ridges, this ornamentation described as granular by CUSHMAN (1924); aperture terminal, circular, or triangular when the margin of the last chamber is truncated, with a thickened rim and provided with a bifid tooth.

Shallow bay in the southwestern lagoon, 0-5 m.
Systematics p. 274.

Quinqueloculina tubus

Test subcircular in lateral view, triangular in cross section; periphery acute; sutures distinct and incised; wall ornamented by characteristic deep grooves between prominent ornaments; grooves becoming less incised towards the oral and aboral ends; aperture terminal, arch-shaped or rounded and produced on a short neck, with a somewhat everted lip and thick triangular-shaped tooth.

Northern shelf, 200 m.
Systematics p. 274.

Quinqueloculina vandiemeniensis

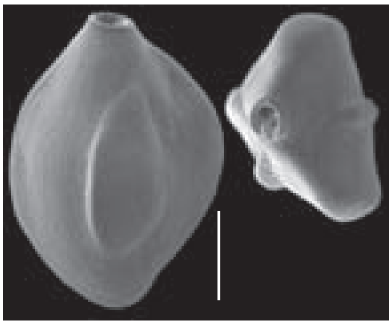
Test small, elongate, subrectangular in outline, sutures and sides roughly parallel; chambers in quinqueloculine arrangement; margin subacute; oral and aboral ends truncated; surface smooth; aperture terminal, not produced, provided with a thickened rim and a short bifid tooth.

Northern shelf, 200 m.
Systematics p. 274.

Quinqueloculina venusta

Test fusiform, obviously quinqueloculine, one and a half as long as wide; chambers prominently triangular in transverse section, the peripheral margin bluntly angular; sutures depressed; wall smooth; apertural end produced to form a short contracted, conical neck nearly circular in section; aperture rounded, with a thickened rim and short simple tooth.

Northern shelf, 600 m.
Systematics p. 274.



Quinqueloculina cf. *Q. victoriensis*

Test about twice as high as wide, with rounded peripheral margins; chambers in quinqueloculine arrangement; surface ornamented with sharp longitudinal costae; aperture somewhat everted, an elongated arch with a long bifid tooth. The specimens from New Caledonia are similar to those from Ningaloo Reef, Australia (Parker, 2009).

Northern shelf, 200 m.
Systematics p. 274.

Quinqueloculina zhengi

Test small, elongate, 2-3 times longer than broad, quinqueloculine; oral and aboral ends produced, peripheral margin sharpened and becoming bicarinate towards the oral and aboral ends; wall surface finely striate; aperture terminal, on a neck, sub-circular with bordering thickened everted peristomal rim, provided with small bifurcate tooth with short stem.

Bay of Prony, 15-25 m.
Systematics p. 274.

Quinqueloculina sp. 1

Test quinqueloculine, longer than broad, elliptical in side view, somewhat compressed; sutures fairly distinct, chambers polygonal in section; periphery keeled, the keel dichotomously branching towards the aboral end; periphery concave between the keels; wall smooth; aperture subcircular at the end of a short neck, and with a short, anvil-shaped tooth.

Bay of Prony, 15-25 m.
Systematics p. 274.

Quinqueloculina sp. 2

Test ovate in lateral view, with truncate apertural end, triangular in cross section; five chambers visible; early chambers with rounded periphery, last chamber truncate with angular margins; wall smooth; aperture highly compressed provided with a long thin tooth that is bifid at the tip.

Bay in the southwestern lagoon, 10 m.
Systematics p. 274.

Quinqueloculina sp. 3

Test elongate about two and a half longer than broad, somewhat triangular in end view, with five chambers visible in the adult; chambers narrow with bicarinate margin; the two carinae merge towards the apertural end, giving a single high carina; oral end truncated and slightly produced, aboral end rounded and produced; sutures slightly depressed; wall finely striate, roughly finished; aperture terminal with a tall oval shape, with thickened peristomal lip; long thin tooth thickened at the tip. *Quinqueloculina* sp. 3 resembles *Quinqueloculina* sp. 22 of Parker (2009), but differs from this species in the merging of the two carinae towards the aperture.

Southwestern lagoon, 25 m.
Systematics p. 274.

Quinqueloculina sp. 4

Test elongate with five chambers visible in the adult, apertural end considerably extended out beyond the main body of the test; chambers distinct, elongate, with concave faces between two to three raised costae; a longitudinal furrow, parallel to the costae is gouged out on each face; both ends of the last-formed chamber extending beyond the previous chambers, the apertural end tapering, with a rounded opening provided with a small T-shaped tooth, slightly protruding. The longitudinal furrow is the main distinctive feature for this species.

Chesterfield, 15 m.
Systematics p. 274.

Quinqueloculina sp. 5

Test ovate to subquadrate in side view, ovate in end view; periphery broadly rounded; 5 chambers visible, with the last two making up most of the test surface; aboral end rounded, sides nearly parallel; sutures distinct, slightly depressed; wall smooth and shiny; aperture at the truncated end of the last-formed chamber, a high arch with a thickened rim and a prominent, widened Y-shaped tooth.

Northern shelf, 200 m.
Systematics p. 274.

Quinqueloculina sp. 6

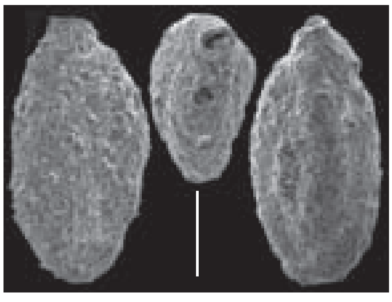
Test quinqueloculine, ovate in lateral view, triangular in cross section; chambers arcuate, tapering towards either end; periphery with two sharp carinate margins, generally converging into a single carina towards the aperture; periphery deeply depressed between the margins; wall smooth; aperture rounded, produced on a neck, with a peristomal rim, not reflected, and a short simple tooth. This species resembles *Q. bicostata* by its ornamentation, but differs from the later species in possessing a long cylindrical neck.

Southwestern lagoon, 25 m.
Systematics p. 274.

Quinqueloculina sp. 7

Test small, ovate in lateral view, quinqueloculine, with rounded peripheral margin; chamber subcylindrical with uniform diameter throughout length; sutures depressed; wall coarsely agglutinated; aperture rounded with a lip and a short bifid tooth.

Chesterfield, 20 m.
Systematics p. 274.



Quinqueloculina sp. 8

Test quinqueloculine, ovate in lateral view, roughly triangular in cross section; chambers in young specimens triangular in cross section, with one peripheral keel; later chambers becoming quadrangular in cross section with two lateral carinae, and even a third, central, longitudinal carina; wall imperforate, smooth; aperture terminal, circular at the end of a cylindrical neck, with peristomal rim and Y-shaped protruding tooth.

South of the Grande Terre, 30 m.
Systematics p. 274.

Quinqueloculina sp. 9

Test quinqueloculine, subcylindrical, elongated in lateral view, ovate in cross section; chambers rounded in cross section; wall imperforate, ornamented by regularly parallel longitudinal costae prolonging on the long cylindrical neck; aperture terminal, circular at the end of the neck, with a short simple tooth.

Southwestern lagoon, 25 m.
Systematics p. 274.

Rectomassilina

Rectomassilina tricarinata

Test small, elongate; proloculus followed by chambers one half coil in length, early ones in quinqueloculine arrangement, then added in single plane on alternate sides, as in *Massilina,* with acute borders; later chambers in rectilinear, uniserial row, with triangular transverse section and a carina at each angle; aperture, at the end of the last chamber preceded by a constricted neck.

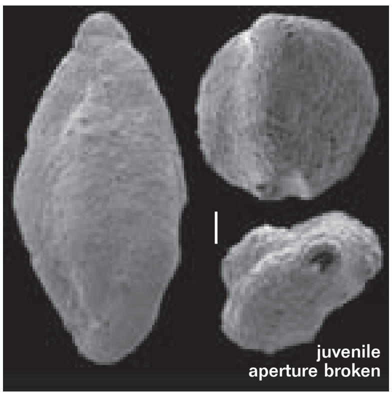
Northern shelf, 600 m.
Systematics p. 268.

Schlumbergerina

Schlumbergerina alveoliniformis

Test with elongate tubular chambers one-half coil in length, added in more than five planes from the earliest stage, slightly inflated; sutures depressed; wall agglutinated; aperture terminal, provided with a trematophore with numerous small rounded openings.

Widely distributed in the shallower areas of the southwestern lagoon (5-25 m).
Systematics p. 280.



Sigmamiliolinella

Sigmamiliolinella australis

Test with sigmoiline coiling with 6-7 semi-tubular chambers visible in the final whorl; last chambers involute; test somewhat compressed with acute periphery in the early stages; surface covered with a supplementary calcite coating, except on the external angle of the chambers; aperture at the end of the last formed chamber, semicircular, bordered by a thick lip and provided with a flap-shaped tooth of the same shape, a little in front of the aperture.

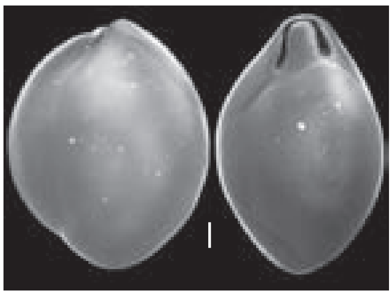
Southwestern lagoon, 25-70 m.
Systematics p. 279.

Sigmoilina

Sigmoilina obesa

Test broadly oval in side view, with the aboral end somewhat projecting, elliptical in cross section; last chamber occupying about 3/4 of the visible surface; sutures curved, but slightly depressed; two surfaces inequilaterally convex, and periphery broadly rounded; surface smooth, may be polished; aperture a curved slit limited by a simple tooth.

Northern shelf, 200 m.
Systematics p. 279.



Sigmoilinella

Sigmoilinella tortuosa

Test compressed, distinctly sigmoiline, twisted; test ornamented by two prominent peripheral carinae and a few subordinate carinae; wall smoothly finished: aperture terminal produced on a long neck, with short slightly bifid tooth.

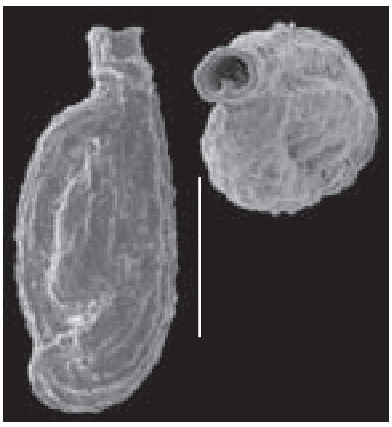
Southwestern lagoon, 25 m.
Systematics p. 279.

Sigmoilinita

Sigmoilinita costata

Test fusiform in outline, slightly compressed; chambers of uniform diameter, arranged in a sigmoid pattern, later tending to become planispiral; periphery rounded; sutures distinct, very slightly depressed; surface costate; aperture semicircular, produced on a neck, with a peristomal rim and a short tooth.

Bay of Prony, 25 m.
Systematics p. 279.

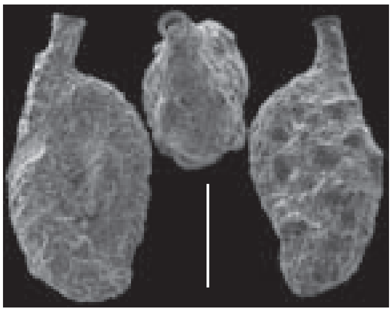


Sigmoilopsis

Sigmoilopsis arenata

Test compressed, subrhomboidal in lateral view, quinqueloculine; chambers subcylindrical with greater width in the basal one third; periphery and basal end rounded; sutures depressed; apertural end drawn out into an extended cylindrical neck with a narrow lip; wall agglutinated, made of particles deeply embedded in cement; aperture circular, small, with a short simple tooth.

Southern shelf, 70 m.
Systematics p. 279.



Sigmoilopsis elliptica

Test elongate, fusiform; chambers with rapidly changing planes in early stages, later arranged in one plane; chambers tubular, cylindrical; surface covered with a layer of fine arenaceous matter; aperture terminal, at the end of a cylindrical neck, rounded with a thickened lip.

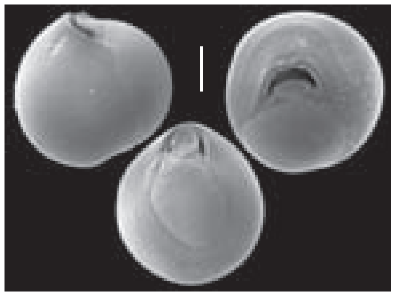
Lifou, Loyalty Islands, 5 m.
Systematics p. 279.

Sinuloculina

Sinuloculina lunata

Test subspherical, slightly laterally compressed; early chambers triloculine, later ones biloculine, the last-formed chamber making up about 3/4 of the entire surface of the test; suture distinct; wall polished; aperture crescentiform with a thickened rim, and limited by a semicircular flap-like tooth.

Northern shelf, 200 m.
Systematics p. 277.

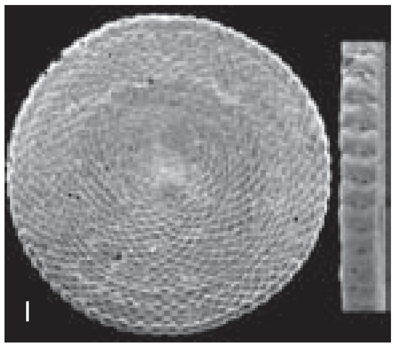


Sorites

Sorites orbiculus

Test discoidal biplane, thin; chamberlets adding in annular, concentric pattern, giving the sutures a characteristic scalloped appearance; wall smooth; apertures ovate or 8-shaped, bordered with a small rim, usually one on each side of the chamberlets, positioned in a medial row on the peripheral margin.

Southwestern lagoon and Chesterfield, 1-40 m.
Systematics p. 282.

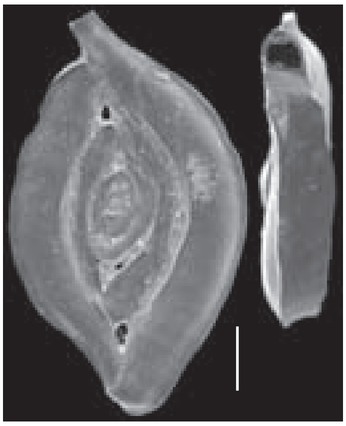


Spiroloculina

Spiroloculina acescata

Test elongate, elliptical, much compressed, somewhat variably depressed in the middle; chambers distinct, earlier ones rectangular in transverse section, periphery truncate, the angles sharply keeled, later chambers much compressed with a single keel; sutures distinct, little depressed; wall smooth, glossy; apertural end extended into a cylindrical neck with a distinct phialine lip and tooth.

Southwestern lagoon, 35 m.
Systematics p. 268.



Spiroloculina angulata

Test elongate, elliptical in lateral view, both ends of the chambers projecting; chambers angular in cross section; surface ornamented by longitudinal costae extending from the aboral end to the aperture; aperture terminal, produced on a cylindrical neck with a thin peristomal rim and small tooth, bifid at the tip.

Shallow areas near patch reefs, rare, 1-10 m.
Systematics p. 268.

Spiroloculina antillarum

Test elongate, ovate to fusiform in lateral view; chambers nearly circular in cross section, but with subangular shoulders between the peripheral and lateral walls; surface ornamented by longitudinal costae, often continuous, extending from the aboral end to the aperture, sometimes anastomosing; aperture circular at the end of a cylindrical neck with a slight lip and a small distinctly bifid tooth.

Shallow reefal areas, 0-25 m.
Systematics p. 269.

Spiroloculina attenuata

Test fusiform, elongate, biloculine, evolute, strongly biconcave; chambers subtrapezoidal in transverse section; peripheral wall slightly concave, separated from the lateral walls by acute carinae; carinae of previous chambers visible at sutures; surface ornamented by minute longitudinal anastomosing microstriae; aperture at the end of a long cylindrical neck, rounded or subtriangular, with a slightly everted peristomal rim and two bifib teeth, a large one attached to the base of the opening and an additional smaller one projecting down from the roof of the aperture.

Southwestern lagoon, near patch reefs, 2-5 m.
Systematics p. 269.

Spiroloculina caduca

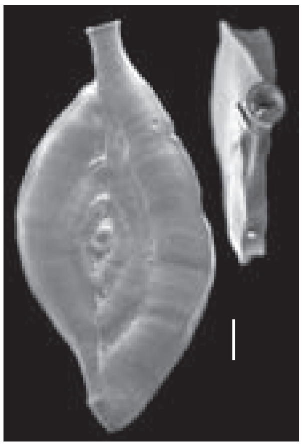
Test biloculine, evolute, elongated, broadly elliptical, much compressed; chambers of the adult with a sharp translucent keel, usually somewhat lobulated; sutures slightly depressed, surface of the chambers sometimes with irregular, raised costae, more or less oblique in position; surface smooth, shining; aperture at the end of a long cylindrical neck, rounded, with a simple tooth.

Southwestern lagoon, 35 m.
Systematics p. 269.

Spiroloculina clara

Test very much compressed, periphery truncate and concave, both ends prominently projecting; sides of the chambers thickened and opaque, the central portion thin and translucent; sutures distinct, not much depressed; wall smooth; aperture rounded, at the end of a neck, with a tooth or sometimes two opposite teeth.

Southwestern lagoon, 35 m.
Systematics p. 269.



Spiroloculina communis

Test strongly built, ovate, biconcave, periphery truncate with sharp angles, carinated in earlier chambers; sutures distinct; wall smooth to slightly ornamented by minute longitudinal microstriae; aperture circular, produced on a cylindrical neck, with a peristomal rim, a protruding bifid tooth attached to the base of the opening and an additional tooth projecting from the top of the aperture into the opening.

Widely distributed in the southwestern lagoon, 5-70 m.
Systematics p. 269.

Spiroloculina corrugata

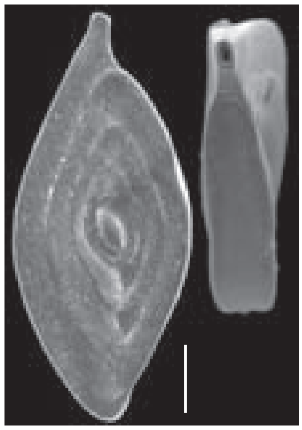
Test ovate to fusiform in lateral view, slightly biconcave; chambers U-shaped in transverse section, strongly convex, with a rounded margin; wall covered with costae that are arranged with an angle to the chamber margin so that they are not continuous from the basal end to the apertural end; aperture at the end of a distinct neck covered with costae, rounded, bordered by a peristomal rim and provided with a scoop-shaped bifid tooth.

Southwestern lagoon, 35 m.
Systematics p. 269.

Spiroloculina elegantissima

Test elongate, fusiform in lateral view; sides flattened, chambers very regularly arranged, proloculus prominent, ellipsoid; chambers subtrapezoidal in transverse section with angular shoulders between the peripheral and lateral walls, and with a unique carina in old individuals; sutures incised; surface ornamented by minute depressions, dull; aperture ovate, at the end of an elongated slender neck, with no lip nor tooth.

Chesterfield, 10 m.
Systematics p. 269.



Spiroloculina convexa

Test ovate to fusiform in lateral view; chambers subtrapezoidal in transverse section with a strongly convex peripheral margin separated from the lateral walls by acute shoulders; wall roughly textured and may appear partly agglutinated; aperture at the end of a distinct neck, rounded, bordered by a peristomal rim and provided with a short bifid tooth.

Bay of Prony, 20-30 m.
Systematics p. 269.

Spiroloculina depressa

Test in side view elliptical or rounded, in end view with the sides nearly parallel, the periphery flattened or even slightly convex; chambers with the periphery and the inner margin raised, the intermediate space more or less depressed, giving the appearance of having limbate sutures; wall smooth and dull; aperture nearly circular, at the end of a short neck, with a small lip and a single tooth with a bifid tip.

Surprise Island, 10 m.
Systematics p. 269.

Spiroloculina eximia

Test elongate, elliptical, periphery convex, the opposite faces concave, ends of the chamber projecting; sutures fairly distinct, the outer angle of each chamber projecting above the inner portion of the adjacent next-formed chamber; wall surface granular, dull; aperture circular, produced on a cylindrical neck, with a slightly everted peristome and a protruding bifid tooth.

Southwestern lagoon, 35 m.
Systematics p. 269.

Spiroloculina fragilis

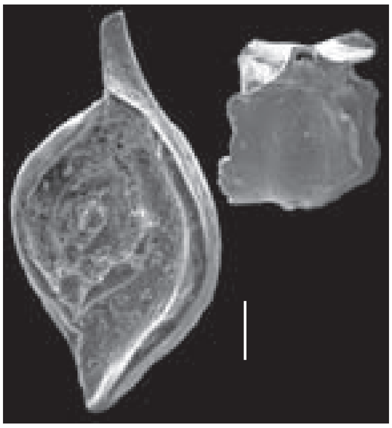
Test minute, fragile, less than twice as long as broad, depressed in the central portion, periphery rounded; chambers very distinct, numerous, narrow, arched, tubular, gradually increasing in size as added; successive coils separated or loosely connected; deeply depressed sutures; apertural end projecting into a long neck; wall dull ornamented with faint longitudinal ribs; aperture at the end of the neck, circular, with a lip, with or without a short bifid tooth.

Southwestern lagoon and Bay of Prony, 10-25 m.
Systematics p. 269.

Spiroloculina mayori

Test fusiform, periphery convex, the opposite faces strongly concave, shoulders of the chamber projecting laterally in thin wide keels; sutures fairly distinct; wall surface ornamented with minute ribs; aperture hemicircular, produced on a neck flattened internally, with a minute tooth.

Northern shelf, 200 m.
Systematics p. 269.



Spiroloculina cf. *S. neocircularis*

Test biloculine, evolute, ovate to subcircular in lateral view, compressed, slightly biconcave; chambers few in number; periphery rounded, ornamented by longitudinal, somewhat oblique, costae; aperture produced on a short neck, with a poorly developed phialine lip and a bar-shaped tooth.

Southwestern lagoon, 25 m.
Systematics p. 269.

Spiroloculina nummiformis

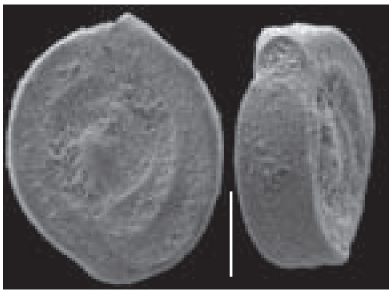
Test biloculine, evolute, broadly ovate in lateral view, flat, slightly biconcave; chambers bicarinated in early stages, later chambers strongly monocarinate; surface ornamented by minute longitudinal anastomosing microstriae; aperture at the end of a neck, bordered with a peristomal rim and provided with two short bifid teeth.

Bay of Prony, 10-20 m.
Systematics p. 269.

Spiroloculina regularis

Test subcircular in outline, with slightly rounded peripheral margins and concave sides; chambers of even width and height over their length and only slightly embracing; last chamber only projecting a little beyond the general circular contour of the whole test; sutures flush with the surface; surface smooth; aperture broad and low, at the end of the last chamber, with the edges slightly thickened and a low tooth. The figured specimen is eroded and covered of secondary deposits leading to an abnormally rough surface.

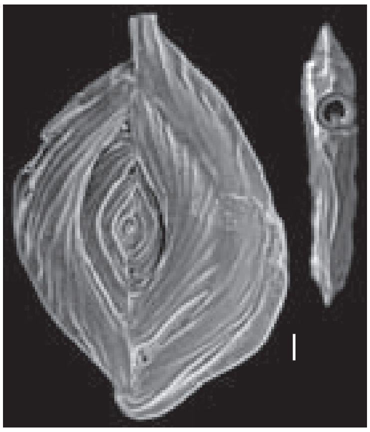
Northern shelf, 600 m.
Systematics p. 269.



Spiroloculina samoaensis

Test strongly compressed with a tapering neck and a sharply-keeled margin; wall white and glossy; surface ornamented by fine raised costae, oblique and somewhat anastomosing, fusing at the margin; aperture rounded, at the end of the neck, provided with a bifid tooth.

South of the Grande Terre, 35 m.
Systematics p. 269.



Spiroloculina subimpressa

Test biloculine, evolute, about twice as long as wide; periphery truncate with angular subcarinate margins; sides of the chambers convex; wall roughly textured with minute, longitudinal, incised lines; aperture produced on a cylindrical neck, with a peristomal lip; short protruding bifid tooth attached to the base of the opening and additional smaller bifid tooth attached to the top of the aperture.

Southwestern lagoon, 35 m.
Systematics p. 269.

Spiroloculina sp. 1

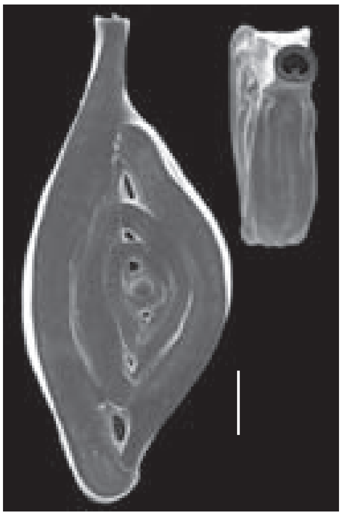
Test elongate, ovate in lateral view; chambers with angular shoulders between the peripheral and lateral walls; sutural gaps at the base of each chamber; surface ornamented by parallel longitudinal costae, extending from the aboral end to the aperture; aperture circular at the end of a cylindrical neck with a slight lip and a small Y-shaped tooth.

Surprise Island, 10 m.
Systematics p. 270.

Spiroloculina sp. 2

Test elongate, fusiform in lateral view; chambers with carinate shoulders between the peripheral and lateral walls; sutural gaps at the base of each chamber; chambers quadrate in cross section; surface ornamented by irregular longitudinal costae; aperture circular at the end of a cylindrical neck with a slight lip and a small simple tooth.

Surprise Island, 10 m.
Systematics p. 270.



Spirophthalmidium

Spirophthalmidium scabrum

Test small, proloculus followed by undivided tubular enrolled second chamber, then by planispirally enrolled chambers of a half coil in length; chambers somewhat overlapping previous whorls, widest at the base and tapering toward the aperture; wall imperforate, surface appearing warty with numerous tiny projections; aperture rounded, at the end of a produced neck.

South of the Grande Terre, 50 m.
Systematics p. 268.

Spirosigmoilina

Spirosigmoilina bradyi

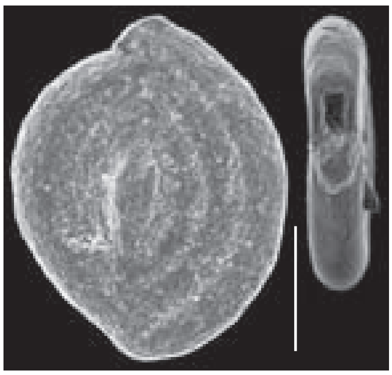
Test subcircular, very compressed; early chambers arranged in a sigmoiline coil, leading to a raised central portion; later chambers narrow and low, planispirally arranged, each chamber one-half coil in length, ornamented by regulate crenulation; aperture a simple terminal opening with a short simple tooth.

Southwestern lagoon, 10-30 m.
Systematics p. 279.

Spirosigmoilina parri

Test subcircular, very compressed; early chambers arranged in a sigmoiline coil, leading to a raised central portion; later chambers compressed, planispirally arranged, each chamber one-half coil in length; wall smooth; aperture at the end of the last-formed chamber, surrounded by a raised lip formed by the slight outward bending of the chamber's wall, and with a short simple tooth.

Southwestern lagoon, 25 m.
Systematics p. 279.



Triloculina

Triloculina affinis

Test triloculine, with three visible chambers in the adult, somewhat longer than wide, triangular in transverse section; periphery convex with rather sharply formed angles; wall smooth; aperture subcircular, with a protruding bifid tooth.

Southwestern lagoon, 20 m.
Systematics p. 277.

Triloculina barnardi

Test slightly longer than broad, triangular in cross section, with sharp carinae; surface ornamented by low longitudinal costae that may be weak or strong; wall smooth and polished; aperture produced on a short neck, roughly triangular with a pronounced everted lip and an elongate tooth, slightly bifurcated at the tip.

Bay in the southwestern lagoon, 10 m.
Systematics p. 277.

Triloculina bertheliniana

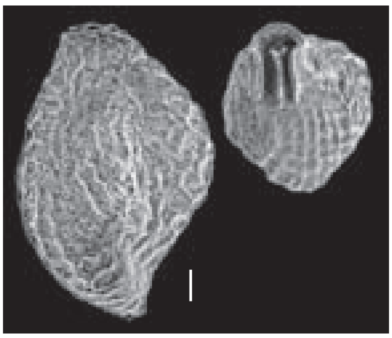
Test fusiform in outline, triangular in transverse section with three visible chambers in the adult; peripheral margin broadly rounded with angular edges; wall ornamented with numerous, slightly elliptical shallow pits evenly distributed over the surface of the test, forming a definite pattern; aperture terminal, a triangular-arch with a bifid tooth.

Outer reef, 50 m.
Systematics p. 277.

Triloculina bicarinata

Test longer than broad, triloculine; sutures somewhat depressed, chambers distinct with a truncate periphery; whole surface ornamented by reticulations; aperture elongated, with a definite thin lip, slightly everted, tooth elongate, narrow, extending above the outline of the aperture, bifid at the tip.

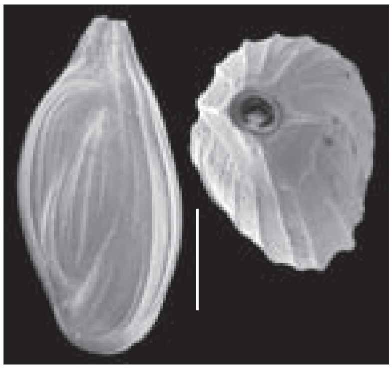
Southwestern lagoon, areas with strong currents, < 20 m.
Systematics p. 278.



Triloculina earlandi

Test, with three visible chambers in the adult, fusiform, more than two times longer than broad; periphery broadly rounded; surface finely costate; wall smooth with a matte finish; aperture subcircular to ovate at the end of a broad neck, provided with a short bifid tooth.

Bay of Prony, 20 m.
Systematics p. 278.



Triloculina elongotricarinata n. sp.

Diagnosis. A slender, elongate *Triloculina*, triangular with rounded angles in cross section, with a glossy surface and a high arch-shaped aperture with a long tooth thickened or bifid at the tip; triloculine arrangement with three chambers always visible.

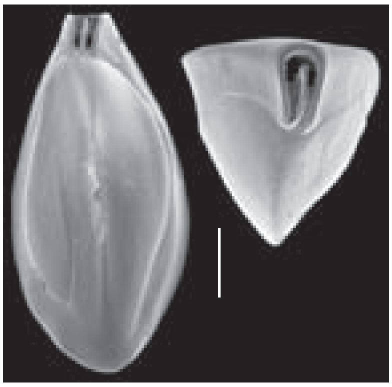
Description. Test triloculine, with three visible chambers in the adult, more than two times longer than broad; chambers triangular in cross section with isometric, slightly convex sides; acute margins; wall smooth and polished; aperture high-arch shaped, provided with a long thin tooth somewhat thickened or bifid at the tip. This species differs from *T. tricarinata* by its strait chambers and by its much more elongated test.

Southwestern lagoon and Bay of Prony, 10-30 m. Systematics p. **.

Derivation of name. The name *elongotricarinata* is given in reference to the resemblance of this species to *T. tricarinata*, but with a more slender and elongated form.

Material. Holotype - MNHN F62324, paratypes - MNHN F62325, MNHN F62326, MNHN F62327, MNHN F62328, MNHNF62329; from 30 m water depth in the Bay of Prony, south of New Caledonia.

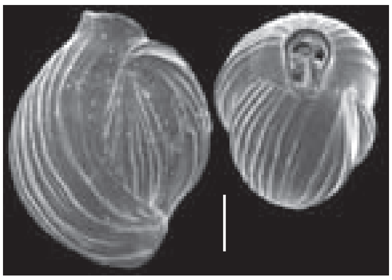
Remarks. The species of *Triloculina* with a triangular section and more or less sharp angles are numerous and quite difficult to be identified. This species, however, with its high arch-shaped opening with tall bifid tooth, as in *T. tricarinata*, and its slender, elongate shape appears different from other known species. Specimens with the typical characteristics are abundant enough to justify the creation of a new species.



Triloculina fichteliana

Test with three visible chambers in the adult, ovate in lateral view, somewhat compressed with periphery broadly rounded; chambers distinct; sutures slightly depressed; wall ornamented by regular, well-spaced longitudinal costae; aperture ovate, with a slightly everted peristomal rim and a narrow tooth, thickened or bifid at the tip.

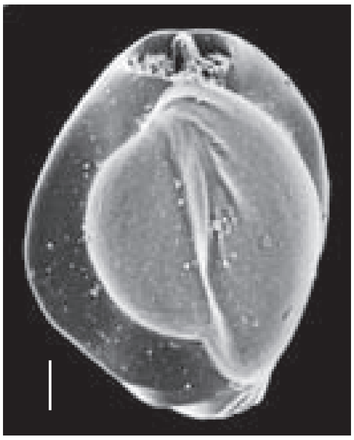
Northern shelf, 200 m.
Systematics p. 278.



Triloculina latiformis

Test triloculine, subcircular in side view; with three visible chambers in the adult, subtriangular in transverse section; sutures deeply depressed; chambers arcuate with tapered initial end and extended overhang, increasing rapidly in size; wall smooth and polished; aperture subcircular, with a protruding, slightly bifid tooth.

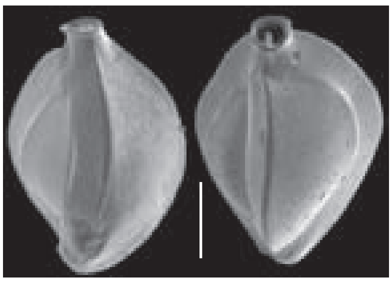
Southwestern lagoon, 10 m.
Systematics p. 278.



Triloculina marshallana

Test triloculine, with three visible chambers in the adult, somewhat longer than wide; periphery broadly convex with angular shoulders; wall smooth and polished; aperture terminal, produced on a projecting apertural neck, with an everted peristomal rim; aperture subtriangular with a thin bifid tooth.

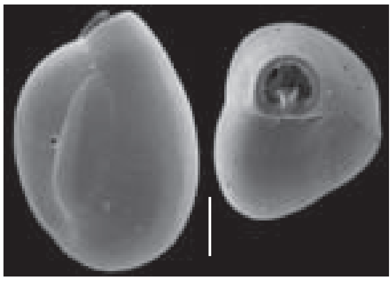
Southwestern lagoon, back reef areas, or near patch reefs, 10-20 m.
Systematics p. 278.



Triloculina rotunda

Test broadly rounded, somewhat longer than wide, with three visible chambers in the adult, the two last chambers making up most of the visible test surface; chambers rotund; sutures very slightly depressed; surface of the test smooth and shining; aperture rounded, with a slightly thickened lip and a short protruding bifid tooth.

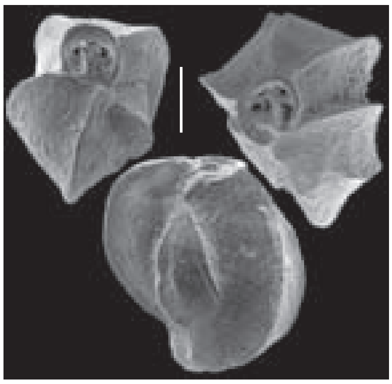
Outer reef, 35 m.
Systematics p. 278.



Triloculina serrulata

Test triloculine, with three visible chambers in the adult, subovate in lateral view, roughly triangular in end view; chambers trapezoidal in transverse section; peripheral margins slightly convex, separated from the lateral walls by strongly protruding carinate shoulders; surface covered with anastomosing microstriae; aperture terminal, rounded, with a thick peristomal rim, provided with a strong bifurcated tooth projecting from a flattened base.

Southwestern lagoon, 30 m.
Systematics p. 278.



Triloculina striatotrigonula

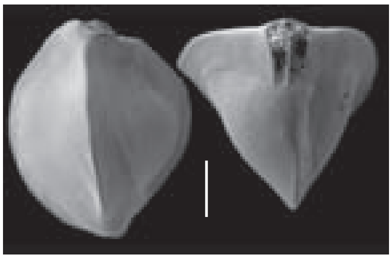
Test ovate in side view, subtriangular in end view with convex sides, as in *Triloculina trigonula*; surface ornamented with regular longitudinal striae; aperture rounded with a short bifid tooth.

Northern shelf, 200 m.
Systematics p. 278.

Triloculina tricarinata

Test triloculine, with three visible chambers in the adult, slightly longer than broad; chambers triangular in cross section with isometric straight sides; acute to carinate margins; wall smooth, often polished; aperture high-arch-shaped provided with a tall bifid tooth.

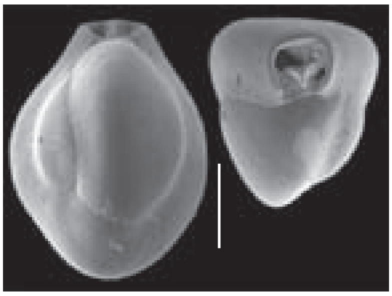
Sparsely distributed in the southwestern lagoon, 5-60 m.
Systematics p. 278.



Triloculina trigonula

Test triloculine, with three visible chambers in the adult, somewhat longer than wide; periphery broadly convex with angles rounded; wall smooth; aperture terminal, without a neck; a basal arch-shaped opening with a rather broad bifid tooth.

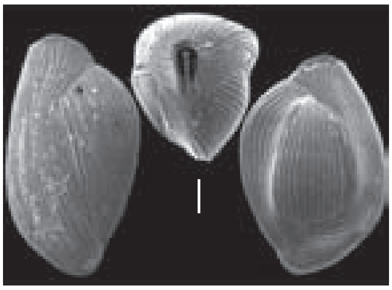
South of the Grande Terre, 35 m.
Systematics p. 278.



Triloculina terquemiana

Test elongate with three chambers visible in the adult, ovate to subcircular in lateral view, subtriangular in cross section with somewhat rounded angles; peripheral chamber walls slightly convex; chambers may be laterally prominent; surface of the test ornamented by fine longitudinal costae; aperture somewhat produced, elongated, narrow, provided with a thin tooth with long base, bifurcated at the tip.

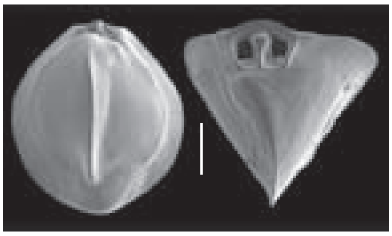
Surprise Island, 10 m.
Systematics p. 278.



Triloculina cf. *T. tricarinata*

Test triloculine, with three visible chambers in the adult, slightly longer than broad; chambers triangular in cross section with isometric straight sides; acute to carinate margins; wall smooth, often polished; aperture low-arch-shaped provided with large tooth, thickened or T-shaped at the tip. This species differs somewhat from the typical *T. tricarinata*, which has a high arch-shaped opening with tall bifid tooth.

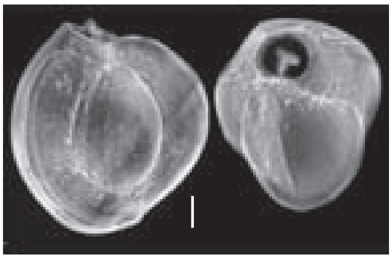
Widely distributed in the southwestern lagoon, 5-60 m.
Systematics p. 278.



Triloculina wiesneri

Test subcircular in lateral view; chambers rounded to slightly angular; wall smooth on the sides of the chambers, periphery ornate by longitudinal costae; aperture circular, without a neck, provided with a bifid tooth.

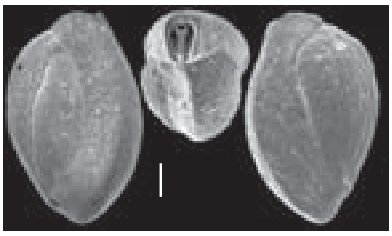
Southwestern lagoon, 20 m.
Systematics p. 278.



Triloculina sp. 1

Test ovate in outline with three chambers visible in the adult; aboral end acutely rounded, apertural end truncate; chambers rectangular in cross section with peripheral chamber walls slightly convex; wall roughly textured with minute, longitudinal, incised lines; aperture flush with the peripheral margin, a high arch, provided with a thin tooth with long base, Y-shaped at the tip.

Northern shelf, 200 m.
Systematics p. 278.



Triloculinella

Triloculinella chiastocytis

Test elongate with typical milioline arrangement with three chambers visible in the adult; characteristic inflated aboral end, and oblique sutures; periphery broadly rounded; aperture small, partly closed by a curved flap-shaped tooth.

Southwestern lagoon, 20 m.
Systematics p. 278.

Triloculinella hornibrooki

Test with a quinqueloculine chamber arrangement, elongate, ovate to subrectangular, with almost parallel sides; periphery rounded; chambers narrow and rounded; sutures depressed; oral end truncated and aboral end rounded, protruding; wall shiny and smooth; aperture terminal, rounded, without neck, with a plate-like tooth at the base of the opening.

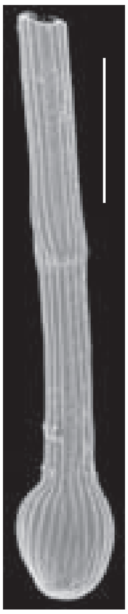
Southwestern lagoon, 25 m.
Systematics p. 278.

Tubinella

Tubinella funalis

Test, elongate, cylindrical early stage bulbous, rounded at the base made up of two closely appressed chambers, later uncoiled, with indistinct tubular chambers separated by faint sutures; wall imperforate; surface with very fine longitudinal striae; aperture at the open end of the last-formed chamber.

Southwestern lagoon and Bay of Prony, 2-25 m.
Systematics p. 280.



Vertebralina

Vertebralina insignis

Test compressed, planispiral, nearly symmetrical bilaterally; margin angular or partially carinate; usually three chambers in the last whorl but last chambers tend to uncoil; surface ornamented with irregular costae, more prominent and oblique on the first chambers, forming an irregular reticulate ornament on the last chambers; aperture terminal, a long slit on the median line of the last chamber with strongly everted lips, the lips of the preceding chambers visible at the sutures.

Southwestern lagoon, mostly back reef areas, 5-20 m.
Systematics p. 267.

Vertebralina striata

Test compressed, slightly trochospiral in the early stage; last chambers broad, a few of them unrolled; surface ornamentation varies from almost smooth to heavily striated; aperture terminal, asymmetric due to the shorted wall on the umbilical side of the test, bordered by a thickened lip.

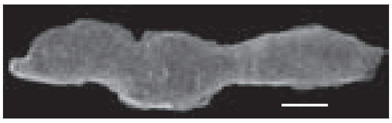
Southwestern lagoon, dispersed, 10-30 m.
Systematics p. 267.

Webbina

Webbina rugosa

Test attached, elongate ovate proloculus followed by a few ovate and inflated chambers, attached surface flattened, upper surface convex, a peripheral keel against the attachment; wall, milky white, imperforate, surface somewhat rough with faint transverse growth wrinkles; aperture terminal.

Outer reef, 50 m.
Systematics p. 267.



Wiesnerella

Wiesnerella auriculata

Test ovate, flattened, quinqueloculine, periphery carinate; chambers overlapping more on one side than the opposite, side changing alternately; wall imperforate, smooth; aperture a large circular opening at end of final chamber on the less overlapping side, bordered by a broad everted lip.

Southwestern lagoon, 20-70 m; northern shelf, 200 m.
Systematics p. 267.

Zoyaella

Zoyaella dissimilis

Test discoidal, compressed, proloculus followed by streptospiral enrolled tubular second chamber, later planispiral and evolute, slightly overlapping in the early whorls; last whorl with about eight chambers quite uniform in shape and size; periphery lobulate; wall imperforate, smooth; aperture a more or less high arch at the open end of the final chamber.

South of the Grande Terre, 50 m.
Systematics p. 266.

Unknown Fischerinidae

Test composed of tubular chambers of irregular shape, irregularly coiled, about three chambers per coil; sutures appear as irregularly spaced thickenings; surface with numerous unevenly distributed pseudopores and irregular longitudinal striae; aperture terminal, at the end of the last chamber.

Northern shelf, 200 m.

Description of hyaline species unilocular (or appearing so)

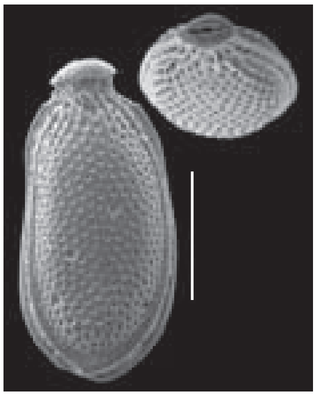
All scale bars = 0.1 mm (for SEM)

Buchnerina

Buchnerina milletti

Test elongate, laterally compressed, periphery with a small distinct keel; test covered with rather large, evenly distributed perforations; aperture slightly projecting, surrounded by recessed grooves.

Bays, 5-20 m.
Systematics p. 293.



Buchnerina radiatomarginata

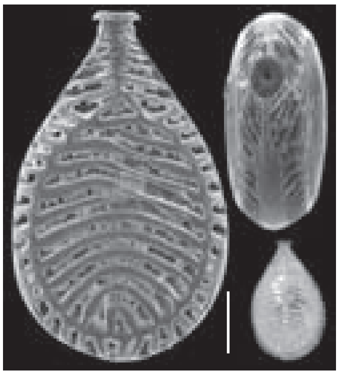
Test ovate in outline, tapering towards the aperture, with a single thickened carina and a small projection at the basal end; wall smooth with radiate ornament on the lateral faces, around a clear unornamented central patch; aperture produced, surrounded by recessed grooves.

Coastal bay, 5-10 m.
Systematics p. 294.

Buchnerina schulzeana

Test oval, compressed, subcarinate, sides flat; surface ornament consisting of transverse bars, horizontal in the middle and bent downwards at an angle near the periphery; aperture at the end of a wide and short neck with a rounded lip.

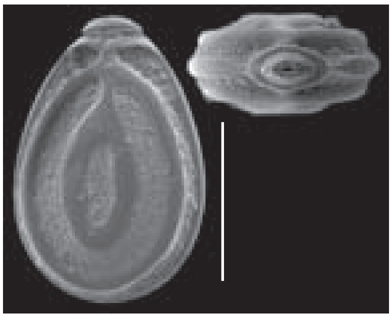
Northern shelf, 600 m.
Systematics p. 294.



Buchnerina walleriana

Test ovate in outline, laterally flattened slightly tapering towards the aperture, with three bluntly rounded carinae that thicken towards the aperture and are separated by deep grooves; aperture produced, surrounded by recessed grooves.

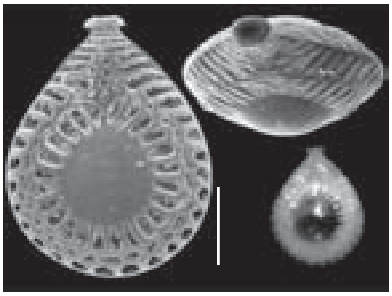
Coastal bay, 5-10 m.
Systematics p. 294.



Buchnerina yokoyamae

Test subcircular in outline, tapering towards the aperture; central part of the test smooth, surrounded by three concentric sets of radial ornaments that change into horizontal ornaments near the aperture; aperture produced, surrounded by recessed grooves.

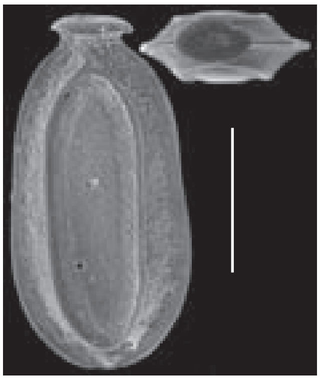
Northern shelf, 600 m.
Systematics p. 294.



Buchnerina sp. 1

Test subrectangular in outline, laterally flattened; central part of the test slightly raised and surrounded by a slight groove and a ring; keel well-developed; aperture produced, surrounded by recessed grooves.

Coastal bay, 10 m.
Systematics p. 294.



Cerebrina

Cerebrina claricerviculata

Test compressed, elongate; prominent primary peripheral carina separated from two subordinate carinae by deep grooves; lateral surface covered with distinct perforations that are irregularly distributed; aperture produced, rounded, with distinct lips.

Coastal bay, 5-10 m.
Systematics p. 288.

Cerebrina cf. *C. clathrata*

Test nearly circular, tapering slightly towards the oral end, compressed; peripheral margin extended into a thin flat wing or carina, with an additional projecting keel or ridge on each side bordering the chamber. The body of the test biconvex, ornamented externally with a series of regular, parallel, longitudinal costae; aperture produced on a distinct neck, rounded to ovate.

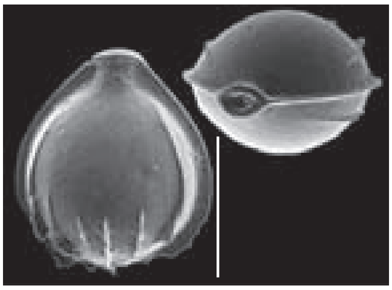
There is some uncertainty regarding the identification of this species, and specimens illustrated in literature are much variable, and often differ from original description.

South of the Grande Terre, 10-50 m.
Systematics p. 288.

Cerebrina conformata

Test subspherical in contour, somewhat compressed; periphery surrounded by a sharp keel with two subordinate keels that taper out before reaching the apertural end; central area transparent, ornamented around the basal end with short radiating longitudinal costae; aperture rounded, slightly produced.

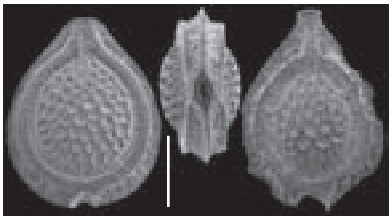
Coastal bay, 10 m.
Systematics p. 289.



Cerebrina lacunata

Test subcircular in outline, compressed, with a reticulate ornament on the lateral surfaces; lateral carina extending from the base to the aperture with two parallel subordinate carinae on each side; basal end rounded; aperture ovate and produced with a short entosolenian tube.

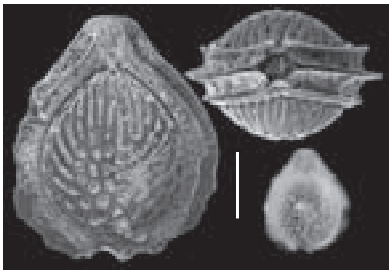
Bay of Prony, 20 m.
Systematics p. 289.



Cerebrina cf. *C. lacunata*

Species differing from *C. lacunata* by its much more inflated test, and by the ornament that is reticulate as in *C. lacunata* in the central, basal part of the test, and more or less radiate elsewhere.

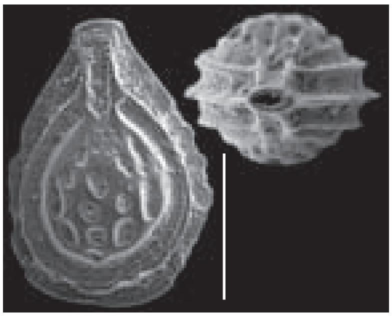
Northern shelf, 200 m.
Systematics p. 289.



Cerebrina neocastrensis

Test compressed, subcircular in outline, except the produced apertural end; periphery surrounded by a prominent central keel with two raised lateral keels; central part of the test with coarse pits vertically aligned; aperture produced, rounded.

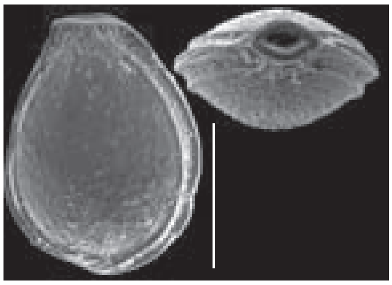
Bay to the south of the Grande Terre, 10 m.
Systematics p. 289.



Cerebrina pilasensis

Test with a subcircular lateral outline, compressed, biconvex, tricarinate; apertural end produced and sculpture with radiating longitudinal striae that extend to the central inflated body; extended central keel with two secondary crescent-shaped rims; wall of the central area distinctly perforated, perforations variable in size and distribution; aperture terminal, roughly rounded.

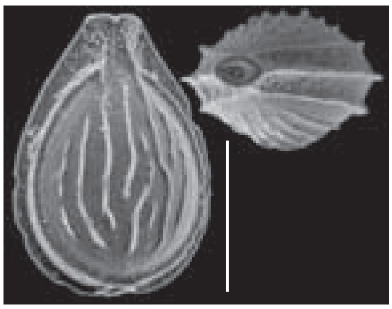
Coastal bay, 5-10 m.
Systematics p. 289.



Cerebrina undulaticostata

Test free, tricarinate, compressed; central area decorated with longitudinal costae of broken continuity, variable in length, width and position; marginal keel of variable width, thick, with greater part transparent, tapering towards the base of the test; lateral keels form, sometimes together with longitudinal costae, two ridges, which ornament the neck area on both sides; a median ridge of variable development may also form on the neck; wall finely perforate, semitransparent; aperture at the end of the neck, with wide lips.

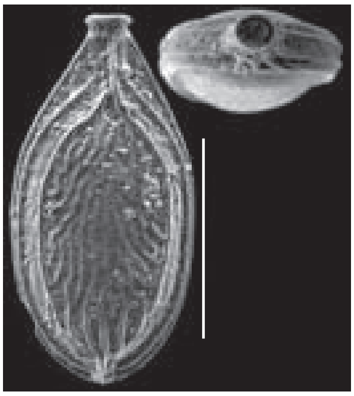
Northern shelf, 200 m.
Systematics p. 289.



Cerebrina sp. 1

Test elongate, ovate, laterally compressed; periphery tricarinate with a central keel and two closely placed secondary keels; a third more central annular ridge enclosed the central area of the test, which is covered with irregular anastomosing costae; aperture produced on a distinct neck, rounded.

Coastal bay, 5-10 m.
Systematics p. 289.



Cerebrina sp. 2

Test flask-shaped, compressed, inflated centrally, tricarinate; central keel interrupted at the rounded basal end; apertural end produced with a neck ornamented with small beads; median keel increasing slightly in width at base of the neck but does not reach the end of the neck; wall transparent, finely perforated; each test face sculpted with irregular raised longitudinal costae that may coalesce or be joined by irregular transverse patterns; aperture slightly compressed, oval.

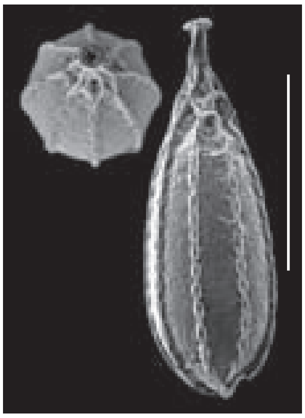
Bay to the south of the Grande Terre, 10 m.
Systematics p. 289.

Cushmanina

Cushmanina bricei

Test ovate, circular in section; basal end broadly rounded, apetural end with a distinct neck; wall hyaline, finely perforate, surface with prominent paired longitudinal costae that continue to the edge of the aperture, ending in a reticular formation at the base of the neck; the deep depression between the two costae of each pair is subdivided by bridges into oval segments producing a chainlike appearance; aperture rounded at the end of the neck, with a distinct lip.

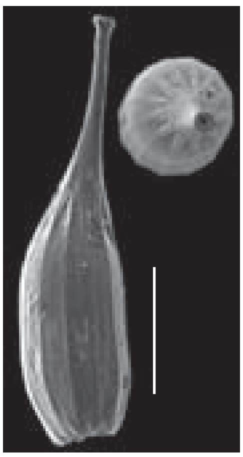
Bay of Prony, 20 m.
Systematics p. 294.



Cushmanina gemma

Test elongated, circular in section; basal end broadly rounded or truncated, apertural end with a long cylindrical neck; wall hyaline, finely perforate, surface with numerous low and rounded paired longitudinal costae; the depression between the two costae of each pair is subdivided by bridges into oval segments producing a chainlike appearance under a stereo microscope, but this pattern is covered by the edge of the costae and not visible on SEM micrographs; aperture rounded at the end of the neck, with a distinct lip.

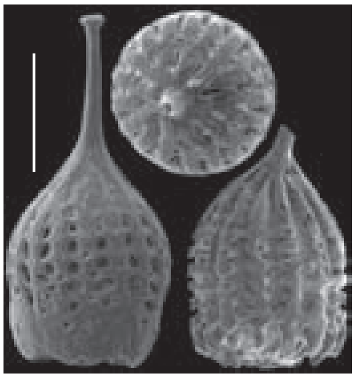
Coastal bay, 10 m.
Systematics p. 294.



Cushmanina neodesmorpha

Test flask-shaped, circular in section; initial end flat, broadly rounded; jagged contour due to prominent longitudinal, irregular, paired costae, projecting at basal margin; costae tapering at the base of the neck; the depression between the two costae of each pair is subdivided by bridges into irregular rounded segments producing a chainlike appearance; adjacent pairs may coalesce irregularly with each other; aperture rounded at the end of the tubular neck, with a phialine lip.

Southwestern lagoon, 25 m.
Systematics p. 294.



Cushmanina spiralis

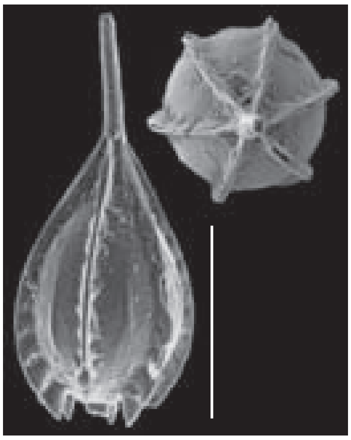
Test unilocular, fusiform, circular in section, with a distinct neck; wall calcareous, hyaline, surface with thick prominent paired spiral costae; the depression between the two costae of each pair is subdivided by bridges into oval segments producing a chainlike appearance under a stereo microscope, but this pattern is covered by the edge of the costae and not visible on SEM micrographs; aperture rounded at the end of the neck that is often broken.

Coastal bay, 10 m.
Systematics p. 294.

Cushmanina striatopunctata

Test fusiform, circular in section, with a cylindrical neck; wall hyaline, surface with blade-like, prominent, paired longitudinal costae that continue along the base of the neck and extend backward, slightly projecting; the depression between the two costae of each pair is subdivided by long bridges into rounded segments producing a chainlike appearance under a stereo microscope, but this pattern is covered by the edge of the costae and not visible on SEM micrographs; aperture rounded at the end of the neck.

Bay of Prony, 10 m.
Systematics p. 294.



Cushmanina cf. *C. tasmaniae*

Test fusiform, circular in section with a cylindrical neck; surface with a few thin prominent paired spiral costae that continue along the base of the neck; the depression between the two costae of each pair is subdivided by bridges into oval segments producing a chainlike appearance; wall smooth; aperture rounded at the end of the neck.

Bay of Prony, 20 m.
Systematics p. 294.

Cushmanina sp. 1

Test fusiform, circular in section with a distinct, very thin neck; wall calcareous, hyaline, surface with a few prominent, longitudinal, slightly twisted paired costae that fuse along the neck; the depression between the two costae of each pair is subdivided by bridges into oval segments producing a chainlike appearance under a stereo microscope, but this pattern is covered by the edge of the costae and not visible on SEM micrographs; aperture rounded, at the end of the neck.

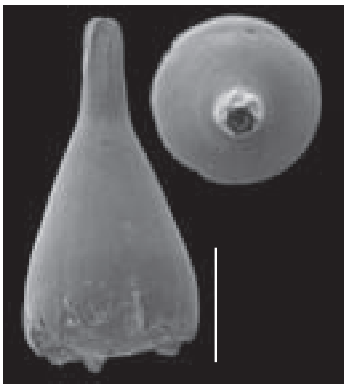
Bay of Prony, 20 m.
Systematics p. 294.

Exsculptina

Exsculptina discrepans

Test with the main section roughly triangular in side view, the sides slightly convex and the greatest width near the base; basal periphery angled, ornamented by very short costae confined to the very basal part; wall smooth; aperture at the end of an elongate tapering neck with weak longitudinal costae.

Isle of Pines, 5 m.
Systematics p. 294.

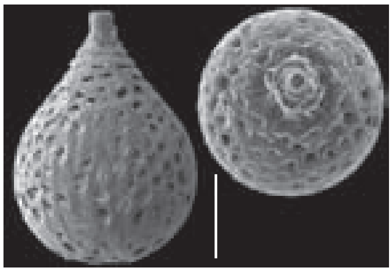


Favulina

Favulina favosopunctata

Test ovate, circular in section, tapering to produced apical end; wall ornamented by very fine hexagonal reticulations becoming smaller and irregular in shape over the upper part of the test; aperture small, rounded on a slightly produced neck with a star-shaped collar.

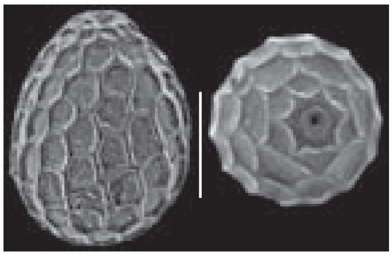
Northern shelf, 600 m.
Systematics p. 294.



Favulina hexagona

Test unilocular, subglobular, circular in section; wall calcareous, hyaline, surface covered by elevated ridges forming large hexagonal reticulations; aperture rounded on a slightly produced neck with a thickened collar-like rim.

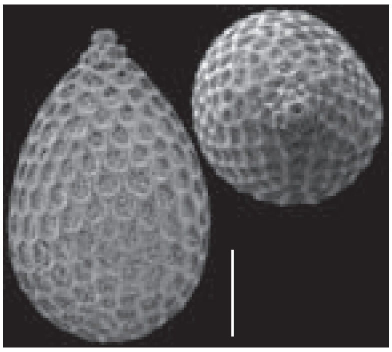
Coastal bay, 10 m.
Systematics p. 294.



Favulina hexagoniformis

Test ovate, circular in section; initial end broadly rounded, the test later tapering towards a small tubular hyaline neck; wall covered by elevated ridges forming a compact network of small hexagonal units; aperture rounded at the end of the neck.

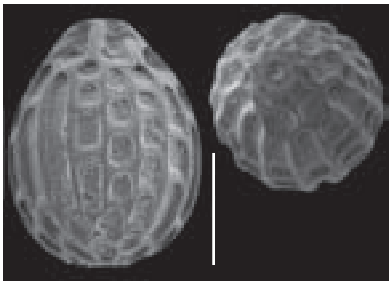
Bay to the south of the Grande Terre, 10 m.
Systematics p. 294.



Favulina melo

Test ovoid, circular in transverse section, ornamented by closely spaced longitudinal ridges connected by irregularly placed cross bars, straight or slightly arched upwards; this reticulose mesh thickens around the aperture forming a slight collar; aperture rounded, small.

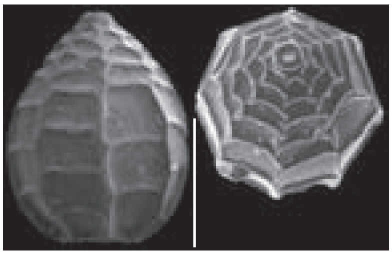
Bay of Prony, 20 m.
Systematics p. 294.



Favulina scalariformis

Test ovate to subcylindrical with rounded ends; raised longitudinal costae are intersected by more or less discontinuous transverse ridges that divide the test surface into relatively regular sub quadrate portions; aperture terminal, rounded.

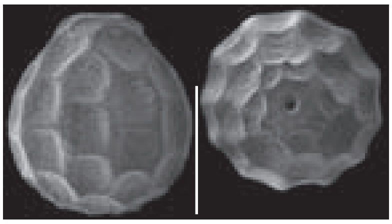
Northern shelf, 600 m.
Systematics p. 295.



Favulina vadosa

Test globular, circular in section; initial end broadly rounded, apertural end with a plate-like collar; wall ornamented with large hexagonal reticulation, with emphasis on the longitudinal part of the pattern. Aperture small, rounded.

Coastal bay, 10 m.
Systematics p. 295.



Fissurina

Fissurina cf. *F. antiqua*

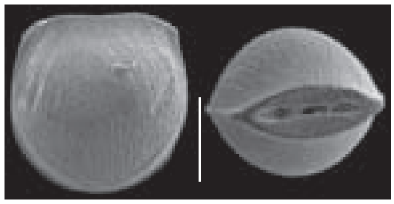
Test ovoid compressed; periphery with a double keel fusing near the aperture; central part of the test surrounded by an annular ridge that form one or two Y-shaped structures (depending on the size of the individual) in the apertural region; longitudinal costae raise in the mid central part of the test; wall smooth, finely perforated; aperture elongated, slightly produced.

Outer reef, 100 m.
Systematics p. 292.

Fissurina cf. *F. aperta*

Test subcircular in side view, moderately compressed; periphery faintly keeled, broadly rounded; apertural edge broadly truncate; test surface ornamented with rows of minute tubercles; aperture a long narrow fissure, approximately two thirds width of test; apertural lip thick, raised. This species resembles *F. aperta*, recorded in the Miocene of New Zealand, from which it differs mostly by its ornamentation.

Northern shelf, 600 m.
Systematics p. 292.



Fissurina bispinata

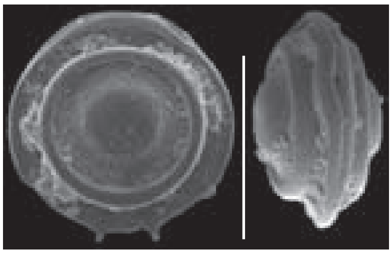
Test rounded in outline, oval in section, periphery with a weak keel; basal end with two short but prominent basal spines; wall calcareous, hyaline, finely perforate, surface smooth; narrow bands near the margin of the test, opaque under the dissecting microscope, whitish on SEM pictures; aperture terminal, symmetrical, slit-like.

Coastal bay, 10 m.
Systematics p. 292.

Fissurina calcar

Test compressed and circular in outline; periphery surrounded by a wide keel with two subsidiary circular keels, one on each side; median keel bearing some short spines in the basal area; central portion of the test slightly raised and smooth, elsewhere the surface is rough; the fissurine aperture is not produced, but surrounded by lips in continuity with the subdivided median keel.

Northern shelf, 600 m.
Systematics p. 292.



Fissurina castanea

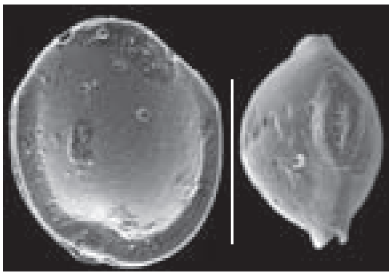
Test small, compressed, subtriangular to subquadrangular, elliptical in transversal section; margins rounded; surface smooth; in the lower part of the test an elliptical fimbriate carina, surrounds the test; aperture terminal.

Southwestern lagoon, 25 m.
Systematics p. 292.

Fissurina cf. *F. castaniformis*

Test small, compressed, subcircular in lateral view; posterior part with well-developed, wide double keels, with a deep groove between them; keels extending over half the test or more; anterior part of the test no keeled, non produced, broadly rounded: aperture a slit parallel with periphery.

Coastal bay, 10 m.
Systematics p. 292.



Fissurina circularis

Test with a circular lateral outline and slightly compressed lenticular profile in axial cross section; the base of the test is bordered by a narrow rounded carina that extends about halfway up the test; aperture produced, having a width about one third of the test width.

Southwestern lagoon, 20 m.
Systematics p. 292.

Fissurina colomboensis

Test subcircular in contour, compressed laterally, tricarinate, with grooves between lateral keels and central body of the test; basal end broadly rounded, apertural end tapering, slightly produced; surface-ornament of large beads, irregularly scattered over the lateral faces of the test; aperture slightly produced, an elongate slit with broad lips.

South of the Grande Terre, 40-50 m.
Systematics p. 292.

Fissurina cf. *F. eumarginata oblata*

Test subcircular in contour; with a well-developed keel; central body inflated, highly translucent, finely perforated; inflated area at the base of the produced aperture; bands on each side of the inflated central area, interrupted at the basal and apertural ends of the test, opaque under the dissecting microscope, whitish on SEM pictures; aperture produced, a long slit with tightly compressed lips.

Coastal Bay, 10 m.
Systematics p. 292.

Fissurina furcata

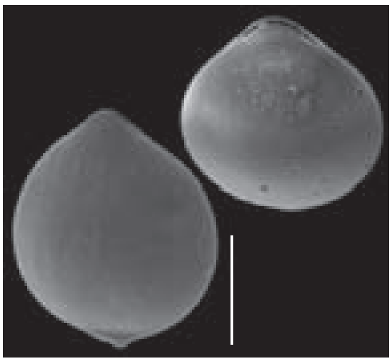
Test compressed and elongated with rounded ends; periphery surrounded by a blunt keel with two smaller costae on each side; apertural collar ornamented by 2-3 fine imbricating ridges; central portion of the test slightly raised and flat; fissurine aperture is at the end of the ornamented collar.

Bay to the south of the Grande Terre, 10 m.
Systematics p. 292.

Fissurina cf. *F. globosocaudata*

Test globular, subcircular in outline, appearing somewhat elongated due to the protruding apertural end; basal end ornamented by a short caudal projection irregularly truncated; surface of the chamber finely perforated; fissurine aperture slightly protruding.

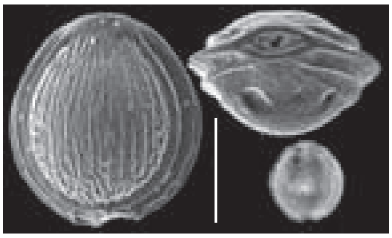
Coastal bay, 10 m.
Systematics p. 292.



Fissurina granulocostata

Test small, subcircular in outline; periphery with a narrow peripheral carina and two subordinate carinae; central part of the test inflated, ornamented with irregular costae that change into pearl-like bosses at the base, and become faint or may disappear towards the aperture; aperture lenticular with slightly raised rim; entosolenian tube straight, not reaching half the length of the test.

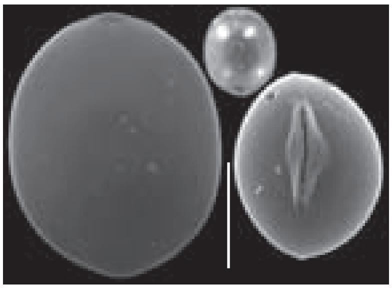
Northern shelf, 600 m.
Systematics p. 292.



Fissurina laevigata

Test ovate in outline, lenticular in section, periphery with a weak rounded keel; wall finely perforate, surface smooth; aperture terminal, ovate, bordered by two subtriangular lips.

Northern shelf, 600 m.
Systematics p. 292.



Fissurina laureata

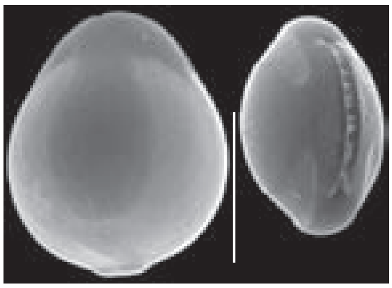
Test compressed, oval, furnished with a median keel, with or without subsidiary keels; costae diverge from the base and follow the line of curvature of the edge of the test; they are most strongly marked near the edge and more feebly in the median area; and generally do not extend the entire length of the test; the surface of the test that is not covered with costae is marked by strong punctuations; aperture terminal, ovate, with lips.

Southwestern lagoon, 20-30 m.
Systematics p. 292.

Fissurina lucida

Test pyriform, compressed, with rounded periphery; basal end sometimes with a short projection; wall smooth and opaque under the dissecting microscope, except for the central area, which is clear and translucent.

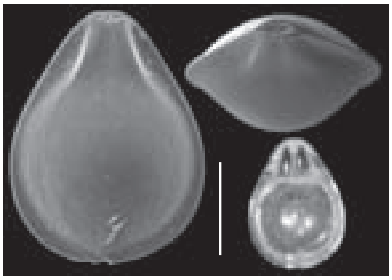
Coastal bay, 5 m; shrimp ponds.
Systematics p. 292.



Fissurina periperforata

Test pyriform with an ovate central region surrounded by a peripheral keel that continues at the sides of the somewhat produced, compressed, apertural neck; section lenticular; towards the base, lateral flange terminates in weak teeth; wall smooth, distinctly perforate in peripheral zone of the central body; aperture terminal, a slit at the end of the produced neck.

Northern shelf, 600 m.
Systematics p. 292.



Fissurina plebeia

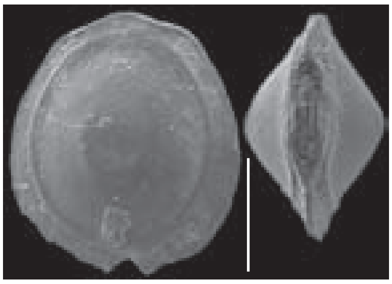
Test pyriform, compressed, lateral edges obtuse; base broad and round in outline; edges with a median keel and two lateral keels separated from the median one by lateral gaping depressions on either side; wall smooth; aperture fissurine, not produced.

Northern shelf, 600 m.
Systematics p. 292.

Fissurina pretiosa

Test compressed, elliptical, lenticular in transversal section; apertural end truncated, with a prominent median part; peripheral margin sharp, with a keel interrupted at the basal apex; marginal keel formed of a double wall, and having a faint fimbriated aspect; surface smooth, ornamented with an elliptical or slightly oval rib, disposed around the test, and with another oval rib in the central part of the test; aperture an elongated slit, bordered by a phialine lip and narrowed in its central portion.

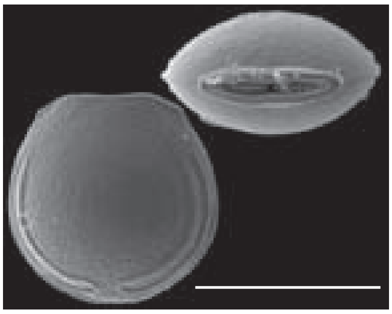
South of the Grande Terre, 40 m.
Systematics p. 292.



Fissurina sidebottomi

Test slightly compressed, slightly marginated, subcircular in lateral view with the apertural end tuncated; paired submarginal costae extend around the lower half margin of the test; margin narrow, rounded, uniform in width; wall finely perforated; aperture a long slit with a distinct annular lip.

Bay of Prony, 20 m.
Systematics p. 293.



Fissurina subquadrata

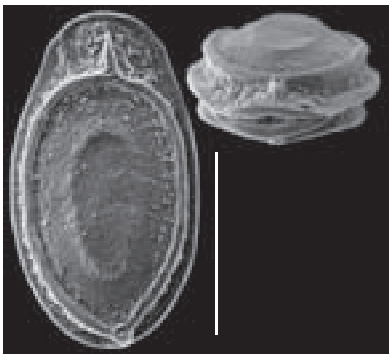
Test strongly compressed and subrectangular in outline; a broad peripheral rim is separated from the slightly inflated central portion of the test by two grooves parallel to the periphery; wall smooth and very finely perforate; slightly produced fissurine aperture.

Southwestern lagoon, 35 m.
Systematics p. 293.

Fissurina sp. 1

Test ovoid, laterally compressed; periphery with a central keel that widen near the aperture; two secondary keels form an annular ridge on each side, and prolong into a costa toward the aperture; a weak annular ridge is discernable around the center of each face of the test; wall smooth; aperture elongated, slightly produced.

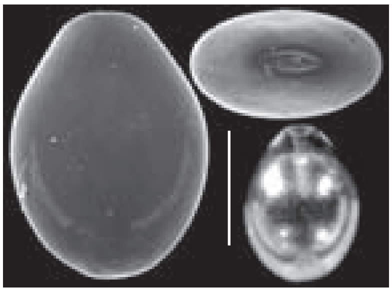
Coastal bay, 10 m.
Systematics p. 293.



Fissurina sp. 2

Test small, ovate in side view and in end view, with rounded lateral edges; wall smooth, transparent, glassy with symmetrical slightly depressed areas parallel to the edge, extending up to mid point, opaque under the dissecting microscope, whitish on SEM pictures; aperture an ovate fissurine opening on the center of the broad blunt apertural end.

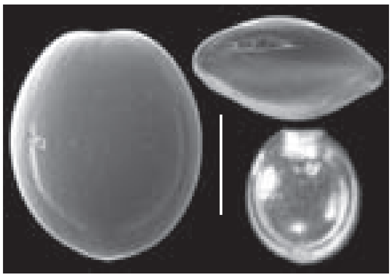
Northern shelf, 600 m.
Systematics p. 293.



Fissurina sp. 3

Test small, ovate with a broadly rounded basal end and a truncated apertural end; central area of the test slightly inflated, marginal edges bluntly keeled, the keel limited by narrow bands on the lower half of the test, opaque under the dissecting microscope, whitish on SEM pictures; wall smooth, mostly transparent; aperture a narrow fissurine slit, not produced.

Northern shelf, 600 m.
Systematics p. 293.



Fissurina sp. 4

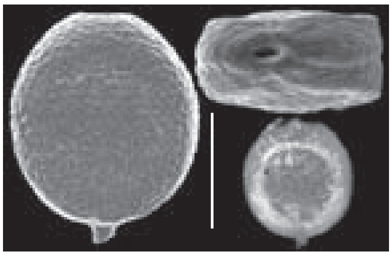
Test compressed; body of the chamber ovate, surrounded by a deep groove, then a wide peripheral keel; the keel somewhat widening to the apertural area and ending into two large lateral projections and a thinner central one to the basal end; wall of the chamber coarsely perforated, keel finely perforated; aperture a narrow slit.

Northern shelf, 600 m.
Systematics p. 293.

Fissurina? sp. 5

Test minute, subcircular with flattened faces; initial end with a small stout spine, apertural end slightly truncated; surface irregular, rough with coarse perforations; aperture an oval slit, not produced.

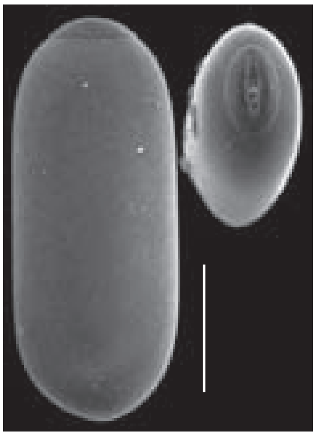
Northern shelf, 600 m.
Systematics p. 293.



Fissurina sp. 6

Test ovoid, subquadrate in side view ovate in section; wall finely perforate, surface smooth; aperture a narrow equatorial slit with thick lips.

Southwestern lagoon, 10 m.
Systematics p. 293.



Fissurina sp. 7

Test subcircular in outline, compressed with two faces nearly parallel, only slightly inflated centrally; basal end slightly produced in a broad short caudal spine, with laterally two additional spines; periphery thickened; wall finely perforated, surface rough; apertural end indented with a small aperture provided with a short, straight entosolenian tube.

Northern shelf, 600 m.
Systematics p. 293.

Fissurina sp. 8

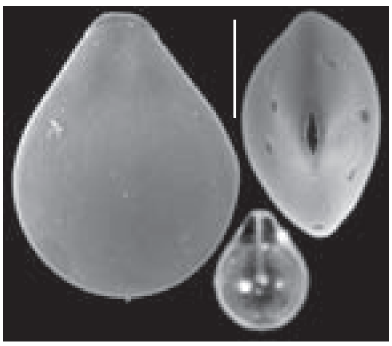
Test quadrangular in outline, compressed, only slightly inflated; central body bluntly produced, forming a prominent caudal extension; test keeled, the keel wider at the basal end; wall finely perforated, surface smooth, shiny; apertural area prominent, broadly produced; aperture a long slit between two thickened lips; entosolenian tube very short.

Northern shelf, 600 m.
Systematics p. 293.

Fissurina sp. 9

Test pyriform, compressed, with a rounded margin; greatest width at about 1/3 of the test from the base; wall transparent, finely perforated, with translucent lateral bands of coarser perforations; surface smooth, shiny; apertural area prominent, hyaline, broadly produced, somewhat depressed along the axis; aperture ovate between two thickened lips; entosolenian tube attached to one side, about half the test in length.

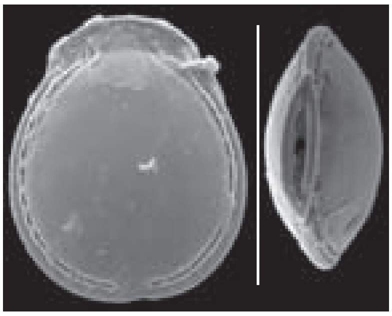
Northern shelf, 600 m.
Systematics p. 293.



Fissurina sp. 10

Test small, compressed, with a small rounded keel, ovate in lateral view with apertural end produced and basal end slightly indented; paired submarginal costae extend around the test, being interrupted at both ends; margin narrow, rounded, uniform in width; wall finely perforated; aperture terminal, between rounded thickened lips, with a very short entosolenian tube.

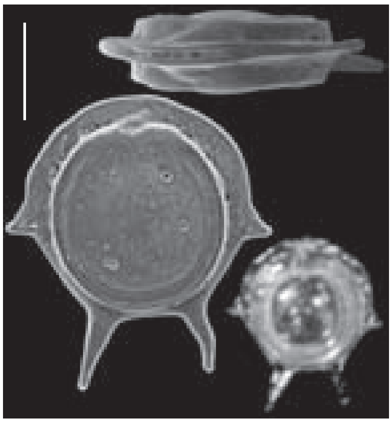
South of the Grande Terre, 40 m.
Systematics p. 293.



Fissurina sp. 11

Test nearly rounded in contour, compressed; periphery with a wide keel ornamented with four nearly symmetrical spinose projections developed laterally and at the aboral end of the test; two secondary keels form an annular ridge on each side; surface smooth; aperture a slit between two thickened lips, continuous with the keel.

Northern shelf, 600 m.
Systematics p. 293.

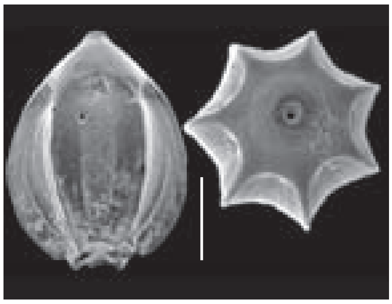


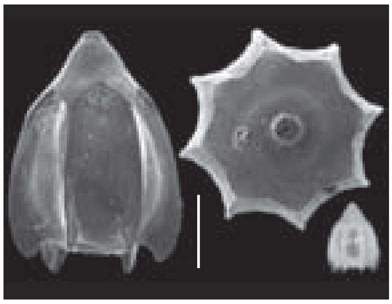
Homalohedra

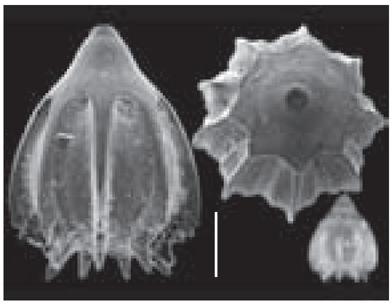
Homalohedra acuticosta

Test subglobular to pyriform, broadly rounded, gradually tapering to the apertural end, the body of the test with a number of thin, elevated costae, running from the base to near the apertural end, where they become coalesced into a thickened collar extending in a short neck containing the aperture; aperture small, round at the end of a short neck. Three various morphologies have been attributed to this species, depending on the morphology of the basal projections of the costae.

Northern shelf, 200 m.
Systematics p. 295.



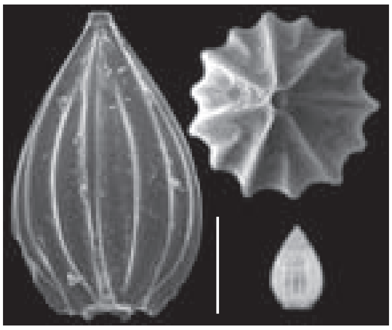




Homalohedra? *costata*

Test pyriform, tapering towards the apertural end and truncated at the aboral end, ornamented with a few rather remote ribs or costae running nearly the length of the test, frequently not reaching the apex, but ending in a ring of spinose projections; costae most often rounded; aperture small and rounded. This species lacks the thickened collar characteristic of *Homalohedra*.

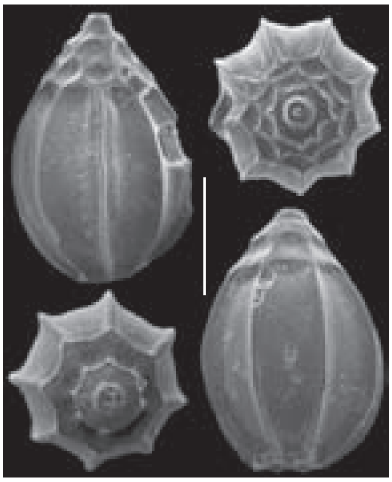
Northern shelf, 200 m.
Systematics p. 295.



Homalohedra gunteri

Test pyriform, more or less acutely pointed at the apertural end; from a basal ring, 6-8 stout costae run up the sides of the test, then arch over and coalesce near the apertural end; intercostal spaces are concave; above the arch, one or two rows of alternating hexagonal pits form a ring around the neck; the test ends in a blunt oral extension with a rounded aperture.

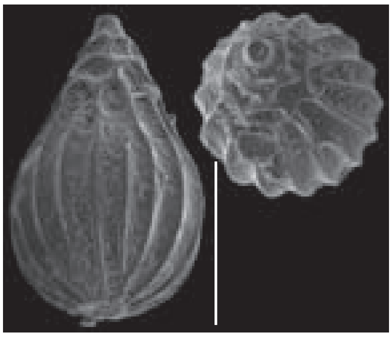
Northern shelf, 600 m.
Systematics p. 295.



Homalohedra williamsoni

Test subglobular to pyriform, broadest toward the basal end, apertural end tapering to a short slender neck; wall ornamented with a few high platelike costae, coalescing at the upper end and forming a collar made up of a reticulate network below the neck; aperture terminal, at the end of the neck, rounded.

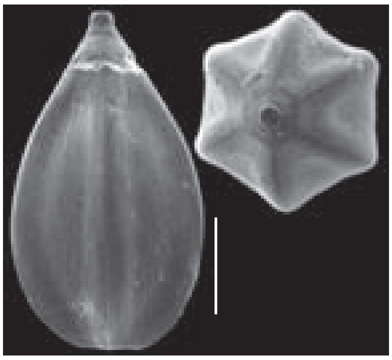
Outer reef, 100 m.
Systematics p. 295.



Homalohedra sp. 1

Test pyriform, tapering towards the apertural end and truncated at the aboral end, ornamented with a few rounded costae running nearly the length of the test; aperture small and rounded, at the end of a small tubular neck. This species differs from *Lagena acuticosta* in the much-rounded costae and the lack of a thickened collar. It resembles, however the species illustrated by Cushman (1933a) as *L. acuticosta* in plate 8, fig. 9.

Northern shelf, 600 m.
Systematics p. 295.

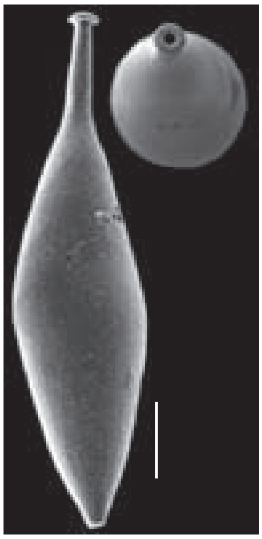


Hyalinonetrion

Hyalinonetrion distomapolita

Test elongate, fusiform subrhombic in outline, thickest in the middle portion, circular in cross section; the test tapers evenly in both directions assuming a double conical appearance; surface smooth; aperture rounded, at the end of a long neck, with a phyaline lip.

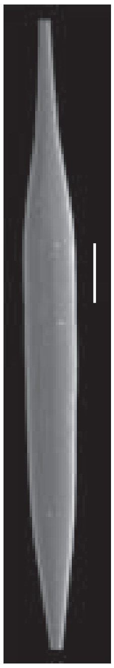
Coastal bay, 10 m.
Systematics p. 289.



Hyalinonetrion elongata

Test very elongate, subcircular in section; the central portion of the test, with parallel sides, gives a cylindrical appearance, the basal end being almost symmetrical to the long neck; wall calcareous hyaline, finely perforated, surface smooth; aperture terminal at the end of the neck.

Coastal bay, 10 m.
Systematics p. 289.



Hyalinonetrion gracillima

Test elongate-fusiform with a long neck, basal end acute; wall calcareous hyaline, finely perforated, surface smooth; aperture is at the end of the neck, bordered with a phialine lip.

Coastal bay, 10 m.
Systematics p. 289.

Lagena

Lagena fenestrata

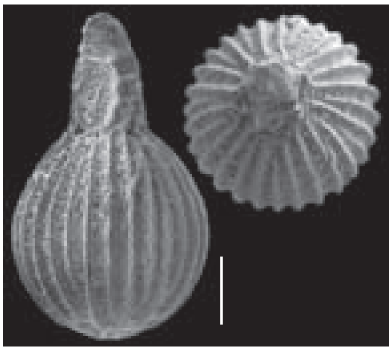
Test elongate, flask-shaped, with a rounded aboral end and a tapering apertural end with a long neck; wall covered with a fenestrate network attached to the surface of the test; the fenestrules are elongated; aperture at the end of the neck.

Southwestern lagoon, 25 m.
Systematics p. 289.

Lagena cf. *L. laevicostata*

Test flask-shaped, rounded; the ornamentation consists of longitudinal costae, some of them, intercalated with shorter costae, occur for the full length of the test and may continue along the neck; the neck shows a number of transverse costae that intersect the longitudinal ones, forming a variable reticular pattern resembling *Lagena* cf. *L. koreana* McCulloch (1981, pl. 35, figs 1-2) and *Lagena sulcata*, variety with ladder-like flanges of Heron-Allen & Earland (1932b, pl. 10, fig. 15).

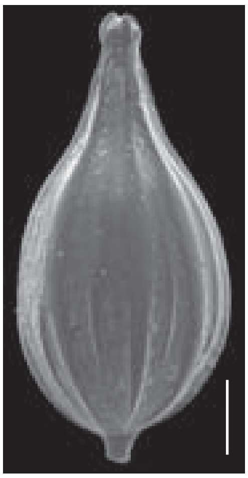
Northern lagoon, 600 m.
Systematics p. 289.



Lagena paucistriata

Test flask-shaped, aboral end marked by a short and thick spine, test terminates in a short wide neck; wall finely perforate and covered with costae originating from the aboral end and that may continue along the neck; aperture a round crenulate opening at the end of the neck, differing from the round aperture with a phialine lip of *Lagena spicata*.

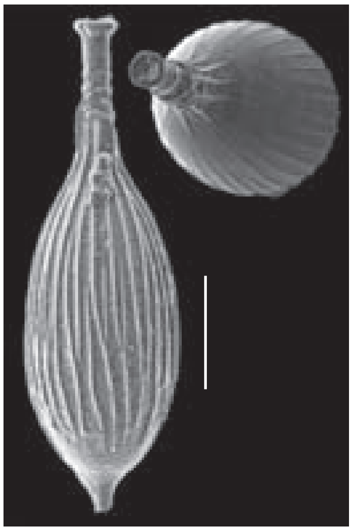
Northern shelf, 600 m.
Systematics p. 289.



Lagena cf. *L. pustulostriatula*

Test flask-shaped, ovate, elongated, tapering into a short neck; basal end with a short spine; wall covered with fine, somewhat anastomosing costae; basal end covered with fine pustules, mostly concentrated in the costae free area, but that may extend between the costae up to half of the test; aperture at the end of the neck, with a distinct lip.

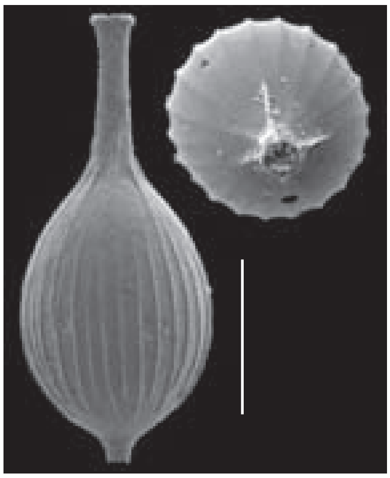
Coastal bay, 5 m.
Systematics p. 289.



Lagena spicata

Test rounded to flask-shaped; wall ornamented with numerous longitudinal costae sometimes continuing up the apertural neck; neck cylindrical or tapering; aperture terminal, rounded, bordered with a phialine lip.

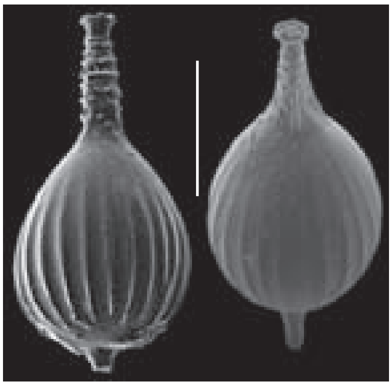
Bay, south of the Grande Terre, 10 m.
Systematics p. 289.



Lagena strumosa

Test globular, flask-shaped, with an elongate neck; basal end with a definite spine; surface covered with fine longitudinal striae, the neck shows several irregular annuli and fine spines; aperture at the end of the neck, with a distinct expanded lip.

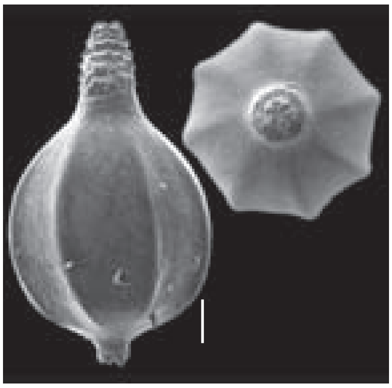
Bay, south of the Grande Terre, 10 m.
Systematics p. 289.



Lagena sp. 1

Test large, globular with a short and thick basal spine and a short wide neck. The ornamentation consists of a few longitudinal costae (6-8) occurring for about the full length of the test; the neck shows a number of undulated annuli and terminates with a round crenulate opening.

Northern shelf, 600 m.
Systematics p. 289.



Lagenosolenia cervicosa

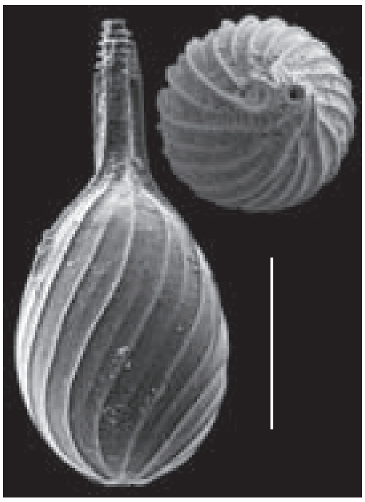
Test flask-shaped, compressed, inflated centrally, tricarinate; basal end rounded, apertural end produced with a neck sculptured with two or more fine longitudinal costae; median keel increasing in width at base of the neck to form a uniform curve to the phialine lip; wall finely perforate, surface rough; aperture subcircular at the end of the neck.

Northern shelf, 200 m.
Systematics p. 293.

Lagena tortilis

Test flask-shaped with initial end broadly rounded, apertural end with a long neck about one third of the entire length of the test; wall ornamented by small spiral costae that converge at center of base, few continuing on the neck into longitudinal structure; the end of the neck is ornamented by several regular rings; aperture at the end of the neck, rounded.

Bay of Prony, 10 m.
Systematics p. 289.



Lagenosolenia

Lagenosolenia bilagenoides

Test flask-shaped, compressed, ending in a long tubular neck terminating in a prominent phialine lip (neck often broken); central part of the test inflated, distinctly perforated; test surrounded by a bicarinate structure of uniform width along the sides; the two carinae fuse near the base of the neck, the resulting carina ending above halfway point of the neck; aperture rounded, terminal.

Bay of Prony, 20 m.
Systematics p. 293.

Lagenosolenia favosa

The body of the test is elongate-oval and tapers to a narrow tubular neck of considerable length, but often broken; the periphery is surrounded by a wing of moderate width, generally emarginated at the base in adult shells, and more or less tubulated; two or three rows of reticulated ornament occur between the body of the test and the peripheral wing. Surface smooth, aperture at the end of the neck

Northern shelf, 600 m.
Systematics p. 293.

Lagenosolenia intricatissima

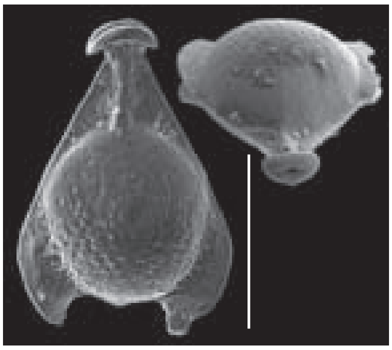
Test ovoid compressed but centrally inflated, bicarinate in part; basal end broadly rounded, greatest width about midpoint, then tapering to a well-developed neck; neck broad at base, hyaline, compressed; periphery with a double keel fusing near the aperture, also fusing at basal end to form two short spines; depressed areas between keel edges granular or spinose; wall smooth, finely perforated with marginal, more densely perforated, opaque bands; aperture ovate, at the end of the produced neck; entosolenian tube attached to dorsal face, more than half the length of the test in length.

Southwestern lagoon, 30 m.
Systematics p. 293.

Lagenosolenia neoauriculata

Test flask-shaped, compressed, unicarinate for anterior half, with laterobasal loops; lateral structure interrupted at central basal area, giving a triangular outline to the test; relatively long carinate neck, with a prominent phialine lip; wall of the central part of the test with rather coarse perforations; aperture terminal, rounded.

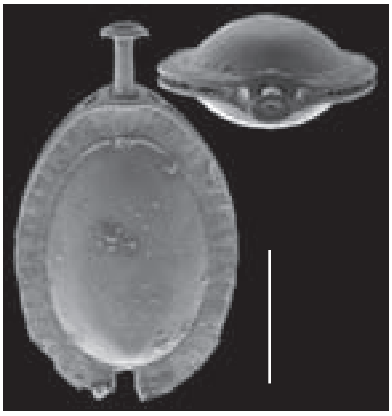
Bay of Prony, 20 m.
Systematics p. 293.



Lagenosolenia peltatusella

Test ovoid with a smooth inflated central area and a thick broad lateral flange, widening slightly towards the aperture, with radiating ridges and a truncated margin; the truncated margin of the flange shows pits at the position of the ridges; aperture terminal, rounded on a slightly produced neck with a well-developed everted lip.

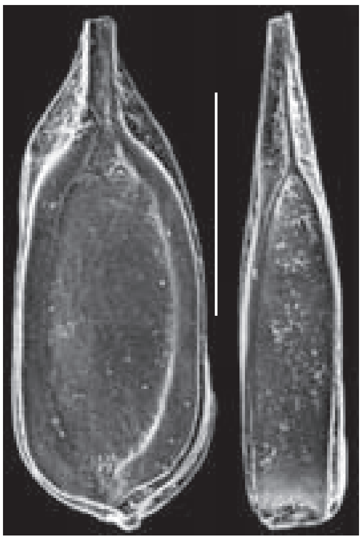
Coastal bay, 10 m.
Systematics p. 293.



Lagenosolenia quadrangularis

Test elongate, compressed, quadrangular in transverse section; basal end rounded, sometimes mucronate; apertural end tapering and terminating in a short apertural neck; flat lateral sides of the test edged by paired carinae; the external carinae of each face fuse in a keel that extends along the neck; the internal carinae form an incomplete rim, then also extending along the neck; surface smooth; aperture ovate, produced on a neck.

Bay of Prony, 20 m.
Systematics p. 293.



Lagenosolenia sp. 1

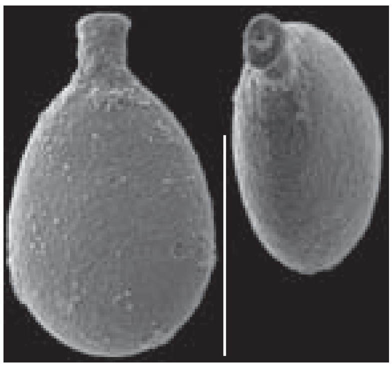
Test oval in outline, laterally compressed with two paired carinae separated by a granular equatorial groove; the internal carina changed into sculpture patterns at each end of the test, these patterns continuing on the granular neck; surface ornamented by minute irregular ridges; aperture terminal, rounded, with a distinct lip.

Bay of Prony, 20 m.
Systematics p. 293.

Lagenosolenia sp. 2

Test globular, flask-shaped, broadly rounded at the base, the opposite end abruptly narrowed to a stout, short neck; surface somewhat rough throughout; aperture terminal, rounded, with a slight lip.

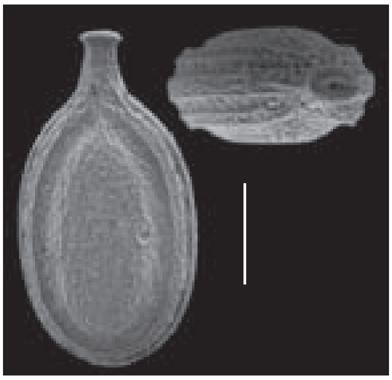
Bay of Prony, 30 m.
Systematics p. 293.



Lagenosolenia sp. 3

Test oval in outline, laterally compressed with three complex carinae and a central boss separated from the lateral carina by a deep groove; the carinae continue over the neck; surface ornamented by irregular ridges; aperture terminal, ovate, with a distinct lip.

Bay of Prony, 20 m.
Systematics p. 293.

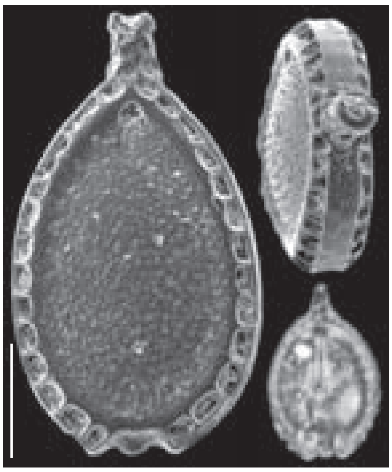


Lagnea

Lagnea lagenoides

Test flask-shaped, usually much compressed, the body portion ovate surrounded by a simple peripheral keel of varying width in different specimens, and with numerous radiating tubulations, giving it in side view a somewhat scalloped appearance; body of the test smooth, and usually nearly transparent; aperture projecting with a distinct neck, slightly tapering, but in some specimens at least with a distinct entosolenian tube.

Isle of Pines, 5 m.
Systematics p. 295.



Lagnea neosigmoidella

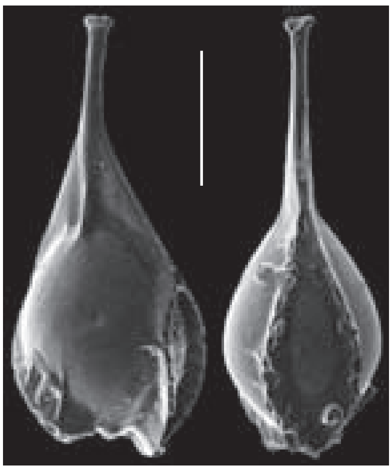
Test elongate, flask-shaped, compressed, sigmoid in cross section; wide peripheral keel with numerous narrow, radiate tubules; keel extends half way up the long tubular neck that is often broken; aperture at the end of the neck with a phialine lip.

Northern shelf, 600 m.
Systematics p. 295.

Lagnea parviauriculata

Test unilocular, flask-like, slightly compressed, periphery broadly carinate, keel with radiating tubules, extending completely around the periphery and at the base of the neck, bifurcating in the lower part of the test but converging at the basal end; wall calcareous, hyaline, surface smooth; aperture round, terminal, at the end of a long neck, with a thickened rim.

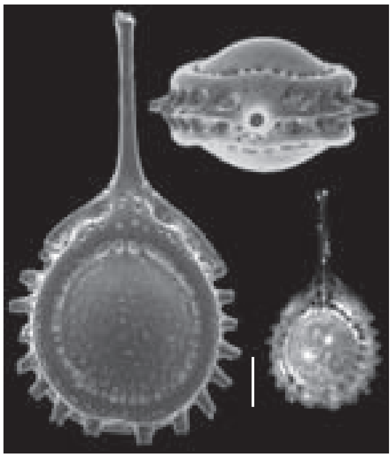
Coastal bay, 5 m.
Systematics p. 295.



Lagnea sp. 1

Test large, in side view rounded, in end view compressed, with a long, fine, cylindrical neck; periphery furnished with a median keel with tubes around the apertural end of the test, only the tubes occurring around the basal end of the test; a thick subsidiary keel is present on either side; wall smooth; aperture at the widening end of the neck, rounded.

Northern shelf, 600 m.
Systematics p. 295.

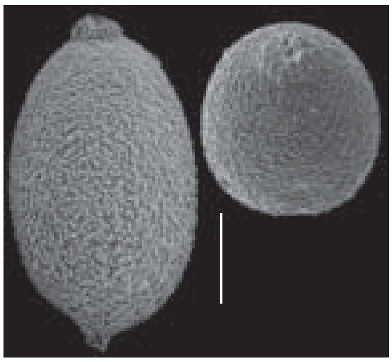


Oolina

Oolina ampulladistoma

Test subcylindrical to subspherical; aboral end with a caudal spine; numerous and prominent nodules, usually more abundant on the basal half of the test that is rougher; test tapering forward to a distinct groove at the base of a convex apertural formation; aperture small at the center of this formation.

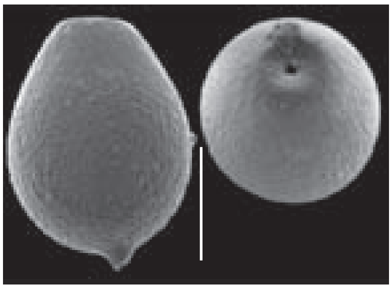
Bay of Prony, 30 m.
Systematics p. 295.



Oolina caudigera

Test globular to ovate characterized by a narrow aboral spine; surface somewhat irregular; aperture simple, surrounded by numerous small bosses.

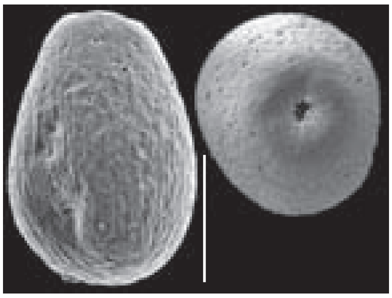
Northern shelf, 600 m.
Systematics p. 295.



Oolina lineata

Test ovate to pyriform, circular in cross section, bluntly rounded at the basal end; numerous fine and weak, closely spaced longitudinal striae form the ornamentation; aperture terminal and rounded.

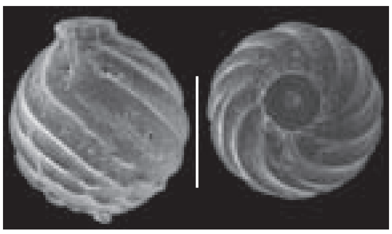
Northern shelf, 600 m.
Systematics p. 295.



Oolina spiroglobosa

Test globose; wall ornamented by several irregularly twisted costae that become indistinct near the base of the test; basal end of the test terminates in a short spine; aperture terminal, at the end of a short lip-like structure.

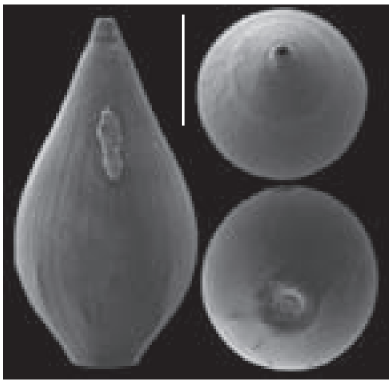
Coastal bay, 10 m.
Systematics p. 295.



Oolina cf. *O. stelligera*

Shell pyriform, with a deep, circular depression at the base, surrounded by a rim about one third the diameter of the shell, varying considerably in depth; a number of ribs radiate from the rim, a few stronger and irregular ribs extend a short distance on the rounded base, the others extending to about two thirds the height of the test; surface otherwise smooth, very finely perforated; aperture terminal, at the produced apical end. The test resembles the final chamber of a uniserial test, but the base is always imperforate. This species differs from *O. stelligera* in having a less marked angle between the rim and the rounded base of the test, and less regular and prominent ribs present in this angle.

Northern shelf, 600 m.
Systematics p. 295.



Oolina stellula

Test unilocular, flask-shaped; wall calcareous, hyaline, surface smooth aperture bordered by radial grooves, slightly produced but without a distinct neck.

Southwestern lagoon, 25 m.
Systematics p. 295.

Oolina sp. 1

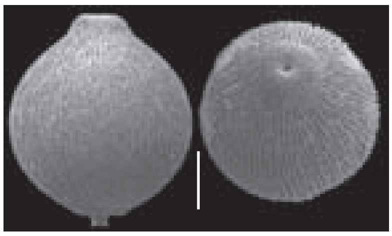
Test subcylindrical; surface ornamented with several costae, thin at the base of the test, thickening towards the apertural end and joining to form a smooth hyaline blunt flat apertural end; aperture very small, round, in the center of a slightly depressed area. This species resembles *O. auberginiana* Yassini & Jones, 1995 in its general morphology.

Northern shelf, 600 m.
Systematics p. 296.

Oolina sp. 2

Test subspherical; initial end broadly rounded on all, but slightly produced basally to form a short blunt caudal spine; test tapering toward the apertural end to form a truncated apertural ring; all surface covered with numerous, raised costae that are discontinuous and made up of a series of contiguous short segments; aperture small, rounded in the central depression of the apertural ring.

Northern shelf, 600 m.
Systematics p. 296.

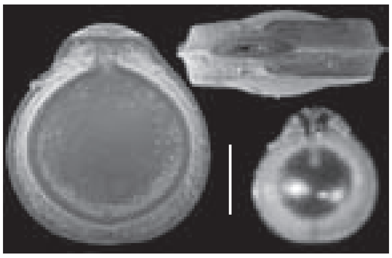


Palliolatella

Palliolatella bradyiformis

Test compressed, circular in side view, with the central part of the test convex on either side; periphery furnished with a sharp prominent median keel and two lateral keels; wall smooth; aperture slit-like with two thick lips connected with the median keel.

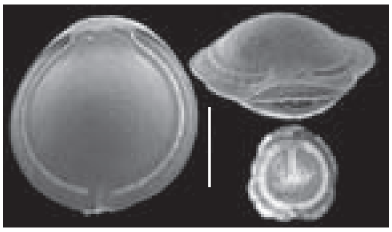
Northern shelf, 600 m.
Systematics p. 293.



Palliolatella fasciata carinata

Test compressed with a circular outline; periphery bordered by a narrow keel; unornamented lateral surfaces limited by two narrow peripheral costae that interrupt at each end of the test; aperture fissurine, not produced.

Coastal Bay, 5 m.
Systematics p. 293.



Palliolatella peponisema

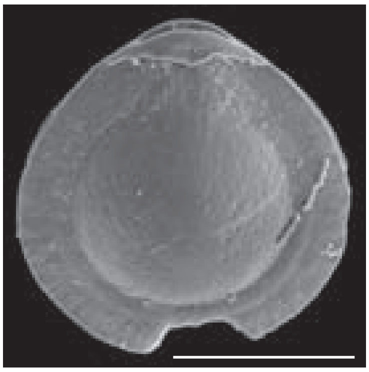
Test elongate subfusiform in outline, about 2.5 times as long as broad, greatest breadth below midline; distinctly compressed but chamber faces convex, neck length up to one quarter that of chamber; periphery ornamented by 3 keels, of which the central one is usually predominant on the upper part, and the outer pair occasionally predominant on the lower part of test; central keel embraces the neck in a rather narrow flange, with the upper surface and lip variably expanded to form an acutely angled hood; central keel may disappear at the base of the test, or may persist, embracing the basal spine as in the presented specimen; aperture terminal, oval, with free straight entosolenian tube of comparable length to neck.

Northern shelf, 600 m.
Systematics p. 293.

Palliolatella sp. 1

Test free, circular in outline, compressed, completely encircled by a wide carina; wall smooth with relatively coarse perforations; aperture and neck enclosed by the inflated carina.

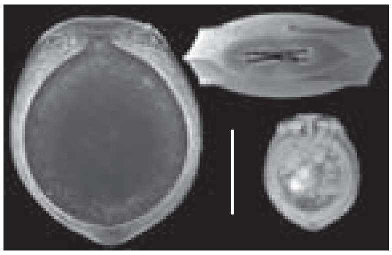
Coastal bay, 10 m.
Systematics p. 293.



Palliolatella sp. 2

Test compressed, the central part circular in side view; periphery furnished with a sharp prominent median keel and two lateral keels; median keel widening toward the truncate apertural end of the test and to the apex of the basal end; wall smooth; aperture slit-like with two thick lips connected with the median keel.

Northern shelf, 600 m.
Systematics p. 293.



Palliolatella sp. 3

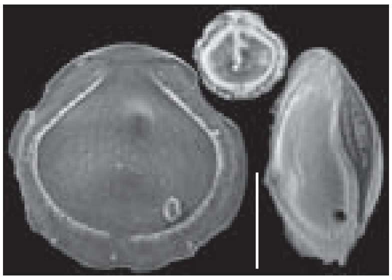
Test compressed; central body of the test circular in side view, with its central part convex; periphery furnished with a sharp prominent median keel and two lateral keels; the median keel widens towards the aperture, connecting to the lips, it ends in two stout spines at some distance from the basal end where three smaller spines are present; surface rough, except in the central part of the test; aperture rounded in a depression between two thick lips connected with the median keel.

Northern shelf, 600 m.
Systematics p. 293.

Palliolatella sp. 4

Test subcircular in side view with a somewhat polygonal central area bordered by a small costa; test dissymmetrical in end view with one side almost flat and the other one convex; periphery keeled; apertural area slightly produced, aperture fusiform surrounded by double lips connected with the keel.

Northern shelf, 600 m.
Systematics p. 293.

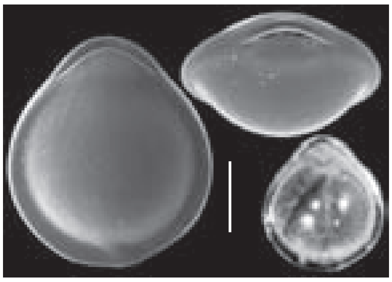


Parafissurina

Parafissurina admiralis

Test ovate to subspherical, somewhat longer than wide; keel uniform in width and texture; apertural area produced with a relatively small lip on one side and a larger hood-like lip on the other side; wall smooth, thick, transparent with heavily perforated peripheral areas, opaque under the dissecting microscope, whitish on SEM pictures; aperture a crescent-shape slit with a long entosolenian tube.

Northern shelf, 600 m.
Systematics p. 296.



Parafissurina aventricosa

Test inflated, subcircular in outline, laterally compressed, but not keeled; basal end flattened on a short distance, then inflating regularly, reaching the greatest width about mid point, then tapering toward a produced hood; aperture rounded below the hood.

Southwestern lagoon, 30 m.
Systematics p. 296.

Parafissurina erecta

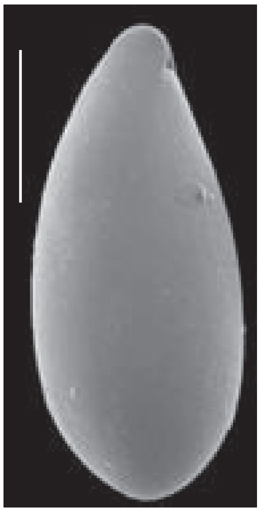
Test subquadrate, marginate but not carinate, much compressed; basal end quadrately rounded, apertural end slightly produced; width about uniform from end to end; margin heavy, rounded, transparent, uniform laterally but wider and thicker basally; wall transparent, thick, with central area more hyaline; margin extending vertically at the apertural end, furnishing a shallow recess for the relatively short, ovate opening; entosolenian tube about as long as the test, adhering to the dorsal face.

South and southeastern lagoon, 50-100 m.
Systematics p. 296.

Parafissurina himatiostoma

Test elongate, ovoid, tapering towards apertural end, basal end rounded, widest in the middle; wall calcareous hyaline, finely perforated, surface smooth; aperture is a small opening with unequally developed lips; upper lip slightly elongate and hood shape.

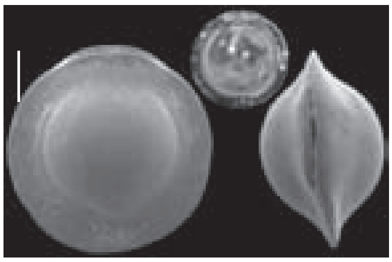
Southwestern lagoon, 25 m.
Systematics p. 296.



Parafissurina cf. *P. kallima*

Test circular in contour, carinate, compressed but centrally inflated; keel prominent, transparent, of uniform width even at apertural end; wall transparent except an irregular white band (pores) near body margin; dorsal lip takes its origin on marginal keel that extends forward, shorter ventral lip parallels dorsal lip, giving a slit-like aperture; entosolenian tube adhering to the dorsal face, about half the length of the test. This species matches well with the description of *P. kallima*, but differs in its shorter aperture and longer entosolenian tube.

Northern shelf, 600 m.
Systematics p. 296.



Parafissurina minuta

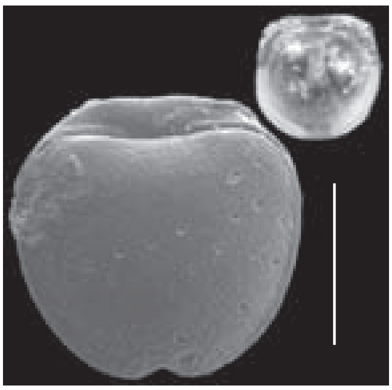
Test compressed roundly quadrangular, about twice as long as broad; the two sides of the peripheral margin parallel; wall transparent, very finely perforated; aperture slit-like, about half the width of the test, dissymmetrically placed towards one side of the test.

Bay of Prony, 30 m.
Systematics p. 296.

Parafissurina cf. *P. reniformis*

Test subcircular in contour, truncated at the apertural end, compressed, slightly marginated; wall translucent, slightly roughened; apertural end squared off into a straight line; aperture located in a depression; entosolenian tube adhering to the dorsal face, about half the length of the test.

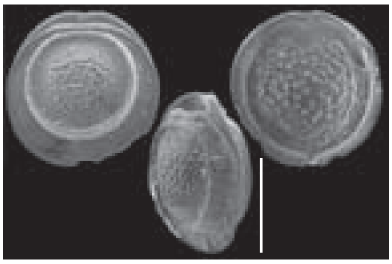
Southwestern lagoon, 20 m.
Systematics p. 296.



Parafissurina sp. 1

Test subcircular in outline, laterally compressed, with a well-developed peripheral keel bordered by two secondary keels forming an annular ridge on each side; central part of the test rather coarsely perforated, ornamented by irregular ridges; aperture large, ovate, with the keel forming two dissymmetrical lips, a raised one and a less developed one.

Southwestern lagoon, 25 m.
Systematics p. 296.

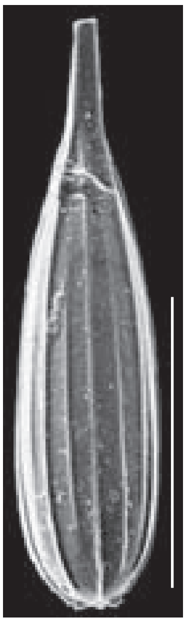


Procerolagena

Procerolagena cylindrocostata

Test elongate, circular in cross section and with a cylindrical central portion; apertural end tapering gradually into a long slender neck with a lip (often broken); basal end tapers rather quickly; two sets of costae form the ornamentation, one set along the full length of the chamber and half way up the neck, the other set occupies the lower three-quarter portion of the chamber. Both sets may slightly project beyond the basal end of the test.

Coastal bay, 10 m.
Systematics p. 289.



Procerolagena distoma

Test elongated, generally with subparallel margins; surface ornamented with fine longitudinal striae; aperture circular, at the end of a short, conical neck; aboral opening.

Specimens found in New Caledonia are more or less curved and inflated, with very fine striae, as the specimen shown on pl. 58, fig. 14 of Barker (1960).

Northern shelf, 200 m.
Systematics p. 290.

Procerolagena cf. *P. gracilis*

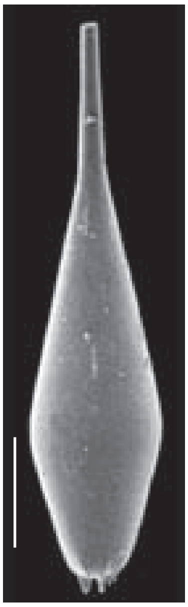
Test fusiform, elongate, ornamented with 4 or more high costae or plate-like ribs running the entire length of the test from near the aperture to the apical end, where they unite in an apical spine; neck slender; surface smooth; aperture terminal, rounded, small.

Northern shelf, 600 m.
Systematics p. 290.

Procerolagena intricata

Test elongate-fusiform, flask-shaped with a long neck, basal end truncated with short spines; wall calcareous hyaline, finely perforated, surface smooth with faint costae on the lower portion of the test; aperture rounded, at the end of the neck.

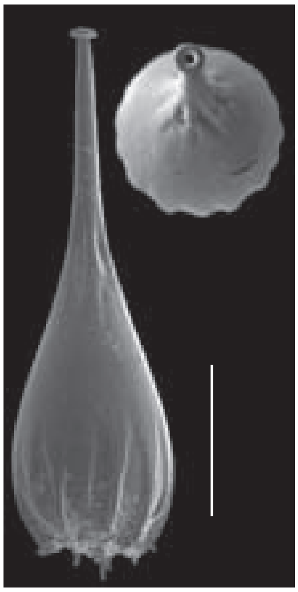
Coastal bay, 10 m.
Systematics p. 290.



Procerolagena oceanica

Clavate form with a long, tapering, nearly cylindrical neck; greatest width near the base; wall ornamented by a few distinct raised costae limited to the truncated basal portion of the test; base provided with a number of short spines; aperture rounded, at the end of the neck, surrounded by a thick phialine lip.

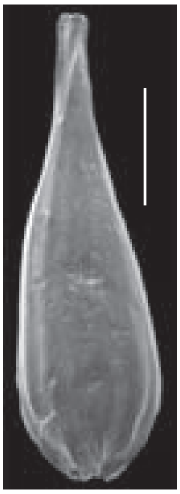
Coastal bay, 10 m.
Systematics p. 290.



Procerolagena implicata

Test fusiform and slightly curved with the aboral end truncated; sides of the main body of the test nearly parallel, becoming rapidly tapering at the apertural end, with a distinct neck; wall ornamented with a few longitudinal costae, some of them continuing from the base to the apertural end; at the aboral end the costae project slightly giving a spinose appearance; wall finely perforated; aperture small, rounded, at the end of the neck.

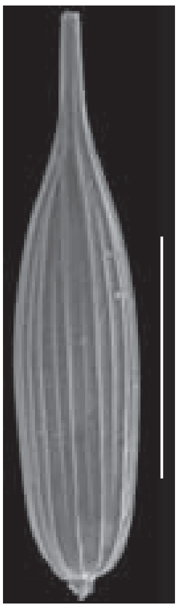
Northern shelf, 600 m.
Systematics p. 290.



Procerolagena meridionalis

Test fusiform, circular in cross section, basal end bluntly rounded, sometimes with an apical spine; 8-12 costae extend the entire test length, alternating with a second set of weaker and shorter costae; wall smooth; aperture at the end of an elongated neck.

Coastal bay, 10 m.
Systematics p. 290.



Pseudofissurina

Pseudofissurina sp. 1

Test small, subrounded in outline, compressed, with inflated central body and carinate periphery; wall finely perforate, surface smooth and unornamented; apertural end truncated; aperture elongate, about the diameter of the test in length, one margin somewhat produced, internally provided with an entosolenian tube attached to the dorsal wall and extending back nearly to the base of the chamber before flaring terminally.

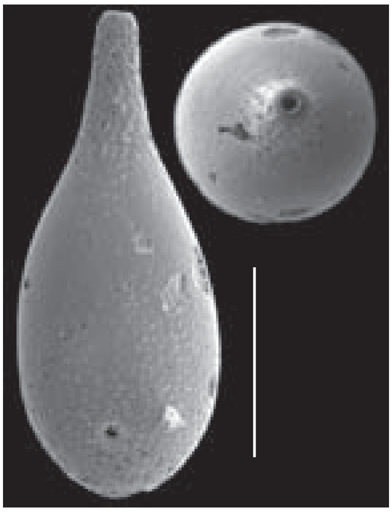
Northern shelf, 600 m.
Systematics p. 296.

Pygmaeoseistron

Pygmaeoseistron baukalionilla

Test flask-shaped with a rounded base and a subcylindrical neck; wall smooth or with low costae developed on the basal half of the test; aperture at the end of the neck, with a flared lip (broken on the figured specimen).

Bay of Prony, 20 m.
Systematics p. 290.



Pygmaeoseistron chasteri

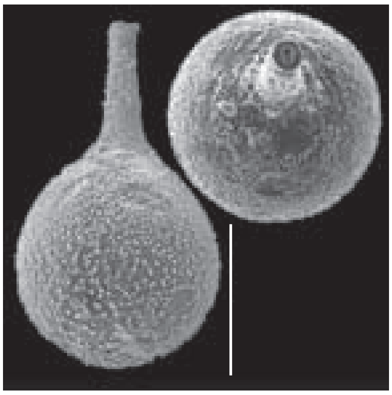
Test flask-shaped with broadly rounded base, gradually tapering to the apertural end; finely pitted surface; aperture at the end of the neck.

Southwestern lagoon, 30 m.
Systematics p. 290.

Pygmaeoseistron hispidulum

Test subglobular, broadly rounded at the base, the opposite end abruptly narrowed to a slender, elongate neck of nearly uniform diameter; surface finely hispid throughout; aperture terminal with a slight lip.

Coastal bay, 5 m.
Systematics p. 290.

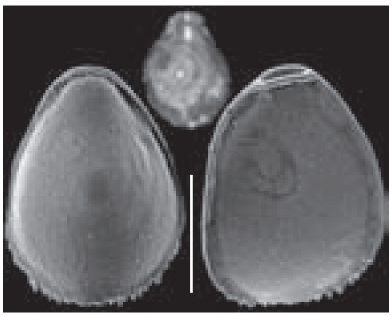


Seabrookia

Seabrookia pellucida

Test elliptical in side view, plano convex in end view; periphery slightly carinate; early stage low trochospiral, chambers rapidly increasing in size, strongly embracing; only two chambers are visible in the last whorl, and generally appear as if it was unilocular with a carina; wall translucent, very finely perforated; aperture terminal, elongated, surrounded by a rim.

Bay of Prony, 10-40 m.
Systematics p. 297.

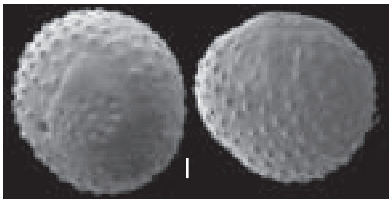


Sphaeridia

Sphaeridia papillata

Test globular, nearly spherical in shape, with a thick wall; three to four rapidly enlarging and strongly enveloping chambers, but usually hardly visible, without apparent sutures; test covered with coarse hemispherical papillae of clear shell material, except over the oral area, covered by a large solid plug that occupies about one fourth of the test surface and is perforated by tubular and bifurcating canals; wall finely perforate; aperture consisting of the pores at the ends of the tubular canals.

Southern shelf, 70 m.
Systematics p. 308.

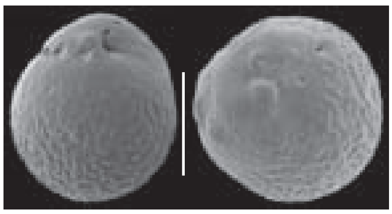


Stictogongylus

Stictogongylus rugata

Small globular test with a small trochospiral early stage followed by a thick walled inflated final chamber that makes up 9/10 of the test; sutures indistinct giving the test an unilocular appearance; wall irregularly ridged with numerous fine pores; apical region smooth, without pores, but with a few larger openings arranged in an incomplete spiral pattern.

Coastal bay, 5 m.
Systematics p. 326.



Description of hyaline species uniserial (or appearing so)

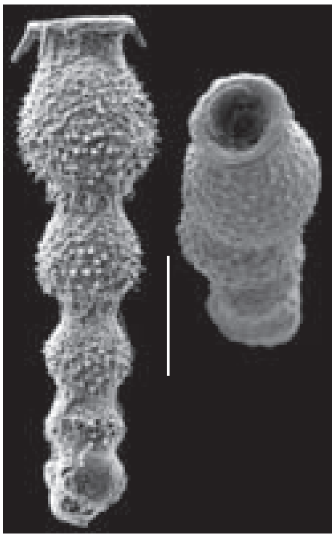
All scale bars = 0.1 mm (for SEM)

Allassoida

Allassoida virgula

Test linear, straight or slightly curved, slightly tapering toward the initial end; early stage with a few trochospirally arranged chambers, abruptly becoming uniserial with 4-5 gradually enlarging chambers; chambers of the linear portion globular or pyriform; surface hispid throughout, with elongate acicular spines at the base of the apertural lip and at the base of the chambers; aperture wide, slightly projected, with an everted phialine lip.

Bay of Prony, 10-30 m.
Systematics p. 302.



Amphicoryna

Amphicoryna scalaris

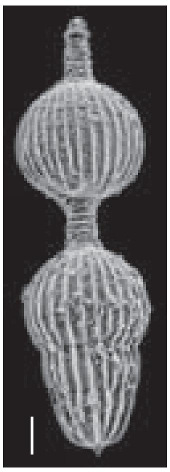
Test straight or slightly curved consisting of a straight linear series of subglobular inflated chambers (3-6); chambers increasing rapidly in size as added; final chamber drawn out into a fairly long neck ornamented with annular costae; initial end commonly mucronate; wall ornamented by longitudinal costae variable both in number and thickness; last chamber may be somewhat separated from the rest of the test; aperture radiate, at the end of the neck. This species is strongly dimorphic.

Northern shelf, 600 m.
Systematics p. 287.

Amphicoryna separans

Test short, the initial portion composed of three globular but not inflated chambers uniserially arranged; initial end broadly rounded with a small apical spine; one or more spherical supplementary chambers are separated from the first chambers by a narrow tube; numerous strong costae run the length of the test, terminating at each chamber; aperture radiate located at the end of a long regularly annulated neck.

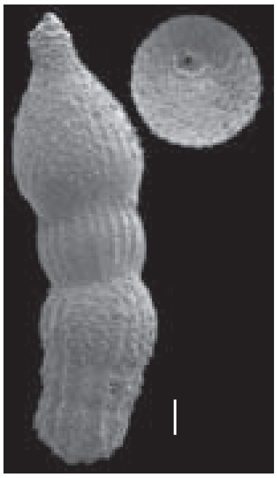
Southern shelf, 70 m.
Systematics p. 287.



Amphicoryna sp. 1

Test elongate, uniserial and slightly curved; chambers somewhat inflated, irregular, overlapping previous chambers; sutures straight and constricted, surface ornamented with fine costae broken up into rows of small pustules: aperture terminal, radiate, at the end of a pronounced neck with undulated concentric ridges.

Northern shelf, 600 m.
Systematics p. 287.

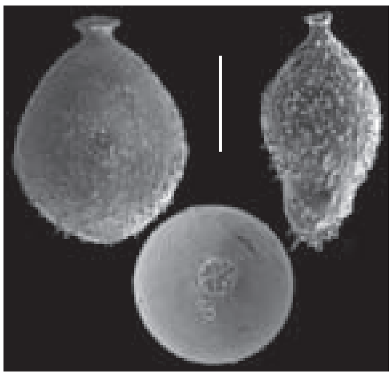


Bombulina

Bombulina echinata

Test elongate, ovate, circular in section, uniserial throughout, chambers strongly embracing; sutures horizontal, flush and obscure; wall calcareous, hyaline, surface finely hispid; aperture terminal, rounded at the end of a short neck, bordered by a phialine lip.

Bay of Prony, 20-40 m.
Systematics p. 296.



Botuloides

Botuloides pauciloculatus

Test small, elongate, arcuate, circular in section, and sausage-shaped; proloculus ovate with nearly parallel sides, about 2.5 times as long as broad, followed by one chamber of similar form that partly overlaps the distal end of the protocols, and occasionally a second chamber; sutures horizontal, straight, constricted; wall calcareous, thin, transparent, finely perforate, surface smooth; aperture small, round, sometimes with a short tubular neck.

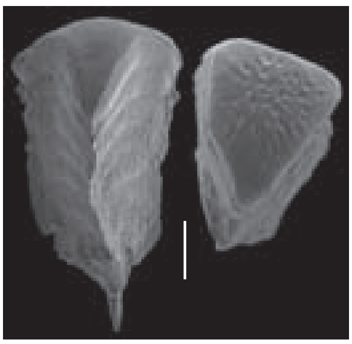
Bay of Prony, 30 m.
Systematics p. 284.

Chrysalidinella

Chrysalidinella dimorpha

Test elongate, early stage pyramidal, later with nearly parallel sides and triangular or rarely quadrangular in section, early chambers triserially arranged and enlarging rapidly; later chambers uniserial and rectilinear, sutures arched and curving backward at the angles, apertural face domed; wall coarsely perforate, surface smooth; uniserial stage with a cribrate aperture of numerous rounded pores scattered over the terminal face, each bordered with a small lip.

Southwestern lagoon, 20 m.
Systematics p. 304.



Dentalina

Dentalina decepta

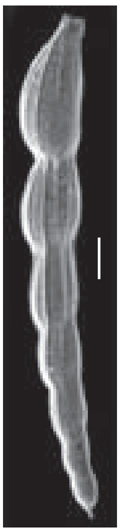
Test large, slightly curved, the initial end with a single stout spine; later part of the test slightly lobulate; chambers distinct, inflated only in the later portion, increasing in size rather gradually; sutures distinct, only the later ones depressed; earlier portion ornamented with distinct longitudinal costae extending across the sutures, later portion smooth; aperture terminal, radiate, slightly projecting, eccentric.

Northern shelf, 600 m.
Systematics p. 284.

Dentalina cf. *D. flintii*

Test elongate, slender, tapering, curved, the initial end mucronate; chambers somewhat inflated, especially in the later portion; sutures depressed in the later portion of the test; surface ornamented by longitudinal costae, faint on the earlier chambers, running to the apertural end; aperture radiate at the end of a tapering neck.

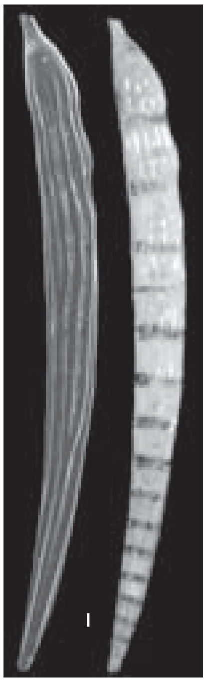
Bay of Prony, 30 m.
Systematics p. 284.



Dentalina vertebralis

Test long, slender, slightly tapering, and generally more or less curved; chambers numerous, outline even; surface marked by distinct, continuous, longitudinal costae; sutures unconstricted, straight, hyaline, and conspicuously thick, but not limbate; aperture terminal, radiate, at the end of a tapering neck.

Northern shelf, 600 m.
Systematics p. 284.



Enantiodentalina

Enantiodentalina muraii

Test elongate, subcylindrical, straight or slightly arcuate, early chambers biserial, alternation clearly evident on the dorsal edge but less clear on the ventral edge, later uniserial, with increasingly oblique sutures; wall finely perforate, surface smooth; aperture terminal on the produced margin of the test, radiate.

Northern shelf, 600 m.
Systematics p. 284.

Euglandulina

Euglandulina striatula

Test subfusiform, circular in cross section; initial end acute, greatest width about midpoint, apertural end rounded; sutures horizontal and flush, hardly visible; last-formed chamber more than half the entire length of the test, tapering towards the aperture; wall ornamented by fine costae; aperture radiate.

Coastal bay, 10 m.
Systematics p. 296.

Frondicularia sp. 1

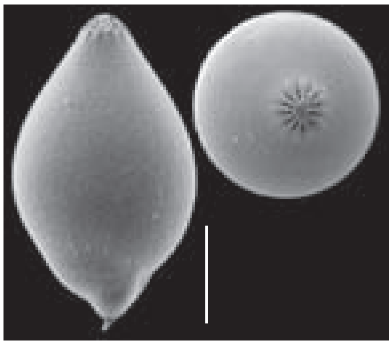
Test stout, tapering, compressed; lateral edges rounded and somewhat lobulate; chambers few; sutures slightly excavated; proloculus inflated; first chambers strongly reflexed later only slightly curved, becoming horizontal; surface smooth; aperture terminal, radiate.

Northern shelf, 600 m.
Systematics p. 285.

Glandulina suezensis

Test fusiform, circular in cross section; early stage biserial, later uniserial; initial end with a short hyaline tapering spine; chambers strongly overlapping and rapidly increasing in size as added; sutures slightly depressed; wall smooth, more or less transparent; aperture terminal, prominent, radiate.

Coastal bay, 5-10 m.
Systematics p. 296.

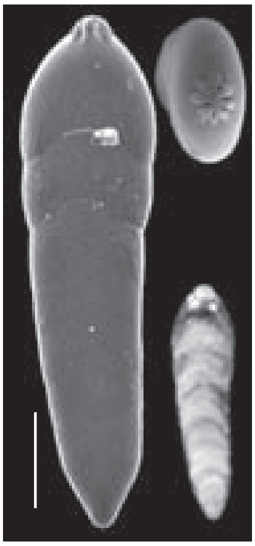


Frondicularia

Frondicularia kiensis

Test elongate, narrow, tapering, compressed; lateral edges rounded and somewhat lobulate; chambers numerous; sutures slightly excavated; proloculus inflated, chambers immediately following it more reflexed than the later ones, which are only slightly curved; surface smooth; aperture terminal, radiate.

Northern shelf, 600 m.
Systematics p. 285.

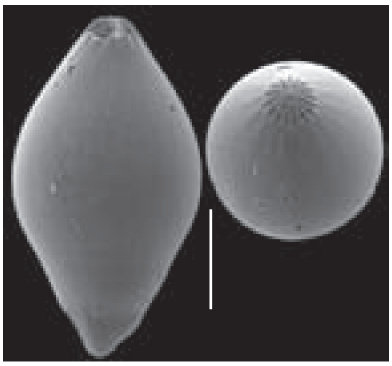


Glandulina

Glandulina laevigata

Test fusiform, circular in cross section; early stage biserial, later uniserial; chambers strongly overlapping and rapidly increasing in size as added, the last chamber occupying more than 2/3 of the test; sutures distinct, flush with the surface; wall smooth, more or less transparent; aperture terminal, prominent, radiate with 10-16 elongated slits.

Coastal bay, 5-10 m.
Systematics p. 296.



Glandulina sp. 1

Test globular, circular in cross section; early stage biserial, later uniserial; initial end broadly rounded; chambers strongly overlapping; sutures slightly depressed, last chamber subspherical; wall smooth, more or less transparent; aperture terminal, large, prominent, finely radiate.

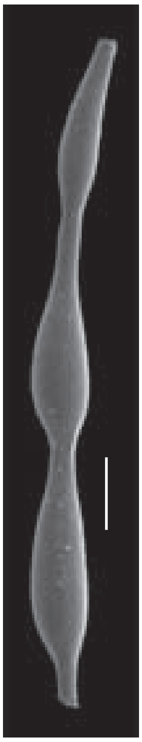
Northern shelf, 600 m.
Systematics p. 296.

Grigelis

Grigelis orectus

Test long and narrow; chambers pyriform, separated by elongate tubular necks; sutures not noticeable; wall smooth; aperture at the end of a long neck.

Southwestern lagoon, 30 m.
Systematics p. 284.



Laevidentalina

Laevidentalina advena

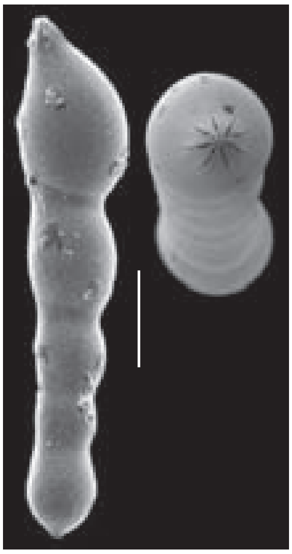
Test elongate, only slightly tapering, circular in transverse section, composed of few chambers, initial end broadly rounded, apertural end slightly drawn out; sutures oblique, distinct, slightly depressed; wall smooth; aperture radiate, eccentric.

Northern shelf, 600 m.
Systematics p. 284.

Laevidentalina baggi

Test elongate, circular in section, slightly curved; proloculus round, somewhat larger than the immediately following chambers; chambers distinct, inflated, somewhat irregularly increasing in size as added; sutures depressed, slightly oblique, limbate; wall smooth; aperture radiate, terminal, at the periphery of the last-formed chamber.

Northern shelf, 600 m.
Systematics p. 284.



Laevidentalina communis

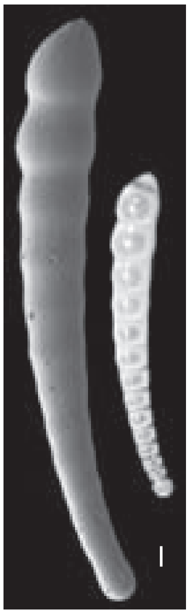
Test elongate, slender, tapering, generally slightly curved, composed of numerous sub-cylindrical chambers; chambers but slightly inflated in the initial portion, more so in the later portion, sutures oblique; surface smooth; aperture terminal, radiate, somewhat eccentric.

Northern shelf, 600 m.
Systematics p. 284.

Laevidentalina emaciata

Test elongate, tapering, slightly curved, composed of numerous short cylindrical chambers, as high as broad; sutures but slightly depressed in the early portion, later chambers more inflated with sutures somewhat depressed; initial end rounded; surface smooth; aperture terminal, radiate.

Northern shelf, 600 m.
Systematics p. 284.



Laevidentalina filiformis

Test elongate, slightly arcuate; chambers oval, sutures oblique; wall smooth; aperture terminal with radial slits, at the end of a short neck.

Bay of Prony, 10-30 m.
Systematics p. 284.

Laevidentalina inflexa

Test elongated, of medium size; initial end rounded, followed by a few chambers in a straight line, later the test is slightly curved; sutures slightly depressed and furnished with short longitudinal costae in the first chambers, later sutures much more depressed and chambers inflated, more elongate, somewhat pyriform; wall very finely perforate, smooth; aperture terminal, radial. Only specimens lacking the initial part were found.

Bay of Prony, 5-20 m.
Systematics p. 284.

Laevidentalina mucronata

Test elongate, tapering from the initial end to the broadest last-formed chamber; initial end acute, often with a short spine; chambers relatively few, not inflated; sutures distinct, slightly oblique, but not depressed; wall smooth; aperture terminal, radiate, eccentric.

Northern shelf, 600 m.
Systematics p. 284.

Laevidentalina sidebottomi

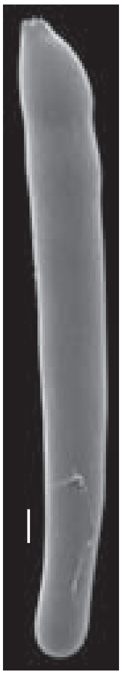
Test elongate, very slightly tapering, not compressed, slightly curved; chambers distinct, somewhat inflated, increasing in length as added, the diameter nearly uniform throughout; sutures distinct, slightly oblique, limbate; wall translucent, smooth, very finely perforate; aperture radiate, terminal, at the peripheral angle.

Bay of Prony, 5-30 m.
Systematics p. 284.

Laevidentalina subemaciata

Test elongate, curved and tapering to the rounded proloculus; chambers numerous, low in the early portion, increasing in size as added; sutures flush and glassy in earlier portion, becoming slightly depressed and oblique in the final chambers; wall smooth; aperture terminal and radiate.

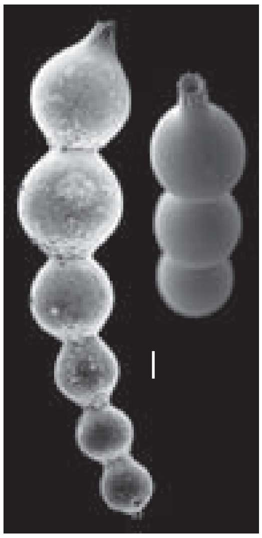
Northern shelf, 600 m.
Systematics p. 284.



Laevidentalina subsoluta

Test elongated, slightly arcuate; chambers comparatively few in number, less than eight, globular and of nearly equal size; sutures horizontal, deeply incised; initial chamber often relatively large, and nearly always mucronate; wall smooth; aperture produced, radiate, terminal.

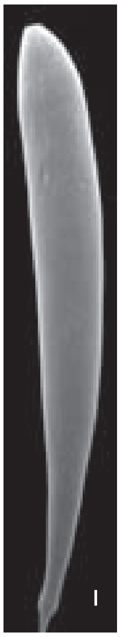
Northern shelf, 600 m.
Systematics p. 284.



Laevidentalina sp. 1

Test elongate, tapering gradually from the acute initial end to the last-formed chamber; initial end often with a stout spine; proloculus larger than the following chambers; chambers not inflated and sutures not depressed; wall smooth; aperture radiate, terminal.

Northern shelf, 600 m.
Systematics p. 284.



Laevidentalina sp. 2

Test elongate, tapering, slightly curved, composed of numerous short and cylindrical chambers; sutures flush in the early portion, later chambers inflated, subspherical with sutures somewhat depressed, horizontal; initial end rounded; surface smooth; aperture terminal, radiate, eccentrical.

Northern shelf, 600 m.
Systematics p. 284.

Laevidentalina sp. 3

Test elongated, variously curved, not tapering, with only a few chambers; initial end rounded; sutures in the first chambers only slightly depressed, later sutures much more depressed and chambers inflated, subspherical or pyriform; wall very finely perforate, smooth; aperture terminal, radial, on a tubular neck. Old microsperical specimens may have more chambers and be strongly curved. Similar specimens were reported as *L. inflexa* by Loeblich & Tappan (1994). They resemble this species, but differ by the lack of short longitudinal costae in the sutures.

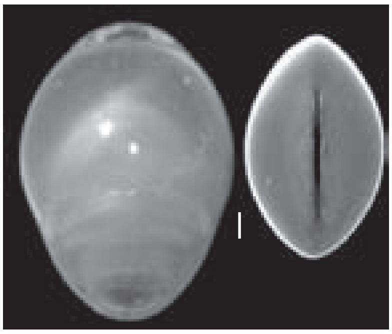
Northern shelf, 600 m.
Systematics p. 284.

Lingulina

Lingulina galapagosensis

Test elongate, robust, strongly compressed; lenticular in section; initial end broadly rounded, apertural end somewhat produced; chambers uniserial and rectilinear, strongly overlapping earlier chambers; periphery but slightly lobulate, peripheral margin acute but not keeled; sutures horizontal, gently curved, very slightly depressed; wall glossy, milky white, finely perforate, surface smooth; aperture an elongate terminal slit in the plane of compression, with produced lips.

Northern shelf, 600 m.
Systematics p. 285.

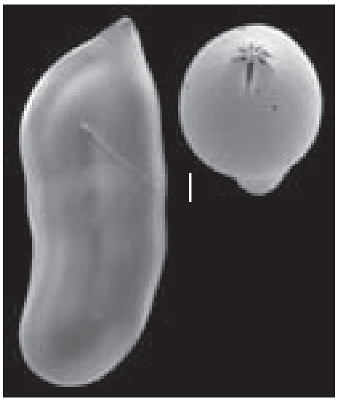


Marginulina

Marginulina similis

Test short, stout, somewhat tapering, with a bluntly rounded initial end; early portion forming a portion of coil; uncoiled section nearly circular in transverse section; length about three times the diameter of the final chamber; around six chambers, all slightly inflated, increasing in size as added; sutures depressed; surface smooth; aperture produced and marginal, radiate.

Northern shelf, 600 m.
Systematics p. 288.



Marginulinopsis

Marginulinopsis bradyi

Test stout, elongate; early portion planispirally coiled with sutures radial and periphery acute; later portion uncoiled, with chambers circular in section and sutures straight, horizontal and slightly depressed; surface ornamented with faint costae that cross the sutures, last chambers less ornamented; aperture radiate, somewhat produced at the external angle.

Northern shelf, 600 m.
Systematics p. 287.

Marginulinopsis tenuis

Test beginning with a few and inconspicuous spiral chambers while the test is laterally compressed; later chambers subcylindrical, increasingly inflated; wall smooth; aperture terminal, radiate.

Northern shelf, 600 m.
Systematics p. 287.

Marginulinopsis? sp. 1

Test elongate; early portion close coiled and planispiral, sutures radial and periphery acutely rounded; later portion uncoiled, with chambers circular in section and sutures straight, horizontal and slightly depressed; last chambers strongly bent backwards giving a peculiar aspect to the test; wall finely perforate, surface with longitudinal costae on the internal periphery; aperture terminal, radiate, at the dorsal angle. Several specimens were found with exactly the same morphology, suggesting that they are not only deformed specimens.

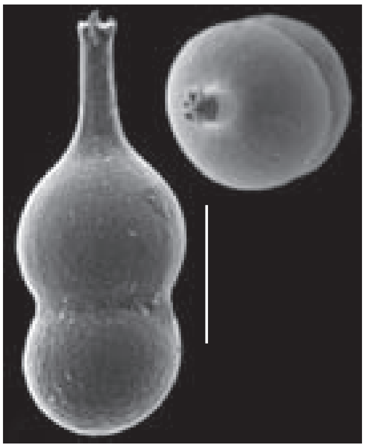
Northern shelf, 600 m.
Systematics p. 287.

Nodosaria

Nodosaria nebulosa

Test composed of two to three globulose chambers with depressed sutures; surface smooth and unornamented; aperture terminal, radiate at the end of a smooth neck.

Bay of Prony, 20 m.
Systematics p. 285.

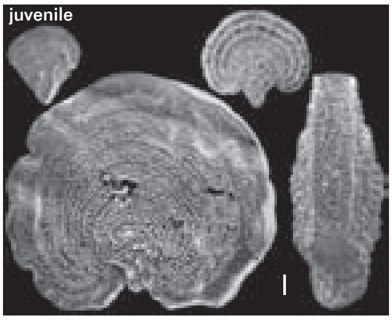


Pavonina

Pavonina flabelliformis

Test free, fan-shaped, compressed; initial stage biserial, rapidly becoming uniserial with embracing successive chambers; chambers laterally compressed and semi-annular; periphery sharply angular on both sides and irregularly keeled; apertural face truncated, keeled; sutures distinct, arched; pores very large, on low raised mounds, arranged in rows paralleling the chamber edges; aperture consisting of a series of large pores of different size irregularly placed along the apertural face.

Southern shelf, 60 m.
Systematics p. 305.

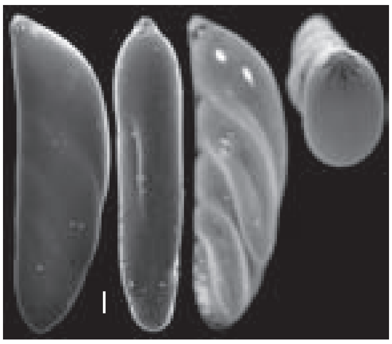


Polymorphinella

Polymorphinella pacifica

Test elongate, ovate in outline, compressed; early stage biserial, with plane of biseriality parallel to the compression, later uniserial, but some chambers are somewhat cuneate, alternating from one side to the other; sutures distinct, sigmoid; wall finely perforate, surface smooth; aperture radiate at the external angle.

Northern shelf, 600 m.
Systematics p. 291.

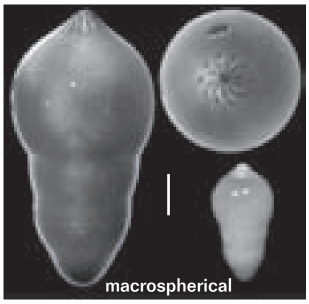


Pseudonodosaria

Pseudonodosaria discreta

Test elongate, cylindrical, base tapering or broadly rounded, early chambers strongly overlapping and increasing rapidly in diameter, later ones enlarging more slowly and less closely appressed, final chamber may be somewhat inflated, sutures straight, horizontal, flush or slightly depressed; wall finely perforated, surface smooth; aperture terminal, radiate.

Northern shelf, 600 m.
Systematics p. 285.



Pyramidulina

Pyramidulina catesbyi

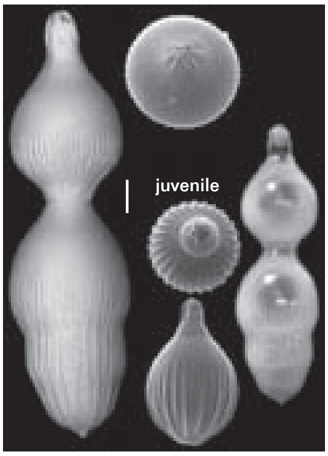
Two to three chambers with an elongate last chamber projecting in a distinct neck; well-developed aboral spine; wall ornamented with several continuous longitudinal costae; aperture radiate at the end of the neck.

Coastal bays, 5-20 m.
Systematics p. 285.

Pyramidulina pauciloculata

Test nodose, composed of two or three closely set chambers followed by one or two remote ones; chambers inflated, sutures horizontal, depressed; wall ornamented by longitudinal costae, usually limited to the middle portion of the chamber; aperture terminal, radiate, at the end of a slightly swollen neck.

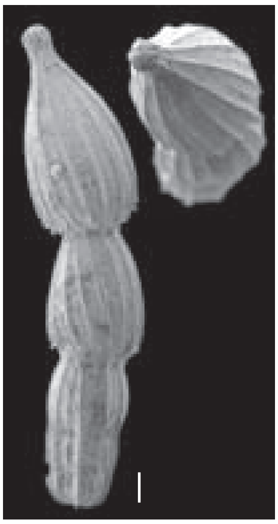
Northern shelf, 600 m.
Systematics p. 285.



Pyramidulina prava

Test elongate, somewhat tapering; early chambers usually overlapping, and either 2 or 3 in number increasing slightly in size as added, followed by two or more chambers obliquely placed, the obliquity becoming more pronounced as chambers are added; sutures distinct, much constricted in the later portion of the test; wall ornamented by longitudinal costae, in the earlier portion continuous over adjacent chambers, later independent on each chamber; aperture radiate, at the end of a cylindrical neck.

Southwestern lagoon, 25 m.
Systematics p. 285.



Pyramidulina sp. 1

Test elongate, initial end rounded; chambers few, gradually becoming separated with one or two remote chambers; sutures depressed, more so in the later chambers; wall ornamented with a few somewhat irregular longitudinal costae; aperture at the end of an elongate tapering neck. Often last chambers were broken and found isolated in New Caledonia. A similar form was reported as *P. luzonensi* by LOEBLICH & TAPPAN (1994), not *P. luzonensi* (CUSHMAN, 1921).

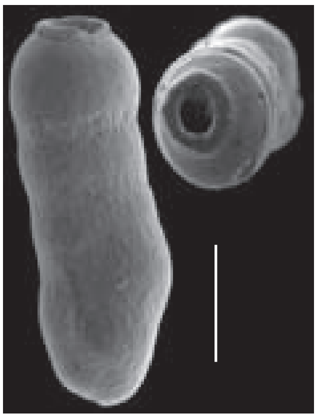
Northern shelf, 600 m.
Systematics p. 285.

Siphogenerina

Siphogenerina columellarensis

Test elongate, cylindrical; initial end, rounded or subacute, oral extremity convex and broad; early chambers biserially arranged, then uniserial for most of the test; chambers rounded, not inflated; sutures distinct, thick and slightly depressed; wall smooth, with short and faint costae across the sutures; aperture terminal, large, circular and surrounded by a lip.

Coastal bay, 5-10 m, Bay of Prony, 20 m.
Systematics p. 302.



Siphogenerina pacifica

Test nearly cylindrical, stoutly built, somewhat tapering, rounded at both ends; chambers short and little inflated; sutures slightly depressed, with a crenulated appearance; wall coarsely perforated; aperture a wide circular opening with a thickened rim.

Northern shelf, 600 m.
Systematics p. 302.

Siphogenerina raphana

Test elongate, cylindrical, tapering slightly toward the initial end; initial end rounded, oral end convex and broad; early chambers biserially arranged, later uniserial and rectilinear for most of the test; sutures distinct slightly depressed; wall ornamented by several prominent longitudinal costae regularly spaced and running the full length of the test; aperture circular, surrounded by a prominent lip.

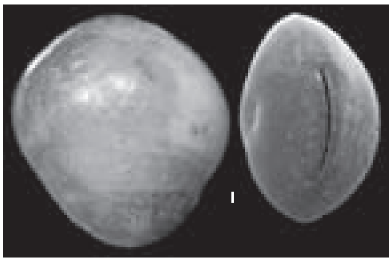
Bay of Prony, 10-30 m.
Systematics p. 302.

Spirolingulina

Spirolingulina sp. 1

Test elongate, lenticular to ovate in section, somewhat inflated medially, early stage with planispirally enrolled chambers, later chambers strongly overlapping, uniserial and rectilinear, sutures flush, radial to slightly curved in the enrolled stage, horizontal and sinuate in the rectilinear stage, curving backward slightly at the midline of the sides and at the test margins; periphery carinate to rounded; wall finely perforate, surface smooth; aperture terminal, an elongate slit bordered by low projecting rims.

Northern shelf, 600 m.
Systematics p. 288.



Vaginulina

Vaginulina reophagina

Test elongate, uniserial, arcuate, slightly compressed and curved; large proloculus followed by subrhomboidal chambers, rectangular in section; each chamber bears four costae, two on either side and has a rounded base and a produced neck; sutures very oblique, slightly depressed; wall finely perforated, surface smooth; aperture radial at the tapering end of the last chamber.

South of the Grande Terre, 20 m.
Systematics p. 286.

Vaginulinopsis

Vaginulinopsis sublegumen

Test elongate, nearly straight, early stage planispirally enrolled and involute (less so in macrospheric individuals), later uncoiled and rectilinear, laterally compressed and ovate in section, sutures radial in the early stage, nearly straight, oblique, and slightly depressed in the uncoiled stage; wall calcareous, finely perforate, surface smooth and unornamented; aperture terminal, radiate, at the external angle.

Northern shelf, 600 m.
Systematics p. 288.

Description of hyaline species biserial (or appearing so)

All scale bars = 0.1 mm (for SEM)

Abditodentrix

Abditodentrix pseudothalmanni

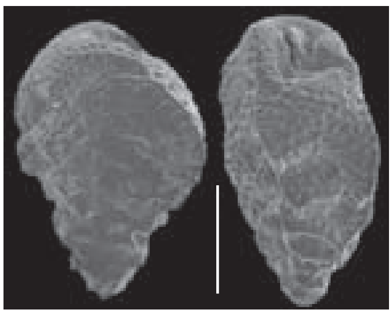
Test elongate, biserial throughout, sides flattened, edges truncate; chambers enlarging gradually, sunken and concave on the sides; sutures constricted laterally to result in serrate test margins; wall perforate with pores of medium size; surface highly ornamented by elevated reticulations, except on the apertural face; aperture basal, ovoid, extending up the apertural face, without a bordering lip but with an internal folded toothplate at one side of the opening.

Northern shelf, 600 m.
Systematics p. 299.

Abditodentrix rhomboidalis

Test small, biserial throughout, triangular in lateral view, rhomboidal in end view; periphery obliquely truncate, sides slightly concave, especially in the later stage; chambers rapidly increasing in size as added; sutures depressed, slightly curved; large scattered pores except for a narrow imperforate region adjacent to the aperture; aperture an areal slit, commencing a slight distance above the base of the rhomboid apertural face and extending obliquely upward, bordered by a distinct lip.

Bay of Prony, 10-30 m; coastal bay, 5-10 m.
Systematics p. 299.



Bolivina

Bolivina doniezi

Test small, broadest near the rounded apertural end; chambers comparatively few; wall smooth, but very coarsely perforated, the earlier chambers with a few coarse perforations near the basal margin, the later chambers with the coarse perforations scattered over the general surface; chambers low, becoming higher as added, periphery rounded; sutures distinct, depressed, strongly oblique; aperture elongate, arched, in the median plane, at the base of the last-formed chamber.

Coastal bays, 10 m.
Systematics p. 298.

Bolivina glutinata

Test elongate, compressed, broad; periphery rounded; chambers provided with irregular basal lobes distinct in the later chambers only; sutures oblique, nearly straight, mostly obscured by the ornamentation; pores may be distinct in the last chambers; aperture elliptical, extending from the base of the last-formed chamber, with narrow rim and distinct toothplate.

The original figures of Egger give little guide for the identification of this species; instead, illustrations by Loeblich & Tappan (1994) and Hayward *et al*. (1999) were used.

Bay of Prony, 10 m.
Systematics p. 298.

Bolivina robusta

Test biserial, elongate, compressed; apertural extremity broad and rounded, test tapering to a point, and frequently terminating in a long stout spine, at the initial end; test thickest on the median line, and sloping away symmetrically towards the lateral edges; margin subacute; chambers long, curved, obliquely set; sutures thickened, usually limbate and somewhat crenulated; aperture a small arch at the base of the apertural face. Only a few macrospheric specimens were found.

Northern shelf, 600 m.
Systematics p. 298.

Bolivina spathulata

Test compressed and highly flattened with a lanceolate shape, slightly keeled and with a rounded initial portion; sutures depressed; chambers numerous, not inflated, increasing gradually in size as added, provided with a definite basal lobe near the median suture; wall smoothly finished, but with a row of coarse perforations along the lower margin of the chamber and of the basal lobe; aperture a broad loop bordered by a rim and with a distinct toothplate.

Bay of Prony, 20-40 m.
Systematics p. 298.

Bolivina striatula

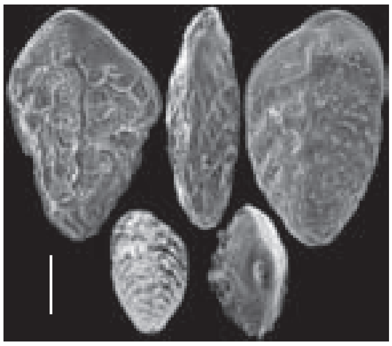
Test elongate, gradually tapering from the somewhat rounded initial end to the broad apertural end; chambers numerous, distinct, slightly inflated; sutures very slightly depressed; early portion of the test less compressed than the later portion; surface ornamented by numerous longitudinal striations occupying about half the length of the test; final chambers smooth, hardly punctate; aperture an elongated opening, narrow at the base and widening in the upper portion, one side with a thick rim, the other smooth and bending inwards to form the toothplate.

Coastal lagoons, estuaries, Bay of Prony, 5-40 m.
Systematics p. 298.

Bolivina subreticulata

Test small, few-chambered, compressed, of rhomboidal shape; surface ornamented with an irregular network of raised lines; aperture elliptical, extending from the base of the apertural face.

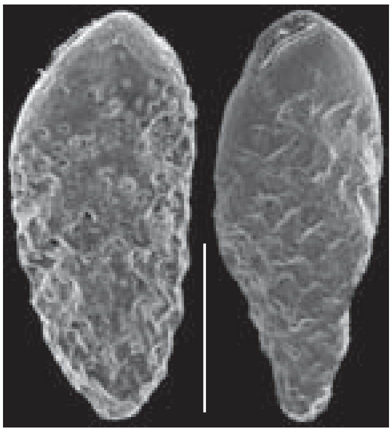
Northern shelf, 600 m.
Systematics p. 298.



Bolivina cf. *B. suezensis*

Test biserial, elongate, very slowly increasing in width, with nearly parallel margins in the adult; periphery rounded; sutures oblique, nearly straight, obscured by the ornamentation, which consists of ribs and irregular ridges particularly prominent in the earlier portion; chambers provided with 3-4 basal lobes visible in the later portion of the test only; wall coarsely perforated on the last chamber; aperture elliptical, extending from the base of the apertural face, with narrow rim and toothplate.

Southwestern lagoon, 20 m.
Systematics p. 298.



Bolivina vadescens

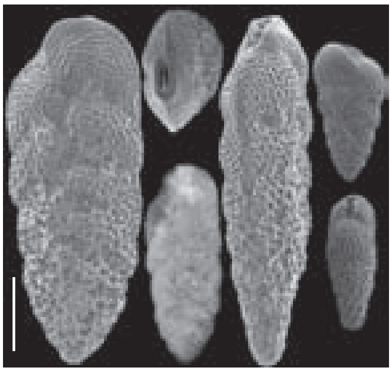
Test compressed and highly flattened with a lanceolate shape and a somewhat rounded periphery; less than twenty chambers; sutures very slightly depressed, appearing flush under light microscope; wall smoothly finished, distinctly perforated; aperture a broad loop bordered by a rim and with a distinct toothplate.

Bay of Prony, 5-40 m.
Systematics p. 298.

Bolivina variabilis

Test elongate of greatly variable size; test gradually tapering, periphery rounded to subcarinate; chambers numerous, slightly inflated; sutures distinct, depressed, but somewhat obscured by the ornamentation; wall unevenly pitted, pores surrounded by ridges forming a polygonal pattern; aperture a broad loop bordered by a thick rim, with a distinct toothplate.

Bay of Prony, 5-40 m.
Systematics p. 298.



Bolivina sp. 1

Test elongate, slender, compressed tapering; chambers biserially arranged, higher than broad; periphery rounded; sutures depressed, strongly oblique; wall distinctly perforated, surface ornamented by longitudinal striations occupying about the entire length of the test, except the last chamber; aperture elliptical, extending from the base of the apertural face, with narrow rim and toothplate.

Coastal bay, 10 m.
Systematics p. 299.

Bolivinellina

Bolivinellina pescicula

Test much elongated, straight or slightly curved, tapering very gradually to the apertural end; apical end rounded; chambers numerous, very slightly compressed; chambers increasing in height as added; sutures slightly depressed, oblique; wall smooth, conspicuously but finely perforated, with imperforated fields in the upper part of chambers; aperture loop-shaped with rim on one side and distinct toothplate.

Coastal bay, 10 m.
Systematics p. 299.

Bolivinellina translucens

Test small, elongate, slender, very slightly tapering, subcircular in cross section; chambers biserially arranged throughout, non inflated, gradually increasing in height as added; sutures very slightly depressed, oblique and curved; wall glossy, the anterior half of the chamber finely perforated, the posterior half coarsely perforated; aperture terminal, loop-shaped with narrow lip and an internal toothplate.

Bay of Prony, 30-40 m.
Systematics p. 299.

Cassidelina

Cassidelina complanata

Test elongate, slender, compressed, tapering throughout, greatest breadth at the last pair of chambers; earliest portion somewhat twisted, later distinctly biserial; chambers increasing in height and length as added, later ones somewhat inflated; sutures distinct, depressed, oblique, slightly curved; wall smooth, finely perforate; aperture elongate, comparatively broad, slightly curved, extending to the base of the inner margin of the last-formed chamber with an elongated tooth.

Bay of Prony, 20 m.
Systematics p. 301.

Cassidelina davisi

Test elongate, narrow, biserial and twisted; initial end acutely pointed with a prominent spine; chambers high, increasing rapidly in height as added; sutures depressed, oblique; wall smooth, finely perforated; aperture a broad loop with one margin higher than the other and a toothplate.

Bay of Prony, 10-40 m.
Systematics p. 301.

Cassidelina spinescens

Test elongate, biserial, compressed but with margins bluntly rounded, the apex bluntly pointed; chambers numerous, inflated; periphery lobate; sutures oblique, fairly deep; wall finely perforated; surface smooth, except the portion at and just above the sutures, which is minutely spinose; aperture large, loop-shaped, with one margin higher than the other.

South of the Grande Terre, 30 m.
Systematics p. 301.

Cassidelina subcapitata

Test elongate, compressed, increasing in width toward the apertural end, periphery rounded; biserial arrangement throughout, slightly twisted; chambers numerous, inflated, increasing rapidly in height; sutures distinct, depressed, obliquely curved; wall smooth, finely perforate; aperture elongate, a curved slit, slightly eccentric, one margin with a low rim, the other bending inward.

Bay of Prony, 30 m.
Systematics p. 301.

Cassidelina sp. 1

Test elongate, ovate in section, chambers higher than broad, slightly inflated, biserial throughout, although plane of biseriality twists somewhat about the test axis, sutures slightly oblique, depressed; wall smooth, very finely perforate; aperture a broad loop with one margin higher than the other and a toothplate. This species resembles the specimen presented as *Fursenkoina rotundata* by Loeblich & Tappan (1994) pl. 256, figs 7-8.

Coastal bay, 10 m.
Systematics p. 301.

Cheilochanus

Cheilochanus fimbriatus

Test small, highly compressed, sides flattened; gradually enlarging chambers biserially arranged; sutures distinct, constricted at the lateral margin that has a fimbriate appearance; raised, slightly curved ridges extend from the medial line of the test to the periphery along sutures in the early stage; wall finely perforated; large ovate subterminal aperture bordered by a prominent flaring lip and turned slightly toward one side of the test, without a toothplate in the apertural opening.

Southwestern lagoon, 30 m.
Systematics p. 299.

Fursenkoina

Fursenkoina earlandi

Test, elongate, compressed, biserial and slightly twisted, strongly tapering; suture depressed, oblique and curved; periphery lobulate; chambers slightly inflated, widened towards the terminal end, and the final pair, strongly compressed, occupying about one third the test length; wall smooth, translucent; aperture a narrow curved slit, slightly eccentric, with a distinct lip, extending up the face of the last chamber from its base.

Bay of Prony, 30 m.
Systematics p. 305.

Fursenkoina pauciloculata

Test small, elongate, oval or subcylindrical, slightly compressed, tapering slightly; ends rounded; initial end mucronate; chambers few in number, long, erect, but little inflated, irregularly arranged; sutures distinct, slightly depressed, strongly oblique; wall smooth, finely perforate; aperture narrowly elliptical, with the opening usually somewhat narrowed at the base of the chamber.

Bay of Prony, 10-40 m.
Systematics p. 306.

Fursenkoina schreibersiana

Test elongate, only slightly compressed, periphery broadly rounded, initial portion strongly twisted; chambers much longer than wide, oblique and slightly inflated; sutures distinct, slightly depressed; wall smooth, finely perforate; aperture elongate in the adult, often failing to reach the base of the apertural face, but continuing onto the terminal end of the test.

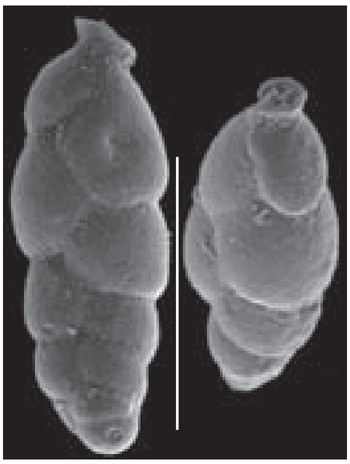
Southwestern lagoon, 40 m.
Systematics p. 306.

Hopkinsinella

Hopkinsinella glabra

Test elongate, laterally compressed, flattened ovate in section; biserial arrangement but with tendency for final chamber to become terminal; chambers increasing in relative height as added, sutures oblique, depressed; wall smooth; aperture subterminal, on a short neck, surrounded by a recurved lip.

Bay of Prony, 20-40 m.
Systematics p. 301.

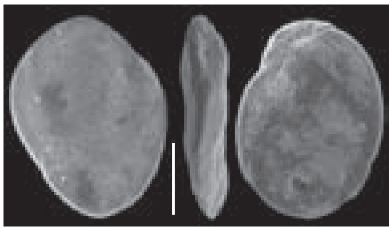


Krebsina

Krebsina subtenuis

Test thin, broadly elliptical in outline, slightly convex on both sides, composed of a high trochospiral coiling of strongly compressed chambers, presenting the appearance of a biserial test; margin acute; chambers few in number, long, curved, obliquely set; aperture on the oblique face of the terminal chamber, surrounded by radiating lines, and partially closed by an apertural flap.

South of the Grande Terre, 30 m.
Systematics p. 291.

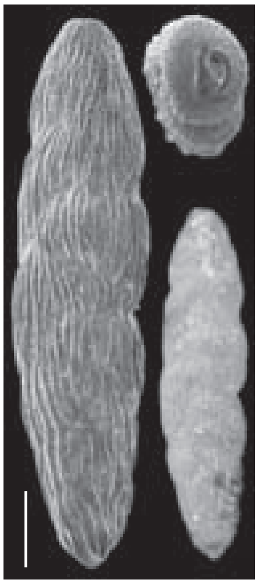


Loxostomina

Loxostomina barkeri

Test elongate, about 4 times as long as broad, compressed, tapering toward both ends; periphery rounded, lobulate; wall perforate, heavily ornamented by irregularly continuous longitudinal striae; sutures depressed, obscured by the ornamentation; aperture rather large, terminal, ovate, with a toothplate.

Coastal bay, 5-10 m.
Systematics p. 301.



Loxostomina costatapertusa

Test elongate, lanceolate, biserial, ovate in section; chambers increasing rapidly in height as added, final pair comprising about one third the test length; sutures obscured by the surface costae; surface coarsely perforated, finely costate in the early stage, the costae dying out in the upper part of the test; aperture terminal with a distinct toothplate.

Bay of Prony, 10-30 m.
Systematics p. 301.

Loxostomina costulata

Test elongate, compressed, ovate in section, often somewhat twisted; early stage biserial, later tending to become uniserial; chambers increasing in height as added; surface coarsely perforated with a few strong, undulated costae; aperture terminal, oval with a toothplate.

Bay of Prony, 30 m.
Systematics p. 302.

Loxostomina limbata

Test elongate, compressed, periphery lobulate; initial end rounded and occasionally produced; sutures thickened and limbate, only slightly depressed; early biserial chambers ornamented by a few strong costae; aperture terminal, surrounded by a distinct thickened lip that is bordered on its outer margin by a row of shallow dimples; lip folded into the toothplate at the top and the base of the opening.

Bay of Prony, 30 m.
Systematics p. 302.

Loxostomina sp. 1

Test elongate, moderately compressed, periphery rounded, slightly lobulate; wall coarsely but sparsely perforate, unornamented except the last chamber; sutures flush to slightly depressed; aperture terminal at the end of the elongate and ornamented last chamber, ovate, with a thick peripheral rim and a toothplate.

Northern shelf, 600 m.
Systematics p. 302.

Lugdunum

Lugdunum hantkenianum

Test ovate to subtriangular in outline, lenticular in section, nearly equally convex on both faces, surrounded by a delicate keel of varying width and completeness; peripheral keel may be entire or may be interrupted at each suture; chambers rounded, inflated, in two more or less regular alternating series; wall finely perforated, surface generally ornamented with short, longitudinal costae; aperture oval with a thick bordering lip, and often furnished with a projecting tooth.

Southwestern lagoon, 50 m.
Systematics p. 299.

Neocassidulina

Neocassidulina abbreviata

Test elongate, biserial, compressed, oval in end view, periphery rounded, initial end rounded; sutures oblique, imperforate, strongly limbate; wall coarsely perforated; aperture a broad asymmetric loop, the lower margin of the aperture folding inwards and joining the toothplate.

Northern shelf, 600 m.
Systematics p. 306.

Neocassidulina sp. 1

Specimens showing similarities with *N. abbreviata*, but differing from this species in their smaller size, more elongated test and coarser perforations are considered to belong to another species.

Northern shelf, 600 m.
Systematics p. 306.

Neocassidulina sp. 2

Test elongate, biserial, initial end rounded, but with a stout spine; apertural end broadly rounded; chambers increasing rapidly in width in the early stage, later slowly; only the two last chambers inflated; periphery rounded; sutures flush with the test in early portion, increasingly depressed later; wall coarsely perforated, surface ornamented by one or two rows of tubercles paralleling the sutures and fusing in the early portion of the test; aperture loop-shaped, asymmetrical.

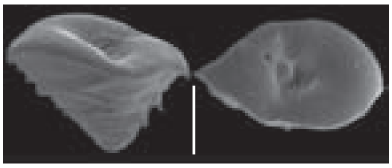
Southwestern lagoon, 30 m.
Systematics p. 306.

Patellinella

Patellinella carinata

Test conical, slightly compressed, commencing with a short trochoid spiral of 3-4 chambers, later chambers added at 180° intervals, only the final pair visible on the flat umbilical side; subacute margins set with fine apically directed spines; wall transparent, finely perforate, with a row of coarser pores on the proximal side of each suture; aperture loop-shaped with a curved toothplate.

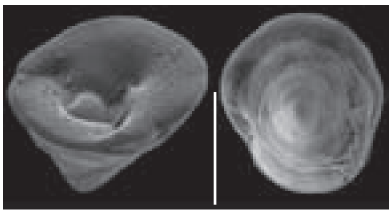
Bay of Prony, 30 m.
Systematics p. 306.



Patellinella inconspicua

Test short, subconical, earlier portion trochospiral, later biserial, slightly compressed laterally, earliest whorl with three chambers, later with two chambers, all visible on the convex spiral side, only the final pair visible on the flat umbilical side; sutures flush or very slightly depressed; apertural end truncate, somewhat concave; wall calcareous, finely perforate; aperture a broad umbilical arch.

Bay of Prony, 30 m.
Systematics p. 306.



Pseudobrizalina

Pseudobrizalina lobata

Test elongate, depressed; apertural end obliquely truncate or rounded; initial end obtuse, peripheral margin lobulate; chambers inflated, their outer margin projecting and subangular; sutures deeply sunk; surface, especially of the later chambers more or less coarsely granulated; aperture elliptical with a thick peristomal lip and a toothplate.

Southwestern lagoon, 20 m.
Systematics p. 302.

Pseudopolymorphina

Pseudopolymorphina sp. 1

Test compressed, oval but somewhat inequilateral in outline; two faces almost equally convex; both ends obtuse; chambers arranged with regularity in two alternating series, the last pair occupying two thirds of the visible shell; sutures depressed; wall finely perforate, surface ornamented with solid costae that may be continuous from one chamber to the other; aperture terminal, radiate, with the central part cribrate.

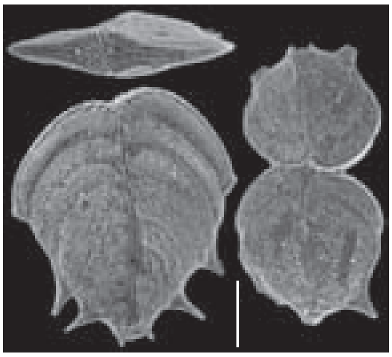
South of the Grande Terre, 50 m.
Systematics p. 291.

Punctobolivinella

Punctobolivinella unca

Earlier part of the test inflated medially, later becoming compressed, triangular to ovate, biserial throughout; globular proloculus followed by small early chambers, later ones increasing rapidly, being strongly curved, lateral margin of a few early chambers are produced into spinose projections; apertural end truncate, ornamented with radiating rows of tiny pustules; sutures thickened, imperforate and limbate, later ones strongly recurved laterally; axis of the test marked by a medial furrow between two irregular ribs; wall hyaline, distinctly perforate; aperture cribrate, near the base of the apertural face and may have a somewhat larger opening on the suture.

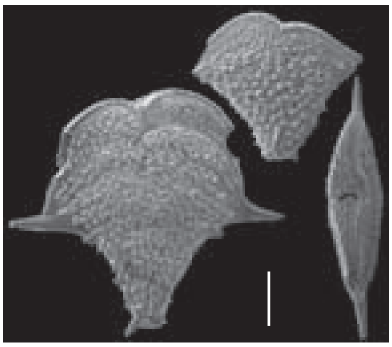
Southwestern lagoon, 20 m.
Systematics p. 299.



Punctobolivinella cf. *P. unca*

This species has similarities with the gamont of *P. unca* from the Marshall Islands shown by HAYWARD (1990, pl. 116, figs 17-18), from which it differs by the dense granular ornamentation that entirely covers the surface of the test, obscuring the sutures.

Northern lagoon, 200 m.
Systematics p. 299.



Quirimbatina n.gen.

A new genus name is proposed for *Mimosina rimosa* HERON-ALLEN & EARLAND 1915, the morphology of which does not conform to the characteristics of *Mimosina*.

Type species: *Mimosina rimosa* HERON-ALLEN & EARLAND 1915, p. 650; pl. 50, figs 5-11.

Diagnosis: biserial hyaline test with coarse perforations; aperture a long fissure extending all round the lower half of last chamber in an axial position, and may be connected with the previous aperture on the penultimate chamber.

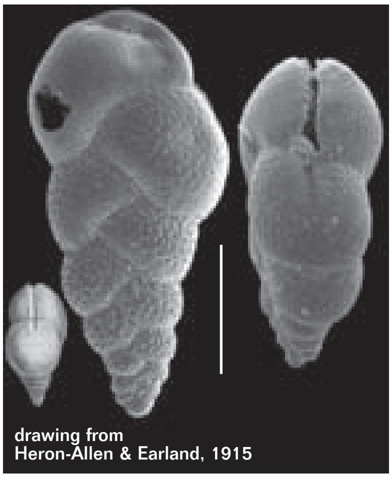
Etymology: from the Quirimba Archipelago where it was first described.

Remarks: This genus is maintained in the family Trimosinidae.

Quirimbatina rimosa

Test consisting of five to eight pairs of chambers biserially arranged after a short initial stage that may appear as triserial; chambers inflated and sutures depressed giving a lobulate periphery to the test; wall coarsely perforated, surface smooth and glassy; aperture a long fissure extending all round the lower half of last chamber in an axial position; aperture of the penultimate chamber may remain visible.

Bay of Prony, 30 m.
Systematics p. 305.

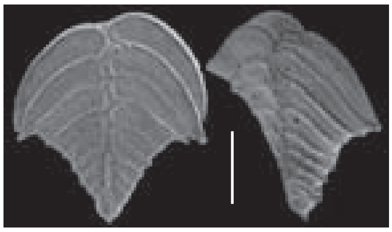


Rugobolivinella

Rugobolivinella elegans

Test compressed, outline flabelliform, biserial throughout; globular proloculus followed by small early chambers, later ones narrow, moderately recurved, increasing rapidly in breadth; sutures with thin raised ridges, often interrupted or broken into several beads before meeting the medial rib; medial rib straight, single from the proloculus to one third of the test and passing upward into two medial ribs separated by a sinuose medial groove; periphery acute; lateral margins of a few last chambers are produced into spinose projections; terminal face truncate, with almost parallel sides tapering toward the periphery; aperture cribrate, situated around the suture between the two last chambers sometimes with a somewhat larger opening on the suture.

South of the Grande Terre, 30-60 m.
Systematics p. 299.



Rugobolivinella spinosa

Test compressed, triangular in outline, biserial throughout; globular proloculus usually with a single spine; chambers moderately curved medially, straight toward the periphery, increasing regularly in breadth, but very slowly in height; sutures ornamented with raised ribs often cut into riblets in the medial part of the test; medial rib straight, single from the proloculus to one third of the test and passing upward into two medial ribs separated by a straight medial groove; lateral margins of all chambers are produced into spinose projections; terminal end truncate, widest medially and tapering toward the periphery; aperture cribrate, situated around the suture between the two last chambers sometimes with a somewhat larger opening on the suture.

Coastal bay, 5-10 m.
Systematics p. 299.

Sagrina

Sagrina jugosa

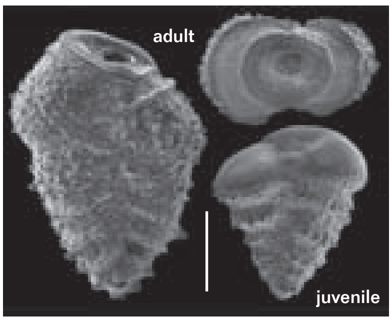
Test oblong, tapering, compressed; oral end elliptical, truncate; aboral extremity subangular or rounded; chambers numerous, 6 to 10 in each series; sutures marked externally by stout raised bands of clear shell-material; aperture elliptical with a distinct raised lip.

South of the Grande Terre, 30 m.
Systematics p. 302.

Sagrina zanzibarica

Test elongate, biserial; early portion somewhat compressed, periphery in end view broadly rounded; test tapering gradually throughout; chambers distinct, somewhat inflated, low and broad in the early portion, later increasing in relative height; sutures distinct, depressed in the later portion, straight, slightly oblique; wall ornamented with numerous small, short, blunt spinose projections, particularly on the lower half of the chamber; aperture elliptical with a distinct raised lip.

South of the Grande Terre, 30 m.
Systematics p. 302.



Sagrinella

Sagrinella convallaria

Test elongate, straight, tapering towards the initial end; periphery serrated; chambers numerous, inflated, with the peripheral margin acute, ornamented with small spines; sutures deeply sunk; apertural end greatly projecting; aperture terminal, large and variable in form.

Bay of Prony, 10-40 m.
Systematics p. 302.

Sagrinella durrandii

Test elongate, lanceolate, compressed, peripheral margin acute and serrated; chambers slightly inflated, inferior margin acute and projecting; sutures deeply sunk and smooth, surface of chambers ornamented with broken irregular costae; aperture terminal, a long fusiform slit.

Bay of Prony, 5-30 m.
Systematics p. 302.

Sagrinella strigosa

Test elongate, slightly tapering, compressed, biserially arranged in the early stage, later becoming loosely biserial and finally uniserial, chambers triangular, sharply angled above the basal suture, with a prominent ridge at the angle resulting in a serrate outline; sutures depressed, oblique; wall hyaline with large pores in the lower part of the chambers below the carinate angle; aperture large, oval, terminal, with a raised lip.

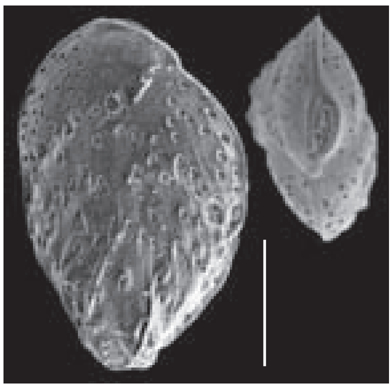
Coastal bay, 5-10 m.
Systematics p. 302.

Sigmavirgulina

Sigmavirgulina basistriata

Test elongate, initial end only slightly twisted; test thinning out toward the periphery, with carinate margins; surface ornamented with sparse longitudinal costae at the base and across the sutures; sutures slightly curved, slightly depressed in the last chambers; wall coarsely perforated; aperture loop-shaped with a raised thickened lip and a toothplate that projects into the top of the opening. It differs from *S. tortuosa* by its less twisted shape, and the presence of longitudinal costae.

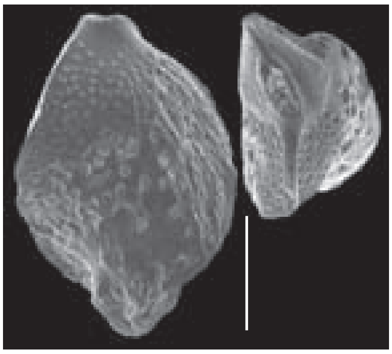
South of the Grande Terre, 30 m.
Systematics p. 306.



Sigmavirgulina tortuosa

Test elongate, tapering, twisted with chambers added at slightly over than 180º apart; margins thin, sharp, lobulate; 8-10 chambers in adult specimens; sutures flush; wall coarsely perforated; aperture slit-shaped, bisected by a toothplate.

Bay of Prony, 20-30 m.
Systematics p. 306.



Sigmavirgulina sp. 1

Species differing from *S. turtuosa* by its more elongated, and less twisted test; test subrectangular in side view, with chambers increasing slowly in width as added.

Northern shelf, 600 m.
Systematics p. 306.

Siphouvigerina

Siphouvigerina fimbriata

Test elongate, short earlier triserial stage, then biserial, and finally nearly uniserial; upper chamber surface broadly domed to a minutely serrate, fimbriate, carinate margin, and a sharply undercut chamber base; loosely appressed chambers, each attached on the preceding apertural neck; wall hyaline, surface smooth other than the carinae; aperture terminal and rounded, at the end of a short tubular neck and bordered with an everted lip.

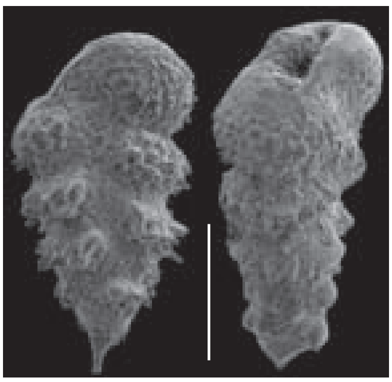
Bay of Prony, 20 m.
Systematics p. 304.

Virgulopsis

Virgulopsis spinea

Small stout test with a spine at the initial end and a prominent spinose ornament; periphery rounded; chambers inflated, sutures depressed, oblique; aperture a large slit that extends up the apertural face.

Coastal bay, 5-10 m.
Systematics p. 301.



Description of hyaline species triserial (or appearing so)

All scale bars = 0.1 mm (for SEM)

Bulimina

Bulimina biserialis

Test small, broadly rounded in end view; early stage triserial, later becoming biserial; sutures depressed; chambers sharply undercut, producing an acute shoulder with acute spines pointing backward; lateral wall of the chambers ornamented by short tubercles or spines; wall finely perforated; aperture loop-shaped, extending from the base of the apertural face, bordered by a small rim, and with a toothplate.

Bay of Prony, 20-40 m.
Systematics p. 303.

Bulimina marginata

Test elongate ovate, chambers triserially arranged throughout, sharply angled about half the distance from the basal suture, with spines at the angle somewhat extended backwards; sutures depressed; wall calcareous, finely perforate; surface smooth other than the spinose angle; aperture a loop extending up the face from the base of the last chamber, provided with an internal folded toothplate.

Bay of Prony, 20-40 m.
Systematics p. 303.

Bulimina striata

Test short, 1,5 to 2 times as long as broad, triserial, composed of distinct overlapping chambers; upper portions of the chambers smooth and unornamented, costae extending over the lower half of the chamber; backwards spinose projections of costae overhang preceding chambers; wall finely perforated transparent; aperture an obliquely placed slit, elongated, with a raised border and a toothplate.

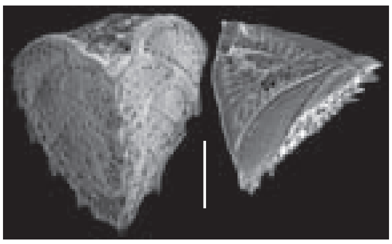
Northern shelf, 600 m.
Systematics p. 303.

Fijiella

Fijiella simplex

Test pyramidal, triserial and triangular in section throughout; sutures gently arched, limbate; peripheral margins carinate, spinose, straight or somewhat lobulate; apertural end truncated, slightly convex, bordered by a thickened imperforate rim and ornamented with numerous small upright spines; wall calcareous, coarsely perforate mostly along the sutures; surface smooth other than the limbate sutures, spinose margins, and sometimes produced pores; aperture a narrow slit partially covered with a curved, denticulate lip and provided with a large perforated toothplate that forms rounded supplementary openings on the central part of the apertural face.

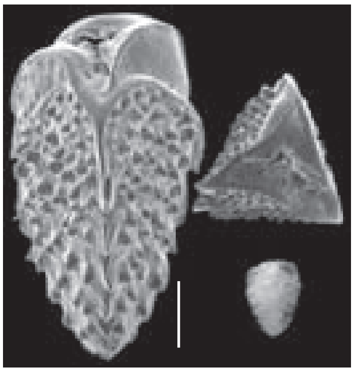
Southwestern lagoon, 40 m.
Systematics p. 304.



Fijiella sp. 1

Test triserial, elongate, increasing gradually in size, slowly in the later portion, so that the margins are nearly parallel; periphery acute with a small hyaline spine at the angle of each chamber, as a continuation of the slightly carinate anterior edge of the chamber; sutures indistinct, except in the last chambers; wall coarsely perforated, the perforations at the end of raised pustules, except in the last chambers; aperture a narrow slit partially covered with a curved lip and provided with a large toothplate.

Northern lagoon, 200 m.
Systematics p. 304.

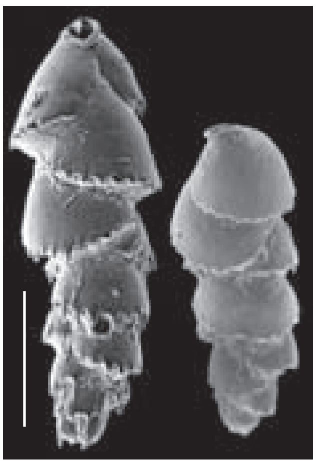


Hopkinsina

Hopkinsina sp. 1

Test elongate, early chambers triserially arranged and closely appressed, later loosely triserial and then biserial; chambers with the base sharply undercut and the upper surface broadly domed; margin carinate, ornamented with a row of short tooth-like spines, some of them prolonging into short costae on the upper surface of the chamber; sutures depressed; wall finely perforate, surface smooth; aperture terminal, ovate, slightly produced and with a distinct lip and a toothplate.

South of the Grande Terre, 30 m.
Systematics p. 301.



Mimosina

Mimosina affinis

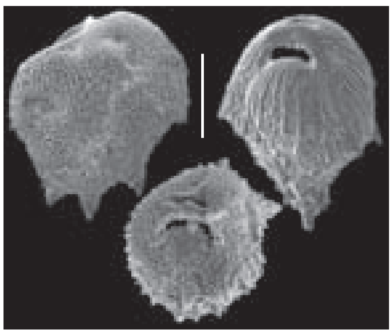
Test triserial in the early stage, later tending to become biserial, chambers subglobular and inflated, sutures depressed; wall distinctly perforate, with fine longitudinal ribs; aperture a wide and low basal arch, with a second ovate opening that is nearly terminal, each bordered by a narrow imperforate lip.

South of the Grande Terre, 30 m.
Systematics p. 305.

Mimosina echinata

Test triserial in the early stage, later tending to become biserial, chambers subglobular and inflated, sutures obscured by ornamentation; the whole surface of the test, except the terminal chambers covered by a dense growth of fine spines, with some bigger spines at the angle of the chambers; surface coarsely perforated; aperture double with a low basal arch and a subterminal ovate opening, each bordered by a narrow imperforate lip.

Isle of Pines, 5 m.
Systematics p. 305.



Mimosina histrix

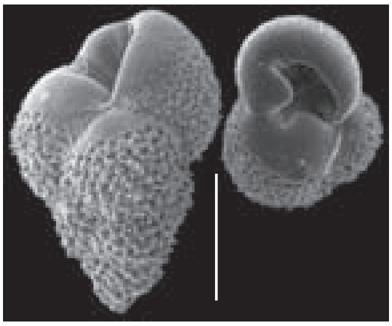
Test elongate, slowly but regularly increasing in width, triserial, tending to become biserial in old specimens; chambers very inflated, spherical, a prominent proximally directed spine arising in the middle of the chamber; sutures depressed, gently arcuate; wall coarsely and densely perforated, ornamented with thin, short ridges running parallel to each other; aperture simple in juvenile stage, later double, lower aperture ovate, bordered by a low, thickened lip, upper aperture almost terminal, rounded, also bordered by a thickened lip.

Bay of Prony, 20 m.
Systematics p. 305.

Mimosina sp. 1 (juvenile?)

Test very small, triserial, chambers subglobular and inflated, sutures depressed; wall coarsely perforate and covered with short spines, except on the upper part of the chambers that is smooth; aperture wide, occupying most of the apertural face, with a folded periphery, without a lip. The aperture resembles that of young stages of *Mimosina*, before its separation into a double aperture.

Outer reef, 100 m.
Systematics p. 305.

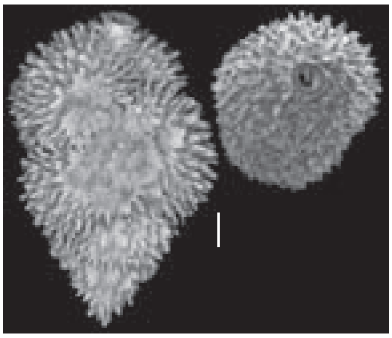


Neouvigerina

Neouvigerina hispida

Test elongate; usually two times as long as broad, but sometimes shorter, with basal spine; chambers closely arranged, rotund; initial portion triserial, tending to become biserial for the last pair of chambers; sutures depressed; test covered with short coarse spines; aperture terminal on short neck with lip and toothplate.

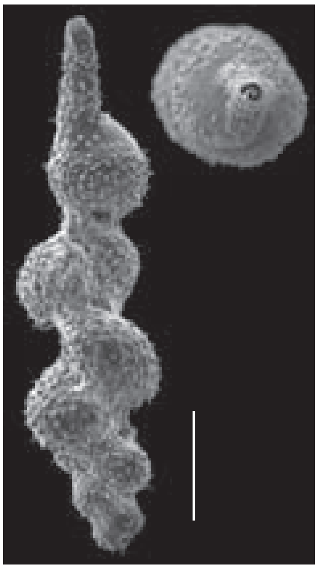
Northern shelf, 600 m.
Systematics p. 303.



Neouvigerina interrupta

Test much elongated, subspiral; composed of a number of inflated or subglobose chambers of gradually increasing size, arranged around a long axis; earlier chambers combined so as to form a more or less compact spire; later chambers disposed in an irregular, interrupted, alternating series, terminating in a tubular neck; surface hispid or aculeate; aperture at the end of the neck with a toothplate.

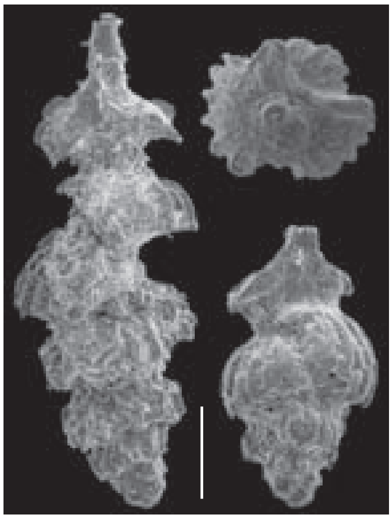
Northern shelf, 600 m.
Systematics p. 303.



Neouvigerina porrecta

Test fusiform, elongated, sub-circular in cross section; chamber separated by deeply depressed sutures, ornamented by prominent thick longitudinal costae; aperture at the end of a well-developed neck, furnished with a toothplate.

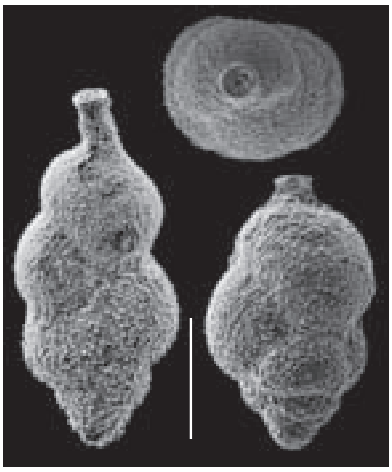
Southwestern lagoon, 30 m.
Systematics p. 303.



Neouvigerina proboscidea

Test small, elongate; initial stage triserial with closely arranged chambers, followed by biserial and uniserial stages; chambers inflated; sutures depressed; test covered with fine spines; aperture terminal on a long neck, with lip and toothplate.

Bay of Prony, 20-30 m.
Systematics p. 303.

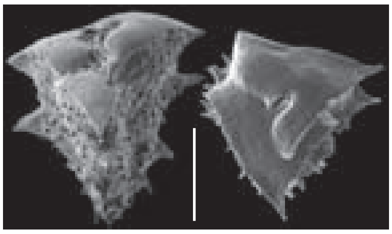


Reussella

Reussella cf. *R. hayasakai*

Test elongate, triserially arranged, triangular in section, tapering towards the basal end; margins acute; chambers sharply triangular, terminating in an horizontal, acute spine at the distal end; upper portion of the chambers smooth and unornamented, elsewhere the test is covered with short stout spines; aperture a narrow arch at the center of the base of the last-formed chamber, with a toothplate.

Northern shelf, 600 m.
Systematics p. 304.



Reussella neapolitina

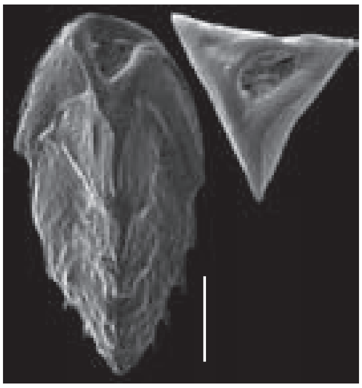
Test pyramidal, triserial throughout, sharply triangular in cross section, regularly increasing in size; chambers wider than high; sutures distinct, curved, limbate and raised over the surface, marked by short spines and tubercles; marginal spines prominent and pointing backward; apical spine often present; wall distinctly perforate and covered by short spines and pustules, except on the upper face of chambers; aperture an elliptical opening along the basal suture, bordered by a low lip which descends into the lumen and fuses with the toothplate.

South of the Grande Terre, 70 m.
Systematics p. 304.

Reussella pacifica

Test triserial with concave sides, elongate, increasing gradually from the spinose initial end, tending to narrow slightly towards the apertural end; periphery acute with a blunt hyaline spine at the base of each chamber, as a continuation of the slightly carinate anterior edge; sutures slightly curved slightly limbate; aperture at the inner margin of the last-formed chamber.

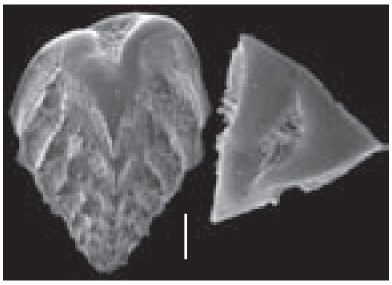
Southwestern lagoon, 30 m.
Systematics p. 304.



Reussella pulchra

Test averaging about 1-1/2 times as long as broad, triangular in transverse section, the sides carinate and with a spine at the base of each chamber and a spine at the initial end; chambers distinct, not inflated; sutures very distinct, limbate, raised well above the surface and often finely spinose to give a sculptured appearance to the test; wall distinctly and rather coarsely perforate; aperture a narrow opening at the inner margin of the last-formed chamber, often with a distinct lip.

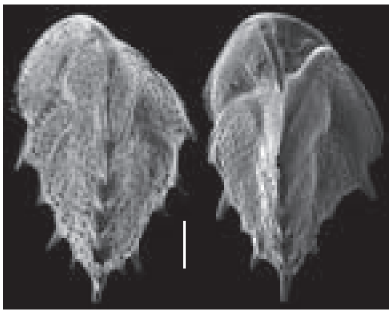
Northern shelf, 600 m.
Systematics p. 304.



Reussella spinulosa

Test pyramidal, triserial, and triangular throughout, tricarinate; chambers enlarging gradually, sutures curved and oblique; marginal angle of each chamber terminates in a projecting spine directed towards the basal end of the test wall coarsely perforate; aperture a high arch at the base of the final chamber, with an internal toothplate.

Bay of Prony, 10-40 m.
Systematics p. 304.

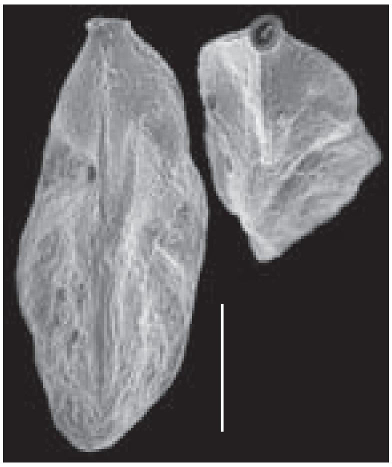


Trifarina

Trifarina angulosa

Test elongate, sharply triangular in section, initial stage triserial, later with tendency to an irregularly uniserial arrangement; apertural end pointed; angles carinate, sutures curved, oblique, and slightly depressed; wall with fine perforations at the end of raised pustules; surface with a few longitudinal costae around the keel; aperture terminal, ovate, produced on a neck and bordered by a narrow lip, provided with an internal toothplate.

Bay of Prony, 20-30 m.
Systematics p. 304.



Trifarina bradyi

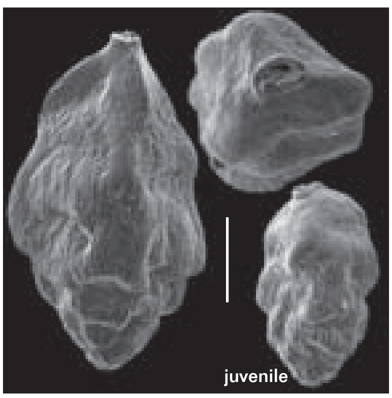
Test elongate, slightly tapering toward either end, often somewhat twisted, triangular in transverse section; carinae at three angles, thin and fairly high, running from the initial end to the aperture, even onto the neck itself; chambers distinct, those of the earlier portion at least irregularly spiral, later ones less distinctly so; sutures distinct but not depressed; wall thin, translucent, finely punctate, smooth; aperture terminal, central, at the end of a short tubular neck, usually with a phialine lip and a toothplate.

Coastal Bay, 10 m.
Systematics p. 304.

Trifarina pacifica

Test with a well-developed initial triserial stage and a few later chambers added in irregular uniseries; peripheral margins acutely rounded, never carinate; wall distinctly dented along the sutures giving the test an irregular outline in side view; aperture produced, with a toothplate and surrounded by a thickened lip, but lacking a distinct neck.

Northern shelf, 600 m.
Systematics p. 304.



Trifarina reussi

Test stout and somewhat irregular in contour with a few (3-4) chambers, triangular in section; margins carinate; wall thick and rough; aperture relatively large, at the end of a short neck, lipped and provided with a toothplate.

Northern shelf, 600 m.
Systematics p. 304.

Trimosina

Trimosina milletti

Test elongate, triserially arranged, triangular in section, tapering towards the basal end; margins acute, the marginal angle of the inflated chambers are developed into lobes terminating in a spine; test often somewhat contorted; aperture a slit at the base of the last-formed chamber, connected or not to a more or less developed subterminal orifice.

South of the Grande Terre, 30 m.
Systematics p. 305.

Trimosina orientalis

Test elongate, tapering, 2 or 3 times as long as broad, the basal end of chambers much angled, especially in young stages; chambers very distinct, inflated, the early ones very angular, those of the adult becoming less so; sutures depressed; wall coarsely perforate; aperture an elongate slitlike opening becoming broader in the last-formed chambers.

Southwestern lagoon, 30 m.
Systematics p. 305.

Uvigerina

Uvigerina carapitana

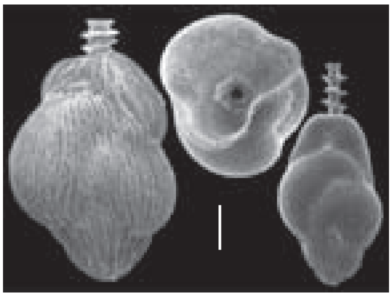
Test stout, compact, rather bulbous, triserial with about 3-4 whorls visible; periphery smoothly rounded, lobulate; chambers somewhat angular in the early stage, later inflated; sutures depressed; wall thick finely perforate, generally smooth though some specimens show faint longitudinal striations; aperture terminal, at the end of a short neck; neck in a depression near the indented margin of the last chamber, with a distinct lip.

Northern shelf, 600 m.
Systematics p. 304.

Uvigerina flintii

Test triserial, periphery lobulate; chambers inflated, increasing rapidly in size; sutures depressed; test finely perforate, ornamented with fine, continuous to discontinuous costae; aperture terminal, at the end of a slender neck with ringlike projections.

Northern shelf, 600 m.
Systematics p. 304.



Uvigerina cf. *U. peregrina*

Test elongate, about 2 times as long as broad, widest in the middle, ends rounded; chambers inflated, distinct; sutures depressed; wall ornamented with longitudinal costae, about 10 on a full-grown chamber, high and very thin and sharp, toward the base and apertural ends of the test becoming broken up into spinose or irregular short portions; aperture circular at the end of a distinct cylindrical neck, often spinose and with a phialine lip.

Northern shelf, 600 m.
Systematics p. 304.

Description of hyaline species trochospiral (or appearing so)

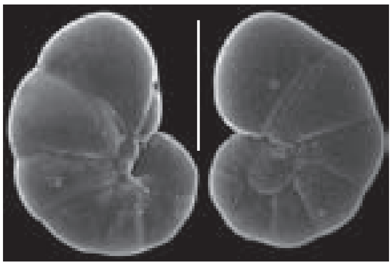
All scale bars = 0.1 mm (for SEM)

Alliatinella

Alliatinella differens

Test low trochospiral, auriculate in outline, somewhat biconcave, periphery broadly rounded; small accessory chambers developed over the sutures on the umbilical side; asymmetrical internal partition crossing the chamber obliquely and marked externally by a groove from the areal opening to the proximal chamber margin near the umbilicus; sutures distinct, later ones slightly depressed; wall finely perforate; aperture a low interiomarginal and equatorial slit, with a rounded areal aperture slightly offset toward the umbilical side.

Coastal bay, 10 m.
Systematics p. 297.



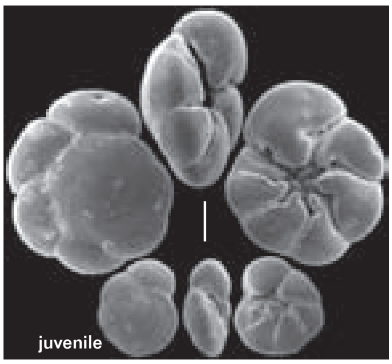
Ammonia

The genus *Ammonia* has a large geographic distribution and a great morphological variability. Some specialists recognize numerous species belonging to this genus while others propose a limitation to only one species with three morphotypes. As always, the truth is in-between. A recent approach, based on genetical sequencing, establishes variants, mainly derived from statistical methods based on arbitrarily set parameters. Unfortunately, at its present stage of development, this approach does not totally clarify the question, and the following list of species is partly tentative.

Ammonia cf. *A. aomoriensis*

Test relatively large, biconvex, with a low trochospiral coil of about 3 volutions; spiral side evolute, umbilical side involute; chambers inflated, 6-7 in the last whorl; periphery lobulate, peripheral margin broadly rounded; sutures somewhat oblique, not limbate on the spiral side, depressed on the umbilical side and deeply excavated near the umbilicus; umbilical region partly occupied by small beads of shell substance; an elongate, imperforate folium extends toward the umbilicus; wall finely perforate; aperture at the base of the last chamber, extending from near the periphery to the umbilicus. This species is similar to *A. aomoriensis* as presented by Hayward *et al*. (2004), but differs from the original description of Asano (1951c) in not having the umbilicus filled with beads of shell substance. Youg specimens may have an umbilical plug, making them resembling *Ammonia parkinsoniana*.

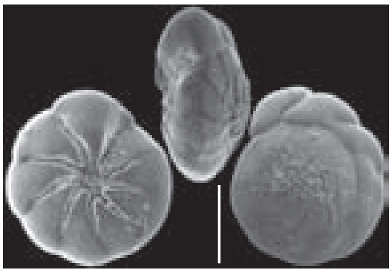
Coastal bays, 0-10 m.
Systematics p. 322.



Ammonia aoteana

Test small, biconvex, low trochospiral; spiral side highly convex, evolute; umbilical side involute; peripheral margin acutely rounded; normally 8-9 chambers in the last whorl, only the last ones slightly inflated; slightly raised sutures in the earlier portion on the spiral side, later depressed, strongly curved backward; sutures depressed, nearly radial, with long furrows along last sutures on umbilical side; faint grooved notches along the suture of the first chambers only as in the specimens from Auckland (Hayward *et al.*, 2004), and not along all the sutures as in the specimens from Ningaloo Reef (Parker, 2009); chambers with sharply pointed inner tips on umbilical side; umbilical region depressed, open or almost covered by chamber tips, almost filled with small tubercles; wall smooth, distinctly perforated; aperture an arched slit at the base of the apertural face.

Coastal bays, 0-10 m.
Systematics p. 322.



Ammonia convexa

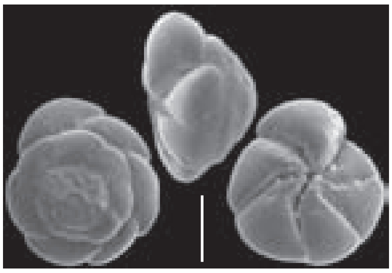
Test biconvex, low trochospiral; spiral side evolute, umbilical side involute; peripheral margin acutely rounded; about 10 chambers in the last whorl, only the last ones slightly inflated; slightly raised sutures, curved on the spiral side, nearly radial on the umbilical side; long furrows along last few radial sutures on umbilical side, and very large umbilical plug; wall smooth; aperture an arch at the base of the apertural face.

Coastal bays, 0-10 m.
Systematics p. 322.

Ammonia cf. *A. irridescens*

Test trochospiral, biconvex with 3-4 volutions; spiral side evolute, highly convex; umbilical side involute, slightly convex and slightly depressed centrally; chambers somewhat inflated, 6-7 in the last whorl; periphery lobulate, peripheral margin rounded; sutures curved, depressed in last whorls on spiral side; on the umbilical side, depressed, sinuous, with faint sutural notches and some granules; umbilicus nearly closed by the pointed inner tips of the chambers, with small tubercles; wall finely perforated, smooth; aperture a slit at the base of the apertural face, extending from near the periphery to the umbilicus.

Coastal bays, 0-10 m.
Systematics p. 322.



Ammonia pustulosa

Test small, trochospiral, planoconvex, composed of 2-3 whorls with 7-9 chambers in the last whorl; spiral side evolute, umbilical side involute; peripheral margin acutely rounded; sutures oblique and limbate on spiral side, depressed on umbilical side; umbilical region and depressed sutures filled with tubercles; wall finely perforate, smooth; aperture a narrow slit at the base of the last-formed chamber and slit-like openings along the sutures on umbilical side.

Coastal bays, 0-10 m.
Systematics p. 322.

Ammonia takanabensis

Test low trochospiral, compressed, biconvex, usually more convex on the umbilical side, composed of 4-5 whorls; 8-9 chambers in the last whorl, only the last ones inflated; spiral side evolute, umbilical side involute; peripheral margin broadly angled; sutures slightly oblique and limbate in the early portion of the test on spiral side, depressed in the last chambers, and depressed on umbilical side; umbilical region filled with a stellate mass of granulated shell material, sometimes excavated along umbilical sutures; wall finely perforate, smooth; aperture a small opening at the base of the last-formed chamber.

Coastal bays, 0-10 m.
Systematics p. 323.

Ammonia tepida form 1

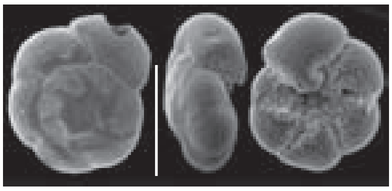
Test small, low trochospiral with 2-3 volutions; spiral side convex, evolute, umbilical side concave, involute; the height of the spire is variable; chambers inflated, 6-7 in the last whorl; periphery slightly lobulate, peripheral margin rounded; sutures oblique, limbate in the earlier portion of the test on the spiral side, later depressed; on the umbilical side, deeply incised at the umbilicus; umbilicus deep, nearly filled with small tubercles; chambers with pointed inner tips and faint sutural notches on umbilical side; wall coarsely perforate; aperture an arch at the base of the apertural face. This species is similar to some specimens of *Ammonia* sp. 1 of Holzmann *et al.* (1998).

Coastal bays, coastal lagoons, shrimp ponds.
Systematics p. 323.

Ammonia tepida form 2

Test quite small, low trochospiral with about 3 volutions; spiral side evolute, umbilical side involute; the height of the spire is variable; chambers inflated, 6-7 in the last whorl; periphery slightly lobulate, peripheral margin rounded; sutures oblique, limbate in the earlier portion of the test on the spiral side, later depressed; on the umbilical side, deeply incised at the umbilicus; umbilicus deep, lacking an umbilical boss; broadly developed, imperforate umbilical flap without pores; wall finely perforate; aperture an arch at the base of the apertural face. This species is similar to some specimens of *Ammonia* sp. 2 of Holzmann *et al*. (1998).

Coastal bays, coastal lagoons, shrimp ponds.
Systematics p. 323.



Ammonia sp. 1

Test low trochospiral, biconvex; periphery lobulate, narrowly rounded; spiral side evolute with 3-4 whorls of nearly constant height but with chambers increasing in breadth as added, sutures depressed, oblique; umbilical side involute, 5-7 chambers of the final whorl visible around the umbilicus, sutures straight and radial with prominent sutural notches; umbilical area filled with granular material; large umbilical folium covering the umbilicus; wall thin, hyaline, finely perforate; aperture an interiomarginal, extraumbilical arch that continues under the umbilical folium.

Bay of Prony, 20-40 m.
Systematics p. 323.

Angulodiscorbis

Angulodiscorbis pyramidalis

Test pyramidal, a strongly elevated trochospiral coil composed of numerous whorls with four vertically aligned chambers per whorl; sides flattened to slightly concave separated by prominent carinae; sutures flush on the spiral side, radial and hardly visible on the umbilical side; wall calcareous, coarsely perforated with random raised perforations on the spiral side; umbilical side with radially aligned pores and granular striae; aperture a low umbilical interiomarginal slit.

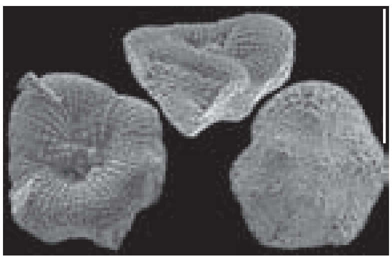
This species differs from *Angulodiscorbis corrugatus* (Millett 1903b) in having four chambers in each whorl instead of the five or six characteristic of that species. It differs from *Angulodiscorbis quadrangularis* Uchio, 1952 in having acute carinae.

Crawling on algae, 0-5 m.
Systematics p. 311.

Angulodiscorbis tobagoensis

Test small, trochospiral, five-sided cone-shaped, concavoconvex with a broadly angular, lobulate periphery; spiral side convex with five chambers per whorl; chambers broadly angular in the center so as to form five sides on the spiral face; sutures flush, obscured by the ornamentation; umbilical face involute, with a strongly depressed umbilical area; wall heavily ornamented, with a dimpled texture on the spiral side and radial rows of granules on the umbilical side; granules increasing in size toward the umbilicus, and passing progressively to spines; aperture interiomarginal at the base of the last-formed chamber.

Crawling on algae, Chesterfield, 20 m.
Systematics p. 311.

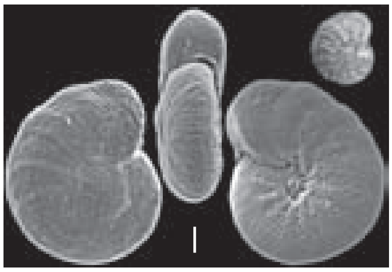


Anomalinoides

Anomalinoides colligerus

Test robust, in a low trochospiral coil, nearly equally convex on the two sides; some specimens are depressed at both umbilici, others are umbonate at one or both; sometimes the earlier convolutions are visible to a nearly equal extent on both faces, sometimes not; peripheral edge rounded; chambers inflated and sutures curved and depressed on both sides, 14-16 chambers in the last whorl; wall more coarsely perforate on one side; aperture a low arch against the periphery of the preceding whorl, with a narrow bordering lip, extending onto one side where it continues along the spiral suture beneath the umbilical margin of the last few chambers of the final whorl.

Northern shelf, 600 m.
Systematics p. 321.



Anomalinoides globulosus

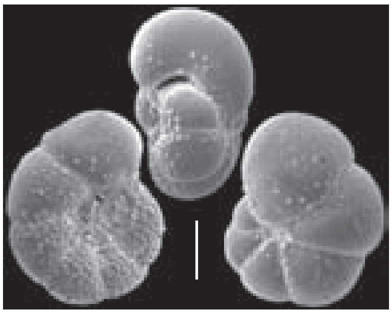
Test robust, in a low trochospiral coil, planoconvex with highly convex, involute umbilical side and evolute spiral side; periphery broadly rounded; 5-10 inflated chambers in the last whorl; sutures depressed, curved on spiral side, gently curved to nearly straight and radial on the umbilical side; wall coarsely perforated on both sides; aperture crescentic, against the periphery of the preceding whorl, with a distinct lip, extending onto the spiral side where it continues along the spiral suture beneath the margin of the last few chambers of the final whorl.

Bay of Prony, 20 m.
Systematics p. 321.

Anomalinoides semicribratus

Test inflated in a low trochospiral coil, planoconvex with strongly convex, involute umbilical side and spiral side partially evolute and centrally excavated; periphery broadly rounded; 5-10 inflated chambers in the last whorl; sutures slightly depressed, gently curved on spiral side, nearly straight and radial on the umbilical side; wall coarsely perforated on spiral sides, less so or even smooth on the umbilical side; aperture a low arch at the periphery, with a distinct lip and extending somewhat onto the spiral side around the spiral suture.

Southwestern lagoon, 30 m.
Systematics p. 321.

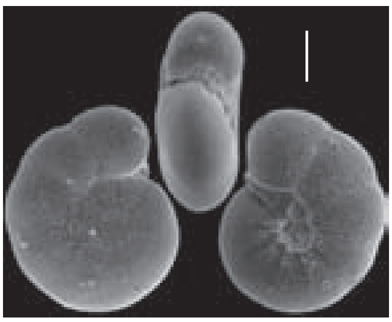


Anomalinulla

Anomalinulla glabrata

Test biconvex with very low trochospiral coiling, appearing almost planispiral; spiral side flattened, umbilical side slightly convex with a distinctly excavated umbilicus; sutures flush, becoming slightly depressed between the last few chambers; wall smoothly finished and evenly perforate on the spiral side; aperture an equatorial slit that starts a short way along the chamber on the spiral side and extends to the spiral suture on the umbilical side of the test; aperture bordered by a lip that continues into a small folium; apertures of the previous chambers remaining open for most of the last whorl.

Bay of Prony, 20-40 m.
Systematics p. 321.



Asanonella

Asanonella tubulifera

Test lenticular, trochospirally coiled; sutures oblique, slightly if at all depressed; umbilicus closed; characteristic prominent tubulopores along the peripheral margin, some having a large produced margin that surrounds a coarsely perforate area, while others have a low and even indistinct margin leaving only the coarsely perforate area; otherwise, wall smooth; aperture large, extraumbilical, slit-shaped, partially filled with a tooth-like protrusion of transparent shell material arising from the previous spiral wall.

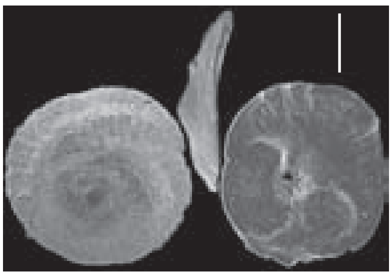
South of the Grande Terre, 20-30 m.
Systematics p. 318.

Ashbrookia

Ashbrookia ornata

Test planoconvex, low trochospiral subcircular in outline; evolute spiral side slightly convex, involute umbilical side slightly concave; periphery lobulate, peripheral margin acute; coil of approximately two whorls, about three, strongly overlapping, crescentic chambers per whorl; sutures strongly curved, final chamber occupying about half the periphery and umbilical side, outer part of the chambers divided by partial radial septula; umbilicus open, partially covered with an umbilical flap from the final chamber; wall finely perforate, somewhat granular on the spiral side; aperture umbilical in position, under the umbilical flap.

Southwestern lagoon, 30 m.
Systematics p. 306.



Baggina

Baggina bubnanensis

Test subglobular, low trochospiral with few inflated and rapidly enlarging chambers per whorl; final chamber very inflated, occupying more than one half of the umbilical side; umbilicus closed; sutures depressed, radial, curved; periphery broadly rounded; surface smooth, glassy; wall perforate but with an imperforate lunate area on the umbilical side just above the aperture; earlier chambers of the final whorl have 3-5 sculptured ridges on the umbilical side; aperture a broad umbilical opening at the base of the apertural face, just over the sculptured ridges.

Northern shelf, 200 m.
Systematics p. 306.

Baggina philippinensis

Test globular, low trochospiral with few inflated and rapidly enlarging chambers per whorl; final chamber very inflated, occupying nearly one half of the umbilical side; umbilicus open; sutures depressed, radial, curved; periphery broadly rounded; surface smooth, glassy; wall perforate but with an imperforate lunate area on the umbilical side just above the aperture; aperture a broad umbilical opening at the base of the apertural face, just over the sculptured ridges.

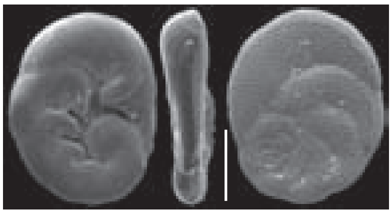
Northern shelf, 600 m.
Systematics p. 306.

Bronnimannia

Bronnimannia haliotis

Test low trochospiral, bievolute and slightly biconcave, progressively more so toward the last-formed chambers; outline smoothly oval; one side of the test is very finely perforate or imperforate while the other is uniformly coarsely perforate; on this imperforate surface the initial coil appears to stand apart from the final whorl of chambers; peripheral margin rounded, without prominent imperforate keel; aperture a low, interiomarginal slit beneath the umbilical flap.

Isle of Pines, 5 m.
Systematics p. 311.



Bronnimannia palmerae

Test auriculate in outline, very low trochospiral, whorls enlarging rapidly; test somewhat flared, bievolute and biconcave with broadly truncate periphery marked by a distinct keel at the spiral side; sutures curved and depressed on both sides; on the umbilical side, chambers have a flap or folium marked by a distinct notch at the posterior margin, both folium and notch remaining visible on most chambers of the final whorl; wall finely perforate on the umbilical side, spiral side more coarsely perforate; aperture a low, interiomarginal slit beneath the umbilical flap.

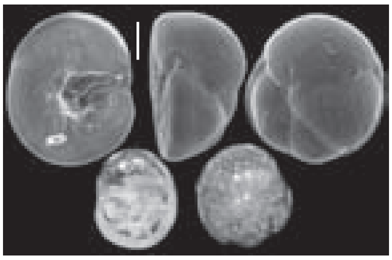
Bay of Prony, 10 m.
Systematics p. 311.

Bueningia

Bueningia creeki

Test small, inflated planoconvex, both sides involute, one side flattened to concave with deep umbilicus, other side convex, four to five inflated chambers per whorl, sutures radial, depressed, periphery broadly rounded, with a thickened to carinate margin on the flattened side; wall finely perforate except for the keel, surface smooth; aperture interiomarginal and umbilical, with a small apertural flap

Northern shelf, 600 m.
Systematics p. 308.



Buliminella

Buliminella elegantissima

Test elongate, fusiform, a high trochospiral coil of only 2-3 whorls of numerous elongate chambers, the last whorl about 80% of the test; sutures slightly curved, almost parallel to the axis of the test, slightly depressed; wall finely perforate, surface smooth; aperture a loop in the depressed face of the final chamber with a high rim and a simple internal toothplate.

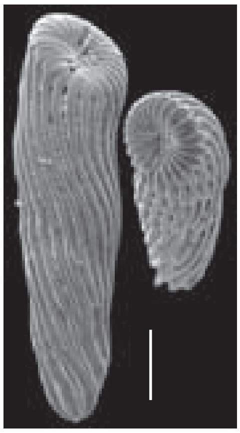
Coastal lagoons, estuaries, shrimp ponds.
Systematics p. 303.

Buliminoides

Buliminoides williamsonianus

Test elongate, cylindrical, somewhat sinuous in contour, circular in transverse section, composed of a spiral band of chambers; initial end slightly tapering, apertural end truncate; surface ornamented from end to end by a series of prominent, parallel costae that twist around the coiling axis and entirely obscure the internal structures; aperture terminal, in a depression at the center of the oblique apertural face, bordered by radiating lines.

Coastal bay, 10 m.
Systematics p. 312.



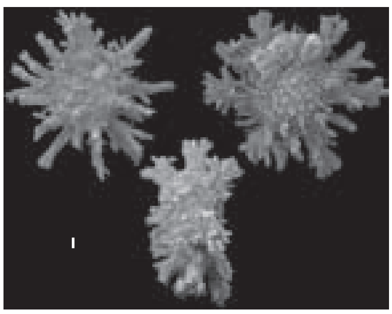
Calcarina

Calcarina exuberans new name

Species differing from *C. hispida* by exuberant outgrowths at the extremity of the strong hispid, bifurcating spines, which give the test a plumose appearance; test more delicate than in *C. hispida*, particularly in the last-formed chambers.

This species was named *Calcarina hispida* var. *pulchella* by Chapman (1900). Since *C. pulchella* was preoccupied by *Calcarina pulchella* d'Orbigny 1839a (*Asterorotalia pulchella*), a new name is proposed to resolve ambiguity and maintain nomenclatorial stability.

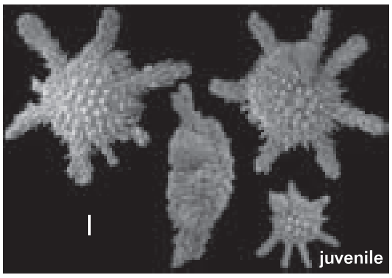
Southwestern lagoon, and mostly on the southern shelf, 40-80 m.
Systematics p. 323.



Calcarina hispida

Test low trochospiral, spiral side evolute and umbilical side involute, but sutures not discernible except in the last few chambers; test hispid, covered by well-developed calcite bosses on both sides; surface of the bosses granulated; peripheral margin rounded with 3-10 robust, coarsely hispid, blunt spines, located on the central part of every chamber, in the plane of coiling; bosses surrounded by small openings of the canal system; wall hispid; apertural face flat, with radiating ridges; apertures narrow, strongly indented, at the base of the last-formed chamber, obscured by the ornamentation.

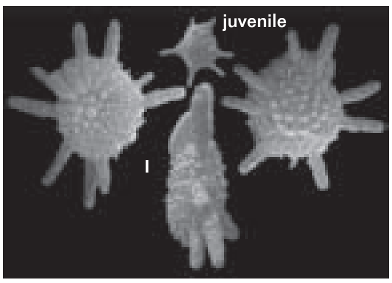
Attached to algal thalli, 0-40 m.
Systematics p. 323.



Calcarina mayori

Test low trochospiral, medium-sized; spiral side evolute and umbilical side involute, but only the last whorl visible, the center of test being obscured by coarse raised tubercles; sutures depressed between the last chambers on the umbilical side; peripheral margin rounded; 3-10 radial peripheral spines in the plane of coiling, slightly hispid, straight, of constant width; test covered by openings of the intraseptal canal system; wall of the last chambers, covered with short, protruding spikes, and perforate on the umbilical side; apertural face flat, imperforate; apertures multiple, on the apertural face, irregularly rounded with thick peristomal rims.

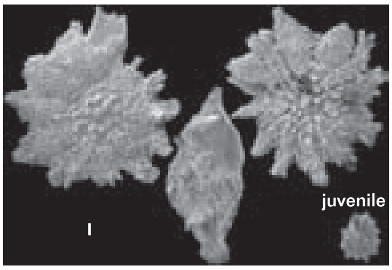
Attached to algal thalli, Chesterfield, 0-40 m.
Systematics p. 323.



Calcarina sp. 1

Test medium-sized to large, coarsely hispid; about 12 chambers in the last whorl each chamber bearing a short blunt, hispid spine, which may bifurcate; surface of the test covered with minute pustules at the periphery and granulated bosses centrally; sutures obscured by the ornamentation, except for the last 3-5 chambers that appear distinct; last 2-3 chambers have deep sutures and an angular crest; some oblique ridges present in the sutures on the umbilical side; aperture narrow, obscured by the ornamentation. Despite this species resembles representations given in the literature for *C. spengleri*, it is probably different (discussion about this species in Lobegeier, 2002).

Northern shelf, 200 m.
Systematics p. 323.

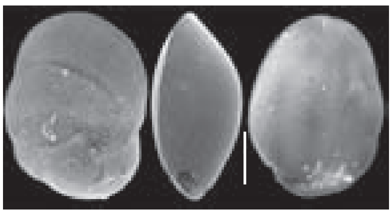


Cancris

Cancris auriculus

Test auriculate in outline with a strongly convex umbilical side; peripheral margin acute with a small carina; chambers arranged in a flared trochospiral coil and increasing rapidly in size; sutures arched, flush or slightly depressed and strongly recurved backward at the periphery on the spiral side, more depressed and nearly radial on the umbilical side; wall thin and smooth, finely perforate, except a semicircular region on the septal face; aperture a slit on the umbilical side, at the base of the last-formed chamber, with a broad apertural flap extending over the umbilicus.

Southwestern lagoon, 30 m.
Systematics p. 307.



Cancris oblongus

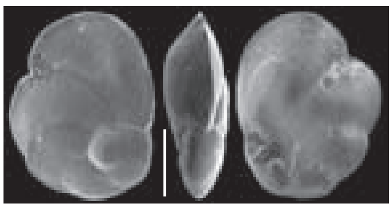
Test auriculate, elongate, unequally convex, with the umbilical side more convex than the spiral side; periphery rounded, except a poorly developed keel around last chamber; chambers increasing very rapidly in size; sutures very slightly depressed; wall finely perforated, except an imperforate lunate area above the aperture; aperture a slit at the base of the last-formed chamber, on the umbilical side, under an imperforate folium partly covering the depressed umbilicus.

Coastal Bay, 10 m.
Systematics p. 307.

Cancris sagrum

Test elliptical in outline, umbilical side convex, spiral side almost plane; margin strongly keeled; test composed of 1-2 whorls of rapidly enlarging chambers, about 6 in the last coil; last-formed chamber making up nearly half the area of the umbilical side; sutures slightly depressed and arched on the spiral side, deeply depressed and almost radial on the umbilical side; wall distinctly perforated, except an imperforate elongated area on the apertural face; aperture a slit at the base of the last-formed chamber, on the umbilical side, with a small folium.

Bay of Prony, 20-40 m.
Systematics p. 307.

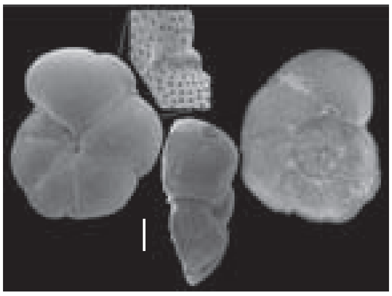


Caribeanella

Caribeanella elatensis

Test planoconvex to concavoconvex, with a flattened evolute spiral side and convex involute umbilical side with an open umbilicus; peripheral margin acute, lobulate, somewhat irregular due to the attachment; 6 chambers in the last coil; sutures depressed, curved on the spiral side, almost radial on the umbilical side; wall coarsely perforated on both sides; aperture a slit, extraumbilical-equatorial, with a rim; characteristic peripheral supplementary apertures at each suture, with a rim.

Bay of Prony, 20-40 m.
Systematics p. 316.

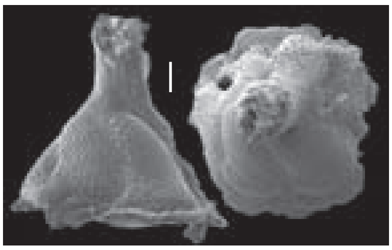


Carpenteria

Carpenteria monticularis

Test attached, large, convex and monticular; circumference is deeply lobed, somewhat irregular; early chambers spirally arranged, broad and round at the outer margin, narrow at the umbilical end; later chambers piled up irregularly about a central axis, somewhat inflated; wall coarsely perforated; aperture a rounded opening at the summit of an erect tubular extension of the end of the central axis.

Northern shelf, 600 m.
Systematics p. 317.

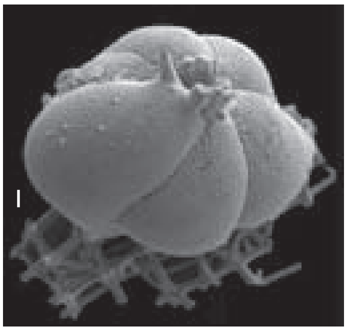


Carpenteria cf. *C. utricularis*

Test attached, large, composed of flask-like chambers increasing in size as added and spirally arranged; chambers tapering toward the apertural end so as to give to the test a more or less conical contour; wall thick, coarsely perforated; aperture single, terminal, opening in the umbilicus and protected by spines that project from the apex of the chambers.

The species has most of the characteristics of *C. utricularis*, but differs by the umbilical position of the aperture and by the presence of projecting spines around the umbilicus. It should be considered as a probable new species.

Northern shelf, 200 m.
Systematics p. 317.

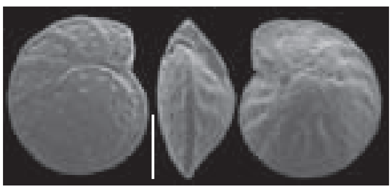


Cibicides

Cibicides mabahethi

Test low trochospiral, planoconvex to slightly biconvex; evolute spiral side, prominently convex, involute umbilical side with a broad imperforate umbilical knob; peripheral outline becoming slightly lobulate in adult; peripheral margin acute with a carina; sutures curved on both sides, limbate on the spiral side, slightly depressed on the umbilical side; test coarsely perforated on the spiral side, perforations scattered, mostly along the sutures, on the umbilical side; aperture extraumbilical equatorial, provided with a thick rim and extending into a supplementary spiral aperture remaining open in the last few chambers.

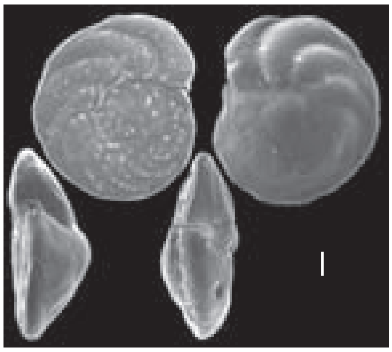
Northern shelf, 600 m.
Systematics p. 315.



Cibicides pachyderma

Test showing a wide range of variation from planoconvex to lenticular, biconvex; generally, spiral side slightly convex, umbilical side more convex with chambers thinning towards keeled periphery; sutures strongly curved backwards on both sides, slightly raised on spiral side; sutures of the last three chambers usually depressed on the umbilical side; wall coarsely perforate on spiral side and densely but finely perforate on umbilical side; aperture an equatorial arch with small lip, extending somewhat on the umbilical side.

Northern shelf, 600 m.
Systematics p. 315.



Cibicides pseudolobatulus

Test trochospirally coiled, spiral side flat, sutures limbate, oblique and curved backward at the periphery; umbilical side convex with depressed sutures radial around the umbilicus and curved backward at the periphery; peripheral margin acute, carinate; peripheral outline faintly lobulate; wall coarsely perforate on the spiral side, less densely and coarsely so on the umbilical side; aperture an interiomarginal, equatorial arch, bordered by a lip and extending onto the spiral side where it remains open in the last few chambers.

Northern shelf, 600 m.
Systematics p. 315.

Cibicides refulgens

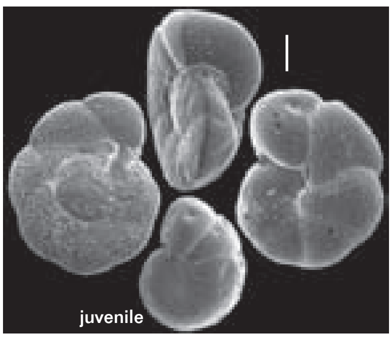
Test tall conical, spiral side flattened, evolute; umbilical side highly convex, bluntly pointed, umbilicus closed; 6-8 chambers visible on the umbilical side, with strongly developed shoulders near the centre; wall very finely perforated; aperture an interiomarginal, equatorial arch, bordered by a lip and extending slightly onto the spiral side.

Northern shelf, 600 m.
Systematics p. 315.

Cibicides tabaensis

Test planoconvex, low trochospiral; flat evolute spiral side, convex involute umbilical side, a broad umbilical knob present; peripheral outline lobulate; peripheral margin acute to subacute with a carina, except in last chambers; sutures on the umbilical side slightly depressed and nearly radial, flush and limbate on the spiral side, slightly sinusoidal and depressed in the last chambers; test coarsely perforate, with perforations scattered, mostly on the last chambers on the umbilical side; aperture extraumbilical equatorial, extending somewhat along the suture of the spiral side, provided with a thick rim.

Northern shelf, 600 m.
Systematics p. 315.



Cibicides tenuimargo

Test planoconvex with a convex involute umbilical face that may be low or high, with a wide range of variation; a continuous, marginal keel is made up by the extension of the peripheral borders of the chambers; umbilicus not depressed, but without a calcitic knob; sutures on the umbilical side slightly depressed and radial, flush and limbate on the spiral side; wall distinctly but not coarsely perforate, with perforations denser on each side of the sutures on the umbilical side; limbate sutures of the spiral side imperforate; aperture a slit opening part way along the spiral suture of final chamber on dorsal side, and extending somewhat to the umbilical side, provided with a small lip.

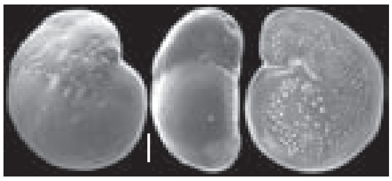
Northern shelf, 200 m.
Systematics p. 315.

Cibicidoides

Cibicidoides bradyi

Test trochospiral, circular in outline with periphery broadly rounded, about 10 chambers in the last whorl, increasing gradually in size as added; sutures flush on both sides, oblique and slightly curved on the spiral side, radial on the umbilical side; spiral side evolute, flattened to slightly convex, coarsely perforated; umbilical side strongly convex, finely perforated, surface smooth, umbilicus covered by a clear umbilical plug; aperture a low interiomarginal equatorial arch with a lip that extends onto the spiral side.
The taxonomy of this species is confusing. Its initial description, as *Truncatulina*, by Trauth (1918) was illustrated by figures from Brady (1884) and Egger (1893) that show a form with a flat to very slightly convex spiral side. Later, it was sometimes described as having a spiral side more convex than the umbilical side. In the "Systematics" section, only references consistent with original illustrations are mentioned.

Northern shelf, 600 m.
Systematics p. 313.

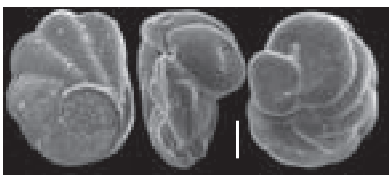


Cibicorbis

Cibicorbis cf. *C. herricki*

Test trochospiral, planoconvex; spiral side flattened and partially involute, umbilical side involute with closed umbilicus, chambers broad, increasing rapidly in breadth so that whorls are flaring; chambers triangular in section, inflated and with sharply angled apertural face; margin of the spiral side carinate, sutures thickened, curved, slightly elevated in early stages; wall distinctly perforate, surface smooth; aperture an interiomarginal slit on the umbilical side, extending from the umbilicus to the periphery, with a large imperforate apertural flap projecting over the umbilicus. Unfortunately, all specimens found are deformed, making it impossible to confirm the attribution of this species.

Northern shelf, 200 m.
Systematics p. 307.

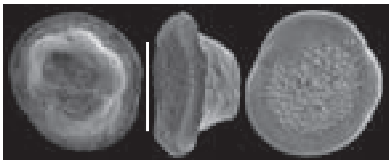


Colonimilesia

Colonimilesia coronata

Test minute, trochospiral, planoconvex with a high conical umbilical face, 6-8 chambers per whorl; periphery with a wide, flange-like keel; sutures flush, almost straight, radial on the umbilical side, almost totally obscured by a dense ornamentation of papillae on the spiral side; high chambers of the umbilical side, with the end broken, forming a spiral row of rounded, rimmed openings.

Coastal bay, 10 m.
Systematics p. 314.



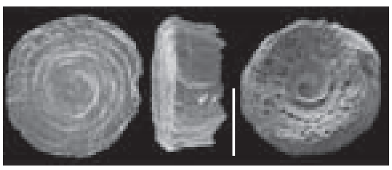
Conicospirillinoides

The test of *Conicospirillinoides* is planispirally enrolled, but the wall, extending on one face into a high spiraling band surrounding a deep umbilical depression, results in a dissymmetrical test. The result is the impression of a trochospiral coiling, justifying the placement of this genus in the "Trochospiral hyaline foraminifera (or appearing so)" section.

Conicospirillinoides denticulatus

Test planoconvex with a proloculus and an undivided, compressed, planispirally enrolled tubular second chamber; flattened side evolute with all the whorls visible, flat or slightly convex; raised side with whorls hardly distinguishable, and a deeply depressed umbilical area; peripheral margin acutely rounded; sutures slightly raised on the flat side, incised but indistinct on the raised side; on the flat side, wall with a row of coarse perforations regularly disposed parallel to the spiral suture; on the raised side, wall extending into a high spiraling band surrounding a deep umbilical depression, and furnished with buttress-like teeth set at regular intervals along its inner margin; aperture simple, at the end of the tubular chamber, at the periphery.

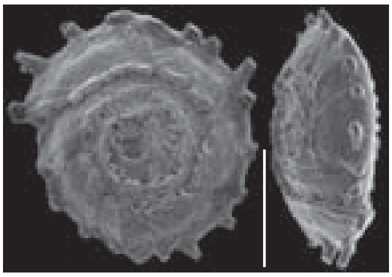
South of the Grande Terre, 30 m.
Systematics p. 282.



Conicospirillinoides intricatus

Test roughly planoconvex with a truncate apex, composed of a proloculus and a planispirally coiled ribbon-like second chamber; flattened side with about 4 whorls visible; peripheral margin with about 20 spines rather evenly spaced, extending out and upward; cone-shaped side with a wide basal half where is the tubular chamber, tapering up into a flat ribbon-like crest bending centrally in a tightly coiled way; ribbon-like crest undulating to form thicken ridges that cover radiating canal-like structures; center of the cone-like side with a deep umbilical area; aperture at the end of the spiral chamber.

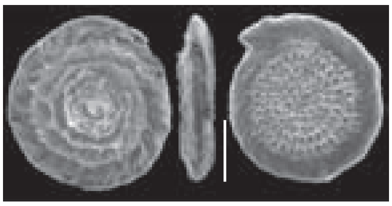
Outer reef, 100 m.
Systematics p. 282.



Conicospirillinoides semidecoratus

Test planoconvex consisting in a globular proloculus and undivided planispirally enrolled tubular chamber; wall extending into a high spiraling flange that partially overlaps the umbilical region and slopes upward considerably beyond the chamber lumen, surface of the flange bearing numerous radial indentations; flattened side covered with rounded bosses, except for the last whorl; periphery with a blunt keel; aperture at the end of the tubular chamber at the periphery.

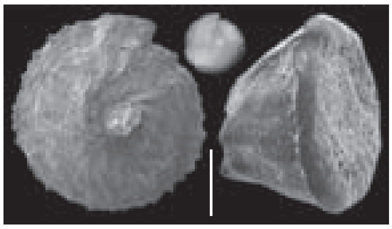
Northern shelf, 200 m.
Systematics p. 282.



Conicospirillinoides cf. *C. semidecoratus*

This form included in *C. semidecoratus* by Heron-Allen & Earland (1915) as the involute type, and reported by Hatta & Ujiié (1992b) as *C. semidecoratus* differs from this species in its greater size and the early whorls entirely concealed by the later; it seems to be a different species

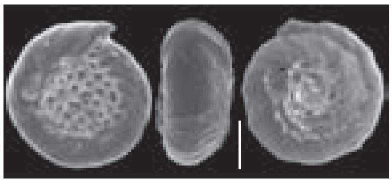
Northern shelf, 200 m.
Systematics p. 282, 283.



Conicospirillinoides sp. 1

This form resembles *C. semidecoratus*, but differs in its more rounded margin, thicker test, and in much more overlapping whorls on the flattened side that therefore becomes more convex.

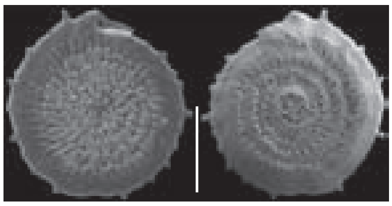
Northern shelf, 200 m.
Systematics p. 283.



Conicospirillinoides sp. 2

This form differs from *C. semidecoratus* by its more regular pattern of ornamentation on the flattened side, and by the spines produced on the peripheral margin.

Northern shelf, 200 m.
Systematics p. 283.



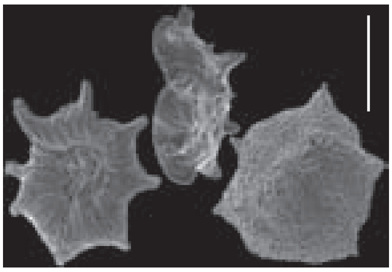
Conorbella

Conorbella imperatoria

Test high-trochospiral, irregularly conical; periphery slightly lobulate, umbilical side with an excavated umbilicus; chambers crescentic and gradually increasing in size; sutures slightly depressed on spiral side, radiate and obscured by the ornamentation on the umbilical side; surface of the spiral side heavily ornamented with a raised honeycomb texture and pseudospines; periphery with large, characteristic pseudospines; umbilical side with radial thickening separated by fine striae; aperture an umbilical slit.

In large specimens, the pseudospines may be absent from the last chambers, and then from the periphery, remaining only on the spiral side.

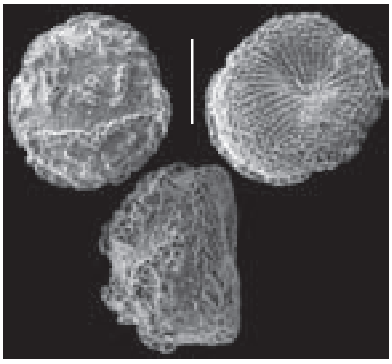
South of the Grande Terre, 30 m.
Systematics p. 311.



Conorbella pulvinata

Test broadly ovate or subglobular, planoconvex; composed of a few more or less inflated chambers, about three in the final coil; spiral side strongly rugose due to coarse pores surrounded by rims of various height; rows of pores follow the edges of the chambers, but additional pores may open over the chamber walls; umbilical side deeply excavated at the umbilicus and ornamented with radiating granulose lines; aperture a rounded opening at the suture on the umbilical side.

Bay of Prony, 10-20 m.
Systematics p. 311.



Cribroparella

Cribroparella sp. 1

Test in a low trochospiral coil, lenticular and biconvex; periphery carinate; spiral side evolute with about two and a half rapidly enlarging whorls, 7-9 chambers in the final whorl; sutures curved, oblique, more so on the spiral side; umbilicus closed and umbonate; wall finely perforate, with coarser perforations at the periphery; aperture a narrow slit near the base of the apertural face, extending toward the umbilicus, bordered by a small lip; small circular supplementary areal openings scattered over the entire apertural face; primary aperture and secondary openings tending to form a cribrate aperture over the entire apertural face in the adult.

South of the Grande Terre, 50 m.
Systematics p. 321.

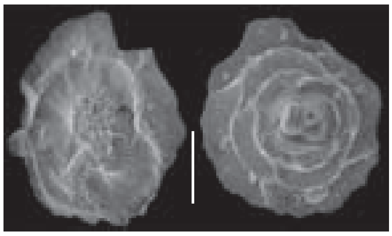
Crouchina

The genus *Crouchina* was synonymized with *Orbitina* by Loeblich & Tappan (1988). The specimens from New Caledonia reported to this genus, however, have the typical characteristics described by McCulloch (1977) for *Crouchina* (p. 296), even if they differ somewhat from the drawings of this author; they differ from *Orbitina*.

Crouchina? cf. *C. taguscovensis*

Test small, planoconvex, trochospiral; apex made up of four loosely-grouped globular chambers; then 2-3 whorls of four chambers each about equal in size with prominent, wide, carinate margins, visible on the spiral convex side; on the umbilical side, 2-3 last chambers visible, arched around the large umbilicus; wall smooth, very finely perforated; aperture at the end of the last chamber turned towards the umbilicus.

Isle of Pines, 5 m.
Systematics p. 309.

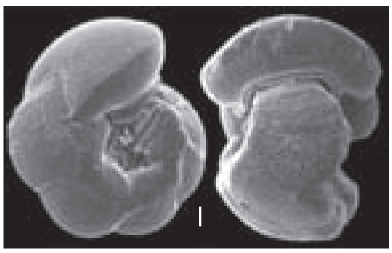


Discanomalina

Discanomalina coronata

Test robust, very low trochospiral, nearly equally biconvex, in face view nearly as broad as the diameter; about eight chambers in the final coil; umbilical region concave on both sides; peripheral border nearly flattened in the later chambers, which increase rapidly in width; inner border of the chambers often of clear shell material; wall coarsely perforate; aperture a narrow curved slit at the base of the apertural face, bordered with a narrow lip; supplementary openings beneath umbilical flaps.

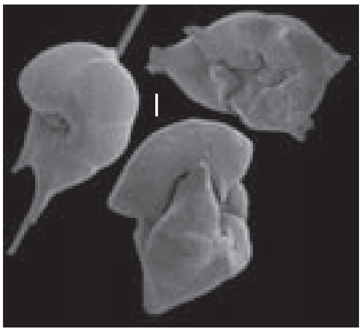
Northern shelf, 600 m.
Systematics p. 322.



Discanomalina semipunctata

Test trochospiral, free, or more often attached on sponge spicules; spiral side plane or concave, umbilical side convex with umbilical region depressed; seven to eight chambers in the final coil; periphery broad, angled, some of the chambers with short spine-like extensions at the periphery, extending along the sponge spicules; wall coarsely perforate on the umbilical side, except on the limbate sutures; spiral side and apertural face smooth; aperture an elongated arched slit at the base of the last-formed chamber.

Northern shelf, 600 m.
Systematics p. 322.



Discorbinella

Discorbinella bertheloti

Test compressed, plano-convex, semicircular in outline; coiling low trochospiral, nearly involute on both sides; peripheral margins acute with a blunt carina; flat side with shallow umbilicus and folia on the last 3-4 chambers; chambers 6-8 in the final whorl, slightly inflated on convex side, increasing in size gradually and then rapidly for the last 3-4; sutures depressed, curved and slightly thickened on both sides; wall smooth, coarsely perforate on the convex side, perforate only at the periphery of the flat side; aperture equatorial to interiomarginal, broadly arch-shaped with a thickened lip, with supplementary posterior foliar openings.

Northern shelf, 600 m.
Systematics p. 314.

Discorbinella complanata

Test low trochospiral, extremely compressed, flat, semicircular in outline; spiral face very slightly convex, umbilical side very slightly concave; semicircular in outline; peripheral margins acute with a blunt carina; flat side with shallow umbilicus and folia on the last 2-3 chambers; chambers 6-8 in the final whorl, increasing in size gradually; sutures limbate, curved; wall smooth, finely perforate; aperture foliar openings near umbilicus.

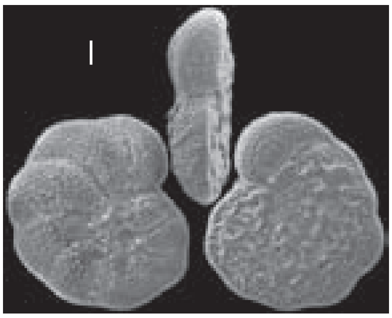
Northern shelf, 600 m.
Systematics p. 314.

Discorinopsis

Discorinopsis aguayoi

Test large, low trochospiral; chambers increasing slowly in height but rapidly in breadth resulting in an auriculate test; spiral side convex, umbilical side flattened to concave; umbilical face partially covered with a spongy mass of shell material; sutures strongly curved on the spiral side, obscured on the umbilical side; wall coarsely perforate; aperture a series of openings through the shell material that covers the umbilical area.

Coastal lagoons, marshes.
Systematics p. 262.

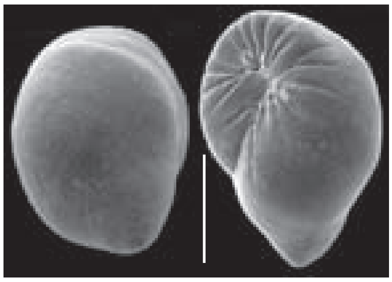


Elongobula

Elongobula milletti

Test small, high trochospiral, tapering, consisting of two or three whorls; "initial end bluntly rounded, increasing in diameter toward the apertural end"; four or more chambers making up the last whorl, slightly inflated; sutures flush with the surface or slightly depressed, spiral suture, slightly limbate; wall smooth, very finely perforate; apertural face broadly rounded with numerous radial clefts running into the depressed area at the center; aperture a semielliptical opening at the base of the apertural face, almost closed by a large apertural flap flush with apertural face.

Southwestern lagoon, 30 m.
Systematics p. 313.



Elongobula parallela

Test elongate, the sides usually nearly parallel for most of their length, both ends broadly rounded, nearly circular in transverse section, periphery slightly lobulate; chambers distinct, in 3 or more whorls; sutures slightly limbate, flush with the surface; wall smooth, very finely perforate, with a weak anastomosing costate ornament over the lower parts of the test; apertural face terminal, striated; aperture central, partially hidden by a broad flap.

Bay of Prony, 20-30 m.
Systematics p. 313.

Elongobula spicata

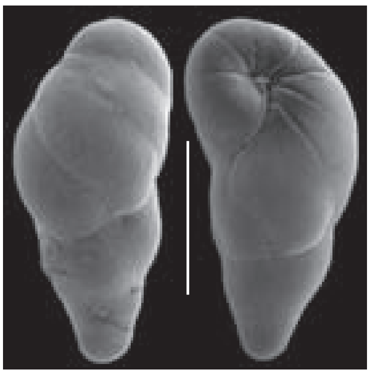
Test high trochospiral, oval in outline; stout basal spine quickly expanding into first whorl; periphery slightly lobulate; about 6 chambers per whorl; sutures very slightly depressed or flush, gently curved; wall finely perforate, smooth; apertural face with deep radial clefts around the aperture, crossing edge of apertural face over short distance; aperture in upper part, partly closed by a well defined apertural flap flush with apertural face.

Coastal bays, 5-10 m.
Systematics p. 313.

Elongobula sp. 1

Test small, tapering, initial end bluntly rounded, increasing slowly in diameter toward the apertural end, consisting of three whorls or more; chambers distinct, inflated; sutures distinct, depressed, especially the spiral suture; wall smooth, very finely perforate; apertural face broadly rounded with deep radial clefts running into the central depressed area; aperture at the centre of the apertural face, partially closed by a small apertural flap.

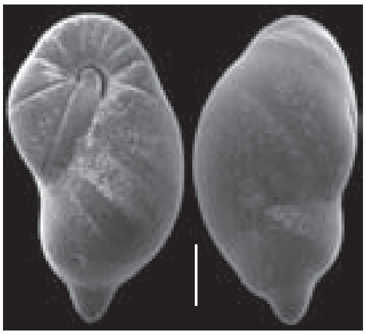
Bay of Prony, 20-30 m.
Systematics p. 313.



Elongobula sp. 2

Test large, initial end characteristically prominent and rounded; chambers increasing rapidly in size so that the three whorls are well visible; chambers distinct, sutures flush; wall smooth, finely perforate; apertural face ovate with deep radial clefts running into the central depressed area; aperture at the centre of the apertural face, partially closed by a well defined apertural flap.

Northern shelf, 600 m.
Systematics p. 313.



Elongobula sp. 3

Test stout, relatively short, nearly circular in cross section, both ends broadly rounded; chambers and sutures indistinct; wall smooth, very finely perforate; apertural face with a few radial striae; aperture central, partially closed by a well defined apertural flap.

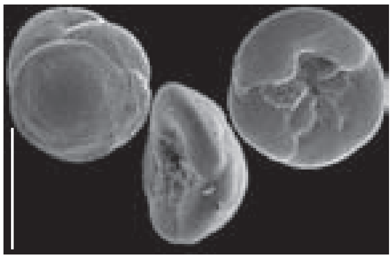
Northern shelf, 600 m.
Systematics p. 313.

Eoeponidella

Eoeponidella pulchella

Test small, planoconvex; 2-3 whorls of chambers crescentic, 5-8 chambers in the final whorl; sutures curved and oblique on the convex spiral side, radial on the umbilical side; umbilical area depressed, covered with secondarily added umbilical plates that form a stellate structure around the umbilicus: periphery rounded to subangular; wall calcareous, finely perforate, with coarser pores near the periphery; aperture a broad interiomarginal arch in the umbilical face of the final chamber, later obscured by the supplementary coverplates.

Bay of Prony, 10-30 m.
Systematics p. 318.



Epistomaroides

Epistomaroides polystomelloides

Test low trochospiral, biconvex; periphery rounded, peripheral outline lobulate; all chambers of the two whorls visible from the spiral side, only the 9-10 of the final whorl visible on the umbilicate side; supplementary chamberlets formed by a transverse internal partition result in a stellate appearance on the umbilical side; sutures deeply incised, bridged by shell material; wall coarsely perforate; primary aperture a low interiomarginal arch extending from the peripheral margin to the umbilicus, small secondary areal opening at the suture between primary and supplementary chambers in the apertural face, and multiple sutural openings present on both sides of the test, between the sutural bridges.

Living in algal thalli 0-15 m.
Systematics p. 318.

Epistominella

Epistominella exigua

Test low trochospiral biconvex, spiral side less convex than umbilical side; periphery acute, lobulate; test composed of three whorls with 5-7 chambers in the last whorl; sutures marked on the spiral face by thickened lines of opaque-white shell-substance (under dissecting microscope); slightly depressed on the umbilical side; wall glassy; aperture an elongate slit tending to parallel to the peripheral margin.

Northern shelf, 600 m.
Systematics p. 313.

Eponides

Eponides repandus

Test low trochospiral, biconvex, more convex on the umbilical side; umbilicus closed; periphery angular to carinate; 2-3 whorls with about 5-7 chambers per whorl; sutures curved and limbate on the spiral side, continuing into the peripheral keel, nearly radial on the umbilical side: wall finely perforate, sutures and keel imperforate; aperture a broad low interiomarginal arch extending from the umbilicus to the periphery, often with a few supplementary areal openings.

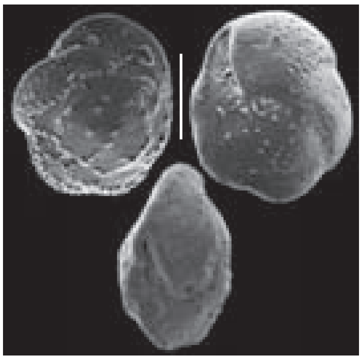
Southern shelf, > 30 m.
Systematics p. 307.

Facetocochlea

Facetocochlea pulchra

Test trochospiral, biconvex; periphery carinate; 6-7 chambers in the last coil; spiral side low convex with sutures straight and oblique; umbilical side more convex, involute, with sutures gently curved, nearly radial, and slightly depressed; wall coarsely perforated; on the spiral side, pores at the end of small tubules, mostly situated along the spiral suture and along the periphery where the tubules radiate outward, making an impression of a crinkled periphery under the dissecting microscope; aperture an interiomarginal slit extending up the face of the final chamber on the umbilical side.

Bay of Prony, 10-40 m.
Systematics p. 313.



Floresina

Floresina latissima

Test elongate, irregularly ovate in outline, compressed composed of 2-3 whorls with 5-6 chambers in the last whorl; chambers narrow with slightly depressed, limbate, sinuate sutures; spiral suture distinct; sutural margin of chambers lobed; aperture semicircular at the base of the flattened semicircular apertural face, with radiating striae.

Outer reef, 35 m.
Systematics p. 303.

Fontbotia

Fontbotia wuellerstorfi

Test much compressed, early stages trochoid, later ones somewhat spread out; umbilical face slightly convex or at least umbonate, spiral face flat, and the peripheral edge acutely rounded; chambers numerous, narrow and much curved, often almost crescentiform in outline; sutures distinct, curved, limbate, somewhat raised, especially on the spiral side, with a decided angle on the umbilical side; wall coarsely perforate; aperture at the periphery and extending over onto the spiral side along the inner margin of the chamber, with a slight lip.

Northern shelf, 600 m.
Systematics p. 315.

Geminospira

Geminospira bradyi

Test elongate, flattened, early chambers in a trochospiral coil, later uncoiled, arcuate, and asymmetrical with chambers highest on the spiral side; a series of secondary chamberlets on the umbilical side alternate in position with the primary chambers; sutures distinct, flush on the spiral side, depressed on the umbilical side; periphery rounded; wall finely perforate, surface smooth; aperture an interiomarginal slit at the base of the final chamber, on the umbilical side, with a secondary opening on the apertural face.

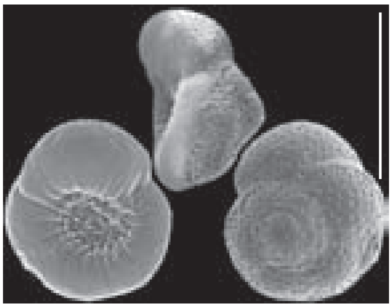
Coastal bay, 10 m.
Systematics p. 297.

Glabratella

Glabratella margaritacea

Test small, circular in outline, planoconvex with a broadly rounded periphery; spiral side convex, evolute showing 2-3 whorls with about 6 chambers in the last whorl; umbilical side with a deep umbilicus; sutures flush on both sides, oblique on spiral side, indistinct on umbilical side, except for the last chamber; wall coarsely perforated on spiral side, finely perforated on the umbilical side; papillae arranged radially around the umbilical depression; aperture a minute slit at the base of the final chamber.

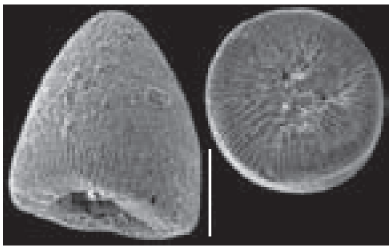
Coastal bays, 10-20 m.
Systematics p. 311.



Glabratellina tabernacularis

Test trochospiral, high conical, circular in end view, with somewhat convex sides and more or less concave base, often deeply sunken at the umbilicus; apex and peripheral margin broadly rounded; chambers oblique, arranged in about three whorls, 4-5 chambers in the last whorl; sutures obscured by the ornamentation; wall finely perforated, umbilical face ornamented with fine radiating rows of granules that continue onto the spiral face, up to the apex; several grooves radiating from the apex; aperture a low interiomarginal slit, often obscured by umbilical pustules or by the destruction of the umbilical region.

Isle of Pines, 5 m.
Systematics p. 312.



Gyroidina

Gyroidina lamarckiana

Test biconvex, periphery rounded, spiral side slightly convex, umbilical side convex with a large umbilicus; 6-10 chambers in the last-formed coil, increasing very gradually and evenly in size as added; sutures curved and strongly limbate on both sides; wall polished, but distinctly perforate; aperture a low interiomarginal slit, extending nearly to the periphery and about halfway to the umbilicus.

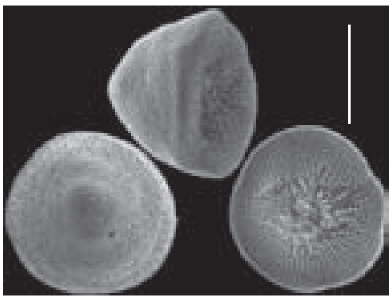
Mangrove swamp under shrimp-pond influence.
Systematics p. 322.

Glabratellina

Glabratellina kermadecensis

Test small, trochospiral, concavoconvex, circular in end view; spiral side high conical with 3-4 whorls and 4-5 chambers in the last whorl; umbilical side slightly concave with a depressed umbilicus; peripheral margin acutely rounded; wall coarsely perforated on the spiral side, ornamented on the spiral side with honeycomb texture more or less filled with calcite; ornament on the umbilical side, rows of granules separated by fine striae, some of them creeping onto the spiral face; aperture in the umbilical depression.

Coastal bays, 10 m.
Systematics p. 312.



Glabratellina sp. 1

Test trochospiral, about two whorls with usually five chambers in the final whorl; chambers globular, periphery rounded; sutures depressed, curved on the spiral side, radial on the umbilical side; surface of the spiral side heavily ornamented with a deeply perforated honeycomb texture; umbilical side with radial rows of granules and an umbilical extension; aperture an umbilical slit.

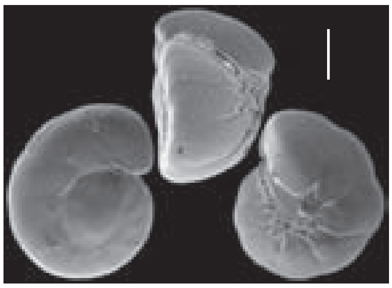
Southwestern lagoon, 30 m.
Systematics p. 312.

Hansenisca

Hansenisca soldanii

Test trochospiral; spiral side evolute and flattened, umbilical side involute and highly convex with subangular umbilical shoulder bordering the open umbilicus; sutures radial, straight to slightly curved, flush, becoming depressed toward the umbilicus; periphery broadly truncate; wall finely perforate, surface smooth; aperture a short equatorial and interiomarginal slit, bordered by a narrow lip, an umbilical flap extending into the umbilicus from each chamber partially covers a small secondary aperture.

South of the Grande Terre, 40 m.
Systematics p. 322.

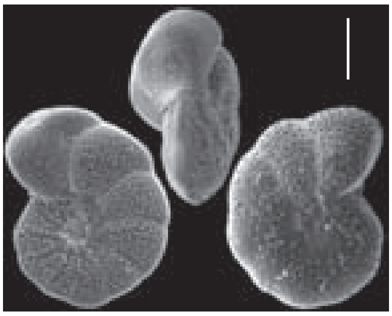


Hanzawaia

Hanzawaia grossepunctata

Test low trochospiral, planoconvex, periphery subangular; whorls enlarging rapidly, chambers numerous; sutures thickened, depressed, and curved back at the periphery; umbilical side involute, convex with clear central boss; spiral side flattened, partially evolute with apertural flap from each chamber extending centrally over earlier whorls; wall coarsely perforate; aperture interiomarginal and equatorial, against the periphery of the previous whorl and extending slightly onto the involute side but continuing beneath the flaps on the flattened side.

Bay of Prony, 20-30 m.
Systematics p. 322.



Helenina

Helenina anderseni

Test low trochospiral, both sides flattened, periphery rounded, peripheral margin slightly lobulate; test composed of two whorls visible on the spiral side; chambers enlarging gradually, 6-7 in the final whorl; sutures curved, oblique, depressed, on both sides; large overlapping umbilical flaps of successive chambers closing the umbilicus; wall distinctly perforate, surface smooth; aperture an extra-umbilical interiomarginal slit bordered by a lip, supplementary sutural apertural slits present on both sides.

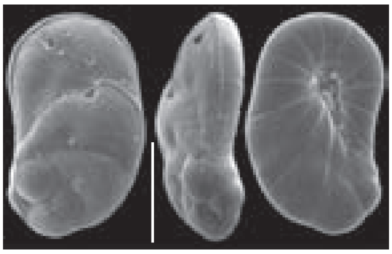
Coastal bays, estuaries, low salinity.
Systematics p. 308.

Heronallenia

Heronallenia laevis

Test low trochospiral, elongate, auriculate in contour, compressed; periphery rounded; spiral side weakly convex with one whorl of five chambers, the last chamber almost uniserial in position; chambers increasing rapidly in size; suture slightly depressed, limbate and curved on the spiral side, flush and indistinct on the umbilical side; wall finely perforate, smooth; umbilical side depressed with long radiate striae; aperture an umbilical arch, at the base of the last chamber.

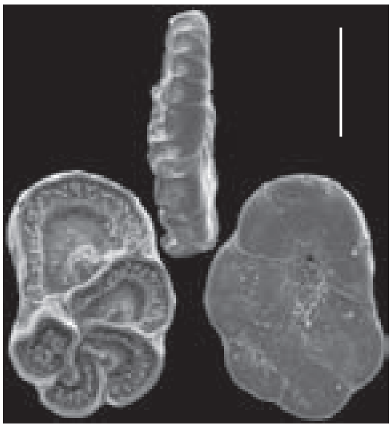
Coastal bay, 10 m.
Systematics p. 312.



Heronallenia lingulata

Test low trochospiral, compressed, flattened, with truncate periphery. 1-2 rapidly widening whorls; sutures costate on the spiral side and having interlocking angles on the umbilical side; wall finely perforate; umbilical side flat and smooth with several deep radial grooves around the simple aperture, at the base of the last chamber.

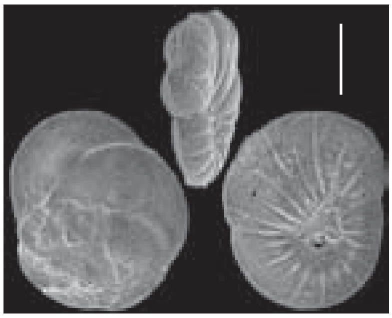
Outer reef, 100 m.
Systematics p. 312.



Heronallenia polita

Test auriculate in outline, low trochospiral, planoconvex, periphery somewhat carinate; spiral side gently convex, umbilical side slightly concave; 1-2 coils of chambers, crescentic on the spiral side; sutures curved, thickened and slightly raised on the spiral side, radial and depressed on the umbilical side; surface finely perforate, rough on the spiral side, smooth but radially grooved on the umbilical side; aperture an umbilical arch.

Southwestern lagoon, 40 m.
Systematics p. 312.

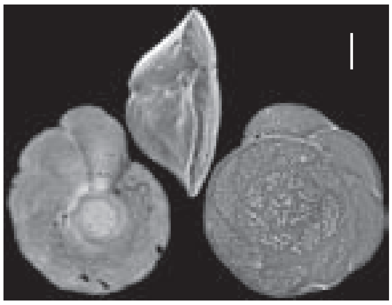


Heterolepa

Heterolepa inagawaensis

Test trochospiral; spiral side evolute, slightly convex, umbilical side involute, highly convex with wide protruding umbilical boss that gives the test a trapezoidal outline in lateral view; peripheral edge carinate, somewhat lobulate for the last chambers; about 3 whorls, the last one with 7 chambers; sutures limbate and slightly raised on the spiral side, obscured on the umbilical side, except for the last few chambers; wall coarsely perforated on the spiral side, finely perforated on the umbilical side; aperture crescentic, against the periphery of the preceding whorl, with a distinct lip, slightly extending onto the spiral side; aperture of the penultimate chamber often visible on the spiral side.

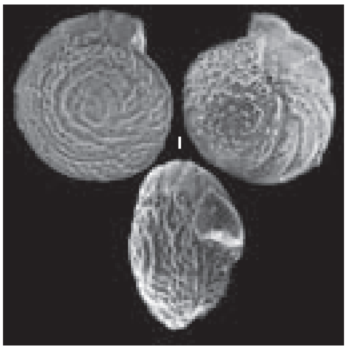
Northern shelf, 600 m.
Systematics p. 312.



Heterolepa margaritifera

Test trochospiral; spiral side evolute, slightly convex or nearly flat, umbilical side involute, convex; peripheral edge sharp, subcarinate, more or less lobulate; about 3 whorls, the last one with 11-15 chambers; sutures on both sides marked by rows of beads of clear shell-substance, largest near the centre of the test; wall conspicuously perforated; aperture a low interiomarginal slit on the umbilical side, extending from about midway between the umbilicus and periphery across the periphery to continue a short distance onto the spiral side, bordered above with a low lip.

Southwestern lagoon, 20 m.
Systematics p. 321.



Heterolepa praecincta

Test trochospiral; spiral side evolute, slightly convex, umbilical side involute, highly convex; peripheral edge carinate, somewhat lobulate for the last chambers; about 3 whorls, the last one with 8-10 chambers; sutures limbate externally, especially those radiating from the umbilicus, which take the form of stout raised bands of clear shell-substance; walls coarsely perforated; aperture a low interiomarginal slit on the umbilical side, extending from about midway between umbilicus and periphery across the periphery to continue a short distance onto the spiral side, bordered above with a low lip; lips of earlier chambers remaining along the spiral suture.

Southwestern lagoon and southern shelf, > 30 m.
Systematics p. 321.

Heterolepa subhaidingeri

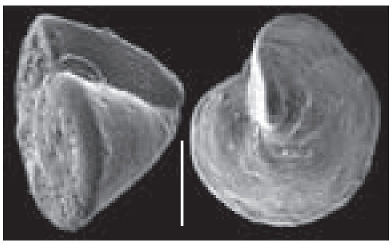
Test trochospiral, subglobular, unequally biconvex, circular in outline with a subacute periphery; peripheral margin slightly lobulate; spiral side evolute with 8-10 chambers in the last whorl; umbilical side involute; early sutures flush and indistinct, becoming depressed and distinct in the last chambers; wall smooth, coarsely perforated on the spiral side, with only sparse pores along the margins of the last chambers on the umbilical side; aperture a low interiomarginal slit at the base of the last-formed chamber, extending for a short distance onto the spiral side, bordered above with a low lip; lips of earlier chambers remaining along the spiral suture.

Southwestern lagoon and southern shelf, > 30 m.
Systematics p. 321.

Heterolepa sp. 1

Test trochospiral; spiral side evolute, flat; umbilical side involute, highly convex, with lateral margins almost straight; peripheral edge sharply angled, subcarinate, not lobulate; about 6 chambers in the last whorl; sutures flush, except between the last chambers; walls conspicuously perforated on the spiral side, only rows of large pores along the margins of the last two chambers on the umbilical side; aperture a low interiomarginal slit with a distinct lip on the umbilical side, extending for a short distance onto the spiral side.

Southwestern lagoon, 30 m.
Systematics p. 321.



Hoeglundina

Hoeglundina elegans

Test trochospiral, close coiled, unequally biconvex; chambers enlarging gradually; 8-9 in the final whorl; sutures curved backward at the periphery on the spiral side, straight and oblique on the umbilical side; periphery sub-acute; wall finely perforate, surface smooth; aperture a long slit-like peripheral opening parallel to the margin and opening on the umbilical side, those of earlier chambers commonly closed by shell material.

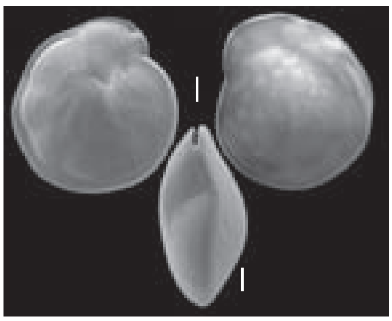
Two different forms are found that can be reported to *Hoeglundina elegans*.

Form 1: a long peripheral aperture extending upon the apertural face, and a small opening at the base of the apertural face; wall very finely perforated with coarser perforations around the margin and on the umbo.

Northern shelf, 600 m.
Systematics p. 297.

Form 2: only a short peripheral aperture, not extending on the apertural face; regularly distributed pore fields on the spiral side. These two forms may be considered as potentially different species.

Northern shelf, 600 m.
Systematics p. 297.

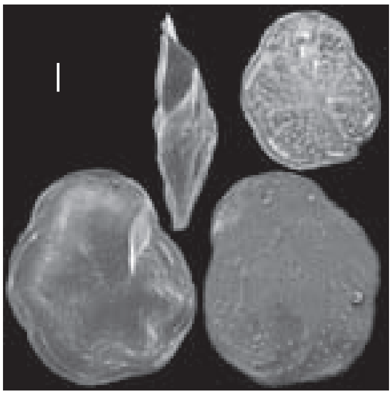


Hoeglundina neocarinata n. sp.

Diagnosis. A species of *Hoeglundina* with a flattened and strongly keeled test, ornamented with tubercles.

Description.Test trochospiral, unequally biconvex, subcircular in outline recognized easily by its clear wall showing a cloudy mottling under a light microscope; spiral side evolute, slightly convex; umbilical side involute, more strongly convex; peripheral margin strongly keeled; on the spiral side, sutures flush, indistinct, obscured by irregularly distributed, low tubercles; on the umbilical side, 7-9 somewhat inflated chambers with depressed and nearly radiate sutures; wall finely perforated on both sides; apertural face truncate, with an acute, nearly keeled border; aperture one or two small openings at the base of the apertural chamber and a long slit-like peripheral opening parallel to the margin and provided with a prominent inner lip, still visible on the last 3 or 4 chambers.

Northern shelf, 600 m.
Systematics p. 297.



Derivation of name. The name *neocarinata* refers to the acute carinate margin of this species, *neo* has been added to differentiate the present species from the Cretaceous species *Hoeglundina carinata* (N. Bykova).

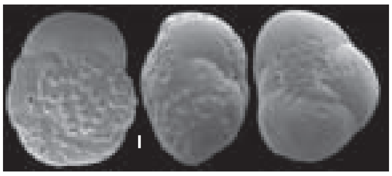
Material. Holotype - MNHN F62318, Paratypes - MNHN F62319, MNHN F62320, MNHN F62321, MNHN F62322, MNHN F62323; from the northern shelf of New Caledonia, at 600 m water depth.

Hofkerina

Hofkerina semiornata

Test large, trochospirally coiled, biconvex, umbilical side inflated; chambers few and inflated; periphery broadly rounded, non carinated; spiral side with pillars in the wall, appearing as strong, irregular papillae on the surface; final whorl composed of 3-5 chambers that are separated by depressed sutures on the umbilical side but are obscured by the papillose surface ornamentation on the spiral side; broad depressed umbilicus that is covered by a series of plates arising from the umbilical margin of each chamber; wall finely perforate, surface smooth; aperture a small slit-like interiomarginal opening on the umbilical side, accompanied by sutural pores and areal openings that pierce the umbilical plate to open into the umbilicus; primary aperture may disappear in old specimens.

Northern shelf, 600 m.
Systematics p. 308.



Lamarckina

Lamarckina scabra

Test trochospiral, unequally biconvex, dorsal side very slightly convex; umbilical side more convex, peripheral margin acute, carinate; chambers seven or eight in the final whorl, rapidly increasing in size as added; on the umbilical side, final chamber strongly overlapping and comprising about one-half the umbilical side; sutures limbate on the spiral side, flush or slightly depressed on the umbilical side; wall rugose or granular on the spiral side, smooth below; aperture interiomarginal, umbilical, closed by a thin plate as the next chamber is added.

Southwestern lagoon, 40 m.
Systematics p. 297.

Lamarckina ventricosa

Test trochospiral, subrounded in outline, composed of less than two complete convolutions, the outer whorl consisting of six or seven chambers; the successive chambers increasing rapidly in length; umbilical faces ventricose, especially that of the final chamber that comprises about one-half the umbilical side; sutures depressed; spiral side hispid, umbilical side smooth; umbilicus deeply sunk; aperture interiomarginal, umbilical; valvular flaps, but little developed.

Southwestern lagoon, 40 m.
Systematics p. 297.

Lamarckina sp. 1

With its rounded periphery and smooth spiral face, this species resembles *H. haliotidea* (Heron-Allen & Earland, 1911), but is more elongated than this later species.

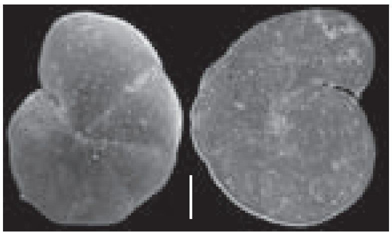
Coastal bay, 10 m.
Systematics p. 297.

Lobatula

Lobatula lobatula

Test trochospirally coiled with a strongly variable morphology; spiral side flat to irregular, sutures thickened, depressed to slightly elevated, oblique and curved backward at the periphery; umbilical side gently convex with depressed sutures radial around the slightly depressed umbilicus, periphery rounded to angular or carinate; peripheral outline lobulate; wall coarsely perforate, except keel, apertural lip and area bordering the aperture; aperture an interiomarginal, equatorial arch, bordered by a lip and extending onto the spiral side beneath a narrow folium.

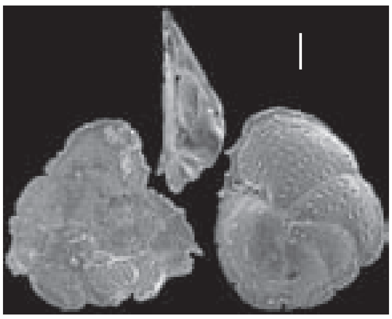
Living attached on algae, 30-100 m.
Systematics p. 315.



Lobatula mayori

Test trochospiral, planoconvex to slightly concavoconvex, evolute and flattened on spiral side, involute and convex on umbilical side; peripheral outline weakly lobulate in last chambers, peripheral margin acute with a carina; 6-8 chambers in the last coil; sutures depressed, radial to slightly curved on umbilical side; on spiral side curved, broadly limbate and in last chambers, slightly depressed. Test coarsely perforated on spiral side, only the last chambers perforated on umbilical side; aperture interiomarginal, extraumbilical-equatorial with thick rim, extending into a supplementary spiral aperture with rim, remaining open in the last few chambers.

Living attached on algae, 30-100 m.
Systematics p. 315.

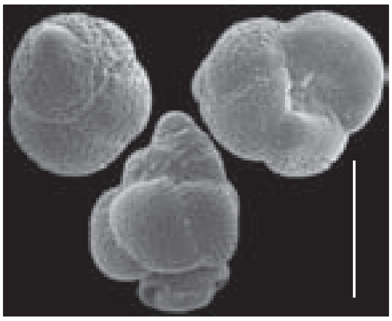


Metarotaliella

Metarotaliella tuvaluensis

Test small, generally attached to various species of miliolid foraminifera; test trochospiral, conical with about two whorls and 3-4 chambers in the last whorl; chambers inflated, globular; sutures depressed and curved on the evolute spiral side, radial on the involute umbilical side; wall thin, coarsely perforate on spiral side, except on proloculus, imperforate on umbilical side; aperture umbilical, semicircular, with a small projection overlapping the base of the last chamber.

Southwestern lagoon, 30 m.
Systematics p. 311.

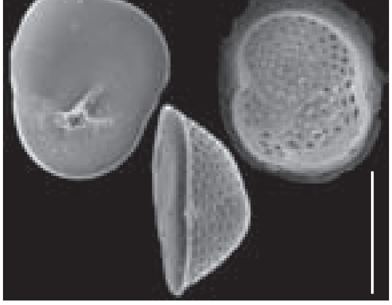


Milesina

Milesina grossepunctata

Test planoconvex, subcircular in contour; one side flat and smooth with sutures flush, other side convex with three chambers visible having a coarsely perforate surface, and slightly depressed limbate sutures; periphery carinate; aperture a narrow slit near the umbilicus.

Bay of Prony, 20 m.
Systematics p. 314.



Mississippina

Mississippina omuraensis

Test low trochospiral, biconvex, spiral side nearly evolute, slightly convex, umbilical side involute, flattened to gently convex; sutures curved on both sides, slightly limbate on spiral side, depressed on umbilical side; wall smooth with depressed opaque bands elongate parallel to the periphery on both sides; aperture a low arch extending from the umbilicus to the periphery under an umbilical flap.

Northern shelf, 400 m.
Systematics p. 308.

Mississippina pacifica

Test low trochospiral, nearly planispiral, slightly biconvex, both sides involute; sutures curved on both sides, flush on spiral side, depressed in last chambers of umbilical side; wall smooth with depressed opaque bands, elongate parallel to the periphery on both sides; aperture a low arch extending from the umbilicus to the spiral side under an umbilical flap; apertures of a few last-formed chambers remaining open.

Northern shelf, 400 m.
Systematics p. 308.

Monspeliensina

Monspeliensina vulpesi

Test biconvex with a low trochospiral coiling of about three whorls; spiral side flattened and evolute, umbilical side slightly inflated and involute; chambers enlarging gradually, early ones may be partially obscured by a central boss; 6-9 chambers in the final whorl; wall finely and densely perforate, surface smooth; primary aperture an interio-marginal slit, extending from the umbilicus to the periphery, sutural supplementary apertures present on both sides, straight and narrow slits on the spiral side progressively filled with shell material with growth, openings on the umbilical side follow the slightly arched sutures.

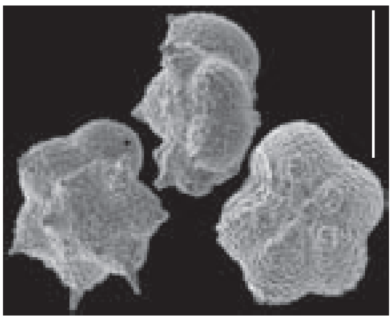
Southwestern lagoon, 25 m.
Systematics p. 318.

Murrayinella

Murrayinella globosa

Test trochospiral, spiral side evolute, slightly inflated; umbilical side involute, inflated; sutures almost radial on both sides; about two whorls with usually five chambers in the final whorl; chambers globular with a large spine arising from the midpoint of each chamber; umbilicus open; wall finely perforate, surface densely covered with small spines or pustules; aperture interiomarginal, umbilical to slightly extraumbilical, obscured by the ornament.

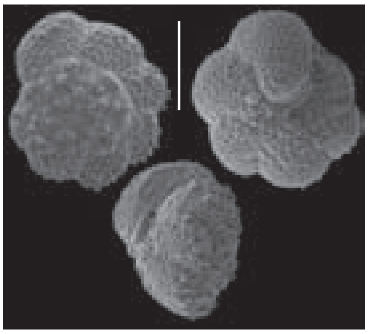
Coastal bays, estuaries.
Systematics p. 312.



Murrayinella murrayi

Test small, unequally biconvex, characterized by its inflated chambers, lobulate outline and dense hispid wall ornament; spiral side evolute, gently convex; umbilical side involute, highly convex; about 6 chambers in the last whorl; periphery broadly rounded, lobulate, sutures depressed, oblique on the spiral side, almost radial on the umbilical side; dense hispid wall ornament; aperture an extraumbilical umbilical slit-shaped opening, obscured by the ornament.

Bay of Prony, 10-30 m.
Systematics p. 312.



Mychostomina

Mychostomina lucida

Test low conical, composed of a proloculus followed by a tubular enrolled second chamber with about 6 convolutions visible on the spiral side, then crossing the periphery, coiling toward the umbilicus; 2-3 whorls visible on the umbilical side; peripheral edge sharp; spiral side convex; umbilicus deeply sunk; wall very minutely perforated; aperture indistinct.

Attached on algae, 20-100 m.
Systematics p. 283.

Mychostomina peripora

Test low conical, composed of a proloculus followed by a non septate tubular enrolled second chamber with two sets of conical whorls, first dorsally from the proloculus to the periphery, and then inward ventrally to an umbilical aperture; periphery rounded to slightly angular; evolute spiral side slightly convex but with depressed central area; umbilical side somewhat concave; coarse perforations restricted to a peripheral zone, more extended at the end of the last whorl on the spiral side; aperture at the end of the tubular chamber, in the umbilicus.

Attached on algae, 20-100 m.
Systematics p. 283.

Mychostomina revertens

Test low conical, composed of a proloculus followed by a tubular enrolled second chamber of several low trochospiral whorls that then crosses the periphery, coiling toward the umbilicus; periphery rounded; evolute spiral side convex, umbilical side concave; spiral side perforated over the entire chamber wall; umbilical side irregularly perforated; aperture at the end of the tubular chamber, in the umbilicus, with a small lip.

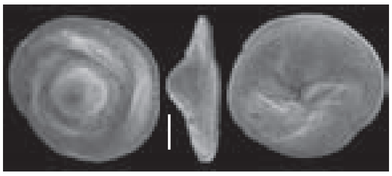
Coastal bays, 10-20 m.
Systematics p. 283.

Neoconorbina

Neoconorbina albida

Test low trochospiral, planoconvex, periphery acute, limbate, hyaline, smooth; spiral side conical; apex opaque; about 5 not inflated chambers in the last whorl; sutures strongly curved on both faces; spiral face finely perforate, slightly granular, umbilical face more distinctly and densely perforate; aperture umbilical, a slit under the short umbilical flap with a reentrant at each end.

Southwestern lagoon, 40 m.
Systematics p. 309.

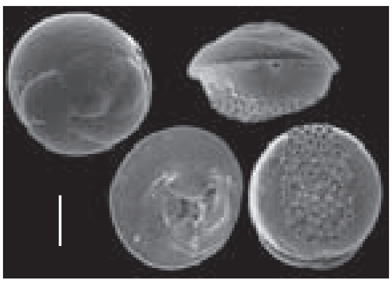


Neoconorbina clara

Benthic stage *Neoconorbina*-like, very low trochospiral, flattened, concavoconvex, umbilical side involute and concave, spiral side evolute and very slightly convex, peripheral margins acute; chambers about 4 per whorl, crescentic on spiral side, extending into a somewhat rectangular folium on the umbilical side; sutures slightly depressed, limbate, and strongly curved on both sides; wall distinctly perforate on both sides, except on the periphery, the sutures and the folium; aperture an interiomarginal slit, anterior to an umbilical folium, with a lip bordering the upper margin, separated from the periphery by a deep reentrant.

Planktonic stage flattened in lateral view; circumferential suture separating the trochospiral stage from the balloon chamber straight, about halfway from the base of the balloon chamber to the top of the test; balloon chamber less densely perforated than the trochospiral stage around its circumference; the base somewhat depressed and perforated by numerous large rimmed pores.

Southwestern lagoon, 40 m.
Systematics p. 309.

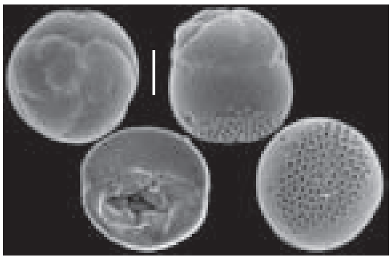


Neoconorbina concinna

Benthic stage *Neoconorbina*-like, low trochospiral, concavoconvex, domed in lateral view, consisting of about 3 whorls of about 4 chambers; umbilical side involute and slightly concave with a deep open umbilicus, spiral side evolute and convex, peripheral margins rounded; sutures depressed and strongly curved on both sides; wall distinctly and densely porous in the last 2 whorls, in earlier chambers the pores appear to have been sealed over by shell material; aperture an interiomarginal slit, anterior to an umbilical folium, with a lip bordering the upper margin, separated from the periphery by a deep reentrant.

Planktonic stage in lateral view a short cylinder with rounded top and bottom; circumferential suture separating the trochospiral stage from the hemispherical balloon chamber straight, about three-fifths the way from the base of the balloon chamber to the top of the test; balloon chamber less densely perforated than the trochospiral stage around its circumference; the base perforated by numerous large rimmed pores.

Southwestern lagoon, 40 m.
Systematics p. 310.



Neoconorbina tuberocapitata

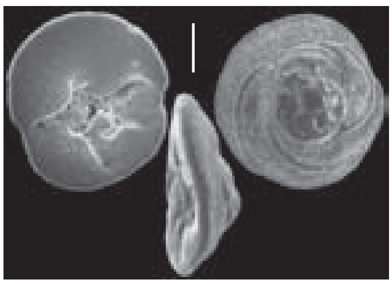
Test trochospiral, circular in outline, conical, the apex swollen into a ball-like prominence; all the whorls visible on the spiral side, only the chambers of the final whorl on the umbilical side; chambers increasing rapidly in breadth, becoming very low and crescentic; umbilical side flat or slightly concave, periphery acutely angled with a narrow flange; sutures curved, strongly oblique on both sides; umbilical extension from the chambers forms a triangular folium; wall finely and densely perforate on the spiral side, more coarsely perforate on the umbilical side, surface smooth; aperture at the umbilical margin of the chamber, beneath the folium.

Northern shelf, 600 m.
Systematics p. 310.

Neoconorbina sp. 1

Test low trochospiral, planoconvex, periphery narrowly rounded, limbate; spiral side evolute, conical, distinctly perforate; chambers shallow, crescentic, 4-6 in the last whorl, terminal chamber covering one third of the surface; sutures curved, limbate and slightly raised on spiral face, slightly depressed on umbilical face; wall slightly granular on the spiral side, smooth on the umbilical side; aperture a slit along the basal edge of the last-formed chamber, under an umbilical flap. This species resembles *Orbitina exquisita* of Loeblich & Tappan (1994) not *Pararosalina dimorphiformis exquisita* McCulloch 1977.

Northern shelf, 600 m.
Systematics p. 310.



Neoconorbina sp. 2

Test low trochospiral, planoconvex; spiral side evolute, dome shaped; umbilical side flat with a depressed umbilicus; periphery acute, carinate, non-lobulate; chambers shallow, crescentic, 4-5 in the last whorl, terminal chamber covering one third of the surface of the umbilical side; sutures curved, broadly limbate and slightly raised on spiral side, flush on umbilical side; wall smooth, imperforate on umbilical side, perforate except on the sutures on spiral side; aperture a low opening along the basal edge of the last-formed chamber, extending under an umbilical flap.

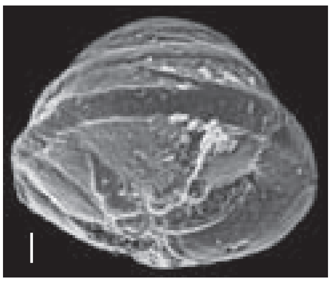
Northern shelf, 600 m.
Systematics p. 310.

Neoeponides

Neoeponides bradyi

Test a high trochospiral coil, with about 3 whorls, periphery circular, angular, chambers broad and low; spiral side evolute, conical with broadly rounded apex, umbilical face involute, convex; sutures, both of the superior and inferior side, conspicuously limbate, imperforate, otherwise wall densely perforate; aperture interiomarginal, extraumbilical, with narrow bordering lip.

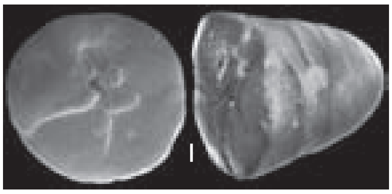
Southern shelf, > 45 m.
Systematics p. 309.



Neoeponides procerus

Test trochoid forming an elevated cone with rounded apex and truncate, flat umbilical face; composed of numerous convolutions, the last of which consists of 4-6 chambers; sutures oblique, indistinct on the spiral face, especially near the apex; sutures and periphery more or less limbate on the umbilical side; aperture interiomarginal, extraumbilical, with narrow bordering lip.

Northern shelf, 600 m.
Systematics p. 309.



Neoeponides schreibersii

Test subconical, spiral side evolute, elevated, apex broadly rounded; umbilical side evolute, slightly convex; peripheral margin bluntly rounded; chambers numerous, 7-9 in the last whorl; sutures slightly depressed and curved on the spiral side, more depressed on the umbilical side, with the umbilical ends limbate, forming a stellate mass; wall finely perforate, smooth; aperture a narrow opening extending from near the periphery to the umbilicus.

Northern shelf, 600 m.
Systematics p. 309.

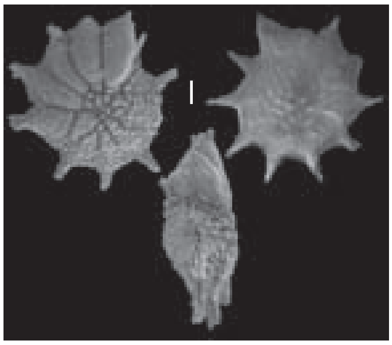
Neorotalia

Neorotalia calcar form A

Test low trochospiral, biconvex, spiral side evolute, umbilical side involute, 10-12 chambers in the last whorl; periphery stellate, angled, with chambers provided with a canaliculated spine at anterior angle; some spines tend to become thickened and even subdivided; chambers on spiral side slightly inflated, on umbilical side with a prominent axial shoulder; sutures slightly depressed, oblique, on the spiral side, deeply sunk and radial on the umbilical side; spiral side with a rugose and pustular ornamentation; on the umbilical side, ridges perpendicular to the median shoulder of each chamber produce a chevron-like ornamentation; umbilicus filled with multiple umbilical plugs; secondary laminations close the deep sutures, except the ultimate ones; wall distinctly perforate on both sides; apertural face covered by grooves separated by rows of small pustules; aperture often obscured by ornamentation, a low arch on the umbilical face with a pustulate lip, and supplementary apertures at the periphery, also with a pustulate lip.

This form seems to correspond to *Pararotalia calcar* (d'Orbigny) *pacifica* n.subsp. of Margerel (http://147.94.111.32/Collection/forams-index.php?)

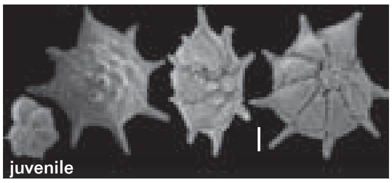
Living in algal thalli, 0-2 m.
Systematics p. 323.



Neorotalia calcar form B

Test low trochospiral, biconvex, spiral side evolute, umbilical side involute, 10-12 chambers in the last whorl; periphery stellate, angled, with chambers provided with a canaliculated spine at anterior angle; chambers on spiral side slightly inflated, on umbilical side with a prominent axial shoulder; sutures slightly depressed, radial, on the spiral side, deeply sunk and radial on the umbilical side; spiral side with a central pustular ornamentation; on the umbilical side, prominent bowls are produced at the umbilical end of each chamber, and pustules along the sutures; umbilicus filled with a few umbilical plugs; secondary laminations close the deep sutures, except the ultimate ones; wall distinctly perforate on both sides; apertural face covered by grooves separated by rows of small pustules; aperture often obscured by ornamentation, a low arch on the umbilical face with a pustulate lip, and supplementary apertures at the periphery, also with a pustulate lip.

Living in algal thalli, 0-2 m.
Systematics p. 323.

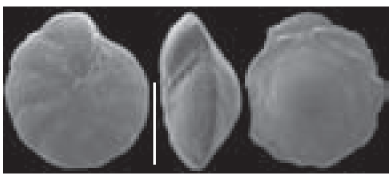


Nuttallides

Nuttallides bradyi

Test small, lenticular, trochospiral, almost equally biconvex, thick-walled; periphery weakly keeled, slightly lobulate; about three whorls on the evolute spiral side with 8-10 chambers in the final whorl, but usually the first whorls are obscured by secondary shell substance; sutures strongly oblique, limbate, and curving into the peripheral keel; on the involute umbilical side, sutures slightly depressed, nearly radial around the clear imperforate umbilical boss, but recurved near the periphery; wall perforate, septa and keel imperforate; aperture interiomarginal, extending from the umbilical boss nearly to the peripheral keel, with a small notch parallel to the plane of coiling.

Northern shelf, 600 m.
Systematics p. 318.

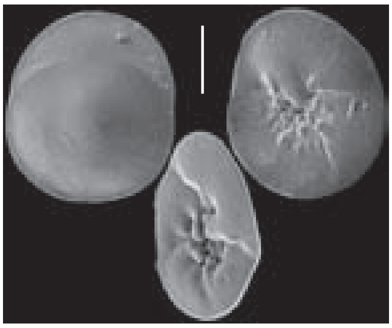


Orbitina

Orbitina carinata

Test very low trochospiral, flattened, planoconvex; peripheral margin acute and bordered by a thickened carina; spiral evolute side slightly convex with arcuate chambers and curved limbate sutures, flush to slightly raised; umbilical sutures slightly curved and very slightly depressed; a globular folium projects from each chamber in the umbilicus, folia of earlier chambers appear as a coarse pustular ornament in the umbilicus; wall smoothly finished, glassy; aperture small, opening into the umbilicus under the globular folium.

Coastal bays, 10 m.
Systematics p. 309.



Oridorsalis

Oridorsalis umbonatus

Test trochospiral with both faces convex, peripheral edge acute and slightly lobulate; test consisting of about three whorls of nearly equal width, with 5-7 chambers in the last one; sutures distinct, nearly radial and limbate on the spiral face, radial and slightly depressed on the umbilical face; wall polished; aperture an interiomarginal slit bordered by a thickened lip; secondary apertures situated at the sutures between the last three chambers on the spiral face, and on the umbilicus on the umbilical face.

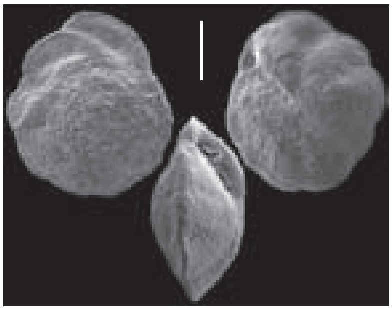
Northern shelf, 600 m.
Systematics p. 321.

Osangularia

Osangularia rugosa

Test planoconvex to slightly biconvex; spiral side slightly convex, umbilical side more convex, commonly with an umbilical plug; periphery sharp, somewhat lobulate; sutures slightly depressed and strongly curved backwards on both faces; 8-10 chambers in the last whorl; surface roughened; aperture areal, at an acute angle to the base of the chamber face which is deeply infolded before attaching to the preceding, the deep indentation appearing as an interiomarginal aperture.

Northern shelf, 600 m.
Systematics p. 321.

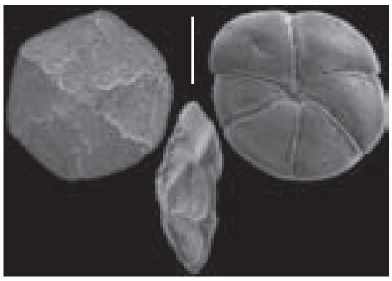


Pannellaina

Pannellaina earlandi

Test minute, compressed, subhexagonal in outline, with slightly inflated chambers and a narrow peripheral keel; all chambers visible on the spiral side, their center concave, and their margins curving up to form ridges which are continuous from the center of the test to the periphery; only the last whorl visible on the umbilical face, with sutures depressed and radial; wall finely perforated on the umbilical side, more coarsely so on the spiral side; aperture a hardly visible narrow slit at the anterior margin of the last-formed chamber on the umbilical side, extending from the periphery to the umbilicus.

Southwestern lagoon, 40 m.
Systematics p. 310.



Pannellaina sp. 1

Test minute, compressed, subhexagonal in outline, with slightly inflated chambers and an angular periphery; all chambers visible on the spiral side, their center concave; sutures limbate and raised over the surface, nearly continuous from the center of the test to the periphery; only the last whorl visible on the umbilical face, with sutures depressed and radial; wall finely perforated on the umbilical side, more coarsely so on the spiral side, except the imperforate sutures; aperture a hardly visible narrow slit at the anterior margin of the last-formed chamber on the umbilical side, extending from the periphery to the umbilicus. This species presented by Loeblich & Tappan (1994, pl. 290, figs 5-7) as *P. earlandi* differs from this latter species in having a less angular outline, and limbate instead of carinate radial sutures on the spiral side.

Outer reef, 100 m.
Systematics p. 310.

Paracibicides

Paracibicides edomicus

Test biconvex with the spiral side only slightly convex; spiral side evolute, umbilical side involute, peripheral outline lobulate; peripheral margin acute, with a carina; triangular cross section; 8-10 chambers in the last whorl; sutures distinct, curved on both sides; wall coarsely perforate on the spiral side, sparsely perforate, mostly near the sutures on the umbilical side: aperture interiomarginal equatorial with a rim, supplementary sutural apertures on the spiral side remaining open in the few last chambers.

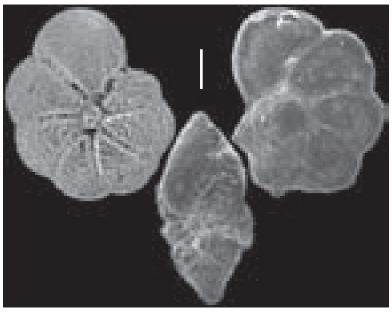
Northern shelf, 600 m.
Systematics p. 315.

Pararotalia

Pararotalia nipponica

Test low trochospiral, biconvex; spiral side evolute, slightly convex with limbate oblique sutures; periphery angular and lobulate, thin spines sometimes present at the chamber apexes; umbilical side convex with deeply sunk radial sutures; umbilicus deeply excavated with a central umbilical plug; wall smooth on the spiral side, pustulate on the umbilical side, distinctly perforated on both sides; aperture a narrow slit at the umbilical border of the last-formed chamber.

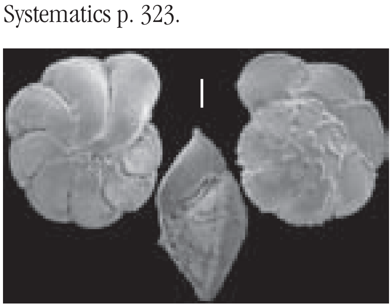
Southwestern lagoon, near coral reefs.
Systematics p. 323.



Pararotalia cf. *P. ozawai*

Test trochospiral, biconvex; periphery carinate, peripheral outline lobulate; chambers centrally elevated on the spiral side which is nearly flat, inflated and produced around the umbilicus, with a prominent umbilical shoulder on the umbilical side; umbilicus relatively small, filled with granules of shell material; sutures oblique, gently curved back at the periphery on both sides, raised on the spiral side, incised on the umbilical side and bordered with granules in early stage; wall distinctly perforate on the spiral side, finely perforate on the umbilical side; aperture interiomarginal, extending obliquely up the apertural face.

Southern shelf, 60 m.
Systematics p. 323.

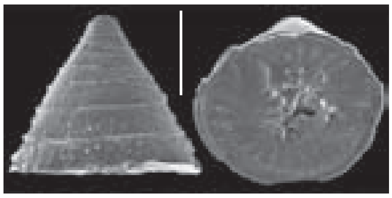


Patellina

Patellina altiformis

Test planoconvex, very highly conical, circular in end view; all chambers visible from the convex spiral side, only the final pair on the flattened umbilical side; periphery carinate; proloculus followed by a short undivided coiled tubular chamber, later stage with two broad and low crescentic chambers per whorl; wall hyaline with coarse, evenly distributed, perforations on the spiral side; these perforations located between septula that are visible by transparency under light microscope; sutures slightly raised on the spiral side; flat umbilical side ornamented with some irregular granules; aperture a low opening covered by a broad T-shaped apertural plate.

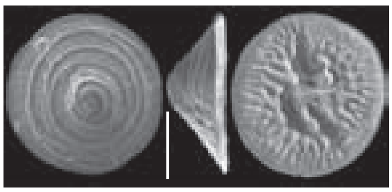
Northern shelf, 600 m.
Systematics p. 283.



Patellina corrugata

Test low conical, planoconvex, circular in end view; all chambers visible from the convex spiral side, only the final pair on the flattened umbilical side; periphery carinate; proloculus followed by an undivided coiled tubular chamber of one to three whorls, later stage with two broad and low crescentic chambers per whorl; chambers subdivided in the outer part by numerous short radial septula, appearing between deep pits on the umbilical side; wall hyaline with coarse, evenly distributed, perforations in the upper chamber wall, between the septula; apertural region on the umbilical side with s-shaped appearance; distal end of chambers turning sharply toward the umbilical area so that the aperture opens toward the umbilicus; aperture a low opening, later covered by a broad T-shaped apertural plate with recurved ends.

Coastal bays, 10-30 m.
Systematics p. 283.



Patellina elaborata

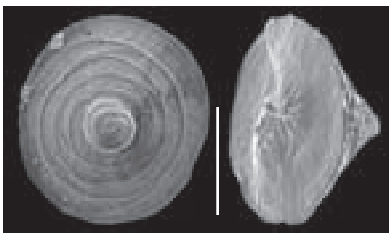
Test very hyaline, low conical, planoconvex, ovate in end view; all chambers visible from the convex spiral side, only the final pair on the flattened umbilical side; basal margin hyaline, fragile; proloculus followed by an undivided coiled tubular chamber, later stage with two broad and low crescentic chambers per whorl; partial marginal septa seen through the hyaline wall on the spiral side; umbilical side slightly concave; partial marginal septa produce a regular peripheral structure on the umbilical side where the distal end of chambers turns sharply toward the umbilical area so that the aperture opens toward the umbilicus; aperture a low opening.

Northern shelf, 600 m.
Systematics p. 284.

Patellina cf. *P. formosa*

Test high conical, planoconvex, circular in end view, with concave sides between the apex and the basal margin; all chambers visible from the convex spiral side, only the final pair on the flattened umbilical side; periphery carinate; proloculus followed by an undivided coiled tubular chamber, later stage with two broad and low crescentic chambers per whorl; sutures raised, giving a corrugated outline to the test; chambers subdivided in the outer part by numerous short radial septula that are expressed on both spiral-side and umbilical-side surface of the test as quite weak radial ridges on the chamber walls; the T-shaped apertural cover-plate that is characteristic of *Patellina* is obscured by supplementary laminae.

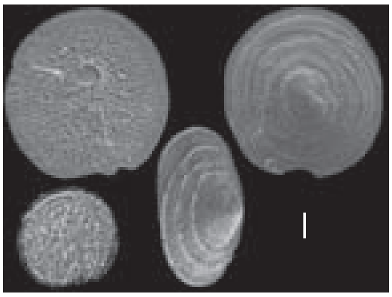
Northern shelf, 600 m.
Systematics p. 284.



Patellina sp. 1

Test low conical, planoconvex, circular in end view; all chambers visible from the convex spiral side, only the final pair on the flattened umbilical side; periphery carinate; proloculus followed by an undivided coiled tubular chamber of one to three whorls, later stage with two broad and low crescentic chambers per whorl; chambers subdivided in the outer part by numerous short radial septula, appearing by transparency; wall very hyaline with coarse, evenly distributed, perforations on the spiral side, and regularly arranged beads on the flat umbilical face; aperture a low opening, toward the umbilicus, later covered by a broad T-shaped apertural plate with recurved ends. This species differs from *P. corrugata* mainly by its lower conical shape and its flat umbilical area, regularly covered with beads.

Northern shelf, 600 m.
Systematics p. 284.

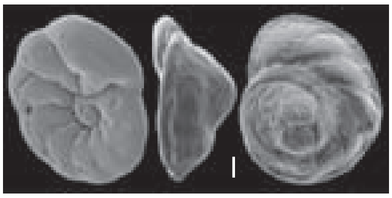


Paumotua

Paumotua terebra

Test low trochospiral, planoconvex; periphery angularly rounded and slightly lobulate; spiral side evolute, convex, umbilical side partially evolute, flattened to slightly concave and umbilicate; chambers enlarging slowly as added, about 9 in the final whorl, with an umbilical folium on the umbilical side; sutures flush to slightly depressed, strongly oblique on the spiral side; conspicuously depressed, curved and radial on the umbilical side; wall finely perforate, surface smooth; aperture a low arch midway between the umbilicus and periphery, under the folium; supplementary apertures on the umbilical side parallel to the periphery.

Northern shelf, 600 m.
Systematics p. 308.

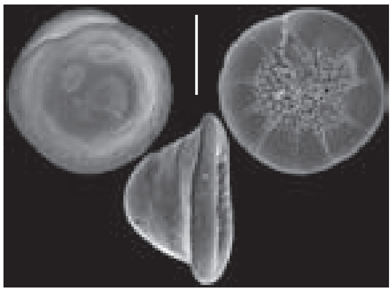


Pileolina

Pileolina haigi

Test low trochospiral planoconvex, dome-shaped; umbilical side involute, flattened, spiral side evolute, convex, periphery subcircular and non-lobate, with a carinate margin that folds upward towards the spiral side; chambers low, slightly arcuate in shape on spiral side, triangular on umbilical side, six per whorl; sutures flush on the spiral side, may be thickened and limbate, radial and sharply depressed on the umbilical side; wall on the spiral side typically with perforate depressions that are surrounded by smooth thickened areas, on the umbilical side with radial sutural grooves and coarse pustular ornament around the umbilicus; aperture an extraumbilical opening, may be more than one, bordered on the upper margin by a thick lip.

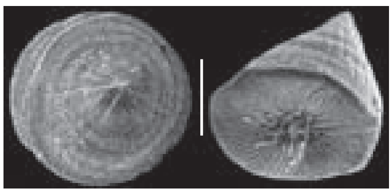
Southwestern lagoon, 40 m.
Systematics p. 312.



Pileolina minogasiformis

Test high trochospiral, planoconvex, high conical with an acute apex and striated convex side; gradually enlarging long crescentic chambers, 5-6 in the final whorl; periphery acute but without a keel; sutures oblique on the spiral side, radial but obscured by the ornamentation on the umbilical side; wall coarsely perforated on the spiral side, ornamented by radial striae starting from the apex on the spiral side, and by radial rows of granule on the umbilical side; umbilical area filled with pustules or nodes; aperture indistinct due to ornamentation, an extraumbilical slit-shaped opening.

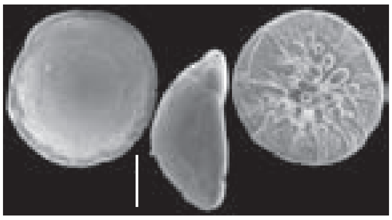
Southwestern lagoon, 40 m.
Systematics p. 312.



Pileolina patelliformis

Test trochospiral planoconvex; spiral side conical with an acutely rounded apex, evolute; inferior side flat, peripheral edge acute; 5-7 long and narrow chambers in the last whorl; flattened side ornamented with large tubercles near the centre and riblets radiating to the periphery, obscuring the radiate sutures between chambers; wall coarsely perforate on the conical side, finely perforate on the flattened side; aperture on the flattened side, hardly discernable.

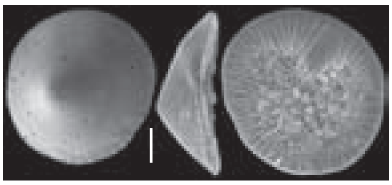
Northern shelf, 600 m.
Systematics p. 312.



Pileolina zealandica

Test trochospiral planoconvex; spiral side low conical with a rounded apex, evolute; inferior side slightly concave, peripheral edge acute; 5-7 long and narrow chambers in the last whorl; flattened side ornamented with irregularly settled tubercles in a wide central area, and deep radiating and branching striae to the periphery, obscuring the sutures between chambers; wall distinctly perforated on the conical side, finely so on the flattened side; aperture on the flattened side, hardly discernable.

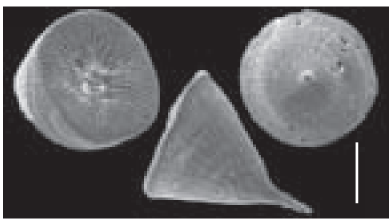
Northern shelf, 600 m.
Systematics p. 312.



Pileolina sp. 1

Species similar to *P. minogasiformis*, but with a long spine-like projection arising from the apex. It may be a variety of the former species.

Northern shelf, 600 m.
Systematics p. 312.



Pileolina sp. 2

The major characteristics of this species are the raised spiral suture and the strongly ornamented spiral side with strong conical tubercles. The umbilical face is ornamented by radiate rows of minute tubercles at the periphery and coarser, irregularly settled tubercles in the central area.

Northern shelf, 600 m.
Systematics p. 312.

Pileolina sp. 3

This species resembles *P. patelliformis*, but possesses, on the spiral face, rounded supplementary apertures surrounded by a thick rim.

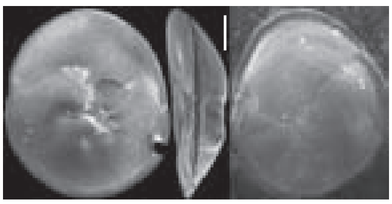
Northern shelf, 600 m.
Systematics p. 312.

Planodiscorbis

Planodiscorbis rarescens

Test adherent, trochospiral, planoconvex; spiral side flattened, somewhat depressed at the umbilicus; peripheral edge sharp, extended in a well-defined, imperforate keel; only the 4-6 chambers of the outermost whorl visible on the convex umbilical side; sutures very slightly depressed, strongly oblique on both sides; each chamber projecting a "valvular lobe" over the umbilicus; aperture a narrow slit with a slightly thickened lip running from upper fourth of umbilical side across periphery and onto spiral side.

Northern shelf, 600 m.
Systematics p. 310.

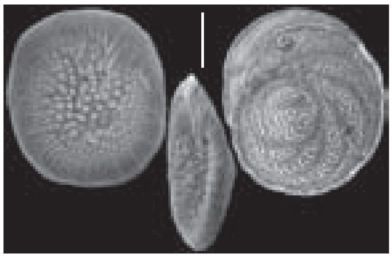


Planoglabratella

Planoglabratella opercularis

Test low trochospiral, planoconvex, nearly circular in outline; spiral side evolute, subconical; umbilical side involute, flat; margin acute; about two rapidly enlarging whorls with 7-9 crescentic chambers in the last whorl; sutures flush, strongly curved back at the periphery on the spiral side, indistinct on the umbilical side; wall finely perforate; surface granulated on spiral side, umbilical side covered with numerous fine radial striae and centrally with prominent tubercles; aperture a low interiomarginal slit near the peripheral margin of the final chamber on the umbilical side.

Southwestern lagoon, 40 m.
Systematics p. 312.

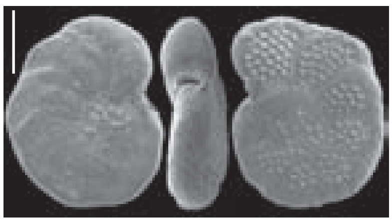


Planulina

Planulina ariminensis

Test discoidal, very low trochospiral of about two whorls, with both sides flattened; spiral side evolute, umbilical side partially evolute; 8-10 broad, low, and arched chambers in the final whorl; septa thick, sutures imperforate, thickened and elevated, strongly curved back at the peripheral margin; periphery with a thick imperforate marginal keel; wall coarsely perforated on the spiral side, finely perforate with scattered larger pores on the umbilical side; aperture an equatorial and interiomarginal arch with an imperforate bordering lip, extending somewhat onto the umbilical side beneath the imperforate umbilical folium.

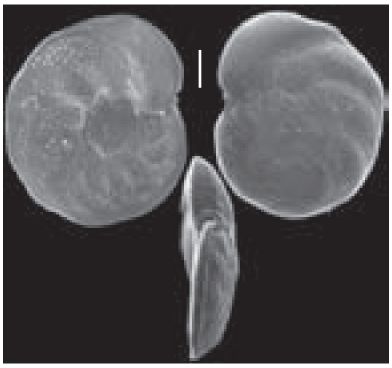
Northern shelf, 600 m.
Systematics p. 314.



Planulina floridana

Test very low trochospiral, discoidal, periphery acute, slightly keeled, somewhat lobulate; spiral side flat, partially involute, umbilical side slightly convex, partially evolute; chambers distinct, 8 to 10 in final whorl, slightly inflated, strongly curved, widest near umbilicus; sutures distinct, limbate in earlier chambers, later depressed; wall rather coarsely perforate on the flat spiral side and only finely perforate on the opposite side; aperture an equatorial interiomarginal arch with imperforate bordering rim.

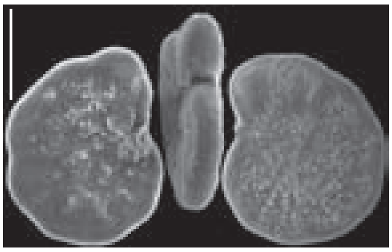
Northern shelf, 600 m.
Systematics p. 314.



Planulina sp. 1

Test discoidal, very low trochospiral of about two whorls, with both sides flattened; spiral side evolute, umbilical side partially evolute; 8-10 broad, low, and arched chambers in the final whorl; septa thick, sutures imperforate and thickened, strongly curved back at the peripheral margin; periphery with a thick imperforate marginal keel; wall finely perforate on the spiral side, where the surface is covered with small granules that obscure the sutures; wall finely perforate with scattered larger pores on the umbilical side; aperture an equatorial and interiomarginal arch with an imperforate bordering lip, extending somewhat onto the umbilical side beneath the imperforate umbilical folium.

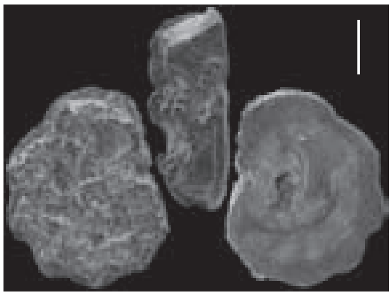
Northern shelf, 600 m.
Systematics p. 314.



Planulinoides sp. 1

Test ovate in outline, flat trochospiral, evolute on the spiral side, and partially involute on the umbilical side; 6-8 centrally excavated chambers in the final whorl; periphery truncate, bicarinate with umbilical carina stronger; surface with elevated sutures, peripheral keels and strong elevated ornament on the spiral side; wall finely perforate; primary aperture areal and equatorial, near the base of the apertural face, an oval oblique opening bordered by a distinct lip; supplementary apertures at the umbilical margin of the chambers beneath slight umbilical flaps.

Northern shelf, 600 m.
Systematics p. 314.



Planulina retia

Test very low trochospiral, discoidal, periphery acute, slightly keeled, somewhat lobulate; spiral side flat, partially involute, umbilical side slightly convex, partially evolute; chambers distinct, 8 to 10 in final whorl, inflated, strongly curved, widest near umbilicus; sutures distinct, thickened, limbate in earlier chambers, later depressed; wall coarsely perforated, except imperforate limbate sutures and keel; aperture an equatorial interiomarginal arch with narrow imperforate bordering lip, extending onto the umbilical side beneath an imperforate umbilical folium.

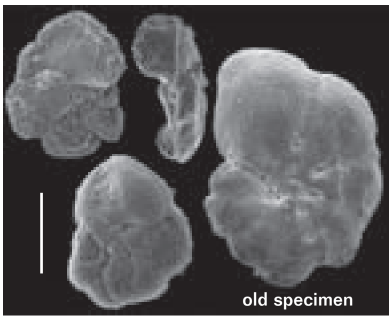
Northern shelf, 600 m.
Systematics p. 314.

Planulinoides

Planulinoides polymitarius

Test small, flat trochospiral, auriculate in outline, chambers increasing rapidly in size as added, 5-7 in the last whorl, somewhat depressed; peripheral margin elevated and nodose on the spiral side; sutures depressed, curved on the spiral side, radial on the umbilical side; wall smooth, except for the nodose peripheral margin on the spiral side; aperture a low interiomarginal slit, with supplementary sutural slits on the umbilical side, beneath large umbilical flaps.

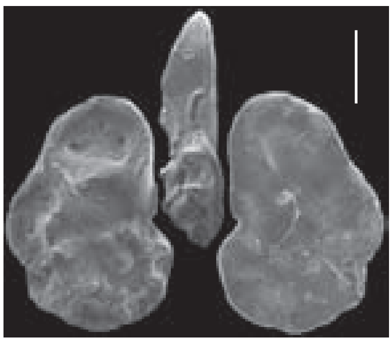
Southwestern lagoon, 40 m.
Systematics p. 314.



Planulinoides sp. 2

Test low trochospiral, ovate in outline; spiral side evolute, slightly convex, umbilical side involute, flat to concave; periphery carinate with a second carina on the spiral side at about half the distance between the periphery and the spiral suture; area between the two carinae strongly depressed; chambers arranged in about two rapidly enlarging whorls, 6-7 chambers in the last whorl the last one often elongate; wall finely perforate; elevated ornament along the sutures on the spiral side; aperture a short oblique areal opening bordered by a thickened lip, secondary opening at the inner chamber margin under umbilical flap.

Southwestern lagoon, 30 m.
Systematics p. 314.



Poroeponides

Poroeponides lateralis

Test trochospiral, biconvex with elevated evolute spiral side; periphery carinate; sutures limbate, curved and oblique on the spiral side, depressed, curved but nearly radial on the umbilical side, meeting in the umbilical region but with final few chambers failing to reach the center, resulting in a depressed umbilical region that may be partially closed by a small umbilical flap from each chamber; wall finely perforate, surface smooth; primary aperture a slit extending at the base of the ultimate chamber from the umbilicus to the peripheral keel and bordered above by a narrow lip, supplementary rounded areal openings scattered over the apertural face.

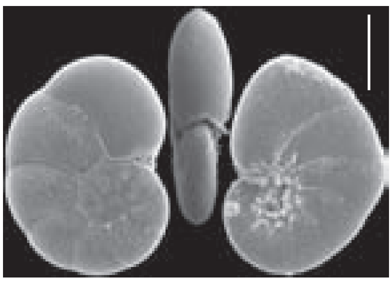
Southern shelf, > 40 m.
Systematics p. 308.

Pseudononion

Pseudononion granuloumbilicatum

Test compressed, broadly auriculate in outline, periphery rounded, slightly lobulate; two whorls visible on the spiral side; umbilical side involute, umbilical area depressed; chambers slightly inflated, low and broad, increasing gradually in size as added, 8 in the final whorl; sutures depressed; umbilical end of chambers slightly curved outwards, coarsely granulated, forming a serrate rim around the umbilicus; wall finely perforated, surface smooth; aperture an arched slit at the base of the last chamber, extending from the umbilicus to the spiral side.

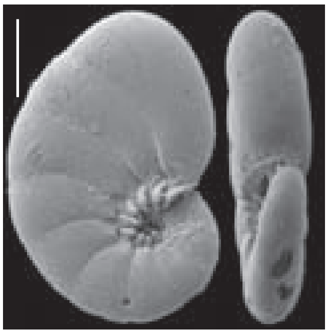
Southern shelf, 70 m.
Systematics p. 320.



Pseudononion sp. 1

Test ovate in outline, compressed, low trochospiral and involute, chambers increasing rapidly in size as added; periphery narrowly rounded; sutures sigmoid, depressed in the umbilical region; wall finely perforate; umbilicus deep, surrounded by a crown made up by the strong reverted umbilical ends of the chambers; aperture a broad low interiomarginal slit that extends to the umbilicus.

South of the Grande Terre, 50 m.
Systematics p. 320.

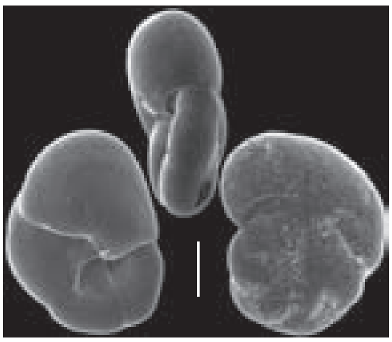


Quadrimorphina

Quadrimorphina laevigata

Test small, peripheral margin bluntly rounded, lobulate; chambers few, five or six in the last-formed whorl; sutures distinct, on the spiral side oblique, on the umbilical side nearly radial and more distinctly depressed; umbilical folium covering the umbilicus; wall smooth; aperture elliptical, umbilical-extraumbilical, midway between the periphery and the umbilicus.

Northern shelf, 600 m.
Systematics p. 320.

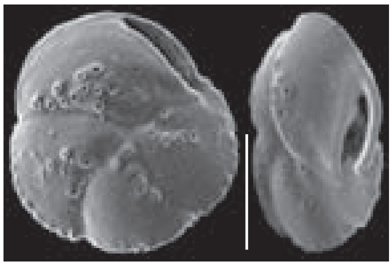


Rhaptohelenina

Rhaptohelenina decoratiformis

Test low trochospiral, biconvex, spiral side evolute, umbilical side involute; periphery acute, lobulate, tubular; 5-6 chambers in the last whorl, non-inflated on the spiral side, slightly inflated on the umbilical side, gradually increasing in size; sutures on the spiral side flush and curved, on the umbilical side depressed and curved; wall smooth, finely perforate, but with large pores located mostly along chamber margins; aperture a short slit almost parallel to and close to the periphery.

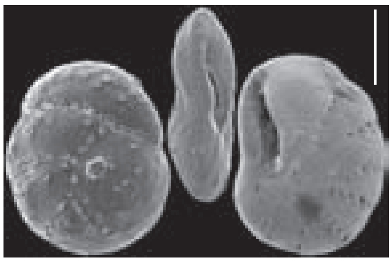
Bay of Prony, 40 m.
Systematics p. 314.



Rhaptohelenina papuanensis

Test low trochospiral, biconvex, spiral side evolute, umbilical side involute, sometimes with a narrow umbilicus; periphery rounded, weakly lobulate; 7-8 chambers in the last whorl, increasingly inflated as added, curved on the spiral side, triangular with radial sutures on umbilical side; sutures flush; wall thick, smooth, finely perforate, but with large pores along the periphery of the spiral side; aperture multiple with primary aperture a low arch on the umbilical side running from the umbilicus about two third of way to periphery, then curving obliquely; secondary apertures consist of large sutural openings on both sides of the test, secondarily reduced by calcification.

Southwestern lagoon, 40 m.
Systematics p. 314.



Robertinoides

Robertinoides australis

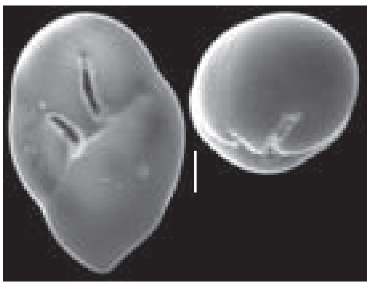
Test high trochospiral, elongated, irregularly fusiform, with inflated chambers and lobulate outline; chambers roughly as height as wide, up to 6 in the last whorl, sutures oblique and depressed; initial end bluntly pointed, oral end broadly rounded; wall thin, transparent and finely perforated; surface smooth; aperture comprises two loop-shaped openings, inclined to the axis of the test, in a shallow depression of the apertural face; one located at the proximal margin of the chamber, the other diverging from chamber margin and directed up the apertural face.

Bay of Prony, 20-40 m.
Systematics p. 298.

Robertinoides bradyi

Test high trochospiral, fusiform, about 1.5 times as long as broad; chambers very slightly inflated, arranged in 2-3 more or less regular, oblique whorls; sutures indistinct and outline not lobulate; initial end bluntly pointed, oral end broadly rounded; wall finely perforate, surface smooth; aperture two slit-like openings, one located at the proximal margin of the chamber, the other diverging from chamber margin and directed up the apertural face.

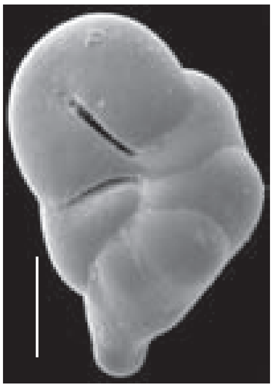
Northern shelf, 600 m.
Systematics p. 298.



Robertinoides oceanicus

Test broad tapering rapidly to a point; chambers numerous, arranged in three coils, very convex; sutures much depressed; wall finely perforate, surface smooth; aperture two slit-like openings, one located at the proximal margin of the chamber, the other diverging from chamber margin and directed up the apertural face.

Northern shelf, 600 m.
Systematics p. 298.



Rosalina

Rosalina bradyi

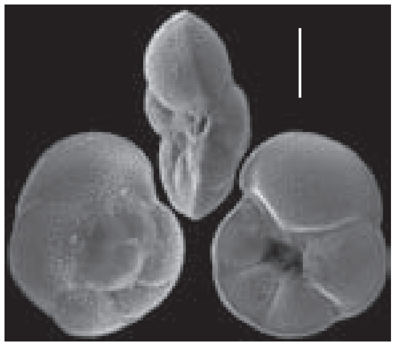
Test trochospiral, concavoconvex, periphery rounded; all chambers visible on the convex spiral side where the earlier chambers are clearly outlined with limbate sutures; sutures curved back at the periphery; umbilical side with the chambers more or less inflated; last-formed chamber with a more or less bifid indentation extending inward from umbilical region; spiral surface coarsely perforated, umbilical surface smooth and imperforate; aperture a low interiomarginal arch on the umbilical side, with narrow bordering lip.

Southwestern lagoon, 30 m.
Systematics p. 310.

Rosalina floridana

Test trochospiral, concavoconvex, periphery subacute, slightly, if at all, lobulate; spiral side rounded, much convex, with all chambers visible; umbilical side concave, with only the 5- 6 chambers of the last whorl visible; umbilicus open; chambers rapidly enlarging; sutures slightly limbate in the younger portion on the spiral side, later depressed, oblique and curved back at the periphery, radiate on the umbilical side; wall distinctly perforate, but the inner concave portion of the chambers often smooth on the umbilical side; aperture an elongate, arched opening at the base of the last-formed chamber, on the umbilicate area, often with a slight, thin lip.

Southwestern lagoon, 30 m.
Systematics p. 310.



Rosalina globularis

Test ovate in outline, spiral side highly convex and evolute, umbilical side plane to almost concave and involute; five chambers in the last whorl; peripheral margin broadly rounded; sutures on spiral side curved and depressed, on umbilical side somewhat indistinct; umbilicus open, chambers with a triangular folium and hook-shaped sutural notches; spiral side densely and coarsely perforate, umbilical side smooth, sparsely perforate; aperture interiomarginal with a low lip in the peripheral-most region, aperture continues to umbilicus, under the folium.

Southwestern lagoon, 40 m.
Systematics p. 310.

Rosalina orientalis

Test trochospiral, evolute and convex on the spiral side; involute and convex with a widely open umbilicus on the umbilical side; peripheral margin broadly rounded; chambers inflated, rapidly increasing in size as added, 4-5 chambers in the last coil; sutures limbate in the first coil of the spiral side, later depressed; last chamber with a large indentation midway along the base of the apertural face, on the umbilical side; wall coarsely perforated on both sides, more densely on the spiral side; aperture a low interiomarginal arched slit on the umbilical side, with a distinct rim.

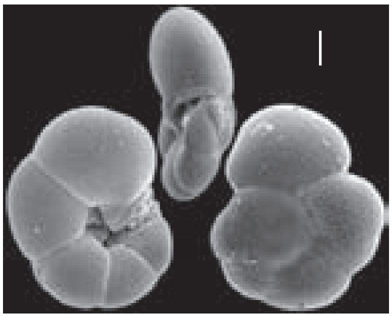
The species differs from *R. globularis* by the more convex umbilical side, more deeply excavated umbilicus and the perforations on the umbilical side.

Bay of Prony, 10-30 m.
Systematics p. 310.

Rosalina rugosa

Test low trochospiral, compressed, only slightly convex on the spiral side and slightly concave on the umbilical side; peripheral edge round and lobulate; chambers inflated, 5 in the last coil; sutures depressed; umbilical cavity partially covered by the folia protecting the successive apertures; wall coarsely perforated; aperture interiomarginal with a narrow lip, continuing under the folium

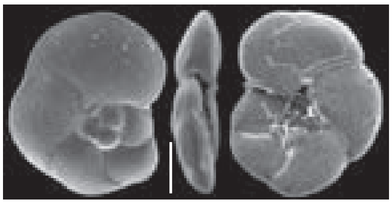
Southwestern lagoon, 40 m.
Systematics p. 310.



Rosalina sp. 1

Test in a low trochospiral coil, spiral side convex, umbilical side plane, periphery subacute, lobulate; all chambers on spiral side inflated; 5 chambers in the last whorl, rapidly enlarging; umbilicus open, chambers with only short folia; sutures depressed, curved back at the periphery on both sides; wall distinctly perforate, except the first chambers with a smooth wall; aperture an elongate, arched opening at the base of the last-formed chamber, on the umbilicate area, with a thin lip.

Southwestern lagoon, 40 m.
Systematics p. 310.



Rotorbinella

Rotorbinella lepida

Test, low trochospiral, biconvex; spiral side evolute, convex, central part of the spire, completely embedded in translucent shell material; umbilical side involute, flattened; umbilicus filled with a rounded umbilical plug; periphery slightly lobate, bluntly angled with a thickened imperforate carina; 5-7 chambers in final whorl, slightly inflated, gradually increasing in size as added, provided with a short backward directed folium; folia extending over the margin of the plug with re-entrants on each suture and fusing with the umbilical plug in earlier chambers; sutures on spiral side arcuate, oblique, flush; on umbilical side slightly arcuate, almost radial, depressed; wall smooth, perforate on umbilical side, only the marginal zone of the last chambers perforate on the spiral side; aperture an interiomarginal slit, at the base of the last-formed chamber, that extends from the periphery to the umbilicus, bordered on the upper margin by a thickened lip that continues into the folium, differing from the aperture of *Gavelinopsis praegeri*.

Southwestern lagoon, southern shelf, 10-100 m.
Systematics p. 309.

Rotorbis

Rotorbis auberii

Test low trochospiral, spiral side evolute and convex, umbilical side involute, almost flat; periphery angled and keeled; chambers crescentic, flattened on spiral side, slightly inflated on umbilical side, six in last whorl; sutures arched, flush, spiral suture somewhat raised; wall coarsely perforated on both sides, with pores mostly arranged in rows paralleling the sutures on the spiral side; aperture a low interiomarginal arch, partially hidden by a low lip running from the umbilicus nearly to the peripheral keel with a supplementary re-entrant.

Southwestern lagoon, < 40 m.
Systematics p. 309.

Rotorbis pacifica

Test free, trochospiral, evolute spiral side slightly convex; involute umbilical side almost flat, periphery angled and slightly keeled, 6-8 chambers in the last whorl; chambers crescentic, increasing progressively in size, slightly inflated at umbilical side; the few last chambers generally are less regularly arranged, and are more inflated on the spiral side; sutures curved on spiral side, radial on umbilical side, spiral suture somewhat raised above surface; wall distinctly and rather coarsely perforate on umbilical side, finely perforate on spiral side; surface of the spiral side covered with irregularly arranged pustules; aperture a slit-like interiomarginal arch, partially hidden by a lip running from the umbilicus to the peripheral keel, with a supplementary re-entrant aperture.

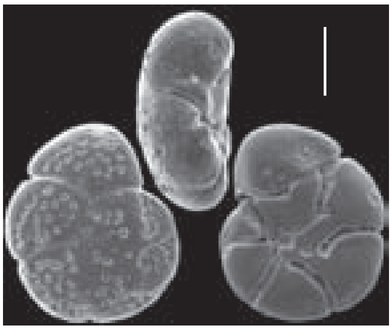
Northern shelf, 600 m.
Systematics p. 309.

Rotorboides

Rotorboides granulosus

Test free, low trochospiral, spiral side convex, umbilical side flattened, outline smooth and rounded, periphery broadly rounded; spiral side evolute, 6-9 chambers in final whorl; umbilical chamber wall drawn-out and covering the umbilical surface by fusing with plates of earlier chambers; spiral side coarsely perforated, more or less ornamented by an anastomosing, imperforate network; umbilical side imperforate; aperture a low interiomarginal slit, extending almost to periphery, bordered by a thickened lip continuous with the drawn-out umbilical chamber wall.

Estuaries.
Systematics p. 310.



Saintclairoides

Saintclairoides toreutus

Test auriculate in outline, a flat trochospiral coil of a single rapidly enlarging whorl of seven to eight chambers, spiral side flat with gently curved, thickened sutures, chambers slightly inflated and sutures depressed and nearly radial on the centrally excavated umbilical side, periphery narrowly carinate; wall calcareous, hyaline, finely perforate, surface somewhat pustulose on the spiral side, smooth on the umbilical side except in the pustulose umbilical area; aperture interiomarginal on the umbilical side.

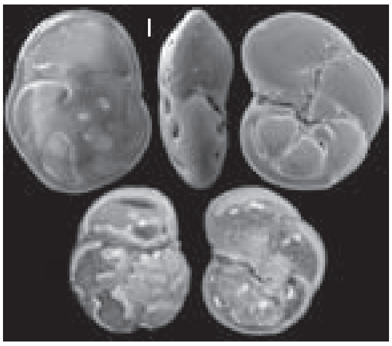
Southwestern lagoon, 40 m.
Systematics p. 297.

Stomatorbina

Stomatorbina concentrica

Test unequally biconvex, in a low trochospiral coil, chambers semilunate; sutures curved and oblique on the spiral side, depressed and nearly radial on the umbilical side; umbilicus wide and shallow, periphery rounded; wall calcareous, finely perforate, thickened on both sides by addition of transparent secondary layers; thickenings limited to the sutures on the spiral side, but leaving only elongated depressed patches of the original chamber wall on the umbilical side; aperture a narrow slit partly covered by a triangular umbilical flap, and strictly umbilical-extraumbilical, stopping at the periphery.

Northern shelf, 600 m.
Systematics p. 308.

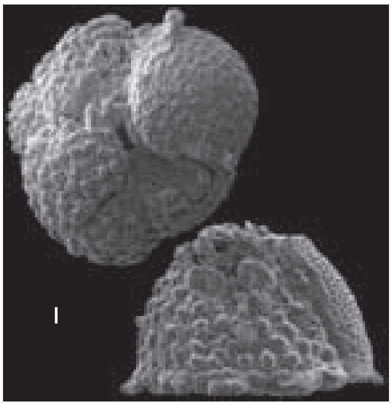


Rupertina

Rupertina pustulosa

Test attached by a prominent basal disc; chambers trochospiral in the early stage, later loosely coiled, growing spirally around a solid central column; chambers inflated, sutures depressed; wall thick, coarsely perforate; surface pustulate; aperture a low umbilical slit bordered by a distinct lip.

Northern shelf, 400 m.
Systematics p. 317.

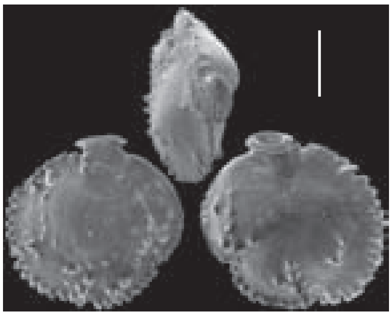


Siphonina

Siphonina tubulosa

Test low trochospiral, lenticular, circular in outline; a few broad, low and crescentic chambers per whorl; sutures somewhat indistinct, oblique, thickened on the spiral side and continuing into the wide fimbriate peripheral keel; sutures radial and depressed on the umbilical side; umbilicus closed: wall finely perforate, surface ornamented with conical pustules; aperture elliptical, just above the base of the final chamber and nearly equatorial in position, produced on a short neck and bordered with a phialine lip.

Southwestern lagoon, and southern shelf, 30-70 m.
Systematics p. 313.



Stomatorbina sp. 1

One individual resembling *S. concentrica*, but with a big test much more rounded than this later species was found.

Northern shelf, 600 m.
Systematics p. 308.

Strebloides

Strebloides advenus

Test low trochospiral of two to three whorls, periphery rounded, outline lobulate, umbilicus open; sutures oblique on the spiral side, limbate in the early portion, later depressed; on the flattened to concave umbilical side, only the 5-7 chambers of the final whorl visible, each with an umbilical flap that may be terminally expanded, sutures straight and radial but bend sharply at the margin of the umbilical chamber flap; wall, thin, translucent, finely perforate, surface smooth; aperture a narrow interiomarginal opening on the umbilical side.

Northern shelf, 600 m.
Systematics p. 309.

Svratkina

Svratkina australiensis

Test trochospiral, biconvex, spiral side evolute, six to seven crescentic chambers in the final whorl, sutures oblique and curved; umbilical side involute, sutures radial and slightly depressed around the closed umbilicus, periphery rounded; wall coarsely perforate, the large pores opening at the center of small tubercles that cover both sides; aperture an elongate oblique opening in a slight depression extending from near the umbilicus up to the face of the final chamber.

Southwestern lagoon, 40 m.
Systematics p. 320.

Ungulatella

Ungulatella pacifica

Test elongate, high-spired, with nearly parallel sides, conical proloculus followed by trochospirally enrolled chambers, each a full whorl in length with distal margin overlapping the proximal one; sutures oblique, flush to slightly depressed; wall calcareous, coarsely but sparsely perforate, outer wall surface with tiny pustules except for the clear, smooth, and polished apertural face; aperture a curved slit extending toward the center of the distal end, at the termination of the final chamber.

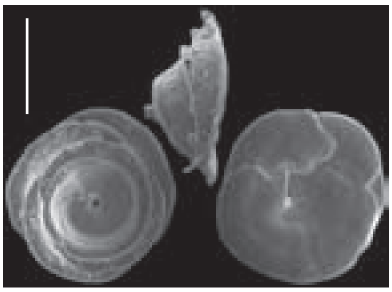
Southeast of the Grande Terre, 40 m.
Systematics p. 311.

Ungulatelloides

Ungulatelloides cf. *U. imperialis*

Test free, small, trochospiral; all chambers visible on the spiral side, only those of the last whorl visible on the umbilical side; proloculus provided with a funnel-shaped lamella, followed by an undivided spiral chamber one or two coils in length, and then by two or more chambers per whorl; last chambers provided with a curved flap; wall transparent, finely perforated; aperture a broad, arched slit with a weak lip on the umbilical side of the last chamber. This species differs from *U. imperatrix* by the presence of a few spines only, even if the characteristic shape that gives in side view the aspect of a hat with spines on the brim is similar.

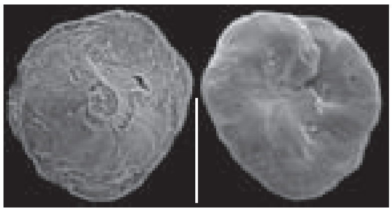
Outer reef, 100 m.
Systematics p. 311.



Ungulatelloides? sp. 1

Test small, dome-shaped, planoconvex, umbilical side flattened, spiral side convex, peripheral margin carinate, slightly flared; proloculus enveloped by several whorls of an undivided spiral chamber; later, coiling low trochospiral with a few chambers per whorl; supplementary chambers attached around the initial spiral chamber, and gradually increasing in size; wall finely perforate, ornamented by ribs on the supplementary chambers; aperture on the umbilical face, initially a terminal opening at the end of the tubular chamber, later an extraumbilical slit.

Southern shelf, 70 m.
Systematics p. 311.

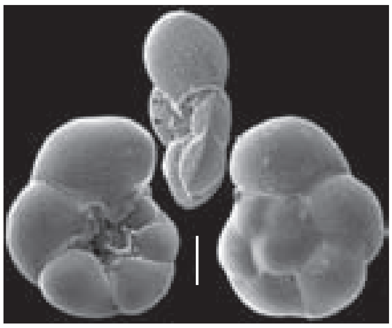


Valvulineria

Valvulineria candeiana

Test low-trochospiral, composed of 2-2.5 coils, the last-formed coil composed of about 6 chambers, rapidly increasing in size, inflated, the last-formed chamber often somewhat deformed; periphery lobulate, rounded; sutures curved backwards, depressed on both sides, except in the early portion of the test; deep umbilicus partly covered by small flaps; wall transparent, distinctly perforate on both sides, except in the early chambers on the spiral side; aperture a narrow, arched slit at the base of the last-formed chamber with a slight lip.

Southwestern lagoon, 30 m.
Systematics p. 307.



Valvulineria minuta

Test small, low trochispiral, subcircular in contour; periphery broadly rounded; spiral side evolute with about two whorls visible, umbilical side involute with a deep umbilicus; about 8 chambers in the last whorl, sutures flush to slightly depressed, gently curved; umbilical end of latter chambers extending over the umbilical depression into triangular flaps; wall smooth, finely perforated; aperture an arched slit at the base of the apertural face, extending beneath the umbilical flap.

Northern shelf, 600 m.
Systematics p. 307.

Description of hyaline species planispiral (or appearing so)

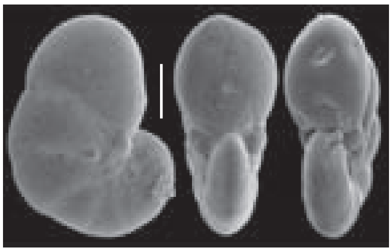
All scale bars = 0.1 mm (for SEM)

Alliatina

Alliatina variabilis

Test almost planispiral slightly asymmetrical, partially evolute, chambers enlarging rapidly and test somewhat flared, periphery rounded; sutures nearly radial, slightly curved, depressed; small accessory chambers developed over the sutures on both sides; wall finely perforate, surface smooth; aperture a small oblique oval areal opening in the chamber face, and an interiomarginal equatorial slit at the base of the chamber.

Southwestern lagoon, 40 m.
Systematics p. 297.



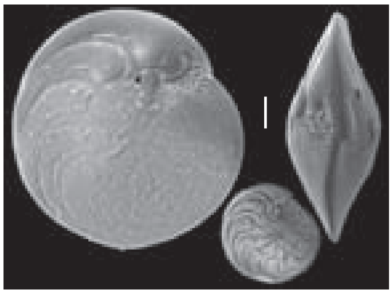
Amphistegina

Amphistegina has been placed in the planispiral section because the species of this genus are lenticular and generally appear symmetrical at first sight, even if they really are low trochospiral.

Amphistegina bicirculata

Test low trochospiral, lenticular, unequally biconvex, slightly contorted, involutedly coiled; peripheral margin acute, slightly keeled; on the spiral sides, chambers almost radiate over the previous whorl (alar prolongations), strongly bent backward over the periphery of the previous whorl, then falciform toward the periphery; sutures on this side slightly depressed; on the umbilical side, main chambers strongly bent backward, covered around the umbilicus by supplementary chamberlets that prolonge toward the periphery into a stellar structure, intercalated between the main chambers, and reaching half the length of the main chambers; sutures of the chamberlets angled and thickened at about one third the distance from the umbilicus to the periphery so as to form a circle parallel to the periphery; aperture a slit reaching the periphery and shielded by a broad lip, with a field of papillae restricted to a small area on the previous whorl.

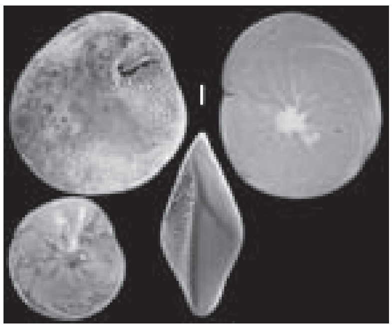
Southeast of the Grande Terre, 40 m.
Systematics p. 318.



Amphistegina lessonii

Test low trochospiral, lenticular, unequally biconvex, usually less convex on the umbilical side; peripheral margin acute; spiral side varying from involute to partially evolute, umbilical side involute; the center of the spiral side and the umbilical area transparent and imperforate; proloculus readily visible through this area on the spiral side; chambers numerous, about 12-16 in the last whorl, broad and low, strongly curved back at the periphery; on the umbilical side, supplementary chamberlets are arranged in a star-shaped pattern that extends about two thirds of the distance from the umbilicus to the periphery; test smooth, except the papillate area, on the apertural face and on the previous whorl in front of the aperture, where papillae are arranged in radial rows converging to the aperture; apertural face angled near the margin; aperture situated on the umbilical side, extending almost to the periphery, slitlike and interiomarginal, with a narrow overhanging lip ornamented by a single row of papillae.

Southwestern lagoon, back-reef areas and areas under open-sea influence.
Systematics p. 318.



Amphistegina lobifera

Test low trochospiral, lenticular to subglobular unequally biconvex, subcircular in outline; peripheral margin acutely rounded; on the spiral side, chambers bent backward over the periphery of the previous whorl, then falciform toward the periphery; sutures highly lobulate, the lobes of successive chambers often imbricate; on the umbilical side, lobulate sutures of the chambers and chamberlets obscure the structure of the test; apertural face and a few chambers of the previous whorl covered with flattened tubercles arranged in rows paralleling the periphery; aperture on the umbilical side, a slit extending to the periphery with a pustular lip, and supplementary openings between the tubercles of the apertural face.

Chesterfield, 0-30 m.
Systematics p. 319.

Amphistegina papillosa

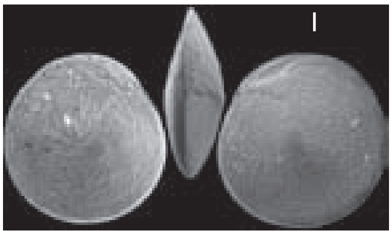
Test very low trochospiral, flat lenticular biconvex, subcircular in outline; peripheral margin acute but not keeled; easy to identify because of the hemispherical to ovate raised pustules on both faces; aperture small, rounded, opening slightly toward the umbilical side, but nearly peripheral in position, surrounded by a small subcircular field of pustules.

South of the Grande Terre, 10-80 m.
Systematics p. 319.

Amphistegina quoii

Test rather flattened, bi-convex, nearly equilateral with bluntly rounded to acute periphery; chambers rather numerous, about 16-23 in the last whorl; umbones of clear shell material relatively small but prominent, nearly equal in size on spiral and umbilical sides; sutures nearly straight but strongly angled near the periphery; between the sutures, especially on the dorsal side, short lines or points of clear shell material develop into papillose forms; test slightly papillose about the aperture; aperture small, on the umbilical side.

South of the Grande Terre, > 30 m.
Systematics p. 319.



Amphistegina radiata

Test large, very low trochospiral, almost planispiral, flattened lenticular, almost circular in outline; peripheral margin subangular; chambers numerous (around 30); sutures on the spiral side flush to slightly raised, radial over the previous whorl (alar prolongations) strongly deflected when reaching the periphery of the previous whorl, then falciform toward the periphery; on the umbilical side, sutures of both the main chambers and the supplementary stellar chamberlets radial over the previous whorl, then falciform toward the periphery, stellar chamberlets almost reaching the periphery; aperture a comparatively short slit near the periphery with a faint lip and a restricted field of papillae.

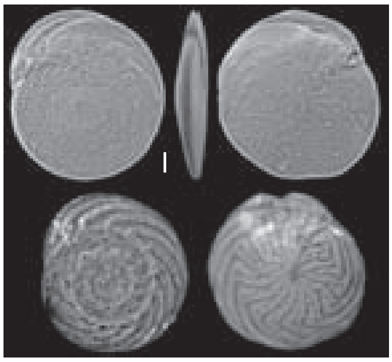
Southwestern lagoon and South of the Grande Terre, 10-80 m.
Systematics p. 319.

Amphistegina sp. 1

Test flattened, much compressed with acute periphery, plano-convex, dissymmetrical; chambers rather numerous, about 13-15 in the last whorl, increasing rather rapidly in size as added; test evolute on the dorsal side, ventral side with supplementary chambers; sutures with a pronounced angle, meeting in a small transparent, imperforate area on the umbilical side, but not on the spiral side; simple supplementary chambers are arranged in a star-shaped pattern on the umbilical side, extending about one half of the distance from the umbilicus to the periphery; proloculus readily visible on both sides; wall translucent, finely perforate, surface somewhat papillose; aperture small, on the umbilical side.

This species was first considered as a juvenile stage of *A. radiata* or *A. quoii*, but the strong compression of the test, the relatively rapid increasing in chamber size with growth and the strongly evolute spiral side indicate that it may be considered as another species. The presence of this species only at deep stations, and its absence at stations rich in *A. radiata* or *A. quoii* reinforce this opinion.

Northern shelf, 600 m.
Systematics p. 319.

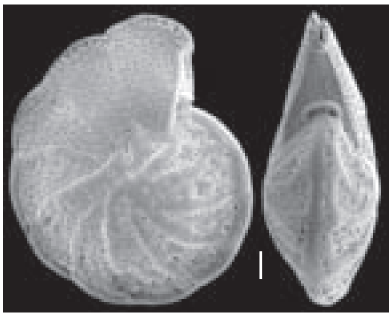


Anomalinella

Anomalinella rostrata

Test lenticular, slightly trochospiral in early stages, but planispiral in the adult, involute; 9-10 gradually enlarging chambers in the final whorl; sutures gently curved, limbate, periphery angular, carinate, with a less elevated second keel paralleling the periphery a slight distance to one side of the median plane; wall hyaline, coarsely perforate, but sutures, keels and apertural face imperforate or with a few pores; aperture a low arch at the base of the last chamber, with protruding bordering lip, supplementary aperture consisting of an elongate slit on the periphery between the two keels, those of earlier chambers secondarily closed.

South of the Grande Terre, areas of strong currents.
Systematics p. 320.



Astacolus

Astacolus crepidulus

Test elongate, flattened, chambers broad and low becoming gradually broader, first stage planispirally enrolled, later uncoiling with chambers added on a slightly curved axis; sutures strongly oblique, curved, slightly if at all depressed; peripheral margin subrounded; wall very finely perforate, surface smooth; aperture radiate, at the dorsal angle, with a longer slit towards the apertural face.

Northern shelf, 600 m.
Systematics p. 288.

Astacolus japonicus

Test broad, oblong, compressed; planispiral in early portion, later uncoiled; lateral faces only slightly convex, dorsal edge acute or subcarinate; chambers broad and arcuate, two or three of later ones uncoiled; apertural face elongate with angular edges; surface ornamented with beads, arranged upon the sutural lines and somewhat elongated parallel to the periphery; aperture radial at peripheral angle.

Northern shelf, 600 m.
Systematics p. 288.

Astacolus neomulticamerata

Test irregularly subovate in contour, compressed, periphery rounded, non-lobulate; initial end a partial planispiral coil with chambers almost completely evolute, increasing rapidly in breath, with tendency to become uniserial, some overlapping along the concave margin; sutures obliquely curved; wall finely perforate, surface smooth; last chamber prominent, centered, with a slightly produced radiate aperture.

Northern shelf, 600 m.
Systematics p. 288.

Astacolus cf. *A. tenuissima*

Test minute hyaline, compressed, consisting of 8-13 long narrow, wedge-shaped and tapering chambers, arranged in a curve from the proloculus, each chamber, in turn, forming the chord of the arc, and extending almost the whole length of the shell; peripheral edge rounded; sutures flush but distinct; aperture radiate. The specimens from New Caledonia fit well with this species, but seem to be less compressed.

Northern shelf, 600 m.
Systematics p. 288.

Astacolus sp. 1

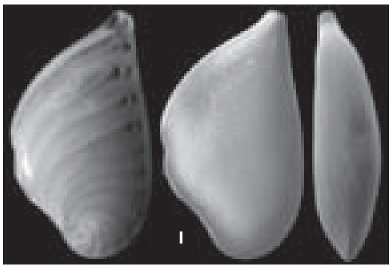
Test elongate in outline, laterally compressed, chambers numerous, broad and low, enrolled in the very early stage, later uncoiling, added on a slightly curved axis with strongly oblique, curved sutures; periphery rounded; surface smooth; aperture radiate, at the dorsal angle.

Northern shelf, 600 m.
Systematics p. 288.

Astacolus sp. 2

Test broad, ovate in outline, flattened, chambers numerous, broad and low, added on a slightly curved axis in the adult stage, but distinctly enrolled in the early stage; sutures strongly oblique, curved; wall finely perforate, surface smooth; aperture radiate, at the dorsal angle.

South of the Grande Terre, 50 m.
Systematics p. 288.



Astrononion

Astrononion novozealandicum

Test planispiral, involute, laterally compressed, bilaterally symmetrical, umbilicate; periphery rounded to somewhat angular; around 10 chambers enlarging gradually; sutures depressed, covered by an elongate sutural plate extending from the umbilicus to half the distance to the periphery, with a small pit at the end of each sutural plate; successive plates fuse in the umbilical region; wall thin, distinctly and densely perforate, surface smooth; aperture a low interiomarginal, equatorial slit, bordered with a lip and extending laterally to the umbilici.

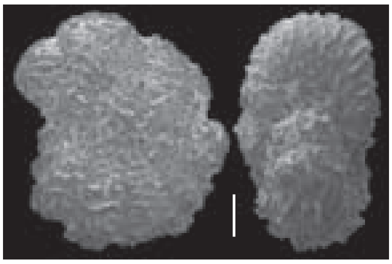
Southern shelf, 70 m.
Systematics p. 319.

Cristatavultatus

Cristatavultatus pacificus

Test slightly trochospiral; periphery broadly rounded; 7-9 inflated chambers in the last whorl; sutures depressed, radial; dense irregular ornament of narrow, irregular, transverse riblets anastomosing into a network of crisp ridges; aperture semicircular at the base of the last chamber.

Northern shelf, 200 m.
Systematics p. 325.

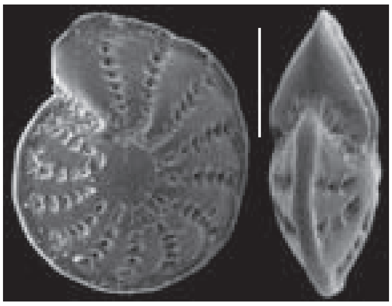


Elphidium

Elphidium advenum

Test involute, equally biconvex, lenticular; periphery subcircular, somewhat lobulate in the last-formed portion; sides convex; peripheral margin acutely rounded, often with a blunt keel; chambers numerous, somewhat inflated, especially in the last-formed portion, gently curved backward; sutures depressed, with sutural bridges only about onefourth the width of the chamber; umbilical region usually with a boss; wall smooth, translucent, very finely perforate, ornamented by numerous small pustules around the aperture, the sutures and the umbilical boss; aperture a series of rounded pores, at the base of the apertural face.

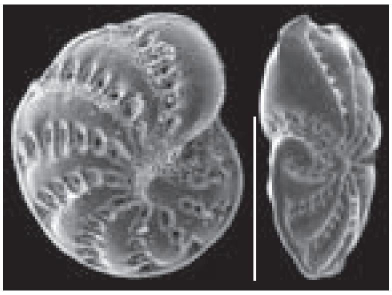
Southwestern lagoon, 30 m.
Systematics p. 323.



Elphidium botaniense

Test biconvex, broadly circular in outline, slightly lobulate in latter part; periphery acute, with a strong rounded keel; 10-13 chambers in the last whorl; sutures depressed and strongly curved backward; sutural bridges about the same length as the width of the visible chamber wall; umbilical area partly filled with a single, small, rounded umbilical boss and fine papillae; wall smooth and glassy; aperture a row of multiple openings along the base of the final chamber.

Coastal bay, 20 m.
Systematics p. 324.



Elphidium charlottense

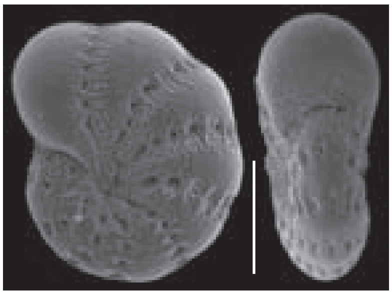
Test involute, biconvex, compressed, subcircular in outline, slightly lobulate in later stage; sides flattened to slightly concave; peripheral margin acutely rounded with a strong, rounded keel; 12-15 non-inflated to slightly inflated chambers in final whorl; sutures flush to slightly depressed, gently curved, with short sutural bridges; umbilical area occupied by a flattened boss not protruding beyond the outline of the test; wall finely perforate, ornamented with fine papillae along the sutures and around the umbilical boss; aperture a row of openings at the base of the last chamber.

Coastal bay, 20 m.
Systematics p. 324.

Elphidium clavatum

Test small to medium-sized, involute, subcircular in outline, but slightly lobulate in later stage; test laterally compressed with almost parallel sides; peripheral margin broadly rounded to subacute; 10-14 slightly inflated and gently curved chambers in the last whorl; sutures depressed with few moderately short sutural bridges; umbilical area usually with small central boss; wall finely perforated, papillae along the sutures and in the umbilical area; aperture a series of basal pores, somewhat obscured by small pustules.

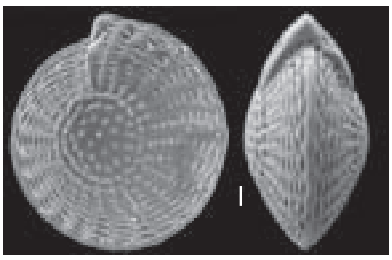
Coastal lagoons, coastal bays, shrimp ponds.
Systematics p. 324.



Elphidium craticulatum

Test large, circular in outline, strongly biconvex, with a very large, pitted umbilical boss; periphery acute with a narrow rounded keel; chambers numerous, about 30 in the last whorl; apertural face very low; sutures almost straight, radial; sutural bridges extending on the chamber wall, resulting in continuous ridges parallel to the periphery; aperture a row of multiple openings along the base of the final chamber.

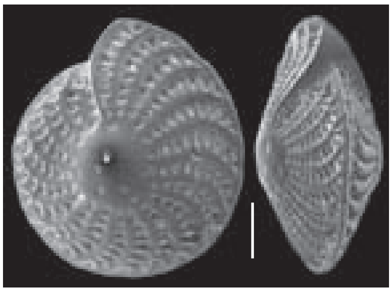
Southwestern lagoon, in bays and depressions, 1-30 m.
Systematics p. 324.



Elphidium crispum

Test large, biconvex, circular in outline, with a large umbilical boss irregularly pitted; periphery surrounded by a thin narrow carina; chambers numerous; sutures sharply curved backward, with numerous sutural bridges; base of each chamber merging with the umbilical boss; aperture a row of multiple openings along the base of the final chamber.

Southwestern lagoon, 0-40 m.
Systematics p. 324.



Elphidium excavatum

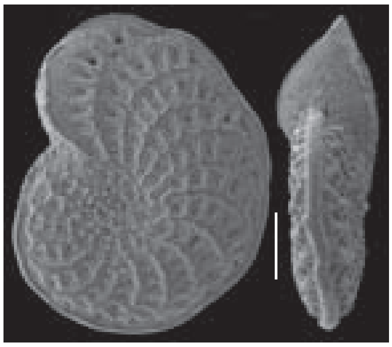
Test planispirally enrolled, laterally compressed with broadly to acutely rounded periphery; sides almost parallel; 7-10 chambers in the last whorl, somewhat inflated, leading to a lobulate periphery; sutures depressed, slightly curved with short and thin sutural bridges; umbilical region depressed with fine papillae and discrete extensions of the chambers (folia) that do not coalesce, giving the umbilical region a star-shaped appearance; wall finely perforated; aperture at the base of the last chamber, obscured by papillae.

Coastal lagoons, coastal bays, shrimp ponds.
Systematics p. 324.

Elphidium fichtelianum

Test involute, strongly compressed, flat, subcircular to subelliptical in outline; periphery only slightly lobulate in the last chambers; peripheral margin strongly keeled; each chamber bears a narrow radial keel that meets the peripheral keel; 15-20 narrow chambers in the last whorl, strongly curved backward towards the periphery and the umbilical area; sutures depressed, with long and narrow sutural bridges, and large fossettes between them; umbilical area slightly depressed, and ornamented with relatively large pustules; test covered with minute pustules and spines; aperture a row of multiple openings along the base of the final chamber, a few supplementary rounded apertures may occurr on the apertural face, surrounded by minute pustules.

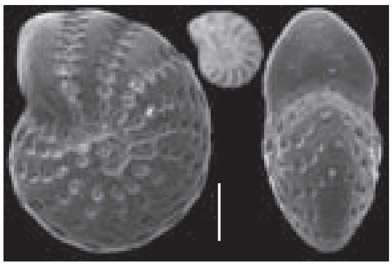
Southwestern lagoon, coastal bays, 5-30 m.
Systematics p. 324.



Elphidium fijiense

Test of small to medium size, outline smoothly circular, lobulate in the last portion; profile biconvex; periphery acutely rounded with a slightly thickened shell; 14-18 chambers in the last whorl; sutures very slightly curved backward towards periphery, with narrow septal bridges; umbilical area with a prominent, irregular glassy boss; fine papillae in the sutures, the depressions in the umbilical boss, and along the aperture; wall finely perforate; aperture a series of small openings at the base of the apertural face.

Estuaries, marshes.
Systematics p. 324.



Elphidium gunteri

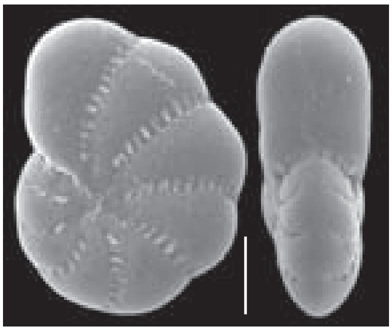
Test small, slightly compressed and with broadly rounded periphery; 8-10 chambers in the last whorl, not inflated; sutures depressed with few, irregularly shaped and broad sutural bridges; umbilical area depressed and covered by a number of irregular small bosses which often become very broad and develop irregular growths on the chambers; wall coarsely perforated; apertural face ornamented by many small papillae that tend to obscure the basal openings.

Coastal lagoons, estuaries, shrimp ponds.
Systematics p. 324.

Elphidium lene

Test of medium size, planispirally enrolled, laterally compressed; periphery lobulate, broadly rounded; chambers broad, somewhat inflated, 9-10 in the last whorl; sutures slightly curved with numerous short septal bridges; apertural face typically high; chambers with foliar projections that partially cover the umbilicus; wall finely perforated, smooth and glassy; aperture an equatorial slit at the base of the last chamber, often difficult to observe.

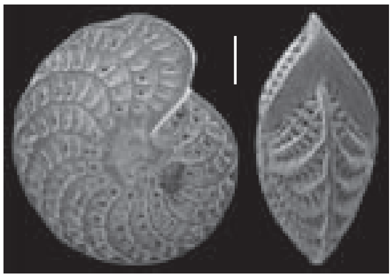
Isle of Pines, fringing reef, 5 m.
Systematics p. 324.



Elphidium macellum

Test large, involute, compressed, circular in outline, with numerous, strongly curved chambers; periphery acute with a narrowly rounded keel; anterior part of each chamber slightly raised and bearing a narrow radial keel that meets the peripheral keel; sutural bridges numerous, narrow and elongate, extending over most of the width of each chamber; typically, umbilical area depressed with a few irregular papillae, but some specimens with a flattened umbilical area and less prominent radial ribs, somewhat intermediate with *E. crispum*.

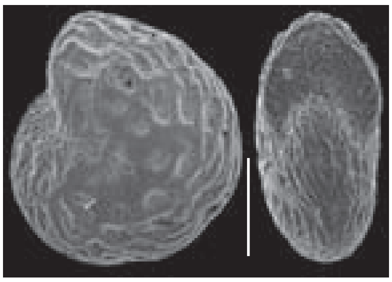
Southwestern lagoon 30 m.
Systematics p. 324.



Elphidium hyalocostatum

Test involute with circular outline; test moderately inflated; 7-10 chambers in the last whorl, non-inflated and strongly curved back toward the periphery; anterior edge of each chamber bearing a strong, narrow, radial ridge; long sutural bridges extending forwards from the radial ridges, together forming a coarse reticular pattern; umbilical area small and slightly depressed; apertural face and the area around its base covered with papillae that obscure the basal aperture.

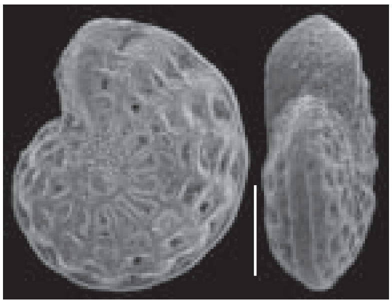
Northern shelf, 600 m.
Systematics p. 324.



Elphidium limbatum

Test involute, laterally compressed, lenticular, with a subcircular periphery; chambers slightly inflated and gently curved backward, 11-14 in the last whorl; subacute peripheral margin developing a blunt carina in the early chambers; sutures depressed with numerous flat sutural bridges, reaching about one half the width of the chambers; umbilical region depressed, containing numerous fine papillae and often one or several larger tubercles; wall finely perforate, ornamented with fine papillae along the sutures and on the apertural face; aperture a row of basal openings.

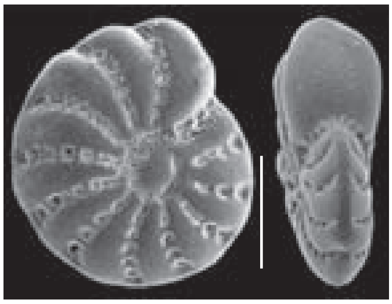
Coastal bay, 10 m.
Systematics p. 324.



Elphidium maorium

Test of small to medium size, outline smoothly circular, lobulate in the last portion; profile biconvex with sides flat and parallel centrally; periphery acutely rounded with a thickened area along the periphery that may be slightly keeled; 10-13 slightly inflated chambers in the last whorl; sutures slightly curved backward towards periphery, with a few narrow septal bridges; umbilical area with a small solid circular boss; fine papillae in the sutures, the umbilical area and along the aperture; wall finely perforate; aperture a series of small openings at the base of the apertural chamber.

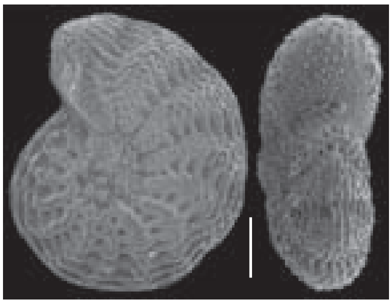
Coastal bay, 10 m.
Systematics p. 324.



Elphidium milletti

Test planispirally enrolled, laterally compressed with flattened sides almost parallel; chambers somewhat inflated, leading to a slightly lobulate periphery; peripheral margin roundly acute in smaller specimens, becoming more rounded in larger specimens; sutures depressed with short and broad sutural bridges; umbilicus depressed; wall ornamented with beads that coalesce and form short raised ridges; on later chambers, discontinuous raised ridges are aligned obliquely to the test periphery in a chevron pattern; apertural face covered with short spines; aperture at the base of the last chamber, obscured by the spines.

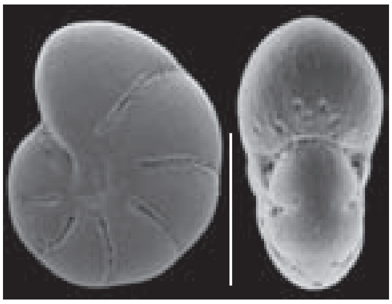
Southwestern lagoon, 40 m.
Systematics p. 324.



Elphidium sandiegoense

Test small planispiral and involute, moderately compressed, biumbilicate, circular in outline; periphery rounded; 7-9 non-inflated chambers in the last whorl; umbilical area ornamented by a scalloped ring lying between the chambers and a small, depressed central area; sutures deeply incised, slightly curved, may have a few irregular septal bridges; a strong sutural pit occurs at the umbilical end of each suture; wall distinctly perforate, surface smooth; aperture a low interiomarginal, equatorial slit extending laterally to the umbilici and small circular supplementary apertures on the apertural face.

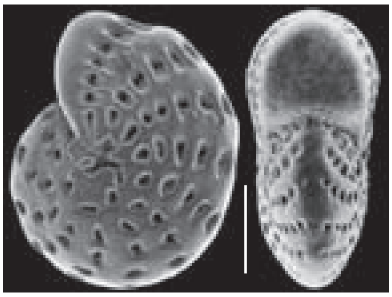
Coastal bay, 5 m.
Systematics p. 325.



Elphidium williamsoni

Test planispirally enrolled, laterally compressed, composed of a great number of chambers (> 11); outline evenly rounded, with last chambers somewhat inflated, leading to a slightly lobulate periphery; sutures flush, becoming slightly depressed between latter chambers, interrupted at the periphery; sutural bridges numerous, as long as chamber width; umbilicus simple, depressed, partially filled with the irregular ends of chambers; aperture at the base of the last chamber, often obscured by tuberculate ornaments.

Coastal lagoons, marshes, shrimp ponds.
Systematics p. 325.



Elphidium oceanicum

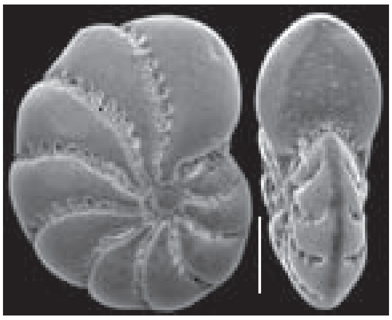
Test planispirally enrolled, slightly compressed laterally; chambers increasing rapidly in width, last ones somewhat inflated, leading to a lobulate periphery; peripheral margin broadly rounded; sutures slightly depressed, continuous around the periphery, with short flush sutural bridges; dense hispid ornament extending from the wide depressed umbilicus to a large area surrounding the aperture; aperture at the base of the last chamber, obscured by the ornamentation.

Coastal lagoons, coastal bays, shrimp ponds.
Systematics p. 325.

Elphidium tongaense

Test of medium to large size, planispiral, slightly evolute, compressed, outline slightly lobulate; sides flat to slightly concave, periphery acutely rounded; 10-12 somewhat inflated chambers in the last whorl; sutures depressed, moderately curved backwards, marked by numerous narrow septal bridges; umbilicus large, partly filled with a solid semicircular boss; wall finely perforated, fine papillae in the umbilical area and in the sutures; aperture made up of numerous openings at the base of the apertural face.

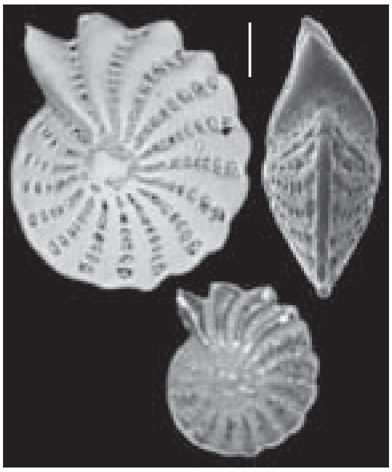
Isle of Pines, 5 m.
Systematics p. 325.



Elphidium sp. 1

This species resembles *E. advenum*, but the periphery becomes lobulate at about half the last whorl; later chambers strongly pointed, the last ones developing spines.

Coastal bay, 30 m.
Systematics p. 325.



Fijinonion

Fijinonion fijiense

Test large, planispiral and involute, moderately compressed, biumbilicate, chambers numerous, each with a large arched triangular apertural plate arising at the umbilical end of the apertural lip, those of successive chambers fused along their borders into a tube that opens at the outer margin, sutures thickened, curved, nearly flush, periphery rounded; wall finely perforate; aperture a low equatorial slit extending laterally to the umbilici and bordered by a narrow lip.

Northern shelf, 200 m.
Systematics p. 319.

Haynesina

Haynesina depressula

Test involute, compressed, evenly rounded to lobulate in outline; peripheral margin rounded; 8-14 slightly inflated chambers in final whorl; sutures curved backwards, slightly depressed in early portion, becoming deeply depressed; large umbilicus that extends along the sutures producing a star shape; wall finely perforate with tubercles along the sutures, in the umbilical depression and around the aperture; aperture a series of openings at the base of the last chamber, obscured by the tubercles.

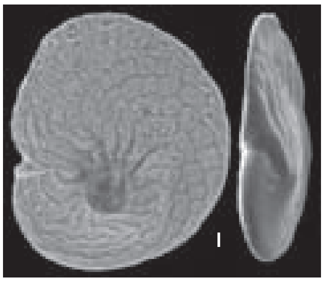
Coastal lagoons, coastal bays, shrimp ponds.
Systematics p. 319.

Heterostegina

Heterostegina depressa

Test planispiral; early portion usually somewhat involute and thickened, later portion very thin and flaring, early chambers only slightly divided, becoming increasingly so during growth, periphery thin and rounded with a thickened shell margin produced by numerous longitudinal anastomosing grooves and adjacent imperforate elongated ridges (marginal cord); chambers elongate, curved, divided into chamberlets by transverse partitions usually alternating in adjacent chambers; sutures distinct, slightly limbate, not raised but occasionally very slightly depressed in the adult, strongly curved, often somewhat sigmoid; surface smooth, finely perforate; aperture at the base of the final chamber, masked by a thick shell deposit.

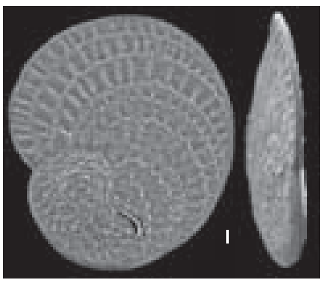
Southern lagoon and southern shelf, 15-50 m.
Systematics p. 325.



Heterostegina operculinoides

Test planispiral evolute extremely flat; chambers falciform, rapidly increasing in peripheral elongation, but slowly in height; chamber subdivision starts early, with chambers completely subdivided into rectangular chamberlets; chamber sutures raised above the test surface and sometimes beaded; chamberlet sutures raised or depressed, forming a more or less regular alternating pattern; a few knobs are located on the central test part, obscured by granulation that decreases with growth; wall finely perforate; aperture equatorial, at the base of the narrow apertural face, masked by a thick shell deposit.

Southern lagoon and southern shelf, frequency increasing with depth.
Systematics p. 325.

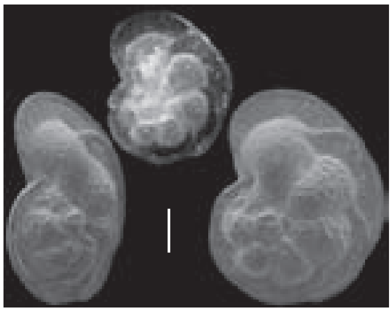


Laticarinina

Laticarinina altocamerata

Test planispiral, planoconvex, elliptical in outline, surrounded by a moderately broad lamelliform peripheral flange; both sides evolute; chambers increasing progressively in size, arranged in one to two convolutions, the entire series being visible on both sides, 7-9 chambers per whorl; chambers strongly inflated on the convex side, separated by deep radial sutures, sutures flush and curved on the other side; proloculus often conspicuously large; wall rough, finely perforated; aperture situated on the flat side of the final chamber, close to the umbilicus.

Northern shelf, 600 m.
Systematics p. 314.



Lenticulina

Lenticulina australis

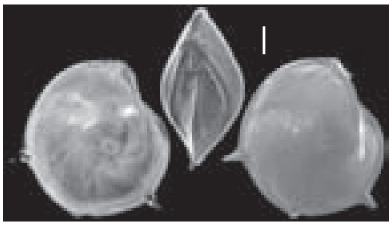
Test planispiral, involute, biconvex, robust, subcircular in outline; periphery bluntly rounded with a narrow keel; 6-7 chambers in the final whorl; umbilical region flush and transparent; sutures flush and limbate, gently curved; apertural face truncated, slightly depressed, with a thick limbate margin; aperture radiate, at the peripheral angle, with a distinctly enlarged equatorial slit on the apertural face.

Northern shelf, 600 m.
Systematics p. 286.

Lenticulina calcar

Medium size species; test lenticular with a thin carinate periphery armed with short radiating spines; apertural face depressed, between two carinate shoulders; 5-6 chambers in the last whorl; sutures flush converging to the translucent umbilical area; wall smooth; aperture radiate with a few radiating slits at the periphery and an equatorial slit on the apertural face, between two rectilinear lips.

Northern shelf, 600 m.
Systematics p. 286.

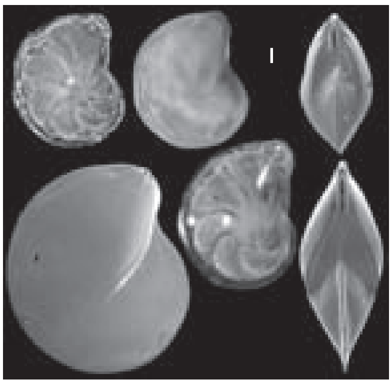


Lenticulina cultrata

Test large, discoidal and biconvex; periphery acute, somewhat irregular, with a well-marked keel; 6-7 chambers in the last whorl; sutures slightly curved, converging to the umbilicus; no umbo, but a translucent central area; wall smooth devoid of ornament; aperture radiate with several slits converging to a median wall at the periphery, and an equatorial slit on the apertural face, between two rectilinear lips that diverge at the lower extremity.

Specimens referred to this species vary greatly in size, thickness, and morphology of the aperture.

Northern shelf, 600 m.
Systematics p. 286.



Lenticulina echinata

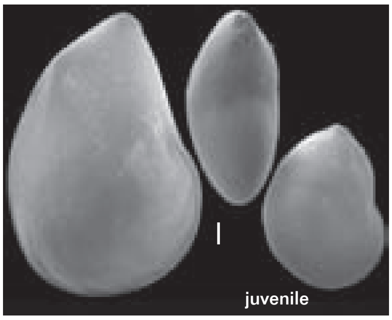
Test large, planispiral, involute, slightly compressed, biumbonate; 8-10 chambers in the final whorl, gradually increasing in size as added; sutures slightly curved; peripheral margin keeled with a few radiating spines; sutures limbate; surface of the test studded with raised beads or tubercles, which on the later chambers give place to partial costae; aperture terminal, radiate, at peripheral angle with a distinctly enlarged equatorial slit on the apertural face.

Northern shelf, 600 m.
Systematics p. 286.

Lenticulina gibba

Test oblong, biconvex, with a tendency towards uncoiling in the last few chambers; periphery acutely rounded to slightly keeled; 7-8 chambers in the last whorl, elongate, strongly curved, increasing slowly in size as added; sutures curved; apertural face convex to truncated; wall smooth, finely perforate; aperture finely radiate, at the peripheral angle, with a slightly enlarged equatorial slit on the apertural face.

Southern shelf, 45-85 m.
Systematics p. 286.



Lenticulina limbosa

Test large, strongly biconvex with acute periphery and a thick keel; 5-7 chambers in the last whorl; sutures nearly straight converging to a moderately large umbo; wall smooth; aperture radiate, somewhat projecting at the peripheral angle, with several radiating slits at the periphery and an equatorial slit on the apertural face, between two raised lips.

Northern shelf, 600 m.
Systematics p. 286.

Lenticulina nitida

Test planispiral, involute, biconvex compressed and carinate; periphery lobulate; 6-8 chambers in the final whorl, slowly increasing in size as added; earlier sutures limbate and raised, later depressed; wall smooth, finely perforate; apertural face truncated, with a thick limbate margin; aperture radiate, at the peripheral angle, with a distinctly enlarged equatorial slit on the apertural face.

Southwestern lagoon, 60 m.
Systematics p. 286.

Lenticulina orbicularis

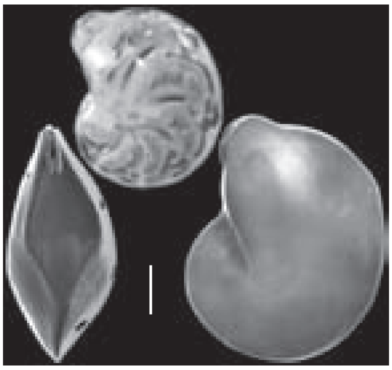
Test large, strongly biconvex with acute periphery and a strong flange-like keel; 9-11 narrow chambers in the last whorl; sutures strongly curved around a large and prominent umbo; wall smooth; aperture radiate at the peripheral angle with several radiating slits at the periphery and an equatorial slit on the apertural face, between two raised lips that fuse and form a rounded end to the opening.

Northern shelf, 600 m.
Systematics p. 286.

Lenticulina platyrhinos

Test involute, subcircular, compressed with narrow peripheral margin; umbilical region transparent showing the proloculus; chambers increasing gradually in size as added, 6-7 in the last whorl; sutures distinct, narrowly limbate, slightly curved, sometimes slightly depressed in the later portion; wall smooth; aperture at the chamber angle, on a ''hyaline snout-like extension'' dominated by an elongate slit on the apertural face, with two short grooves on the top.

Northern shelf, 600 m.
Systematics p. 286.



Lenticulina suborbicularis

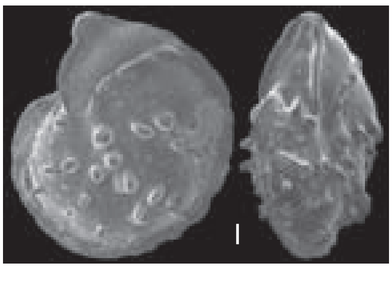
Test close-coiled, entirely involute, biconvex and umbonate, subcircular in outline; peripheral margin with a strong keel; 5-7 chambers in the last whorl; sutures strongly curved around the broad raised umbo; apertural face slightly concave, with pronounced margins, and divided by the keel of the earlier coil; wall smooth; aperture radiate, with an enlarged equatorial slit between two raised lips.

Northern shelf, 600 m.
Systematics p. 286.

Lenticulina papillosa

Test large, planispiral, mostly involute, biconvex; 8-10 chambers in the final whorl, gradually increasing in size as added; sutures slightly curved; peripheral margin with an acute keel, as specified by Fichtel & Moll; surface ornamented with raised beads or tubercles, either set irregularly near the umbilicus, or arranged along the sutural lines, row of beading gradually decreasing in size toward the periphery and in the later added portions; aperture radiate, at the peripheral angle with a distinctly enlarged equatorial slit on the apertural face.

Northern shelf, 600 m.
Systematics p. 286.



Lenticulina serpens

Test close-coiled, biconvex, slightly lobulate in outline; peripheral margin rounded; 7-8 chambers in the last whorl; sutures flush, slightly curved, strongly oblique, tangent to the broad umbo; apertural face broadly rounded to truncated; wall smooth, very finely perforate; aperture a series of ovate radiating openings with an equatorial, more elongated slit that merges with an horizontal slit on the apertural face to form a characteristic inverted T, surrounded by a distinct lip.

Northern shelf, 600 m.
Systematics p. 286.

Lenticulina tasmanica

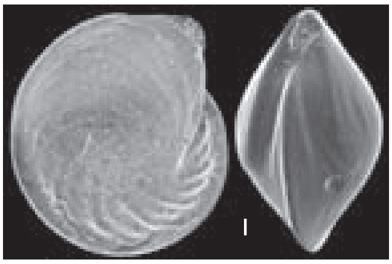
Test large, strongly biconvex with acute periphery and a small carina; 5-6 very slightly inflated chambers in the last whorl; sutures nearly straight, tangent to the translucent umbo; wall smooth; aperture radiate at the peripheral angle with several radiating slits at the periphery and an equatorial slit on the apertural face, between two strongly raised lips.

Northern shelf, 600 m.
Systematics p. 286.

Lenticulina vortex

Test close-coiled, entirely involute, biconvex, umbonate; chambers numerous, elongate, narrow, curved, increasing only slightly in size as added; sutures strongly limbate making a characteristic long curve from the periphery to the umbo; peripheral margin acute; sides of the apertural face distinctly raised; wall smooth, very finely perforate; aperture radial at peripheral angle, with a distinct equatorial slit.

Southern shelf, 40-80 m.
Systematics p. 287.



Lenticulina sp. 1

Test close-coiled, involute, lenticular, bi-umbonate; chambers curved, increasing slightly in size as added; sutures and umbo flush, giving a very smooth surface to the test; peripheral margin acutely rounded; apertural face small, rounded; wall very finely perforate; aperture radiate, transformed into an elongated double row of lateral slits that converge towards an axial wall, itself with a central opening; apertural face partially divided by an elongate equatorial slit somewhat radiating at its base.

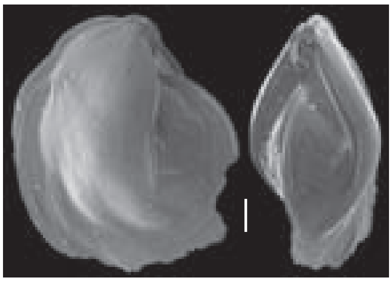
Northern shelf, 600 m.
Systematics p. 287.

Lenticulina sp. 2

Test close-coiled, entirely involute, biconvex; periphery lobulate with a thin, very broad keel, nearly transparent; a few somewhat inflated chambers in the last-formed coil; sutures slightly curved, very slightly depressed; wall smooth, thin; aperture radiate, at the peripheral angle of the test, those of a few early chambers distinct.

This species differs from *L. iota* (Cushman) by its much smaller number of chambers, and from *L. strongi* (Church) in its entirely involute coiling.

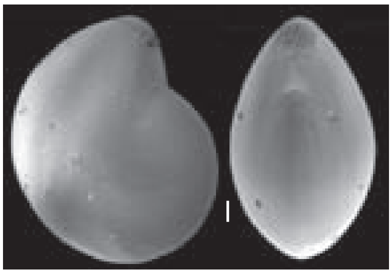
Northern shelf, 600 m.
Systematics p. 287.



Lenticulina? sp. 3

Test close-coiled, entirely involute, biconvex, broadly rounded; 6-7 chambers in the last-formed coil; apertural face small, rounded; sutures flush, curved; wall smooth; aperture at the peripheral angle of the test, radiate with a series of radiating slits at the periphery, but with a tendency to become cribrate, due to irregularly settled slits in the center.

Northern shelf, 600 m.
Systematics p. 287.



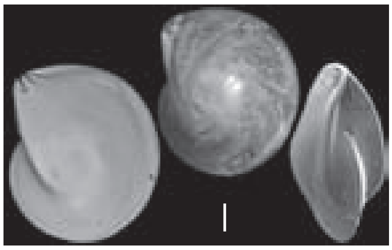
Lenticulina spp.

The following species of Lenticulina all have a lenticular shape with a subcircular contour, a smooth wall, and a radiate aperture that is flush or nearly so with the peripheral margin. They differ with each other in the organization of chambers, the presence or not of an umbo and the morphology of the margin. They are presented separately even if some of them are suspected to be varieties of the same species

Species 1

Periphery very acute but not keeled, apertural face deeply depressed with two acute shoulders; 5-6 chambers, not inflated; sutures flush, slightly limbate, nearly straight, tangent to the large and prominent umbo; aperture composed of a few radiating slits at the periphery and a Y-shaped slit on the apertural face, surrounded by a wide lip.

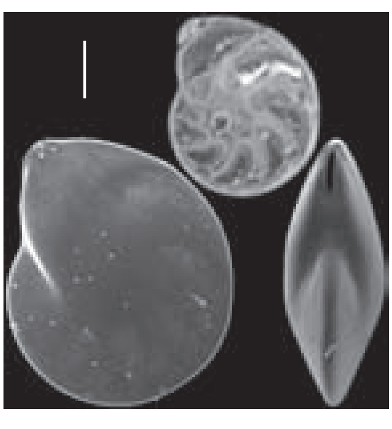
Northern shelf, 600 m.
Systematics p. 287.



Species 2

Periphery acute but not keeled, apertural face truncated with two angular shoulders; 8-9 chambers increasing relatively slowly in size as added; sutures flush, limbate, curved, converging to the large umbo flush with the surface; aperture composed of 2-3 short radiating slits on each side at the periphery and an equatorial slit between two lips on the apertural face.

Northern shelf, 600 m.
Systematics p. 287.



Species 3

Periphery acute, carinate, apertural face truncated with two angular, somewhat carinate shoulders; 5-6 chambers visible; sutures curved, tangent to well-developed but not prominent umbo; aperture composed of 7-8 radiating slits on each side at the periphery in the adult; and an equatorial slit between two lips on the apertural face.

Northern shelf, 600 m.
Systematics p. 287.

Species 4

Periphery acute, carinate, apertural face truncated, somewhat concave, with two angular shoulders; 7-8 chambers in the last coil, increasing relatively slowly in size as added; sutures raised, strongly curved, converging to the umbilicus without umbo; aperture composed of 7-8 radiating slits at the periphery and an equatorial slit between two projecting lips on the apertural face.

Northern shelf, 600 m.
Systematics p. 287.

Species 5

Periphery truncated to acutely rounded, apertural face small, truncated, with two rounded shoulders; 5-6 chambers in the last coil, increasing slowly in size as added; sutures raised, strongly curved, converging with an acute angle to the transparent umbilical region through which the proloculus can be seen; aperture composed of 4-5 radiating slits on each side at the periphery, and an equatorial slit between two projecting lips on the apertural face; equatorial slit reaching the base of the apertural face.

Northern shelf, 600 m.
Systematics p. 287.

Species 6

Periphery carinate, apertural face truncated, somewhat concave, with two angular shoulders; 9-11 chambers in the last coil, increasing relatively slowly in size as added; sutures strongly curved, converging to the small umbilicus; sutures discontinuously raised, a few tubercles arranged parallel with the sutures, and faint costae parallel with the carina; aperture composed of 7-8 radiating slits at the periphery and an equatorial slit between two projecting lips that nearly reach the base of the apertural face; small rounded openings are present in the median wall of the aperture.

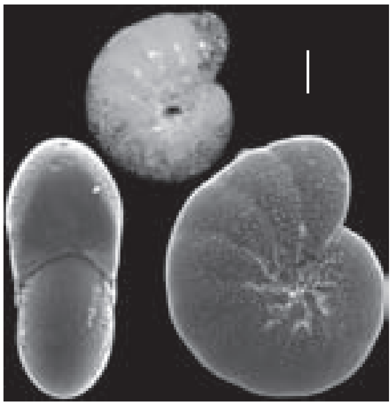
Northern shelf, 600 m.
Systematics p. 287.

Melonis

Melonis affinis

Test planispiral, involute, moderately compressed, peripheral margin broadly rounded; umbilici opened; chambers numerous, 10-14 in final whorl; sutures flush, later ones slightly depressed, slightly curved; walls coarsely perforated; aperture interiomarginal equatorial, a slit extending from umbilicus to umbilicus and slightly overlapped by the lip.

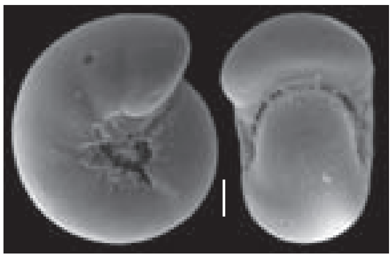
Northern shelf, 600 m.
Systematics p. 320.



Melonis pompiloides

Test planispiral, involute, compact, peripheral margin very broadly rounded; chambers numerous, 10-14 in final whorl; sutures flush, later ones slightly depressed, slightly curved; deeply sunk umbilici; walls coarsely perforated; aperture terminal, low, broad arch extending from umbilicus to umbilicus.

Northern shelf, 600 m.
Systematics p. 320.



Neolenticulina

Neolenticulina occidentalis

Test for the most part close-coiled, compressed, composed of 6-8 chambers in the last whorl; periphery carinate or angled, apertural face rounded or somewhat truncate; apertural end projecting; sutures fairly distinct, in the later chambers, slightly depressed, nearly straight, generally radiate; aperture at the end of the peripheral projection of the last-formed chamber, radial, often broken.

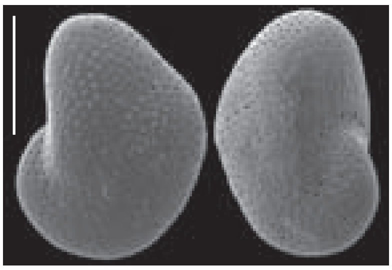
Northern shelf, 600 m.
Systematics p. 287.

Nonion

Nonion grossepertusum

Test planispirally enrolled, involute, slightly inflated; 8 chambers in the final whorl increasing rapidly in size as added; periphery rounded; sutures flush to weakly depressed; wall smooth but coarsely perforated; aperture a series of pores at the base of the apertural face.

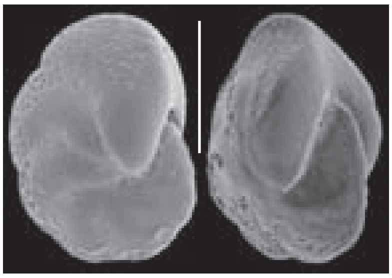
Southwestern shelf, 70 m.
Systematics p. 319.



Nonion pauperatum

Test planispiral, involute, bilaterally symmetrical, last-formed coil composed of about 9 chambers of uniform shape, slightly inflated; periphery lobulate, peripheral margin acutely rounded; sutures depressed; umbilical area closed; wall smooth, distinctly perforate around the periphery; aperture a low opening at the base of the last-formed chamber.

Bays, estuaries, shrimp ponds.
Systematics p. 319.



Nonion scaphum

Test planispiral, bilaterally symmetrical, compressed, elongate oval in outline, may tend to become evolute; peripheral margin rounded; umbilici depressed, unornamented; 10-12 chambers in the last coil, later ones rapidly increasing in size and broadening towards the umbilici; sutures depressed, not limbate; apertural face broadly oval; wall smooth, finely perforate; aperture, a narrow slit at the base of the apertural face next to the preceding coil.

Bay of Prony, 20-40 m.
Systematics p. 319.

Nonion subturgidum

Test bilaterally symmetrical, compressed, last-formed coil composed of 8-12 chambers, greatly increasing in length as added, broadening towards the umbilici; periphery rounded; sutures slightly depressed; apertural face broadly rounded; depressed umbilical area often filled with secondary material; wall smooth, very finely perforate; aperture an equatorial slit at the base of the last-formed chamber.

Coastal bays 10-20 m.
Systematics p. 319.

Nonionoides

Nonionoides grateloupi

Test compressed, low trochospiral, composed of tall, narrow chambers, rapidly increasing in length as added; spiral side evolute and umbilical side involute, but the symmetrical evenly flattened sides give the impression that the coiling is planispiral; wall translucent, smooth, with hispid ornament in the umbilical depression, along the spiral suture and around the aperture; aperture an equatorial slit at the base of the apertural face, extending from the suture on the umbilical side to a short way along the spiral suture on the spiral side.

Bay of Prony, 10-40 m.
Systematics p. 320.

Nonionoides turgidum

Test compressed, weakly trochospiral, composed of tall, narrow chambers, rapidly increasing in length as added; about 11 chambers in the last whorl; spiral side partly evolute and umbilical side involute, but the nearly symmetrical sides give the impression that the coiling is planispiral; periphery rounded; last chamber large and wide, extending the entire length of the test, somewhat more developed on the umbilical side; wall smooth, finely perforate, with hispid ornament in the umbilical depression and around the aperture; aperture an equatorial slit at the base of the apertural face.

Bay of Prony, 30 m.
Systematics p. 320.

Nummulites

Nummulites venosus

Test planispirally coiled, biconvex and lenticular, evolute in young individuals, later involute, and finally tending to become evolute again with a slight marginal flattening (see also fig. 52); chambers numerous; periphery with a thick marginal cord; sutures fairly distinct, raised, radiate, recurved at the periphery and sometimes branched around the umbilicus; wall smooth, finely perforate; aperture at the base of the apertural face, masked by a thick shell deposit.

Southwestern lagoon, depressions, 5-45 m.
Systematics p. 326.

Operculina

Hohenegger *et al*. (2000) stated that "differentiation between the genera *Assilina* and *Operculina* is impossible". In agreement with this statement, the species reported in the literature as belonging to either of the two genera have all been attributed to *Operculina*.

Operculina ammonoides

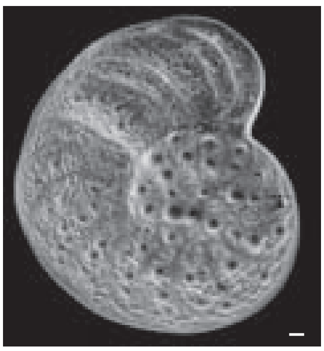
Test large, compressed, planispiral, evolute, flaring; chambers flat, curved, irregular in size, shape and number; sutures raised, ornamented with low pustules that are higher in the umbilical region; peripheral chord distinct; aperture at the base of the apertural face concealed under a mask structure.

Southwestern lagoon, areas under open-sea influence.
Systematics p. 326.

Operculina bartschi

Test evolute, lenticular, coils rapidly widening, but not flaring; umbilical area usually raised and ornamented with comparatively large bosses; chambers narrow, somewhat inflated, 20-25 in the last whorl, arcuate and sharply recurved at the periphery; sutures depressed; peripheral chord distinct; surface ornamented with a row of tubercles along the median line of the chambers; tubercles higher in the earlier portion of the test; aperture at the base of the apertural face concealed under a mask structure.

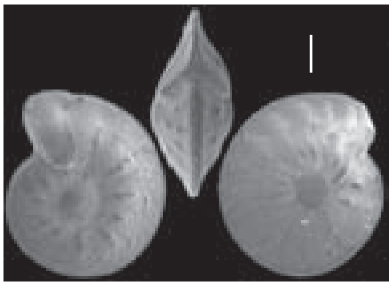
Southwestern lagoon, areas under open-sea influence.
Systematics p. 326.



Operculina discoidalis

Test completely involute in the first whorls, later becoming semiinvolute to evolute; umbilical region with a large and thick hyaline central boss on each side of the test, giving rhombic axial sections; sutures slightly raised and limbate in the inner part of the whorl, more or less changed into rows of papillae, and somewhat depressed toward periphery; peripheral chord distinct; wall smooth, finely perforate; aperture concealed under an apertural mask structure.

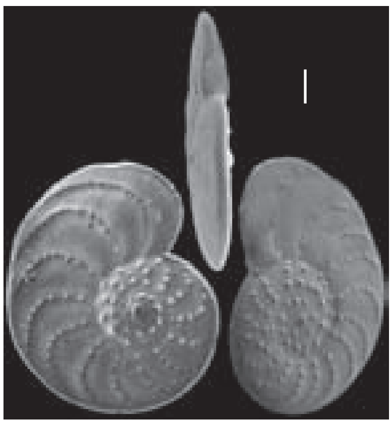
Southwestern lagoon and southern shelf, 10-80 m.
Systematics p. 326.



Operculina gaimardi

Test much compressed; coiling planispiral evolute, but earlier whorl more or less embracing; central area somewhat thickened; chambers 15 or less in the last whorl, strongly and regularly curved toward the periphery and toward the umbilicus; sutures limbate, marked by chains of beads, which are larger near the centre of the shell; peripheral chord distinct; surface of the chambers smooth and unornamented or covered with minute granules scattered over the surface; aperture at the base of the apertural face concealed under a mask structure.

Southwestern lagoon and southern shelf, 10-80 m.
Systematics p. 326.



Operculina philippinensis

Test much compressed; coiling planispiral evolute but increasing slowly in size; 15-20 chambers in the last coil; chambers, nearly radiate straight and bend back sharply near the periphery; sutures limbate, with weakly marked chains of beads and with a raised tubercle near the spiral suture in the earlier portion of the test; central area thickened around the proloculus only; peripheral cord distinct; surface of the chambers smooth; aperture at the base of the apertural face concealed under a mask structure.

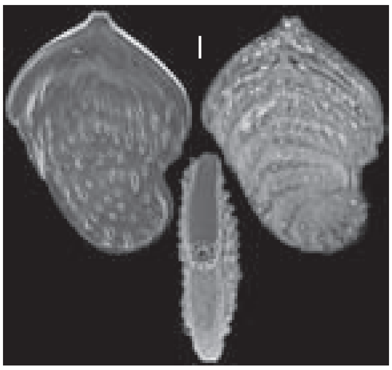
Bay of Prony and adjacent areas.
Systematics p. 326.

Palmula

Palmula robusta

Test elongate, compressed, stoutly built, fan-shaped; lateral margins tending to become parallel with ends obtusely angular or rounded, peripheral edges thick, rounded, slightly lobulate; chambers numerous, somewhat irregular in contour, chevron-shaped; surface furnished with closely set, interrupted, longitudinal costae aperture terminal, slightly produced, radiate.

Northern shelf, 600 m.
Systematics p. 288.



Parrellina

Parrellina hispidula

Test planispiral, slightly evolute, biconvex; periphery circular with a rounded peripheral margin; sutures depressed between the last chambers, flush between earlier ones; last-formed chambers covered with numerous spines that unit on earlier chambers into prominent peripheral costae surrounding the test; umbilical area occupied by irregular bosses that may fuse into a larger flat boss, often covered with stout spines; wall coarsely perforated; aperture a basal row of small openings, often obscured by hispid ornament.

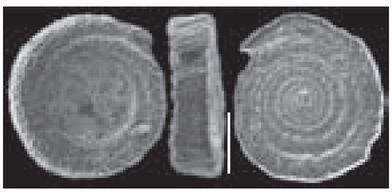
Southwestern lagoon, 40 m.
Systematics p. 325.

Planispirillina

Planispirillina inaequalis

Test discoidal, consisting of a proloculus and a long undivided, gradually enlarging, coiled, tubular second chamber; coiling planispiral, but with the tubular chamber overlapping slightly more on one side than on the other, so that the test has distinct sides; evolute side flattened, the other side partially involute with a concave umbilical area; periphery acute with, on the umbilicate side, a coarsely perforate raised margin that slopes gently inwards; flat side with a slightly raised spiral suture, but with no secondary lamination or ornamentation; aperture at the end of the tubular chamber.

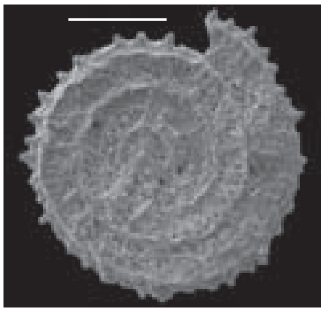
Northern shelf 200 m.
Systematics p. 283.



Planispirillina parvispinata

Test small, circular, compressed, periphery truncate; proloculus followed by a tubular chamber forming appressed whorls; periphery provided with numerous short, stout spines irregular in shape and position; whorls ornamented with radiate sculturing; aperture roughly rectangular, at the open end of the tubular chamber.

Southwestern lagoon, 20 m.
Systematics p. 283.

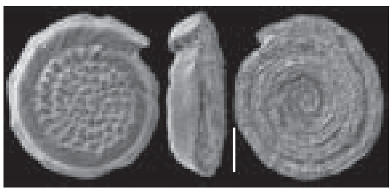


Planispirillina tuberculatolimbata

Test discoidal, globular proloculus followed by undivided tubular and planispirally enrolled second chamber, evolute on one flat side and very slightly involute on the opposite convex side; test strongly dissymmetrical, the larger and flat side being limbate with a sharp peripheral edge, the opposite convex side having a rounded edge; wall perforate between the raised spiral sutures on the flat side, imperforate on the opposite side where earlier whorls are obscured by a covering of papillose lamellae; aperture at the end of the tubular chamber.

Chapman mentioned that the convex side is partially involute but his illustrations shows the coiling of the tubular chamber to be evolute, all the whorls but the last one being obscured by the ornamentation.

Northern shelf, 200 m.
Systematics p. 283.



Planularia

Planularia californica

Test somewhat longer than broad, much compressed, uncoiling in the later stage; periphery flattened with a raised costa on either side; chambers distinct, not inflated, increasing gradually in length, but little if at all in height; sutures strongly curved, flush, limbate; wall usually smooth but occasionally with elongate costae generally parallel to the periphery; aperture terminal, radiate.

Northern shelf, 400 m.
Systematics p. 285.

Planularia mirabilis

Test complanate, subovate; narrow at the initial end, broadening towards the distal end, which carries an alate margin; apex ornamented by two or three small imperfect and crescentic costulae on the lateral surface; sutures faintly marked, oblique and recurved; aperture radiate, at the dorsal angle.

Northern shelf, 200 m.
Systematics p. 286.

Planularia perculta

Test auriculate in contour, much compressed; periphery truncate; chambers planispirally arranged in an increasingly evolute coiling; about 10 arcuate chambers in the last coil; sutures limbate, slightly depressed between the last chambers; surface ornamented by narrow longitudinal costae equally spaced; aperture a small ovate opening at the dorsal angle of the last chamber.

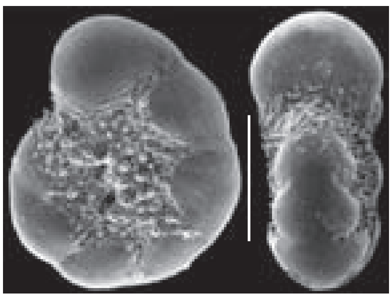
Northern shelf, 200 m.
Systematics p. 286.

Porosononion

Porosononion shansiense

Test small, partially evolute, subcircular in outline, compressed with flattened side; peripheral margins broadly rounded; umbilici depressed and covered by a thin foliar extension obscured by the ornamentation; 7-10 slightly inflated chambers in the last whorl, enlarging slowly as added; sutures depressed around the umbilicus, but flush at the periphery, slightly curved backward; wall smooth, transparent, finely perforate, coarsely ornamented by pustules and spines in the umbilical depression, the sutures and around the aperture; aperture a row of pores along the base of the apertural face.

Southwestern lagoon, 40 m.
Systematics p. 325.



Porosononion simplex

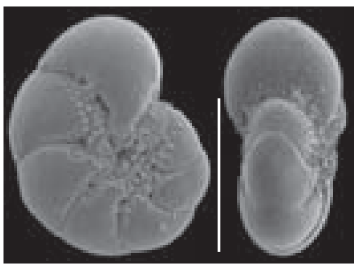
Test involute, compressed, with an evenly rounded outline, last stage becoming slightly lobulate; peripheral margin rounded; 8-14 chambers in final whorl, increasing very slightly in size, last ones slightly inflated; sutures curved backwards, deeply depressed between later chambers, partly obstructed during ontogeny; umbilical region occupied by a large flat boss that is attached to earlier chambers, but separated from later chambers by a semicircular depression filled with small tubercles; wall finely perforate with tubercles along the sutures, around the umbilical boss and around the aperture; aperture a series of openings at the base of the last chamber, obscured by tubercles.

Bay of Prony, 10-30 m.
Systematics p. 325.

Porosononion sp. 1

Test small, planispiral, partially evolute, somewhat elongated in outline, compressed with flattened sides; peripheral margins rounded; sutures depressed around the umbilicus, but flush at the periphery, slightly curved backward; 8-9 slightly inflated chambers in the last whorl, enlarging regularly as added, with a foliar extension in the depressed umbilici; umbilici, depressed sutures, base of the apertural face and foliar extensions highly ornamented by pustules and minute spines; wall smooth, transparent, coarsely perforate, except for the middle part of the apertural face; aperture a row of openings along the base of the apertural face, mostly concealed by ornamentation.

Southwestern lagoon, 40 m.
Systematics p. 325.



Prionotolegna

Prionotolegna sp. 1

Test planispiral, biinvolute, peripheral margin subacute; 8-9 chambers in the last whorl; proximal margins of chambers protruding somewhat to result in a serrate peripheral outline; sutures oblique, curved backwards, indented near the periphery; wall smooth, coarsely but sparsely perforated; aperture areal, almost equatorial, ovate, in a depressed area. This species differs from the type species *P. paeminosa* Loeblich & Tappan in its smooth rather than nodose surface and in its larger aperture.

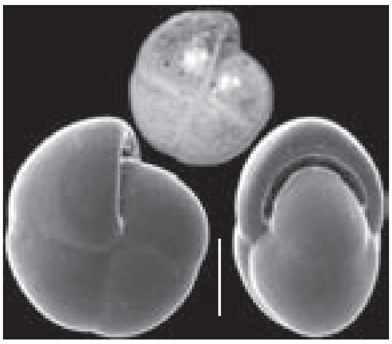
Northern shelf, 600 m.
Systematics p. 314.

Pullenia

Pullenia quadriloba

Test globular, planispiral and involute, with 4 moderately inflated chambers in the final whorl, sutures radial, slightly depressed; wall finely perforate, surface smooth; aperture a narrow interio-marginal crescentic slit extending across the periphery, but not reaching the umbilici.

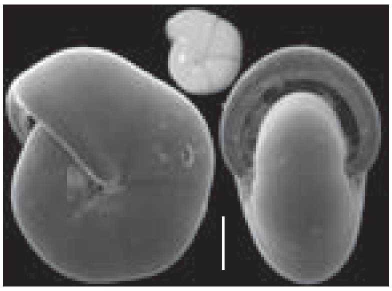
Northern shelf, 600 m.
Systematics p. 320.



Pullenia quinqueloba

Test globular, moderately compressed, planispiral and involute, with a slightly lobulate outline; periphery rounded; 5-6 moderately inflated chambers in the final whorl, sutures radial, slightly depressed; wall finely perforate, surface smooth: aperture a narrow interio-marginal crescentic slit extending across the periphery to the umbilici.

Northern shelf, 600 m.
Systematics p. 320.



Saracenaria

Saracenaria altifrons

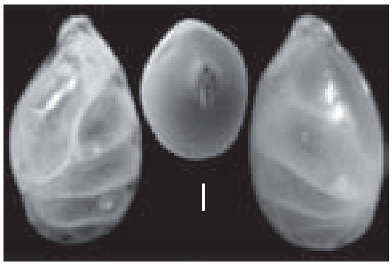
Test ovoid, planispirally enrolled in the early stage, later flaring and tending to become rectilinear, triangular in section, apertural face broad, nearly flat, with acutely rounded margins and dorsal angle; sutures curved, slightly depressed; wall finely perforate, surface smooth; aperture radiate at the dorsal angle.

Northern shelf, 600 m.
Systematics p. 287.

Saracenaria? *ampliformis*

Test ovate in outline, length less than twice width; cross section broadly triangular with rounded angles; initial chambers organized in a planispiral half-coil; uncoiled chambers strongly overlapping; apertural face broadly triangular, rounded; sutures oblique, flush wall finely perforated, surface smooth; aperture a slit on on a produce flange, at the dorsal angle.

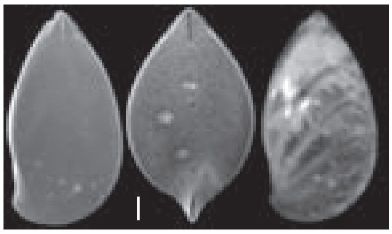
Northern shelf, 200 m.
Systematics p. 287.



Saracenaria latifrons

Test spiral, elongate, trihedral, broadest near the middle and tapering towards the ends; initial portion pointed, with early chambers small and involute; later chambers long, narrow, slightly curved, obliquely set; "dorsal margin" acutely angular and carinate; apertural face broad, oval, somewhat curved, with partially carinate lateral edges; aperture radiate, at the acute dorsal angle.

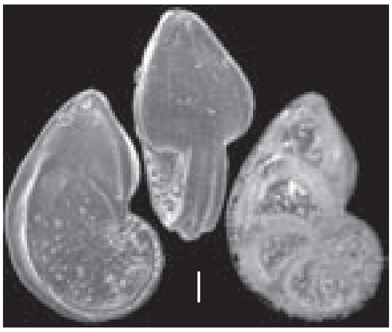
Northern shelf, 600 m.
Systematics p. 287.



Saracenaria sp. 1

Test spiral tending to uncoil, the last two chambers increasing considerably in breadth and becoming triangular in end view; periphery carinate with three carinae, the central one prominent; apertural face triangular with rounded angles, nearly flat, with carinate lateral edges; aperture radiate, at the dorsal angle.

Northern shelf, 200 m.
Systematics p. 287.

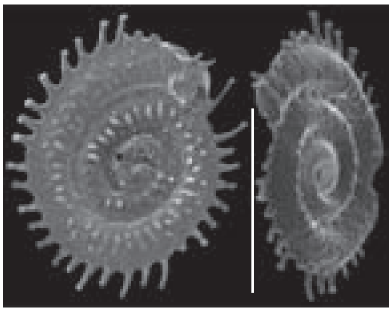


Sejunctella

Sejunctella cf. *S. wenmanensis*

Test discoidal, proloculus followed by a planispirally enrolled undivided tubular second chamber that is loosely coiled and separated from the previous whorl by a narrow solid area; planispiral coiling of about 3 whorls; periphery carinate, bearing numerous, relatively long, evenly spaced solid spines, somewhat thickened at the top; wall hyaline, with secondarily added granulations; aperture a simple rounded opening at the end of the tubular chamber. This species differs from McCulloch's one in its granular ornamentation.

Outer reef, 100 m.
Systematics p. 283.

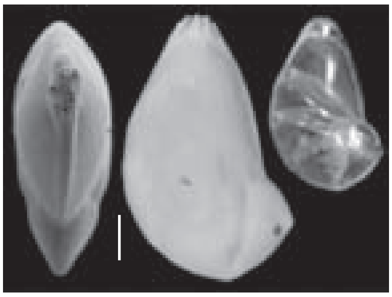


Siphomarginulina

Siphomarginulina angulosa

Test elongate, compressed, early coil consisting of three chambers with marked angularity; periphery acute but non-carinate, uncoiled chambers increasing gradually in size; sutures radial in the early coil, oblique in the uncoiling part; wall finely perforate, surface smooth; aperture at the dorsal angle, consisting of a projecting ring of rounded openings.

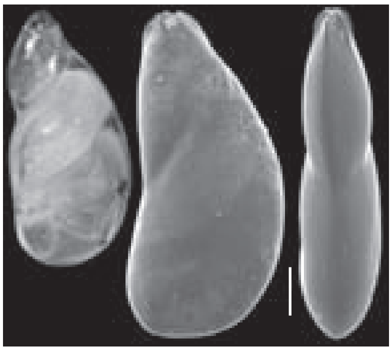
Northern shelf, 200 m.
Systematics p. 287.



Siphomarginulina sp. 1

Test elongate, compressed, periphery acutely rounded, early chambers planispirally enrolled, only three to four chambers in the coil, final few chambers uncoiled and rectilinear, sutures radial in the early coil, oblique in the uncoiling part; wall finely perforate, surface smooth; aperture at the dorsal angle, consisting of a projecting ring of rounded openings.

Northern shelf, 200 m.
Systematics p. 287.



Spincterules

Spincterules compressus

Test planispiral, involute in earlier portion, later somewhat uncoiled and slightly flared; sutures straight, obscured by the ornamentation; wall covered by equally spaced continuous costae, with additional costae interspersed as growth continues; aperture terminal, radiate, at peripheral angle, with more elongate slit on the apertural face.

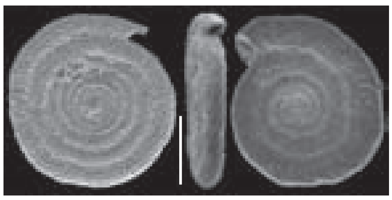
Northern shelf, 200 m.
Systematics p. 287.

Spirillina

Spirillina grosseperforata

Test flattened, circular in outline, consisting of a proloculus and a long undivided, gradually enlarging, coiled, tubular second chamber; periphery subacute; coiling planispiral, but with the tubular chamber overlapping slightly more on one side than on the other, so that the earliest whorls are in a low trochospiral arrangement, with distinct spiral and umbilical sides; later coils flattened on one side; wall thin, coarsely perforated on the spiral side, roughly ornamented with transverse ridges and not perforated on the umbilical side; suture depressed; aperture formed by the open end of the tube.

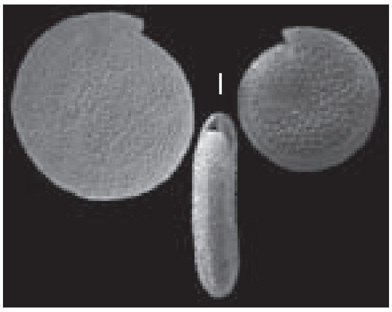
Bay of Prony, 40 m.
Systematics p. 283.



Spirillina tuberculata

Test flattened, circular in outline, composed of a proloculus followed by a gradually enlarging, planispirally enrolled, somewhat embracing, undivided tubular second chamber; peripheral edge rounded; surface of the whole shell beset with well-defined raised tubercles, which are generally more prominent on one side of the test than on the other and often fill the sutural depressions, except that bounding the final convolution; aperture crescentic at the end of the chamber.

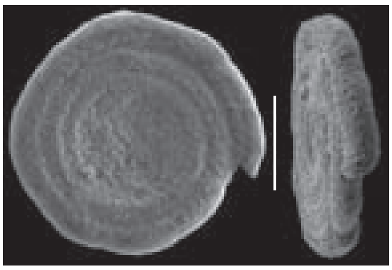
Northern shelf, 600 m.
Systematics p. 283.



Spirillina vivipara

Test flattened, circular in outline, consisting of a proloculus and a long undivided, slowly enlarging, plan spirally coiled, tubular second chamber; periphery rounded; coils numerous, later ones often somewhat uneven and not entirely planispiral; wall calcareous, coarsely pitted, thin; suture depressed; aperture formed by the open end of the tube.

Living attached on algae, 10-100 m.
Systematics p. 283.



Spirillina sp. 1

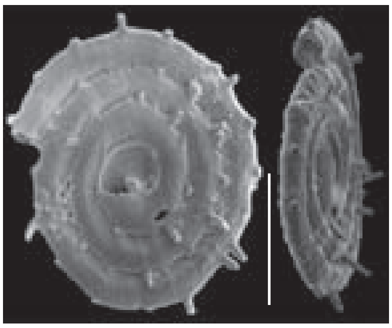
Test planispirally enrolled, symmetrical, ovate; proloculus elongated, followed by a tubular planispirally coiled chamber; 4-5 coils, somewhat embracing; wall with a row of coarse perforations regularly disposed along the inner side of the tube, parallel to the spiral suture; aperture terminal.

Northern shelf, 600 m.
Systematics p. 283.

Spirillina sp. 2

Test flattened, circular in outline, consisting of a proloculus and a long undivided, slowly enlarging, planispirally coiled, tubular second chamber; periphery rounded; wall smooth, with a row of perforations irregularly disposed axially on the tube; ornamentation with well-developed spines, pointing toward one side of the test, so that they are leaved free by the subsequent whorls; aperture terminal.

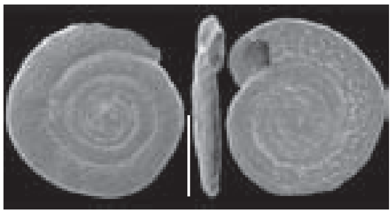
Northern shelf, 600 m.
Systematics p. 283.



Spirillina sp. 3

Test flattened, circular in outline, very low trochospiral, consisting of a proloculus and a long undivided, flattened, tubular second chamber, widening quite rapidly; whorls numerous; periphery narrowly rounded; spiral face coarsely perforated, chamber convex; umbilical side flat, ornamented with granules, most abundant along the inner side of the tube, and with a row of perforations along the outer side of the tube; aperture terminal.

Southwestern lagoon, 40 m.
Systematics p. 283.



Vaginulinopsis

Vaginulinopsis gnamptina

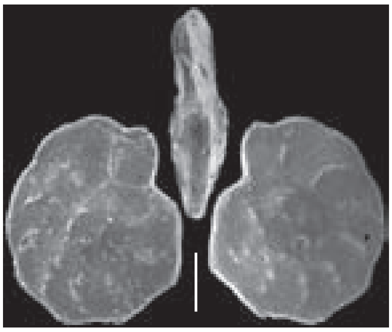
Test broad, arcuate, with rounded periphery; early enrolled portion followed by uncoiled part with chambers increasing rapidly in breath, and with considerable overlap over previous chambers; sutures slightly curved, moderately depressed; surface smooth, aperture a long slit on a produce flange, at the dorsal angle.

Northern shelf, 600 m.
Systematics p. 288.

Undetermined species

Test planispirally enrolled, of about two whorls; last whorl evolute; both sides flattened with slightly prominent early portion; outline angular in the first stages, then lobulate; 8-10 chambers in the final whorl; sutures thickened and raised, strongly curved back at the peripheral margin; periphery with a weakly thickened margin; wall finely perforated on both sides, surface covered with small granules; aperture at the base of the last chamber, hardly visible.

Northern shelf, 600 m.



Description of other hyaline species

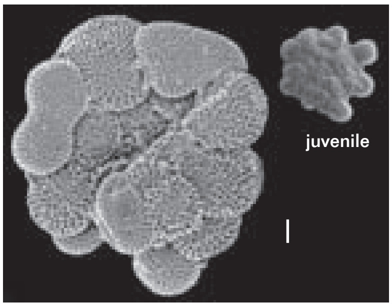
All scale bars = 0.1 mm (for SEM)

Acervulina

Acervulina mabahethi

Test attached, early chambers spirally arranged, later chambers added irregularly, either in irregular cycles on a flattened substrate, or in irregular directions, according to the shape of the substrate; flattened forms have only a few chambers added above the initial plane of growth; irregular forms are made of irregularly amassed chambers; chambers much inflated; sutures depressed; wall thick, coarsely perforate, with interpore ridges; all apertures are restricted to sutural positions; main apertures on opposite sides of the chambers in a peripheral position, with a thickened peristomal rim; supplementary apertures in the depressed sutures, with an arched peristome.

Widely distributed, living attached on algae, 1-100 m.
Systematics p. 317.

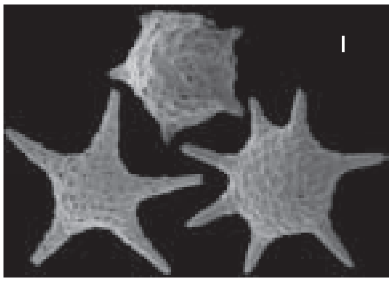


Baculogypsina

Baculogypsina sphaerulata

Test biconvex, lenticular, with prominent radial spines; initial trochospiral arrangement of only a few chambers followed by the addition of numerous domelike lateral chamberlets in a loose network over the test; a larger number of chamberlets is positioned in the equatorial plane, giving a biconvex shape to the test; 4-9 large spines provided with numerous anastomosing canals are developed in the equatorial plane; wall of the chamberlets coarsely perforated; numerous small imperforate pustules between the chamberlets mark the position of solid pillars that are inserted between the vertical rows of chamberlets.

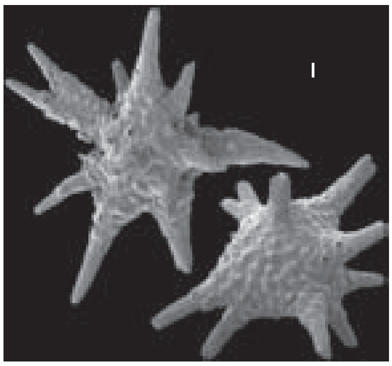
Chesterfield, living in algal thalli growing on coral reefs, 1-2 m.
Systematics p. 323.



Baculogypsina
cf. *B. sphaerulata*

Specimens with large spines arising in all directions but not only in the equatorial plane, and sometimes bifurcated; may be abnormal specimens of *Baculogypsina sphaerulata* or may belong to another species. Further examinations are needed to determine if this variation has any taxonomic significance.

Chesterfield, living in algal thalli growing on coral reefs, 1-2 m.
Systematics p. 323.



Biarritzina

Biarritzina proteiformis

Test attached by the flaring base; early stage trochospirally enrolled in a loose elevated spire, later tending to become uniserial and growing upright in an irregular column, or even with chambers crowded together; about 6 chambers, globular to pyriform, inflated; sutures depressed: wall, coarsely perforate, and covered with strongly marked pits; aperture terminal, at the end of a stout imperforate tubular neck, rounded.

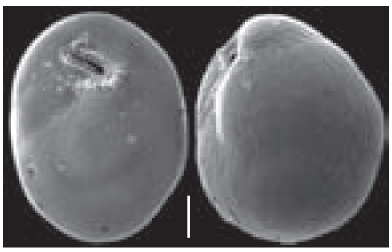
Southern shelf, near coral reefs.
Systematics p. 317.

Burseolina

Burseolina pacifica

Test biserially arranged with the plane of biseriality planispirally enrolled; test large, compact, globular to subglobular, very slightly compressed; periphery not lobulate; peripheral margin broadly rounded; chambers low and broad; sutures flush virtually indistinguishable except when the test is moistened; wall finely perforate, surface smooth; apertural face broad and depressed; aperture an elongate narrow slit, curved so that its outermost part is approximately parallel to the periphery of the test; lower margin with a large imperforate apertural flap and a poorly developed toothplate on the upper apertural margin.

Northern shelf, 600 m.
Systematics p. 300.

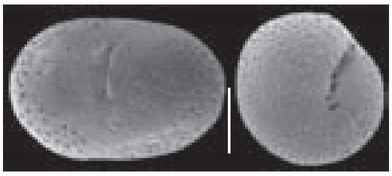


Cribrobaggina

Cribrobaggina reniformis

Test ranging from reniform to nearly spherical, with a broadly rounded periphery; chambers arranged in a low trochospiral coil of about two whorls; sutures flush and hardly distinguishable; wall coarsely perforated, except for an imperforate area at the base of the apertural face, adjacent to the umbilicus; aperture a curve slit in the middle or slightly to one side of the edge of the test.

Coastal bay, 10 m.
Systematics p. 307.

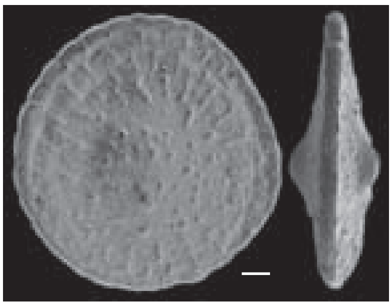


Cycloclypeus

Cycloclypeus carpenteri

Test discoidal, nearly circular in outline; biconvex or subumbonate; central portion thickened, the outer zones gradually thinning towards the thin, sharp, peripheral edge; test composed of annular chambers divided by septulae into chamberlets that alternate in position more or less regularly from one chamber to the other; chamberlets approximately square in the smaller megalospheric form, radially elongated in the larger microspheric forms; sutures slightly raised, peripheral ends of septula marked with a rounded knob; large knobs also covering the thick central part; surface of the chamberlets smooth, finely perforated; aperture a row of marginal pores.

Southern shelf, 60-80 m.
Systematics p. 325.



Cymbaloporella

Cymbaloporella tabellaeformis

Test with an initial trochospiral coil followed by chambers added in alternating annular series, evolute on the spiral side, involute on the umbilical one; chambers elongated at the periphery, giving a tabular appearance to the test, with a nearly plane spiral side; umbilical side centrally depressed; wall coarsely perforate on the spiral side, more finely so on the umbilical side; apertures numerous small openings surrounded by a produced rim along the umbilical side sutures, more than 8 in the adult; number of apertures smaller in younger specimens.

Southwestern lagoon, 5-30 m.
Systematics p. 316.

Cymbaloporetta

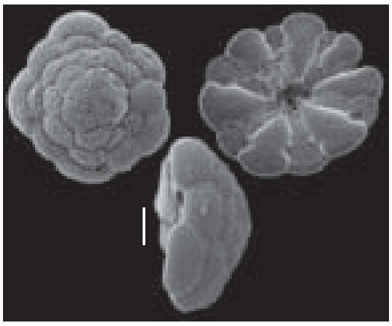
Planktonic stages of species with a *Cymbaloporetta*-like initial stage and a hemispherical balloon chamber ("*Tretomphalus*") were found. According to the discussion made in the section "How to use the guide", they have been placed with the benthic *Cymbaloporetta*. Due to the uncertainties in the relationship between the planktonic stage and the corresponding benthic species, it was decided to present them separately, with mention of the suspected corresponding benthic species when possible.

Cymbaloporetta bradyi

Low trochospiral test, roughly squared or polygonal in outline; dorsal side slightly convex, peripheral margin rounded; chambers bigger as added, first trochospirally arranged, later in an annular arrangement, irregularly globular on the spiral side; umbilibal side flat with open umbilicus and chambers appearing long and thin; wall coarsely perforate on the spiral side, smooth on the umbilical side; typically three apertures on each chamber, two in a sutural position and one opening into the umbilicus.

This species differs from *C. squammosa* in its much more compressed form and the much more open arrangement of the chambers on the ventral side.

Living on algae, 1-20 m.
Systematics p. 316.

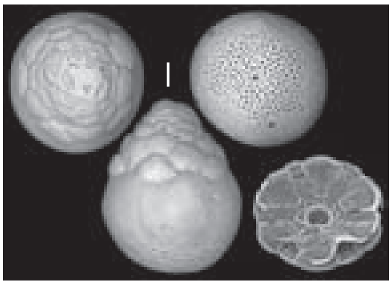


Cymbaloporetta grandis

The high conical benthic *Cymbaloporetta*-like stage resembles *Cymbaloporetta squammosa*.

Test large, the *Cymbaloporetta*-like earlier portion making up about half the entire height of the test; greatest dimension from the apex to the base of the balloon chamber, and greatest diameter across the ballon chamber; chambers of the final circle of the initial portion appear to hang down over the balloon chamber in side view; balloon chamber bulging outward from the overhanging chambers; earlier portion and balloon chamber rather coarsely and densely perforated; numerous large rimmed openings at its base disposed in a star pattern with five or more arms, and some smaller rimmed openings at the suture between the *Cymbaloporetta* stage and the balloon chamber.

Southern shelf, 200 m.
Systematics p. 316.

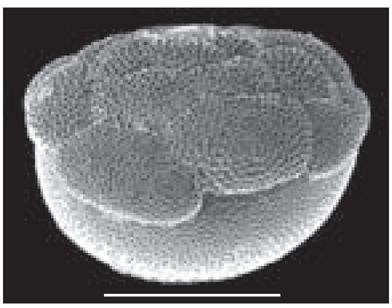


Cymbaloporetta plana

The benthic *Cymbaloporetta*-like stage has not been identified without the balloon chamber.

Planktonic stage low and flattened both top and bottom; initial *Cymbaloporetta*-like stage flat, as in *Cymbaloporetta bradyi*, slightly protruding out all around the balloon chamber; wall coarsely and densely perforated in the initial stage, somewhat less so in the balloon chamber that is, however, distinctly perforated; numerous large rimmed openings at the base of the balloon chamber.

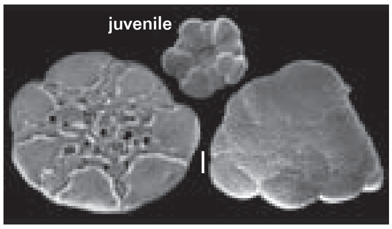
Southwestern lagoon, 40 m.
Systematics p. 316.



Cymbaloporetta squammosa

Test high subconical, apex rounded; early chambers trochospiral, later ones in alternating concentric rings; chambers irregularly globular on the spiral side, short and regularly arranged around the umbilicus on the umbilical side; umbilicus open in young specimens, later sealed by extensions of the chamber wall that made up an irregular plate that may or may not be perforate by rounded holes; wall coarsely perforate on the spiral side, less so on the umbilical side; aperture of each chamber in sutural position, and at the end of each chamber.

Living on algae, 3-30 m.
Systematics p. 316.



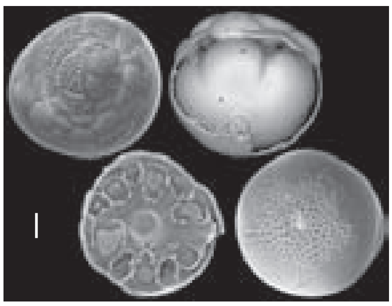
Cymbaloporetta sp. 1

The high conical benthic *Cymbaloporetta*-like stage resembles *Cymbaloporetta bradyi*.

Test composed of a low conical *Cymbaloporetta*-like earlier portion and a rounded, bulging balloon chamber; entire test almost spherical in outline; chambers of the final circle of the initial portion appear to hang down over the balloon chamber in side view; balloon chamber bulging outward from the overhanging chambers; earlier portion rather coarsely and densely perforate, balloon chamber densely perforate with a smooth wall, except the numerous large rimmed openings at its base disposed in a five-arm star pattern, and some smaller rimmed openings at the suture between the *Cymbaloporetta* stage and the balloon chamber.

A picture with the balloon chamber broken lets see the floating chamber, inside.

Northern shelf, 200 m.
Systematics p. 316.

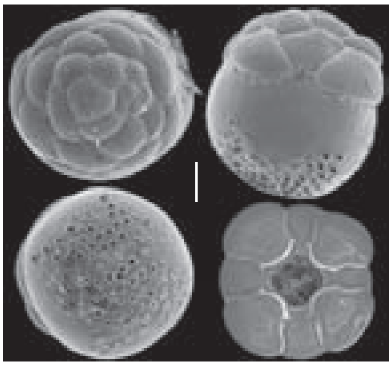


Cymbaloporetta sp. 2

The benthic *Cymbaloporetta*-like stage, without the balloon chamber, has four chambers in the last whorl. It seems close to *Cymbaloporetta bradyi*, but with fewer chambers on the umbilical side.

Planktonic stage large, with a *Cymbaloporetta*-like earlier portion and a rounded, bulging balloon chamber; greatest dimension from the apex to the base of the balloon chamber, and greatest diameter across the balloon chamber, which is, however, less inflated than in *Tretomphalus grandis*; chambers of the final circle of the initial portion appear to hang down over the balloon chamber in side view; balloon chamber bulging outward from the overhanging chambers; earlier portion rather coarsely and densely perforate, balloon chamber finely and scarcely perforated with a smooth wall, except the numerous large rimmed openings at its base disposed in a four-arm star pattern, and some smaller rimmed openings at the suture between the *Cymbaloporetta* stage and the balloon chamber.

Southwestern lagoon, 40 m.
Systematics p. 316.



Delosina

Delosina complexa

Test elongate, ovate in outline, rounded in section; chambers in a high trochospiral coil of three strongly overlapping chambers per whorl, increasing rapidly in height as added, final whorl occupying most of the test length; sutures depressed, strongly oblique; wall finely perforate, surface smooth; aperture consisting of fine openings in an arched spongy area at the base of the apertural face, and large secondary sutural openings.

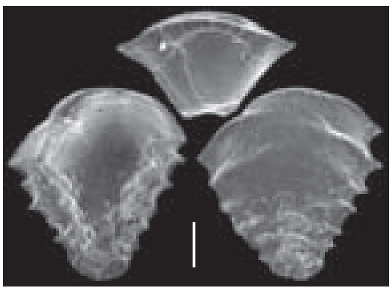
Southwestern lagoon, 40 m.
Systematics p. 306.

Ehrenbergina

Ehrenbergina bosoensis

Test biserial and slightly coiled in early portion, triangular in outline, subtrapezoidal in end view; in end view "dorsal" margin convex and "ventral" margin with a broad median furrow; apical end spinose, periphery carinate, with short, small spines; chambers broad and low, indistinct, not inflated; "ventral" sutures depressed, "dorsal" sutures limbate, raised and meandering in the early portion of the test; wall very finely perforate; aperture a curved elongate slit paralleling and close to the peripheral margin, its upper margin bordered by radiating grooves.

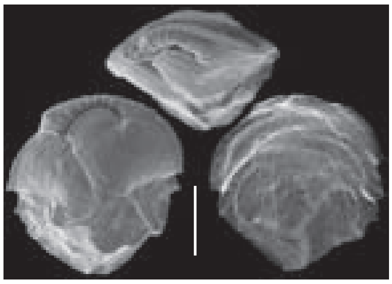
Northern shelf, 600 m.
Systematics p. 301.



Ehrenbergina crispata

Test biserial and slightly coiled in early portion, compressed perpendicular to the plane of coiling, lenticular in section; apical end narrowly rounded; peripheral margin acute, lobulate and spinose; chambers broad and low, triangular, broadly overlapping, with margins raised over previous chambers, angular; sutures depressed; wall distinctly perforate, surface ornamented with small pustules and weak ridges; aperture a curved elongate slit paralleling the peripheral margin, its upper margin bordered by radiating grooves, and the other side with a distinct apertural flap provided with a narrow lip.

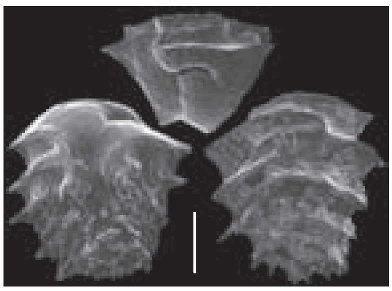
Northern shelf, 600 m.
Systematics p. 301.



Ehrenbergina cf. *E. decorata*

Test biserial and slightly coiled in early portion, triangular in outline, trapezoidal in end view; in end view "dorsal" margin nearly straight and "ventral" margin with a broad median furrow; apical end spinose, periphery carinate, with stout spines; chambers broad and low, indistinct, not inflated; "ventral" sutures depressed, "dorsal" sutures limbate, raised and moderately curved; wall very finely perforate; aperture a curved slit paralleling and some distance from the peripheral margin; apertural face with distinct grooves. This species resembles the species of Ujiié (1990), differing from the typical *E. decorata* by more prominent sutures on the "dorsal" side.

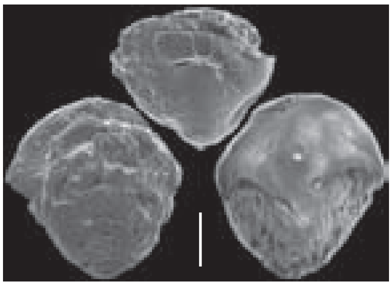
Northern shelf, 600 m.
Systematics p. 301.



Ehrenbergina sp. 1

Test biserial and slightly coiled in early portion, triangular in outline, triangular in end view; apertural end broadly rounded, periphery acutely rounded; chambers broad and low, indistinct, not inflated; "ventral" sutures deep, with highly overlapping chambers; "dorsal" sutures raised and fusing to form a mass of shell material that nearly covers the "dorsal" side; wall finely perforate; aperture a curved slit paralleling and some distance from the peripheral margin; apertural face with distinct grooves.

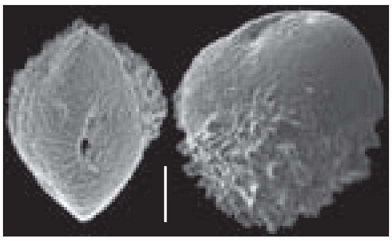
Northern shelf, 600 m.
Systematics p. 301.



Ehrenbergina sp. 2

Test biserial and slightly coiled in early portion; test stout, rounded in outline, periphery rounded; chambers and sutures indistinct; initial portion spinose; wall coarsely and densely perforate; aperture a curved slit paralleling and some distance from the "dorsal" margin.

Northern shelf, 600 m.
Systematics p. 301.

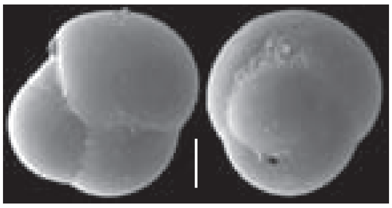


Eusphaeroidina

Eusphaeroidina inflata

Test globular, coiling much variable, independently to position of aperture; chambers spherical and strongly embracing, rapidly increasing in size, the last chamber occupying one half to two thirds of the whole test; wall very finely perforate, smooth; aperture a low arch, weakly rimmed, at the base of the last chamber, provided with a small crescentic lip. *Eusphaeroidina* differs from *Sphaeroidina* in its more rapid growth and in the position of the aperture that is not at the junction between the last three chambers.

Southern shelf, 70 m.
Systematics p. 311.



Evolvocassidulina

Evolvocassidulina belfordi

Test biserially arranged with the plane of biseriality planispirally enrolled; test small, slightly compressed, pyriform with the last two chambers tending to uncoil; apertural end bluntly rounded, peripheral margin narrowly rounded, not lobulate; chambers not inflated, gradually increasing in size as added; sutures distinct, flush with surface, almost straight; wall smooth and polished, distinctly perforated; aperture a subterminal slit extending upward almost to the top of the poorly developed apertural face.

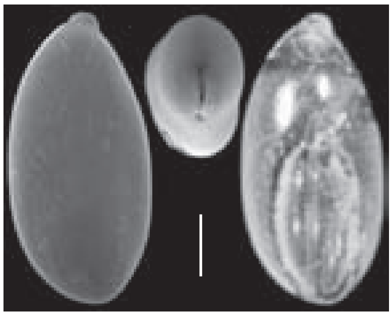
Northern shelf, 600 m.
Systematics p. 300.

Fissuripolymorphina

Fissuripolymorphina albemarlensis

Test elongate, ovate in outline, compressed, periphery rounded, non-lobulate; length usually more than twice width; basal end broadly rounded, greatest width about midpoint; chambers biserially arranged, rapidly increasing in size, most of chambers extending to base, sutures curved, in a longitudinal position, very slightly depressed; wall thin, hyaline, finely perforate, non-perforate around sutures; surface smooth; apertural end narrowly rounded; aperture an elongate and narrow terminal slit, between projecting lips.

Northern shelf, 600 m.
Systematics p. 290.



Fissuripolymorphina williamsoni

Test elongate, subovate in outline, somewhat compressed, periphery rounded, chambers biserially arranged, overlapping at the margins, sutures oblique, very slightly depressed; wall thin, hyaline, finely perforate, non-perforate around sutures; surface smooth; aperture an elongate and narrow terminal slit, slightly projecting, bordered by a low lip.

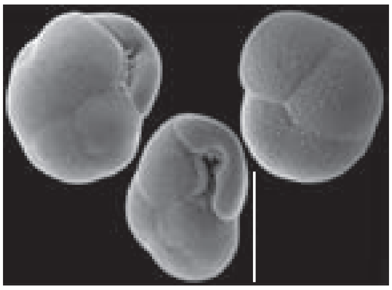
Northern shelf, 200 m.
Systematics p. 290.

Globocassidulina

Globocassidulina crassa

Test biserially arranged with the plane of biseriality planispirally enrolled; test small and slightly compressed; periphery nearly circular, slightly lobulate, with last chamber slightly protruded; peripheral margin rounded; chambers moderately inflated, gradually increasing in size as added; about 4 pairs of chambers in the last whorl; sutures distinct, gently curved; wall smooth, distinctly perforated; aperture an elongate slit parallel to the suture, with a short branch extending into the apertural face (areal branch); aperture bordered by an apertural ridge along its lower margin, a narrow lip along its upper margin, and a cristate tooth near the areal branch.

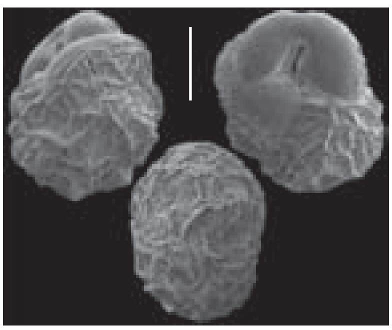
Estuaries, bays, 5-40 m.
Systematics p. 300.



Globocassidulina decorata

Test biserially arranged with the plane of biseriality planispirally enrolled; test medium, subglobular to globular, with last chamber slightly protruded; sutures indistinct, obscured by the ornamentation; wall decorated by a network of irregular costae, strongly reticulated on earlier chambers and progressively less developed toward the unornamented last chamber; aperture with two branches, one along the suture, at the base of the apertural face, the other extending into the apertural face; aperture bordered by a thickened apertural ridge and a triangular apertural flap.

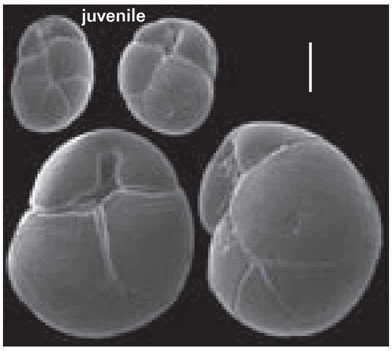
Northern shelf, 600 m.
Systematics p. 300.



Globocassidulina parva

Test biserially arranged with the plane of biseriality planispirally enrolled; test medium, globular, periphery broadly rounded, not lobulate; sutures very distinct, grooved, U-shaped in section; wall finely perforated, smooth, sutural regions and apertural face imperforate; aperture with two branches, one along the suture, at the base of the apertural chamber, the other extending almost orthogonally over the apertural face.

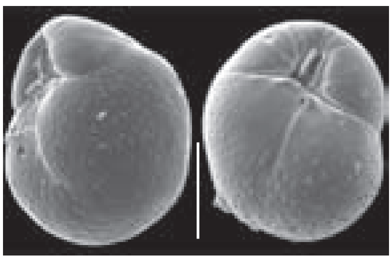
Northern shelf, 600 m.
Systematics p. 300.



Globocassidulina subglobosa

Test biserially arranged with the plane of biseriality planispirally enrolled; test globular, periphery broadly rounded, not lobulate, last chamber somewhat projecting; sutures indistinct; wall coarsely perforated, with depressed pore margins, apertural face imperforate with faint striations radiating from the aperture; aperture a narrow elongate opening extending almost orthogonally over the apertural face; a small lip is present on one margin, and a narrow tooth extends along the opposite side.

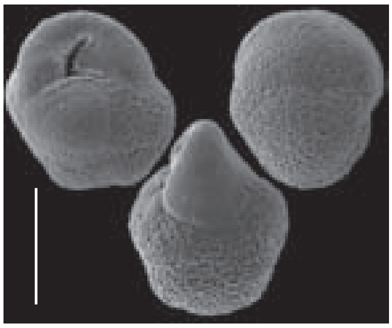
Northern shelf, 600 m.
Systematics p. 300.



Globocassidulina sp. 1

Test biserially arranged with the plane of biseriality planispirally enrolled; test medium, subglobular to globular, with last chamber protruded; sutures indistinct, obscured by the ornamentation; wall decorated by a network of fine costae, strongly reticulated on earlier chambers and progressively less developed toward the unornamented last chamber; aperture with two branches, one along the suture, at the base of the apertural chamber, the other extending into the apertural face; aperture bordered by a thickened apertural ridge and a triangular apertural flap. This species resembles *G. decorata* from which it differs mainly by the finer and more regular ornamentation, and by the aperture with a longer sutural branch.

Northern shelf, 600 m.
Systematics p. 300.



Globulina

Globulina gibba

Test generally nearly spherical to somewhat compressed, rounded at the base; apertural end variable, either acuminate with the aperture situated on a mammillate protuberance, or truncate and the general aperture flush with the body of the test; usually three compactly joined and overlapping chambers visible; sutures neither excavated nor depressed; wall finely perforated, smooth; aperture radiate, but commonly obscured by fistulose growth.

Northern shelf, 200 m.
Systematics p. 290.

Globulina myristiformis

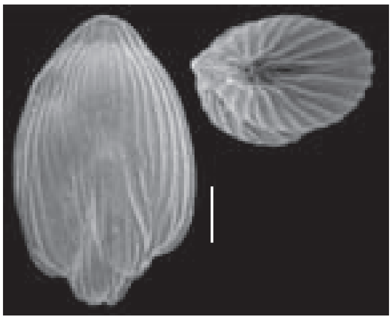
Test ovate in outline, circular in cross section, chambers and sutures indistinct; wall finely perforated, ornamentation with irregular, interrupted costae; aperture radiate.

Southwestern lagoon, 30 m.
Systematics p. 290.

Guttulina regina

Test ovate, somewhat compressed, with six to eight visible chambers; chambers oblong and inflated, added in five planes at about 144° apart, sutures distinct and depressed; surface ornamented by regular, closely-set, prominent longitudinal costae; aperture terminal radiate.

South of the Grande Terre, 10-30 m.
Systematics p. 290.



Guttulina sp. 1

Test ovate, somewhat compressed; initial end angularly rounded, apertural end rounded; periphery broadly rounded; chambers slightly inflated, added in five planes at about 144° apart; sutures flush or very slightly depressed; surface smoothly finished; aperture terminal radiate.

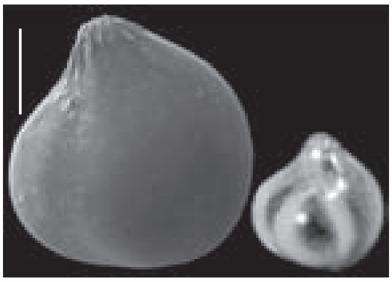
Northern shelf, 400 m.
Systematics p. 291.

Guttulina

Guttulina bartschi

Test inflated, as broad as high, characterized by globular chambers added in a manner that the test broadens more quickly than it heightens; sutures slightly depressed; surface smoothly finished, finely perforated; apertural end acuminate with a distinctly radiate aperture, the radial segments of which fusing over the opening.

Northern shelf, 600 m.
Systematics p. 290.



Guttulina yamazakii

Test elongate, the base broadly rounded, uniformly tapering toward the apertural end; chambers elongated, especially the later ones, arranged in a quinqueloculine series, each succeeding chamber slightly removed from the base; wall smooth, finely perforated, aperture terminal, radiate.

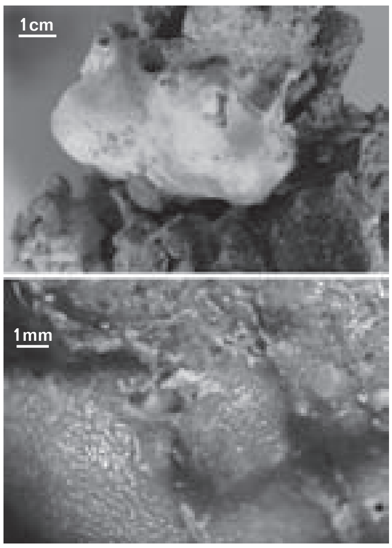
Northern shelf, 600 m.
Systematics p. 290.

Gypsina

Gypsina plana

Test very large, incrusting, composed of numerous layers of chambers coating solid substrates, in competition with other incrusting organisms, and making large, white, smooth accumulations; each layer consists of an expanse chamber divided into small, polygonal, somewhat irregular chamberlets; each expanse chamber forms a discontinuous meshwork through which previous chambers can be seen; sutures between chamberlets limbate; wall perforate; apertures multiple, each marginal chamberlet bearing several apertures, with or without a peristomal rim.

Living on coral rubble or algae, 40-125 m.
Systematics p. 317.

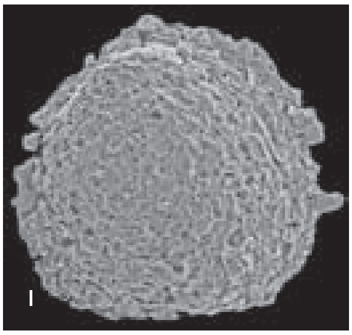


Gypsina vesicularis

Test large, attached, convex or subconical, frequently taking the form of a truncated cone; test constructed of numerous layers of small, polygonal and closely packed chambers separated by raised imperforate septa; neighboring chambers belonging respectively to the ultimate and penultimate layers are out of level for half their height in radial direction, with respect to each other; upper surface of the chambers coarsely perforate; apertures multiple consisting of small rounded openings or small slits at the base of the free chamber walls.

Several authors consider that attached hemispherical forms attributed to *Gypsina vesicularis* (Parker and Jones) and free spherical forms attributed to *Sphaerogypsina globula* (Reuss) belong to the same species and are only different morphotypes. However, some differences may be observed between the two species, for example the imperforate raised septa are absent in *Sphaerogypsina*.

Living attached on algae, often *Halimeda*, 10-30 m.
Systematics p. 317.

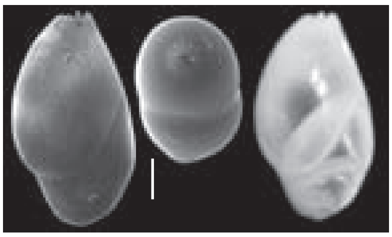


Hemirobulina

Hemirobulina angistoma

Test elongate, stout, circular in section; early chambers added in a slight curve at the base, but not coiled, later becoming rectilinear; chambers as high as wide, sutures oblique; wall finely perforate, surface smooth and unornamented; aperture terminal, radiate, at the dorsal angle.

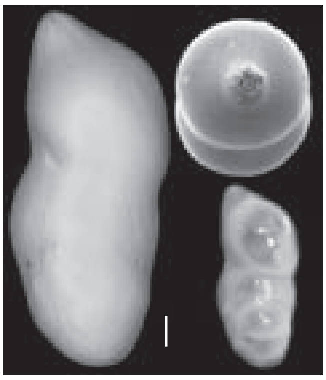
Northern shelf, 600 m.
Systematics p. 288.



Hemirobulina galapagosensis

Test elongate, circular in section, numerous chambers added in a slight curve at the base, later becoming irregularly rectilinear; sutures oblique, slightly depressed; wall finely perforate, surface smooth and unornamented; aperture terminal, radiate, at the dorsal angle, slightly produced on a neck.

Northern shelf, 600 m.
Systematics p. 288.

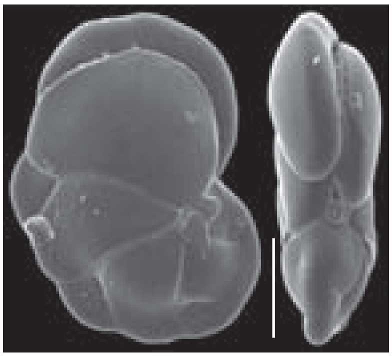


Heterocassidulina

Heterocassidulina sp. 1

Test biserially arranged with the plane of biseriality planispirally enrolled, becoming uncoiled for the last chambers; test medium, oval in side view, compressed; periphery lobulate; chambers inflated in the central portion, and suddenly compressed at the periphery; sutures distinct, deep; wall finely perforated, smooth; aperture an elongate narrow slit along the suture.

Northern shelf, 600 m.
Systematics p. 300.

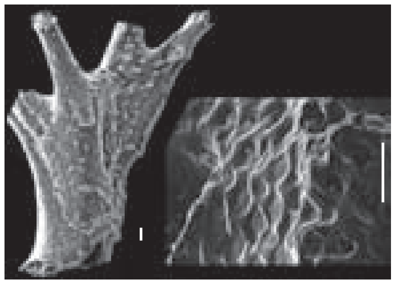


Homotrema

Homotrema rubra

Test large, attached, variable in form but generally arborescent with erected branches, commonly red in color; early chambers in spiral or clustered arrangement, later in numerous layers; upper chamber wall coarsely perforate, surrounded by an imperforate rim that is the elevated portion of the imperforate intercameral walls; which differs from the structure of *Miniacina miniacina*; apertures at the end of the branches, with sponge spicules glued into the tubular peristomal extension of the aperture.

Living attached on coral rubble and algae, 1-125 m.
Systematics p. 318.

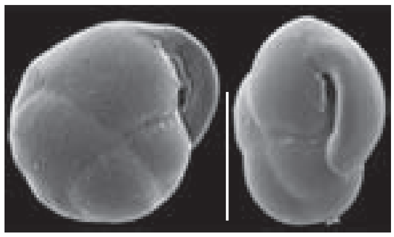


Islandiella

Islandiella japonica

Test biserially arranged with the plane of biseriality planispirally enrolled; test nearly circular in outline, subglobular, periphery rounded, slightly lobulate; chambers somewhat inflated, only a small triangular part of the chamber visible at the periphery on the opposite side; sutures slightly depressed, limbate, gently curved; wall finely perforate, surface smooth and polished; aperture an elongate opening, with a prominent tooth.

Coastal bay, 10 m.
Systematics p. 300.

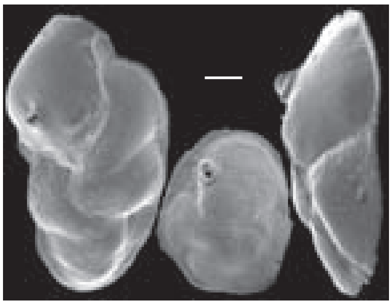


Karreria

Karreria maoria

Test attached for much of growth; early stage trochospirally enrolled, the spiral side attached, surrounded by a carina, and the free side involute; later uncoiling, shape and arrangement of the globular chambers varying depending on the support; sutures depressed; wall thick, smoothly finished and very finely perforate; aperture rounded, at the end of a raised rim, migrating far from the periphery in uncoiled stage.

Northern shelf, 400 m.
Systematics p. 322.



Laryngosigma compacta

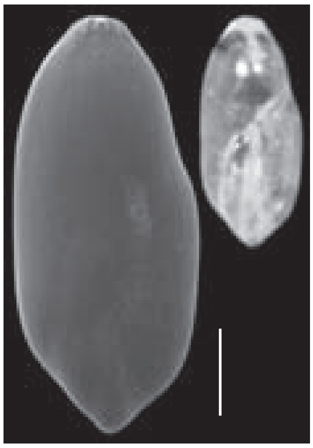
Test ovate in contour, slightly compressed; chambers biserially arranged and irregularly sigmoid; initial end rounded; chambers increasing rapidly in size; sutures slightly depressed, slightly diagonal to almost longitudinal; wall transparent, finely perforate, surface smooth; aperture terminal, slightly produced, radiate, with a short entosolenian tube.

Northern shelf, 600 m.
Systematics p. 296.

Laryngosigma sp. 1

Test elongate compressed, sides parallel; chambers biserially arranged and sigmoid, added in planes slightly less than 180° apart; initial end acute; chambers elongate and overlapping; sutures slightly depressed, longitudinal then curving sharply about mid-test; wall transparent, surface smooth; aperture terminal, radiate, with a short entosolenian tube.

Northern shelf, 600 m.
Systematics p. 296.

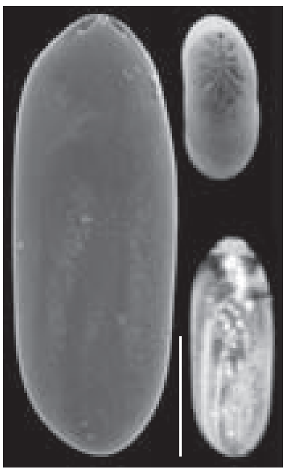


Laryngosigma

Laryngosigma afueraensis

Test elongate, much compressed, subquadrate in contour, periphery rounded; initial end broadly rounded, width almost uniform; chambers biserially arranged and sigmoid, added in planes slightly less than 180° apart; initial end rounded; chambers elongate, increasing rapidly in length, quite slowly in width and strongly overlapping; sutures flush, diagonal with sharply curved ends; wall transparent, finely perforated, surface smooth; aperture terminal, radiate, with a short stout entosolenian tube.

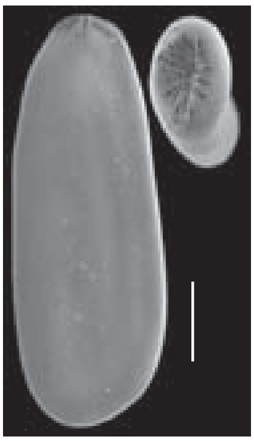
Northern shelf, 600 m.
Systematics p. 296.



Laryngosigma williamsoni

Test elongate ovate, somewhat compressed, sides nearly parallel; chambers biserially arranged and sigmoid, added in planes slightly less than 180° apart; initial end rounded; chambers elongate and strongly overlapping; sutures flush, oblique; wall transparent, surface smooth; aperture terminal, radiate.

Northern shelf, 200 m.
Systematics p. 296.



Laryngosigma sp. 2

Test compressed, fusiform, periphery rounded; initial end narrowly rounded, protruding, apertural end broadly rounded; chambers broad, elongate, added in a biserial sigmoid series in planes slightly less than 180° apart, each succeeding chamber farther removed from the base; sutures depressed; wall finely perforate, surface smooth; aperture large, terminal, radiate.

Southwestern lagoon, 40 m.
Systematics p. 296.

Laryngosigma sp. 3

Test elongate ovate in outline, very slightly compressed and ovate in section; chambers biserially arranged and irregularly sigmoid; initial end rounded, chambers narrow and elevated, overlapping, sutures flush, diagonal with curved ends; wall finely perforate, surface smooth; aperture terminal, radiate, with a short entosolenian tube.

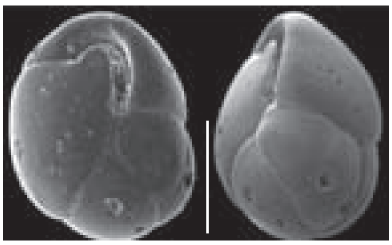
Northern shelf, 600 m.
Systematics p. 296.

Lernella

Lernella inflata

Test biserially arranged with the plane of biseriality planispirally enrolled; test medium, subcircular to ovate in side view, slightly compressed; periphery broadly rounded, distinctly lobulate; last four chambers may occupy 2/3 of the circumference of the test; sutures distinct, depressed, gently curved; wall finely perforated, smooth; aperture a curved, elongate slit at the base of the last chamber with a large apertural flap.

Northern shelf, 600 m.
Systematics p. 300.

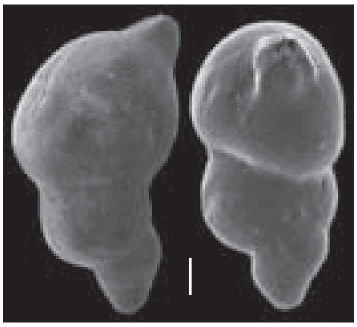


Marginulina

Marginulina obesa

Test elongate, nearly circular in transverse section, irregularly curved; initial end bluntly rounded; the figured specimen with a large proloculus lacks the spiral section, as it may be the case for the megalospheric generation of *Marginulina*; all chambers somewhat inflated, and the last being large in comparison with the others; sutures straight to oblique; wall finely perforate; aperture on one side of the last chamber, radiate, terminal and produced on a neck.

Southern lagoon, 40 m.
Systematics p. 288.



Millettia

Millettia limbata

Test elongate, compressed, tapering, somewhat twisted or otherwise irregular; proloculus followed by two biserially arranged chambers; later chambers rectilinear or slightly arcuate, few chambers making up the test; apertural end rounded, initial extremity angular or pointed; surface marked by a number of raised transverse bands of shell-substance connected by a similar band on the median line on either side of the test, which may become irregular in later chambers; wall perforated, with perforations more distinct on the ornamentational ridges; aperture terminal, produced on a neck.

South of the Grande Terre, 30 m.
Systematics p. 305.

Millettia cf. *M. tessellata*

Test subcylindrical, arcuate, slightly tapering; proloculus followed by two biserially arranged chambers, few later chambers (4-5) making up the test; chambers elongate, gradually increasing in size, joined end to end, subcylindrical but with a longitudinal constriction running over all chambers and deforming the apertural face; periphery regularly constricted at the junction of the chambers; sutures depressed; surface marked by a number of raised transverse and longitudinal bands of shell-substance resulting in a somewhat irregular areolated pattern; longitudinal bands may be interrupted in the last chamber; aperture a central stellate orifice, on a short neck, with an everted lip.

This species differs from the typical *Millettia tessellata* by its irregular and non-alternating areolate pattern.

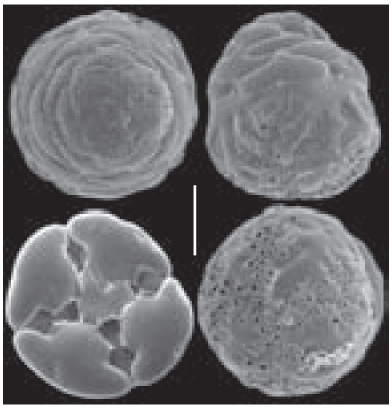
South of the Grande Terre, 40 m.
Systematics p. 305.

Millettiana

Millettiana milletti

Test trochospiral and planoconvex in the early stage, chambers broadening, to become crescentic; wall coarsely perforate on the spiral side, umbilical side imperforate with radial sutures; sutures limbate on the spiral side; later chambers added in cycles, being mushroom-shaped in outline on the umbilical side, and having lateral apertures; the gamont produces a balloon chamber, which, when fusing with the enclosed float chamber produces branching tubes, reflected externally as vermicular ridges; float chambers with irregularly distributed holes. Vermicular ridges and irregularly positioned holes easily distinguish *M. milletti* from species of *Cymbaloporetta* and *Tretomphalus,* which have a smooth-walled balloon chamber, and more regularly positioned holes.

Southwestern lagoon, 40 m.
Systematics p. 316.

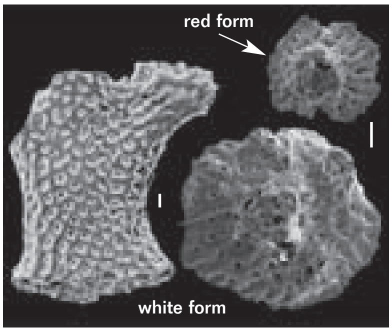


Miniacina

Miniacina miniacea

Test large, attached, forming an irregularly convex, tuberculate or arborescent mass, somewhat spreading at the base; surface areolate in various ways; light pink to red in color, rarely white; test composed of a multitude of small chambers, arranged spirally at the initial stage, later in more or less regular layers of expanse chambers extending over the previous layer of chambers in a reticulate pattern, with funnel-shaped, perforate invagination of lateral wall; in arborescent specimens, the central core of the branches is formed by irregular, nonseptate, imperforate cylindrical tubes, ending externally in large, irregular, terminal orifices often armed with sponge spicules, either entire or broken; walls coarsely perforated; aperture one to multiple rounded openings with phialine bordering lip at the ends of the branches.

Living attached on algae, 15-125 m.
Systematics p. 318.



Miniacina sublarvata

Test discoidal, flattened, nearly symmetrical, periphery rounded; irregular-shaped chambers added in irregular series; wall calcareous, more coarsely perforated on one side than the other; aperture indistinct due to coarse perforation.

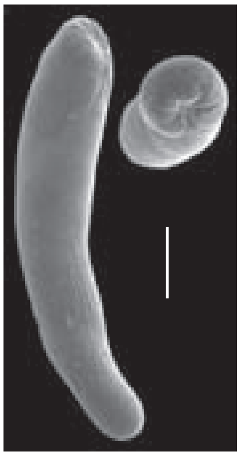
Southern and northern shelf.
Systematics p. 318.

Orthoplecta

Orthoplecta clavata

Test cylindrical, elongate, arcuate, uniserial with asymmetrical chambers arranged in a corkscrew-like fashion; sutures flush with the surface, oblique; apertural face terminal, circular; wall finely perforate, ornamented with some longitudinal ridges; aperture a small central opening, almost entirely covered by a low broad flap and surrounded by a few radiating furrows that continue over the edge of the apertural face.

Southwestern lagoon, 25 m.
Systematics p. 303.



Paracassidulina

Paracassidulina angulosa

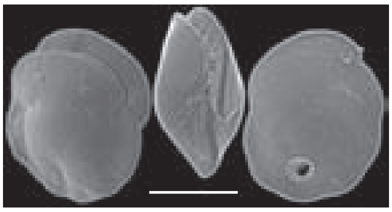
Test biserially arranged with the plane of biseriality planispirally enrolled; test compressed, lenticular; chambers elongate, five pairs in the last whorl; periphery strongly lobulate, with prominent bosses; wall smooth; aperture a long narrow slit along the suture, with a narrow lip along its inner margin.

Northern shelf, 600 m.
Systematics p. 300.

Paracassidulina neocarinata

Test biserially arranged with the plane of biseriality planispirally enrolled; test compressed, lenticular, with four pairs of chambers in the last whorl; periphery subcircular slightly lobulate; peripheral margin carinate; chambers elongated and narrow, tangentially much curved; umbilical region filled with semi-opaque shell material, with sutures indistinct; wall polished, finely perforate; aperture a long narrow slit along the suture, with a narrow lip along its inner margin.

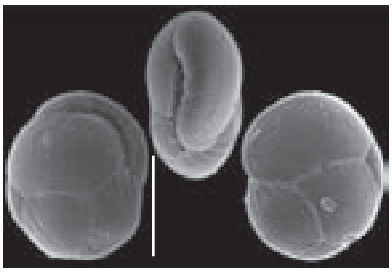
Northern shelf, 600 m.
Systematics p. 300.



Paracassidulina sulcata

Test biserially arranged with the plane of biseriality planispirally enrolled; test small, nearly circular in side view, compressed, oval in end view; periphery slightly lobulate; peripheral edge rounded; chambers broadly rhomboid, very slightly inflated; sutures distinct, deep; wall finely perforated, smooth, but with irregularly distributed grooves running out from the sutures and aperture; aperture an elongate narrow slit along the suture, bordered on its upper margin by radiating grooves and on the other side by a thin apertural ridge.

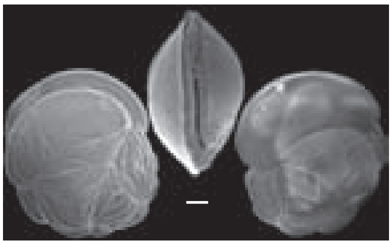
Northern shelf, 600 m.
Systematics p. 300.



Paracassidulina sp. 1

Test biserially arranged with the plane of biseriality planispirally enrolled; test large, nearly circular in side view, compressed, lenticular in end view; periphery distinctly lobulate; peripheral edge acute; chambers broadly rhomboid, very slightly inflated; sutures distinct, deep; wall finely perforated, ornamented with numerous grooves running out from the aperture and sutures, mostly near the periphery; aperture an elongate narrow slit along the suture, bordered on both margins by thickened apertural ridges.

Northern shelf, 600 m.
Systematics p. 300.

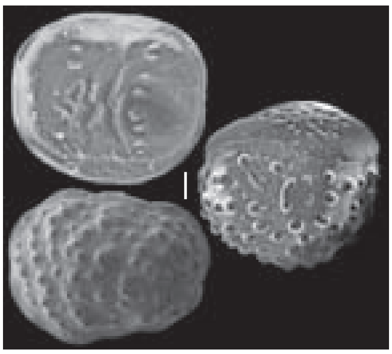


Pegidia

Pegidia dubia

Test unequally biconvex and irregular in shape, ranging between a regular oval and a quadrate contour with rounded corners; periphery with a broad smooth keel; reduced trochospiral coiling of two chambers per whorl, rapidly enlarging as added; spiral side domed, densely covered with tubercles that obscure the sutures; umbilical side flattened; wall thick, finely perforate, spiral side strongly tuberculate, umbilical side smooth; aperture consisting of openings of tubular canals along the sutures on the umbilical side.

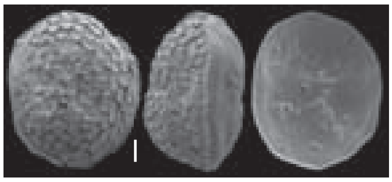
Southwestern lagoon near passes; southern shelf, 40-60 m.
Systematics p. 308.



Pegidia lacunata

Test planoconvex, subcircular; weak trochospire of two chambers per whorl, involute, rapidly enlarging as added, spiral side domed, umbilical side flattened; periphery heavily carinate, rounded, non-lobulate; sutures of the spiral side not visible; wall thick, finely perforate, spiral side with numerous, strong, truncated tubercles, umbilical side smooth, ornamented with parallel wrinkle-like striae across central area; aperture consisting of openings of tubular canals along an X-shaped outline on the umbilical side.

South of the Grande Terre, 50 m.
Systematics p. 308.



Physalidia

Physalidia? *earlandi*

Test reniform, characterized by a few globular chambers arranged in an elongate trochospire; chambers inflated, subspherical, variable in shape, increasing regularly in size as added; initial stage constituted of a relatively small proloculus and 3 closely-enrolled chambers; sutures deeply depressed; wall very thin, hyaline, smooth, irregularly but distinctly perforated, with a non-perforate area just below the aperture; aperture a fine slit at the base of the final chamber, bordered by a distinct poreless lip on the upper margin.

The unique specimen of this species resembles the specimens illustrated by Parker (2009) as *Physalia earlandi*, from which it differs by the greater number of chambers, the initial spiral stage and the small proloculus. Since this species is reported in the literature with

less chambers (generally 4), and a big proloculus, it is hypothesized that the specimen from New Caledonia could be a microspheric individual of the same species, elsewhere illustrated by megalospheric stages.

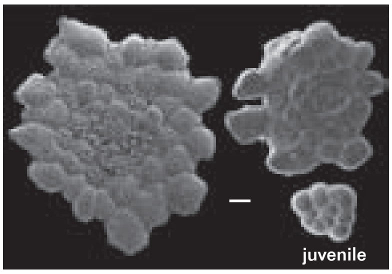
Northern shelf, 200 m.
Systematics p. 307.

Planogypsina

Planogypsina acervalis

Test large, normally attached, irregularly discoidal, the shape being controlled largely by the shape of the substrate; attached side flattened, free side more or less convex; peripheral margin acute; periphery lobulate; chambers nearly isometric, subglobular, inflated, added evenly in all directions on a flat substrate, with the addition of minute chambers on the free surface of the test; chambers may be added irregularly and in several layers in specimens that are restricted in growth by the substrate; wall coarsely perforated; each chamber has two arched apertures bordered by a rim at the contact with previous chambers, and a large number of peripheral, tubular apertures; small sutural apertures open on both sides of the test.

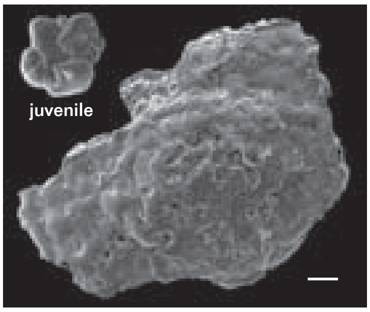
Living attached on algae, 1-80 m.
Systematics p. 317.



Planogypsina squamiformis

Test large, irregularly discoidal, very thin, normally attached and encrusting; early stage with globular chambers in planispiral arrangement, later chambers elongate to vermiform and added irregularly; wall perforate; apertures multiple, on the free side of the test, often hard to see: two low slits with a narrow rim in each chamber, at the contact with previous chambers; apertures in radial position may also occur, as well as minute slit-like sutural apertures on both sides of the test.

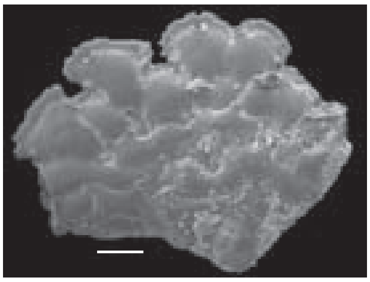
Living attached on algae, 1-125 m.
Systematics p. 307.



Planogypsina? sp. 1

Test large, normally attached, the shape being controlled largely by the shape of the substrate; attached side flattened, free side more or less convex; peripheral margin acute, bordered by a narrow, indented flange; periphery lobulate; chambers slightly inflated, added in all directions on the substrate, with the addition of minute chambers on the free surface of the test; chambers may be added irregularly and in several layers in specimens that are restricted in growth by the substrate; wall shiny, very transparent, very finely perforated; each chamber has two arched apertures bordered by a rim at the contact with previous chambers, and additional peripheral apertures; small sutural apertures open on both sides of the test. This species resembles *P. acervalis,* from which it differs by its less inflated chambers, and more evidently by very fine perforations of the wall instead of coarse perforations in *P. acervalis*.

Outer reef, 100 m.
Systematics p. 317.

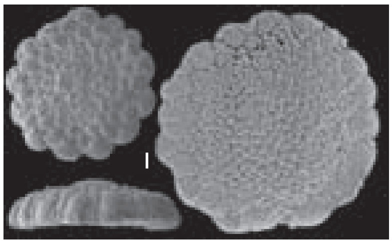


Planorbulinella

Planorbulinella larvata

Test discoidal, flattened, trochospiral in the early stage, later chambers added in annular series, and nearly symmetrical; may be attached; chambers of successive annuli alternating in position; sutures depressed; periphery subrounded; wall coarsely perforate; central part of the test thickened by a perforate secondary lamination with irregular pustular ornamentation that covers both sides of the test with the exception of the final one to two annular series of chambers; two apertures per chamber lie at opposite ends of each chamber on the periphery and are provided with a narrow bordering lip.

Southwestern lagoon near passes; southern shelf, 40-70 m.
Systematics p. 316.

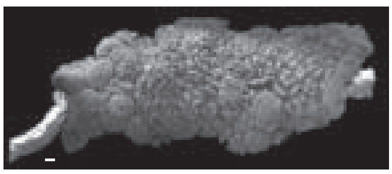


Planorbulinoides

Planorbulinoides retinaculata

Test attached, early stage trochospiral, later chambers globular added in an irregular layer, spreading, and loosely appressed, leaving gaps between adjacent chambers; morphology of the test depending on the geometry of the support; sutures deeply depressed; periphery irregularly lobulate; in adult stage, additional chambers are added over the first layer of chambers; wall very thick, coarsely perforate; adult test with prominent secondary lamination and high pseudospines, sometimes bifurcating, that cover and obscure the central parts of the test; last-formed chambers with multiple spikes on their free side; apertures multiple, small openings on short necks that arise at the chamber margin against the attachment; additional sutural apertures open in the deep sutures.

Outer reef, 40 m.
Systematics p. 315.



Polymorphina

Polymorphina cf. *P. diffusa*

Early stage consisting in an ovate test, biserially arranged, but often twisted, with elongate chambers separated by slightly depressed sutures; later stage developing a "wild growth" of a fistulose form, usually spinose and irregular.

Southwestern lagoon, 40 m.
Systematics p. 291.

Pyrulina

Pyrulina angusta

Test fusiform, circular in section, with obtuse extremities, somewhat pointed at the initial end; usually composed of about four embracing, elongate chambers; chambers added in planes about 120° apart in the early stage, later biserial; sutures oblique, curved, flush; wall thin and transparent, finely perforate; aperture terminal, radiate.

Southwestern lagoon, 40 m.
Systematics p. 291.

Ramulina

Ramulina? *confosa*

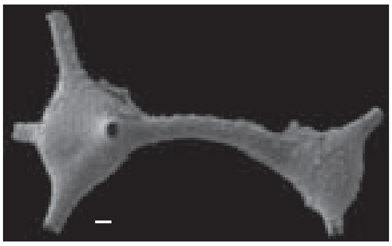
Test consisting of a single globular to ovate chamber, lacking the stoloniferous connections characteristic of many *Ramulina*; wall distinctly perforate, surface with low spines, and occasional larger subconical spinules; aperture rounded, obscured by ornamentation.

South of the Grande Terre, 30 m.
Systematics p. 291.

Ramulina globulifera

Test free, branching, consisting of globular chambers connected by stoloniferous tubes; wall hispid; aperture at the end of tubular projections, often several to a single chamber.

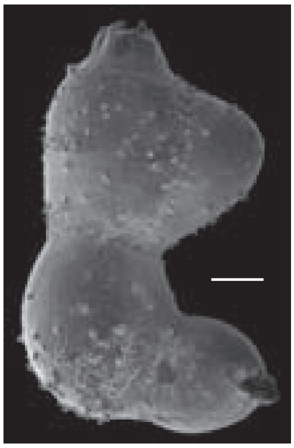
Bay of Prony, 20 m.
Systematics p. 291.



Ramulina vanandeli

Test attached consisting of a few ovoid chambers separated by constricted necks; wall distinctly perforate, surface finely spinulate, with subconical spinules.

Southern lagoon, 40 m.
Systematics p. 291.



Rectocibicidella

Rectocibicidella robertsi

Test attached, elongate, compressed, early stage trochospirally coiled and attached by the spiral side, later uncoiling, becoming biserial and finally uniserial; sutures curved and limbate in the early stage, later slightly depressed, periphery acute to carinate, peripheral outline becoming lobulate in the adult; wall coarsely perforate; aperture terminal, an ovate slit bordered by a lip.

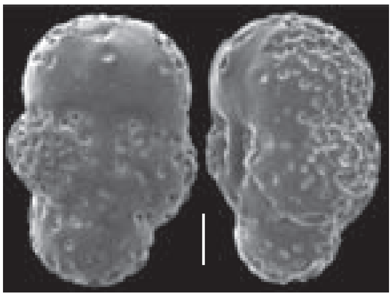
Northern shelf, 200 m.
Systematics p. 315.

Rugidia

Rugidia cortica

Test small, globose, reduced trochospiral with a proloculus and 3-4 chambers all visible externally; periphery broadly rounded; sutures slightly depressed; wall coarsely perforate on the spiral side, sometimes with a highly rugose thickening; umbilical side finely perforate; aperture consists of rounded openings between pairs of chambers on the umbilical side.

Northern shelf, 200 m.
Systematics p. 307.



Sigmoidella

Sigmoidella elegantissima

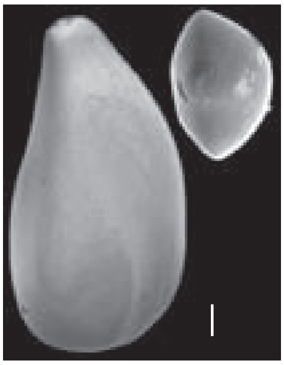
Test large and strongly compressed, with a sigmoidal cross-sectional shape; chambers on one side of the test completely embracing the earlier ones, on the other side partially evolute, giving the test an asymmetric appearance; sutures flush or slightly depressed; wall smooth; aperture terminal, radiate.

Northern shelf, 200 m.
Systematics p. 291.

Sigmoidella pacifica

Test flasklike, broadly lenticular in section; elongated chambers added in a sigmoidal series, strongly overlapping on one side of the test; all chambers extending to the base of the test; sutures slightly curved, flush; wall finely perforate, surface smooth; aperture terminal, radiate, at the end of a thick neck.

Southwestern lagoon, 40 m.
Systematics p. 291.



Sigmomorphina

Sigmomorphina cf. *S. basistriata*

Some specimens correspond to the description of Zheng (1979): "test compressed, oval to oblong, basal end narrowly rounded, apertural end slightly obtuse, periphery narrowly rounded; chambers long, thickest in the middle portion, thinning towards the periphery, early ones with ridge-like periphery; chambers arranged in a clokwisely sigmoid series, the early ones reaching the base of the test, the later ones gradually removed from the base; sutures distinct, slightly depressed; wall translucent, the basal half of the chambers with very fine longitudinal interrupted costae; aperture radiate". However, in other specimens, costae are stronger and may reach the aperture.

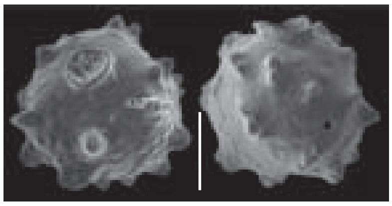
Northern shelf, 600 m.
Systematics p. 291.

Siphoninoides

Siphoninoides echinatus

Test subglobular, irregularly trochospiral but chamber arrangement not discernable, chambers enlarging rapidly; wall thin in the early stage, later much thickened and coarsely perforate, surface strongly spinose; aperture elevated surrounded by a circular thickened rim, rounded, and filled with a concave plate that has a single small central pore.

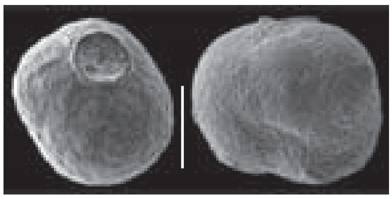
Bay of Prony, 10-30 m.
Systematics p. 313.



Siphoninoides laevigatus

Test subglobular, irregularly trochospiral but chamber arrangement not discernable, chambers enlarging rapidly; wall thin in the early stage, later much thickened and coarsely perforate, surface irregularly smooth; aperture elevated surrounded by a circular thickened rim, rounded, and filled with a concave plate that has a single small central pore.

Bay of Prony, 20 m.
Systematics p. 313.

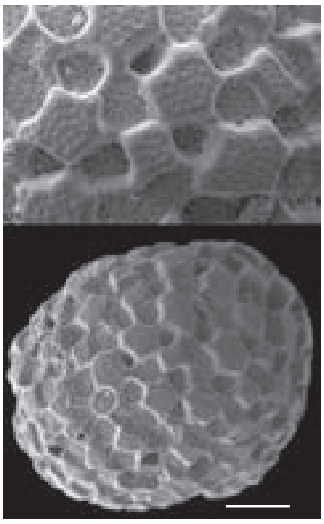


Sphaerogypsina

Sphaerogypsina globula

Test large, up to 2 mm in diameter, normally free; spherical to somewhat irregular, constructed of numerous layers of small, polygonal and closely packed chambers; neighboring chambers belonging respectively to the ultimate and penultimate layers are out of level for half their height in radial direction, with respect to each other; upper surface of the chambers coarsely perforate, and septa thick, elevated and imperforate; apertures multiple consisting of small rounded openings or small slits at the base of the free chamber walls.

Northern shelf, 200 m.
Systematics p. 317.

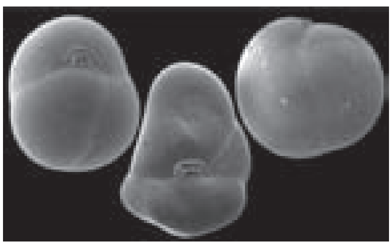


Sphaeroidina

Sphaeroidina bulloides

Test subglobular composed of a few chambers arranged in a relatively regular spiral; chambers hemispherical and strongly embracing, centered over the preceding aperture; wall very finely perforate, surface smooth; aperture a crescentic opening near the base of the last-formed chamber, commonly above the junction of earlier chambers, bordered by a narrow lip, and with a simple flaplike tooth.

Northern shelf, 600 m.
Systematics p. 311.

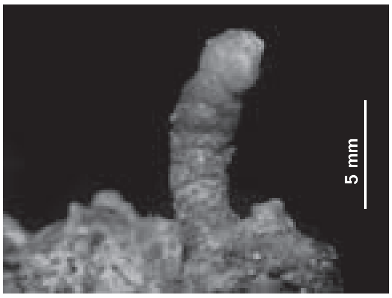


Sporadotrema

Sporadotrema cylindrica

Test attached, very large, early stage planispirally coiled, later chambers spiraling upward to form a large cylindrical upright structure with short terminal branches; 4-6 chambers per whorl, irregular in size and slightly inflated; sutures depressed; color orange or yellowish; wall thick with irregularly scattered coarse perforations that result from outward fusion of the finer pores at the inner wall surface; apertures multiple, two arches bordered by narrow lips on the umbilical wall of each chamber, and additional openings produced on tubes with everted rims around the umbilical depression.

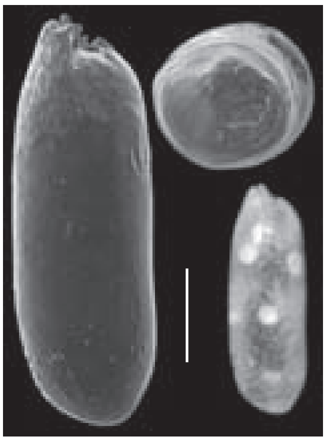
Attached on algae, 125 m.
Systematics p. 318.



Unidentified species

Test cylindrical with initial end rounded and apertural end irregular; only one chamber visible; test finely perforated, surface smooth; aperture terminal, a set of irregularly placed small rounded openings. In its morphology, this species resembles *Duplella neobotelliformis* (McCulloch) as it is illustrated by Loeblich & Tappan (1994), but it differs by the characteristics of the aperture as described by McCulloch (1977).

Northern shelf, 600 m.



Systematics

Suprageneric classification based on Loeblich & Tappan (1992), except for agglutinated foraminifera (Textulariia) classified following Kaminski (2004).
+ indicates new species for New Caledonia (not reported in the 2007 compendium).
* indicates species reported before, but not found to be included in this work.

Class FORAMINIFERA d'Orbigny, 1826
Subclass Textulariia
(Classification based on Kaminski 2004)

Order **ALLOGROMIIDA** Fursenko, 1958

Family Allogromiidae Rhumbler, 1904

Subfamily Argillotubinae Avnimelech, 1952

Nodellum Rhumbler, 1913

****Nodellum membranaceum*** (Brady, 1879) - Vincent *et al*., 1991

Order **ASTRORHIZIDA** Lankester, 1885

Suborder Astrorhizina Lankester, 1885

Superfamily Astrorhizacea Brady, 1881

Family Astrorhizidae Brady, 1881

Pelosina Brady, 1879

+*Pelosina cylindrica* Brady, 1884 - p. 87

1884 *Pelosina cylindrica* - Brady, p. 236; pl. 26, figs 1-6.
1988 *Pelosina cylindrica* Brady - Hughes; pl. 1, fig. 12.

Family Rhabdamminidae Brady, 1884

Subfamily Rhabdammininae Brady, 1884

Marsipella Norman, 1878

+*Marsipella cylindrica* Brady, 1882 - p. 85

1882 *Marsipella cylindrica* - Brady, p. 714.
1884 *Marsipella cylindrica* Brady - Brady, p. 265; pl. 24, figs 20-22.
1988 *Marsipella cylindrica* Brady - Zheng, p. 26; pl. 1, fig. 10.
2001 *Marsipella cylindrica* Brady - Szarek, p. 73; pl. 1, fig. 1.

Rhabdammina M. Sars, 1869

****Rhabdammina abyssorum*** M. Sars, 1869 - Vincent *et al*., 1991
****Rhabdammina linearis*** Brady, 1879 - (as *Oculosiphon*) Vincent *et al*., 1991

Family Diffusilinidae Loeblich & Tappan, 1961

Diffusilina Heron-Allen & Earland, 1924

+*Diffusilina humilis* Heron-Allen & Earland, 1924 - p. 79

1924 *Diffusilina humilis* - Heron-Allen & Earland, p. 614.
1964 *Diffusilina humilis* Heron-Allen & Earland - Loeblich & Tappan, p. C205; fig. 119.1, 2.
http://www.foraminifera.eu/lectotypes.html

Superfamily Komokiacea Tendal & Hessler, 1977

Family Rhizamminidae Wieser, 1931

Rhizammina Brady, 1879

+*Rhizammina algaeformis* Brady, 1879 - p. 92

1879 *Rhizammina algaeformis* - Brady, p. 39; pl. 4, figs 16-17.
1884 *Rhizammina algaeformis* Brady - Brady; pl. 28, figs 1-11.
2010a *Rhizammina algaeformis* Brady - Hayward *et al*., p. 128; pl. 1, fig. 23.

Suborder Saccamminina Lankester, 1885

Superfamily Saccamminacea Brady, 1881

Family Stegnamminidae Moreman, 1930

Subfamily Hemisphaerammininae Loeblich & Tappan, 1961, emend Mikhalevich, 1995

Hemisphaerammina Loeblich & Tappan, 1957

+*Hemisphaerammina bradyi* Loeblich & Tappan, 1957 - p. 83

1884 *Webbina hemisphaerica* Jones, Parker & Brady - Brady, p. 350; pl. 41, fig. 11.
1957 *Hemisphaerammina bradyi* - Loeblich & Tappan, p. 224; pl. 72, fig. 2.
1995 *Hemisphaerammina bradyi* Loeblich & Tappan - Yassini & Jones, p. 65; figs 33-35.

Family Saccamminidae Brady, 1884

Subfamily Saccammininae Brady, 1884

Lagenammina Rhumbler, 1911

+*Lagenammina arenulata* (Skinner, 1961) - p. 84

1961 *Reophax difflugiformis arenulata* - Skinner, p. 1239.
1994 *Lagenammina arenulata* (Skinner) - Jones; pl. 30, fig. 5.
2010a *Lagenammina arenulata* (Skinner) - Hayward *et al*., p. 128; pl. 1, figs 24-25.

+*Lagenammina bulbosa* (Chapman & Parr, 1937) - p. 85

1937 *Proteonina bulbosa* - Chapman & Parr; pl. 10, fig. 42.
2010a *Lagenammina bulbosa* (Chapman & Parr) - Hayward *et al*., p. 128; pl. 1, figs 26-27.

+*Lagenammina spiculata* (Skinner, 1961) - p. 85

1961 *Reophax difflugiformis spiculata* - Skinner, p. 1239.
1994 *Lagenammina spiculata* (Skinner) - Jones; pl. 30, fig. 4.
2010a *Lagenammina spiculata* (Skinner) - Hayward *et al*., p. 129; pl. 1, fig. 30.

Saccammina Carpenter, 1869

****Saccammina sphaerica*** G.O. Sars, 1872 - Vincent *et al*., 1991

Technitella Norman, 1878

+*Technitella melo* Norman, 1878 - p. 95

1878 *Technitella melo* - Norman, p. 280; pl. 16, figs 5-6.
1884 *Technitella melo* Norman - Brady, p. 246; pl. 25, figs 7a, b.
1910 *Technitella melo* Norman - Cushman, p. 48; figs 54a, b.
2001 *Technitella melo* Norman - Szarek, p. 75; pl. 1, fig. 14.

Subfamily Thurammininae Miklukho-Maklay, 1963

Armorella Heron-Allen & Earland, 1932

+*Armorella sphaerica* Heron-Allen & Earland, 1932a - p. 77

1932a *Armorella sphaerica* - Heron-Allen & Earland, p. 256; pl. 2, figs 4-11.
1934 *Armorella sphaerica* Heron-Allen & Earland - Earland, p. 69; pl. 2, figs 12-14.
1986 *Astrammina sphaerica* (Heron-Allen & Earland) - Schröder, p. 30; pl. 1, fig. 6.

Pseudothurammina Scott, Medioli & Williamson, 1981

+*Pseudothurammina limnetes* Scott & Medioli, 1980 - p. 89

1980 *Pseudothurammina limnetes* - Scott & Medioli, p. 43.
1994 *Pseudothurammina limnetis* (Scott & Medioli) - Hayward & Hollis, p. 198; pl. 1, figs 1-3.
1999 *Pseudothurammina limnetis* (Scott & Medioli) - Hayward *et al*., p. 80; pl. 1, figs 1-2.

Thurammina Brady, 1879

+*Thurammina papyracea* Cushman, 1913 - p. 100

1913a *Thurammina papyracea* - Cushman, p. 637; pl. 79, fig. 4.
1921 *Thurammina papyracea* Cushman - Cushman, p. 52; pl. 3, fig. 3.
1988 *Thurammina papyracea* Cushman - Zheng, p. 35; pl. 7, fig. 10.

Superfamily Psammosphaeracea Haeckel, 1894

Family Psammosphaeridae Haeckel, 1894

Subfamily Psammosphaerinae Haeckel, 1894

Psammosphaera Schulze, 1875

+*Psammosphaera parva* Flint, 1899 - p. 88

1899 *Psammosphaera parva* - Flint, p. 268; pl. 9, fig. 1.
1919 *Psammosphaera parva* Flint - Cushman, p. 594; pl. 75, fig. 3.
2010a *Psammosphaera parva* Flint, - Hayward *et al*., p. 127; pl. 1, fig. 16.

Family Lacustrinellidae Mikhalevich, 1995

Aggerostramen Loeblich & Tappan, 1985

+*Aggerostramen rustica* (Heron-Allen & Earland, 1912) - p. 74

1912 *Psammosphaera rustica* - Heron-Allen & Earland, p. 383; pl. 5, figs 3-4; pl. 6, figs 2-4.
1988 *Psammosphaera rustica* Heron-Allen & Earland - Zheng, p. 32; pl. 7, fig. 5.
1988 *Aggerostramen rustica* (Heron-Allen & Earland) - Loeblich & Tappan, p. 56; pl. 43, figs 1-7.
1995 *Psammosphaera rustica* Heron-Allen & Earland - Levy *et al*., p. 17; pl. 1, figs 3-4.

Suborder Hippocrepinina Saidova, 1981

Superfamily Hippocrepinacea Rhumbler, 1895

Family Hippocrepinidae Rhumbler, 1895

Subfamily Jaculellinae Mikhalevich, 1995

Jaculella Brady, 1879

+*Jaculella obtusa* Brady, 1982 - p. 84

1882 *Jaculella obtusa* - Brady, p. 714; pl. 23, figs 1-3, 5, 6.
1884 *Jaculella obtusa* Brady - Brady; pl. 22, figs 19-22.
1988 *Jaculella obtusa* Brady - Zheng; pl. 4, fig. 10.

Family Hyperamminidae Eimer & Fickert, 1899

Subfamily Hyperammininae Eimer & Fickert, 1899

Hyperammina Brady, 1878

***Hyperammina elongata** Brady, 1878 - Vincent *et al*., 1991

+*Hyperammina friabilis* Brady, 1884 - p. 83

1884 *Hyperammina friabilis* - Brady, p. 258; pl. 23, figs 1-3, 5, 6.
1921 *Hyperammina friabilis* Brady - Cushman, p. 54; pl. 3, fig. 4.
1939 *Hyperammina friabilis* Brady - Cushman & McCulloch, p. 50; pl. 2, figs 7-9.
1995 *Hyperammina friabilis* Brady - Yassini & Jones, p. 65, fig. 10.

+*Hyperammina novaezealandiae* Heron-Allen & Earland, 1922 - p. 84

1922 *Hyperammina novaezealandiae* - Heron-Allen & Earland, p. 89; pl. 3, figs 1-5.
1994 *Hyperammina novaezealandiae* Heron-Allen & Earland - Loeblich & Tappan, p. 14; pl. 1, figs 9-12.
2010 *Hyperammina novaezealandiae* Heron-Allen & Earland - Hayward *et al*., p. 126; pl. 1, fig. 12.

+*Hyperammina spiculifera* Lacroix, 1928 - p. 84

1928 *Hyperammina spiculifera* - Lacroix, p. 14; text figs 13a-d.
1939 *Hyperammina spiculifera* Lacroix - Cushman & McCulloch, p. 52; pl. 2, figs 10-11.

Subfamily Saccorhizinae Eimer & Fickert, 1899

Saccorhiza Eimer & Fickert, 1899

Saccorhiza ramosa (Brady, 1879) - p. 92

1879 *Hyperammina ramosa* - Brady, p. 33; pl. 3, figs 14-15.
1884 *Hyperammina ramosa* Brady - Brady, p. 261; pl. 23, figs 15-19.
1910 *Saccorhiza ramosa* (Brady) - Cushman, p. 65; pl. 30, figs 3-4; text-fig. 81.
1988 *Saccorhiza ramosa* (Brady) - Zheng, p. 31; pl. 3, figs 6- 9; pl. 7, figs 1-2.
1994 *Saccorhiza ramosa* (Brady) - Loeblich & Tappan, p. 14; pl. 1, figs 4-5.

Suborder Ammodiscina Mikhalevich, 1980

Superfamily Ammodiscacea Reuss, 1862

Family Ammodiscidae Reuss, 1862

Subfamily Ammodiscinae Reuss, 1862

Ammodiscus Reuss, 1862

+*Ammodiscus gullmarensis* Höglund, 1948 - p. 75

1947 *Ammodiscus planus* (non *Ammodiscus planus* Loeblich, 1946) - Höglund, p. 127; pl. 28, figs 17-18.
1948 *Ammodiscus gullmarensis* - Höglund, p. 45.
1994 *Ammodiscus gullmarensis* Höglund - Loeblich & Tappan, p. 14; pl. 3, figs 11-15.

+*Ammodiscus pacificus* Cushman & Valentine, 1930 - p. 75

1930 *Ammodiscus pacificus* - Cushman & Valentine, p. 7; pl. 1, fig. 1.
1939 *Ammodiscus pacificus* Cushman & Valentine - Cushman & McCulloch, p. 69; pl. 5, figs 1-2.

Subfamily Tolypammininae Cushman, 1928

Ammolagena Eimer & Fickert, 1899

Ammolagena clavata (Jones & Parker, 1860) - p. 75

1860 *Trochammina irregularis* (d'Orbigny) var. *clavata* - Jones & Parker, p. 304.
1958 *Ammolagena clavata* (Jones & Parker) - Collins, p. 348; pl. 1, fig. 9.
1994 *Ammolagena clavata* (Jones & Parker) - Loeblich & Tappan, p. 14; pl. 4, figs 1-4.

Subfamily Usbekistaniinae Vyalov, 1968

Glomospira Rzehak, 1885

+*Glomospira fijiensis* Brönnimann, Whittaker & Zaninetti, 1992 - p. 82

1992 *Glomospira fijiensis* - Brönnimann, Whittaker & Zaninetti, p. 22; pl. 5, figs 4, 5, 8.

1999 *Glomospira* cf. *fijiensis* Brönnimann, Whittaker & Zaninetti - Hayward *et al*., p. 80; pl. 1, figs 3-4.

+*Glomospira gordialis* (Jones & Parker, 1860) - p. 82

1860 *Trochammina squamata* Jones & Parker var. *gordialis* - Jones & Parker, p. 304.

1884 *Ammodiscus gordialis* (Jones & Parker) - Brady, p. 333; pl. 38, figs 7-9.

1964 *Glomospira gordialis* (Jones & Parker) - Loeblich & Tappan, p. C212, fig. 122.6.

1994 *Glomospira gordialis* (Jones & Parker) - Hayward & Hollis, p. 200; pl. 1, figs 4-5.

Usbekistania Suleymanov, 1960

****Usbekistania charoides*** (Jones & Parker, 1860) - (as *Glomospira*) - Vincent *et al*., 1991

Order **LITUOLIDA** Lankester, 1885

Suborder Rzehakinina Saidova, 1981

Superfamily Rzehakinacea Cushman, 1933

Family Rzehakinidae Cushman, 1933

Subfamily Miliammininae Saidova, 1981

Miliammina Heron-Allen & Earland, 1930

+*Miliammina fusca* (Brady, 1870) - p. 86

1870 *Quinqueloculina fusca* - Brady, p. 286; pl. 11, figs 2, 3.

1980 *Miliammina fusca* (Brady) - Scott & Medioli, p. 40; pl. 2, figs 1-3.

1994 *Miliammina fusca* (Brady) - Hayward & Hollis, p. 210; pl. 3, figs 5-8.

2006 *Miliammina fusca* (Brady) - Debenay & Luan; pl. 1, figs 5-7.

+*Miliammina obliqua* Heron-Allen & Earland, 1930 - p. 86

1930 *Miliammina obliqua* - Heron-Allen & Earland, p. 42; pl. 1, figs 7, 12.

1994 *Miliammina* cf. *obliqua* Heron-Allen & Earland - Hayward & Hollis, p. 210; pl. 3, figs 9-10.

1999 *Miliammina obliqua* Heron-Allen & Earland - Hayward *et al*., p. 82; pl. 1, figs 7-8.

Trilocularena Loeblich & Tappan, 1955

+*Trilocularena patensis* Closs, 1963 - p. 100

1963 *Trilocularena patensis* - Closs, p. 32; pl. 1, figs 1-7; pl. 5, figs 7a-c, 9-14.

1998 *Trilocularena patensis* Closs - Debenay *et al*.; pl. 3, figs 7, 8.

2002 *Trilocularena patensis* Closs - Debenay *et al*.; pl. 2, figs 1, 2.

Suborder Hormosinina Mikhalevich, 1980

Superfamily Hormosinellacea Rauser & Reitlinger, 1986

Family Hormosinellidae Rauser-Chernousova & Reitlinger, 1986

Hormosinella Shchedrina, 1969

Hormosinella distans Brady, 1881 - p. 83

1881 *Reophax distans* - Brady, p. 50.

1884 *Reophax distans* Brady - Brady, p. 296; pl. 31, figs 18-22.

1910 *Reophax distans* Brady - Cushman, p. 85; fig. 119.

1994 *Hormosinella distans* (Brady) - Loeblich & Tappan, p. 16; pl. 5, figs 15-17.

Reophanus Saidova, 1970

Reophanus oviculus (Brady, 1879) - p. 89

1879 *Hormosina ovicula* - Brady, p. 61; pl. 4, fig. 6.

1884 *Hormosina ovicula* Brady - Brady, p. 327; pl. 39, figs 7-9.

1920 *Hormosina ovicula* Brady - Cushman, p. 28; pl. 6, fig. 2.

1988 *Reophanus oviculus* (Brady) - Loeblich & Tappan, p. 61; pl. 46, fig. 10.

Superfamily Hormocinacea Haeckel, 1894

Family Reophacidae Cushman, 1910

Reophax de Montfort, 1808

Reophax agglutinatus Cushman, 1913 - p. 89

1913a *Reophax agglutinatus* - Cushman, p. 637; pl. 79, fig. 6.

1939 *Reophax agglutinatus* Cushman - Cushman & McCulloch, p. 59; pl. 3, figs 1-3.

****Reophax ampullacea*** (Brady, 1884) - Vincent *et al*., 1991

+*Reophax bacillaris* Brady, 1881 - p. 89

1881 *Reophax bacillaris* - Brady, p. 49.

1884 *Reophax bacillaris* Brady - Brady, p. 293; pl. 30, figs 23-24.

1920 *Reophax bacillaris* Brady - Cushman, p. 19; pl. 5, fig. 6.

1988 *Reophax bacillaris* Brady - Hughes; pl. 1, fig. 24.

+*Reophax communis* Lacroix, 1930 - p. 90
1930 *Reophax communis* - Lacroix, p. 4; figs 5-7.
1939 *Reophax communis* Lacroix - Cushman & McCulloch, p. 68; pl. 3, figs 12.
1981 *Reophax communis* Lacroix - McCulloch, p. 8; pl. 1, figs 14, 21-24.
+*Reophax dentaliniformis* Brady, 1881 - p. 90
1881 *Reophax dentaliniformis* - Brady, p. 49.
1884 *Reophax dentaliniformis* Brady - Brady, p. 193; pl. 30, figs 21-22.
1980 *Hormosina dentaliniformis* (Brady) - Brönnimann & Whittaker, p. 265; figs 8-11.
1988 *Reophax dentaliniformis* Brady - Zheng, p. 43; pl. 10, figs 2-3.
Reophax fusiformis (Williamson, 1858) - p. 90
1858 *Proteonina fusiformis* - Williamson, p. 1; pl. 1, fig. 1.
1995 *Reophax fusiformis* (Williamson) - Yassini & Jones, p. 67; fig. 17.
Reophax irregularis Parker, 1954 - p. 90
1954 *Reophax irregularis* - Parker, p. 483; pl. 1, figs 9-10.
1988 *Reophax irregularis* Parker - Zheng, p. 47; pl. 11, fig. 8.
+*Reophax longicollaris* Zheng, 1988 - p. 90
1988 *Reophax longicollaris* - Zheng, p. 309; pl. 8, figs 11-12.
+*Reophax nana* Rhumbler, 1911 - p. 90
1911 *Reophax nana* - Rhumbler, p. 182; pl. 8, figs 6-12.
1957 *Reophax nana* Rhumbler - Todd & Brönnimann, p. 22; pl. 1, fig. 17.
2002 *Reophax nana* Rhumbler - Debenay *et al*.; pl. 1, fig. 6.
2007 *Reophax nana* Rhumbler - Abu-Zied *et al*.; pl. 1, figs 1, 2.
***Reophax nodulosus** (Brady, 1879) - Vincent *et al*., 1991
+*Reophax pseudodistans* Cushman, 1919 - p. 91
1919 *Reophax spiculifera* Brady var. *pseudodistans* - Cushman, p. 598; pl. 75 fig. 1.
1932b *Reophax distans* Brady var. *pseudo-distans* Cushman - Heron-Allen & Earland, p. 338; pl. 7, figs 17-20.
Reophax scorpiurus de Montfort, 1808 - p. 91
1808 *Reophax scorpiurus* - Montfort, p. 331.
1884 *Reophax scorpiurus* Montfort- Brady, p. 291; pl. 30, figs 12, 14-17.
1920 *Reophax scorpiurus* Montfort - Cushman, p. 6; pl. 1, figs 5-7.
+*Reophax scottii* Chaster, 1892 - p. 91
1892 *Reophax scottii* - Chaster, p. 57; pl. 1 fig. 1.
1947 *Reophax scottii* Chaster - Hoglund, p. 94; fig. 72.
1985 *Reophax scottii* Chaster - Wells, p. 581; figs 4i, j.
***Reophax spiculifer** Brady, 1879 - Vincent *et al*., 1991
+*Reophax spiculotestus* Cushman, 1910 - p. 91
1910 *Reophax spiculotestus* - Cushman, p. 438.
1921 *Reophax spiculotestus* Cushman - Cushman, p. 72; pl. 11, fig. 1; pl. 13, fig. 2.
1939 *Reophax spiculotestus* Cushman - Cushman & McCulloch, p. 61; pl. 3, fig. 10.
+*Reophax subfusiformis* Earland, 1933 - p. 91
1933 *Reophax subfusiformis* - Earland, p. 74; pl. 2, fig. 16-19.
1988 *Reophax subfusiformis* Earland - Zheng, p. 52; pl. 13, fig. 7.
1999 *Reophax subfusiformis* Earland emend Hoglund - Hayward *et al.*, p. 82; pl. 1, figs 15-16.
+*Reophax* sp. 1 - p. 91

Suborder Lituolina Lankester, 1885

Superfamily Lituotubacea Loeblich & Tappan, 1984

Family Lituotubidae Loeblich & Tappan, 1984

Lituotuba Rhumbler, 1895
Lituotuba lituiformis (Brady, 1879) - p. 85
1879 *Trochammina lituiformis* - Brady, p. 59; pl. 5, fig. 16.
1884 *Trochammina lituiformis* Brady - Brady p. 88; pl. 40, figs 4-7.
1988 *Lituotuba lituiformis* (Brady) - Zheng, p. 39; pl. 5, fig. 6.
2001 *Lituotuba lituiformis* (Brady) - Szarek, p. 85; pl. 5, fig. 1.

Superfamily Lituolacea de Blainville, 1827

Family Haplophragmoididae Maync, 1952

Haplophragmoides Cushman, 1910
+*Haplophragmoides canariensis* (d'Orbigny, 1839) - p. 83
1839b *Nonionina canariensis* - d'Orbigny, p. 128; pl. 2, figs 33-34.
1884 *Haplophragmoides canariensis* (d'Orbigny) - Brady, p. 310; pl. 35, fig. 1-5.
1910 *Haplophragmoides canariensis* (d'Orbigny) - Cushman, p. 101; text fig. 149.
1920 *Haplophragmoides canariensis* (d'Orbigny) - Cushman, p. 38; pl. 8, fig. 1.

+*Haplophragmoides pusillus* Collins, 1974 - p. 83
1974 *Haplophragmoides pusillus* - Collins, p. 9; pl. 1, fig. 2.
1994 *Haplophragmoides pusillus* Collins - Loeblich & Tappan, p. 16; pl. 7, figs 1-7.
Haplophragmoides wilberti Andersen, 1953 - p. 83
1953 *Haplophragmoides wilberti* - Andersen, p. 21; pl. 4, fig. 7.
1994 *Haplophragmoides wilberti* Andersen - Hayward & Hollis, p. 204; pl. 2, figs 4-6.
2002 *Haplophragmoides wilberti* Andersen - Debenay *et al*.; pl. 1, figs 14, 15.

Family Discamminidae Mikhalevich, 1980

Ammoscalaria Höglund, 1947
+*Ammoscalaria compressa* (Cushman & McCulloch, 1939) - p. 76
1939 *Ammofrondicularia compressa* - Cushman & McCulloch, p. 68; pl. 4, fig. 7.
1988 *Reophax depressus* Natland - Zheng (not Natland, 1938), p. 44; pl. 12, figs 4-6.
1994 *Ammoscalaria* (?) *compressa* (Cushman & McCulloch) - Loeblich & Tappan, p. 17; pl. 6, figs 3-6.
2001 *Ammoscalaria compressa* (Cushman & McCulloch) - Szarek, p. 85; pl. 4, fig. 9.
****Ammoscalaria pseudospiralis*** (Williamson, 1858) - Vincent *et al*., 1991
Discammina Lacroix, 1932
+*Discammina compressa* (Goes, 1882) - p. 79
1882 *Lituolina irregularis* Roemer var. *compressa* - Goës, p. 141; pl. 12, figs 421-423.
1960 *Discammina compressa* (Goës) - Barker, p. 40; pl. 33, figs 26-28.
1964 *Discammina compressa* (Goës) - Loeblich & Tappan, p. C226; fig. 136.10.
1988 *Discammina compressa* (Goës) - Zheng, p. 65; pl. 21, fig. 1; pl. 51, fig. 12.

Family Lituolidae de Blainville, 1827

Subfamily Ammomarginulininae Podobina, 1978
Ammobaculites Cushman, 1910
Ammobaculites agglutinans (d'Orbigny, 1846) - p. 74
1846 *Spirolina agglutinans* - d'Orbigny, p. 137; pl. 7, figs 10-12.
1884 *Haplophragmium agglutinans* (d'Orbigny) - Brady, p. 301; pl. 32, figs 19-20, 24-26.
1988 *Ammobaculites agglutinans* (d'Orbigny) - Zheng, p. 66; pl. 23, fig. 7.
1995 *Ammobaculites agglutinans* (d'Orbigny) - Yassini & Jones, p. 70; figs 46-48, 50.
****Ammobaculites calcareus*** (Brady, 1884) - Vincent *et al*., 1991
+*Ammobaculites crassaformis* Zheng, 1988 - p. 74
1988 *Ammobaculites crassaformis* - Zheng, p. 313; pl. 30, figs 1-3.
1994 *Ammobaculites crassaformis* Zheng - Loeblich & Tappan, p. 17; pl. 7, figs 8-11.
Ammobaculites exiguus Cushman & Brönnimann, 1948 - p. 74
1948 *Ammobaculites exiguus* - Cushman & Brönnimann, p. 38; pl. 7, figs 7-8.
1998 *Ammobaculites exiguus* Cushman & Brönnimann - Debenay *et al*.; pl. 1, figs 6, 11.
1999 *Ammobaculites exiguus* Cushman & Brönnimann - Hayward *et al*., p. 85; pl. 1, figs 19-20.
Ammobaculites reophaciformis Cushman, 1910 - p. 75
1910 *Ammobaculites reophaciformis* - Cushman, p. 440.
1922a *Ammobaculites reophaciformis* Cushman - Cushman, p. 20; pl. 1, fig. 1.
+*Ammobaculites* cf. *A. subcatenulatus* Warren, 1957 - p. 75
1957 *Ammobaculites subcatenulatus* - Warren, p. 32; pl. 3, figs 11–13.
1995 *Ammobaculites subcatenulatus* - Yassini & Jones, p. 71; figs 44-45.
+*Ammobaculites villosus* Saidova, 1975 - p. 75
1975 *Ammobaculites villosus* - Saidova, p. 93; pl. 25, fig. 12.
1994 *Ammobaculites villosus* Saidova - Loeblich & Tappan, p. 17; pl. 7, figs 12-15.
Ammomarginulina Wiesner, 1931
+*Ammomarginulina ensis* Wiesner, 1931 - p. 76
1931 *Ammomarginulina ensis* - Wiesner, p. 97.
2010 *Ammomarginulina ensis* Wiesner - Hayward *et al*., p. 139; pl. 4, figs 27-28.
Ammotium Loeblich & Tappan, 1953
****Ammotium cassis*** (Parker, 1870)
+*Ammotium fragile* Warren, 1957 - p. 76
1957 *Ammotium fragile* - Warren, p. 30; pl. 3, figs 14-15.
1994 *Ammotium fragile* Warren - Hayward & Hollis; pl. 2, figs 1-3.
1999 *Ammotium fragile* Warren - Hayward *et al*., p. 85; pl. 1, figs 21-22.
Ammotium salsum (Cushman & Brönnimann, 1948) - p. 76
1948 *Ammobaculites salsus* - Cushman & Brönnimann, p. 16; pl. 3, figs 7-9.
1998 *Ammotium salsum* (Cushman & Brönnimann) - Debenay *et al*.; pl. 1, fig. 7.
2002 *Ammotium salsum* (Cushman & Brönnimann) - Debenay *et al*.; pl. 1, fig. 10.

Family Placopsilinidae Rhumbler, 1913

Subfamily Placopsilininae Rhumbler, 1913

Placopsilina d'Orbigny, 1850

Placopsilina bradyi Cushman & McCulloch, 1939 - p. 87

1939 *Placopsilina bradyi* - Cushman & McCulloch, p. 112; pl. 12, figs 14-15.

1988 *Placopsilina bradyi* Cushman & McCulloch - Zheng, p. 73; pl. 24, fig. 7.

1994 *Placopsilina bradyi* Cushman & McCulloch - Loeblich & Tappan, p. 18; pl. 8, figs 4-9.

Superfamily Recurvoidacea Alekseychik-Mitskevich

Family Ammosphaeroidinidae Cushman, 1927

Subfamily Ammosphaeroidininae Cushman, 1927

Ammosphaeroidina Cushman, 1910

+*Ammosphaeroidina sphaeroidiniformis* (Brady, 1884) - p. 76

1884 *Haplophragmium sphaeroidiniforme* - Brady, p. 313.

1910 *Ammosphaeroidina sphaeroidiniformis* (Brady) - Cushman, p. 128; fig. 202.

1988 *Ammosphaeroidina sphaeroidiniformis* (Brady) - Zheng, p. 69; pl. 41, figs 1-2.

1994 *Ammosphaeroidina sphaeroidiniformis* (Brady) - Loeblich & Tappan, p. 18; pl. 9, figs 7-14.

Cystammina Neumayr, 1889

****Cystammina galeata*** (Brady, 1881) - Vincent *et al* 1991

Subfamily Recurvoidinae Alekseychik-Mitskevich, 1973

Cribrostomoides Cushman, 1910

+*Cribrostomoides jeffreysii* (Williamson, 1858) - p. 78

1858 *Nonionina jeffreysii* - Williamson, p. 34; pl. 3, figs 72-73.

1993 *Labrospira jeffreysii* (Williamson) - Hottinger *et al*., p. 29; pl. 2, figs 5-9.

1995 *Cribrostomoides jeffreysii* (Williamson) - Yassini & Jones, p. 70; figs 70-71.

1999 *Cribrostomoides jeffreysii* (Williamson) - Hayward *et al*., p. 83; pl. 1, figs 23-24.

+ *Cribrostomoides spiculotestus* Zheng, 1979 - p. 78

1979 *Cribrostomoides spiculotestus* - Zheng, p. 201; pl. 1, figs 10-11.

1994 *Labrospira spiculotesta* (Zheng) - Loeblich & Tappan, p. 17; pl. 10, figs 4-9.

Cribrostomoides subglobosus (G.O. Sars, 1872) - p. 79

1872 *Lituola subglobosa* - G.O. Sars, p. 253.

1910 *Haplophragmoides subglobosum* (G.O. Sars) - Cushman, p. 105; text-figs 162-164.

1960 *Alveolophragmium subglobosum* (G.O. Sars) - Barker; pl. 34, figs 8-10.

2010 *Cribrostomoides subglobosus* (Cushman) - Hayward *et al*., p. 136; pl. 3, figs 28-29.

Recurvoides Earland, 1934

+*Recurvoides contortus* Earland, 1934 - p. 89

1934 *Recurvoides contortus* - Earland, p. 91; pl. 10, figs 7-19.

1988 *Recurvoides contortus* Earland - Zheng, p. 70; pl. 20, figs 4-5; pl. 51, figs 11-12.

1994 *Recurvoides contortus* Earland - Loeblich & Tappan, p. 18; pl. 12, figs 1-14.

2010 *Recurvoides contortus* Earland - Hayward *et al*., p. 132; pl. 2, fig. 24.

Family Acupeinidae Brönnimann & Zaninetti, 1984

Acupeina Brönnimann & Zaninetti, 1984

+*Acupeina triperforata* (Millett, 1899) - p. 74

1899a *Haplophragmium agglutinans* d'Orbigny var. *triperforata* - Millett, p. 358; pl. 5, figs 2a-b.

1948 *Haplophragmium salsum* - Cushman & Bronnimann, p. 16; pl. 3, figs 10-13.

1965 *Lituola salsa* (Cushman & Bronnimann) - Brönnimann & Zaninetti, p. 608; figs 1-3.

1992 *Acupeina triperforata* (Millett) - Brönnimann *et al*., p. 16; pl. 2, figs 10-11.

Suborder Spiroplectamminina Mikhalevich

Superfamily Spiroplectamminacea Cushman, 1927

Family Spiroplectamminidae Cushman, 1927

Subfamily Spiroplectammininae Cushman, 1927

Bolivinopsis Yakovlev, 1891

+*Bolivinopsis elongata* Zheng, 1988 - p. 77

1988 *Bolivinopsis elongata* - Zheng, p. 315; pl. 25, fig. 1; pl. 52, fig. 5.

Spiroplectammina Cushman, 1927

+*Spiroplectammina biformis* (Parker & Jones, 1865) - p. 95

1865 *Textularia agglutinans* var. *biformis* - Parker & Jones, p. 370; pl. 15, figs 23-24.

1884 *Spiroplecta biformis* (Parker & Jones) - Brady, p. 376; pl. 45, figs 25-27.

1932b *Spiroplectammina biformis* (Parker & Jones) - Heron-Allen & Earland, p. 347; pl. 8, figs 27-28.

1953 *Spiroplectammina biformis* (Parker & Jones) - Loeblich & Tappan, p. 34; pl. 4, figs 1-6.

Subfamily Spirotextulariinae Saidova, 1975

Spirotextularia Saidova, 1975

Spirotextularia fistulosa (Brady, 1884) - p. 95

1884 *Textularia sagittula* Defrance var. *fistulosa* - Brady, p. 362; pl. 42, figs 20-22.

1988 *Spirorutilus fistulosa* (Brady) - Zheng, p. 76; pl. 25, figs 2-5.

1992a *Spirotextularia fistulosa* (Brady) - Hatta & Ujiié, p. 56; pl. 1, fig. 7; pl. 19, fig. 4.

1994 *Spirotextularia fistulosa* (Brady) - Loeblich & Tappan, p. 20; pl. 16, figs 5-9.

+*Spirotextularia floridana* (Cushman, 1922) - p. 95

1922a *Textularia floridana* - Cushman, p. 24; pl. 1, fig. 7.

1994 *Spirotextularia floridana* (Cushman) - Loeblich & Tappan, p. 20; pl. 16, figs 10-16.

Family Duquepsammiidae Seiglie & Baker, 1987

Duquepsammia Seiglie & Baker, 1987

+*Duquepsammia bulbosa* (Cushman, 1911) - p. 80

1911 *Spiroplecta bulbosa* - Cushman, p. 5; text fig. 1.

1992a *Spiroplectammina bulbosa* (Cushman) - Hatta & Ujiié, p. 51; pl. 1, fig. 6.

1994 *Duquepsammia bulbosa* (Cushman) - Loeblich & Tappan, p. 20; pl. 17, figs 5-6.

Monotalea Brönnimann, Whittaker & Zaninetti, 1992

+*Monotalea salsa* Brönnimann, Whittaker & Zaninetti, 1992 - p. 86

1992 *Monotalea salsa* - Brönnimann, Whittaker & Zaninetti, p. 32; pl. 2, figs 6-9.

Family Pseudobolivinidae Wiesner, 1931

Pseudobolivina Wiesner, 1931

+*Pseudobolivina brevis* Zheng, 1979 - p. 88

1979 *Pseudobolivina brevis* - Zheng, p. 202; pl. 3, figs 8-10.

1992a *Pseudobolivina brevis* Zheng - Hatta & Ujié, p. 57; pl. 1, figs 8a, b.

+*Pseudobolivina nasostoma* Zheng, 1988 - p. 88

1988 *Pseudobolivina nasostoma* - Zheng, p. 323; pl. 34, fig. 4.

Family Nouriidae Chapman & Parr, 1936

Nouria Heron-Allen & Earland, 1914

+*Nouria armata* Collins, 1958 - p. 86

1958 *Nouria textulariformis* Hada subsp. *armata* - Collins, p. 352; pl. 1, figs 11a, b.

+*Nouria harrisii* Heron-Allen & Earland, 1914 - p. 86

1914 *Nouria harrisii* - Heron-Allen & Earland, p. 376; pl. 37, figs 16-20.

1988 *Nouria harrisii* Heron-Allen & Earland - Zheng, p. 100; pl. 15, fig. 4.

Nouria polymorphinoides Heron-Allen & Earland, 1914 - p. 87

1914 *Nouria polymorphinoides* - Heron-Allen & Earland, p. 376; pl. 37, figs 1-15.

1988 *Nouria polymorphinoides* Heron-Allen & Earland - Zheng, p. 100; pl. 15, figs 5-8.

1999 *Nouria polymorphinoides* Heron-Allen & Earland - Hayward *et al.*, p. 86; pl. 1, figs 9-10.

Suborder Trochamminina Saidova, 1981

Superfamily Trochamminacea Schwager, 1877

Family Trochamminidae Schwager, 1877

Subfamily Trochammininae Schwager, 1877

Paratrochammina Brönnimann, 1979

+*Paratrochammina* cf. *simplissima* (Cushman & McCulloch, 1948) - p. 87

1939 *Trochammina pacifica* var. *simplex* - Cushman & McCulloch, p. 104; pl. 11, figs 4a-c.

1948 *Trochammina pacifica* var. *simplissima* - Cushman & McCulloch, new name, p. 76.

1994 *Paratrochammina simplissima* (Cushman & McCulloch) - Loeblich & Tappan, p. 23; pl. 24, figs 1-12.

2009 *Paratrochammina simplissima* (Cushman & McCulloch) - Parker, p. 17; figs 14a-c.

Tritaxis Schubert, 1921

+*Tritaxis fusca* (Williamson, 1858) - p. 100

1858 *Rotalina fusca* - Williamson, p. 55; pl. 5, figs 114-115.

1884 *Valvulina fusca* (Williamson) - Brady, p. 392; pl. 49, figs 13-14.

1921 *Valvulina fusca* (Williamson) - Cushman, p. 143; pl. 28, figs 1a-b.

1984 *Tritaxis fusca* (Williamson) - Brönnimann & Whittaker, p. 293; figs 1-10, 19-27.

Trochammina Parker & Jones, 1859

+*Trochammina carinata* Cushman & McCulloch, 1939 - p. 101

1939 *Trochammina carinata* - Cushman & McCulloch, p. 109; pl. 12, fig. 3.

Trochammina inflata (Montagu, 1808) - p. 101

1808 *Nautilus inflatus* - Montagu, p. 81; pl. 18, fig. 3.

1859 *Trochammina inflata* (Montagu) - Parker & Jones, p. 347.

1980 *Trochammina inflata* (Montagu) - Scott & Medioli, p. 44; pl. 3, figs 12-14; pl. 4, figs 1-3.

2002 *Trochammina inflata* (Montagu) - Debenay *et al.*; pl. 1, figs 20, 21.

+*Trochammina xishaensis* Zheng, 1979 - p. 101
1979 *Trochammina xishaensis* - Zheng, p. 202; pl. 2, fig. 8.
+*Trochammina* sp. 1 - p. 101
+*Trochammina* sp. 2 - p. 101
Trochamminopsis Brönnimann, 1976
+*Trochamminopsis quadriloba* (Höglund, 1948) - p. 101
1948 *Trochammina quadriloba* - Höglund, p. 46.
1977 *Trochamminopsis quadriloba* (Höglund) - Brönnimann & Beurlen, p. 260.
1979 *Trochammina quadriloba* Höglund - Zheng, p. 116; pl. 2, figs 9a-c.
Subfamily Arenoparrellinae Saidova, 1981
Arenoparrella Andersen, 1951
Arenoparrella mexicana (Kornfeld, 1931) - p. 76
1931 *Trochammina inflata* (Montagu) var. *mexicana* - Kornfeld, p. 86; pl. 13, figs 5a, c.
1990 *Arenoparrella mexicana* (Kornfeld) - Debenay; pl. 2, fig. 3-7.
1992 *Arenoparrella mexicana* (Kornfeld) - Brönnimann *et al*., p. 20; pl. 1, figs 8-10; pl. 13, figs 1-6.
Subfamily Jadammininae Saidova, 1981
Jadammina Bartenstein & Brand, 1938
Jadammina macrescens (Brady, 1870) - p. 84
1870 *Trochammina inflata* (Montagu) var. *macrescens* - Brady, p. 290; pl. 11, fig. 5.
1980 *Trochammina macrescens* Brady - Scott & Medioli, p. 44; pl. 3, figs 1-12.
1999 *Jadammina macrescens* (Brady) - Hayward *et al*., p. 83; pl. 1, figs 27-29.
2006 *Jadammina macrescens* (Brady) - Debenay & Luan; pl. 1, figs 30, 31.
Subfamily Polystomammininae Brönnimann & Beurlen, 1977
Polystomammina Seiglie, 1965
+*Polystomammina lobatula* (Zheng, 1979) - p. 88
1979 *Trochamminula lobatula* - Zheng, p. 204; pl. 3, fig. 1-2.
Subfamily Rotaliammininae Saidova, 1981
Rotaliammina Cushman, 1924
+*Rotaliammina chitinosa* (Collins 1958) - p. 92
1958 *Trochammina chitinosa* - Collins, p. 354; pl. 1, figs 12a-c.
1987 *Rotaliammina chitinosa* (Collins) - Baccaert, p. 31; pl. 11, figs 27, 28.
2009 *Rotaliammina chitinosa* (Collins) - Parker, p. 22; fig. 16.
+*Rotaliammina siphonata* (Seiglie, 1964) - p. 92
1964 *Polysiphotrocha siphonata* - Seiglie, p. 500; pl. 1, figs 9a-c; pl. 2, figs 1-6.
1994 *Rotaliammina chitinosa* (Collins) - Loeblich & Tappan, p. 24; pl. 27, figs 7-9.
2009 *Rotaliammina* sp. 1, - Parker, p. 22; fig. 17.
Siphotrochammina Saunders, 1957
Siphotrochammina lobata Saunders, 1957 - p. 94
1957 *Siphotrochammina lobata* - Saunders, p. 9; pl. 3, figs 1, 2.
1992 *Siphotrochammina lobata* Saunders - Brönnimann *et al*., p. 21; pl. 4, figs 1-2.
2006 *Siphotrochammina lobata* Saunders - Debenay & Luan; pl. 1, figs 28-29.
Family Remaneicidae Loeblich & Tappan, 1964, emend.
Subfamily Remaneicinae Loeblich & Tappan, 1964
Septotrochammina Zheng, 1979
+*Septotrochammina gonzalesi* (Seiglie, 1964) - p. 93
1964 *Remaneica gonzalesi* - Seiglie, p. 500; pl. 1, figs 7-8.
1984 *Remaneicella gonzalesi* (Seiglie) - Brönnimann & Zaninetti, p. 98; pl. 7, figs 1-4.
1994 *Septotrochammina gonzalesi* (Seiglie) - Loeblich & Tappan, p. 25; pl. 28, figs 1-5.

Suborder Verneuilinina Mikhalevich & Kaminski 2004

Superfamily Verneuilinacea Cushman, 1911
Family Verneuilinidae Cushman, 1911
Subfamily Caroniinae Brönnimann, Whittaker & Zaninetti, 1992
Caronia Brönnimann, Whittaker & Zaninetti, 1992
Caronia exilis (Cushman & Brönnimann, 1948) - p. 77
1948 *Gaudryina exilis* - Cushman & Brönnimann, p. 40; pl. 7, figs 15, 16.
1992 *Caronia exilis* (Cushman & Brönnimann) - Brönnimann *et al*., p. 30; pl. 2, figs 1, 2, 5; pl. 17, figs 1-6.
2002 *Caronia exilis* (Cushman & Brönnimann) - Debenay *et al*.; pl. 1, fig. 7.

Subfamily Verneuilininae Cushman, 1911

Gaudryina d'Orbigny, 1839

+*Gaudryina attenuata* Chapman, 1902 - p. 81

1902 *Gaudryina attenuata* - Chapman, p. 409; pl. 36, fig. 10.
1937 *Gaudryina attenuata* Chapman - Cushman, p. 69; pl. 10, figs 12-13.
1994 *Gaudryina attenuata* Chapman - Loeblich & Tappan, p. 21; pl. 18, figs 1-13.

+*Gaudryina collinsi* Cushman, 1936 - p. 81

1936 *Gaudryina collinsi* - Cushman, p. 8; pl. 2, fig. 2.
1937 *Gaudryina collinsi* Cushman - Cushman, p. 57; pl. 9, figs 2-3.
1988 *Gaudryina collinsi* Cushman - Zheng, p. 90; pl. 42, fig. 6.

+*Gaudryina convexa* (Karrer, 1865) - p. 81

1865 *Textilaria convexa* - Karrer, p. 78; pl. 16, figs 8a-c.
1997 *Gaudryina convexa* (Karrer) - Haig, p. 264; fig. 3, n° 3.
1999 *Gaudryina convexa* (Karrer) - Hayward *et al.*, p. 89; pl. 2, figs 14-15.
2009 *Gaudryina convexa* (Karrer) - Parker, p. 31; figs 23a-h.

Gaudryina quadrangularis Bagg, 1908 - p. 81

1908 *Gaudryina quadrangularis* - Bagg, p. 133; pl. 5, fig. 1.
1921 *Gaudryina quadrangularis* Bagg - Cushman, p. 147; pl. 29, fig. 2.
1988 *Gaudryina quadrangularis* Bagg - Zheng, p. 90; pl. 42, fig. 7.
1994 *Gaudryina quadrangularis* Bagg - Loeblich & Tappan, p. 21; pl. 17, figs 22-23.

Gaudryina robusta Cushman, 1913 - p. 81

1913a *Gaudryina robusta* - Cushman, p. 636; pl. 78, fig. 2.
1921 *Gaudryina robusta* Cushman - Cushman, p. 152; pl. 30, figs 1a-c.
1937 *Gaudryina robusta* Cushman - Cushman, p. 67; pl. 9, fig. 15.

+*Gaudryina tenuis* Cushman, 1936 - p. 82

1921 *Gaudryina attenuata* (not Chapman, 1902) - Cushman, p. 152; pl. 30, fig. 4.
1936 *Gaudryina tenuis* - Cushman, p. 10; pl. 2, figs 5a-b.

+*Gaudryina* sp. 1 - p. 82

+*Gaudryina* sp. 2 - p. 82

1980 *Gaudryina* (*Siphogaudryina*) sp. - Zheng; pl. 1, figs 8a-c.

Latentoverneuilina Loeblich & Tappan, 1985

+*Latentoverneuilina indiscreta* (Brady, 1881) - p. 85

1881 *Clavulina indiscreta* - Brady, p. 55.
1884 *Tritaxia indiscreta* (Brady) - Brady p. 389; pl. 49, figs 10-11.
1985 *Latentoverneuilina indiscreta* (Brady) - Loeblich & Tappan, p. 191; pl. 10, figs 1-5.
1992a *Clavulinoides* aff. *indiscreta* (Brady) - Hatta & Ujié, p. 60; pl. 3, figs 3a, b.

Verneuilina d'Orbigny, 1839

+*Verneuilina novozealandica* Cushman, 1936 - p. 102

1936 *Verneuilina novozealandica* - Cushman, p. 3; pl. 1, figs 4a-b.

Order **LOFTUSIIDA** Kaminski & Mikhalevich, 2004

Suborder Loftusiina Kaminski & Mikhalevich, 2004

Superfamily Loftusiacea Brady, 1884

Family Cyclamminidae Marie, 1941

Subfamily Alveolophragmiinae Saidova, 1981

Alveolophragmium Shchedrina, 1936

Alveolophragmium zealandicum Vella, 1957 - p. 74

1957 *Alveolophragmium zealandicum* - Vella, p. 2; pl. 3, figs 44-45.
2010 *Alveolophragmium zealandicum* Vella - Hayward *et al*. p. 133; pl. 2, figs 25-26.

Subfamily Cyclammininae Marie, 1941

Cyclammina Brady, 1879

***Cyclammina cancellata** Brady, 1879 - Vincent *et al* 1991

+*Cyclammina subtrullissata* (Parr, 1950) - p. 79

1950 *Haplophragmoides subtrullissatus* - Parr, p. 271; pl. 4, fig. 27.
1994 *Cyclammina subtrullissata* (Parr) - Loeblich & Tappan, p. 19; pl. 14, figs 1-6.
2001 *Cyclammina subtrullissata* (Parr) - Szarek, p. 87; pl. 5, fig. 15.

Cyclammina trullissata (Brady, 1879) - p. 79

1879 *Trochammina trullissata* - Brady, p. 56; pl. 5, figs 10-11.
1910 *Cyclammina bradyi* - Cushman, p. 113; textfig. 174.
1975 *Cyclammina trullissata* (Brady) - Saidova, p. 84; pl. 24, figs 1-4.
1994 *Cyclammina trullissata* (Brady) - Loeblich & Tappan, p. 19; pl. 14, figs 7-8.

Suborder Biokovinina Kaminski, 2004

Superfamily Coscinophragmatacea Thalmann, 1951

Family Haddoniidae Saidova, 1981

Haddonia Chapman, 1898

+*Haddonia torresiensis* Chapman, 1898 - p. 82

1898 *Haddonia torresiensis* - Chapman, p. 454; pl. 28, figs 1-5.

1994 *Haddonia torresiensis* Chapman - Loeblich & Tappan, p. 18; pl. 11, figs 6-11.

2009 *Haddonia torresiensis* Chapman - Parker, p. 32; figs 24a-i.

Suborder Ataxophragmiina Fursenko, 1958

Superfamily Ataxophragmiacea Schwager, 1877

Family Globotextulariidae Cushman, 1927

Subfamily Liebusellinae Saidova, 1981

Liebusella Cushman, 1933

***Liebusella soldanii** (Jones & Parker, 1860) - Vincent *et al* 1991

Order **TEXTULARIIDA** Delage & Herouard, 1896

Suborder Textulariina Delage & Herouard, 1896

Superfamily Eggerellacea Cushman, 1937

Family Eggerellidae Cushman, 1937

Subfamily Dorothiinae Balakhmatova, 1972

Dorothia Plummer, 1931

Dorothia pseudoturris (Cushman, 1922) - p. *80

1884 *Textularia turris* - Brady (non d'Orbigny), p. 366; pl. 44, fig. 4-5.

1922b *Textularia pseudoturris* - Cushman, p. 19; pl. 3, fig. 1.

1937 *Dorothia pseudoturris* (Cushman) - Cushman, p. 100; pl. 11, fig. 7.

+*Dorothia rotunda* (Chapman, 1902) - p. 80

1902 *Gaudryina rotunda* - Chapman, p. 409; pl. 36, fig. 11.

1994 *Dorothia rotunda* (Chapman) - Loeblich & Tappan, p. 25; pl. 29, figs 1-15.

2010 not *Dorothia scabra* (Brady, 1884) - Hayward *et al*., p. 144; pl. 5, figs 20-22.

***Dorothia scabra** (Brady, 1884) - Vincent *et al* 1991

+*Dorothia* sp.1 - p. 80

Subfamily Eggerellinae Cushman, 1937

Eggerella Cushman, 1933

+*Eggerella australis* Collins, 1958 - p. 80

1958 *Eggerella australis* - Collins, p. 356; pl. 2, figs 1a-b.

1995 *Eggerella australis* Collins - Yassini & Jones, p. 73; figs 84, 86-88.

Eggerella bradyi (Cushman, 1911) - p. 80

1911 *Verneuilina bradyi* - Cushman, p. 54; text fig. 87.

1994 *Eggerella bradyi* (Cushman) - Loeblich & Tappan, p. 25; pl. 28, figs 9-14.

2010 *Eggerella bradyi* (Cushman) - Hayward *et al*., p. 144; pl. 5, figs 23-24.

+*Eggerella pusilla* (Goës, 1896) - p. 81

1896 *Verneuilina pusilla* - Goës, p. 39; pl. 5, figs 6-8.

1937 *Eggerella pusilla* (Goës) - Cushman, p. 51; pl. 5, figs 16-17.

1939 *Eggerella pusilla* (Goës) - Cushman & McCulloch, p. 96; pl. 10, figs 2-3.

Karreriella Cushman, 1933

Karreriella bradyi (Cushman, 1911) - p. 84

1911 *Gaudryina bradyi* - Cushman, p. 67; text-fig. 107.

1937 *Karreriella bradyi* (Cushman) - Cushman, p. 135; pl. 16, figs 6-11.

1988 *Karreriella bradyi* (Cushman) - Zheng, p. 94; pl. 45, fig. 10; pl. 46, fig. 1.

1994 *Karreriella bradyi* (Cushman) - Loeblich & Tappan, p. 25; pl. 30, figs 8-16.

+ *Karreriella* sp.1 - p. 84

Martinottiella Cushman, 1933

Martinottiella bradyana (Cushman, 1936) - p. 85

1936 *Listerella bradyana* - Cushman, p. 40; pl. 6, fig. 11.

1939 *Listerella bradyana*, Cushman - Cushman & McCulloch, p. 100; pl. 10, figs 15-16.

1988 *Martinottiella bradyana* (Cushman) - Zheng, p. 105; pl. 48, fig. 1.

1994 *Martinottiella bradyana* (Cushman) - Loeblich & Tappan, p. 26; pl. 31, figs 1-4.

***Martinottiella nodulosa** (Cushman, 1922) - Vincent *et al* 1991

+ *Martinottiella* sp. 1 - p. 86

Subfamily Tritaxilininae Loeblich & Tappan, 1986

Tritaxilina Cushman, 1911

+*Tritaxilina caperata* (Brady, 1881) - p. 100

1881 *Clavulina caperata* - Brady, p. 54.
1884 *Tritaxia caperata* (Brady) - Brady, p. 390; pl. 49, figs 1-2, 4-7.
1911 *Tritaxilina caperata* (Brady) - Cushman, p. 71; text-figs 112-113.
1994 *Tritaxilina caperata* (Brady) - Loeblich & Tappan, p. 35; pl. 49, figs 12-14.

Family Pseudogaudryinidae Loeblich & Tappan, 1985

Subfamily Pseudogaudryininae Loeblich & Tappan, 1985

Connemarella Loeblich & Tappan, 1989

Connemarella rudis (Wright, 1900) - p. 78

1900 *Gaudryina rudis* - Wright, p. 53; pl. 2, figs 1a-b.
1991 *Connemarella rudis* (Wright) - Cimerman & Langer, p. 23; pl. 8, figs 1-4.
1993 *Connemarella rudis* (Wright) - Sgarrella & Montcharmont-Zei, p. 167; pl. 4, figs 6-7.
2000 *Connemarella rudis* (Wright) - Kaminski, p. 218; fig. 89.

Pseudoclavulina Cushman, 1936

+*Pseudoclavulina serventyi* (Chapman & Parr, 1935) - p. 88

1935 *Clavulina serventyi* - Chapman & Parr, p. 5; pl. 1, fig. 7.
1960 *Pseudoclavulina serventyi* (Chapman & Parr) - Barker, p. 98; pl. 48, fig. 14-16.
1988 *Pseudoclavulina serventyi* (Chapman & Parr) - Zheng, p. 104; pl. 47, fig. 8.
2001 *Pseudoclavulina serventyi* (Chapman & Parr) - Szarek, p. 97; pl. 10, figs 16-17.

Pseudogaudryina Cushman, 1936

Pseudogaudryina concava (Collins, 1958) - p. 88

1958 *Gaudryina concava* (Karrer) - Collins, p. 355; pl. 1, fig. 14.

+*Pseudogaudryina pacifica* Cushman & McCulloch, 1939 - p. 89

1939 *Gaudryina (Pseudogaudryina) atlantica* (Bailey) var. *pacifica* - Cushman & McCulloch, p. 94; pl. 9, figs 1-2.
1988 *Gaudryina (Pseudogaudryina) pacifica* Cushman & McCulloch - Zheng, p. 91; pl. 43, figs 2-3.
1994 *Pseudogaudryina pacifica* Cushman & McCulloch - Loeblich & Tappan, p. 33; pl. 45, figs 20-23.
2009 *Gaudryina convexa* (karrer) - Parker, p. 31; figs 23d-h.

Subfamily Siphoniferoidinae Loeblich & Tappan, 1985

Plotnikovina Mikhalevich, 1981

+*Plotnikovina timorea* Loeblich & Tappan, 1994 - p. 87

1994 *Plotnikovina timorea* - Loeblich & Tappan, p. 33; pl. 17, figs 17-21; pl. 47, figs 1-10.

Plotnikovina transversaria (Brady, 1884) - p. 87

1884 *Textularia transversaria* - Brady, p. 359; pl. 113, figs 3-4.
1949 *Gaudryina* (*Siphogaudryina*) *transversaria* (Brady) - Said, p. 8.
2009 *Plotnikovina transversaria* (Brady) - Margerel, http://147.94.111.32/Collection/forams-index.php?

Siphoniferoides Saidova, 1981

Siphoniferoides siphoniferus (Brady, 1881) - p. 93

1881 *Textularia siphonifera* - Brady, Hawaii, p. 53; pl. 42, figs 25-29.
1994 *Siphoniferoides siphoniferus* (Brady) - Loeblich & Tappan, p. 33; pl. 46, figs 1-10.
1995 *Gaudryina siphonifera* (Brady) - Yassini & Jones, p. 72; figs 114, 115.
2009 *Siphoniferoides siphoniferus* (Brady) - Parker, p. 39; figs 32a-h.

Family Valvulamminidae Loeblich & Tappan, 1986

Discorinopsis Cole, 1941

Discorinopsis aguayoi (Bermudez, 1935) - p. 194

1935 *Discorbis aguayoi* - Bermudez, p. 204; pl. 15, figs 10-14.
1953 *Discorinopsis aguayoi* (Bermudez) - Phleger, *et al*., p. 7, pl. 4, figs 23-24.
1963 *Trichohyalus aguayoi* (Bermudez) - Bermudez & Seiglie, p. 176; pl. 26, fig. 4.
2003 *Discorinopsis aguayoi* (Bermudez) - Javaux & Scott, p. 14; fig. 6, no 1-2.

Family Valvulinidae Berthelin, 1880

Subfamily Valvulininae Berthelin, 1880

Clavulina d'Orbigny, 1826

Clavulina difformis Brady, 1884 - p. 77

1884 *Clavulina angularis* d'Orbigny var. *difformis* - Brady, p. 392; pl. 48, figs 25-27.
1932 *Clavulina difformis* Brady - Parr, p. 5; pl. 1, fig. 6.
2009 *Clavulina difformis* Brady - Parker, p. 25; figs 19a-c.

Clavulina multicamerata Chapman, 1907 - p. 78

1907 *Clavulina parisiensis* d'Orbigny var. *multicamerata* - Chapman, p. 127; pl. 9, fig. 5.
1960 *Clavulina multicamerata* Chapman - Barker, p. 98; pl. 48, figs 17,18.
1994 *Clavulina multicamerata* Chapman - Loeblich & Tappan; pl. 47, figs 11-15.

****Clavulina nodosaria*** d'Orbigny, 1839

Clavulina pacifica Cushman, 1924 - p. 78

1924 *Clavulina pacifica* - Cushman, p. 22; pl. 6, figs 7-11,

1987 *Clavulina pacifica* Cushman - Baccaert, p. 35; pl. 11, figs 7-8.

1994 *Clavulina pacifica* Cushman - Loeblich & Tappan, p. 34; pl. 47, figs 16-24.

2009 *Clavulina pacifica* Cushman - Parker, p. 26; figs 21a-f; 22a-i.

+*Clavulina subangularis* Ishizaki, 1939 - p. 78

1939 *Clavulina subangularis* - Ishizaki, p. 113; pl. 8, fig. 8.

1994 *Clavulina subangularis* Ishizaki - Loeblich & Tappan, p. 34; pl. 48, figs 1-6.

****Clavulina tricarinata*** d'Orbigny, 1839

Cylindroclavulina Bermúdez & Key, 1952

Cylindroclavulina bradyi (Cushman, 1911) - p. 79

1884 *Clavulina cylindrica* Hantken. - Brady (not Hantken, 1875), p. 396; pl. 48, figs 32-33, 38 (not figs 34-37).

1911 *Clavulina bradyi* - Cushman, p. 73, text-figs 118-119.

1992a *Cylindroclavulina bradyi* (Cushman) - Hatta & Ujiié, p. 61; pl. 3, fig. 8; pl. 19, fig. 8.

1994 *Cylindroclavulina bradyi* (Cushman) - Loeblich & Tappan, p. 34; pl. 48, figs 7-19.

Valvulina d'Orbigny, 1826

+*Valvulina oviedoiana* d'Orbigny, 1839 - p. 101

1839a *Valvulina oviedoiana* - d'Orbigny, p. 103; pl. 2, figs 21, 22.

1993 *Valvulina oviedoiana* d'Orbigny - Hottinger *et al*., p. 42; pl. 22, figs 7-10.

Superfamily Textulariacea Ehrenberg, 1838

Family Textulariidae Ehrenberg, 1838

Subfamily Textulariinae Ehrenberg, 1838

Bigenerina d'Orbigny, 1826

Bigenerina nodosaria d'Orbigny, 1826 - p. 77

1826 *Bigenerina nodosaria* - d'Orbigny, p. 261; pl. 11, figs 9-11.

1884 *Bigenerina nodosaria* d'Orbigny - Brady, p. 369; pl. 44, figs 14-18.

1988 *Bigenerina nodosaria* d'Orbigny - Zheng, p. 120; pl. 32, figs 3-4; pl. 33, fig. 1.

1994 *Bigenerina nodosaria* d'Orbigny - Loeblich & Tappan, p. 27; pl. 31, figs 8-12; pl. 32, figs 11-12.

Sahulia Loeblich & Tappan, 1985

Sahulia barkeri (Hofker, 1978) [*Textularia orbica* Lalicker & McCulloch, 1940] - p. 92

1978 *Textularia barkeri* - Hofker, p. 27; pl. 1, fig. 3.

1992a *Sahulia barkeri* (Hofker) - Hatta & Ujié, p. 57; pl. 2, figs 2a, c.

1994 *Sahulia barkeri* (Hofker) - Loeblich & Tappan, p. 27; pl. 32, figs 1-8.

2009 *Sahulia barkeri* (Hofker) - Parker, p. 35; figs 28a-d.

+*Sahulia peritubula* (Zheng, 1988) - p. 92

1988 *Textularia peritubula* - Zheng, p. 321; pl. 28, fig. 5.

Textularia Defrance, 1824

Textularia agglutinans d'Orbigny, 1839 - p. 95

1839a *Textularia agglutinans* - d'Orbigny, p. 144; pl. 1, figs 17-18, 32-34.

1899b *Textularia agglutinans* d'Orbigny - Millet, p. 562.

1994 *Textularia agglutinans* d'Orbigny -Loeblich & Tappan, p. 27; pl. 33, figs 8-12.

2009 *Textularia agglutinans* d'Orbigny - Parker, p. 44; figs 33a-k.

****Textularia barretti*** Jones & Parker 1863

+*Textularia calva* Lalicker, 1935 - p. 96

1935 *Textularia calva* - Lalicker, p. 1; pl. 1, figs 1-2.

1940 *Textularia calva* Lalicker - Lalicker & McCulloch, p. 120; pl. 13, figs 6a-d.

1981 *Textularia* cf. *calva* Lalicker - McCulloch, p. 15; pl. 4, figs 6, 7, 10.

Textularia candeiana d'Orbigny, 1839 - p. 96

1839a *Textularia candeiana* - d'Orbigny, p. 143; pl. 1, figs 25-27.

1899b *Textularia sagittula* var. *candieana* d'Orbigny - Millett, p. 556; pl. 7, fig. 12.

1995 *Textularia candeiana* d'Orbigny - Yassini & Jones, p. 75, figs 102,103.

2009 *Textularia candeiana* d'Orbigny - Parker, p. 44, figs 34a-f.

Textularia conica d'Orbigny, 1839 - p. 96

1839a *Textularia conica* - d'Orbigny, p. 135; pl. 1, figs 19-20.

1884 *Textularia conica* d'Orbigny - Brady, p. 365; pl. 43, figs 13-14.

1979 *Textilina conica* (d'Orbigny) - Whittaker & Hodgkinson, p. 15; pl. 1, fig. 1.

2001 *Sahulia conica* (d'Orbigny) - Szarek, p. 94; pl. 8, figs 19-21.

Textularia corrugata Heron-Allen et Earland, 1915

+*Textularia cushmani* Said, 1949 - p. 96

1949 *Textularia cushmani* - Said, p. 7; pl. 1, fig. 13

1993 *Textularia cushmani* Said - Hottinger *et al.*, p. 36; pl. 13, figs 10-14.

1994 *Textularia cushmani* Said - Loeblich & Tappan, p. 28; pl. 35, figs 1-4.

2009 *Textularia cushmani* Said - Parker, p. 44; figs 35a-i.

+*Textularia dupla* Todd, 1954 - p. 96

1954 *Textularia dupla* - Todd in Cushman, Todd & Post, p. 329; pl. 83, fig. 6.

1992a *Textularia dupla* Todd - Hatta & Ujiié, p. 59; pl. 2, figs 6a-b.

+*Textularia fistula* Cushman, 1911 - p. 96

1911 *Textularia agglutinans* d'Orbigny var. *fistula* - Cushman, p. 10; text fig. 11.

1994 *Textularia fistula* Cushman - Loeblich & Tappan, p. 28; pl. 34, figs 1-5.

Textularia foliacea Heron-Allen & Earland, 1915 - p. 97

1915 *Textularia foliacea* - Heron-Allen & Earland, p. 628; pl. 47, figs 17-20.

1940 *Textularia foliacea* Heron-Allen & Earland - Lalicker & McCulloch, p. 128; pl. 14, figs 11a-c.

1993 *Textularia foliacea foliacea* Heron-Allen & Earland - Hottinger *et al.*, p. 37; pl. 13, figs 15-18; pl. 14, figs 1-5.

1994 *Textularia foliacea* Heron-Allen & Earland - Loeblich & Tappan, p. 28; pl. 34, figs 6-14.

Textularia goesii Cushman, 1911 - p. 97

1884 *Textularia trochus* - Brady, p. 366; pl. 44, fig. 1-2.

1911 *Textularia goesii* - Cushman, p. 15; text fig. 24.

Textularia kerimbaensis (Said, 1949) - p. 97

1915 *Textularia conica* var. *corrugata* - Heron-Allen & Earland, p. 629; pl. 47, figs 24-27.

1949 *Textularia kerimbaensis* - Said, p. 6

1954 *Textularia kerimbaensis* Said - Cushman, Todd & Post, p. 329; pl. 83, fig. 11.

Textularia lateralis Lalicker, 1935 - p. 97

1935 *Textularia lateralis* - Lalicker, p. 1; pl. 1, figs 3-5.

1997 *Textularia lateralis* Lalicker - Haig, p. 270; fig. 3 n° 9.

2009 *Textularia lateralis* Lalicker - Parker, p. 54; figs 40a-j, 41a-c.

Textularia occidentalis Cushman, 1922 - p. 97

1922b *Textularia foliacea* Heron-Allen & Earland var. *occidentalis* - Cushman, p. 16; pl. 2, fig. 13.

1993 *Textularia foliacea* Heron-Allen & Earland *occidentalis* Cushman - Hottinger *et al.*, p. 37; pl. 14, figs 6-11.

Textularia oceanica Cushman, 1932 - p. 97

1932 *Textularia foliacea* Heron-Allen & Earland var. *oceanica* - Cushman, p. 8; pl. 1, figs 11-12.

1940 *Textularia foliacea* Heron-Allen & Earland var. *oceanica* Cushman - Lalicker & McCulloch, p. 128; pl. 14, figs 12a-c.

1993 *Textularia foliacea* Heron-Allen & Earland *oceanica* Cushman - Hottinger *et al.*, p. 37; pl. 14, figs 12-16.

1994 *Textularia oceanica* Cushman - Loeblich & Tappan, p. 29; pl. 40, figs 15-17.

Textularia porrecta Brady, 1884 - p. 98

1884 *Textularia agglutinans* var. *porrecta* - Brady, p. 364; pl. 43, fig. 4.

1922 *Textularia porrecta* Brady - Heron-Allen & Earland, p. 119; pl. 4, fig. 7.

1985 *Textularia porrecta* (Brady) - Wells, p. 584; figs 9g-h.

Textularia pseudogramen Chapman & Parr, 1937 - p. 98

1937 *Textularia pseudogramen* - Chapman & Parr, p. 153.

1960 *Textularia pseudogramen* Chapman & Parr - Barker, p. 88; pl. 43, fig. 10.

1995 *Textularia pseudogramen* Chapman & Parr - Yassini & Jones, p. 76; figs 118-119, 123.

1999 *Textularia pseudogramen* Chapman & Parr - Hayward *et al*., p. 91; pl. 2, figs 27-29.

+*Textularia pseudosolita* Zheng, 1988 - p. 98

1988 *Textularia pseudosolita* - Zheng, p. 321; pl. 27, fig. 5; pl. 53, fig. 5; text fig. 32.

1994 *Textularia pseudosolita* Zheng - Loeblich & Tappan, p. 29; pl. 36, figs 5-6; pl. 37, figs 9-12.

Textularia semialata Cushman, 1913 - p. 98

1913a *Textularia semialata* - Cushman, p. 634; pl. 80, figs 6-7.

1954 *Textularia semialata* Cushman- Cushman, Todd & Post, p. 330; pl. 83, fig. 5.

+*Textularia stricta* Cushman, 1911 - p. 98

1911 *Textularia stricta* - Cushman, p. 11, text-fig. 13.

1951 *Valvotextularia stricta* (Cushman). - Hofker, p. 33; text-fig. 11.

1994 *Textularia stricta* Cushman - Loeblich & Tappan, p. 30; pl. 38, figs 1-9.

2001 *Textularia stricta* Cushman - Szarek, p. 95; pl. 9, figs 7-8.

+*Textularia subantarctica* Vella, 1957 - p. 98

1957 *Textularia subantarctica* - Vella, p. 16; pl. 3, figs 49-51.

1985 *Sahulia subantarctica* Vella - Loeblich & Tappan, p. 205.

1994 *Textularia subantarctica* Vella - Loeblich & Tappan, p. 30; pl. 39, figs 1-5.

+*Textularia* cf. *T. truncata* Höglund, 1947 - p. 99
1947 *Textularia truncata* - Höglund, p. 175; pl. 12, figs 8-9, tex. fig. 147-149.
1958 *Textularia truncata* Höglund - Le Calvez, p. 149; pl. 1, fig. 5.
1988 *Textularia truncata* Höglund - Zheng, p. 116; pl. 26, fig. 5.
1994 *Textularia truncata* Höglund - Loeblich & Tappan, p. 30; pl. 35, figs 8-13.
+*Textularia truncatiformis* Zheng, 1988 - p. 99
1988 *Textularia truncatiformis* - Zheng, p. 321; pl. 28, figs 6-7.
+*Textularia tubulosa* Zheng, 1980 - p. 99
1980 *Textularia tubulosa* - Zheng, p. 175; pl. 1, figs 3-4.
1994 *Textularia tubulosa* Zheng - Loeblich & Tappan, p. 30; pl. 36, figs 7-12.
+*Textularia* sp. 1 - p. 99
+*Textularia* sp. 2 - p. 99
+*Textularia* sp. 3 - p. 99
+*Textularia* sp. 4 - p. 100
+*Textularia* sp. 5 - p. 100
Subfamily Planctostomatinae Loeblich & Tappan, 1984
Planctostoma Loeblich & Tappan, 1955
****Planctostoma luculenta*** (Brady, 1884)
Subfamily Septotextulariinae Loeblich & Tappan, 1985
Septotextularia Cheng & Zheng, 1978
Septotextularia rugosa Cheng & Zheng, 1978 - p. 93
1978 *Septotextularia rugulosa* - Cheng & Zheng, p. 167, 257; pl. 3, figs 5-10.
1987 *Gaudryina rugulosa* (Cushman) - Baccaert, p. 32; pl. 11, figs 2-3.
1992a *Textularia crenata* Cheng & Zheng - Hatta & Ujié, p. 59; pl. 3, figs 2a, b.
2009 *Septotextularia rugosa* Cheng & Zheng - Parker, p. 39; figs 29a-i; 30a-f; 31a-f.
Subfamily Siphotextulariinae Loeblich & Tappan, 1985
Siphotextularia Finlay, 1939
+*Siphotextularia blacki* Vella, 1957 - p. 93
1957 *Siphotextularia blacki* - Vella, p. 16; pl. 4, figs 53-54.
2010 *Siphotextularia blacki* Vella - Hayward *et al*., p. 146; pl. 6, figs 11-13.
+*Siphotextularia crassisepta* (Cushman, 1911) - p. 93
1911 *Textularia crassisepta* - Cushman, p. 24, text-fig. 41.
1988 *Siphotextularia crassisepta* (Cushman) - Zheng, p. 125; pl. 34, fig. 6.
+*Siphotextularia flintii* (Cushman, 1911) - p. 93
1911 *Textularia flintii* - Cushman, p. 21; text-fig. 36.
1988 *Siphotextularia flintii* (Cushman) - Zheng, p. 125; pl. 35; figs 1-2.
+*Siphotextularia* cf. *S. foliosa* Zheng, 1988 - p. 94
1988 *Siphotextularia foliosa* - Zheng, p. 324; pl. 38; figs 1-2.
2010 *Siphotextularia foliosa* Zheng - Hayward *et al*., p. 146; pl. 6, figs 16-18.
Siphotextularia heterostoma (Fornasini, 1896) - p. 94
1896 *Textilaria heterostoma* - Fornasini, p. 2; figs 7-9.
1988 *Siphotextularia heterostoma* (Fornasini) - Zheng, p. 126; pl. 38, fig. 4.
1994 *Siphotextularia heterostoma* (Fornasini) - Loeblich & Tappan, p. 31; pl. 40, figs 17-18.
+*Siphotextularia mestayerae* Vella, 1957 - p. 94
1957 *Siphotextularia mestayerae* - Vella, p. 17; pl. 4, figs 55, 57.
1988 *Siphotextularia mestayerae* Vella - Zheng, p. 127; pl. 37, figs 5-8.
1994 *Siphotextularia mestayerae* Vella - Loeblich & Tappan, p. 31; pl. 42, figs 11-23.
1999 *Siphotextularia mestayerae* Vella - Hayward *et al.*, p. 90; pl. 2, figs 19-21.
+*Siphotextularia pulchra* Zheng, 1988 - p. 94
1988 *Siphotextularia pulchra* - Zheng, p. 325; pl. 37; fig. 2.
1994 *Siphotextularia pulchra* Zheng - Loeblich & Tappan, p. 31; pl. 42, figs 7-10.
+*Siphotextularia subplanoides* Zheng, 1988 - p. 94
1988 *Siphotextularia subplanoides* - Zheng, p. 325; pl. 38; figs 5a, b.
1994 *Textulina subplanoides* (Zheng) - Loeblich & Tappan, p. 31; pl. 44, figs 1-7.
Subfamily Tawitawiinae Loeblich & Tappan, 1961
Tawitawia Loeblich, 1952
+*Tawitawia immensa* (Cushman, 1913) - p. 95
1913a *Textularia immensa* - Cushman, p. 633; pl. 70, fig. 2.
1994 *Tawitawia immensa* (Cushman) - Loeblich & Tappan, p. 32; pl. 44, figs 8-10.

Order Miliolida Lankester, 1885

Superfamily Cornuspiracea Schultze, 1854

Family Cornuspiridae Schultze, 1854

Subfamily Cornuspirinae Schultze, 1854

Cornuspira Schultze, 1854

+*Cornuspira foliacea* (Philippi) - p. 105

1844 *Orbis foliaceus* - Philippi, p. 147; pl. 24, fig. 26.

1884 *Cornuspira foliacea* (Philippi) - Brady, p. 199; pl. 11, figs 5-6 (not figs 7-9).

1988 *Cornuspiroides foliaceus* (Philippi) - Zheng, p. 186; pl. 1, fig. 7.

1994 *Cornuspira foliacea* (Philippi) - Loeblich & Tappan, p. 36; pl. 55, figs 10-11.

Cornuspira involvens (Reuss) - p. 105

1850 *Operculina involvens* - Reuss, p. 370; pl. 46, fig. 20.

1988 *Cyclogyra involvens* (Reuss). - Zheng, p. 184; pl. 1, fig. 6.

1992a *Cornuspira involvens* (Reuss) - Hatta & Ujiié, p. 61; pl. 4, fig. 1.

1994, *Cornuspira involvens* (Reuss) - Loeblich & Tappan, p. 36; pl. 56, figs 14-15.

Cornuspira planorbis Schultze - p. 105

1854 *Cornuspira planorbis* Shultze, p. 4; pl. 2, fig. 21.

1994 *Cornuspira planorbis* Shultze - Loeblich & Tappan, p. 37; pl. 56, figs 1-7.

2007 *Cornuspira planorbis* Shultze - Parker, p. 146; figs 100 a-e.

+*Cornuspira polygyra* Reuss - p. 105

1863 *Cornuspira polygyra* - Reuss, p. 39; pl. 1, fig. 1.

1932b *Cornuspira polygyra* Reuss - Heron-Allen & Earland, p. 323; pl. 7, fig. 5.

Subfamily Cornuspiroidinae Saidova, 1981

Cornuspiroides Cushman, 1928

+*Cornuspiroides striolatus* (Brady) - p. 106

1882 *Cornuspira striolata* - Brady in Tizard & Murray, p. 713.

1884 *Cornuspira striolata* Brady - Brady, p. 202; pl. 113, figs 18-19.

1994 *Cornuspiroides striolatus* (Brady) - Loeblich & Tappan, p. 37; pl. 56, fig. 16.

Superfamily Nubeculariacea T.R. Jones, 1875

Family Fischerinidae Millett, 1898

Subfamily Fischerininae Millett, 1898

Fischerina Terquem, 1878

Fischerina pellucida Millett - p. 107

1898 *Fischerina pellucida* - Millett, p. 611; pl. 13, figs 14-15.

1932 *Fischerina pellucida* Millett - Cushman, p. 75; pl. 17, figs 7ac.

not 1979 *Fischerina pellucida* Millett - Zheng & Cheng, p. 121; pl. 4, fig. 1.

1992a *Fischerina pellucida* Millett - Hatta & Ujiié, p. 61; pl. 4, figs 2a-c; pl. 18, fig. 9.

Planispirinella Wiesner, 1931

Planispirinella exigua (Brady) - p. 114

1879 *Hauerina exigua* Brady, p. 27.

1884 *Planispirina exigua* (Brady) - Brady, p. 196; pl. 12, figs 1, 2, 4.

1994 *Planispirinella exigua* (Brady) - Loeblich & Tappan, p. 38; pl. 57, figs 7-8.

2009 *Planispirinella exigua* (Brady) - Parker, p. 157, figs 110a-k.

+*Planispirinella involuta* Collins - p. 114

1958 *Planispirinella involuta* - Collins, p. 374.

1988 *Planispirinella* sp., - Haig, p. 228; pl. 3, figs 13-15.

2009 *Planispirinella involuta* Collins - Parker, p. 158, figs 111a-f.

Subfamily Fischerinellinae Saidova, 1981

Fischerinella Loeblich & Tappan, 1962

Fischerinella diversa McCulloch - p. 107

1977 *Fischerinella diversa* - McCulloch, p. 587; pl. 248, figs 9-10.

1994 *Fischerinella diversa* McCulloch - Loeblich & Tappan, 1994, p. 38; pl. 58, figs 1-12.

+*Fischerinella helix* (Heron-Allen & Earland) - p. 107

1915 *Fischerina helix* - Heron-Allen & Earland, p. 591; pl. 46, figs 10-14.

1988 *Fischerinella helix* (Heron-Allen & Earland) - Haig, p. 218; pl. 1, figs 22-24.

Zoyaella Loeblich & Tappan, 1962

+Zoyaella dissimilis McCulloch - p. 140

1977 Zoyaella? dissimilis - McCulloch, p. 580; pl. 248, fig. 11.

Subfamily Nodobaculariellinae Bogdanovich, 1981

Nodobaculariella Cushman & Hanzawa, 1937

Nodobaculariella convexiuscula (Brady) - p. 111

1884 *Spiroloculina convexiuscula* - Brady, p. 155; pl. 10, figs 18-20.

1921 *Spiroloculina convexiuscula* Brady - Cushman, p. 409; pl. 82, fig. 4.
1971 *Nodobaculariella convexiuscula* (Brady) - Rasheed, p. 57; pl. 17, figs 15-16.
1994 *Nodobaculariella convexiuscula* (Brady) - Loeblich & Tappan, p. 39; pl. 59, figs 15-19.

Nodobaculariella japonica Cushman & Hanzawa - p. 112
1937 *Nodobaculariella japonica* - Cushman & Hanzawa; pl. 14, figs 1-8.
1944 *Nodobaculariella japonica* Cushman & Hanzawa - Cushman & Todd, p. 72; pl. 12, fig. 2.
1987 *Nodobaculariella japonica* Cushman & Ozawa - Baccaert, p. 43; pl. 14, figs 1-8.

Nodobaculariella rustica Cushman et Todd

Vertebralina d'Orbigny, 1826

Vertebralina insignis Brady - p. 139
1884 *Vertebralina insignis* - Brady, p. 187; pl. 12, figs 9-11.

Vertebralina striata d'Orbigny - p. 139
1826 *Vertebralina striata* - d'Orbigny, p. 283.
1987 *Vertebralina striata* d'Orbigny - Baccaert, p. 45; pl. 15, fig. 1.
1994 *Vertebralina striata* d'Orbigny - Loeblich & Tappan, p. 39; pl. 60, figs 1-7.
2009 *Vertebralina striata* d'Orbigny - Parker, p. 379, figs 274a-h.

Wiesnerella Cushman, 1933

Wiesnerella auriculata (Egger) - p. 140
1893 *Planispirina auriculata* - Egger, p. 245; pl. 3, figs 13-15.
1988 *Wiesnerella auriculata* (Egger) - Haig, Papua New Guinea, p. 235; pl. 11, figs 32-33.
1999 *Wiesnerella auriculata* (Egger) - Hayward, p. 92; pl. 3, fig. 19.
2009 *Wiesnerella auriculata* (Egger) - Parker, p. 384, figs 275a-l; 276a-j.

Family Nubeculariidae Jones, 1875

Subfamily Nubeculariinae Jones, 1875

Nubecularia Defrance, 1825

Nubecularia lucifuga Defrance

Subfamily Nodobaculariinae Cushman, 1927

Nodobacularia Rhumbler, 1895

Nodobacularia sageninaeformis Hofker

Nubeculina Cushman, 1924

Nubeculina advena Cushman - p. 112
1924 *Nubeculina divaricata* (Brady) var. *advena* - Cushman, p. 53; pl. 19, figs 1-4.
1987 *Nubeculina divaricata* Brady var. *advena* Cushman - Baccaert; pl. 13, figs 6-8.
1988 *Nubeculina advena* Cushman - Haig, p. 228; pl. 3, figs 5-7.
1994 *Nubeculina advena* Cushman - Loeblich & Tappan, p. 38; pl. 59, figs 1-12.

Subfamily Nodophthalmidiinae Cushman, 1940

Nodophthalmidium Macfadyen, 1939

Nodophthalmidium antillarum (Cushman)

+*Nodophthalmidium gracilis* Collins - p. 112
1958 *Nodophthalmidium gracilis* - Collins, p. 372; pl. 3, fig. 15.
1988 *Nodophthalmidium gracilis* Collins - Haig, p. 224; pl. 3, figs 1, 2.
1994 *Nodophthalmidium gracile* Collins - Loeblich & Tappan, 1994, p. 38; pl. 57, figs 18-19.

Nodophthalmidium simplex Cushman & Todd

Subfamily Nubeculinellinae Avnimelech & Reiss, 1954

Cornuspiramia Cushman, 1928

+*Cornuspiramia* cf. *C. antillarum* (Cushman) - p. 105
1922a *Nubecularia antillarum* - Cushman, p. 58; figs 7-8.
2006 *Cornuspiramia antillarum* (Cushman) - Richardson, fig. 4.

Nubeculinella Cushman, 1930

+*Nubeculinella* sp. 1 - p. 112

Nubeculinita Seiglie, 1964

+*Nubeculinita decorata* (Heron-Allen & Earland) - p. 112
1915 *Nubecularia lucifuga* Defrance var. *decorata* - Heron-Allen & Earland, p. 549; pl. 40, figs 6-7.
1994 *Nubeculinita decorata* (Heron-Allen & Earland) - Loeblich & Tappan, p. 39; pl. 62, figs 9-10.

+*Nubeculinita ramosa* Loeblich & Tappan - p. 112
1994 *Nubeculinita ramosa* - Loeblich & Tappan, p. 39; pl. 62, figs 11-17.

Webbina d'Orbigny, 1839

+*Webbina rugosa* d'Orbigny - p. 140
1839 *Webbina rugosa* - d'Orbigny, p. 126; pl. 1, figs 16-18.
1988 *Webbina rugosa* d'Orbigny - Loeblich & Tappan, p. 323; pl. 332, figs 14-15.
1994 *Webbina rugosa* d'Orbigny- Loeblich & Tappan, p. 40; pl. 59, figs 13-14; pl. 61, figs 10-11.

Family Ophthalmidiidae Wiesner, 1920

Cornuloculina Burbach, 1886

Cornuloculina inconstans (Brady) - p. 105

1879 *Hauerina inconstans* - Brady, p. 268.

1884 *Ophthalmidium inconstans* (Brady) - Brady, p. 189; pl. 12, figs 5, 7-8.

1988 *Cornuloculina inconstans* (Brady) - Zheng, p. 188; pl. 1, fig. 10.

1994 *Cornuloculina inconstans* (Brady) - Loeblich & Tappan; p. 40; pl. 63, figs 6-7.

Edentostomina Collins, 1958

Edentostomina cultrata (Brady) - p. 106

1881 *Miliolina cultrata* - Brady, p. 45.

1884 *Miliolina cultrata* Brady - Brady, p. 161; pl. 5, figs 1-2.

1992a *Edentostomina cultrata* (Brady) - Hatta & Ujiié, p. 63; pl. 5, fig. 2.

1999 *Edentostomina cultrata* (Brady) - Hayward *et al.*, p. 95; pl. 3, figs 20-21.

+*Edentostomina milletti* (Cushman) - p. 106

1917 *Biloculina milletti* - Cushman, p. 81; pl. 34, figs 4-5.

1958 *Edentostomina milletti* (Cushman) - Collins, p. 371.

1977 *Pyrgo milletti* (Cushman) - McCulloch, p. 531; pl. 220, figs 11-12.

1988 *Edentostomina milletti* (Cushman) - Zheng, p. 219; pl. 2, fig. 1.

+*Edentostomina* sp. 1 - p. 107

Spirophthalmidium Cushman, 1927

+*Spirophthalmidium scabrum* Loeblich & Tappan, 1994 - p. 135

1994 *Spirophthalmidium scabrum* - Loeblich & Tappan, p. 41; pl. 64, figs 4-5.

Superfamily Miliolacea Ehrenberg, 1839

Family Spiroloculinidae Wiesner, 1920

Adelosina d'Orbigny, 1826

+*Adelosina mediterranensis* (Le Calvez J & Y) - p. 102

1958 *Quinqueloculina mediterranensis* - Le Calvez J & Y, p. 177; pl. 4, figs 29-31

1991 *Adelosina mediterranensis* (Le Calvez J & Y) - Cimerman & Langer, p. 28; pl. 19, figs 1-16.

Cribrolinoides Cushman & LeRoy, 1939

+*Cribrolinoides curta* (Cushman) - p. 106

1917 *Quinqueloculina disparilis* d'Orbigny var. *curta* - Cushman, p. 49; pl. 14, fig. 2, text fig. 30.

1951b *Cribrolinoides curta* (Cushmn) - Asano, pt 6, p. 9, figs 63-64.

1987 *Quinqueloculina curta* Cushman - Baccaert, p. 84; pl. 39, figs 6-7; pl. 40, figs 1-3.

2009 *Quinqueloculina* cf. *Q. curta* Cushman - Parker, p. 193, figs 136a-e.

Inaequalina Luckzkowska, 1971

Inaequalina affixa (Terquem) - p. 108

1878 *Spiroloculina affixa* - Terquem, p. 55; pl. 5, fig. 13.

1884 *Spiroloculina acutimargo* - Brady, p. 154; pl. 10, fig. 12 (not figs 13-15)

1893 *Spiroloculina inaequilateralis* - Schlumberger, p. 201; pl. 4, figs 84-86.

1921 *Spiroloculina affixa* Terquem - Cushman, p. 410; pl. 83, figs 2a-c.

1988 *Inaequalina disparilis* (Terquem) - Zheng, 1988, p. 188; pl. 2, figs 11-12.

1999 *Inaequalina disparilis* (Terquem) - Hayward *et al.*, p. 107; pl. 6, figs 1-3.

+*Inaequalina* sp. 1 - p. 109

+*Inaequalina* sp. 2 - p. 109

Nummulopyrgo Hofker, 1983

+*Nummulopyrgo globulus* (Hofker) - p. 113

1976 *Pseudopyrgo globulus* (Bornemann) (non *Biloculina globulus* Bornemann, 1855) - Hofker, p. 112, fig. 106.

1983 *Nummulopyrgo globulus* (Bornemann) - Hofker, p. 26.

1994 *Nummulopyrgo globulus* (Hofker) - Loeblich & Tappan, p. 42; pl. 65, figs 8-16.

+*Nummulopyrgo* sp. 1 - p. 113

Rectomassilina Seiglie, 1964

+*Rectomassilina tricarinata* (Collins) - p. 130

1958 *Articulina tricarinata* - Collins, p. 366; pl. 3, figs 5-6.

1964 *Rectomassilina triangularis* - Seiglie, p. 505; pl. 3, figs 13-16.

Spiroloculina d'Orbigny, 1826

Spiroloculina acescata Cushman - p. 132

1932 *Spiroloculina grateloupi* d'Orbigny *acescata* - Cushman, p. 35; pl. 9, figs 2 a, b.

1977 *Spiroloculina* cf. *acescata* Cushman - McCulloch, p. 536; pl. 228, fig. 4.

Spiroloculina angulata Cushman - p. 132

1917 *Spiroloculina grata* Terquem var. *angulata* - Cushman, p. 36; pl. 7, fig. 5.

1988 *Spiroloculina angulata* Cushman - Haig, p. 235; pl. 10, figs 1-7.

1993 *Spiroloculina* cf. *angulata* Cushman - Hottinger *et al*, p. 44; pl. 24, figs 11-14.

Spiroloculina antillarum d'Orbigny - p. 132
1839a *Spiroloculina antillarum* - d'Orbigny, p. 166; pl. 9, figs 3,4.
1977 *Spiroloculina antillarum* d'Orbigny - Le Calvez, p. 91; pl. 17, figs 1-6.
1993 *Spiroloculina antillarum* d'Orbigny - Hottinger *et al*., p. 45; pl. 24, figs 15-17; pl. 25, figs 1, 2.
2009 *Spiroloculina antillarum* d'Orbigny - Parker, p. 341, figs 246a-l; 247a-l.
+*Spiroloculina attenuata* Cushman & Todd - p. 132
1944 *Spiroloculina attenuata* - Cushman & Todd, p. 54; pl. 20, figs 3-4.
1987 *Spiroloculina communis* Cushman & Todd subsp. *attenuata* Cushman & Todd - Baccaert, p. 118; pl. 53, figs 4-5.
1993 *Spiroloculina attenuata* Cushman & Todd - Hottinger *et al*., p. 45; pl. 25, figs 3-9.
Spiroloculina caduca Cushman - p. 132
1922a *Spiroloculina caduca* - Cushman, p. 61; pl. 11, figs 3, 4.
Spiroloculina clara Cushman - p. 132
1932 *Spiroloculina clara* - Cushman, p. 40; pl. 10, figs 4-5.
1954 *Spiroloculina clara* Cushman - Cushman, Todd & Post, p. 335; pl. 84, fig. 9.
Spiroloculina communis Cushman & Todd - p. 133
1944 *Spiroloculina communis* - Cushman & Todd, p. 63; pl. 9, figs 4, 5, 7, 8.
1988 *Spiroloculina communis* Cushman & Todd, - Zheng, p. 237; pl. 2, figs 15-16; text-fig. 54.
1992a *Spiroloculina communis* Cushman & Todd - Hatta & Ujiié, p. 63; pl. 5, fig. 4.
1999 *Spiroloculina communis* Cushman & Todd - Hayward *et al.*, p. 108; pl. 6, figs 8-9.
Spiroloculina convexa Said - p. 133
1949 *Spiroloculina communis* Cushman & Todd, var. *convexa* - Said, p. 15; pl. 1, fig. 38.
1993 *Spiroloculina convexa* Said - Hottinger *et al*., p. 45; pl. 26, figs 1-4.
Spiroloculina corrugata Cushman & Todd - p. 133
1944 *Spiroloculina corrugata* - Cushman & Todd, p. 51, 61; pl. 8, figs 22-25.
1993 *Spiroloculina corrugata* Cushman & Todd - Hottinger *et al*., p. 46; pl. 26, figs 5-9.
Spiroloculina depressa d'Orbigny - p. 133
1826 *Spiroloculina depressa* - d'Orbigny, p. 298, n° 1.
1884 *Spiroloculina limbata* d'Orbigny - Brady, p. 150; pl. 9, fig. 17.
1917 *Spiroloculina depressa* d'Orbigny - Cushman, p. 29; pl. 3, figs 6-10.
1929 *Spiroloculina depressa* d'Orbigny - Cushman, p. 44; pl. 9, fig. 8.
***Spiroloculina disparilis** Terquem
+*Spiroloculina elegantissima* Said - p. 133
1949 *Spiroloculina elegantissima* - Said, p. 15; pl. 1, fig. 41.
1993 *Spirophthalmidium* cf. *S. elegantissima* Said - Hottinger *et al*., p. 44; pl. 24, figs 5-10.
+*Spiroloculina eximia* Cushman - p. 133
1922a *Spiroloculina eximia* - Cushman, p. 61; pl. 11, fig. 2.
1979 *Spiroloculina eximia* Cushman - Whittaker & Hodgkinson, p. 18; pl. 1, fig. 6.
***Spiroloculina fovealata** Egger
+*Spiroloculina fragilis* Uchio - p. 134
1960 *Spiroloculina fragilis* - Uchio, p. 57; pl. 3, figs 5-6.
1994 *Spiroloculina fragilis* Uchio - Loeblich & Tappan, p. 43; pl. 69, figs 3-8.
***Spiroloculina manifesta** Cushman & Todd
+*Spiroloculina mayori* Cushman - p. 134
1924 *Spiroloculina mayori* - Cushman, p. 56; pl. 8, figs 5-6.
1954 *Spiroloculina mayori* Cushman - Cushman Todd & Post, p. 336; pl. 84, fig. 15.
+*Spiroloculina* cf. *S. neocircularis* McCulloch - p. 134
1977 *Spiroloculina neocircularis* - McCulloch, p. 544; pl. 228, fig. 14.
Spiroloculina nummiformis Said - p. 134
1949 *Spiroloculina nummiformis* - Said, p. 16; pl. 1, fig. 39.
1993 *Spiroloculina nummiformis* Said - Hottinger *et al*., p. 46; pl. 27, figs 1-9.
***Spiroloculina ornata** d'Orbigny
+*Spiroloculina regularis* Cushman & Todd - p. 134
1944 *Spiroloculina regularis* - Cushman & Todd, p. 51; pl. 7, figs 26-27.
1994 *Spiroloculina regularis* Cushman & Todd - Loeblich & Tappan, p. 44; pl. 68, figs 1-2.
Spiroloculina samoensis Cushman - p. 134
1924 *Spiroloculina planissima* (Lamarck) var. *samoaensis* - Cushman, p. 58; pl. 21, figs 9, 10.
1944 *Spiroloculina samoaensis* Cushman - Cushman & Todd, p. 56; pl. 8, figs 8-10.
***Spiroloculina scita** Cushman et Todd
+*Spiroloculina subimpressa* Parr - p. 135
1950 *Spiroloculina subimpressa* - Parr, p. 291; pl. 6, figs 12, 13.
1987 *Spiroloculina communis* Cushman & Todd - Baccaert, p. 118; pl. 53, figs 1-3.

1988 *Spiroloculina communis* Cushman & Todd - Haig, p. 234; pl. 10, figs 11-13.
2009 *Spiroloculina subimpressa* Parr, - Parker, p. 350, figs 254a-k.
+*Spiroloculina* sp. 1 - p. 135
+*Spiroloculina* sp. 2 - p. 135

Family Hauerinidae Schwager, 1876

Subfamily Hauerininae Schwager, 1876

Hauerina d'Orbigny, 1839

****Hauerina bradyi*** Cushman
Hauerina diversa Cushman - p. 108
1946 *Hauerina diversa* - Cushman, p. 11; pl. 2, figs 16-19.
1992a *Hauerina diversa* Cushman - Hatta & Ujiié, p. 65; pl. 6, figs 3a-b.
1993 *Hauerina diversa* Cushman - Hottinger *et al*., p. 50; pl. 36, figs 1-7.
+*Hauerina earlandi* Rasheed - p. 108
1971 *Hauerina earlandi* - Rasheed, p. 54; pl. 16, fig. 7.
1988 *Miliola earlandi* (Rasheed) - Haig, p. 220; pl. 2, figs 8-9.
2009 *Hauerina earlandi* Rasheed - Parker, p. 107, figs 74a-k.
+*Hauerina fragilissima* (Brady) - p. 108
1884 *Spiroloculina fragilissima* - Brady, p. 149; pl. 9, figs 12-14.
1988 *Hauerina fragilissima* (Brady) - Haig, p. 220; pl. 2, figs 3, 4.
1994 *Parahauerinoides fragilissima* (Brady) - Loeblich & Tappan, p. 51; pl. 87, figs 1-5.
2009 *Hauerina fragilissima* (Brady) - Parker, p. 107, figs 75a-g.
****Hauerina ornatissima*** (Karrer)
Hauerina pacifica Cushman - p. 108
1917 *Hauerina pacifica* - Cushman, p. 64; pl. 21, figs 2a-c.
1987 *Hauerina pacifica* Cushman - Baccaert, p. 145, 146; pl. 63, figs 4-6.
1988 *Hauerina pacifica* Cushman - Haig, p. 220; pl. 2, figs 5-7.
2009 *Hauerina pacifica* Cushman - Parker, p. 109, figs 76a-c; 77a-m; 78a-j.

Quinqueloculina d'Orbigny, 1826

****Quinqueloculina* cf. *adiazeta***
Quinqueloculina agglutinans d'Orbigny [*Siphonaperta agglutinans*] - p. 119
1839a *Quinqueloculina agglutinans* - d'Orbigny, p. 195; pl. 12, figs 11-13.
1994 *Agglutinella agglutinans* (d'Orbigny) - Loeblich & Tappan, p. 44; pl. 70, figs 1-9.
Quinqueloculina arenata Said [*Siphonaperta anguina arenata*; *Triloculina sabulosa* Collins] - p. 119
1949 *Quinqueloculina anguina* Terquem var. *arenata* - Said, p. 9; pl. 1, fig. 25.
1988 *Quinqueloculina arenata* Said - Haig, p. 233; pl. 4, figs 15-17.
1994 *Agglutinella arenata* (Said) - Loeblich & Tappan, p. 45; pl. 69, figs 6-11; pl. 70, figs 10- 15; pl. 74, figs 10-13.
2009 *Quinqueloculina arenata* Said - Parker, p. 179, figs 126a-j; 127a-h; 128a-i.
+*Quinqueloculina auberiana* d'Orbigny [*Quinqueloculina lamarckiana*] - p. 119
1839a *Quinqueloculina auberiana* - d'Orbigny, p. 193; pl. 12, figs 1-3.
1999 *Quinqueloculina auberiana* d'Orbigny - Hayward *et al*., p. 100; pl. 4, figs 13-14.
Quinqueloculina barnardi Rasheed - p. 119
1971 *Quinqueloculina barnardi* - Rasheed, p. 26, 27; pl. 2, fig. 1.
1988 *Quinqueloculina barnardi* Rasheed - Haig, p. 233; pl. 4, figs 18-20.
2009 *Quinqueloculina barnardi* Rasheed - Parker, p. 184, figs 129a-f; 130a-k.
Quinqueloculina bassensis (Parr) [*Triloculina bassensis* - *Affinetrina quadrilateralis*] - p. 119
1945 *Triloculina bassensis* - Parr, p. 198; pl. 8, figs 7a-c.
1987 *Triloculina irregularis* (d'Orbigny) - Baccaert, p. 126; pl. 57, fig. 1.
1993 *Affinetrina* cf. *A. quadrilateralis* (d'Orbigny) - Hottinger *et al.*, p. 47; pl. 28, figs 9-15; pl. 29, figs 1-4.
2009 *Quinqueloculina bassensis* (Parr) - Parker, p. 184, figs 131a-g.
****Quinqueloculina* cf. *berthelotiana*** d'Orbigny
Quinqueloculina bicarinata d'Orbigny - p. 120
1826 *Quinqueloculina bicarinata* d'Orbigny, p. 302, no 35.
1878 *Quinqueloculina bicarinata* d'Orbigny - Terquem; pl. 5, figs 10a-c.
1921 *Quinqueloculina bicarinata* d'Orbigny - Cushman, p. 428; pl. 86, figs 2-3.
1988 *Quinqueloculina bicarinata* d'Orbigny - Haig, p. 233; pl. 4, figs 27-28; pl. 5, figs 1-5.
2009 *Quinqueloculina pseudolamarckiana* n.sp. - Margerel http://147.94.111.32/Collection/forams-index.php?

+*Quinqueloculina bicornis* (Walker & Jacob) - p. 120
1798 *Serpula bicornis* - Walker & Jacob, p. 633; pl. 14, fig. 2.
1958 *Quinqueloculina bicornis* (Walker & Jacob) - Le Calvez & Le Calvez, p. 180; pl. 4, figs 28, 32.
1973 *Quinqueloculina bicornis* (Walker & Jacob) - Haynes, p. 67; pl. 7, fig. 18, text fig. 16, nos 1-3.
1999 *Quinqueloculina bicornis* (Walker & Jacob) - Hayward *et al*., p. 100; pl. 4, figs 15-17.
****Quinqueloculina bicostata*** d'Orbigny
+*Quinqueloculina boroi* McCulloch - p. 120
1981 *Quinqueloculina* (?) *boroi* - McCulloch, p. 41; pl. 16, figs 13, 15.
2009 *Miliolinella? boroi* (McCulloch) - Parker, p. 117, figs 82a-g.
Quinqueloculina bosciana d'Orbigny - p. 120
1839a *Quinqueloculina bosciana* - d'Orbigny, p. 191; pl. 11, figs 22-24.
1977 *Quinqueloculina bosciana* d'Orbigny - Le Calvez, p. 66; pl. 10, figs 1-3.
2009 *Quinqueloculina bosciana* d'Orbigny - Parker, p. 185; figs 132a-k.
Quinqueloculina bradyana Cushman - p. 120
1910 *Quinqueloculina bradyana* - Cushman, p. 52; pl. 18, fig. 2.
1960 *Quinqueloculina bradyana* Cushman - Barker; pl. 6, figs 6-7, not fig. 8.
1995 *Quinqueloculina bradyana* Cushman - Yassini & Jones, p. 83; figs 214-215.
+*Quinqueloculina carinatastriata* (Wiesner) - p. 120
1923 *Adelosina milletti* Wiesner var. *carinatastriata* - Wiesner, p. 76; pl. 14, figs 190-191.
1974 *Quinqueloculina poeyana carinata* - Albani, p. 35; pl. 1, figs 4-6.
1987 *Quinqueloculina poeyana carinata* Albani - Baccaert, p. 101; pl. 47, figs 4-5.
1988 *Quinqueloculina carinatastriata* (Wiesner) - Haig, p. 233; pl. 5, figs 6-10.
1994 *Quinqueloculina funafutiensis* (Chapman) - Loeblich & Tappan, p. 49; pl. 77, figs 13-20.
2009 *Cycloforina? littoralis* (Collins) - Margerel http://147.94.111.32/Collection/forams-index.php?
2009 *Quinqueloculina carinatastriata* (Wiesner) - Parker, p. 188; figs 133a-h; 134a-h.
+*Quinqueloculina collumnosa* Cushman - p. 121
1915 *Miliolina cuvieriana* d'Orbigny - Heron-Allen & Earland (not d'Orbigny, 1839), p. 571; pl. 42, figs 33-36.
1922a *Quinqueloculina collumnosa* - Cushman, p. 65; pl. 10, fig. 10.
1929a *Quinqueloculina collumnosa* - Cushman, p. 27; pl. 3, figs 2a-c.
+*Quinqueloculina corrugata* (Collins) - p. 121
1958 *Massilina corrugata* - Collins, p. 362; pl. 2, figs 11,12.
1988 *Quinqueloculina corrugata* Collins - Haig, p. 233; pl. 5, figs 15-17.
****Quinqueloculina crassa*** Heron-Allen et Earland
Quinqueloculina crassicarinata Collins - p. 121
1958 *Quinqueloculina crassicarinata* - Collins, p. 359; pl. II, fig. 6.
1988 *Quinqueloculina crassicarinata* Collins - Haig, p. 233; pl. 5, figs 18-20,
1994 *Quinqueloculina crassicarinata* Collins - Loeblich & Tappan, p. 48; pl. 77, figs 4-12.
Not 2009 *Quinqueloculina crassicarinata* Collins - Parker, p. 189; figs 135a-j.
Quinqueloculina crenulata Cushman - p. 121
1932 *Quinqueloculina crenulata* - Cushman, p. 21; pl. 5, fig. 11.
1988 *Quinqueloculina crenulata* Cushman - Haig, p. 233; pl. 5, figs 21-23.
Quinqueloculina cuvieriana d'Orbigny - p. 121
1839a *Quinqueloculina cuvieriana* - d'Orbigny, p. 190; pl. 11, figs 19-21.
1994 *Quinqueloculina cuvieriana* d'Orbigny - Loeblich & Tappan, p. 48; pl. 78, figs 1-6.
2009 *Quinqueloculina cuvieriana* d'Orbigny - Parker, p. 193; figs 136f-j.
+*Quinqueloculina debenayi* Langer - p. 121
1992 *Quinqueloculina debenayi* - Langer, p. 90; pl. 2, figs 7-8.
+*Quinqueloculina delicatula* Vella - p. 122
1957 *Quinqueloculina delicatula* - Vella, p. 27; pl. 4, figs 77-79.
1999 *Quinqueloculina delicatula* Vella - Hayward *et al.*, p. 102; pl. 4, figs 23-24.
2009 *Quinqueloculina delicatula* Vella - Parker, p. 195; figs 137a-g.
2009 *Quinqueloculina subcuneata* n.sp. - Margerel http://147.94.111.32/Collection/forams-index.php?
+*Quinqueloculina disparilis* d'Orbigny - p. 122
1826 *Quinqueloculina disparilis* - d'Orbigny, p. 302; n° 21.
1893 *Quinqueloculina disparilis* d'Orbigny - Schlumberger, p. 212; pl. 2, figs 55-57, text figs 21-22.
1929 *Quinqueloculina disparilis* d'Orbigny - Cushman, 1929a, p. 32; pl. 5, figs 4 a-c.
Quinqueloculina distorqueata Cushman [*Quinqueloculina samoaensis* Cushman] - p. 122
1954 *Quinqueloculina distorqueata* - Cushman in Todd, p. 333; pl. 83, fig. 27.
1987 *Quinqueloculina distorqueata* Cushman - Baccaert, p. 86; pl. 40, figs 4-7.
1988 *Quinqueloculina distorqueata* Cushman - Haig, p. 233; pl. 5, figs 26-28.
2009 *Quinqueloculina distorqueata* Cushman - Parker, p. 195, figs 138a-f; 139a-i.

+*Quinqueloculina erinacea* Mikhalevich - p. 122
1977 *Quinqueloculina erinacea* - Mikhalevich, p. 447; fig. 4.
1983 *Quinqueloculina erinacea* Mikhalevich - Mikhalevich, p. 114; figs 203a-b.
+*Quinqueloculina exmouthensis* Parker - p. 122
1993 *Cycloforina collumnosa* (Cushman) - Hottinger *et al.*, p. 49; pl. 32, figs 10-15.
2009 *Quinqueloculina exmouthensis* - Parker, p. 207; figs 146a-h, 147a-i, 148a-i).
+*Quinqueloculina exsculpta* (Heron-Allen & Earland) - p. 122
1915 *Miliolina exsculpta* - Heron-Allen & Earland, p. 567; pl. 42, figs 23-26.
1979 *Quinqueloculina exsculpta* (Heron-Allen & Earland) - Whittaker & Hodgkinson, p. 25; pl. 1, figs 11, 12.
1988 *Quinqueloculina exsculpta* (Heron-Allen & Earland) - Haig, p. 233; pl. 6, figs 5-7.
2009 *Quinqueloculina exsculpta* **(**Heron-Allen & Earland) - Parker, p. 210, figs 149a-k.
****Quinqueloculina funafutiensis*** (Chapman)
Quinqueloculina granulocostata Germeraad - p. 123
1946 *Quinqueloculina granulocostata* - Germeraad, p. 63, figures as per Brady 1884.
1987 *Quinqueloculina granulocostata* Germeraad - Baccaert, p. 87; pl. 41, fig. 3.
1988 *Quinqueloculina granulocostata* Germeraad - Haig, p. 233; pl. 6, figs 8-10.
1994 *Massilina granulocostata* (Germeraad) - Loeblich & Tappan, p. 47; pl. 79, figs 1-12.
2009 *Quinqueloculina granulocostata* Germeraad - Parker, p. 211, figs 150a-k; 151a-h.
****Quinqueloculina hadaii*** Rasheed
+*Quinqueloculina haigi* (Langer) - p. 123
1988 *Quinqueloculina* cf. *Q. semireticulosa* (Cushman) - Haig, p. 234; pl. 8, figs 8, 9, not 6, 7.
1992a *Triloculina lecalvezae* Kaasschieter - Hatta & Ujiié, p. 74; pl. 12, fig. 4.
1992 *Pitella haigi* - Langer, p. 91; pl. 2, figs 11-14.
2009 *Quinqueloculina haigi* (Langer) - Parker, p. 213; figs 152a-i.
Quinqueloculina inaequalis (Cushman) - p. 123
1921 *Massilina inaequalis* - Cushman, p. 72; pl. 17, figs 12-13.
1987 *Massilina inaequalis* Cushman - Baccaert, p. 108; pl. 49, figs 3-5.
+*Quinqueloculina jugosa* Cushman - p. 123
1944b *Quinqueloculina seminulum* Linné var. *jugosa* - Cushman, p. 13; pl. 2, fig. 5.
2005 *Quinqueloculina jugosa* Cushman - Debenay *et al*.; pl. 1, fig. 16.
+*Quinqueloculina latidentella* Loeblich & Tappan - p. 123
1994 *Quinqueloculina latidentella* - Loeblich & Tappan, p. 49; pl. 80, figs 10-12.
2009 *Quinqueloculina latidentella* Loeblich & Tappan - Parker, p. 217, figs 154a-f; figs 155a-g.
****Quinqueloculina limbata*** (d'Orbigny)
+*Quinqueloculina lizardi* Baccaert - p. 123
1987 *Quinqueloculina oblonga* subsp. *lizardi* - Baccaert, p. 100; pl. 46, figs 6a-b; pl. 47, fig. 1.
+*Quinqueloculina massiliniformis* Parker - p. 124
2009 *Quinqueloculina massiliniformis* - Parker, p. 218, figs 156a-h; 157a-h; 158a-g.
****Quinqueloculina milletti*** (Wiesner)
****Quinqueloculina*** **cf.** ***multimarginata*** Said
+*Quinqueloculina neocylindrica* (McCulloch) - p. 124
1981 *Triloculina? neocylindrica* McCulloch, p. 64; pl. 16, figs 14, 16, 18-20.
Quinqueloculina neostriatula Thalmann [*Varidentella neostriatula*] - p. 124
1950 *Quinqueloculina neostriatula* Thalmann - Thalmann, new name for *Q. striatula* Cushman 1932, p. 45.
1987 *Quinqueloculina neostriatula* Thalmann - Baccaert, p. 91; pl. 43, figs 1-6.
1988 *Quinqueloculina neostriatula* Thalmann - Haig, p. 234; pl. 6, figs 22-25.
2009 *Quinqueloculina neostriatula* Thalmann - Parker, p. 225, figs 162a-j; 163a-i.
+*Quinqueloculina* cf. *Q. oblonga* (Montagu) - p. 124
1803 *Vermiculum oblongum* - Montagu p. 522; pl. 14, fig. 9.
1988 *Quinqueloculina* cf. *Q. oblonga* Montagu - Haig, p. 234; pl. 6, figs 26-29.
+*Quinqueloculina parallela* (Zheng) - p. 124
1979 *Triloculina parallela* - Zheng, p. 209; pl. 7, figs 9-10.
1994 *Triloculina parallela* Zheng - Loeblich & Tappan, p. 56; pl. 96, figs 17-19.
Quinqueloculina parkeri (Brady) - p. 124
1884 *Miliolina parkeri* - Brady, p. 177; pl. 7, figs 14a-c.
1988 *Quinqueloculina parkeri* (Brady) - Haig, p. 234; pl. 6, figs 30-33.
1994 *Lachlanella parkeri* (Brady) - Loeblich & Tappan, p. 47; pl. 74, figs 1-6.
2009 *Quinqueloculina parkeri* (Brady) - Parker, p. 233, figs 167a-g; 168a-j.

Quinqueloculina parvaggluta Vella [*Siphonaperta enoplostoma*] - p. 125
1957 *Quinqueloculina parvaggluta* - Vella, p. 27; pl. 4, figs 71-73.
1988 *Quinqueloculina* cf. *pittensis* Albani - Haig, p. 234; pl. 7, figs 9-11.
1994 *Quinqueloculina parvaggluta* Vella - Loeblich & Tappan, p. 49; pl. 80, figs 1-9.
2009 *Quinqueloculina enoplostoma* (d'Orbigny) - Margerel http://147.94.111.32/Collection/forams-index.php?

Quinqueloculina pittensis Albani - p. 125
1974 *Quinqueloculina pittensis* - Albani, p. 34-35; pl. 1, figs 1-3.
1988 *Quinqueloculina* cf. *Q. pittensis* Albani - Haig, p. 234; pl. 7, figs 9-11.
2009 *Quinqueloculina pittensis* Albani - Parker, p. 236, figs 169a-h, 170a-h, 171a-j.

Quinqueloculina polygona d'Orbigny - p. 125
1839a *Quinqueloculina polygona* - d'Orbigny, in de la Sagra, p. 198; pl. 12, figs 21-23.
1921 *Quinqueloculina polygona* d'Orbigny - Cushman, p. 66; pl. 16, figs 3-4.
1929a *Quinqueloculina polygona* d'Orbigny - Cushman, p. 28; pl. 3, figs 5a-c.
1932 *Quinqueloculina polygona* d'Orbigny - Cushman, p. 25; pl. 6, fig. 6.

Quinqueloculina pseudoreticulata Parr [*Quinqueloculina variolata* d'Orbigny; *Quinqueloculina philippinensis* Cushman] - p. 125
1884 *Miliolina reticulata* - Brady, p. 177; pl. 9, figs 2-3.
1941 *Quinqueloculina pseudoreticulata* - Parr, p. 305.
1994 *Quinqueloculina philippinensis* Cushman - Loeblich & Tappan, p. 50; pl. 81, figs 1-10.
2009 *Quinqueloculina* gr. *Q. pseudoreticulata* Parr - Parker, p. 243, figs 174a-j; 175a-h.

Quinqueloculina quinquecarinata Collins - p. 125
1958 *Quinqueloculina quinquecarinata*- Collins, p. 360; pl. 2, fig. 8.
1987 *Quinqueloculina quinquecarinata* Collins - Baccaert, p. 103; pl. 48, fig. 1.
1988 *Quinqueloculina quinquecarinata* Collins - Haig, p. 234; pl. 7, figs 21-25.
2009 *Quinqueloculina quinquecarinata* Collins - Parker, p. 248, figs 176a-i; 177a-g.

+*Quinqueloculina rariformis* McCulloch - p. 125
1981 *Quinqueloculina*? *rariformis* - McCulloch, p. 51; pl. 15, figs 12a-b.

+*Quinqueloculina* cf. *Q. rugosa* d'Orbigny - p. 126
1826 *Quinqueloculina rugosa* - d'Orbigny, p. 302; no. 24.
1917 *Quinqueloculina rugosa* d'Orbigny - Cushman, p. 53.
1921 *Quinqueloculina rugosa* d'Orbigny - Cushman, p. 429; pl. 100, figs 6a-c.
1988 *Quinqueloculina* cf. *Q. rugosa* d'Orbigny - Haig, p. 234; pl. 8, figs 1-5.

+*Quinqueloculina* cf. *Q. sagamiensis* Asano - p. 126
1936 *Quinqueloculina sagamiensis* - Asano, p. 612; pl. 30, figs 5a-c.
1988 *Quinqueloculina sagamiensis* Asano - Zheng, p. 208; pl. 8, figs 1-3.

+*Quinqueloculina schlumbergeri* (Wiesner) - p. 126
1893 *Quinqueloculina stelligera* - Schlumberger, p. 68; pl. 2, figs 58,-59.
1923 *Miliolina schlumbergeri* - Wiesner, new name for *Q. stelligera* Schlumberger, p. 49; pl. 6, fig. 73.
1991 *Quinqueloculina stelligera* Schlumberger - Cimerman & Langer, p. 38; pl. 34, figs 13-15.
2009 *Quinqueloculina schlumbergeri* Wiesner - Parker, p. 248; figs 179a-k.

Quinqueloculina seminula (Linné) - p. 126
1758 *Serpulum seminulum* - Linnaeus, p. 76, not figured.
1964 *Quinqueloculina seminula* (Linné) - Loeblich & Tappan, fig. 349, nos 1a-c.
1994 *Quinqueloculina incisa* Vella - Loeblich & Tappan, p. 49; pl. 80, figs 13-15.
2009 *Quinqueloculina seminula* Linnaeus - Parker p. 251, figs 180a-l; 181a-j; 182a-f.

+*Quinqueloculina* cf. *Q. semireticulosa* Cushman - p. 126
1932 *Quinqueloculina semireticulosa* - Cushman, p. 27; pl. 7, figs 2a-b.
not 1988 *Quinqueloculina* cf. *Q. semireticulosa* Cushman - Haig, p. 234; pl. 8, figs 6-9.

Quinqueloculina striatula Cushman

Quinqueloculina subcuneata Cushman - p. 126
1921 *Quinqueloculina crassa* d'Orbigny var. *subcuneata* - Cushman p. 423; pl. 89, figs 4a-c.
1929 *Quinqueloculina crassa* d'Orbigny var. *subcuneata* Cushman - Cushman, p. 30; pl. 5, figs 1a-c.
1932 *Quinqueloculina crassa* d'Orbigny var. *subcuneata* Cushman - Cushman, p. 21; pl. 5, figs 8a-c.
1966 *Quinqueloculina subcuneata* Cushman - Todd, p. 130; pl. 17, fig. 6.

+*Quinqueloculina subparkeri* McCulloch - p. 127
1977 *Quinqueloculina subparkeri* - McCulloch, p. 511; pl. 217, figs 15-16; pl. 218, figs 2-6, 12.
2009 *Quinqueloculina subparkeri* McCulloch - Parker, p. 260, figs 188a-f; 189a-h; 190a-j.

Quinqueloculina subpolygona Parr - p. 127
1945 *Quinqueloculina subpolygona* - Parr, p. 196; pl. 12, figs 2a-c.
1999 *Quinqueloculina subpolygona* Parr - Hayward *et al.*, p. 104; pl. 5, figs 11-13.
2009 *Quinqueloculina subpolygona* Parr - Parker, p. 262, figs 191a-j, 192a-l.

Quinqueloculina cf. *Q. sulcata* d'Orbigny - p. 127
1926 *Quinqueloculina sulcata* - d'Orbigny, p. 301.
1932 *Quinqueloculina sulcata* d'Orbigny - Cushman, p. 28; pl. 57, figs 5-8.
1994 *Quinqueloculina sulcata* d'Orbigny - Loeblich & Tappan, p. 50; pl. 82, figs 1-6.
+*Quinqueloculina tantabiddyensis* Parker - p. 127
1987 *Quinqueloculina oblonga* s.. (Montagu) - Baccaert, p. 94; pl. 4, figs 4a-b.
1988 *Quinqueloculina* cf. *Q. oblonga* (Montagu) - Haig, p. 234; pl. 6, figs 26-29.
2009 *Quinqueloculina tantabiddyensis* - Parker, p. 265, figs 192a-j, 193a-h, 194a-i, 195a-f.
Quinqueloculina transversestriata (Brady) [*Triloculina transversestriata*] - p. 127
1881 *Miliolina transversestriata* - Brady, p. 45; pl. 4, fig. 6.
1988 *Quinqueloculina transversestriata* (Brady) - Haig, p. 234; pl. 8; figs 22-24.
Quinqueloculina tropicalis Cushman - p. 127
1924 *Quinqueloculina tropicalis* - Cushman, p. 63; pl. 23, figs 9, 10.
1960 *Quinqueloculina tropicalis* Cushman - Barker, p. 10; pl. 5, fig. 3.
1995 *Quinqueloculina tropicalis* Cushman - Yassini & Jones, p. 85; figs 170-171, 174-175.
Quinqueloculina tubus Todd - p. 128
1957 *Quinqueloculina tubus* - Todd, p. 306; pl. 85, fig. 18.
1988 *Quinqueloculina tubus* Todd - Haig, p. 234; pl. 8, figs 25-28.
1994 *Quinqueloculina cuvieriana* d'Orbigny - Loeblich & Tappan, p. 48; pl. 78, figs 4-6.
2009 *Quinqueloculina tubus* Todd - Parker, p. 276, figs 198a-l, 199a-g, 200a-i.
+*Quinqueloculina vandiemeniensis* Loeblich & Tappan - p. 128
1994 *Quinqueloculina vandiemeniensis* - Loeblich & Tappan, p. 51; pl. 83, figs 1-3.
2009 *Quinqueloculina vandiemeniensis* Loeblich & Tappan - Parker, p. 277; figs 201a-h; 202a-k; 203a-j.
+*Quinqueloculina venusta* Karrer - p. 128
1868 *Quinqueloculina venusta* - Karrer, p. 147; pl. 2, fig. 16.
1884 *Miliolina venusta* (Karrer) - Brady, p. 162; pl. 5, fig. 7.
1917 *Quinqueloculina venusta* Karrer - Cushman, p. 45; pl. 11, fig. 1.
1990 *Quinqueloculina venusta* Karrer - Ujiié, p. 15; pl. 3, figs 3-4.
+*Quinqueloculina* cf. *Q. victoriensis* Collins - p. 128
1974 *Quinqueloculina victoriensis* - Collins, p. 8; pl. 1, fig. 9.
2009 *Quinqueloculina* cf. *victoriensis* Collins - Parker, p. 281; figs 204a-j; 205a-l.
+*Quinqueloculina zhengi* Parker - p. 128
1957 *Quinqueloculina fusiformis* - Petri, p. 36; pl. 1, figs 10, 11.
1979 *Quinqueloculina fusiformis* - Zheng, p. 126, 206; pl. 5, figs 7a-d, tf. 3.
1993 *Quinqueloculina fusiformis* Zheng - Ujiié & Rifardi, p. 122; pl. 1, fig. 5.
2009 *Quinqueloculina zhengi* - Parker p. 285, figs 206a-l, 207a-g.
+*Quinqueloculina* sp. 1 - p. 128
+*Quinqueloculina* sp. 2 - p. 129
+*Quinqueloculina* sp. 3 - p. 129
+*Quinqueloculina* sp. 4 - p. 129
+*Quinqueloculina* sp. 5 - p. 129
+*Quinqueloculina* sp. 6 - p. 129
+*Quinqueloculina* sp. 7 - p. 129
+*Quinqueloculina* sp. 8 - p. 130
+*Quinqueloculina* sp. 9 - p. 130
Subfamily Miliolinellinae Vella, 1957
Biloculinella Wiesner, 1931
+*Biloculinella globula* (Bornemann) - p. 104
1855 *Biloculina globula* - Bornemann, p. 349; pl. 19, fig. 3.
1932 *Pyrgo globula* (Bornemann) - Cushman, p. 65; pl. 15, figs 6-8.
1951b *Biloculinella globula* (Bornemann) - Asano, p. 20; figs 134-135.
+*Biloculinella inflata* (Wright) - p. 104
1902 *Biloculina inflata* - Wright, p. 183; pl. 13, figs 1-4.
1988 *Biloculinella inflata* (Wright) - Zheng, p. 253; pl. 22, figs 4-6.
2001 *Biloculinella inflata* (Wright) - Szarek, p. 105; pl. 13, figs 2-3.
Cribromiliolinella Saidova, 1981
+*Cribromiliolinella subvalvularis* (Parr) - p. 106
1844 *Miliolina valvularis* (Reuss) - Brady, p. 161; pl. 4, figs 4-5.
1950 *Triloculina subvalvularis* - Parr, p. 296.
1981 *Cribromiliolinella subvalvularis* - Saidova, p. 31.

Flintina Cushman, 1921

Flintina bradyana Cushman - p. 108

1921 *Flintina bradyana* - Cushman, p. 467; pl. 94, fig. 2, text figs 38-44.

1988 *Flintina bradyana* Cushman - Haig, p. 220; pl. 1, fig. 25.

Miliolinella Wiesner, 1931

Miliolinella circularis (Bornemann) [*Triloculinella circularis*] - p. 109

1855 *Triloculina circularis* - Bornemann, p. 349; pl. 19, fig. 4.

1995 *Miliolinella circularis* (Bornemann) - Yassini & Jones, p. 87; figs 227-228, 231.

2009 *Miliolinella circularis* (Bornemann) - Parker, p. 120; figs 85a-c.

Miliolinella labiosa (d'Orbigny) [*Flintinoides labiosa*] - p. 109

1839a *Triloculina labiosa* - d'Orbigny, p. 178; pl. 10, figs 12-14.

1954 *Triloculinella labiosa* (d'Orbigny) - Cushman, Todd & Post, p. 334; pl. 84, figs 5-6.

1988 *Miliolinella labiosa* (d'Orbigny) - Zheng, p. 250; pl. 22, fig. 8.

1994 *Miliolinella labiosa* (d'Orbigny) - Loeblich & Tappan, p. 52; pl. 87, figs 10-12.

Miliolinella oceanica (Cushman) [*Miliolinella baragwanathi* Parr] - p. 110

1932 *Triloculina oceanica* - Cushman, p. 54; pl. 12, figs 2a-c.

1987 *Miliolinella baragwanathi* (Parr) - Baccaert, p. 136; pl. 60, figs 4-5.

2009 *Miliolinella baragwanathi* (Parr) - Margerel http://147.94.111.32/Collection/forams-index.php?

2009 *Miliolinella oceanica* (Cushman) - Parker, p. 120, figs 86a-h.

+*Miliolinella pilasensis* McCulloch - p. 110

1977 *Miliolinella pilasensis* - McCulloch, p. 566; pl. 238, fig. 16.

1994 *Triloculinella pilasensis* (McCulloch) - Loeblich & Tappan, p. 57; pl. 99, figs 1-9.

+*Miliolinella* cf. *M. semicostata* (Wiesner) - p. 110

1923 *Quinqueloculina semicostata* - Wiesner, p. 72; pl. 14, figs 177, 178.

1991 *Miliolinella semicostata* (Wiesner) - Cimerman & Langer, p. 42; pl. 38, figs 10-15.

2007 *Miliolinella semicostata* (Wiesner) - Parker, p. 176, figs 120 c-g.

Miliolinella suborbicularis (d'Orbigny)

Miliolinella subrotunda (Montagu) - p. 110

1808 *Vermiculum subrotundum* - Montagu, p. 521; pl. 1, fig. 4.

1964 *Miliolinella subrotunda* (Montagu) - Loeblich & Tappan, p. C466, figs 355, n° 1a-c.

2009 *Miliolinella subrotunda* (Montagu) - Parker, p. 124, figs 88a-j; 89a-g.

+*Miliolinella* cf. *M. vigilax* Vella - p. 110

1957 *Miliolinella vigilax* - Vella, p. 21-22; pl. 7, figs 124-126.

1999 *Miliolinella vigilax* Vella - Hayward *et al*., p. 97; pl. 3, fig. 25.

Miliolinella webbiana (d'Orbigny) [*Miliolinella albatrossi* Baccaert] - p. 110

1839b *Triloculina webbiana* - d'Orbigny, p. 140; pl. 3, figs 13-15.

1974 *Miliolinella webbiana* (d'Orbigny) - Le Calvez, p. 90-92; pl. 23, figs 1, 2, 3, 4, 13-15.

1994 *Miliolinella suborbicularis* (d'Orbigny) - Loeblich & Tappan, p. 52; pl. 89, figs 11-16.

2009 *Miliolinella albatrossi* Baccaert - Margerel http://147.94.111.32/Collection/forams-index.php?

2009 *Miliolinella webbiana* (d'Orbigny) - Parker p. 124, figs 90a-e.

+*Miliolinella* sp. 1 - p. 111

+*Miliolinella* sp. 2 - p. 111

+*Miliolinella* sp. 3 - p. 111

+*Miliolinella* sp. 4 - p. 111

Pseudolachlanella Langer, 1992

Pseudolachlanella eburnea (d'Orbigny) [*Pseudotriloculina*? *eburnea*] - p. 115

1839a *Triloculina eburnea* - d'Orbigny, p. 180; pl. 10, figs 21-23.

1987 *Quinqueloculina oblonga* (Montagu) subsp. *eburnea* (d'Orbigny) - Baccaert, p. 98; pl. 46, figs 3-5.

1988 *Quinqueloculina* cf. *Q. incisura* (Todd) - Haig, p. 233; pl. 6, figs 11-14.

1993 "*Quinqueloculina*" *eburnea* (d'Orbigny) - Hottinger *et al.*, p. 59; pl. 53, figs 9-11; pl. 54, figs 3-5, not fig. 1.

+*Pseudolachlanella slitella* Langer - p. 115

1992 *Pseudolachlanella slitella* - Langer, p. 90; pl. 2, figs 4-6.

1994 *Pseudolachlanella slitella* Langer - Loeblich & Tappan, p. 48; pl. 73, figs 16-18; pl. 101, ? figs 1-3.

1994 *Quinqueloculina schwantzi* McCulloch - Loeblich & Tappan, p. 50; pl. 83, figs 4-6.

2009 *Pseudotriloculina*? *eburnea* (d'Orbigny) - Margerel http://147.94.111.32/Collection/forams-index.php?

Pseudomassilina Lacroix, 1938

Pseudomassilina australis (Cushman) - p. 115

1932 *Massilina australis* - Cushman, p. 32; pl. 8, fig. 2.

1987 *Pseudomassilina australis* (Cushman) - Baccaert, p. 110; pl. 50, figs 1-5; pl. 51, fig. 1.

1993 *Pseudomassilina australis* (Cushman) - Hottinger *et al.*, p. 53; pl. 41, figs 3-11.
1994 *Pseudomassilina australis* (Cushman) - Loeblich & Tappan, p. 53; pl. 91, figs 1-3.

Pseudomassilina macilenta (Brady) - p. 115

1884 *Miliolina macilenta* - Brady, p. 167; pl. 7, figs 5-6.
1988 *Pseudomassilina macilenta* (Brady) - Haig, p. 228; pl. 3, figs 21, 24.
1994 *Pseudomassilina macilenta* (Brady) - Loeblich & Tappan, p. 53; pl. 90, figs 10-13; not pl. 90, figs 5-9.
2009 *Pseudomassilina macilenta* (Brady) - Parker, p. 168, figs 118a-j.

Pseudomassilina pacificiensis Cushman - p. 115

1924 *Pseudomassilina pacificiensis* - Cushman, p. 66; pl. 24, figs 1, 2.
1988 *Pseudomassilina pacificiensis* Cushman - Haig, p. 228; pl. 3, fig. 25.
1993 *Pseudomassilina pacificiensis* Cushman - Hottinger *et al*., p. 54; pl. 42, figs 1-4.

+*Pseudomassilina robusta* Lacroix - p. 115

1938 *Pseudomassilina oblonga* Lacroix, var. *robusta* - Lacroix, p. 5, text fig. 3.
1988 *Pseudomassilina robusta* Lacroix - Haig, p. 233; pl. 3, figs 26, 27.
1994 *Pseudomassilina robusta* Lacroix - Loeblich & Tappan p. 53; pl. 90, figs 1-4.

+*Pseudomassilina*? sp. 1 - p. 116

Pseudotriloculina Cherif, 1970

+*Pseudotriloculina* cf. *P. chrysostoma* (Chapman) - p. 116

1909 *Miliolina chrysostoma* - Chapman, p. 322; pl. 13, figs 8-10; pl. 14, figs 1, 4.
1957 *Triloculina chrysostoma* (Chapman) - Vella; pl. 5; figs 97-99.
1999 *Triloculina chrysostoma* (Chapman) - Hayward *et al*., p. 105; pl. 5, figs 27-28.

Pseudotriloculina linneiana (d'Orbigny) [*Triloculina planciana* d'Orbigny] - p. 116

1839a *Triloculina linneiana* - d'Orbigny, p. 172; pl. 9, figs 11-13.
1929 *Triloculina linneiana* d'Orbigny - Cushman, p. 61; pl. 16, figs 1, 2.
1987 *Triloculina linneiana* d'Orbigny - Baccaert, p. 128; pl. 57, figs 3, 4.

Pseudotriloculina subgranulata (Cushman) - p. 116

1918 *Triloculina subgranulata* Cushman, p. 290; pl. 96, fig. 4.
1987 *Triloculina linneiana* d'Orbigny var. *subgrabulata* Cushman - Baccaert, p. 129, 130; pl. 58, figs 1, 2.
1988 *Quinqueloculina eamsii* (Rasheed) - Haig, p. 233; pl. 11, figs 1-4.
2009 *Quinqueloculina subgranulata* (Cushman) - Parker, p. 259, figs 187a-j.

Pyrgo Defrance, 1824

+*Pyrgo anomala* (Schlumberger) - p. 116

1891 *Biloculina anomala* - Schlumberger, p. 569; pl. 11, figs 84-86; pl. 12, fig. 101.
1988 *Pyrgo anomala* (Schlumberger) - Zheng, p. 222; pl. 11, fig. 1; pl. 27, fig. 3.
1994 *Nummulopyrgo anomala* (Schlumberger) - Loeblich & Tappan, p. 42; pl. 91, figs 4-10.
1999 *Pyrgo anomala* (Schlumberger) - Hayward *et al*., p. 97; pl. 4, figs 1-2.

+*Pyrgo comata* (Brady) - p. 116

1881 *Biloculina comata* - Brady, p. 45.
1884 *Biloculina comata* Brady - Brady, p. 144; pl. 3, figs 9a-b.
1917 *Biloculina comata* Brady - Cushman, p. 81; pl. 34, fig. 1.
1999 *Pyrgo comata* (Brady) - Hayward *et al*., p. 98; pl. 4, figs 3-4.

Pyrgo denticulata (Brady) - p. 117

1884 *Biloculina ringens* (Lamarck) var. *denticulata* - Brady, p. 143; pl. 3, figs 4-5.
1987 *Pyrgo denticulata* (Brady) - Baccaert, p. 113; pl. 51, figs 5-6; pl. 52, fig. 1.
1988 *Pyrgo denticulata* (Brady) - Haig, p. 233; pl. 3, fig. 28, ?29.
2009 *Pyrgo denticulata* (Brady) - Parker, p. 168, figs 119a-h.

Pyrgo depressa (d'Orbigny) - p. 117

1826 *Biloculina depressa* - d'Orbigny, p. 298.
1884 *Biloculina depressa* d'Orbigny - Brady, p. 145; pl. 2, figs 12, 16-17.
1988 *Pyrgo depressa* (d'Orbigny) - Zheng, p. 225; pl. 11, figs 4-5; pl. 31, fig. 13.
1994 *Biloculinella depressa* (d'Orbigny) - Loeblich & Tappan, p. 51; pl. 86, figs 1-4.

Pyrgo inornata (d'Orbigny) - p. 117

1846 *Biloculina inornata* - d'Orbigny, p. 266; pl. 16, figs 7-9.
1999 *Pyrgo anomala* (Schlumberger) - Hayward *et al*., p. 97; pl. 4, figs 1-2.
2010 *Pyrgo inornata* (d'Orbigny) - Hayward *et al*., p. 151; pl. 7, figs 15-19.

Pyrgo lucernula (Schwager)

Pyrgo murrhyna (Schwager)

Pyrgo oblonga (d'Orbigny) - p. 117

1839a *Biloculina oblonga* - d'Orbigny, p. 163; pl. 8, figs 21-23.
1993 *Pyrgo oblonga* (d'Orbigny) - Hottinger *et al*., p. 57; pl. 50, figs 1-6.

+*Pyrgo phlegeri* Andersen - p. 117

1961 *Pyrgo phlegeri* - Andersen, p. 38; pl. 8, fig. 1.
1993 *Pyrgo phlegeri* Andersen - Hottinger *et al*., p. 57; pl. 50, figs 7-12.

+*Pyrgo rasheedi* Hatta - p. 117

1987 *Pyrgo lundgreni* - Baccaert, p. 115; pl. 52, figs 6-8.
1988 *Pyrgo* sp. - Haig, p. 233; pl. 4, figs 1-4.
1994 *Pyrgo pisum* (Schlumberger) - Loeblich & Tappan, p. 54; pl. 93, figs 1-14.
1996 *Pyrgo rasheedi* - Hatta, p. 21-28; pl. 1, figs 1-3.
2009 *Pyrgo rasheedi* - Parker, p. 168; figs 120a-j.

+*Pyrgo rotaliara* Loeblich & Tappan - p. 117

1953 *Pyrgo rotaliara* - Loeblich & Tappan, p. 47; pl. 6, figs 5-6.
1977 *Pyrgo* cf. *P. rotalaris* Loeblich & Tappan - McCulloch, p. 532; pl. 241, figs 1-2; pl. 242, fig. 5.
1993 *Pyrgo rotaliara* Loeblich & Tappan - Hottinger *et al*., p. 57; pl. 51, figs 1-4.

+*Pyrgo sarsi* (Schlumberger) - p. 117

1891 *Biloculina sarsi* - Schlumberger, p. 166; pl. 9, figs 55-59; text-figs 10-11.
1921 *Biloculina sarsi* Schlumberger - Cushman, p. 471; pl. 97, fig. 1; text-figs 48-50.
1988 *Pyrgo sarsi* (Schlumberger) - Zheng, p. 229; pl. 12, figs 6-10; pl. 13, figs 1-2; pl. 31, figs 19-22; text-fig. 46.
1994 *Pyrgo sarsi* (Schlumberger) - Loeblich & Tappan, p. 54; pl. 94, figs 1-9.

***Pyrgo serrata** *(Bailey)*

Pyrgo striolata (Brady) - p. 118

1884 *Biloculina ringens* (Lamarck) var. *striolata* - Brady, Torres Strait, p. 143; pl. 3, figs 7, 8.
1988 *Pyrgo striolata* (Brady) - Haig, p. 233; pl. 4, fig. 4, not figs 1-3.
1994 *Pyrgo striolata* (Brady) - Loeblich & Tappan, p. 54; pl. 92, figs 9-15.
2009 *Pyrgo striolata* (Brady) - Parker, p. 172, figs 122a-k.

Pyrgo subglobulus Parr

+*Pyrgo subpisus* Parr - p. 118

1950 *Pyrgo subpisum* - Parr, p. 197; pl. 7, figs 5, 6.
1995 *Pyrgo subpisus* Parr - Yassini & Jones, p. 91; fig. 236.

+*Pyrgo tainanensis* Ishizaki - p. 118

1943 *Pyrgo tainanensis* - Ishizaki, p. 21; pl. 1, figs 8a-c.
1951b *Pyrgo tainanensis* Ishizaki - Asano, p. 19; figs 128-129.

Pyrgo vespertilio (Schlumberger) - p. 118

1891 *Biloculina vespertilio* - Schlumberger, p. 174; pl. 10, figs 74-76.
1917 *Biloculina vespertilio* Schlumberger - Cushman, p. 77; pl. 30, fig. 1.
1921 *Biloculina vespertilio* Schlumberger - Cushman, p. 472; pl. 95, fig. 5.

+*Pyrgo* sp. 1 - p. 118
+*Pyrgo* sp. 2 - p. 118
+*Pyrgo* sp. 3 - p. 118
+*Pyrgo* sp. 4 - p. 118

Pyrgoella Cushman & White, 1936

+*Pyrgoella irregularis* (d'Orbigny) - p. 119

1839c *Biloculina irregularis* - d'Orbigny, p. 67; pl. 8, figs 20-21.
1995 *Pyrgoella irregularis* (d'Orbigny) - Yassini & Jones, p. 91; fig. 235.

Sinuloculina Luczkowska, 1972

+*Sinuloculina lunata* Zheng - p. 131

1988 *Sinuloculina lunata* - Zheng, p. 336; pl. 15, figs 3, 6; pl. 24, fig. 4; pl. 32, figs 5-6; text fig. 89.

Triloculina d'Orbigny, 1826

+*Triloculina affinis* d'Orbigny - p. 136

1826 *Triloculina affinis* - d'Orbigny, p. 299, n° 2.
1993 *Triloculina affinis* d'Orbigny - Hottinger *et al*., p. 64; pl. 65, figs 7-10; pl. 66, figs 1-3.

Triloculina austriaca d'Orbigny

+*Triloculina barnardi* Rasheed - p. 136

1971 *Triloculina terquemiana* (Brady) var. *barnardi* - Rasheed, p. 37; pl. 10, fig. 3.
1988 *Triloculina barnardi* Rasheed - Haig, p. 235; pl. 11, figs 19-21.
2009 *Triloculina barnardi* Haig - Parker, p. 358, figs 260a-m.

Triloculina bertheliniana (Brady) - p. 136

1884 *Miliolina bertheliniana* - Brady, p. 166; pl. 114, fig. 2.
1932 *Triloculina bertheliniana* (Brady) - Cushman, p. 60; pl. 13, fig. 5.
1992a *Triloculina bertheliniana* (Brady) - Hatta & Ujiié, p. 73; pl. 11, fig. 7.
2009 *Triloculina bertheliniana* (Brady) - Parker, p. 358; figs 261a-j.

+*Triloculina bicarinata* d'Orbigny [*Affinetrina bicarinata*; *Triloculina reticulata* var. *sagra* d'Orbigny] - p. 136

1839a *Triloculina bicarinata* - d'Orbigny, in De la Sagra, p. 158; pl. 10, figs 18-20.

1992a *Triloculina bicarinata* d'Orbigny - Hatta & Ujiié, p. 73; pl. 11, figs 8a-b.

***Triloculina cuneata** Karrer

Triloculina earlandi Cushman - p. 136

1954 *Triloculina earlandi* - Cushman, in Cushman, Todd & Post, p. 338; pl. 85, fig. 3.

1988 *Triloculina funafutiensis* (Chapman) - Haig, p. 235; pl. 11, figs 22-24.

1992a *Triloculina earlandi* Cushman - Hatta & Ujiié, p. 73; pl. 12, figs 1a-c.

2009 *Triloculina earlandi* Cushman - Parker, p. 362, figs 262a-h.

+*Triloculina elongotricarinata* n. sp. - p. 136

Triloculina fichteliana d'Orbigny - p. 137

1839a *Triloculina fichteliana* - d'Orbigny, in De la Sagra, p. 171; pl. 9, figs 8-10.

1993 *Triloculina fichteliana* d'Orbigny - Hottinger *et al*., p. 65; pl. 66, figs 10-15.

Triloculina* cf. *gracilis d'Orbigny

Triloculina irregularis (d'Orbigny)

Triloculina laevigata d'Orbigny

+*Triloculina latiformis* McCulloch - p. 137

1981 *Triloculina latiformis* McCulloch, p. 64; pl. 21, figs 1, 2.

Triloculina linneiana d'Orbigny var. gomis Bandy

Triloculina marshallana Todd - p. 137

1954 *Triloculina marshallana* - Todd in Cushman, Todd & Post, p. 339; pl. 85, fig. 13.

1988 *Triloculina marshallana* Todd - Zheng, 1988, p. 243; pl. 18, fig. 7.

1992a *Triloculina marshallana* Todd - Hatta & Ujiié, p. 74; pl. 12, fig. 5.

Triloculina oceanica Cushman

Triloculina rotunda d'Orbigny - p. 137

1826 *Triloculina rotunda* - d'Orbigny, p. 299, n° 4.

1893 *Triloculina rotunda* d'Orbigny - Schlumberger, p. 206; pl. 1, figs 48-50.

1958 *Triloculina rotunda* d'Orbigny - Le Calvez & Le Calvez, p. 192; pl. 6, figs 57-58.

+*Triloculina serrulata* McCulloch - p. 137

1977 *Triloculina serrulata* - McCulloch, p. 558; pl. 225, figs 1, 2, 4.

1987 *Triloculina costifera* Terquem - Baccaert, p. 125; pl. 56, fig. 3.

1993 *Triloculina serrulata* McCulloch - Hottinger *et al.*, p. 65; pl. 67, figs 1-9.

2009 *Triloculina serrulata* McCulloch - Parker, p. 364, figs 264a-k.

+*Triloculina striatotrigonula* Parker & Jones - p. 138

1865 *Triloculina striatotrigonula* - Parker & Jones, p. 438.

1884 *Miliolina insignis* brady - Brady; pl. 4, figs 10 a-b.

1999 *Triloculina striatotrigonula* Parr - Hayward & others, p. 105; pl. 5, figs 25, 26.

Triloculina terquemiana (Brady) - p. 138

1884 *Miliolina terquemiana* - Brady, p. 114, fig. 1.

1993 *Triloculina terquemiana* (Brady) - Hottinger *et al*., p. 65; pl. 68, figs 1-6.

Triloculina tricarinata d'Orbigny - p. 138

1826 *Triloculina tricarinata* - d'Orbigny, p. 299.

1884 *Miliolina tricarinata* d'Orbigny - Brady, p. 165; pl. 3, figs 17 a-c.

1993 *Triloculina tricarinata* d'Orbigny – Hottinger *et al*., p. 65; pl. 68, figs 7-12.

1994 *Triloculina tricarinata* d'Orbigny - Loeblich & Tappan, p. 56; pl. 96, figs 1-7.

Triloculina trigonula (Lamarck) - p. 138

1804 *Miliolites trigonula* - Lamarck, p. 351; pl. 17, figs 4a-c.

1884 *Miliolina trigonula* (Lamarck) - Brady; pl. 3, figs 15, 16.

1993 *Triloculina trigonula* (Lamarck) - Hottinger *et al*., p. 66; pl. 69, figs 1-10.

2009 *Triloculina trigonula* (Lamarck) - Parker, p. 366, figs 266a-k, 267a-k.

+*Triloculina wiesneri* Le Calvez & Le Calvez [*Quinqueloculina cuvieriana* d'Orbigny var. *queenslandica* Collins] - p. 138

1958 *Triloculina wiesneri* - Le Calvez & Le Calvez, p. 195; pl. 15, figs 179-181.

+*Triloculina* sp. 1 - p. 139

Triloculinella Riccio, 1950

+*Triloculinella chiastocytis* Loeblich & Tappan - p. 139

1994 *Triloculinella chiastocytis* - Loeblich & Tappan, p. 57; pl. 97, figs 7-9; pl. 98, figs 4-6, 10-18.

2009 *Miliolinella* cf. *M. chiastocytis* (Loeblich & Tappan) - Parker, p. 117, figs 83a-j, 84a-g.

+*Triloculinella hornibrooki* (Vella) - p. 139

1957 *Quinquinella hornibrooki* - Vella, p. 21; pl. 7, figs 127-129.

1988 *Triloculinella hornibrooki* (Vella) - Loeblich & Tappan; pl. 353, figs 7-9.

1999 *Triloculinella hornibrooki* (Vella) - Hayward *et al*., p. 106; pl. 5, figs 33-35.

Subfamily Sigmoilinitinae Luczkowska, 1974
Nummoloculina Steinmann, 1881
Nummoloculina contraria (d'Orbigny) - p. 112
1846 *Biloculina contraria* - d'Orbigny, p. 266; pl. 16, figs 4-6.
1921 *Biloculina contraria* d'Orbigny - Cushman, p. 412; pl. 85, fig. 1.
1960 *Nummoloculina contraria* (d'Orbigny) - Barker, p. 22; pl. 11, figs 10-11.
1994 *Nummoloculina contraria* (d'Orbigny) - Loeblich & Tappan, p. 57; pl. 99, figs 18-21.
+*Nummoloculina* sp. 1 - p. 113
1992a *Triloculinella*? Aff. *obliquinodus* Riccio - Hatta & Ujiié, p. 75; pl. 13, figs 1a-c.
Sigmamiliolinella Zheng, 1988
Sigmamiliolinella australis (Parr) [*Miliolinella australis*] - p. 130
1932 *Quinqueloculina australis* - Parr, p. 7; pl. 1, fig. 8.
1954 *Miliolinella australis* (Parr) - Cushman, Todd & Post, p. 334; pl. 84, figs 3, 4.
1988 *Sigmamiliolinella australis* (Parr) - Zheng, p. 263, 234; pl. 20, figs 5-7, pl. 33, figs 16-19, text fig. 8.
2009 *Sigmamiliolinella australis* (Parr) - Parker, p. 330, figs 238a-k, 239a-j, 240a-j, 241a-h.
Sigmoilina Schlumberger, 1887
Sigmoilina carinata (Hofker)
+*Sigmoilina obesa* Heron-Allen & Earland - p. 130
1932b *Sigmoilina obesa* - Heron-Allen & Earland, p. 320; pl. 7, figs 1-4.
1994 *Sigmoilina obesa* Heron-Allen & Earland - Loeblich & Tappan, p. 58; pl. 101, figs 4-12.
Sigmoilina* cf. *porcellana Germeraad
Sigmoilinella Zheng, 1979
+*Sigmoilinella tortuosa* Zheng - p. 131
1979 *Sigmoilinella tortuosa* - Zheng, p. 130, 131, 208, 209; pl. 7, fig. 4, text fig. 7.
1988 *Quinqueloculina* cf. *Q. collumnosa* Cushman - Haig, p. 233; pl. 5, figs 11-14.
1997 *Sigmoilinella tortuosa* Zheng - Haig p. 273, fig. 4, nos 20, 21.
2009 *Sigmoilinella tortuosa* Zheng - Parker p. 330, figs 242a-j.
Sigmoilinita Seiglie, 1965
+*Sigmoilinita costata* (Schlumberger) - p. 131
1893 *Sigmoilina costata* - Schlumberger, p. 61; pl. 1, figs 51-52.
1958 *Sigmoilina costata* Schlumberger - Le Calvez J & Y, p. 20; pl. 7, figs 69-70.
1991 *Sigmoilinita costata* (Schlumberger) - Cimerman & Langer, p. 47; pl. 45, figs 1-6.
Spirosigmoilina Parr, 1942
Spirosigmoilina bradyi Collins [=*Massilina crenata*] - p. 135
1884 *Spiroloculina crenata* Karrer - Brady, p. 156; pl. 10, figs 24-26.
1917 *Massilina crenata* (Karrer) - Cushman, p. 57; pl. 20, figs 2a, c.
1988 *Spirosigmoilina bradyi* Collins - Haig, p. 235; pl. 11, figs 1-6.
2009 *Spirosigmoilina bradyi* Collins - Parker, p. 357, figs 259a-f.
Spirosigmoilina parri Collins - p. 135
1958 *Spirosigmoilina parri* - Collins, 1958, p. 365; pl. 3, figs 3-4.
1988 *Spirosigmoilina parri* Collins - Haig, p. 235; pl. 11, figs 7-10.
1994 *Spirosigmoilina parri* Collins - Loeblich & Tappan, p. 58; pl. 102, figs 9-17; pl. 103, figs 1-5.
Subfamily Sigmoilopsinae Vella, 1957
Sigmoilopsis Finlay, 1947
+*Sigmoilopsis arenata* Cushman - p. 131
1921 *Spiroloculina arenata* - Cushman, p. 63; pl. 14, fig. 17.
1929 *Spiroloculina arenata* Cushman - Cushman, p. 44; pl. 9, fig. 5.
1977 *Quinqueloculina guadalupensis* - McCulloch, p. 492; pl. 203, figs 17a-b.
1983 *Spiroloculina arenata* Cushman - Mikhalevich; fig. 176.
+*Sigmoilopsis elliptica* (Galloway & Wissler) - p. 131
1927 *Sigmoilina elliptica* - Galloway & Wissler, p. 39; pl. 7, figs 2a-b.
1995 *Sigmoilopsis elliptica* (Galloway & Wissler) - Yassini & Jones p. 92; figs 148-150.
1999 *Sigmoilopsis elliptica* (Galloway & Wissler) - Hayward *et al*., p. 104; pl. 5, figs 16-18.
Subfamily Siphonapertinae Saidova, 1975
Ammomassilina Cushman, 1933
Ammomassilina alveoliniformis (Millett) - p. 103
1898c *Massilina alveoliniformis* - Millett, p. 609; pl. 8, figs 5-7.
1988 *Ammomassilina alveoliniformis* (Millett) - Haig, p. 218; pl. 1, figs 3-6.
1992a *Ammomassilina alveoliniformis* (Millett) - Hatta & Ujiié, p. 65; pl. 6, fig. 1.
1994 *Ammomassilina alveoliniformis* (Millett) - Loeblich & Tappan, p. 45; pl. 5, figs 1-5; pl. 69, figs 1-2.
+*Ammomassilina clypeoarenulata* Loeblich & Tappan - p. 103
1994 *Ammomassilina clypeoarenulata* - Loeblich & Tappan, p. 45; pl. 69, figs 15-17.

Schlumbergerina Munier-Chalmas, 1882
Schlumbergerina alveoliniformis (Brady) - p. 130
1884 *Miliolina alveoliniformis* - Brady, p. 181; pl. 8, figs 15-20.
1988 *Schlumbergerina alveoliniformis* (Brady) - Haig, p. 234; pl. 9, figs 18, 19.
1994 *Schlumbergerina alveoliniformis* (Brady) - Loeblich & Tappan, p. 46; pl. 72, figs 9-11.
2009 *Schlumbergerina alveoliniformis* (Brady) - Parker, p. 326, figs 237a-h.

Family Tubinellidae Rhumbler, 1906

Articulina d'Orbigny, 1826
Articulina alticostata Cushman - p. 103
1944a *Articulina alticostata* - Cushman, p. 16; pl. 4, figs 10-13.
1994 *Articulina alticostata* Cushman - Loeblich & Tappan, p. 59; pl. 104, figs 7-10.
2009 *Articulina alticostata* Cushman - Margerel http://147.94.111.32/Collection/forams-index.php?
2009 *Articulina alticostata* Cushman - Parker, p. 88, figs 63a-g.
+*Articulina* cf. *A. carinata* Cushman - p. 103
1944a *Articulina carinata* - Cushman, p. 15; pl. 3, figs 18-20.
1994 *Articulina carinata* Cushman - Loeblich & Tappan, p. 59; pl. 104, figs 11-18.
***Articulina mucronata** (d'Orbigny)
Articulina pacifica Cushman - p. 104
1944a *Articulina pacifica* - Cushman, p. 19; pl. 4. figs 14-18.
1987 *Articulina pacifica* Cushman - Baccaert, p. 151; pl. 66, figs 2-3.
1988 *Articulina pacifica* Cushman - Haig, p. 218; pl. 1, figs 9, 10.
2009 *Articulina pacifica* Cushman - Parker, p. 90, figs 64a-e.
+*Articulina queenslandica* Collins - p. 104
1958 *Articulina queenslandica* - Collins, p. 366; pl. 3, figs 8-10.
1987 *Articulina queenslandica* Collins - Baccaert, p. 153; pl. 66, figs 4-5.
Articulina sagra d'Orbigny - p. 104
1839a *Articulina sagra* - d'Orbigny, p. 183; pl. 9, figs 23-26.
1915 *Articulina sagra* d'Orbigny - Heron-Allen & Earland, p. 585; pl. 45, figs 22-25.
1917 *Articulina sagra* d'Orbigny - Cushman, p. 59; pl. 22, figs 7-8.
1994 *Articulina mucronata* (d'Orbigny) - Loeblich & Tappan, p. 59; pl. 104, figs 1-4.
***Articulina scrobiculata** (Brady)
Erichsenella Tinoco, 1955
+*Erichsenella schauinslandi* (Rhumbler) - p. 107
1906 *Miliolina schauinslandi* - Rhumbler, p. 41; pl. 3, figs 20, 21.
1932 *Triloculina labiosa* var. *schauinslandi* (Rhumbler) - Parr, p. 220; pl. 22, fig. 43.
1988 *Parrina bradyi* (Millett) - Loeblich & Tappan, p. 351; pl. 358, figs 16-18.
2009 *Erichsenella schauinslandi* (Rhumbler) - Parker, p. 102, figs 70a-h; 71a-l.
Parrina Cushman, 1931
Parrina bradyi (Millett) - p. 113
1898a *Nubecularia bradyi* - Millett, p. 261; pl. 5, figs 6a, b.
1987 *Miliolinella australis* (Parr) subsp. *Bradyi* (Millet) - Baccaert, p. 141; pl. 61, figs 7a, b.
2003 *Parrina bradyi* (Millett) - Javaux & Scott, p. 16, fig. 3.9.
Tubinella Rhumbler, 1906
Tubinella funalis (Brady) - p. 139
1884 *Articulina funalis* - Brady, p. 185; pl. 13, figs 6-11.
1924 *Tubinella funalis* (Brady) - Cushman, p. 54; pl. 19, figs 7-8.
1988 *Tubinella funalis* (Brady) - Haig, p. 235; pl. 11, figs 27-28.
1992a *Tubinella funalis* (Brady) - Hatta & Ujiié, p. 44; pl. 14, fig. 6.

Family Miliolidae Ehrenberg, 1839

Subfamily Miliolinae Ehrenberg, 1839
Miliola Lamarck, 1804
+*Miliola sublineata* (Brady) - p. 109
1884 *Miliolina circularis* (Bornemann) var. *sublineata* - Brady, p. 169; pl. 4, figs 7a-c.
1898b *Miliolina circularis* (Bornemann) var. *sublineata* Brady - Millett, p. 501; pl. 11, figs 4a-b.
1988 *Miliola sublineata* (Brady) - Haig, p. 220; pl. 2, figs 10-11.
1992a *Cribromiliolinella milletti* (Cushman) - Hatta & Ujiié, p. 69; pl. 9, figs 4-5.

Superfamily Austrotrillinacea Loeblich & Tappan, 1986

Family Brebinidae Mikhalevich, 1988

Subfamily Pseudohauerininae Mikhalevich, 1988
Pseudohauerina Ponder, 1972
Pseudohauerina involuta (Cushman) - p. 114
1946 *Hauerina involuta* - Cushman, p. 13; pl. 2, figs 25-28.

1988 *Pseudohauerina involuta* (Cushman) - Haig, p. 228; pl. 3, figs 16-18.
1994 *Sigmoihauerina involuta* (Cushman) - Loeblich & Tappan, p. 58; pl. 100, figs 8-12.
2009 *Pseudohauerina involuta* (Cushman) - Parker, p. 158, figs 112a-i.

Pseudohauerina orientalis (Cushman) - p. 114
1946 *Hauerina orientalis* (Cushman) - Cushman, p. 43; pl. 10, figs 16-17.
1988 *Pseudohauerina orientalis* (Cushman) - Haig, p. 228; pl. 3, figs 19, 20.
1994 *Hauerina orientalis* (Cushman) - Loeblich & Tappan, p. 60; pl. 76, figs 12-14.

Pseudohauerinella McCulloch, 1981

+Pseudohauerinella dissidens (McCulloch) - p. 114
1977 *Pseudohauerina dissidens* - McCulloch, p. 237; pl. 102, fig. 7.
1981 *Pseudohauerinella dissidens* (McCulloch) - McCulloch, p. 6.
1993 *Pseudohauerinella dissidens* (McCulloch) - Hottinger *et. al.*, p. 67; pl. 74, figs 1-8.

Superfamily Alveolinacea Ehrenberg, 1839

Family Alveolinidae Ehrenberg, 1839

Alveolinella Douvillé, 1907

Alveolinella boscii Defrance

Alveolinella quoii (d'Orbigny) - p. 102
1826 *Alveolina quoii* - d'Orbigny, p. 307; pl. 17, figs 11-13.
1987 *Alveolinella quoii* (d'Orbigny) - Baccaert, p. 154; pl. 66, figs 6-7.
1988 *Alveolinella quoii* (d'Orbigny) - Haig, p. 218; pl. 1, figs 1, 2.
1994 *Alveolinella quoii* (d'Orbigny) - Loeblich & Tappan, p. 60; pl. 107, figs 1-4.

Borelis de Monfort, 1808

Borelis pulchra d'Orbigny

Borelis schlumbergeri (Reichel) - p. 104
1937 *Neoalveolina pygmaea* (Hanzawa) *schlumbergeri* - Reichel, p. 110; pl. 10, figs 1-3.
1977 *Borelis schlumbergeri* (Reichel) - Hottinger, p. 93; figs 29a-h.
1993 *Borelis schlumbergeri* (Reichel) - Hottinger *et al.*, p. 68; pl. 75; figs 1-17.
1997 *Borelis schlumbergeri* (Reichel) - Haig, p. 270; fig. 3 n° 16.

Superfamily Soritacea Ehrenberg, 1839

Family *Peneroplidae* Schultze, 1854

Coscinospira Ehrenberg, 1839

+*Coscinospira hemprichii* Ehrenberg [*Spirolina arietina* (Batch)] - p. 106
1839 *Coscinospira hemprichii* - Ehrenberg, p. 131; pl. 2, fig. 2.
1993 *Coscinospira hemprichii* Ehrenberg - Hottinger *et al.*, p. 69; pl. 76, figs 1-12; pl. 77, figs 1-8.

Euthymonacha Loeblich & Tappan, 1994

Euthymonacha polita (Chapman) [*Monalysidium politum* Chapman] - p. 107
1900 *Peneroplis* (*Monalysidium*) *polita* - Chapman, p. 4; pl. 1, fig. 5.
1987 *Monalysidium politum* Chapman - Baccaert, p. 61; pl. 110, fig. 8.
1994 *Euthymonacha polita* (Chapman) - Loeblich & Tappan, p. 61; pl. 110, fig. 8.
2009 *Euthymonacha polita* (Chapman) - Parker, p. 103, figs 72a-h; 73a-j.

Monalysidium Chapman, 1900

Monalysidium acicularis (Batsch) - p. 111
1791 *Nautilus* (*Lituus*) *acicularis* - Batsch, p. 3, 6; pl. 6, figs 16a-b.
1993 *Monalysidium acicularis* (Batsch) - Hottinger *et al.*, p. 70; pl. 78, figs 1-14.
2009 *Monalysidium acicularis* (Batsch) - Parker, p. 138; figs 98a-h; 99a-e.

+*Monalysidium confusa* (McCulloch) - p. 111
1977 *Spirolina? confusa* - McCulloch, p. 231; pl. 100, fig. 9.
2009 *Monalysidium compressa* n.sp.- Margerel http://147.94.111.32/Collection/forams-index.php?

Peneroplis de Monfort, 1808

Peneroplis pertusus (Forskal) - p. 113
1775 *Nautilus pertusus* - Forskål, p. 125.
1988 *Spirolina pertusus* (Forskål) - Haig, p. 234; pl. 9, figs 22-24.
1994 *Peneroplis pertusus* (Forskål) - Loeblich & Tappan, p. 62; pl. 110, figs 1-5.
2009 *Peneroplis pertusus* (Forskål) - Parker, p. 152, figs 108a-h, 109i-l.

Peneroplis planatus (Fichtel et Moll) - p. 114
1798 *Nautilus planatus* - Fichtel & Moll, p. 91; pl. 16, figs a-c, i; p. 93; pl. 16, figs d-f; p. 94; pl. 16, figs g, h.
1988 *Peneroplis planatus* (Fichtel & Moll) - Loeblich & Tappan, p. 371; pl. 391, figs 7-8, 11-12.
1992a *Peneroplis planatus* (Fichtel & Moll) - Hatta & Ujiié, p. 79; pl. 16, fig. 2.
1993 *Peneroplis planatus* (Fichtel & Moll) - Hottinger *et al.*, p. 70; pl. 79, figs 1-16; pl. 80, figs 1-8.

Spirolina Lamarck, 1804

****Spirolina arietina*** (Batsch)

Family Soritidae Ehrenberg, 1839

Subfamily Archaiasinae Cushman, 1927

Parasorites Seiglie & Rivera, 1977

Parasorites orbitolitoides (Hofker) - p. 113

1930 *Praesorites orbitolitoides* - Hofker, p. 149. pl. 55, figs 8, 10; pl. 57, figs 1-5; pl. 61, figs 3-14.

1988 *Parasorites orbitolitoides* (Hofker) - Haig, p. 228; pl. 3, figs 8, 9.

1992a *Parasorites orbitolitoides* (Hofker) - Hatta & Ujiié, p. 80; pl. 17, figs 1, 2; pl. 18, figs 1, 2.

2009 *Parasorites* cf. *P. orbitolitoides* (Hofker) - Parker, p. 149, figs 106a-k, 107a-h.

Subfamily Soritinae Ehrenberg, 1839

Amphisorus Ehrenberg, 1839

Amphisorus hemprichii Ehrenberg - p. 103

1840 *Amphisorus hemprichii* - Ehrenberg, p. 130; pl. 3, fig. 3.

1987 *Amphisorus hemprichii* Ehrenberg - Baccaert, p. 72. pl. 30, fig. 1.

1994 *Amphisorus hemprichii* Ehrenberg - Loeblich & Tappan, p. 62; pl. 109, figs 7-12; pl. 110, figs 6-7.

2009 *Amphisorus hemprichii* Ehrenberg - Parker, p. 85, figs 60a-g, 61a-d.

+*Amphisorus sauronensis* Lee, Burnham & Cevasco - p. 103

2004 *Amphisorus sauronensis* - Lee, Burnham & Cevasco, p. 366, text figs 3-15, 17.

2009 *Amphisorus sauronensis* Lee, Burnham & Cevasco - Parker, p. 87, figs 62a-g.

Marginopora Quoy & Gaimard, 1830

Marginopora vertebralis Quoy & Gaimard - p. 109

1830 *Marginopora vertebralis* - Quoy & Gaimard in Blainville, vol. 6, p. 377.

1930 *Marginopora vertebralis* Quoy & Gaimard - Hofker, pt 2, p. 160; pl. 57, figs 1-2; pl. 61, figs 4-5; pl. 62, figs 1-9, 11-12.

1954 *Marginopora vertebralis* Quoy & Gaimard - Cushman, Todd & Post, p. 348; pl. 82, figs 5-6.

1987 *Marginopora vertebralis* Blainville - Baccaert, p. 74; pl. 32, fig. 2; pls. 33-36.

Sorites Ehrenberg, 1839

****Sorites marginalis*** (Lamarck)

+*Sorites orbiculus* (Forskål) - p. 131

1775 *Nautilus orbiculus* - Forskål, p. 125.

1840 *Sorites orbiculus* (Forskål) - Ehrenberg; pl. 3, figs 2a-d.

1987 *Sorites orbiculus* (Forskål) - Baccaert, p. 70; pl. 27, fig. 2; pl. 28, figs 1-2; pl. 29, fig. 1.

2009 *Sorites orbiculus* (Forskål) - Parker, p. 336, figs 244a-g; 245a-h.

Order **CARTERINIDA** Loeblich & Tappan, 1981

Family Carterinidae Loeblich & Tappan, 1955

Carterina Brady, 1884

Carterina spiculotesta (Carter, 1877) - p. 77

1877a *Rotalia spiculotesta* - Carter, p. 470; pl. 16.

1884 *Carterina spiculotesta* (Carter) - Brady, p. 346; pl. 41, figs 7-10.

Family Zaninettidae Brönnimann & Whittaker, 1983

Zaninettia Brönnimann & Whittaker, 1983

+*Zaninettia conica* Brönnimann & Whittaker, 1983 - p. 102

1983 *Zaninettia conica* - Brönnimann & Whittaker, p. 16; pl. 1, figs 1, 6-11, 13; pl. 2, figs 1-5, 7-9, 14; pl. 3, figs 8-18.

+*Zaninettia manaarensis* Brönnimann & Whittaker, 1983 - p. 102

1955 *Carterina spiculotesta.* (Carter) - Loeblich & Tappan, p. 27; p1. 4, figs 9a, b.

1983 *Zaninettia manaarensis* - Brönnimann & Whittaker, p. 15; pl. 4, figs 1-3, 5, 7.

Order **SPIRILLINIDA** Gorbachik & Mantsurova, 1980

Suborder Spirillinina Hohenegger & Piller, 1975

Family Planispirillinidae Piller, 1978

Conicospirillinoides Cheng & Zheng, 1978

Conicospirillinoides denticulatus (Brady, 1884) [*Spirillina denticulata*] - p. 192

1884 *Spirillina limbata* - Brady var. *denticulata* - Brady, p. 632; pl. 85, fig. 17.

1915 *Spirillina limbata* Brady var. *denticulata* Brady - Cushman, p. 5; pl. 3, fig. 1.

1994 *Conicospirillinoides denticulatus* (Brady) - Loeblich & Tappan, p. 35; pl. 51, figs 1-3.

+*Conicospirillinoides intricatus* McCulloch, 1977 - p. 192

1977 *Spirillina intricata* - McCulloch, p. 269; pl. 111, fig. 5.

+*Conicospirillinoides semidecoratus* (Heron-Allen & Earland, 1915) - p. 192

1915 *Spirillina semidecorata* - Heron-Allen & Earland, p. 685; pl. 51, figs 26-29.

1994 *Conicospirillinoides semidecoratus* (Heron-Allen & Earland) - Loeblich & Tappan, p. 35; pl. 50, figs 1-9.

+*Conicospirillinoides* cf. *C. semidecoratus* (Heron-Allen & Earland, 1915) - p. 192

1915 *Spirillina semidecorata* - Heron-Allen & Earland, p. 685; pl. 51, figs 30-31.

1992b *Conicospirillinoides semidecoratus* (Heron-Allen & Earland) - Hatta & Uliié, p. 163; pl. 51, figs 6a-c.

+*Conicospirillinoides* sp. 1 - p. 192

+*Conicospirillinoides* sp. 2 - p. 192

Planispirillina Bermúdez, 1952

Planispirillina inaequalis (Brady, 1879) [*Spirillina inaequalis*] - p. 229

1879 *Spirillina inaequalis* - Brady, p. 278; pl. 8, figs 25a, b.

1884 *Spirillina inaequalis* Brady - Brady, p. 631; pl. 85, figs 8-11.

1994 *Conicospirillinoides inaequalis* (Brady) - Loeblich & Tappan, p. 35; pl. 51, figs 4-6.

2009 *Planispirillina? inaequalis* Brady - Parker, p. 74; figs 54a-h.

+*Planispirillina parvispinata* McCulloch, 1981 - p. 229

1981 *Planispirillina parvispinata* - McCulloch, p. 141; pl. 49, figs 1-4.

+*Planispirillina tuberculatolimbata* (Chapman, 1900) - p. 229

1900 *Spirillina tuberculatolimbata* - Chapman, p. 11; pl. 1, figs 1a-c.

1992b *Planispirillina tuberculatolimbata* (Chapman) - Hatta & Ujiié, p. 163; pl. 20, figs 1a-c.

2009 *Planispirillina* cf. *P. tuberculatolimbata* (Chapman) - Parker, p. 74; figs 55a-i.

Family Spirillinidae Reuss & Fritsch, 1861

Mychostomina Berthelin, 1881

+*Mychostomina lucida* (Sidebottom, 1908) - p. 202

1908 *Spirillina lucida* - Sidebottom, p. 9; pl. 2, fig. 9.

1977 *Spirillina lucidiformis* - McCulloch, p. 270; pl. 111, fig. 12.

+*Mychostomina peripora* Zheng, 1979 - p. 202

1979 *Mychostomina peripora* - Zheng, p. 224; pl. 20, fig. 12.

1987 *Spirillina vivipara* Ehrenberg var. *revertens* Rhumbler - Baccaert, p. 170; pl. 71, figs 4-5.

1994 *Mychostomina peripora* Zheng - Loeblich & Tappan, p. 35; pl. 52, figs 14-16.

2009 *Mychostomina peripora* Zheng - Parker, p. 68; figs 49a-e.

Mychostomina revertens Rhumbler, 1906 - p. 202

1906 *Spirillina vivipara* Ehrenberg var. *revertens* - Rhumbler, p. 32-33; pl. 2, figs 8-10.

1988 *Mychostomina revertens* (Rhumbler) - Loeblich & Tappan, p. 303; pl. 318, figs 9-11.

1994 *Mychostomina revertens* (Rhumbler) - Loeblich & Tappan, p. 35; pl. 52, figs 1-12.

2009 *Mychostomina revertens* (Rhumbler) - Parker p. 68; figs 49f-i.

Sejunctella Loeblich & Tappan, 1957

+*Sejunctella* cf. *S. wenmanensis* (McCulloch, 1977) - p. 232

1977 *Spirillina wenmanensis* - McCulloch, p. 275; pl. 110, fig. 5.

Spirillina Ehrenberg, 1843

+*Spirillina grosseperforata* Zheng, 1979 - p. 232

1979 *Spirillina grosseperforata* - Zheng, p. 222; pl. 19, fig. 12.

1994 *Spirillina grosseperforata* Zheng - Loeblich & Tappan, p. 36; pl. 53, figs 1-8.

Spirillina spinigera Chapman

Spirillina tuberculata Brady, 1878 - p. 233

1878 *Spirillina tuberculata* - Brady in Siddall, p. 50.

1884 *Spirillina tuberculata* Brady - Brady, p. 631; pl. 85, figs 12-16.

1915 *Spirillina tuberculata* Brady - Cushman, p. 4; pl. 1, figs 7-9; pl. 2, fig. 3.

2004 *Spirillina tuberculata* Brady - Hromic *et al*., p. 36; pl. 1, figs a-f.

Spirillina vivipara Ehrenberg, 1843 - p. 233

1843 *Spirillina vivipara* - Ehrenberg, p. 422; pl. 3, fig. 41.

1987 *Spirillina vivipara* Ehrenberg - Baccaert, p. 179; pl. 71, figs 2-3.

1994 *Spirillina vivipara* Ehrenberg - Loeblich & Tappan, p. 36; pl. 54, figs 5-10.

2009 *Spirillina vivipara* Ehrenberg - Parker, p. 81; figs 58a-c.

+*Spirillina* sp. 1 - p. 233

+*Spirillina* sp. 2 - p. 233

+*Spirillina* sp. 3 - p. 233

Family Patellinidae Rhumbler, 1906

Subfamily Patellininae Rhumbler, 1906

Patellina Williamson, 1858

Patellina altiformis Cushman, 1933 - p. 206

1933b *Patellina advena* Cushman var. *altiformis* - Cushman, p. 87; pl. 9, figs 8a-b.

1954 *Patellina advena* var. *altiformis* Cushman - Cushman, Todd & Post, p. 357; pl. 89, fig. 1.

Patellina corrugata Williamson, 1858 - p. 206

1858 *Patellina corrugata* - Williamson, p. 46; pl. 3, figs 86-89.

1884 *Patellina corrugata* - Brady, p. 634; pl. 86, figs 1-7.

1992b *Patellina corrugata* - Hatta & Ujiié, p. 164; pl. 20, fig. 5.
1995 *Patellina corrugata* Williamson - Yassini & Jones, p. 163; figs 743-745.
+*Patellina elaborata* McCulloch, 1977 - p. 207
1977 *Patellina corrugata* var. *elaborata* - McCulloch, p. 279; pl. 112, figs 1-4.
+*Patellina* cf. *P. formosa* Heron-Allen & Earland, 1932 - p. 207
1932b *Patellina corrugata* Williamson var. *Formosa* - Heron-Allen & Earland, p. 406; pl. 13, figs 23-25.
1994 *Patellina corrugata* Williamson - Loeblich & Tappan, p. 36; pl. 55, figs 1-9.
1995 *Heteropatellina frustratiformis* McCulloch - Yassini & Jones, p. 997; fig. 837.
2009 *Patellina* cf. *P. formosa* Heron-Allen & Earland - Parker p. 70; figs 51a-h.
+*Patellina* sp. 1 - p. 207

Order **LAGENIDA** Lankester, 1885

Superfamily Nodosariacea Ehrenberg, 1838

Family Nodosariidae Ehrenberg, 1838

Subfamily Nodosariinae Ehrenberg, 1838

Botuloides Zheng, 1979
+*Botuloides pauciloculatus* Zheng, 1979 - p. 163
1979 *Botuloides pauciloculatus* - Zheng, p. 141; pl. 9, figs 15-16.
2010 *Botuloides pauciloculatus* Zheng - Hayward *et al*., p. 169; pl. 12, figs 27-28.

Dentalina Risso, 1826
+*Dentalina decepta* (Bagg, 1912) - p. 163
1912 *Nodosaria decepta* - Bagg, p. 55; pl. 16, fig. 1.
1950 *Dentalina decepta* (Bagg) - Cushman & McCulloch, p. 311; pl. 41, figs 11-12.
+*Dentalina* cf. *D. flintii* (Cushman, 1923) - p. 163
1923 *Nodosaria flintii* - Cushman, p. 85; pl. 14, fig. 1.
2001 *Dentalina flintii* (Cushman) - Szarek, p. 110.
+*Dentalina vertebralis* (Batsch, 1791) - p. 163
1791 *Nautilus (Orthoceras) vertebralis* - Batsch, p. 3, n° 6; pl. 2. figs 6a-b.
1884 *Nodosaria vertebralis* (Batsch) - Brady, p. 514; pl. 63, fig. 35; pl. 64, figs 11-14.
1921 *Nodosaria vertebralis* (Batsch) - Cushman, p. 211; pl. 38, figs 2-3; pl. 40, fig. 2.

Enantiodentalina Marie, 1941
+*Enantiodentalina muraii* Uchio, 1953 - p. 163
1953 *Enantiodentalina muraii* - Uchio, p. 152; pl. 14, figs 1-2.
1988 *Enantiodentalina muraii* Uchio - Loeblich & Tappan, p. 396; pl. 438, figs 21-23.
1994 *Enantiodentalina muraii* Uchio - Loeblich & Tappan, p. 64; pl. 115, figs 7-10.

Grigelis Mikhalevich, 1981
Grigelis orectus Loeblich & Tappan, 1994 [*Dentalina guttifera*] - p. 165
1960 *Dentalina guttifera* d'Orbigny - Barker (not *D. guttifera* d'Orbigny, 1846), p. 130; pl. 62, figs 10-12.
1994 *Grigelis orectus* - Loeblich & Tappan, p. 64; pl. 115, fig. 22.
1999 *Grigelis orectus* Loeblich & Tappan - Hayward *et al.*, p. 109; pl. 6, figs 14-15.

Laevidentalina Loeblich & Tappan, 1986
+*Laevidentalina advena* (Cushman, 1923) - p. 165
1923 *Nodosaria advena* - Cushman, p. 79; pl. 14, fig. 12.
2010 *Laevidentalina advena* (Cushman) - Hayward *et al*., p. 170; pl. 12, figs 34-35.
+*Laevidentalina baggi* (Galloway & Wissler, 1927) - p. 165
1927 *Dentalina baggi* - Galloway & Wissler, p. 49; pl. 8, figs 14-15.
1950 *Dentalina baggi* Galloway & Wissler - Cushman & McCulloch, p. 313; pl. 41, figs 13-14.
Laevidentalina communis (d'Orbigny, 1826) [*Dentalina communis*] - p. 165
1826 *Nodosaria (Dentalina) communis* - d'Orbigny, p. 254, n° 35.
1995 *Laevidentalina communis* (d'Orbigny) - Yassini & Jones, p. 99; fig. 254.
+*Laevidentalina emaciata* (Reuss, 1851) - p. 165
1851 *Dentalina emaciata* - Reuss, p. 63; pl. 3, fig. 9.
1921 *Nodosaria consobrina* var. *emaciata* (Reuss) - Cushman, p. 195; pl. 34, fig. 8; pl. 35, fig. 1.
1923 *Nodosaria consobrina* var. *emaciata* (Reuss) - Cushman, p. 78; pl. 13, figs 3-5.
Laevidentalina filiformis (d'Orbigny, 1826) [*Dentalina filiformis*] - p. 165
1826 *Nodosaria filiformis* - d'Orbigny, p. 253, no. 14.
1884 *Nodosaria (D.) filiformis* d'Orbigny - Brady, p. 500; pl. 63, figs 3-5.
1995 *Laevidentalina filiformis* (d'Orbigny) - Yassini & Jones, p. 99; figs 257-258.
1999 *Laevidentalina filiformis* (d'Orbigny) - Hayward *et al.*, p. 109; pl. 6, figs 18-19.
+*Laevidentalina inflexa* (Reuss, 1866) - p. 166
1866 *Nodosaria inflexa* - Reuss, p. 131; pl. 2, fig. 1.
1884 *Nodosaria inflexa* Reuss - Brady, p. 498; pl. 62, fig. 9.

1956 *Dentalina inflexa* (Reuss) - Asano, p. 20; pl. 4, figs 36-37.
1994 *Laevidentalina inflexa* (Reuss) - Loeblich & Tappan, p. 65; pl. 114, figs 10-16; pl. 115, fig. 6.
+*Laevidentalina mucronata* (Neugeboren, 1856) - p. 166
1856 *Dentalina mucronata* - Neugeboren, p. 83; pl. 3, figs 8-11.
1923 *Nodosaria mucronata* (Neugeboren) - Cushman, p. 80; pl. 12, figs 5-7; pl. 13, figs 7-9.
+*Laevidentalina sidebottomi* (Cushman, 1933) - p. 166
1933a *Dentalina sidebottomi* - Cushman, p. 12; pl. 3, fig. 4.
1994 *Laevidentalina sidebottomi* (Cushman) - Loeblich & Tappan, p. 65; pl. 113, figs 13-19.
+*Laevidentalina subemaciata* Parr, 1950 - p. 166
1950 *Dentalina subemaciata* - Parr, p. 329; pl. 12, fig. 1.
1999 *Laevidentalina subemaciata* (Parr) - Hayward *et al.*, p. 110; pl. 6, figs 22-23.
+*Laevidentalina subsoluta* (Cushman, 1923) - p. 166
1884 *Nodosaria (Dentalina) soluta* Reuss - Brady (not Reuss, 1851), p. 503; pl. 62, figs 13-16.
1923 *Nodosaria subsoluta* - Cushman, p. 74; pl. 13, fig. 1.
1950 *Dentalina subsoluta* (Cushman) - Cushman & McCulloch, p. 315; pl. 40, figs 13-15.
1999 *Laevidentalina inflexa* (Reuss) - Hayward *et al.*, p. 109; pl. 6, figs 20-21.
+*Laevidentalina* sp. 1 - p. 166
+*Laevidentalina* sp. 2 - p. 167
+*Laevidentalina* sp. 3 - p. 167
Nodosaria Lamarck, 1812
Nodosaria proxima Silvestri
+*Nodosaria nebulosa* (Ishizaki, 1943) - p. 168
1943 *Lagenonodosaria nebulosa* - Ishizaki, p. 219; pl. 10, figs 5, 7, 8.
1999 *Nodosaria nebulosa* (Ishizaki) - Hayward *et al*., p. 110; pl. 6, fig. 27.
Pseudonodosaria Boomgaart, 1949
+*Pseudonodosaria discreta* (Reuss, 1850) - p. 168
1850 *Glandulina discreta* - Reuss, p. 336; pl. 46, fig. 3.
1994 *Pseudonodosaria discreta* (Reuss) - Loeblich & Tappan, p. 66; pl. 117, figs 1-6.
Pyramidulina Fornasini, 1894
Pyramidulina catesbyi (d'Orbigny, 1839) - p. 168
1839a *Nodosaria catesbyi* - d'Orbigny, p. 16; pl. 1, figs 8-10.
1977 *Lagenonodosaria catesbyi* (d'Orbigny) - Le Calvez, p. 47; figs 1-5, 8-10.
1994 *Pyramidulina catesbyi* (d'Orbigny) - Loeblich & Tappan, p. 66; pl. 116, figs 10-12.
+*Pyramidulina pauciloculata* (Cushman, 1917) - p. 169
1917 *Nodosaria pauciloculata* - Cushman, p. 655.
1950 *Nodosaria pauciloculata* Cushman - Cushman & McCulloch, p. 324; pl. 42, figs 1-3.
1994 *Pyramidulina pauciloculata* (Cushman) - Loeblich & Tappan, p. 66; pl. 117, figs 7-8.
+*Pyramidulina prava* (Cushman, 1933) - p. 169
1933 *Nodosaria prava* - Cushman, p. 14; pl. 4, figs 1-4.
+*Pyramidulina* sp. 1 - p. 169
Subfamily Frondiculariinae Reuss, 1860
Frondicularia Defrance, 1826
+*Frondicularia kiensis* Barker, 1960 - p. 164
1884 *Frondicularia spathulata* - Brady, p. 519; pl. 65, fig. 18.
1960 *Frondicularia kiensis* - Barker; pl. 65, fig. 18.
1994 *Pseudolingulina kiensis* (Barker) - Loeblich & Tappan, p. 67; pl. 118, figs 11-20.
+*Frondicularia* sp. 1 - p. 164
Subfamily Lingulininae Loeblich & Tappan, 1961
Lingulina d'Orbigny, 1826
Lingulina carinata d'Orbigny
+*Lingulina galapagosensis* McCulloch, 1977 - p. 167
1977 *Lingulina galapagosensis* - McCulloch, p. 15; pl. 49, figs 11-13.
1994 *Lingulina galapagosensis* McCulloch - Loeblich & Tappan, p. 67; pl. 119, figs 1-5.
2009 *Lingulina carinata* d'Orbigny - Margerel http://147.94.111.32/Collection/forams-index.php?

Family Vaginulinidae Reuss, 1861

Subfamily Vaginulininae Reuss, 1860
Planularia Defrance, in de Blainville, 1824
+*Planularia californica* (Galloway & Wissler, 1927) - p. 230
1927 *Astacolus californicus* - Galloway & Wissler, p. 46; pl. 8, fig. 4.
1950 *Planularia californica* (Galloway & Wissler) - Cushman & McCulloch, p. 303; pl. 39, figs 6-9.
1960 *Planularia australis* - Barker; pl. 68, figs 3-4.
1994 *Planularia californica* (Galloway & Wissler) - Loeblich & Tappan, p. 75; pl. 130, fig. 11; pl. 133, figs 1-9.

+*Planularia mirabilis* (Chapman, 1902) - p. 230
1902 *Cristellaria mirabilis* - Chapman, p. 410; pl. 36, fig. 15.
+*Planularia perculta* McCulloch, 1977 - p. 230
1977 *Planularia perculta* - McCulloch, p. 10; pl. 96, fig. 14.
1992b *Planularia perculta* McCulloch - Hatta & Ujiié, p. 166; pl. 22, fig. 3.
1994 *Planularia perculta* McCulloch - Loeblich & Tappan, p. 75; pl. 134, figs 10-13.
Vaginulina d'Orbigny, 1826
+*Vaginulina reophagina* Sidebottom, 1918 - p. 170
1918 *Vaginulina reophagina* - Sidebottom, p. 139; pl. 5, figs 6-7.
1995 *Vaginulina reophagina* Sidebottom - Yassini & Jones, p. 135; figs 658-659.
Subfamily Lenticulininae Chapman, Parr & Collins, 1934
Lenticulina Lamarck, 1804
+*Lenticulina australis* Parr, 1950 - p. 222
1950 *Lenticulina australis* - Parr, p. 322, pl. 11, figs 7-8.
1999 *Lenticulina australis* Parr - Hayward *et al*., p. 113; pl. 6, figs 31-32.
Lenticulina calcar (Linné, 1758) - p. 223
1758 *Nautilus calcar* - Linné, p. 709; pl. 1, figs 3-4.
1954 *Robulus calcar* (Linné) - Cushman, Todd & Post, p. 342; pl. 86, fig. 4.
1994 *Lenticulina calcar* (Linné) - Loeblich & Tappan, p. 68; pl. 120, figs 1-8.
2010 *Lenticulina calcar* (Linné) - Hayward *et al*., p. 177; pl. 14, figs 9-10; pl. 15, figs 1-2.
+*Lenticulina cultrata* Montfort, 1808 - p. 223
1808 *Robulus cultratus* - Montfort, p. 214, 540 genre.
1995 *Lenticulina cultrata* (Monfort) - Yassini & Jones, p. 133; figs 701-702.
2010 *Lenticulina cultrata* (Monfort) - Hayward *et al*., p. 177; pl. 14, figs 11-12.
+*Lenticulina echinata* (d'Orbigny, 1846) - p. 223
1846 *Robulina echinata* - d'Orbigny, p. 100; pl. 4, figs 21-22.
1884 *Cristellaria echinata* (d'Orbigny) - Brady, p. 554, pl. 71, figs 1-3.
1960 *Lenticulina papillosoechinata* (Fornasini) - Barker, p. 148, pl. 71, figs 1-3.
1994 *Lenticulina papillosoechinata* (Fornasini) - Loeblich & Tappan, p. 68; pl. 119, figs 6-7.
Lenticulina gibba (d'Orbigny, 1839) - p. 223
1839a *Cristellaria gibba* - d'Orbigny, p. 40; pl. 7, figs 20-21.
1923 *Cristellaria gibba* - d'Orbigny - Cushman, p. 105; pl. 25, fig. 4.
2010 *Lenticulina gibba* (d'Orbigny) - Hayward *et al*., p. 178; pl. 14, figs 19-20.
+*Lenticulina limbosa* (Reuss, 1863) - p. 223
1863 *Cristellaria* (*Robulina*) *limbosa* - Reuss, p. 55; p1. 6, figs 69a-b.
1995 *Lenticulina limbosa* (Reuss) - Yassini & Jones, p. 134; fig. 726.
2010 *Lenticulina limbosa* (Reuss) - Hayward *et al*., p. 178; pl. 14, figs 21-22.
+*Lenticulina nitida* (d'Orbigny, 1826) - p. 223
1826 *Cristellaria nitida* - d'Orbigny, p. 291; no. 5.
1884 *Cristellaria nitida*, d'Orbigny - Brady, p. 549; pl. 70, figs 2a-b.
+*Lenticulina orbicularis* (d'Orbigny, 1826) - p. 224
1826 *Robulina orbicularis* - d'Orbigny, p. 288; p1. 15, figs 8-9.
1960 *Robulus orbicularis* (d'Orbigny) - Barker; pl. 69, fig. 17.
2010 *Lenticulina orbicularis* (d'Orbigny) - Hayward *et al*., p. 178; pl. 14, figs 23-24.
+*Lenticulina papillosa* (Fichtel & Moll, 1803) - p. 224
1803 *Nautilus papillosus* - Fichtel & Moll, p. 82; pl. 14, figs a-c.
1860 *Cristellaria papillosa* (Fichtel & Moll) - Parker & Jones, p. 113; no 17.
1884 *Cristellaria papillosa* (Fichtel & Moll) - Brady, p. 553; pl. 70, fig. 16.
1921 *Cristellaria papillosa* (Fichtel & Moll) - Cushman, p. 234.
+*Lenticulina platyrhinos* Zheng, 1980 - p. 224
1980 *Lenticulina platyrhinos* - Zheng, p. 178; pl. 3, fig. 2.
+*Lenticulina serpens* (Seguenza, 1880) - p. 224
1880 *Robulina serpens* - Seguenza, p. 143; p1. 13, fig. 25.
1985 *Cribrorobulina serpens* (Seguenza) - Kohl, p. 38; pl. 9, figs 1-3.
+*Lenticulina suborbicularis* Parr, 1950 - p. 224
1950 *Lenticulina suborbicularis* - Parr, p. 321; pl. 11, figs 5, 6.
1994 *Lenticulina suborbicularis* Parr - Loeblich & Tappan, p. 68; pl. 123, figs 3-9.
+*Lenticulina tasmanica* Parr, 1950 - p. 224
1950 *Lenticulina tasmanica* - Parr; p1. 11, figs 3-4.
1960 *Robulus atlanticus* - Barker; pl. 69, fig. 9-12.
2010 *Lenticulina tasmanica* Parr - Hayward *et al*., p. 179; pl. 14, figs 31-32.

Lenticulina vortex (Fichtel & Moll, 1798) - p. 225
1798 *Nautilus vortex* - Fichtel & Moll, p. 33; pl. 2, figs d-i.
1913b *Cristellaria vortex* (Fichtel & Moll) - Cushman, p. 68; pl. 32, fig. 3.
1994 *Lenticulina vortex* (Fichtel & Moll) - Loeblich & Tappan, p. 68; pl. 121, figs 9-14.
2001 *Lenticulina vortex* (Fichtel & Moll) - Szareck, p. 114; pl. 15, fig. 7.
Lenticulina sp. 1 - p. 225
Lenticulina sp. 2 - p. 225
Lenticulina sp. 3 - p. 225
Lenticulina spp. species 1 - p. 225
Lenticulina spp. species 2 - p. 225
Lenticulina spp. species 3 - p. 226
Lenticulina spp. species 4 - p. 226
Lenticulina spp. species 5 - p. 226
Lenticulina spp. species 6 - p. 226
Marginulinopsis Silvestri, 1904
+*Marginulinopsis bradyi* (Goës, 1894) - p. 167
1894 *Nodosaria* (*Cristellaria*) *bradyi* - Goës, p. 64; p1. 11, figs 643-645.
1988 *Marginulinopsis bradyi* (Goës) - Loeblich & Tappan, p. 406; pl. 446, figs 20-21.
2010 *Marginulinopsis bradyi* (Goës) - Hayward *et al*., p. 180; pl. 15, fig. 12.
+*Marginulinopsis tenuis* (Bornemann, 1855) - p. 167
1855 *Marginulina tenuis* - Bornemann, p. 326; pl. 13, fig. 14.
1884 *Cristellaria tenuis* (Bornemann) - Brady, p. 535; pl. 66, figs 21-23.
1921 *Cristellaria tenuis* (Bornemann) - Cushman, p. 250; pl. 50, fig. 2.
1994 *Marginulinopsis tenuis* (Bornemann) - Loeblich & Tappan, p. 69; pl. 122; figs 9-12.
+*Marginulinopsis*? sp. 1 - p. 168
Neolenticulina McCulloch, 1977
+*Neolenticulina occidentalis* (Cushman, 1923) - p. 227
1923 *Cristellaria occidentalis* - Cushman, p. 102; pl. 25, fig. 2; pl. 26, figs 1-2.
Saracenaria Defrance, in de Blainville, 1824
+*Saracenaria altifrons* (Parr, 1950) - p. 231
1884 *Cristellaria acutauricularis* (Fichtel & Moll) - Brady, p. 543; pl. 114, fig. 17.
1950 *Lenticulina altifrons* - Parr, p. 323; pl. 11, fig. 12.
1994 *Saracenaria altifrons* (Parr) - Jones; pl. 114, fig. 17.
2010 *Saracenaria altifrons* (Parr) - Hayward *et al*., p. 181; pl. 15, figs 20-24.
+*Saracenaria*? *ampliformis* McCulloch, 1881 - p. 231
1881 *Saracenaria ampliformis* - McCulloch, p. 88; pl. 28, fig. 4.
+*Saracenaria latifrons* (Brady, 1884) - p. 231
1884 *Cristellaria latifrons* - Brady, p. 544; pl. 68, fig. 19; pl. 113, fig. 11.
2010 *Saracenaria latifrons* (Brady) - Hayward *et al*., p. 181; pl. 15, figs 28-34.
+*Saracenaria* sp. 1 - p. 232
Siphomarginulina McCulloch, 1981
+*Siphomarginulina angulosa* Loeblich & Tappan, 1994 - p. 232
1994 *Siphomarginulina angulosa* - Loeblich & Tappan, p. 70; pl. 126, figs 1-7.
+*Siphomarginulina* sp. 1 - p. 232
Spincterules de Montfort, 1808
+*Spincterules compressus* Loeblich & Tappan, 1994 - p. 232
1994 *Spincterules compressus* - Loeblich & Tappan, p. 70; pl. 126, figs 8-13; pl. 134, figs 8-9.
Subfamily Marginulininae Wedekind, 1937
Amphicoryna Schlumberger, in Milne-Edwards, 1881
****Amphicoryna hirsuta*** (d'Orbigny, 1826)
Amphicoryna scalaris (Batsch, 1791) - p. 162
1791 *Nautilus (Orthoceras) scalaris* - Batsch, p. 1-4; pl. 2, figs 4a-b.
1884 *Nodosaria scalaris* (Batsch) - Brady, p. 510; pl. 63, figs 28-31.
1921 *Nodosaria scalaris* (Batsch) - Cushman, p. 199; pl. 35, fig. 6.
1992b *Amphicoryna scalaris* (Batsch) - Hatta & Ujiié, p. 166; pl. 21, fig. 8.
Amphicoryna separans (Brady, 1884) - p. 162
1884 *Nodosaria scalaris* (Batsch) var. *separans* - Brady, p. 510; pl. 64, figs 16-19.
1950 *Amphicoryna scalaris* (Batsch) var. *compacta* - Parr, p. 328; pl. 11, fig. 24.
1960 *Amphicoryna separans* (Brady) - Barker, p. 136; pl. 64, figs 16-19.
+*Amphicoryna* sp. 1 - p. 162

Astacolus de Montfort, 1808
Astacolus crepidulus (Fichtel & Moll, 1798) - p. 217
1798 *Nautilus crepidula* - Fichtel & Moll, p. 107; pl. 19, figs g-i.
1923 *Cristellaria crepidula* (Fichtel & Moll) - Cushman, p. 117; pl. 35, figs 3-4.
1960 *Astacolus crepidulus* (Fichtel & Moll) - Barker; pl. 67, fig. 20; pl. 68, figs 1-2.
1994 *Astacolus crepidulus* (Fichtel & Moll) - Loeblich & Tappan, p. 72; pl. 130, figs 1-10.
+*Astacolus japonicus* (Asano, 1936) - p. 217
1884 *Cristellaria gemmata* - Brady (part), p. 554; pl. 71, fig. 7.
1936 *Lenticulina japonica* - Asano, p. 328; pl. 37, fig. 7.
1994 *Astacolus japonicus* (Asano) - Loeblich & Tappan, p. 72; pl. 130, figs 14-19.
+*Astacolus neomulticamerata* McCulloch, 1981 - p. 217
1981 *Astacolus neomulticamerata* - McCulloch, p. 78; pl. 27, figs 19, 21.
+*Astacolus* cf. *A. tenuissima* Heron-Allen & Earland, 1932 - p. 217
1932b *Cristellaria tenuissima* - Heron-Allen & Earland, p. 389; pl. 12, figs 16-20.
+*Astacolus* sp. 1 - p. 217
1884 *Cristellaria lata* Cornuel - Brady, p. 539; pl. 72, figs 18a-b.
+*Astacolus* sp. 2 - p. 218
Hemirobulina Stache, 1864
+*Hemirobulina angistoma* Stache, 1864 - p. 241
1864 *Hemirobulina angistoma* - Stache, p. 213; pl. 22, fig. 46.
1960 *Marginulina obesa* - Barker; pl. 65, figs 5-6.
2010 *Hemirobulina angistoma* Stache - Hayward *et al*., p. 175; pl. 13, figs 25-27.
+*Hemirobulina galapagoensis* McCulloch, 1977 - p. 241
1977 *Hemirobulina galapagoensis* - McCulloch, p. 9; pl. 76, fig. 14; pl. 94, figs 16, 18, 23.
1988 *Hemirobulina galapagoensis* (McCulloch) - Loeblich & Tappan, p. 410; pl. 451, figs 15-16.
1994 *Hemirobulina galapagoensis* (McCulloch) - Loeblich & Tappan, p. 73; pl. 130, figs 12-13.
Marginulina d'Orbigny, 1826
+*Marginulina obesa* Cushman, 1923 - p. 243
1923 *Marginulina glabra* var. *obesa* - Cushman, p. 128; pl. 37, fig. 1.
1990 *Marginulina* cf. *obesa* (Cushman) - Ujiié, p. 20; pl. 6, figs 2-3.
1994 *Marginulina obesa* (Cushman) - Jones, p. 77; pl. 65, figs 5-6.
+*Marginulina similis* d'Orbigny, 1846 - p. 167
1846 *Marginulina similis* - d'Orbigny, p. 68; pl. 3, figs 15- 16.
1913b *Marginulina glabra* (d'Orbigny) - Cushman, p. 79; pl. 23, fig. 3.
Vaginulinopsis Silvestri, 1904
Vaginulinopsis pacifica (Cushman & Ozawa)
+*Vaginulinopsis gnamptina* Loeblich & Tappan, 1994 - p. 233
1994 *Vaginulinopsis gnamptina* - Loeblich & Tappan, p. 74; pl. 132, figs 11-16.
2010 *Vaginulinopsis gnamptina* Loeblich & Tappan - Hayward *et al*., p. 182; pl. 16, figs 8-11.
+*Vaginulinopsis sublegumen* Parr, 1950 - p. 170
1884 *Vaginulina legumen* (Linné) - Brady (non *Nautilus legumen* Linné, 1758), p. 530; pl. 66, fig. 13.
1950 *Vaginulinopsis sublegumen* - Parr, p. 325; pl. 11, fig. 18.
1992b *Astacolus sublegumen* (Parr) - Halla & Ujiié, p. 166; pl. 22, figs 1-2.
1994 *Vaginulinopsis sublegumen* Parr - Loeblich & Tappan, p. 74; pl. 131, figs 12-13; pl. 133, figs 10-19.
Subfamily Palmulininae Saidova 1981
Palmula Lea, 1833
Palmula robusta (Brady, 1884) [*Frondovaginulina*? *robusta*] - p. 229
1884 *Frondicularia robusta* - Brady, p. 523; pl. 66, figs 1-2.
1979 *Palmula latifolia* - Zheng, p. 211, pl. 10, fig. 6.
1992b *Palmula robusta* (Brady) - Hatta & Ujiié, p. 65; pl. 21, figs 3, 4-7.
2009 *Frondovaginulina*? *robusta* (Brady) - Margerel http://147.94.111.32/Collection/forams-index.php?
Subfamily Spirolingulininae Loeblich & Tappan, 1986
Spirolingulina Sellier de Civrieux & Dessauvagie, 1965
+*Spirolingulina* sp. 1 - p. 170
Family Lagenidae Reuss, 1861
Cerebrina Patterson, 1986
+*Cerebrina claricerviculata* (McCulloch, 1977) - p. 141
1977 *Lagenosolenia claricerviculata* - McCulloch, p. 55; pl. 63, figs 9a, c
1987 *Fissurina orbignyana* sensu stricto Seguenza - Baccaert, p. 166; pl. 70, figs 3a, b.
2009 *Cerebrina* cf. *C. claricerviculata* (McCulloch 1977) - Parker, p. 390, figs 282a-c; 283a-j.
Cerebrina cf. *C. clathrata* (Brady, 1884) [*Fissurina*] - p. 141
1884 *Lagena clathrata* - Brady, p. 484; pl. 60, fig. 4.
1994 *Cerebrina clathrata* (Brady) - Loeblich & Tappan, p. 75; pl. 136, figs 1-2.

1995 *Fissurina clathrata* (Brady) - Yassini & Jones, p. 122, figs 454-457.
2009 *Buchnerina clathrata* (Brady) Margerel, http://147.94.111.32/Collection/forams-index.php?
+*Cerebrina conformata* (McCulloch, 1977) - p. 142
1977 *Fissurina conformata* - McCulloch, p. 97; pl. 62, fig. 9.
1994 *Cerebrina conformata* (McCulloch) - Loeblich & Tappan, p. 75; pl. 136, figs 3-4.
Cerebrina lacunata (Burrows & Holland in Jones 1895) [*Buchnerina*] - p. 142
1895 *Lagena lacunata* - Burrows & Holland in Jones, p. 205; pl. 7, figs 12a, b.
1994 *Cerebrina lacunata* (Burrows & Holland) - Loeblich & Tappan, p. 76; pl. 135, figs 8-15.
2009 *Cerebrina lacunata* (Burrows & Holland in Jones 1865) - Parker, p. 395; figs 284a-l; 285a-i.
2009 *Buchnerina lacunata* (Brady) Margerel, http://147.94.111.32/Collection/forams-index.php?
+*Cerebrina neocastrensis* (McCulloch, 1977) - p. 142
1977 *Fissurina neocastrensis* - McCulloch, p. 117; pl. 61, fig. 20.
1994 *Cerebrina neocastrensis* (McCulloch) - Loeblich & Tappan, p. 76; pl. 135, figs 19-20.
+*Cerebrina pilasensis* (McCulloch, 1977) - p. 142
1977 *Fissurina pilasensis* - McCulloch, p. 123; pl. 64, fig. 4.
+*Cerebrina undulaticostata* (McCulloch, 1977) - p. 142
1977 *Fissurina undulaticostata* - McCulloch, p. 134; pl. 63, fig. 24.
+*Cerebrina* sp. 1 - p. 143
+*Cerebrina* sp. 2 - p. 143

Hyalinonetrion Patterson & Richardson, 1987
+*Hyalinonetrion distomapolita* (Parker & Jones, 1865) - p. 151
1865 *Lagena sulcata* (Walker & Jacob) var. *distomapolita* - Parker & Jones, p. 357; pl. 13, fig. 21.
1995 *Procerolagena distomapolita* (Parker & Jones) - Yassini & Jones, p. 109, fig. 876.
+*Hyalinonetrion elongata* (Ehrenberg, 1844) - p. 151
1844 *Miliolida elongata* - Ehrenberg, p. 274.
1995 *Procerolagena elongata* (Ehrenberg) - Yassini & Jones, p. 109, figs 271-273.
Hyalinonetrion gracillima (Seguenza, 1862) - p. 152
1862 *Amphorina gracillima* - Seguenza, p. 51; pl. 1, fig. 37.
1995 *Procerolagena gracillima* (Seguenza) - Yassini & Jones, p. 109, figs 271-273.
2009 *Hyalinonetrion gracillima* (Seguenza) - Margerel, http://147.94.111.32/Collection/forams-index.php?

Lagena Walker & Jacob, 1798
+*Lagena fenestrata* Yassini & Jones, 1995 - p. 152
1995 *Lagena fenestrata* - Yassini & Jones, p. 104, fig. 344.
****Lagena gracilis*** Williamson
****Lagena hispida*** (Reuss)
+*Lagena* cf. *L. laevicostata* Cushman & Gray, 1946 - p. 152
1946 *Lagena sulcata* (Walker & Jacob) var. *laevicostata* - Cushman & Gray, p. 68; pl. 12, figs 13-14.
1950 *Lagena sulcata* var. *laevicostata* Cushman & Gray - Cushman & McCulloch, p. 361; pl. 48, figs 8-10.
****Lagena laevis*** (Montagu)
+*Lagena paucistriata* Yassini & Jones, 1995 - p. 152
1995 *Lagena striata paucistriata* - Yassini & Jones, p. 106; figs 323-325.
****Lagena perlucida*** (Montagu)
+*Lagena* cf. *L. pustulostriatula* Albani & Yassini, 1989 - p. 152
1989 *Lagena pustulostriatula* - Albani & Yassini, p. 379; pl., figs 2q-r.
1995 *Lagena pustulostriatula* Albani & Yassini - Yassini & Jones, p. 106, figs 328-329.
+*Lagena spicata* Cushman & McCulloch, 1950 - p. 152
1950 *Lagena sulcata* var. *spicata* - Cushman & McCulloch, p. 360; pl. 48, figs 3, 7.
1995 *Lagena striata paucistriata* - Yassini & Jones, p. 106, 107, figs 323-325.
1999 *Lagena spicata* Cushman & McCulloch - Hayward *et al*., p. 116; pl. 7, figs 4-5.
2009 *Lagena spicata* (Cushman & McCulloch) - Margerel, http://147.94.111.32/Collection/forams-index.php?
****Lagena striata*** d'Orbigny
Lagena strumosa Reuss, 1858 - p. 153
1858 *Lagena striata strumosa* - Reuss, p. 434.
1995 *Lagena striata strumosa* Reuss - Yassini & Jones, p. 107, figs 321-322, 326-327, 330-331.
+*Lagena tortilis* Egger, 1893 - p. 153
1893 *Lagena tortilis* - Egger, p. 329; pl. 10, figs 61-63.
1901b *Lagena striata* d'Orbigny var. *tortilis* Egger - Millett, p. 487; pl. 8, fig. 4.
+*Lagena* sp. 1 - p. 153

Procerolagena Puri, 1954
+*Procerolagena cylindrocostata* Albani & Yassini, 1989 - p. 159
1989 *Procerolagena cylindrocostata* - Albani & Yassini, p. 381, fig. 3 D.
1995 *Procerolagena cylindrocostata* Albani & Yassini - Yassini & Jones, p. 108, figs 289-291.

+*Procerolagena distoma* (Parker & Jones, 1864) - p. 159

1864 *Lagena distoma* - Parker & Jones, in Brady, p. 467; pl. 48, fig. 6.

1923 *Lagena distoma* Parker & Jones - Cushman, p. 14; pl. 3; figs 2, 3.

1960 *Lagena distoma* Parker & Jones - Barker; pl. 58; figs 11-15.

+*Procerolagena* cf. *P. gracilis* (Williamson, 1848) - p. 160

1848 *Lagena gracilis* - Williamson, p. 13; pl. 1, figs 3-4.

1913b *Lagena gracilis* Williamson - Cushman, p. 24; pl. 8, figs 5-6.

+*Procerolagena implicata* (Cushman & McCulloch, 1950) - p. 160

1950 *Lagena implicata* - Cushman & McCulloch, p. 340; p1. 45, figs 5-7.

1995 *Procerolagena implicata* (Cushman & McCulloch) - Yassini & Jones, p. 110; figs 278-281.

+*Procerolagena intricata* (McCulloch, 1977) - p. 160

1977 *Lagena intricata* - McCulloch, p. 38; pl. 50, fig. 15.

+*Procerolagena meridionalis* (Wiesner, 1931) - p. 160

1931 *Lagena gracilis* Williamson var. *meridionalis* - Wiesner, p. 117; pl. 18, fig. 211.

1994 *Procerolagena meridionalis* (Wiesner) - Loeblich & Tappan, p. 79; pl. 143, figs 7-11.

2010 *Procerolagena meridionalis* (Wiesner) - Hayward *et al*., p. 169; pl. 12, figs 21-24.

+*Procerolagena oceanica* (Albani, 1974) - p. 160

1974 *Lagena oceanica* - Albani, p. 37; pl. 1, figs 7, 10, 11.

1993 *Lagena oceanica* Albani - Hottinger *et al*., p. 78; pl. 90, figs 9-11.

1994 *Pygmaeoseistron oceanicum* (Albani) - Loeblich & Tappan, p. 80; pl. 144, figs 4-7.

Pygmaeoseistron Patterson & Richardson, 1988

+*Pygmaeoseistron baukalionilla* (Loeblich & Tappan, 1994) - p. 161

1994 *Oolina baukalionilla* - Loeblich & Tappan, p. 86; pl. 153, figs 7-16.

+*Pygmaeoseistron chasteri* (Millett, 1901) - p. 161

1901a *Lagena chasteri* - Millett, p. 11; pl. 1, fig. 11.

1912 *Lagena chasteri* Millett - Sidebottom, p. 398; pl. 16, fig. 31.

1950 *Lagena chasteri* Millett, Cushman & McCulloch, p. 335; pl. 44, figs 5-6.

Pygmaeoseistron hispidulum (Cushman, 1913) - p. 161

1913b *Lagena hispidula* - Cushman, p. 14; pl. 5, figs 2-3.

1950 *Lagena hispidula* Cushman - Cushman & McCulloch, p. 339; pl. 45, figs 8-10.

1995 *Lagena hispidula* Cushman - Yassini & Jones, p. 105, figs 306-308.

Superfamily Polymorphinacea d'Orbigny, 1839

Family Polymorphinidae d'Orbigny, 1839

Subfamily Falsoguttulininae Loeblich & Tappan, 1986

Fissuripolymorphina McCulloch, 1977

+*Fissuripolymorphina albemarlensis* McCulloch, 1977 - p. 238

1977 *Fissuripolymorphina albemarlensis* McCulloch, p. 215; pl. 90, fig. 14.

+*Fissuripolymorphina williamsoni* (Terquem, 1878) - p. 238

1858 *Polymorphina lactea* (Walker & Jacob) var. *oblonga* - Williamson, p. 71; pl. 6, figs 149-149a.

1878 *Polymorphina williamsoni* - Terquem, p. 37; pl. 4, fig. 2.

1991 *Fissuripolymorphina williamsoni* (Terquem) - Cimerman & Langer, p. 53; pl. 58; figs 1-4.

Subfamily Polymorphininae d'Orbigny, 1839

Globulina d'Orbigny, 1839

Globulina gibba tuberculata d'Orbigny

+*Globulina gibba* d'Orbigny, 1826 - p. 239

1826 *Globulina gibba* - d'Orbigny, p. 266.

1884 *Polymorphina gibba* (d'Orbigny) - Brady, p. 561; pl. 71, figs 12a-b.

1994 *Globulina gibba* d'Orbigny - Loeblich & Tappan, p. 82; pl. 145; figs 1-4.

+*Globulina myristiformis* (Williamson, 1858) - p. 240

1858 *Polymorphina myristiformis* - Williamson, p. 73; pl. 6, figs 156-157.

1960 *Globulina myristiformis* (Williamson) - Barker; pl. 73, figs 9-10.

1991 *Globulina myristiformis* (Williamson) - Cimerman & Langer, p. 53; pl. 56; figs 13-14.

Guttulina d'Orbigny, 1839

+*Guttulina bartschi* Cushman & Ozawa, 1930 - p. 240

1930 *Guttulina bartschi* - Cushman & Ozawa, p. 23; pl. 1, figs 10a-c.

1994 *Guttulina bartschi* Cushman & Ozawa - Loeblich & Tappan, p. 82; pl. 145, figs 5-15.

2009 *Guttulina bartschi* Cushman & Ozawa - Parker, p. 405; figs 291a-c.

Guttulina problema d'Orbigny

Guttulina regina (Brady, Parker & Jones, 1871) - p. 240

1870 *Polymorphina regina* - Brady, Parker & Jones, p. 241; pl. 41, fig. 32.

1884 *Polymorphina regina* Brady, Parker & Jones - Brady, p. 571; pl. 73, figs 11-13.

1930 *Guttulina regina* (Brady, Parker & Jones) - Cushman & Ozawa, p. 34; pl. 6, figs 1, 2.
2009 *Guttulina regina* (Brady, Parker & Jones) - Parker, p. 405; figs 292a-k.

+*Guttulina yamazakii* Cushman & Ozawa, 1930 - p. 240
1930 *Guttulina yamazakii* - Cushman & Ozawa, p. 40; pl. 8, figs 3-4.
1994 *Guttulina yamazaki* Cushman & Ozawa - Loeblich & Tappan, p. 82; pl. 148, figs 1-3.

+*Guttulina* sp. 1 - p. 240

Krebsina McCulloch, 1981

Krebsina subtenuis (Cushman, 1936) [*Bolivina subtenuis*] - p. 174
1884 *Bolivina tenuis* - Brady, p. 419; pl. 52, fig. 29.
1936 *Bolivina subtenuis* - Cushman, p. 57; pl. 8, fig. 10.
1994 *Krebsina subtenuis* (Cushman) - Loeblich & Tappan, p. 82; pl. 146, figs 12-16.

Polymorphina d'Orbigny, 1826

+*Polymorphina* cf. *P. diffusa* Jones & Chapman, 1896 - p. 247
1884 *Polymorphina lactea* (Walker & Jacob), fistulose form - Brady, p. 560; pl. 73, fig. 14.
1896 *Polymorphina* spp. var. *diffusa* - Jones & Chapman, p. 505; figs 26-29.
1907 *Polymorphina lactea* var. *diffusa* Jones & Chapman - Chapman, p. 131; pl. 10, fig. 1.
1913b *Polymorphina lactea* (Walker & Jacob) var. *diffusa* Jones & Chapman - Cushman, p. 84; pl. 41, fig. 8.

Polymorphinella Cushman & Hanzawa, 1936

+*Polymorphinella pacifica* Cushman & Hanzawa, 1936 - p. 168
1884 *Cristellaria schloenbachi* anomalous specimen - Brady, p. 539; pl. 69, fig. 8.
1936 *Polymorphinella pacifica* - Cushman & Hanzawa, p. 47.
1954 *Polymorphinella pacifica* Cushman & Hanzawa - Cushman, Todd & Post, p. 344; pl. 86, fig. 23-24.
1994 *Marginulina subcrassa* Schwager - Loeblich & Tappan, p. 74; pl. 129, figs 17-18.

Pseudopolymorphina Cushman & Ozawa, 1928

Pseudopolymorphina ligua (Roemer, 1838)

Pseudopolymorphina ovalis Cushman et Ozawa

Pseudopolymorphina sp. 1 - p. 176
1884 *Polymorphina compressa* d'Orbigny - Brady, p. 564; pl. 72, figs 9-11.
1960 *Pseudopolymorphina ligua* (Roemer) - Barker; pl. 72, figs 9-11.

Pyrulina d'Orbigny, 1839

+*Pyrulina angusta* (Egger, 1857) - p. 247
1857 *Polymorphina (Globulina) angusta* - Egger, p. 290; pl. 13, figs 13-15.
1884 *Polymorphina (Globulina) angusta* Egger - Brady, p. 563; pl. 72, figs 1-3.
1913b *Polymorphina (Globulina) angusta* Egger - Cushman, p. 86; pl. 39, fig. 6.
1990 *Pyrulina angusta* (Egger) - Ujiié, p. 21; pl. 6, figs 10-11.

Sigmoidella Cushman & Ozawa, 1928

+*Sigmoidella elegantissima* (Parker & Jones, in Brady Parker & Jones, 1870) - p. 248
1865 *Polymorphina elegantissima* - Parker & Jones, p. 438. (nom. nud.)
1870 *Polymorphina elegantissima* - Parker & Jones in Brady, Parker & Jones, p. 231; pl. 40, figs 15a-c.
1930 *Sigmoidella elegantissima* (Parker & Jones) - Cushman & Ozawa, p. 140; pl. 39, fig. 1.
1994 *Sigmoidella elegantissima* (Parker & Jones) - Loeblich & Tappan, p. 83; pl. 148, figs 4-12.
2009 *Sigmoidella elegantissima* (Parker & Jones) - Parker, p. 422; figs 305a-g.

+*Sigmoidella pacifica* Cushman & Ozawa, 1928 - p. 248
1928 *Sigmoidella* (*Sigmoidina*) *pacifica* - Cushman & Ozawa, p. 19; pl. 2, fig. 13.
1960 *Guttulina* (*Sigmoidella*) *pacifica* (Cushman & Ozawa) - Barker, pl. 72; figs 14-15.
1993 *Sigmoidella* cf. *S. pacifica* Cushman & Ozawa - Hottinger *et al.*, p. 80; pl. 91, figs 16-18.
1994 *Sigmoidella pacifica* Cushman & Ozawa - Loeblich & Tappan, p. 84; pl. 149, figs 1-9.

Sigmomorphina Cushman & Ozawa, 1928

+*Sigmomorphina* cf. *S. basistriata* Zheng, 1979 - p. 248
1979 *Sigmomorphina basistriata* - Zheng, p. 212; pl. 11, figs 5-6.

Subfamily Ramulininae Brady, 1884

Ramulina T.R. Jones, in Wright, 1875

+*Ramulina*? *confosa* Loeblich & Tappan, 1994 - p. 247
1994 *Ramulina confosa* - Loeblich & Tappan, p. 84; pl. 150, figs 8-13.

Ramulina globulifera Brady, 1879 - p. 247
1879 *Ramulina globulifera* - Brady, p. 272; pl. 8, figs 32-33.
1913b *Ramulina globulifera* Brady - Cushman, p. 110; pl. 39, fig. 1.
1992b *Ramulina globulifera* Brady - Hatta & Ujiié, p. 167; pl. 22, fig. 6.
1994 *Ramulina globulifera* Brady - Loeblich & Tappan, p. 84; pl. 149, fig. 17.

+*Ramulina vanandeli* Loeblich & Tappan, 1994 - p. 247
1994 *Ramulina vanandeli* - Loeblich & Tappan, p. 85; pl. 150, figs 1-7.

Family Ellipsolagenidae A. Silvestri, 1923

Subfamily Ellipsolageninae A. Silvestri, 1923

Fissurina Reuss, 1850

+*Fissurina* cf. *F. antiqua* Yassini & Jones, 1995 - p. 145

1995 *Fissurina antiqua* - Yassini & Jones, p. 121, fig. 499.

+*Fissurina* cf. *F. aperta* Seguenza, 1862 - p. 145

1862 *Fissurina (Fissurine) aperta* - Seguenza, p. 60; pl. 1, fig. 60.

1979 *Fissurina aperta* Seguenza - Hayward & Buzas, p. 56; pl. 16, figs 200-201.

+*Fissurina bispinata* Ujiié, 1963 - p. 145

1963 *Fissurina cucurbitasema* Loeblich & Tappan subsp. *bispinata* - Ujiié, p. 30; pl. 1, figs 9-11.

1994 *Fissurina bispinata* Ujiié - Loeblich & Tappan, p. 88; pl. 154, figs 5-8.

2009 *Fissurina bispinata* Ujiié - Parker, p. 398, figs 286a-j.

+*Fissurina calcar* (Millett, 1898) - p. 146

1898d *Lagena orbignyana* var. calcar - Millet, p. 175.

1901c *Lagena orbignyana* var. calcar Millet - Millett, p. 626; pl. 14, fig. 18.

+*Fissurina castanea* (Flint, 1899) - p. 146

1899 *Lagena castanea* - Flint, p. 307; pl. 54, fig. 3.

1993 *Fissurina castanea* (Flint) - Sgarrella & Montcharmont Zei, p. 201; pl. 13, fig. 10.

+*Fissurina* cf. *F. castaniformis* McCulloch, 1981 - p. 146

1981 *Fissurina castaniformis* - McCulloch, p. 103; pl. 34, fig. 25.

Fissurina circularis Todd, 1954 [*Palliolatella*] - p. 146

1954 *Fissurina circularis* - Todd in Cushman, Todd & Post, p. 351; pl. 87, fig. 27.

1994 *Fissurina circularis* Todd - Loeblich & Tappan, p. 88; pl. 154, figs 13-18.

2009 *Fissurina circularis* Todd - Parker, p. 400, figs 287a-c.

+*Fissurina colomboensis* McCulloch, 1977- p. 146

1977 *Fissurina contusa* Parr var. *colomboensis* - McCulloch, p. 94; pl. 64, figs 5a-b.

1994 *Fissurina contusa* Parr - Loeblich & Tappan, p. 88; pl. 136, figs 11-16; pl. 156, figs 4-5.

2009 *Fissurina*? cf. *colomboensis* McCulloch - Parker, p. 400, figs 287d-f.

+*Fissurina* cf. *F. eumarginata oblata* McCulloch, 1977 - p. 146

1977 *Fissurina eumarginata oblata* - McCulloch, p. 104; pl. 60, fig. 1.

+*Fissurina furcata* Collins, 1974 - p. 147

1974 *Fissurina furcata* - Collins, p. 28; pl. 2, fig. 18.

1995 *Fissurina furcata* Collins - Yassini & Jones, p. 123; figs 433, 435-437.

2009 *Palliolatella* sp. - Margerel, http://147.94.111.32/Collection/forams-index.php?

+*Fissurina* cf. *F. globosocaudata* Albani & Yassini, 1989 - p. 147

1989 *Fissurina globosocaudata* - Albani & Yassini p. 395, figs 6 C, D.

1995 *Fissurina globosocaudata* Albani & Yassini - Yassini & Jones, p. 124; figs 409-410.

+*Fissurina granulocostata* Zheng, 1979 - p. 147

1979 *Fissurina granulocostata* - Zheng, p. 214; pl. 12, figs 9a-c.

Fissurina kerguelenensis (Parr)

+*Fissurina laevigata* Reuss, 1850 - p. 147

1850 *Fissurina laevigata* - Reuss, p. 366; pl. 46, fig. 1.

1964 *Fissurina laevigata* Reuss - Loeblich & Tappan, p. 540; fig. 425-8.

1987 *Fissurina laevigata* Reuss - Baccaert, p. 163; pl. 69, fig. 5.

+*Fissurina laureata* (Heron-allen & Earland, 1932) - p. 147

1932b *Lagena laureata* - Heron-allen & Earland, p. 382; pl. 11, figs 37-40.

1995 *Fissurina rugosocarinata* Albani & Yassini - Yassini & Jones, p. 126; figs 412-416.

2010 *Fissurina laureata* (Heron-allen & Earland) - Hayward *et al*., p. 162; pl. 10, fig. 32-33.

Fissurina lucida (Williamson, 1848) - p. 147

1848 *Entosolenia marginata* (Montagu) var. *lucida* - Williamson, p. 17; pl. 2, fig. 17.

1994 *Fissurina lucida* (Williamson) - Hayward & Triggs pl. 1, figs 17q, w.

1995 *Fissurina lucida* (Williamson) - Yassini & Jones, p. 124, fig. 873.

2009 *Fissurina lucida* (Williamson) - Margerel, http://147.94.111.32/Collection/forams-index.php?

Fissurina perforata (Möbius) = *Buchnerina milletti* ?

+*Fissurina periperforata* Ujiié, 1990 - p. 148

1990 *Fissurina periperforata* - Ujiié, p. 25; pl. 8, figs 10 a-b.

+*Fissurina plebeia* (Cushman, 1913) - p. 148

1913b *Lagena alveolata* Brady var. *plebeia* - Cushman, p. 33; pl. 18, fig. 2.

+*Fissurina pretiosa* (Buchner, 1940) - p. 148

1940 *Lagena pretiosa* - Buchner, p. 502; pl. 19, figs 398-399.

1983 *Fissurina pretiosa* (Buchner) - Popescu, p. 270; pl. 4, figs 15-20; pl. 6, fig. 16; pl. 7, fig. 10.

2004 *Fissurinella pretiosa* (Buchner) - Popescu & Crihan, p. 408; pl. 2, figs 23-30.

2009 *Pseudofissurina pretiosa* (Buchner) - Margerel, p. 596; figs 10O-Q.

+*Fissurina sidebottomi* Buchner, 1940 - p. 148
1940 *Lagena sidebottomi* - Buchner, p. 484; pl. 6, figs 297-299.
1993 *Fissurina* sp. A - Hottinger *et al*., p. 81, figs 12-18.
1993 *Fissurina sidebottomi* Buchner - Sgarrella & Montcharmont Zei, p. 204; pl. 13, fig. 7.
2009 *Fissurina* sp. A - Margerel, http://147.94.111.32/Collection/forams-index.php?
***Fissurina squamoso-marginata** (Parker et Jones)
+*Fissurina subquadrata* Parr, 1945 - p. 148
1945 *Fissurina subquadrata* - Parr, p. 203; pl. 9, fig. 5.
1989 *Fissurina subquadrata* Parr - Albani & Yassini, p. 39, figs 6 K, L.
+*Fissurina* sp. 1 - p. 148
+*Fissurina* sp. 2 - p. 149
+*Fissurina* sp. 3 - p. 149
+*Fissurina* sp. 4 - p. 149
+*Fissurina* sp. 5 - p. 149
+*Fissurina* sp. 6 - p. 149
+*Fissurina* sp. 7 - p. 149
+*Fissurina* sp. 8 - p. 150
+*Fissurina* sp. 9 - p. 150
+*Fissurina* sp. 10 - p. 150
+*Fissurina* sp. 11 - p. 150
Lagenosolenia McCulloch, 1977
+*Lagenosolenia bilagenoides* McCulloch, 1977 - p. 153
1977 *Lagenosolenia bilagenoides* - McCulloch, p. 52; pl. 51, figs 20-21.
+*Lagenosolenia cervicosa* McCulloch, 1977 - p. 153
1977 *Lagenosolenia bradyiformata cervicosa* - McCulloch, p. 53; pl. 61, figs 12-13.
+*Lagenosolenia favosa* (Brady, 1884) - p. 153
1884 *Lagena formosa* Schwager var. *favosa* - Brady, p. 480; pl. 60, fig. 21.
+*Lagenosolenia intricatissima* McCulloch, 1977 - p. 154
1977 *Lagenosolenia intricatissima* - McCulloch, p. 63; pl. 67, fig. 19.
+*Lagenosolenia neoauriculata* McCulloch, 1981 - p. 154
1981 *Lagenosolenia neoauriculata* - McCulloch, p. 99; pl. 37, fig. 4.
+*Lagenosolenia peltatusella* Loeblich & Tappan, 1994 - p. 154
1994 *Lagenosolenia peltatusella* - Loeblich & Tappan, p. 92; pl. 159, figs 1-11.
+*Lagenosolenia quadrangularis* (Brady, 1884) - p. 154
1884 *Lagena quadrangularis* - Brady, p. 483; pl. 114, fig. 11.
1960 *Fissurina quadrangularis* (Brady) - Barker, p. 483; pl. 114, fig. 11.
+*Lagenosolenia* sp. 1 - p. 154
+*Lagenosolenia* sp. 2 - p. 154
+*Lagenosolenia* sp. 3 - p. 155
Palliolatella Patterson & Richardson, 1987
+*Palliolatella bradyiformis* McCulloch, 1977 - p. 157
1977 *Palliolatella bradyiformis* - McCulloch, p. 54; pl. 61, fig. 14.
2010 *Palliolatella bradyiformis* McCulloch - Hayward *et al*., p. 165; pl. 11, figs 20-21.
+ *Palliolatella fasciata carinata* (Sidebottom, 1906) - p. 157
1906 *Lagena fasciata* (Egger) var. *carinata* - Sidebottom, p. 7; pl. 1, fig. 17.
1968 *Fissurina fasciata carinata* (Sidebottom) - Albani, p. 105; pl. 8, fig. 17.
1994 *Duplella trinalmarginata* - Loeblich & Tappan, p. 88; pl. 154, figs 4-8.
1995 *Fissurina fasciata carinata* (Sidebottom) - Yassini & Jones, p. 123; figs 399-400, 404, 429.
2009 *Fissurina circularis* Todd - Margerel, http://147.94.111.32/Collection/forams-index.php?
+*Palliolatella peponisema* Clark, 1995 - p. 157
1995 *Palliolatella peponisema* - Clark, p. 4; pl. 1, figs 11-12, 14-15.
2009 *Palliolatella* cf. *peponisema* Clark - Margerel, p. 592; figs 9J-P.
+*Palliolatella* sp. 1 - p. 157
+*Palliolatella* sp. 2 - p. 157
+*Palliolatella* sp. 3 - p. 157
+*Palliolatella* sp. 4 - p. 158
Subfamily Oolininae Loeblich & Tappan, 1961
Buchnerina Jones, 1984
Buchnerina milletti (Todd in Cushman, Todd & Post, 1954) [*Fissurina*] - p. 140
1954 *Fissurina milletti* - Todd in Cushman, Todd & Post, p. 351; pl. 87, fig. 30.
1979 *Fissurina milletti* Todd - Zheng, p. 151; pl. 13, figs 1-2.
1984 *Fissurina milletti* Todd - Margerel, p. 47; pl. 15, fig. 3.
1992 *Fissurina marginato-perforata* (Seguensa 1879) - Hatta & Ujié, p. 169; pl. 23, figs 7a, b.

Buchnerina radiatomarginata (Parker & Jones, 1865) - p. 140

1865 *Lagena sulcata* Walker & Jacob var. *marginata* (Montagu) subvar. *radiatomarginata* - Parker & Jones 1865, p. 346, 355; pl. 18, figs 3a, b.

1984 *Fissurina radiato-marginata* (Parker & Jones 1865) - Margerel, p. 47; pl. 15, fig. 6.

1994 *Fissurina wrightiana* (Brady) - Loeblich & Tappan, p. 91; pl. 158, figs 1-2.

2009 *Buchnerina radiatomarginata* (Parker & Jones 1865) - Parker, p. 389; figs 280a-f.

+*Buchnerina schulzeana* Brady, 1881 - p. 141

1881 *Lagena schulzeana* - Brady, p. 62.

1884 *Lagena schulzeana* Brady - Brady, p. 482; pl. 61, fig. 10.

+*Buchnerina walleriana* (Wright, 1886) - p. 141

1886 *Lagena orbignyana* (Seguenza) var. *walleriana* - Wright, p. 611.

1901c *Lagena orbignyana* (Seguenza) var. *walleriana* Wright - Millett, p. 627; pl. 14, fig. 19.

1994 *Lagenosolenia walleriana* (Wright) - Loeblich & Tappan, p. 93; pl. 160, figs 9-12.

2009 *Buchnerina walleriana* (Wright 1886) - Parker, p. 390; figs 281a-f.

+*Buchnerina yokoyamae* (Millet, 1894) - p. 141

1894 *Lagena yokoyamae* - Millet, p. 657.

1922 *Lagena orbignyana* (Seguenza) var. *yokoyamae* - Heron-Allen & Earland, p. 163; pl. 6, figs 17-18.

1933a *Lagena yokoyamae* Millet - Cushman, p. 28; pl. 6, figs 13a-b.

+*Buchnerina* sp. 1 - p. 141

Cushmanina R.W. Jones, 1984

+*Cushmanina bricei* (McCulloch, 1981) - p. 143

1981 *Lagena(?) bricei* - McCulloch, p. 90; pl. 33, figs 5-6.

****Cushmanina desmophora*** (R. Jones, 1872)

+*Cushmanina gemma* (Cushman & McCulloch, 1950) - p. 143

1950 *Lagena striatopunctata* Parker & Jones, var *gemma* - Cushman & McCulloch, p. 353; pl. 47, fig. 16.

1994 *Cushmanina gemma* (Cushman & McCulloch) - Loeblich & Tappan, p. 85; pl. 151, fig. 1.

+*Cushmanina neodesmorpha* (McCulloch, 1981) - p. 143

1981 *Lagena neodesmorpha* - McCulloch, p. 94; pl. 33, figs 1, 2, 4.

Cushmanina spiralis (Brady, 1884) - p. 143

1884 *Lagena striatopunctata* Parker & Jones, var. *spiralis* - Brady, p. 468; pl. 114, fig. 9.

1950 *Lagena striatopunctata* Parker & Jones, var. *spiralis* - Brady - Cushman & McCulloch, p. 353; pl. 47, figs 17-18.

1994 *Lagena spiralis* Brady - Loeblich & Tappan, p. 79; pl. 139, figs 3-9.

+*Cushmanina striatopunctata* (Parker & Jones, 1865) - p. 144

1865 *Lagena striata* (d'Orbigny) var. *striato-punctata* - Parker & Jones, p. 350; pl. 13, figs 25-27.

1950 *Lagena striatopunctata* Parker & Jones - Cushman & McCulloch, p. 351; pl. 47, figs 5-9.

+*Cushmanina* cf. *C. tasmaniae* (Quilty, 1974) - p. 144

1974 *Lagena tasmaniae* - Quilty, p. 70; pl. 3, fig. 107.

1987 *Cushmanina tasmaniae* (Quilty) - Patterson & Richardson, p. 217; pl. 1, fig. 1.

+*Cushmanina* sp. 1 - p. 144

Exsculptina Patterson & Richardson, 1987 (in Loeblich & Tappan, 1988)

+*Exsculptina discrepans* (Cushman & Gray, 1946) - p. 144

1946 *Lagena pliocenica* Cushman & Gray var. *discrepans* - Cushman & Gray, p. 19; pl. 3, figs 35-38.

1950 *Lagena pliocenica* Cushman & Gray var. *discrepans* Cushman & Gray - Cushman & McCulloch, p. 344; pl. 46, fig. 9.

1994 *Exsculptina discrepans* (Cushman & Gray) - Loeblich & Tappan, p. 85; pl. 151, figs 2-3.

Favulina Patterson & Richardson, 1987 (in Loeblich & Tappan, 1988)

+*Favulina favosopunctata* (Brady, 1881) - p. 144

1881 *Lagena favoso-punctata* - Brady, p. 62.

1884 *Lagena favoso-punctata* Brady - Brady, p. 473; pl. 58, fig. 35.

1994 *Conolagena favosopunctata* (Brady) - Loeblich & Tappan, p. 76; pl. 137, figs 1-8.

Favulina hexagona (Williamson, 1848) - p. 144

1848 *Entosolenia squamosa* (Montagu) var. *hexagona* - Williamson, p. 20; pl. 2, fig. 23.

1978 *Oolina hexagona* (Williamson) - Albani, p. 379, fig. 7 N.

1994 *Favulina hexagona* (Williamson) - Loeblich & Tappan, p. 86; pl. 151, figs 11-12.

+*Favulina hexagoniformis* (McCulloch, 1977) - p. 145

1977 *Lagena hexagoniformis* - McCulloch, p. 36; pl. 54, fig. 19.

+*Favulina melo* d'Orbigny, 1839 - p. 145

1839c *Oolina melo* - d'Orbigny, p. 20; pl. 5, fig. 9.

1848 *Entosolenia squamosa* (Montagu) var. *catenulata* - Williamson, p. 19; pl. 2, fig. 20.

1953 *Oolina melo* d'Orbigny - Loeblich & Tappan, p. 71; pl. 12, figs 8-15.

+*Favulina scalariformis* (Williamson, 1848) - p. 145
1848 *Entosolenia squamosa* (Montagu) var. *scalariformis* - Williamson, p. 20; pl. 2, figs 21-22.
1977 *Oolina scalariformis* (Williamson) - McCulloch, p. 84; pl. 54, fig. 20.
1995 *Oolina scalariformis* (Williamson) - Yassini & Jones, p. 114; figs 357-360.
Favulina squamosa (Montagu)
+*Favulina vadosa* (McCulloch, 1977) - p. 145
1977 *Oolina squamosa vadosa* - McCulloch, p. 86; pl. 54, figs 21-24
Homalohedra Patterson & Richardson, 1987 (in Loeblich & Tappan, 1988)
+*Homalohedra acuticosta* (Reuss, 1861) - p. 150
1861 *Lagena acuticosta* - Reuss, p. 305; pl. 1, fig. 4.
1912 *Lagena acuticosta* Reuss - Sidebottom, p. 388; pl. 15, fig. 22.
1923 *Lagena acuticosta* Reuss - Cushman, p. 5; pl. 1, figs 1-3.
+*Homalohedra costata* (Williamson, 1848) - p. 151
1848 *Entosolenia costata* - Williamson, p. 9; pl. 1, fig. 18.
1912 *Lagena costata* (Williamson) - Sidebottom, p. 388; pl. 15, fig. 16.
1923 *Lagena costata* (Williamson) - Cushman, p. 12.
+*Homalohedra gunteri* (Earland, 1934) - p. 151
1934 *Lagena gunteri* - Earland, p. 151; pl. 6, figs 53-54.
1977 *Lagena expressa* - McCulloch, p. 34; pl. 53, fig. 34.
1995 *Oolina collaripolygonata* Albani & Yassini - Yassini & Jones, p. 112; figs 361-362, 365.
+*Homalohedra williamsoni* (Alcock, 1865) - p. 151
1865 *Entosolenia williamsoni* - Alcock, p. 195
2001 *Homalohedra williamsoni* (Alcock, 1865) - Debenay *et al*.; pl. 3, fig. 5.
+*Homalohedra* sp. 1 - p. 151
Lagnea Popescu, 1983
Lagnea Lagenoides (Williamson, 1858) [*Fissurina*] - p. 155
1858 *Entosolenia marginata* Walker & Boys var. *lagenoides* - Williamson, p. 11; pl. 1, figs 25, 26.
1933a *Lagena lagenoides* (Williamson, 1858) - Cushman, p. 24; pl. 6, figs 3-5.
1977 *Lagenosolenia densata* - McCulloch, p. 57; pl. 51, fig. 16.
1979 *Fissurina kerimbatica* (Heron-Allen & Earland) - Zheng, p. 147; pl. 12, figs 12-14.
2009 *Lagnea densata* (McCulloch) - Parker, p. 415; figs 298a-g.
+*Lagnea neosigmoidella* (McCulloch, 1977) - p. 155
1977 *Lagenosolenia neosigmoidella* - McCulloch, p. 66; pl. 51, fig. 9.
2010 *Lagnea neosigmoidella* (McCulloch) - Hayward *et al*., p. 164; pl. 11, fig. 13-14.
Lagnea parviauriculata (McCulloch, 1977) - p. 155
1977 *Lagena parviauriculata* - McCulloch, p. 42; pl. 51, figs 19a, c.
1993 *Lagnea parviauriculata* (McCulloch) - Hottinger *et al*., p. 81; pl. 93, figs 19-24; pl. 94, figs 1, 2.
1994 *Lagenosolenia perplexa* (McCulloch) - Loeblich & Tappan, p. 93; pl. 159, figs 15, 16.
2009 *Lagnea parviauriculata* (McCulloch 1977), - Parker, p. 415; figs 299a-c.
+*Lagnea* sp. 1 - p. 155
Oolina d'Orbigny, 1839
Oolina ampulladistoma (Rymer-Jones, 1872) - p. 155
1872 *Lagena vulgaris* var. *ampulladistoma* - Rymer-Jones, p. 63; pl. 19, fig. 52.
1994 *Oolina ampulladistoma* (Rymer-Jones, 1872) - Loeblich & Tappan, p. 86; pl. 152, figs 3-8.
Oolina caudigera (Wiesner, 1931) - p. 156
1931 *Lagena (Entosolenia) globosa* (Montagu) var. *caudigera* - Wiesner, p. 119; pl. 18, fig. 214.
1995 *Oolina caudigera* (Wiesner) - Yassini & Jones, p. 11; figs 352, 356.
Oolina globosa (Montagu, 1803)
Oolina lineata (Williamson, 1848) - p. 156
1848 *Entosolenia lineata* - Williamson, p. 18; pl. 2, fig. 18.
1953 *Oolina lineata* (Williamson) - Loeblich & Tappan, p. 70; pl. 13, figs 11-13.
2010 *Oolina lineata* (Williamson) - Hayward *et al*., p. 164; pl. 11, figs 15-16.
Oolina spiroglobosa McCulloch, 1977 - p. 156
1977 *Oolina spiroglobosa* - McCulloch, p. 85; pl. 55, figs 23-25.
1994 *Oolina spiroglobosa* McCulloch - Loeblich & Tappan, p. 87; pl. 153, figs 1, 2.
+*Oolina* cf. *O. stelligera* (Brady, 1881) - p. 156
1881 *Lagena stelligera* - Brady, p. 60.
1884 *Lagena stelligera* Brady - Brady, p. 466; pl. 57, figs 35-36.
1990 *Lagena stelligera* Brady - Ujiié, p. 19; pl. 5, fig. 9.
2010 *Oolina stelligera* (Brady) - Hayward *et al*., p. 164; pl. 11, figs 17-19.
Oolina stellula (Loeblich & Tappan, 1994) - p. 156
1994 *Reussoolina stellula* - Loeblich & Tappan, p. 81; pl. 144, figs 9-12.

+*Oolina* sp. 1 - p. 156
+*Oolina* sp. 2 - p. 156
Subfamily Parafissurininae R.W. Jones, 1984
Parafissurina Parr, 1947
+*Parafissurina admiralis* McCulloch, 1977 - p. 158
1977 *Parafissurina admiralis* - McCulloch, p. 137; pl. 69, fig. 3.
+*Parafissurina aventricosa* McCulloch, 1977 - p. 158
1977 *Parafissurina aventricosa* - McCulloch, p. 138; pl. 70, figs 19a, b.
+*Parafissurina erecta* McCulloch, 1977 - p. 158
1977 *Parafissurina erecta* - McCulloch, p. 145; pl. 71, fig. 12.
+*Parafissurina himatiostoma* Loeblich & Tappan, 1953 - p. 158
1953 *Parafissurina himatiostoma* - Loeblich & Tappan, p. 80; pl. 14, figs 12-14.
1995 *Parafissurina himatiostoma* Loeblich & Tappan - Yassini & Jones, p. 128; fig. 628.
+*Parafissurina* cf. *P. kallima* McCulloch, 1977 - p. 158
1977 *Parafissurina kallima* - McCulloch, p. 148; pl. 69, fig. 8.
+*Parafissurina minuta* Zheng, 1979 - p. 159
1979 *Parafissurina minuta* - Zheng, p. 216; pl. 14, fig. 5.
+*Parafissurina* cf. *P. reniformis* (Sidebottom, 1913) - p. 159
1913 *Lagena reniformis* - Sidebottom, p. 204; pl. 18, figs 14-15.
1916 *Lagena reniformis* Sidebottom - Heron-Allen & Earland, p. 255; pl. 41, fig. 30.
1932 *Lagena reniformis* Sidebottom - Heron-Allen & Earland, p. 372; pl. 10, figs 31-32.
+*Parafissurina* sp. 1 - p. 159
Pseudofissurina Jones, 1984
+*Pseudofissurina* sp. 1 - p. 160
Family Glandulinidae Reuss, 1860
Subfamily Glandulininae Reuss, 1860
Euglandulina McCulloch, 1977
+*Euglandulina striatula* (Cushman, 1917) [? *Glandulina semistriata*] - p. 164
1917 *Nodosaria* (*Glandulina*) *laevigata* d'Orbigny var. *striatula* - Cushman, p. 653.
1921 *Nodosaria* (*Glandulina*) *laevigata* d'Orbigny var. *striatula* - Cushman, p. 186; pl. 33, fig. 2.
1977 *Euglandulina striatula* (Cushman) - McCulloch, p. 14; pl. 96, fig. 17.
1994 *Euglandulina striatula* (Cushman) - Loeblich & Tappan, p. 96; pl. 168, figs 1-5.
2009 *Glandulina semistriata* Collins - Margerel http://147.94.111.32/Collection/forams-index.php?
Glandulina d'Orbigny, 1839
Glandulina laevigata (d'Orbigny, 1826) - p. 164
1826 *Nodosaria (Glandulina) laevigata* - d'Orbigny, p. 252; pl. 10, figs 1-3.
1930 *Glandulina laevigata* (d'Orbigny) - Cushman & Ozawa, p. 143; pl. 40, fig. 1.
1993 *Glandulina laevigata* (d'Orbigny) - Hottinger *et al*., p. 83; pl. 96, figs 1-5, 8.
+*Glandulina suezensis* McCulloch, 1977 - p. 164
1977 *Glandulina suezensis* - McCulloch, p. 13; pl. 96, figs 1, 3, 4.
1994 *Glandulina suezensis* McCulloch - Loeblich & Tappan, p. 97; pl. 168, fig. 12.
+*Glandulina* sp. 1 - p. 164
Laryngosigma Loeblich & Tappan, 1953
+*Laryngosigma afueraensis* McCulloch, 1977 - p. 242
1977 *Laryngosigma afueraensis* - McCulloch, p. 188; pl. 87, figs 5, 12, 19.
+*Laryngosigma compacta* Mc Culloch, 1977 - p. 242
1977 *Laryngosigma compacta* - McCulloch, p. 189; pl. 86, figs 12, 14-17, 21.
+*Laryngosigma williamsoni* (Terquem, 1878) - p. 242
1878 *Polymorphina williamsoni* - Terquem, p. 37
1930 *Sigmomorphina williamsoni* (Terquem) - Cushman & Ozawa, p. 138; pl. 38, figs 3-4.
1953 *Laryngosigma williamsoni* (Terquem) - Loeblich & Tappan, p. 84; pl. 16, fig. 1.
1995 *Laryngosigma williamsoni* (Terquem) - Yassini & Jones, p. 142; fig. 661.
+*Laryngosigma* sp. 1 - p. 242
1995 *Laryngosigma williamsoni* (Terquem) - Yassini & Jones, p. 142; fig. 663, not fig. 661, not *Laryngosigma williamsoni* (Terquem, 1878).
+*Laryngosigma* sp. 2 - p. 242
+*Laryngosigma* sp. 3 - p. 243
Subfamily Entolingulininae Saidova, 1981
Bombulina Mikhalevich, 1983
+*Bombulina echinata* (Millett, 1902) - p. 162
1902 *Nodosaria (Glandulina) echinata* - Millett, p. 511; pl. 11, fig. 4.
1994 *Bombulina echinata* (Millett) - Loeblich & Tappan, p. 97; pl. 169, figs 1-8.

****Bombulina spinata*** **(Cushman)**
Subfamily Seabrookiinae Cushman, 1927
Seabrookia Brady, 1890
Seabrookia pellucida Brady, 1890 - p. 161
1890 *Seabrookia pellucida* - Brady, p. 570, fig. 60.
1992b *Seabrookia pellucida* Brady - Hatta & Ujié, p. 169; pl. 24, figs 2a, b.
1994 *Seabrookia pellucida* Brady - Loeblich & Tappan, p. 97; pl. 170, figs 1-9.

Order **ROBERTINIDA** Mikhalevich, 1980
Superfamily Ceratobuliminacea Cushman, 1927
Family Ceratobuliminidae Cushman, 1927
Subfamily Ceratobulimininae Cushman, 1927
Ceratobulimina Toula, 1915
****Ceratobulimina pacifica*** (Cushman & Harris)
Lamarckina Berthelin, 1881
Lamarckina scabra (Brady, 1884) - p. 200
1884 *Pulvinulina oblonga* Williamson var. *scabra* - Brady, p. 689, pl. 106, fig. 8.
1931a *Lamarckina scabra* (Brady) - Cushman, p. 35, pl. 7, fig. 6.
1994 *Ceratocancris scaber* (Brady) - Jones, p. 105, pl. 106, fig. 8.
Lamarckina ventricosa (Brady, 1884) - p. 200
1884 *Discorbina ventricosa* - Brady, p. 654, pl. 91, fig. 7.
1931a *Lamarckina ventricosa* (Brady) - Cushman, p. 34, pl. 7, fig. 5.
1992b *Lamarckina ventricosa* (Brady) - Hatta & Ujiié, p. 169, pl. 24, fig. 4.
1994 *Lamarckina ventricosa* (Brady) - Loeblich & Tappan, p. 98; pl. 172, figs 1-9.
+*Lamarckina* sp. 1 - p. 200
Saintclairoides McCulloch, 1981
+*Saintclairoides toreutus* Loeblich & Tappan, 1994 - p. 213
1994 *Saintclairoides toreutus* - Loeblich & Tappan, p. 98; pl. 173, figs 1-14.
2009 *Lamarckina laevigata* n.sp. - Margerel http://147.94.111.32/Collection/forams-index.php?
Family Epistominidae Wedekind, 1937
Subfamily Epistomininae Wedekind, 1937
Hoeglundina Brotzen, 1948
Hoeglundina elegans (d'Orbigny, 1826) - p. 199
1826 *Rotalia* (*Turbinulina*) *elegans* - d'Orbigny, p. 276.
1884 *Pulvinulina elegans* (d'Orbigny) - Brady, p. 699; pl. 105, figs 4-6.
1992b *Hoeglundina elegans* (d'Orbigny) - Hatta & Ujiié, p. 170; pl. 24, fig. 3.
1994 *Hoeglundina elegans* (d'Orbigny) - Loeblich & Tappan, p. 98; pl. 174, figs 1-6.
+*Hoeglundina neocarinata* n. sp. - p. 200
Superfamily Robertinacea Reuss, 1850
Family Robertinidae Reuss, 1850
Subfamily Alliatininae McGowran, 1966
Alliatina Troelsen, 1954
****Alliatina translucens*** (Cushman)
+*Alliatina variabilis* (Zheng, 1978) - p. 215
1978 *Pseudononionella variabilis* - Zheng *et al*., p. 62; pl. 9, figs 7-12.
1988 *Alliatina variabilis* (Zheng) - Loeblich & Tappan, p. 449; pl. 481, figs 5-8.
1994 *Alliatina variabilis* (Zheng) - Loeblich & Tappan, p. 99; pl. 174, figs 7-12.
2001 *Alliatina variabilis* (Zheng) - Szareck, p. 123; pl. 15, fig. 13.
Alliatinella D.J. Carter, 1957
+*Alliatinella differens* (McCulloch, 1977) - p. 184
1977 *Subcushmanella differens* - McCulloch, p. 380; pl. 161, fig. 13.
1994 *Alliatinella differens* (McCulloch) - Loeblich & Tappan, p. 99; pl. 175, figs 1-12; pl. 176, figs 1-3.
2001 *Alliatinella differens* (McCulloch) - Szareck, p. 123; pl. 15, fig. 14.
Geminospira Makiyama & Nakagawa, 1941
Geminospira bradyi Bermudez, 1952 - p. 196
1884 *Bulimina convoluta* Williamson - Brady, p. 409, pl. 113, figs 6a, b.
1952 *Geminospira bradyi* - Bermudez, p. 80, pl. 13, fig. 7.
1994 *Geminospira bradyi* Bermudez - Loeblich & Tappan, p. 99; pl. 177, figs 1-14; pl. 178, figs 1-9.
2009 *Geminospira bradyi* Bermudez - Parker, p. 385; figs 277a-i.

Robertinoides Höglund, 1947

+*Robertinoides australis* Collins, 1958 - p. 211

1958 *Robertinoides australis* - Collins, p. 416; pl. 5, fig. 11.

1994 *Robertinoides* cf. *australis* (Collins) - Loeblich & Tappan, p. 99; pl. 176, figs 9-14.

+*Robertinoides bradyi* (Cushman & Parker, 1936) - p. 211

1884 *Bulimina subteres* Brady - Brady, p. 403; pl. 50, figs 18a-b.

1936 *Robertina bradyi* Cushman & Parker, p. 99; pl. 16, fig. 9.

1960 *Robertinoides bradyi* (Cushman & Parker) - Barker; pl. 50, fig. 18.

+*Robertinoides oceanicus* (Cushman & Parker, 1947) - p. 211

1947 *Robertina oceanica* - Cushman & Parker, p. 75; pl. 28, fig. 18.

1994 *Robertinoides oceanicus* (Cushman & Parker) - Loeblich & Tappan, p. 99; pl. 176, figs 4-8.

2010 *Robertinoides oceanicus* (Cushman & Parker) - Hayward *et al*., p. 183; pl. 16, figs 22-24.

Order **BULIMINIDA** Fursenko, 1958

Superfamily Bolivinacea Glaessner, 1937

Family Bolivinidae Glaessner, 1937

Bolivina d'Orbigny, 1839

***Bolivina (Loxostoma) amygdalaeformis* (Brady)**

***Bolivina compacta* Sidebottom**

+*Bolivina doniezi* Cushman & Wickenden, 1929 - p. 171

1929 *Bolivina doniezi* - Cushman & Wickenden, p. 9; pl. 4, figs 3a-b.

1937 *Bolivina doniezi* Cushman & Wickenden - Cushman, p. 140; pl. 19, fig. 6.

1942 *Bolivina doniezi* Cushman & Wickenden - Cushman & McCulloch, p. 192; pl. 23, fig. 5.

+*Bolivina glutinata* Egger, 1893 - p. 171

1893 *Bolivina glutinata* - Egger, p. 297; pl. 8, figs 57-62.

1937 *Bolivina glutinata* Egger - Cushman, p. 137; pl. 16, fig. 25.

1994 *Bolivina glutinata* Egger - Loeblich & Tappan, p. 111; pl. 213, figs 1-8.

1999 *Bolivina glutinata* Egger - Hayward *et al*., p. 126; pl. 8, fig. 16.

***Bolivina (Loxostoma) karrerianum* (Brady)**

***Bolivina* cf. *pacifica* Cushman & McCulloch (as *Brizalina*)**

Bolivina robusta Brady, 1881 - p. 171

1881 *Bolivina robusta*, Brady, p. 57.

1884 *Bolivina robusta*, Brady - Brady, p. 421; pl. 53, figs 7-9.

1937 *Bolivina robusta*, Brady - Cushman, p. 131; pl. 17, figs 1-3.

1994 *Bolivina robusta*, Brady - Loeblich & Tappan, p. 111; pl. 215, figs 17-18.

***Bolivina semicostata* Cushman**

Bolivina spathulata (Williamson, 1858) - p. 171

1858 *Textularia variabilis* var. *spathulata* - Williamson, p. 76; pl. 6, figs 164, 165.

1937 *Bolivina spathulata* (Williamson) - Cushman, p. 162; pl. 15, figs 20-24.

1960 *Bolivina spathulata* (Williamson) - Barker, p. 106; pl. 52, figs 20-21.

1999 *Bolivina spathulata* (Williamson) - Hayward *et al*., p. 126; pl. 8, fig. 17.

Bolivina striatula Cushman, 1922 - p. 171

1922a *Bolivina striatula* - Cushman, p. 27; pl. 3, fig. 10.

1993 *Bolivina striatula* Cushman - Hottinger *et al*., p. 92; pl. 112, figs 3-8.

+*Bolivina subreticulata* Parr, 1932 - p. 171

1884 *Bolivina reticulata* Hantken - Brady (not *Bolivina reticulata* Hantken), p. 426; pl. 53, figs 30-31.

1932 *Bolivina subreticulata* - Parr, p. 12; pl. 1, fig. 21.

1992b *Bolivina subreticulata* Parr - Hatta & Ujiié, p. 171; pl. 25, figs 4a-b.

1994 *Latibolivina subreticulata* (Parr) - Loeblich & Tappan, p. 112; pl. 217, figs 1-11.

+*Bolivina* cf. *B. suezensis* Said, 1949 - p. 172

1949 *Bolivina hebes* MacFadyen var. *suezensis* - Said, p. 28; pl. 3, fig. 9.

1974 *Bolivina suezensis* Said - Lutze, p. 26.

1993 *Bolivina* cf. *B. suezensis* Said - Hottinger *et al*., p. 91; pl. 109, figs 7-10.

Bolivina vadescens Cushman, 1933 - p. 172

1933b *Bolivina vadescens* - Cushman, p. 81; pl. 8, fig. 11.

1994 *Bolivina vadescens* Cushman - Loeblich & Tappan, p. 111; pl. 214, figs 1-4, 7-12.

2009 *Bolivina vadescens* Cushman - Parker, p. 434; figs 314a-k.

+*Bolivina variabilis* (Williamson, 1858) - p. 172

1858 *Textularia variabilis* - Williamson, p. 76; pl. 6, figs 162-163.

1994 *Bolivina variabilis* (Williamson) - Loeblich & Tappan, p. 111; pl. 216, figs 7-15.

1995 *Bolivina doniezi* Cushman & Wickenden - Yassini & Jones, p. 129, figs 520, 521, 525.

2009 *Bolivina variabilis* (Williamson) - Parker, p. 434, figs 315a-k.

****Bolivina (Loxostoma)* cf *vertebralis* (Cushman)**

+*Bolivina* sp. 1 - p. 172

Bolivinellina Saidova, 1975

+*Bolivinellina pescicula* Saidova, 1975 - p. 172

1975 *Bolivinellina pescicula* - Saidova, p. 301.

1993 *Bolivinellina pescicula* Saidova - Hottinger *et al*., p. 91; pl. 110, figs 9-12; pl. 111, fig. 3.

+*Bolivinellina translucens* (Phleger & Parker, 1951) - p. 172

1951 *Bolivina translucens* - Phleger & Parker, p. 15; pl. 7, figs 13-14.

1994 *Bolivinellina translucens* Phleger & Parker- Loeblich & Tappan, p. 111; pl. 213, figs 9-14.

Lugdunum Saidova, 1975

Lugdunum hantkenianum (Brady, 1881) - p. 175

1881 *Bolivina kantkeniana* - Brady, p. 58.

1884 *Bolivina hantkeniana* Brady - Brady, p. 424; pl. 53, figs 16-18.

1921 *Bolivina hantkeniana* Brady - Cushman, p. 132; pl. 27, fig. 2.

1994 *Lugdunum hantkenianum* (Brady) - Loeblich & Tappan, p. 112; pl. 217, fig. 12.

****Lugdunum semicostatum*** (Cushman)

****Lugdunum subangularis*** (Brady)

Family Cheilochanidae Loeblich & Tappan, 1994

Cheilochanus Loeblich & Tappan, 1994

+*Cheilochanus fimbriatus* (Collins, 1958) - p. 173

1958 *Bolivina alata* (Seguenza) subsp. *fimbriata* - Collins, p. 394; pl. 5, fig. 1.

1992b *Bolivina*? *fimbriata* Collins - Hatta & Ujiié, p. 171; pl. 25, figs 5-7.

1994 *Cheilochanus fimbriatus* (Collins) - Loeblich & Tappan, p. 112; pl. 218, figs 3-14.

Superfamily Loxostomatacea Loeblich & Tappan, 1962

Family Bolivinellidae Hayward, 1980

Punctobolivinella Hayward, 1990

Punctobolivinella unca Hayward, 1990 [*Bolivinella folia* var. *ornata* Cushman] - p. 177

1954 *Bolivinella folia* var. *ornata* - Cushman in Cushman, Todd & Post, p. 349; pl. 87, figs 12-13.

1990 *Punctobolivinella unca* - Hayward, p. 62; pl. 2, figs 11, 13; pl. 3, fig. 9; pl. 6, figs 12-13; pl. 14, figs 15-22.

Rugobolivinella Hayward, 1990

Rugobolivinella elegans Parr, 1932 - p. 177

1884 *Textularia folium* Parker & Jones - Brady, p. 357; pl. 42, figs 4-5.

1932 *Bolivinella elegans* - Parr, after Brady, p. 223-224.

1994 *Rugobolivinella elegans* (Parr) - Loeblich & Tappan, p. 113; pl. 220, figs 1-6.

2009 *Bolivinella elegans* Parr - Parker, p. 436; figs 316a-f.

****Rugobolivinella margaritacea* Cushman (as Bolivinella)**

Rugobolivinella spinosa (Hayward, 1980) - p. 177

1980 *Bolivinella spinosa* **-** Hayward, in Hayward & Brasier, p. 111; pl. 2, figs 17-20, 28; pl. 3, figs 7-8.

1990 *Rugobolivinella spinosa* (Hayward) - Hayward, p. 74; pl. 2, fig. 6; pl. 8, figs 22-23; pl. 19, figs 17-27.

Family Tortoplectellidae Loeblich & Tappan, 1985

Tortoplectella Loeblich & Tappan, 1985

****Tortoplectella crispata* (Brady)**

Superfamily Bolivinitacea, Cushman, 1927

Family Bolivinitidae Cushman, 1927

Abditodendrix Paterson, 1985

+*Abditodentrix pseudothalmanni* (Boltovskoy & Guissani de Kahn, 1981) - p. 170

1981 *Bolivinita pseudothalmanni* - Boltovskoy & Giussani de Kahn, p. 44.

1990 *Abditodentrix pseudothalmanni* (Boltovskoy & Guissani de Kahn) - Ujiié, p. 29; pl. 12, fig. 2.

1994 *Abditodentrix pseudothalmanni* (Boltovskoy & Guissani de Kahn) - Loeblich & Tappan, p. 113; pl. 218, figs 1, 2.

2010 *Abditodentrix pseudothalmanni* (Boltovskoy & Guissani de Kahn) - Hayward *et al*., p. 188; pl. 17, figs 11-12.

Abditodentrix rhomboidalis (Millett, 1899) - p. 170

1899b *Textularia rhomboidalis* - Millett, p. 559; pl. 7, fig. 4.

1992b *Brizalina*? *rhomboidalis* (Millett) - Hatta & Ujiié, p. 172; pl. 26, fig. 2.

1994 *Tortoplectella rhomboidalis* (Millett) - Loeblich & Tappan, p. 113; pl. 216, figs 1-6.

2009 *Abditodentrix rhomboidalis* (Millett) - Parker, p. 427; figs 308a-i.

Superfamily Cassidulinacea, d'Orbigny, 1839

Family Cassidulinidae d'Orbigny, 1839

Subfamily Cassidulininae, d'Orbigny, 1839

Evolvocassidulina Eade, 1967

Evolvocassidulina belfordi Nomura, 1983 - p. 238

1983 *Evolvocassidulina belfordi* - Nomura, p. I-79; pl. 2, figs 6a-c; pl. 20, figs 8-10, 12.

Favocassidulina Loeblich & Tappan, 1957

****Favocassidulina favus*** (Brady)

Globocassidulina Voloshinova, 1960

+*Globocassidulina crassa* (d'Orbigny, 1839) - p. 239

1839c *Cassidulina crassa* - d'Orbigny, p. 56; pl. 7, figs 18-20.

1983 *Globocassidulina crassa* (d'Orbigny) - Nomura, p. 37; pl. 3, figs 9-10; pl. 6, fig. 17; pl. 18, figs 3-5.

+*Globocassidulina decorata* (Sidebottom, 1910) - p. 239

1910 *Cassidulina decorata* - Sidebottom, p. 107; pl. 4, fig. 2.

1983 *Globocassidulina decorata* (Sidebottom) - Nomura, p. 27; pl. 2, figs 14-16; pl. 17, fig. 8.

1994 *Globocassidulina decorata* (Sidebottom) - Loeblich & Tappan, p. 115; pl. 222; figs 14-19.

****Globocassidulina elegans* (Sidebottom, 1910) as *Cassidulina elegans***

+*Globocassidulina parva* (Asano & Nakamura, 1937) - p. 239

1937 *Cassidulina subglobosa parva* - Asano & Nakamura, p. 148; pl. 13, figs 5a-b.

1983 *Globocassidulina parva* (Asano & Nakamura) - Nomura, p. II 41; pl. 3, figs 13a-b; pl. 15, figs 6-10.

Globocassidulina subglobosa (Brady, 1881) - p. 239

1881 *Cassidulina subglobosa* - Brady, p. 60.

1884 *Cassidulina subglobosa* Brady - Brady, p. 430; pl. 54, figs 17a-c.

1966 *Globocassidulina subglobosa* (Brady) - Belford, p. 149; pl. 25, figs 11-16.

1983 *Globocassidulina subglobosa* (Brady) - Nomura, p. II 20; pl. 2, figs 8a-c, 9; pl. 13, figs 5-6.

+*Globocassidulina* sp. 1 - p. 239

Heterocassidulina McCulloch, 1977

+*Heterocassidulina* sp. 1 - p. 241

Islandiella Nørvang, 1959

+*Islandiella japonica* (Asano & Nakamura, 1937) - p. 241

1937 *Cassidulina japonica* - Asano & Nakamura, p. 144; pl. 13, figs 1-2; text figs 2a-b.

1983 *Islandiella japonica* (Asano & Nakamura) - Nomura, p. 2; pl. 1, figs 1-2; pl. 10, figs 4-10.

1994 *Islandiella japonica* (Asano & Nakamura) - Loeblich & Tappan, p. 116; pl. 225; figs 6-8.

Lernella Saidova, 1975

+*Lernella inflata* (Le Roy, 1944) - p. 243

1944 *Cassidulina inflata* - Le Roy, p. 37; pl. 4, figs 30-31.

1983 *Lernella inflata* (Le Roy) - Nomura, p. I-86; pl. 2, figs 9a-c; pl. 24, figs 4-5.

1994 *Lernella inflata* (Le Roy) - Loeblich & Tappan, p. 116; pl. 226; figs 1-12.

Paracassidulina Nomura, 1983

Paracassidulina angulosa (Cushman, 1933) [*Cassidulina angulosa*] - p. 244

1933b *Cassidulina angulosa* - Cushman, p. 93; pl. 10, fig. 6.

1954 *Cassidulina angulosa* Cushman - Cushman, Todd & Post, p. 365; pl. 90, fig. 22.

1965 *Cassidulina angulosa* Cushman - Todd, p. 40; pl. 17, fig. 2.

****Paracassidulina minuta*** **(Cushman) as Cassidulina minuta**

+*Paracassidulina neocarinata* (Thalman, 1950) - p. 245

1922b *Cassidulina laevigata* var. *carinata* - Cushman, p. 124; pl. 25, figs 6-7.

1950 *Cassidulina neocarinata* - Thalmann, p. 44.

1983 *Paracassidulina neocarinata* (Thalmann) - Nomura, p. 63; pl. 5, figs 11a-b.

1994 *Paracassidulina neocarinata* (Thalmann) - Loeblich & Tappan, p. 116; pl. 227, figs 1-15.

+*Paracassidulina sulcata* (Belford, 1966) - p. 245

1966 *Cassidulina sulcata* - Belford, p. 142; pl. 24, figs 11-14; text fig. 16, nos 7-8.

1983 *Paracassidulina sulcata* (Belford) - Nomura, p. 69; pl. 6, figs 4-6.

1992b *Paracassidulina* sp. 1 - Hatta & Ujiié, p. 173; pl. 26, fig. 6.

+*Paracassidulina* sp. 1 - p. 245

Subfamily Ehrenbergininae Cushman, 1927

Burseolina Seguenza, 1880

+*Burseolina pacifica* (Cushman, 1925) - p. 235

1925 *Cassidulina pacifica* - Cushman, p. 53; pl. 9, figs 14-16.

1965 *Cassidulina pacifica* Cushman - Todd, p. 43.

1983 *Burseolina pacifica* (Cushman) - Nomura, p. 57; pl. 5, figs 1-4; pl. 21, figs 6-10.

Ehrenbergina Reuss, 1850
+*Ehrenbergina bosoensis* Takayanagi, 1951 - p. 237
1951 *Ehrenbergina bosoensis* - Takayanagi, p. 87; text figs 8a-c.
1983 *Ehrenbergina bosoensis* Takayanagi - Nomura, p. II 61; pl. 4, figs 18a-c; pl. 5, figs 7, 9.
+*Ehrenbergina crispata* Nomura, 1983 - p. 237
1983 *Ehrenbergina crispata* - Nomura, p. I-93; pl. 2, figs 18a-b; pl. 23, fig. 5.
1994 *Ehrenbergina crispata* Nomura - Loeblich & Tappan, p. 117; pl. 229, figs 1-7.
+*Ehrenbergina* cf. *E. decorata* Takayanagi, 1951 - p. 237
1951 *Ehrenbergina bosoensis decorata* - Takayanagi, p. 89; text figs 9a-c.
1983 *Ehrenbergina bosoensis decorata* Takayanagi - Nomura, p. II 62; pl. 4, figs 19a-c; pl. 5, figs 9, 10.
1990 *Ehrenbergina* cf. *decorata* Takayanagi - Ujiié, p. 41; pl. 20, figs 6a-c.
Ehrenbergina pacifica (Cushman)
Ehrenbergina trigona (Goes)
+*Ehrenbergina* sp. 1 - p. 238
+*Ehrenbergina* sp. 2 - p. 238
Reissia Loeblich & Tappan, 1964
Reissia histrix (Brady)
Superfamily Turrilinacea T.R. Cushman, 1927
Family Stainforthiidae Reiss, 1963
Cassidelina Saidova, 1975
+*Cassidelina? complanata* (Egger, 1893) - p. 173
1893 *Virgulina schreibersiana* Czjzek var. *complanata* - Egger, p. 292; pl. 8, figs 91-92.
1937 *Virgulina complanata* Egger - Cushman, p. 26; pl. 4, figs 13-17.
1977 *Stainforthia*? cf. *complanata* (Egger) - McCulloch, p. 250; pl. 104, figs 16a-b.
1994 *Cassidelina complanata* (Egger) - Loeblich & Tappan, p. 117; pl. 230, figs 1-10.
+*Cassidelina davisi* (Chapman & Parr, 1937) - p. 173
1937 *Virgulina davisi* - Chapman & Parr, p. 88; pl. 8, fig. 15.
1994 *Cassidelina davisi* (Chapman & Parr) - Loeblich & Tappan, p. 117; pl. 230, figs 11-19.
+*Cassidelina spinescens* (Cushman, 1911) - p. 173
1911 *Bolivina spinescens* - Cushman, p. 46, fig. 76.
1937 *Bolivina spinescens* Cushman - Cushman, p. 142; pl. 18, figs 17-19.
1993 *Cassidelina spinescens* (Cushman) - Hottinger *et al*., p. 96; pl. 118, figs 10-14.
+*Cassidelina subcapitata* (Zheng, 1979) - p. 173
1979 *Brizalina subcapitata* - Zheng, p. 160; pl. 15, fig. 15.
1994 *Cassidelina subcapitata* (Zheng) - Loeblich & Tappan, p. 118; pl. 229, figs 8-12.
2001 *Cassidelina subcapitata* (Zheng) - Szarek, p. 126; pl. 17, fig. 7.
+*Cassidelina* sp. 1 - p. 173
Hopkinsina Howe & Wallace, 1932
+*Hopkinsina* sp. 1 - p. 180
Virgulopsis Finlay, 1939
Virgulopsis spinea (Cushman, 1936) [*Sagrinella spinea*] - p. 179
1936 *Bolivina spinea* - Cushman, p. 58; pl. 8, figs 11a-b.
1992b *Brizalina spinea* (Cushman) - Hatta & Ujiié, p. 172; pl. 26, figs 1a-b.
1994 *Sagrina zanzibarica* Cushman - Loeblich & Tappan, p. 122; pl. 238, figs 12-17.
2009 *Virgulopsis spinea* (Cushman) - Parker, p. 472; figs 340a-k.
Superfamily Buliminacea T.R. Jones, 1875
Family Siphogenerinoididae Saidova, 1981
Subfamily Siphogenerinoidinae Saidova, 1981
Hopkinsinella Bermúdez & Fuenmayor, 1966
+*Hopkinsinella glabra* (Millett, 1903) - p. 174
1903a *Uvigerina auberiana* d'Orbigny var. *glabra* - Millett, p. 268; pl. 5, figs 8-9.
1994 *Hopkinsinella glabra* (Millett) - Loeblich & Tappan, p. 118; pl. 232, figs 1-11.
Loxostomina Sellier de Civrieux, 1969
Loxostomina barkeri (Margerel, 1981) - p. 174
1977 *Euloxostomum mayori* (Cushman) - McCulloch, p. 262; pl. 106, figs 4-5.
1981 *Rectobolivina barkeri* - Margerel, p. 67; pl. 1, figs 1-8.
1994 *Loxostomina mayori* (Cushman) - Loeblich & Tappan, p. 119; pl. 233, figs 9-14.
2009 *Loxostomina barkeri* (Margerel) - Margerel http://147.94.111.32/Collection/forams-index.php?
+*Loxostomina costatapertusa* Loeblich & Tappan, 1994 - p. 175
1993 *Loxostomina* cf. *L. africana* (Smitter) - Hottinger, p. 97; pl. 119, figs 10-15.
1994 *Loxostomina costatapertusa* - Loeblich & Tappan, p. 119; pl. 234, figs 1-2.

2000 *Loxostomina costatapertusa* Loeblich & Tappan - Revets, p. 371; pl. 3, fig. 10.
2009 *Loxostomina costatapertusa* Loeblich & Tappan - Parker, p. 456; figs 3328a-c.
Loxostomina costulata (Cushman, 1922) - p. 175
1922a *Bolivina limbata* Brady var. *costulata* - Cushman, p. 26; pl. 3, fig. 8.
1994 *Loxostomina costulata* (Cushman) - Loeblich & Tappan, p. 119; pl. 232, figs 12-16.
Loxostomina limbata (Brady, 1884) - p. 175
1884 *Bolivina limbata* - Brady, p. 419; pl. 52, figs 26-28,
1987 *Loxostomina* (?) *limbatum* (Brady) - Baccaert, p. 264-265; pl. 106, fig. 11.
1994 *Loxostomina limbata* (Brady) - Loeblich & Tappan, p. 119; pl. 233, figs 1-8.
2009 *Loxostomina limbata* (Brady) - Parker, p. 456; figs 329a-k, 330a-h.
+*Loxostomina* sp. 1 - p. 175
Pseudobrizalina Zweig-Strykowski & Reiss, 1976
+*Pseudobrizalina lobata* (Brady 1884) - p. 176
1884 *Bolivina lobata* - Brady, p. 425; pl. 53, figs 22-23.
2002 *Bolivina lobata* Brady - Suresh-Gandhy *et al*., p. 56; pl. 2, fig. 5.
Rectobolivina Cushman, 1927
****Rectobolivina dimorpha*** (Parker & Jones)
Sagrinella Saidova, 1975
Sagrinella convallaria (Millett, 1900) - p. 178
1900b *Bolivina convallaria* - Millett, p. 544; pl. 4, figs 6a-b.
1958 *Loxostomum convallarium* (Millett) - Collins, p. 395; pl. 5, fig. 2.
1993 *Sagrinella convallaria* (Millett) - Hottinger *et al*., p. 98; pl. 122, figs 8-11.
Sagrinella durrandii (Millett, 1900) [*Euloxostomum durrandii*] - p. 178
1900b *Bolivina durrandii* - Millett, p. 544; pl. 4, figs 7a-b.
1992b *Loxostomina durrandi* - Hatta & Ujiié, p. 174; pl. 26, fig. 10.
1994 *Sagrinella durrandii* (Millett) - Loeblich & Tappan, p. 120; pl. 236, figs 11-13.
Sagrinella strigosa Brady, 1884 - p. 178
1884 *Bolivina lobata* var. *strigosa* - Brady, p. 425; pl. 113, fig. 7.
1911 *Bolivina* (Bifarina) *strigosa* (Brady) - Cushman, p. 49; fig. 80.
1975 *Sagrinella strigosa* (Brady) - Saidova, p. 310.
1994 *Siphouvigerina strigosa* (Brady) - Loeblich & Tappan, p. 127; pl. 247, fig. 12.
Subfamily Tubulogenerininae Saidova, 1981
Allassoida Loeblich & Tappan 1994
Allassoida virgula (Brady, 1879) [*Siphogenerina virgula*] - p. 162
1879 *Sagrina virgula* - Brady, p. 275; pl. 8, figs 19-21.
1924 *Siphogenerina virgula* (Brady) - Cushman, p. 29; pl. 8, figs 3-4.
1994 *Allassoida virgula* (Brady) - Loeblich & Tappan, p. 121; pl. 238, figs 1-11.
2001 *Allassoida virgula* (Brady) - Szarek, p. 127; pl. 17, fig. 14.
Sagrina d'Orbigny, 1839
Sagrina jugosa (Brady, 1884) [*Patellinella jugosa*] - p. 178
1884 *Textularia jugosa* - Brady, p. 358; pl. 42, fig. 7.
1994 *Sagrina jugosa* (Brady) - Loeblich & Tappan, p. 122; pl. 237, figs 12-17.
2001 *Sagrina jugosa* (Brady) - Szareck, p. 128; pl. 17, fig. 15.
+*Sagrina zanzibarica* (Cushman, 1936) - p. 178
1936 *Bolivina zanzibarica* - Cushman, p. 58; p1. 8, fig. 12.
1958 *Bolivina zanzibarica* Cushman - Collins, p. 395.
1994 *Sagrina zanzibarica* (Cushman) - Loeblich & Tappan, p. 122; pl. 238, figs 12-17.
Siphogenerina Schlumberger, in Milne-Edwards, 1882
Siphogenerina columellaris (Brady, 1881) - p. 169
1881 *Sagrina columellaris* - Brady, p. 64.
1884 *Sagrina columellaris* Brady - Brady, p. 581; pl. 75, figs 15-17.
1960 *Rectobolivina columellaris* (Brady) - Barker, p. 156; pl. 75, figs 15-17.
1994 *Siphogenerina columellaris* (Brady) - Jones, p. 87; pl. 75, figs 15-17.
+*Siphogenerina pacifica* Cushman, 1926 - p. 169
1926a *Siphogenerina dimorpha* (Parker & Jones) var. pacifica - Cushman, p. 13; pl. 2, fig. 9.
1960 *Rectobolivina dimorpha* (Parker & Jones) var. pacifica (Cushman) - Barker, p. 158; pl. 76, figs 1-3.
1994 *Siphogenerina pacifica* (Cushman) - Loeblich & Tappan, p. 123; pl. 241, figs 1-9.
Siphogenerina raphana (Parker & Jones, 1865) - p. 169
1865 *Uvigerina (Sagrina) raphanus* - Parker & Jones, p. 364; pl. 18, figs 16-17.
1884 *Sagrina raphanus* (Parker & Jones) - Brady, p. 585; pl. 75, figs 21-22.
1992b *Rectobolivina raphana* (Parker & Jones) - Hatta & Ujiié, p. 174; pl. 26, figs 11-12.
1999 *Siphogenerina raphana* (Parker & Jones) - Hayward *et al*., p. 130; pl. 9, fig. 4.

****Siphogenerina tropicalis*** Cushman

Family Buliminidae T.R. Jones, 1875

Bulimina d'Orbigny, 1826

+*Bulimina biserialis* Millett, 1900 - p. 179

1900a *Bulimina marginata* var. *biserialis* - Millett, p. 278; pl. 2, fig. 7.

1993 *Bulimina marginata biserialis* Millett - Hottinger *et al*., p. 100; pl. 124, figs 8-11.

+*Bulimina marginata* d'Orbigny, 1826 - p. 179

1826 *Bulimina marginata* - d'Orbigny, p. 269; pl. 12, figs 10-12.

1884 *Bulimina marginata* d'Orbigny - Brady, p. 405; pl. 51, figs 3-5.

1994 *Bulimina marginata* d'Orbigny - Loeblich & Tappan, p. 124; pl. 242, figs 1-4.

1999 *Bulimina marginata* d'Orbigny var. *marginata* d'Orbigny - Hayward *et al.*, p. 133; pl. 9, figs 13-15.

+*Bulimina striata* d'Orbigny, 1843 - p. 180

1843 *Bulimina striata* - d'Orbigny in Guérin Méneville, p. 9; pl. 2, fig. 16.

1922b *Bulimina inflata* var. *mexicana* - Cushman, p. 95; pl. 21, fig. 2.

1994 *Bulimina striata* d'Orbigny - Loeblich & Tappan, p. 125; pl. 242, figs 8-14.

2010 *Bulimina striata* d'Orbigny - Hayward *et al.*, p. 190; pl. 17, figs 25-27.

Globobulimina Cushman, 1927

****Globobulimina australiensis*** Collins

Family Buliminellidae Hofker, 1951

Buliminella Cushman, 1911

Buliminella elegantissima (d'Orbigny, 1839) - p. 188

1839c *Bulimina elegantissima* - d'Orbigny, p. 51; pl. 7, figs 13, 14.

1995 *Buliminella elegantissima* (d'Orbigny) - Yassini & Jones, p. 144, figs 638-640 and 643-645.

1998 *Buliminella elegantissima* (d'Orbigny) - Debenay *et al*., pl. 4, figs 2, 3.

1999 *Buliminella elegantissima* (d'Orbigny) - Hayward *et al*., p. 133; pl. 9, figs 18-19.

Family Orthoplectidae Loeblich & Tappan, 1984

Floresina Revets, 1990

Floresina latissima (Collins, 1958) - p. 196

1900a *Bulimina elegantissima* d'Orbigny var. *compressa* - Millett, p. 277; pl. 2, fig. 3.

1958 *Buliminella latissima* - Collins, p. 387; pl. 4, figs 7a-c.

Orthoplecta Brady 1884

+*Orthoplecta clavata* Brady, 1884 - p. 244

1884 *Cassidulina* (*Orthoplecta*) *clavata* - Brady, p. 432; pl. 113, fig. 9.

1927 *Orthoplecta clavata* Brady - Cushman, p. 84; pl. 18, fig. 5.

1988 *Orthoplecta clavata* Brady - Loeblich & Tappan, p. 508; pl. 561, figs 8-10.

1991 *Orthoplecta clavata* Brady - Revets & Whittaker, p. 168; pl. 1, figs 1-8.

Family Uvigerinidae Haeckel, 1894

Subfamily Uvigerininae Haeckel, 1894

Neouvigerina Thalmann, 1952

Neouvigerina hispida (Schwager, 1866) - p. 181

1866 *Uvigerina hispida* - Schwager, p. 249; pl. 2, fig. 95.

2010 *Neouvigerina hispida* (Schwager) - Hayward *et al*., p. 203; pl. 21, figs 4-5.

Neouvigerina interrupta (Brady, 1879) - p. 181

1879 *Uvigerina interrupta* - Brady, p. 274; pl. 6, figs 17-18.

1994 *Neouvigerina interrupta* (Brady) - Loeblich & Tappan, p. 126; pl. 246, figs 5-8.

2001 *Neouvigerina interrupta* (Brady) - Szareck, p. 130; pl. 18, fig. 9.

2010 *Neouvigerina interrupta* (Brady) - Hayward *et al*., p. 203; pl. 21, figs 6-8.

Neouvigerina porrecta (Brady, 1879) - p. 181

1879 *Uvigerina porrecta* - Brady, p. 274; pl. 8, figs 15-16.

1884 *Uvigerina porrecta* Brady - Brady, p. 577; pl. 74, figs 21-23.

1994 *Siphouvigerina porrecta* (Brady) - Loeblich & Tappan, p. 127; pl. 247, figs 6-11.

2009 *Neouvigerina porrecta* (Brady) - Parker, p. 462; figs 331a-e.

Neouvigerina proboscidea (Schwager, 1866) [*Siphouvigerina proboscidea* (Schwager)] - p. 181

1866 *Uvigerina proboscidea* - Schwager, p. 250; pl. 7, fig. 96.

1990 *Uvigerina proboscidea* Schwager - Ujiié, p. 32; pl. 13, figs 10-11.

1999 *Neouvigerina proboscidea* (Schwager) - Hayward *et al.*, p. 134; pl. 9, fig. 22.

2001 *Neouvigerina interrupta* (Brady) - Szareck, p. 130; pl. 18, fig. 10.

2009 *Neouvigerina ampullacea* (Brady) Margerel, http://147.94.111.32/Collection/forams-index.php?

Siphouvigerina Parr, 1950
Siphouvigerina fimbriata (Sidebottom, 1918) [*Uvigerina fimbriata*] - p. 179
1918 *Uvigerina porrecta* Brady var. *fimbriata* - Sidebottom p. 147; pl. 5, fig. 23.
1942 *Uvigerina porrecta* Brady var. *fimbriata* Sidebottom - Cushman, p. 49; pl. 14, figs 1-4.
1994 *Siphouvigerina fimbriata* (Sidebottom) - Loeblich & Tappan, p. 127; pl. 247, figs 1-5.
Uvigerina d'Orbigny, 1826
****Uvigerina bradyana*** (Fornasi)
+*Uvigerina carapitana* Hedberg, 1937 - p. 183
1937 *Uvigerina carapitana* - Hedberg, p. 677; pl. 91, fig. 20.
1984 *Uvigerina carapitana* Hedberg- Lamb & Miller, p. 15; p1. 39, fig. 3.
1986 *Uvigerina carapitana* Hedberg - van Morkhoven *et al*., p. 124; pl. 40A, figs 1-2. pl. 40B fig. 1.
+*Uvigerina flintii* Cushman, 1923 - p. 184
1923 *Uvigerina flintii* - Cushman, p. 165; pl. 42, fig. 13.
1984 *Uvigerina flintii* Cushman - Lamb & Miller, p. 15; p1. 40, fig. 3.
+*Uvigerina* cf. *U. peregrina* Cushman, 1923 - p. 184
1923 *Uvigerina peregrina* - Cushman, p. 166; pl. 42, figs 7-10.
1951 *Uvigerina peregrina* Cushman - Phleger & Parker, p. 18; pl. 8, figs 22, 24-26.
1990 *Uvigerina peregrina* Cushman - Ujiié, p. 31; pl. 13, figs 1-3.
2001 *Uvigerina peregrina* Cushman - Szareck, p. 130; pl. 18, fig. 13.
Subfamily Angulogerininae Galloway, 1933
Trifarina Cushman, 1923
+*Trifarina angulosa* (Williamson, 1858) - p. 182
1858 *Uvigerina angulosa* - Williamson, p. 67; pl. 5, fig. 140.
1964 *Trifarina angulosa* (Williamson) - Loeblich & Tappan, p. 571; fig. 450, 1-3.
1993 *Angulogerina angulosa* (Williamson) - Hottinger *et al*., p. 100; pl. 126, figs 1-7.
+*Trifarina bradyi* Cushman, 1923 - p. 183
1923 *Trifarina bradyi* - Cushman, p. 99; pl. 22, figs 3-9.
1988 *Trifarina bradyi* Cushman - Loeblich & Tappan, p. 526; pl. 574, figs 10-13.
1994 *Trifarina bradyi* Cushman - Loeblich & Tappan, p. 128; pl. 251, figs 6-16.
+*Trifarina pacifica* (Albani, 1974) - p. 183
1974 *Trimosina pacifica* - Albani, p. 38; pl. 1, figs 8, 9.
1995 *Trimosina pacifica* Albani - Yassini & Jones, p. 154; fig. 602.
2009 *Angulogerina pacifica* (Albani) - Parker, p. 432; figs 312a-f.
+*Trifarina reussi* Cushman, 1913 - p. 183
1884 *Rhabdogonium minutum* - Brady, p. 526; pl. 67, figs 4-6.
1913b *Triplasia reussi* - Cushman, p. 63; pl. 39, fig. 3.
1923 *Trifarina reussi* (Cushman) - Cushman, p. 99.
1960 *Trifarina reussi* (Cushman) - Barker; pl. 67, figs 4-6.

Family Reussellidae Cushman, 1933
Chrysalidinella Schubert, 1908
Chrysalidinella dimorpha (Brady, 1881) - p. 163
1881 *Chrysalidina dimorpha* - Brady, p. 54.
1884 *Chrysalidina dimorpha* Brady - Brady, p. 388; pl. 46, figs 20-21.
1911 *Chrysalidina dimorpha* Brady - Cushman, p. 60; text figs 96-97.
1994 *Chrysalidinella dimorpha* (Brady) - Loeblich & Tappan, p. 129; pl. 252, figs 7-13.
****Chrysalidinella fijiensis* Cushman**
Fijiella Loeblich & Tappan, 1962
Fijiella simplex (Cushman, 1929) - p. 180
1929b *Trimosina simplex* - Cushman, p. 158, text fig. 2.
1991 *Fijiella simplex* (Cushman) - Revets, p. 4; pl. 2, figs 1-4.
1994 *Fijiella simplex* (Cushman) - Loeblich & Tappan, p. 129; pl. 252, figs 5-6.
2009 *Fijiella simplex* (Cushman) - Parker, p. 449; figs 323a-m.
+*Fijiella* sp. 1 - p. 180
Reussella Galloway, 1933
****Reussella aculeata*** Cushman
+*Reussella* cf. *R. hayasakai* Öki, 1989 - p. 182
1989 *Reussella hayasakai* - Öki, p. 117; pl. 11, fig. 8.
1994 *Reussella hayasakai* Öki - Loeblich & Tappan, p. 129; pl. 252, figs 1-4.
+*Reussella neapolitina* Hofker, 1956 - p. 182
1956 *Reussella neapolitina* - Hofker, p. 52; pl. 5, fig. 2.
1993 *Reussella neapolitana* Hofker - Hottinger *et al*., p. 103; pl. 132, figs 1-6.
+*Reussella pacifica* Cushman & McCulloch, 1948 - p. 182
1948 *Reussella pacifica* - Cushman & McCulloch, p. 251; pl. 31, fig. 6.

1987 *Reussella "simplex"* (Cushman) - Baccaert, p. 190; pl. 75, figs 3-5.
2009 *Reussella pacifica* Cushman & McCulloch - Parker, p. 463; figs 333a-c.

+*Reussella pulchra* Cushman, 1945 - p. 182
1945 *Reussella pulchra* - Cushman, p. 34; pl. 6, figs 11-12.
1966 *Reussella pulchra* Cushman - Todd, pl. 18, fig. 6.
1980 *Reussella pulchra* Cushman - Zheng, p. 166; pl. 4, figs 12-13.

+*Reussella spinulosa* (Reuss, 1850) - p. 182
1850 *Verneuilina spinulosa* - Reuss, p. 374; pl. 47, fig. 12.
1884 *Verneuilina spinulosa* Reuss - Brady, p. 384; pl. 47, figs 2-3.
1942 *Reussella spinulosa* (Reuss) - Cushman, p. 40; pl. 11, figs 5-8.

Valvobifarina Hofker, 1951

****Valvobifarina mackinnoni*** (Millett)

Family Trimosinidae Saidova, 1981

Mimosina Millett, 1900

Mimosina affinis Millett, 1900 - p. 180
1900b *Mimosina affinis* - Millett, p. 548; p1. 4, fig. 11.
1993 *Mimosina affinis* Millett - Hottinger *et al.*, p. 104; pl. 133, figs 9-12; pl. 134, figs 1-3.

Mimosina echinata Heron-Allen & Earland, 1915 - p. 180
1915 *Mimosina echinata* - Heron-Allen & Earland, p. 651; p1. 50, figs 12-18.
1987 *Mimosina echinata* Heron-Allen & Earland - Baccaert; pl. 75, figs 1-2.
1994 *Mimosina echinata* Heron-Allen & Earland - Loeblich & Tappan, p. 129; pl. 255, figs 1-2.

Mimosina histrix Millett, 1900 - p. 181
1900b *Mimosina hystrix* - Millett, p. 549; p1. 4, figs 14, 15.
1927 *Mimosina hystrix* Millett - Cushman, p. 64.
1991 *Mimosina histrix* Millett - Revets, p. 6; pl. 2, figs 5-11.

****Mimosina pacifica*** Cushman

+*Mimosina* sp. 1 - p. 181

Quirimbatina Debenay n.gen.

+*Quirimbatina rimosa* (Heron-Allen & Earland, 1915) - p. 177
1915 *Mimosina rimosa* - Heron-Allen & Earland, p. 650; pl. 50, figs 5-11.
1958 *Mimosina rimosa* Heron-Allen & Earland - Collins, p. 391; pl. 4, fig. 11.

Trimosina Cushman, 1927

+*Trimosina milletti* Cushman, 1927 - p. 183
1900b *Mimosina spinulosa* var. - Millett, p. 548; p1. 4, fig. 13.
1927 *Trimosina milletti* - Cushman, p. 64, p1. 13, fig. 20.
1991 *Trimosina milletti* Cushman - Revets, p. 4; pl. 1, figs 8-9.

+*Trimosina orientalis* Cushman, 1933 - p. 183
1933b *Trimosina orientalis* - Cushman, p. 78; pl. 8, fig. 4.
1942 *Trimosina orientalis* Cushman - Cushman, p. 43; pl. 12, figs 1-5.

Family Pavoninidae Eimer & Fickert, 1899

Pavonina d'Orbigny, 1826

Pavonina flabelliformis d'Orbigny, 1826 - p. 168
1826 *Pavonina flabelliformis* - d'Orbigny, p. 358; pl. 42, fig. 7.
1991 *Pavonina flabelliformis* d'Orbigny - Revets, p. 8; pl. 3, figs 4-9.
1994 *Pavonina flabelliformis* d'Orbigny - Loeblich & Tappan, p. 130; pl. 255, figs 3-6.
2009 *Pavonina flabelliformis* d'Orbigny - Parker, p. 462; figs 332a-c.

Family Millettiidae Saidova, 1981

Millettia Schubert, 1911

Millettia limbata (Brady, 1884) - p. 243
1884 *Sagrina limbata* - Brady, p. 586; pl. 113, fig. 14.
1992 *Millettia limbata* (Brady) - Revets, p. 40, pl. 2, figs 5-9.
1994 *Millettia limbata* (Brady) - Loeblich & Tappan, p. 130; pl. 255; figs 7-8.

+*Millettia* cf. *M. tessellata* (Brady, 1884) - p. 243
1884 *Sagrina* (?) *tessellata* - Brady, p. 585; pl. 76, figs 17-19.
1992 *Millettia tessellata* (Brady) - Revets, p. 38, pl. 1, figs 1-13.
1994 *Millettia tessellata* (Brady) - Loeblich & Tappan, p. 130; pl. 255; figs 9-15.

Superfamily Fursenkoinacea Loeblich & Tappan, 1961

Family Fursenkoinidae Loeblich & Tappan, 1961

Fursenkoina Loeblich & Tappan, 1961

Fursenkoina earlandi (cushman, 1936) [*Stainforthia earlandi*] - p. 174
1900a *Virgulina schreibersiana* Czjzek var. - Millett, p. 280; pl. 2, fig. 13.
1915 *Virgulina schreibersiana* Czjzek - Heron Allen & Earland, p. 642; pl. 49, figs 1-12.

1936 *Virgulina earlandi* - Cushman, p. 49; pl. 7, fig. 8.
1994 *Fursenkoina earlandi* (Cushman) - Loeblich & Tappan, p. 131; pl. 256, figs 14-15.
Fursenkoina pauciloculata (Brady, 1884) - p. 174
1884 *Virgulina pauciloculata* - Brady, p. 414; pl. 52, figs 4-5.
1994 *Fursenkoina pauciloculata* (Brady) - Loeblich & Tappan, p. 131; pl. 256, figs 1-5.
+*Fursenkoina schreibersiana* (Czjzek, 1848) - p. 174
1848 *Virgulina schreibersiana* - Czjzek, p. 147; pl. 13, figs 18-21.
1937 *Virgulina schreibersiana* Czjzek - Cushman, p. 13; pl. 2, figs 11-20.
1994 *Fursenkoina schreibersiana* (Czjzek) - Loeblich & Tappan, p. 131; pl. 257, figs 1-12.
1996 *Fursenkoina schreibersiana* (Czjzek) - Revets, p. 12; pl. 8, figs 5-8.
Neocassidulina McCulloch, 1977
Neocassidulina abbreviata (Heron-Allen & Earland, 1924) [*Cassidellina abbreviata*] - p. 175
1924 *Bolivina limbata* Brady var. *abbreviata* - Heron-Allen & Earland, p. 622; pl. 36, figs 25-27.
1979 *Brizalina abbreviata* (Heron-Allen & Earland) - Zheng, p. 157; pl. 15, figs 4-6.
1992b *Brizalina abbreviata* (Heron-Allen & Earland) - Hatta & Ujiié, p. 172; pl. 25, figs 8a-b.
1994 *Neocassidulina abbreviata* (Heron Allen & Earland) - Loeblich & Tappan, p. 131; pl. 258, figs 1-7.
+*Neocassidulina* sp. 1 - p. 176
+*Neocassidulina* sp. 2 - p. 176
Sigmavirgulina Loeblich & Tappan, 1957
+*Sigmavirgulina basistriata* Zheng, 1979 - p. 178
1979 *Sigmavirgulina basistriata* - Zheng, p. 227; pl. 24, figs 9, 10.
2009 *Sigmavirgulina basistriata* Zheng - Parker, p. 466; figs 336a-l.
Sigmavirgulina tortuosa (Brady, 1881) - p. 179
1881 *Bolivina tortuosa* - Brady, p. 57.
1988 *Sigmavirgulina tortuosa* (Brady) - Loeblich & Tappan, p. 531; pl. 579, figs 1-5.
1999 *Sigmavirgulina tortuosa* (Brady) - Hayward *et al*., p. 136; pl. 9, figs 30-31.
2009 *Sigmavirgulina tortuosa* (Brady) - Parker, p. 466; figs 337a-f.
+*Sigmavirgulina* sp. 1 - p. 179
Superfamily Delosinacea Parr, 1950
Family Delosinidae Parr, 1950
Delosina Wiesner, 1931
+*Delosina complexa* (Sidebottom, 1907) - p. 237
1907 *Polymorphina? complexa* - Sidebottom, p. 16; pl. 4, figs 1-3, text figs 6-7.
1974 *Delosina complexa* (Sidebottom) - Collins, p. 50; text fig. 2.
1988 *Delosina complexa* (Sidebottom) - Loeblich & Tappan, p. 535; pl. 582; figs 1-6.
1994 *Delosina complexa* (Sidebottom) - Loeblich & Tappan, p. 132; pl. 260; figs 1-12.

Order **ROTALIIDA** Lankester, 1885

Superfamily Discorbacea Ehrenberg, 1838
Family Placentulinidae Kasimova Poroshina & Geodakchan, 1980
Subfamily Ashbrookiinae Loeblich & Tappan, 1984
Ashbrookia McCulloch, 1977
+*Ashbrookia ornata* McCulloch, 1977 - p. 187
1977 *Ashbrookia ornata* - McCulloch, p. 282; pl. 118, fig. 5.
Patellinella Cushman, 1928
Patellinella carinata Collins, 1958 - p. 176
1958 *Patellinella carinata* - Collins, p. 407; pl. 5, figs 8a-c.
1992b *Eupatellinella bullata* - Hatta & Ujiié, p. 178; pl. 28, figs 4-8.
+*Patellinella inconspicua* (Brady, 1884) - p. 176
1884 *Textularia inconspicua* - Brady, p. 357; pl. 42, figs 6a-c.
1911 *Textularia inconspicua* Brady - Cushman, p. 18; fig. 30.
1968 *Patellinella inconspicua* (Brady) - Albani, p. 108; pl. 8, figs 22-23.
Patellinella nitida (Hofker)
Family Bagginidae Cushman, 1927
Baggina Cushman, 1926b
+*Baggina bubnanensis* McCulloch, 1977 - p. 187
1977 *Baggina bubnanensis* - McCulloch, p. 342; pl. 137, figs 2a-c.
1994 *Baggina bubnanensis* McCulloch - Loeblich & Tappan, p. 134; pl. 264, figs 5-10.
2009 *Cancris bubnanensis* (McCulloch) - Parker, p. 525; figs 372a-d.

****Baggina indica*** (Cushman, 1921)

+*Baggina philippinensis* (Cushman, 1921) - p. 187

1921 *Pulvinulina philippinensis* - Cushman, p. 331; pl. 58, fig. 2.

1994 *Baggina philippinensis* (Cushman) - Loeblich & Tappan, p. 134; pl. 265, figs 1-6.

Cancris Montfort, 1808

Cancris auriculus (Fichtel & Moll, 1798) - p. 189

1798 *Nautilus auricula* var. · - Fichtel & Moll p. . 108; pl. 20, figs a-c.

1798 *Nautilus auricula* var. , - Fichtel & Moll p. . 110; pl. 20, figs d-f.

1994 *Cancris auriculus* (Fichtel & Moll) - Loeblich & Tappan, p. 134, pl. 265, figs 7-10.

2009 *Cancris* cf. *C. auriculus* (Fichtel & Moll) - Parker, p. 522; figs 371a-i.

+*Cancris oblongus* (d'Orbigny, 1839) - p. 189

1839b *Valvulina oblonga* - d'Orbigny, p. 136; pl. 1, figs 40-42.

1994 *Cancris oblongus* (d'Orbigny) - Loeblich & Tappan, p. 134, pl. 265, figs 11-13.

2001 *Cancris oblongus* (d'Orbigny) - Szareck, p. 133, pl. 19, fig. 4.

Cancris sagrum (d'Orbigny, 1839) - p. 189

1839a *Rotalina sagra* - d'Orbigny, p. 77; pl. 5, figs 13-15.

1931a *Cancris sagrum* (d'Orbigny) - Cushman, p. 74; pl. 15, fig. 2.

Cibicorbis Hadley, 1934

+*Cibicorbis* cf. *C. herricki* Hadley, 1934 - p. 191

1934 *Cibicorbis herricki* - Hadley, p. 26, pl. 5, figs 1-3.

1986 *Cibicorbis herricki* Hadley - van Morkhoven *et al*, p. 107; pl. 33, figs 1-2.

Cribrobaggina McCulloch, 1977

Cribrobaggina reniformis (Heron-Allen & Earland, 1915) - p. 235

1915 *Discorbina reniformis* - Heron-Allen & Earland, p. 696; pl. 52, figs 7-14.

1977 *Cribrobaggina socorroensis* - McCulloch, p. 342; pl. 201, figs 3-5.

1978 *Latecella reniformis* (Heron-Allen & Earland) - Cheng & Zheng, p. 260; pl. 19, figs 4a-q 6a-c; pl. 22, fig. 11.

2009 *Cribrobaggina reniformis* (Heron-Allen & Earland) - Parker, p. 546; figs 388a-k.

Physalidia Heron-Allen & Earland, 1928

+*Physalidia*? *earlandi* Bermúdez, 1935 - p. 245

1935 *Physalidia earlandi* - Bermúdez, p. 212; pl. 14, figs 1-3.

1977 *Physalidia? razaensis* - McCulloch, p. 348; pl. 154, figs 4a-b.

2009 *Physalidia? earlandi* Bermúdez - Parker, p. 687; figs 486a-i.

Rugidia Heron-Allen & Earland, 1928

Rugidia cortica (Heron-Allen & Earland, 1915) - p. 248

1915 *Sphaeroidina cortica* - Heron-Allen & Earland, p. 681; pl. 51, figs 14-18.

1928 *Rugidia cortica* (Heron-Allen & Earland) - Heron-Allen & Earland, p. 289; pl. 1, figs 5-7.

1978 *Rugidia cortica* (Heron-Allen & Earland) - Cheng & Zheng, p. 214; pl. 24, fig. 8.

1994 *Rugidia cortica* (Heron-Allen & Earland) - Loeblich & Tappan, p. 135; pl. 267, figs 5-12.

Valvulineria Cushman, 1926

+ *Valvulineria candeiana* (d'Orbigny, 1839) - p. 214

1839a *Rosalina candeiana* - d'Orbigny, p. 97; pl. 4, figs 2-4.

1922a *Truncatulina candeiana* (d'Orbigny) - Cushman, p. 47; pl. 6, figs 7-9.

1994 *Discorbia candeiana* (d'Orbigny) - Loeblich & Tappan, p. 150; pl. 320, figs 1-10.

2001 *Discorbia candeiana* (d'Orbigny) - Szareck, p. 139; pl. 22, figs 6-7.

Valvulineria minuta (Schubert, 1904) - p. 215

1904 *Discorbina rugosa* (d'Orbigny) var. *minuta* - Schubert, p. 420.

1990 *Rotamorphina minuta* (Schubert) - Ujiié, p. 42; pl. 15, figs 2-3.

1994 *Valvulineria minuta* (Schubert) - Loeblich & Tappan, p. 135; pl. 268, figs 4-9.

2010 *Valvulineria minuta* (Schubert) - Hayward *et al*., p. 228; pl. 30, figs 16-18.

Family Eponididae Hofker, 1951

Subfamily Eponidinae Hofker, 1951

Eponides de Montfort, 1808

Eponides repandus (Fichtel & Moll, 1798) - p. 196

1798 *Nautilus repandus* - Fichtel & Moll, p. 35; pl. 3, figs a-d.

1993 *Eponides repandus* (Fichtel & Moll) - Hottinger *et al.*, p. 106-107; pl. 137, figs 1-10.

1995 *Eponides cribrorepandus* (Asano & Uchio) - Yassini & Jones, p. 157; figs 779-780.

2009 *Eponides repandus* (Fichtel & Moll) - Parker, p. 603; figs 429a-f.

Poroeponides Cushman, 1944
****Poroeponides cribrorepandus*** Asano & Uchio
Poroeponides lateralis (Terquem, 1878) - p. 210
1878 *Rosalina lateralis* - Terquem, p. 25; pl. 2, fig. 11
1944b *Poroeponides lateralis* (Terquem) - Cushman, p. 34; pl. 4, figs 23a-b.
1993 *Poroeponides lateralis* (Terquem) - Hottinger *et al*., p. 107; pl. 138, figs 1-9.
Subfamily Heleninninae Loeblich & Tappan, 1988
Helenina Saunders, 1961
Helenina anderseni (Warren, 1957) - p. 198
1957 *Pseudoeponides anderseni* - Warren, p. 39; pl. 4, figs 12-15.
1999 *Helenina anderseni* (Warren) - Hayward *et al.*, p. 138; pl. 10, figs 1-3.
2001 *Helenina anderseni* (Warren) - Szareck, p. 133; pl. 19, figs 13-15.
2009 *Monspeliensina* cf. *M. vulpesi* Glaçon & Lys - Parker, p. 648; figs 457a-h, 458a-j.
Subfamily Sestronophorinae Saidova, 1981
Hofkerina Chapman & Parr, 1931
+*Hofkerina semiornata* (Howchin, 1889) - p. 200
1889 *Pulvinulina semiornata* - Howchin, p. 14; pl. 1, fig. 12.
1931 *Hofkerina semiornata* (Howchin) - Chapman & Parr, p. 237; pl. 9, figs 1-5.
1965 *Hofkerina semiornata* (Howchin) - Todd, p. 32; pl. 18, fig. 3.
1994 *Sestronophora arnoldi* Loeblich & Tappan - Loeblich & Tappan, p. 136; pl. 271, figs 1-3.
Paumotua Loeblich, 1952
+*Paumotua terebra* (Cushman, 1933) - p. 207
1933b *Eponides terebra* - Cushman, p. 90; pl. 10, fig. 1.
1965 *Paumotua terebra* (Cushman) - Todd, p. 25; pl. 16, figs 3-4.
1992b *Paumotua terebra* (Cushman) - Hatta & Ujiié, p. 180; pl. 31, figs 5-6.
Family Mississippinidae Saidova, 1981
Subfamily Mississippininae Saidova, 1981
Mississippina Howe, 1930
+*Mississippina omuraensis* Shuto, 1953 - p. 201
1953 *Mississippina omuraensis* - Shuto, p. 137; figs 8d-f.
1999 *Mississippina omuraensis* Shuto - Hayward *et al*., p. 138; pl. 10, figs 4-6.
Mississippina pacifica Parr, 1950 - p. 201
1950 *Mississippina pacifica* - Parr, p. 361; pl. 14, fig. 17.
1994 *Mississippina pacifica* Parr - Loeblich & Tappan, p. 137; pl. 273, figs 8-10.
Subfamily Stomatorbininae Saidova, 1981
Stomatorbina Dorreen, 1948
Stomatorbina concentrica (Parker & Jones, 1864) - p. 213
1864 *Pulvinulina concentrica* - Parker & Jones in Brady, p. 470; pl. 48, fig. 14.
1884 *Pulvinulina concentrica* Parker & Jones - Brady, p. 686; pl. 105, fig. 1.
1992b *Stomatorbina concentrica* (Parker & Jones) - Hatta & Ujiié, p. 180; pl. 27, figs 1-8.
1999 *Stomatorbina concentrica* (Parker & Jones) - Hayward *et al.*, p. 139; pl. 10, figs 7-8.
+*Stomatorbina* sp. 1 - p. 213
Family Bueningiidae Saidova, 1981
Bueningia Finlay, 1939
+*Bueningia creeki* Finlay, 1939 - p. 188
1939b *Bueningia creeki* - Finlay, p. 123; pl. 14, figs 82-84.
1965 *Bueningia creeki* Finlay - Todd, p. 28; pl. 8, fig. 4.
1994 *Bueningia creeki* Finlay - Loeblich & Tappan, p. 137; pl. 274, figs 1-9.
Family Pegidiidae Heron-Allen & Earland, 1928
Pegidia Heron-Allen & Earland, 1928
Pegidia dubia (d'Orbigny, in Fornasini, 1908) - p. 245
1908 *Rotalia dubia* - d'Orbigny, in Fornasini, p. 46; pl. 1, fig. 14.
1928 *Pegidia dubia* (d'Orbigny) - Heron-Allen & Earland, p. 290-291; pl. 1, figs 8-15.
1988 *Pegidia dubia* (d'Orbigny) - Loeblich & Tappan, p. 556; pl. 602, figs 7-9.
1994 *Pegidia dubia* (d'Orbigny) - Loeblich & Tappan, p. 137; pl. 275, figs 1-6.
Pegidia lacunata McCulloch, 1977 - p. 245
1977 *Pegidia lacunata* - McCulloch, p. 347; pl. 154, fig. 2.
1994 *Pegidia lacunata* McCulloch - Loeblich & Tappan, Timor Sea, p. 137; pl. 274, figs 10-12.
2009 *Pegidia lacunata* McCulloch - Margerel, http://147.94.111.32/Collection/forams-index.php?
Sphaeridia Heron-Allen & Earland, 1928
+*Sphaeridia papillata* Heron-Allen & Earland, 1928 - p. 161
1928 *Sphaeridia papillata* - Heron-Allen & Earland, p. 294; pl. 2, figs 27-33; pl. 3, figs 34-37.
2009 *Sphaeridia papillata* Heron-Allen & Earland - Margerel, http://147.94.111.32/Collection/forams-index.php?

Family Discorbidae Ehrenberg, 1838

Crouchina McCulloch, 1977

+*Crouchina*? cf. C. *taguscovensis* McCulloch, 1977 - p. 193

1977 *Crouchina taguscovensis* - McCulloch, p. 296; pl. 121, figs 13-15.

1988 *Orbitina taguscovensis* McCulloch - Loeblich & Tappan, p. 558.

Discorbis Lamarck, 1804

****Discorbis subvesicularis*** Collins

Orbitina Sellier de Civrieux, 1977

+*Orbitina carinata* Sellier de Civrieux, 1977 - p. 205

1977 *Orbitina carinata* - Sellier de Civrieux, p. 29; pl. 18, figs 3-10.

1994 *Orbitina carinata* Sellier de Civrieux - Loeblich & Tappan, p. 137; pl. 275, figs 7-12.

Rotorbinella Bandy, 1944

Rotorbinella lepida McCulloch, 1977 - p. 212

1977 *Rotorbinella lepida* - McCulloch, p. 360; pl. 116, fig. 4.

1993 *Rotorbinella* cf. *R. lepida* McCulloch - Hottinger *et al*., p. 108; pl. 141, figs 1-7.

1994 *Gavelinopsis praegeri* (Heron-Allen & Earland) - Loeblich & Tappan, p. 138; pl. 281, figs 1-3.

? 2009 *Rotorbinella* sp. 1 - Parker, p. 727; figs 511a-h, 512a-j.

Rotorbis Sellier de Civrieux, 1977

Rotorbis auberi (d'Orbigny, 1839) [*Discorbis mirus*] - p. 212

1839a *Rosalina auberi* - d'Orbigny, p. 94; pl. 4, figs 5-8.

1977 *Discorbis auberi* (d'Orbigny) - Le Calvez, p. 77; pl. 9, figs 5-8.

1987 *Discorbis mira* (Cushman) - Baccaert, p. 198; pl. 78, figs 2-5.

1992 *Rotorbis auberi* (d'Orbigny) - Hansen & Revets, p. 175; pl. 1, figs 1-3, 7.

+*Rotorbis pacifica* (Hofker, 1951) - p. 212

1951 *Discopulvinulina pacifica* - Hofker, p. 452; figs 307-309.

1994 *Rotorbis pacifica* (Hofker) - Loeblich & Tappan, p. 138; pl. 277, figs 7-11.

Family Neoeponididae Loeblich & Tappan, 1994

Neoeponides Reiss, 1960

+*Neoeponides bradyi* Le Calvez, 1974 - p. 204

1884 *Pulvinulina berthelotiana* (d'Orbigny) - Brady, p. 701; pl. 106, fig. 1.

1974 *Neoeponides bradyi* - Le Calvez, p. 64.

1994 *Neoeponides bradyi* Le Calvez - Loeblich & Tappan, p. 138; pl. 279, figs 1-9.

2001 *Neoeponides bradyi* Le Calvez - Szareck, p. 134; pl. 20, figs 5-7.

Neoeponides procerus (Brady, 1884) - p. 204

1884 *Pulvinulina procera* - Brady, p. 698; pl. 105, fig. 7.

1994 *Neoeponides procerus* (Brady) - Loeblich & Tappan, p. 138; pl. 280, figs 1-4.

+*Neoeponides schreibersii* (d'Orbigny, 1846) - p. 204

1846 *Rotalina schreibersii* - d'Orbigny, p. 154; pl. 8. figs 4-6.

1915 *Pulvinulina schreibersii* (d'Orbigny) - Cushman, p. 62; text fig. 59.

1992 *Neoeponides schreibersii* (d'Orbigny) - Hansen & Revets, p. 176; pl. 7, figs 1-3, 7, 8.

Strebloides Bermúdez & Seiglie, 1963

+*Strebloides advenus* (Cushman, 1922) - p. 214

1884 *Discorbina rosacea* (d'Orbigny) - Brady, (non *Rotalia rosacea* d'Orbigny, 1826), p. 644; pl. 87, fig. 1.

1922a *Discorbis advena* - Cushman, p. 40.

1988 *Strebloides advenus* (Cushman) - Loeblich & Tappan, p. 559; pl. 608, figs 1-5.

1992 *Strebloides advenus* (Cushman) - Hansen & Revets, p. 176; pl. 5, figs 1-3, 7-8.

Family Rosalinidae Reiss, 1963

Gavelinopsis Hofker, 1951

****Gavelinopsis lobatulus*** (Parr, 1950)

****Gavelinopsis praegeri*** (Heron-Allen & Earland, 1913)

Neoconorbina Hofker, 1951

+*Neoconorbina albida* McCulloch, 1977 [*Neoconorbina crustata* (Cushman)] - p. 203

1977 *Neoconorbina albida* - McCulloch, p. 353; pl. 122, fig. 8.

1994 *Neoconorbina albida* McCulloch - Loeblich & Tappan, p. 139; pl. 280, figs 5-9.

2009 *Neoconorbina crustata* (Cushman) - Margerel, http://147.94.111.32/Collection/forams-index.php?

Neoconorbina clara (Cushman, 1934) [*Tretomphaloides clarus*] - p. 203

1934 *Tretomphalus clarus* - Cushman, p. 99, pl. 11, figs 6a-c; pl. 12, figs 16-17.

1985 *Neoconorbina (Tretomphaloides) clarus* (Cushman) - Banner *et al*., p. 166.

1993 *Tretomphaloides clara* (Cushman) - Hottinger *et al*., p. 112; pl. 145, figs 6-11.

Neoconorbina concinna (Brady, 1884) [*Tretomphaloides concinnus*] - p. 203
1884 *Discorbina concinna* - Brady, p. 646; pl. 90, figs 7-8.
1934 *Tretomphalus concinnus* (Brady) - Cushman, p. 96, pl. 11, figs 8-9; pl. 12, figs 13-15.
1965 *Rosalina concinna* (Brady) - Todd, p. 10; pl. 4, fig. 3.
1985 *Neoconorbina (Tretomphaloides) concinna* (Brady) - Banner *et al*., p. 166; pl. 1, figs 6-10; pl. 2, figs 1, 3.
****Neoconorbina orbicularis*** (Terquem)
****Neoconorbina pacifica*** Hofker
****Neoconorbina terquemi*** (Rzehak, 1888)
Neoconorbina tuberocapitata (Chapman, 1900) - p. 203
1900 *Discorbina tuberocapitata* - Chapman, p. 11; pl. 1, fig. 9.
1954 *Discorbis tuberocapitata* (Chapman) - Cushman, Todd & Post, p. 359; pl. 89, fig. 16.
1965 *Neoconorbina tuberocapitata* (Chapman) - Todd, p. 17; pl. 1, figs 8-9.
1992 *Neoconorbina tuberocapitata* (Chapman) - Hatta & Ujiié, p. 183; pl. 32, fig. 3.
+*Neoconorbina* sp. 1 - p. 203
+*Neoconorbina* sp. 2 - p. 204
Planodiscorbis Bermúdez, 1952
+*Planodiscorbis rarescens* (Brady, 1884) - p. 208
1884 *Discorbina rarescens* - Brady, p. 651; pl. 90, figs 2-3.
1952 *Planodiscorbis rarescens* (Brady) - Bermudez, p. 651.
1992 *Planodiscorbis racescens* (Brady) - Hansen & Revets, p. 177; pl. 7, figs 4-6, 9.
2010 *Planodiscorbis racescens* (Brady) - Hayward *et al*., p. 230; pl. 32, figs 1-6.
Rosalina d'Orbigny, 1826
Rosalina bradyi Cushman, 1915 - p. 211
1915 *Rosalina globularis* d'Orbigny var. brabyi - Cushman, p. 12; pl. 8, fig. 1.
1960 *Rosalina bradyi* (Cushman) - Barker; pl. 86, figs 8a-c.
1999 *Rosalina bradyi* (Cushman) - Hayward *et al*., p. 142; pl. 11, fig. 1.
Rosalina floridana (Cushman, 1922) - p. 211
1922a *Discorbis floridana* - Cushman, p. 39; pl. 5, figs 11, 12.
1971 *Rosalina floridana* (Cushman) - Schnitker, p. 210; pl. 5, fig. 19.
1993 *Rosalina floridana* (Cushman) - Sgarrella & Moncharmont-Zei, p. 218; pl. 17, fig. 6.
Rosalina globularis d'Orbigny, 1826 - p. 211
1826 *Rosalina globularis* - d'Orbigny, p. 271; pl. 13, figs 1-4.
1884 *Discorbina globularis* (d'Orbigny) - Brady, p. 643; pl. 86, fig. 13.
1992 *Rosalina globularis* d'Orbigny - Hansen & Revets, p. 177; pl. 6, figs 4-6, 9.
2009 *Rosalina globularis* d'Orbigny - Parker, p. 718; figs 504a-l.
Rosalina orientalis (Cushman, 1925) - p. 212
1915 *Discorbina globularis* (d'Orbigny) - Heron-Allen & Earland, p. 694; pl. 51, figs 36-37.
1925 *Discorbis orientalis* - Cushman, p. 130,
1993 *Rosalina orientalis* (Cushman) - Hottinger *et al.*, p. 111; pl. 143, figs 1-3; pl. 144, figs 1, 2.
2009 *Rosalina* cf. *R. orientalis* (Cushman) - Parker, p. 719; figs 506a-k.
Rosalina rugosa d'Orbigny, 1839 - p. 212
1839c *Rosalina rugosa* - d'Orbigny, p. 42; pl. 2, figs 12-14.
1884 *Discorbina rugosa* (d'Orbigny) - Brady, p. 652; pl. 87, figs 3a-c.
1960 *Valvulineria rugosa* (d'Orbigny) - Barker; pl. 87, figs 3a-c.
2002 *Rosalina rugosa* d'Orbigny - Bicchi *et al*.; fig. 7, n° 20a-c.
****Rosalina suezensis*** (Said)
+*Rosalina* sp. 1 - p. 212
Rotorboides Sellier de Civrieux, 1977
+*Rotorboides granulosus* (Heron-Allen & Earland, 1915) - p. 213
1915 *Discorbina valvulata* var. *granulosa* - Heron-Allen & Earland, p. 695, pl. 52, figs 1-6.
1977 *Rotorboides granulosa* (Heron-Allen & Earland) - Sellier de Civrieux, p. 34, pl. 26, figs 3-8.
1992 *Rotorboides granulosus* (Heron-Allen & Earland) - Hansen & Revets, p. 175; pl. 3, figs 4-6, 8, 9
Tretomphalus Möbius, 1880
****Tretomphalus bulloides*** d'Orbigny
Family *Pannellainidae* Loeblich & Tappan, 1984
Pannellaina Seiglie & Bermúdez, 19676
+*Pannellaina earlandi* (Collins, 1958) - p. 205
1958 *Conorbella earlandi* - Collins, p. 405, pl. 5, fig. 6.
1979 *Stomatorbina* sp. - Zheng, p. 192; pl. 25, fig. 13.
1994 *Pannellaina earlandi* (Collins) - Loeblich & Tappan, p. 140; pl. 290, figs 1-4.
+*Pannellaina* sp. 1 p. 206
1994 *Pannellaina earlandi* (Collins) - Loeblich & Tappan, p. 140; pl. 290, figs 5-7.

Family Bronnimanniidae Loeblich & Tappan, 1984

Bronnimannia Bermudez, 1952

Bronnimannia haliotis (Heron-Allen & Earland, 1924) - p. 188

1924 *Discorbina haliotis* - Heron-Allen & Earland, p. 173; pl. 13, figs 99-101.
1965 *Bronnimannia haliotis* (Heron-Allen & Earland) - Todd, p. 27; pl. 5, fig. 2.
1994 *Bronnimannia haliotis* (Heron-Allen & Earland) - Loeblich & Tappan, p. 141; pl. 287, figs 7-12.

+*Bronnimannia palmerae* (Bermudez, 1935) - p. 188

1935 *Discorbis palmerae* - Bermudez, p. 207; pl. 14, figs 4-7.
1952 *Bronnimannia palmerae* (Bermudez) - Bermudez, p. 39; pl. 40, fig. 5.
1994 *Bronnimannia palmerae* (Bermudez) - Loeblich & Tappan, p. 141; pl. 287, figs 4-6.

Family Rotaliellidae Loeblich & Tappan, 1964

Metarotaliella Grell, 1962

+*Metarotaliella tuvaluensis* Collen, 1998 - p. 201

1998 *Metarotaliella tuvaluensis* - Collen, p. 67; pl. 1, figs 13-15; pl. 3, figs 10-12, 14.

Family Sphaeroidinidae Cushman, 1927

Eusphaeroidina Ujiie, 1990

+*Eusphaeroidina inflata* Ujiie, 1990 - p. 238

1990 *Eusphaeroidina inflata* - Ujiie, p. 29; pl. 11, figs 6-12.

Sphaeroidina d'Orbigny, 1826

Sphaeroidina bulloides d'Orbigny, 1826 [*Spheroidina sp.*] - p. 249

1826 *Sphaeroidina bulloides* - d'Orbigny, p. 267.
1884 *Sphaeroidina bulloides* d'Orbigny - Brady, p. 620; pl. 84, figs 1-5 (not figs 6-7).
1992b *Sphaeroidina bulloides* d'Orbigny - Hatta & Ujiié, p. 184; pl. 33, fig. 4.
1994 *Sphaeroidina bulloides* d'Orbigny - Loeblich & Tappan, p. 141; pl. 289, figs 1-3.

Family Ungulatellidae Seiglie, 1964

Ungulatella Cushman, 1931

+*Ungulatella pacifica* Cushman, 1931 - p. 214

1931b *Ungulatella pacifica* - Cushman, p. 82; pl. 10, figs 11-12.
1992b *Ungulatella pacifica* Cushman - Hatta & Ujiié, p. 181; pl. 31, figs 1a-b.

Ungulatelloides Seiglie, 1964

+*Ungulatelloides* cf. *U. imperialis* Seiglie, 1964 - p. 214

1964 *Ungulatelloides imperialis* - Seiglie, p. 509; pl. 5, figs 5a-b, 6-8.
1977 *Heteropatellina* cf. *frustratiformis* - McCulloch, p. 280; pl. 113, fig. 4.
1979 *Ungulatelloides imperialis* Seiglie - Zheng, p. 174; pl. 21, figs 14a-c.
2009 *Ungulatelloides frustratiformis* McCulloch - Parker, p. 754; figs 529a-h.

+*Ungulatelloides*? sp. 1 - p. 214

Superfamily Glabratellacea Loeblich & Tappan, 1964

Family Glabratellidae Loeblich & Tappan, 1964

Angulodiscorbis Uchio 1953

Angulodiscorbis pyramidalis (Heron-Allen & Earland, 1924) [= *Glabratella quadrangularis* (Uchio)] - p. 186

1924 *Discorbina pyramidalis* - Heron-Allen & Earland, p. 634; pl. 37, figs 56-61.
1977 *Angulodiscorbis pyramidalis* (Heron-Allen & Earland) - Buzas *et al*., p. 91.
1984 *Glaratella pyramidalis* (Heron-Allen & Earland) - Margerel, p. 77; pl. 24, figs 10-11.

+*Angulodiscorbis tobagoensis* McCulloch, 1981 - p. 186

1981 *Angulodiscorbis* (?) *tobagoensis* - McCulloch, p. 145; pl. 49, figs 19-20b; pl. 50, figs 1-3.

Conorbella Hofker, 1951

+*Conorbella imperatoria* (d'Orbigny, 1846) - p. 193

1846 *Rosalina imperatoria* - d'Orbigny, p. 176, pl. 10, figs 16-18.
1991 *Conorbella imperatoria* (d'Orbigny) - Cimerman & Langer, p. 68; pl. 72, figs 9-11.
1993 *Schackoinella imperatoria* (d'Orbigny) - Sgarrella & Moncharmont-Zei, p. 222; pl. 18, figs 5-6.
2006 *Conorbella imperatoria* (d'Orbigny) - Oflaz, p. 220; pl. 8, figs 3-4.

Conorbella patelliformis erecta (Sidebottom)

Conorbella pulvinata (Brady, 1884) - p. 193

1884 *Discorbina pulvinata* - Brady, p. 650; pl. 88, fig. 10.
1992b *Conorbella pulvinata* (Brady) - Hatta & Ujiié, p. 184; pl. 34, fig. 1.
1994 *Conorbella pulvinata* (Brady) - Loeblich & Tappan, p. 141; pl. 291, figs 11-13.
1995 *Conorbella pulvinata* (Brady) - Yassini & Jones, p. 161; figs 740, 742.

Glabratella Dorreen, 1948

+*Glabratella margaritaceus* (Earland, 1933) - p. 197

1933 *Discorbis margaritaceus* - Earland, p. 125; pl. 4, figs 23-25.
1999 *Glabratella margaritaceus* (Earland) - Hayward *et al*., p. 144; pl. 11, figs 26-27.

Glabratella wiesneri (Parr)

Glabratellina Seiglie & Bermúdez, 1965

+*Glabratellina kermadecensis* Hayward *et al.*, 1999 - p. 197

1999 *Glabratellina kermadecensis* - Hayward *et al*., p. 145; pl. 11, figs 23-25.

Glabratellina tabernacularis (Brady, 1881) [*Glabratella tabernacularis*] - p. 197

1881 *Discorbina tabernacularis* - Brady, p. 65.

1884 *Discorbina tabernacularis* Brady - Brady, p. 648; pl. 89, figs 5-7.

1915 *Discorbis tabernacularis* (Brady) - Cushman, p. 18, text fig. 20; pl. 5, fig. 4.

1995 *Glabratellina tabernacularis* (Brady) - Yassini & Jones, p. 159; figs 737, 741.

Glabratellina sp. 1 - p. 197

Murrayinella Farias, 1977

Murrayinella globosa (Millet, 1903) [*Murrayinella erinacea*] - p. 202

1903b *Discorbina imperatoria* (d'Orbigny) var. *globosa* - Millet, p. 701; pl. 7, figs 6a-c.

1915 *Rotalia erinacea* - Heron-Allen & Earland, p. 720; pl. 53, figs 23-26.

1977 *Murrayinella erinacea* (Heron-Allen & Earland) - Farias, p. 343; pl. 1, fig. 7.

1994 *Schackoinella globosa* (Millet) - Loeblich & Tappan, p. 142; pl. 294, figs 1-10.

2000 *Murrayinella globosa* (Millett) - Nomura & Takayanagi, p. 174; fig. 1 nos 1-8.

+*Murrayinella murrayi* (Heron-Allen & Earland, 1915) - p. 202

1915 *Rotalia murrayi* - Heron-Allen & Earland, p. 721; pl. 53, figs 27-34.

1997 *Murrayinella murrayi* (Heron-Allen & Earland) - Haig, p. 277; fig. 7, nos 11, 12.

2009 *Murrayinella* cf. *M. murrayi* (Heron-Allen & Earland) - Parker, p. 657; figs 464a-k.

Pileolina Bermúdez, 1952

+*Pileolina haigi* Parker, 2009 - p. 207

2009 *Pileolina haigi* - Parker, p. 693; figs 487a-j; 488a-i.

+*Pileolina minogasiformis* Ujiié, 1992 - p. 207

1988 *Glabratella patelliformis* - Cabioch, pl. 18, figs 9-10.

1992b *Discorbinoides minogasiformis* - Ujiié, in Hatta & Ujiié, p. 185, pl. 24, figs 2-3.

1994 *Discorbinoides minogasiformis* Ujiié - Loeblich & Tappan, p. 141; pl. 291, figs 1-10.

2009 *Discorbinoides ? minogasiformis* Ujiié - Parker, p. 562; figs 398a-k.

Pileolina patelliformis (Brady, 1884) [*Glabratella patelliformis*] - p. 208

1884 *Discorbina patelliformis* - Brady, p. 647, pl. 88, figs 3a-c.

1999 *Pileolina patelliformis* (Brady) - Hayward *et al*., p. 147; pl. 12, figs 10-12.

+*Pileolina zealandica* Vella, 1957 - p. 208

1957 *Pileolina zealandica* - Vella, p. 37, pl. 8, figs 175-176.

1999 *Pileolina zealandica* Vella - Hayward *et al*., p. 148; pl. 12, figs 16-18.

+*Pileolina* sp. 1 - p. 208

+*Pileolina* sp. 2 - p. 208

+*Pileolina* sp. 3 - p. 208

Planoglabratella Sieglie & Bermúdez, 1965

Planoglabratella opercularis (d'Orbigny, 1826) - p. 208

1826 *Rosalina opercularis* - d'Orbigny, p. 271, no 7.

1915 *Discorbis opercularis* (d'Orbigny) - Cushman, p. 18, text fig. 21; pl. 11, fig. 3.

? 1999 *Planoglabratella opercularis* (d'Orbigny) - Hayward *et al*., p. 148; pl. 13, figs 1-3.

Family Heronalleniidae Loeblich & Tappan, 1986

Heronallenia Chapman & Parr, 1931

+*Heronallenia laevis* Parr, 1950 - p. 198

1950 *Heronallenia laevis* - Parr, p. 357; pl. 14, fig. 8.

1979 *Heronallenia laevis* Parr - Zheng, p. 173; pl. 19, fig. 9.

1994 *Heronallenia laevis* Parr - Loeblich & Tappan, p. 143; pl. 297, figs 10-12.

+*Heronallenia lingulata* (Burrows & Holland, 1896) - p. 198

1896 *Discorbina lingulata* - Burrows & Holland, *in* Jones, p. 297; pl. 7, figs 33a-c.

1999 *Heronallenia lingulata* (Burrows & Holland) - Hayward *et al*, p. 148; pl. 13, figs 4-6.

***Heronallenia otukai* Uchio**

+*Heronallenia polita* Parr, 1950 - p. 198

1950 *Heronallenia polita* - Parr, p. 358; pl. 14, fig. 9.

1994 *Heronallenia polita* Parr - Loeblich & Tappan, p. 143; pl. 296, figs 13-18.

Family Buliminoididae Seiglie, 1970

Buliminoides Cushman, 1911

Buliminoides williamsonianus (Brady, 1881) - p. 188

1881 *Bulimina williamsoniana* - Brady, p. 56.

1884 *Bulimina williamsoniana* Brady - Brady, p. 408; pl. 51, figs 5, 6.

1900a *Bulimina williamsoniana* Brady - Millett, p. 279; pl. 2, fig. 8.

2009 *Buliminoides williamsonianus* (Brady) - Parker, p. 440; figs 317a-c.

Elongobula Finlay, 1939
Elongobula milletti (Cushman, 1933) [*Floresina milletti*] - p. 194
1933b *Buliminella milletti* - Cushman, p. 78; pl. 8, figs 5-6.
1942 *Buliminella milletti* - Cushman, p. 7; pl. 3, figs 1-2.
+*Elongobula parallela* (Cushman & Parker, 1931) - p. 194
1931 *Buliminella parallela* - Cushman & Parker, p. 13; pl. 3, figs 15a-c.
1993 *Elongobula parallela* (Cushman & Parker) - Revets, p. 262; pl. 3, figs 10-13.
1994 *Floresina durrandi* Revets - Loeblich & Tappan, p. 126, pl. 245, figs 1-6.
2009 *Elongobula parallela* (Cushman & Parker) - Parker, p. 446; figs 322a-l.
Elongobula spicata (Cushman & Parker, 1942) [*Floresina spicata*] - p. 195
1907 *Bulimina elegantissima* d'Orbigny var. *apiculata* - Chapman, p. 30; pl. 4, fig. 77.
1929c *Buliminella apiculata* - Cushman, p. 44; pl. 7, figs 6, 7.
1942 *Buliminella madagascariensis* (d'Orbigny) var. *spicata* - Cushman & Parker, p. 8; pl. 3, figs 5, 6.
1993 *Elongobula spicata* (Cushman & Parker) - Revets, p. 263; pl. 4, figs 6-8.
+*Elongobula* sp. 1 - p. 195
1942 *Buliminella milletti* - Cushman, p. 7; pl. 3, figs 3-4.
+*Elongobula* sp. 2 - p. 195
+*Elongobula* sp. 3 - p. 195
Superfamily Siphoninacea Cushman, 1927
Family Siphoninidae Cushman, 1927
Subfamily Siphonininae Cushman, 1927
Siphonina Reuss, 1850
Siphonina tubulosa Cushman, 1924 - p. 213
1924 *Siphonina tubulosa* - Cushman, p. 40; pl. 13, figs 1-2.
1965 *Siphonina tubulosa* Cushman - Todd, p. 22; pl. 15, fig. 4.
1992b *Siphonina tubulosa* Cushman - Hatta & Ujiié, p. 186; pl. 35, figs 1-2.
2009 *Siphonina tubulosa* Cushman - Parker, p. 731; figs 515a-i.
Subfamily Siphoninoidinae Loeblich & Tappan, 1984
Siphoninoides Cushman, 1927
Siphoninoides echinatus (Brady, 1879) - p. 248
1879 *Planorbulina echinata* - Brady, p. 283; pl. 8, figs 31a-c.
1984 *Truncatulina echinata* (Brady) - Brady, p. 670; pl. 96, figs 9-11, 13-14.
1994 *Siphoninoides echinatus* (Brady) - Loeblich & Tappan, p. 144; pl. 300, figs 7-12.
2009 *Siphoninoides echinatus* (Brady) - Parker, p. 735; figs 516d-l.
Siphoninoides laevigatus (Howchin, 1889) [*Siphoninoides glabrus* (Heron Allen & Earland)] - p. 248
1889 *Truncatulina echinata* (Brady) var. *laevigata* - Howchin, p. 13, pl. 1, fig. 8.
1915 *Truncatulina glabra* - Heron-Allen & Earland, p. 711; pl. 52, figs 41-47.
1992b *Siphoninoides laevigata* (Howchin) - Hatta & Ujiié, p. 186; pl. 35, fig. 4.
1994 *Siphoninoides laevigatus* (Howchin) - Loeblich & Tappan, p. 144; pl. 300, figs 1-4.
Superfamily Discorbinellacea Sigal, 1952 (in Piveteau)
Family Parrelloididae Hofker, 1956
Cibicidoides Thalmann, 1939
Cibicidoides bradyi (Trauth, 1918) [*Cibicides bradyi*] - p. 191
1918 *Truncatulina bradyi* - Trauth, p. 235.
1960 *Cibicides bradyi* (Trauth) - Barker; pl. 95, figs 5a-c.
1995 *Parrelloides bradyi* (Trauth) - Yassini & Jones, p. 168; figs 924-926.
2000 *Cibicidoides bradyi* (Trauth) - Ohkushi *et al*., p. 139; pl. 4, figs 6a-c.
2008 *Gyroidina bradyi* (Trauth) - Lobegeier & Sen Gupta, p. 115; pl. 2, figs 2a–b.
Family Pseudoparrellidae Voloshinova, 1952
Subfamily Pseudoparrellinae Voloshinova, 1952
Epistominella Husezima & Maruhasi, 1944
+*Epistominella exigua* (Brady, 1884) - p. 196
1884 *Pulvinulina exigua* - Brady, p. 696; pl. 103, figs 13-14.
1965 *Epistominella exigua* (Brady) - Todd, p. 30; pl. 10, fig. 1.
1990 *Epistominella exigua* (Brady) - Ujiié, p. 32; pl. 14, fig. 1.
2010 *Epistominella exigua* (Brady) - Hayward *et al*., p. 229; pl. 31, figs 6-10.
Facetocochlea Loeblich & Tappan, 1994
Facetocochlea pulchra (Cushman, 1933) [*Epistominella pulchra*] - p. 196
1933b *Pulvinulinella pulchra* - Cushman, p. 92; pl. 9, fig. 10.
1958 *Pseudoparrella pulchra* (Cushman) - Collins, p. 410.
1965 *Epistominella pulchra* (Cushman) - Todd, p. 31; pl. 10, figs 3-4.
1994 *Facetocochlea pulchra* (Cushman) - Loeblich & Tappan, p. 145; pl. 304, figs 1-10.

Rhaptohelenina Clark, 1993

+*Rhaptohelenina decoratiformis* (McCulloch, 1977) - p. 210

1977 *Svratkina (?) decoratiformis* - McCulloch, p. 410; pl. 159, fig. 5.

1994 *Poroepistominella decoratiformis* (McCulloch) - Loeblich & Tappan, p. 146; pl. 305, figs 1-10.

1994 *Rhaptohelenina decoratiformis* (McCulloch, 1977) - Loeblich & Tappan, p. 172.

2001 *Poroepistominella decoratiformis* (McCulloch) - Szareck, p. 136; pl. 20, figs 16-18.

+*Rhaptohelenina papuanensis* Clark, 1993 - p. 210

1993 *Rhaptohelenina papuanensis* - Clark, p. 899; fig. 1, nos 1-20.

1994 *Poroepistominella sabulensis* - Loeblich & Tappan, p. 146; pl. 306, figs 1-12.

1994 *Rhaptohelenina papuanensis* Clark - Loeblich & Tappan, p. 172.

Subfamily Stetsoniinae Saidova, 1981

Prionotolegna Loeblich & Tappan, 1994

+*Prionotolegna* sp. 1 - p. 231

Family Planulinoididae Saidova, 1981

Planulinoides Parr, 1941

+*Planulinoides polymitarius* Loeblich & Tappan, 1994 - p. 209

1994 *Planulinoides polymitarius* - Loeblich & Tappan, p. 147; pl. 309, figs 10-12.

+*Planulinoides* sp. 1 - p. 209

+*Planulinoides* sp. 2 - p. 209

Family Discorbinellidae Sigal, 1952 (in Piveteau)

Subfamily Discorbinellinae Sigal, 1952 (in Piveteau)

Discorbinella Cushman & Martin, 1935

Discorbinella bertheloti (d'Orbigny, 1839) - p. 194

1839b *Rosalina bertheloti* - d'Orbigny, p. 135; pl. 1, figs 28-30.

1884 *Discorbina bertheloti* (d'Orbigny) - Brady, p. 650; pl. 89, figs 10-12 (ZF 1384).

1994 *Discorbinella bertheloti* (d'Orbigny) - Loeblich & Tappan, p. 147; pl. 309, figs 13-15.

1999 *Discorbinella bertheloti* (d'Orbigny) - Hayward *et al.*, p. 152; pl. 14, figs 1-3.

+*Discorbinella complanata* (Sidebottom, 1918) - p. 194

1918 *Discorbina bertheloti* var. *complanata* - Sidebottom, p. 253; pl. 6, figs 1-3.

1979 *Discorbinella complanata* (Sidebottom) - Hayward & Buzas, p. 50; pl. 8: figs 103-105; pl. 12, figs 151-152.

Colonimilesia McCulloch, 1977

+*Colonimilesia coronata* (Heron-Allen & Earland, 1932) - p. 192

1932b *Discorbis coronata* - Heron-Allen & Earland, p. 416, pl. 14, figs 25-30.

1977 *Colonimilesia obscura* - McCulloch, p. 308, pl. 128, figs 9-11.

1994 *Colonimilesia obscura* McCulloch - Loeblich & Tappan, p. 138, pl. 282, figs 1-6, 3-15.

1999 *Colonimilesia coronata* (Heron-Allen & Earland) - Hayward *et al.*, p. 151, pl. 13, figs 23-25.

Laticarinina Galloway & Wissler, 1927

+*Laticarinina altocamerata* (Heron-Allen & Earland, 1922) - p. 222

1922 *Truncatulina tenuimargo* Brady var. *altocamerata* - Heron-Allen & Earland, p. 209; pl. 7, figs 24-27.

1988 *Laticarinina altocamerata* (Heron-Allen & Earland) - Loeblich & Tappan, p. 578; pl. 631, figs 5-7.

2010 *Laticarinina altocamerata* (Heron-Allen & Earland) - Hayward *et al.*, p. 212; pl. 24, figs 16-18.

***Laticarinina pauperata** (Parker & Jones, 1865)

Milesina McCulloch, 1981

+*Milesina grossepunctata* (Parr, 1945) - p. 201

1945 *Discorbis grossepunctatus* - Parr, p. 210; pl. 10, fig. 4.

1979 *Planodiscorbis grossepunctatus* (Parr) - Zheng, p. 167; pl. 18, figs 1-2.

1988 *Milesina differens* (McCulloch) - Loeblich & Tappan, p. 578; pl. 629, figs 11-13.

1994 *Milesina grossepunctata* (Parr) - Loeblich & Tappan, p. 139; pl. 282, figs 7-12.

Superfamily Planorbulinacea Schwager, 1877

Family Planulinidae Bermúdez, 1952

Planulina d'Orbigny, 1826

+*Planulina ariminensis* d'Orbigny, 1826 - p. 208

1826 *Planulina ariminensis* - d'Orbigny, p. 280; pl. 14, figs 1-3.

1884 *Anomalina ariminensis* (d'Orbigny) - Brady, p. 674; pl. 93, figs 10-11.

2010? *Planulina ariminensis* d'Orbigny - Hayward *et al.*, p. 228; pl. 30, figs 19-22.

+*Planulina floridana* (Cushman, 1919) - p. 209

1919 *Truncatulina floridana* - Cushman, p. 62; pl. 19, fig. 2.

1965 *Cibicides floridanus* (Cushman) - Todd, p. 52; pl. 22, fig. 6.

1994 *Planulina floridana* (Cushman) - Loeblich & Tappan, p. 149; pl. 312, figs 9-14.

***Planulina ornata** (d'Orbigny)

+*Planulina retia* Belford, 1966 - p. 209

1966 *Planulina retia* - Belford, p. 122; pl. 11, figs 1-9.

1994 *Planulina retia* Belford - Loeblich & Tappan, p. 149; pl. 315, figs 1-11; pl. 316, figs 4-7.

2005 *Planulina retia* Belford - Narayan *et al*., p. 134; pl. 4, fig. 35.

+*Planulina* sp. 1 - p. 209

Family Cibicididae Cushman, 1927

Subfamily Cibicidinae Cushman, 1927

Cibicides Montford, 1808

****Cibicides advenum*** (d'Orbigny)

****Cibicides cicatricosus*** (Schwager)

+*Cibicides mabahethi* Said, 1949 - p. 190

1949 *Cibicides mabahethi* - Said, p. 42; pl. 4, fig. 20.

1993 *Cibicides mabahethi* Said - Hottinger *et. al*., p. 115; pl. 151, figs 6-12.

2009 *Cibicides mabahethi* Said - Margerel, http://147.94.111.32/Collection/forams-index.php?

Cibicides pachyderma (Rzehak, 1886) [*Heterolepa pseudoungeriana*] - p. 190

1886 *Truncatulina pachyderma* - Rzehak, p. 87; pl. 1, fig. 5.

1922c *Truncatulina pseudoungeriana* - Cushman, p. 97; pl. 20, fig. 9.

1986 *Cibicidoides pachyderma* (Rzehak) - van Morkhoven *et al.*, p. 68; pl. 22, fig. 1.

2010 *Cibicides pachyderma* (Rzehak) - Hayward *et al*., p. 209; pl. 22, figs 13-15.

Cibicides pseudolobatulus Perelis & Reiss, 1975 - p. 190

1975 *Cibicides pseudolobatulus* - Perelis & Reiss, p. 77; pl. 4, figs 1-7.

1993 *Cibicides pseudolobatulus* Perelis & Reiss - Hottinger *et al*., p. 116; pl. 153, figs 1-6.

Cibicides refulgens Montfort, 1808 - p. 191

1808 *Cibicides refulgens* - Montfort, p. 123; text fig. p. 122.

1991 *Cibicides refulgens* Montfort - Cimerman & Langer, p. 70; pl. 75, figs 5-9.

1994 *Cibicides refulgens* Montfort - Loeblich & Tappan, p. 149, pl. 318, figs 7-9.

****Cibicides robertsonianus*** (Brady)

+*Cibicides tabaensis* Perelis & Reiss, 1975 - p. 191

1975 *Cibicides tabaensis* - Perelis & Reiss, p. 76, pl. 3, fig. 4; pl. 6, figs 1-6.

1993 *Cibicides tabaensis* Perelis & Reiss - Hottinger *et al*., p. 116; pl. 152, figs 7-11.

+*Cibicides tenuimargo* (Brady, 1884) - p. 191

1884 *Truncatulina tenuimargo* - Brady, p. 662, pl. 93, fig. 3.

1994 *Cibicides tenuimargo* (Brady) - Loeblich & Tappan, p. 149; pl. 316, figs 1-3; pl. 317, figs 1-10.

Fontbotia Gonzales-Donoso & Linares, 1970

Fontbotia wuellerstorfi (Schwager, 1866) - p. 196

1866 *Anomalina wuellerstorfi* - Schwager, p. 258; pl. 7, figs 105-107.

1884 *Truncatulina wuellerstorfi* (Schwager) - Brady, p. 662; pl. 93, figs 8-9.

1931a *Planulina wuellerstorfi* (Schwager) - Cushman, p. 110; pl. 19, figs 5-6.

1951 *Cibicides wuellerstorfi* (Schwager) - Hofker, p. 350; text fig. 237.

1994 *Cibicidoides wuellerstorfi* (Schwager) - Jones, p. 98; pl. 93, figs 8-9.

1994 *Fontbotia wuellerstorfi* (Schwager) - Loeblich & Tappan, p. 150; pl. 319, figs 7-12.

Lobatula Fleming, 1828

Lobatula lobatula Walker & Jacob in Kanmacher, 1798 - p. 201

1798 *Nautilus lobatulus* - Walker & Jacob in Kanmacher, p. 642; pl. 14, fig. 36.

1884 *Truncatulina lobatula* d'Orbigny - Brady, p. 660; pl. 92, fig. 10; pl. 93, figs 1, 4-5; pl. 115, figs 4-5.

1951a *Cibicides lobatulus* (Walker & Jacob) - Asano, p. 17; figs 36-38.

1994 *Lobatula lobatula* (Walker & Jacob) - Loeblich & Tappan, p. 150; pl. 316, figs 8-11; pl. 319, figs 1-7.

Lobatula mayori (Cushman, 1924) - p. 201

1924 *Truncatulina mayori* - Cushman, p. 39; pl. 12, figs 3-4.

1993 *Cibicides* (?) *mayori* Cushman - Hottinger *et al*., p. 116; pl. 152, figs 1-6.

Paracibicides Perelis & Reiss, 1975

Paracibicides edomicus Perelis & Reiss, 1975 - p. 206

1975 *Paracibicides edomica* - Perelis & Reiss, p. 94; pl. 9, figs 5, 6.

1993 *Paracibicides edomica* Perelis & Reiss - Hottinger *et al.*, p. 117; pl. 155, figs 1-8.

2009 *Paracibicides* cf. *P. edomica* Perelis & Reiss - Parker, p. 679; figs 479a-e.

Subfamily Annulocibicidinae Saidova, 1981

Planorbulinoides Cushman, 1928

Planorbulinoides retinaculata Parker & Jones, 1862 - p. 246

1862 *Planorbulinoides retinaculata* - Parker & Jones in Carpenter, Parker & Jones, p. 209.

1865 *Planorbulinoides retinaculata* Parker & Jones - Parker & Jones, p. 421; pl. 19, fig. 2.

1988 *Planorbulinoides retinaculata* Parker & Jones - Loeblich & Tappan, p. 586; pl. 642, fig. 1.

1993 *Planorbulinoides retinaculata* Parker & Jones - Hottinger *et al*., p. 127; pl. 172, figs 1-9.

Subfamily Stichocibicidinae Saidova, 1981
Dyocibicides Cushman & Valentine, 1930
****Dyocibicides biserialis*** Cushman & Valentine
Rectocibicidella McLean, 1956
+*Rectocibicidella robertsi* McLean, 1956 - p. 247
1956 *Rectocibicidella robertsi* - McLean, p. 370; pl. 49, figs 12-13.
1988 *Diocibicides robertsi* (McLean) - Loeblich & Tappan, p. 585; pl. 639, figs 4-7.
1994 *Rectocibicidella robertsi* McLean - Loeblich & Tappan, p. 151; pl. 323, figs 8-10.

Family Planorbulinidae Schwager, 1877
Subfamily Caribeanellinae Saidova, 1981
Caribeanella Bermúdez, 1952
****Caribeanella katasensis*** (Ujiie)
+*Caribeanella elatensis* Perelis & Reiss, 1975 - p. 190
1975 *Caribeanella elatensis* - Perelis & Reiss, p. 94; pl. 11, figs 1-7; pl. 12, figs 1-6.
1993 *Caribeanella elatensis* Perelis & Reiss - Hottinger *et al*., p. 118; pl. 156, figs 1-8.
1994 *Caribeanella philippinensis* McCulloch - Loeblich & Tappan, 1994, p. 151; pl. 324, figs 1-9.
Subfamily Planorbulininae Schwager, 1877
Cibicidella Cushman, 1927
****Cibicidella variabilis*** (d'Orbigny)
Planorbulina d'Orbigny, 1826
****Planorbulina mediterranensis*** d'Orbigny
Planorbulinella Cushman, 1927
Planorbulinella larvata (Parker & Jones, 1865) - p. 246
1865 *Planorbulina larvata* - Parker & Jones, p. 379; pl. 19, figs 3a, b.
1987 *Planorbulinella larvata* (Parker & Jones) - Baccaert, p. 221; pl. 88, figs 4, 5.
1994 *Planorbulinella larvata* (Parker & Jones) - Loeblich & Tappan, p. 152; pl. 327, figs 1-7.
2009 *Planorbulinella larvata* (Parker & Jones) - Parker, p. 709; figs 498a-f.

Family Cymbaloporidae Cushman, 1927
Subfamily Cymbaloporinae Cushman, 1927
Cymbaloporella Cushman, 1927
Cymbaloporella tabellaeformis (Brady, 1884) - p. 235
1884 *Cymbalopora tabellaeformis* - Brady, p. 637, pl. 102, figs 15-18.
1987 *Cymbaloporella tabellaeformis* (Brady) - Baccaert, p. 224, 225, pl. 90, figs 1-5.
1993 *Cymbaloporella tabellaeformis* (Brady) - Hottinger *et al*., p. 119; pl. 159, figs 1-6.
2009 *Cymbaloporella tabellaeformis* (Brady) - Parker, p. 548; figs 389a-j, 390a-e.
Cymbaloporetta Cushman, 1928
Cymbaloporetta bradyi (Cushman, 1915) - p. 236
1915 *Cymbalopora poeyi* (d'Orbigny) var. *bradyi* - Cushman, p. 25, pl. 10, fig. 2; pl. 14, fig. 2.
1992b *Cymbaloporetta bradyi* (Cushman) - Hatta & Ujiié, p. 190, pl. 39, fig. 4; pl. 40, fig. 1.
1994 *Cymbaloporetta bradyi* (Cushman) - Loeblich & Tappan, p. 152, pl. 327, figs 8-10; pl. 328, figs 1-3.
1999 *Cymbaloporetta bradyi* (Cushman) - Hayward *et al.*, p. 155; pl. 14, figs 28-29.
Cymbaloporetta grandis (Cushman, 1934) - p. 236
1934 *Tretomphalus grandis* - Cushman, p. 95; pl. 11, fig. 10; pl. 12, figs 23-24.
1971 *Tretomphalus bulloides* (d'Orbigny) *grandis* form - Todd, p. 167.
Cymbaloporetta plana (Cushman, 1924) - p. 236
1924 *Tretomphalus bulloides* (d'Orbigny) var. *plana* - Cushman, p. 36, pl. 10, fig. 8.
1934 *Tretomphalus planus* Cushman - Cushman, p. 94, pl. 11, fig. 11; pl. 12, figs 18-22.
1965 *Tretomphalus planus* Cushman - Todd, p. 40; pl. 18, fig. 1.
1971 *Tretomphalus bulloides* (d'Orbigny) *planus* form Cushman - Todd, p. 166.
Cymbaloporetta squammosa (d'Orbigny, 1839) - p. 236
1839a *Rosalina squammosa* d'Orbigny, p. 91; pl. 3, figs 12-14.
1965 *Cymbaloporetta squammosa* (d'Orbigny) - Todd, p. 38; pl. 20, fig. 3.
1994 *Cymbaloporetta squammosa* (d'Orbigny) - Loeblich & Tappan, p. 152; pl. 328, figs 4-8.
1995 *Cymbaloporetta squammosa* (d'Orbigny) - Yassini & Jones, p. 173, figs 758-761.
+*Cymbaloporetta* sp. 1 - p. 236
? 1994 *Cymbaloporetta squammosa* (d'Orbigny) - Loeblich & Tappan, p. 152; pl. 328, figs 1-3.
+*Cymbaloporetta* sp. 2 - p. 237
1994 *Cymbaloporetta squammosa* (d'Orbigny) - Loeblich & Tappan, p. 152; pl. 328, figs 4-8.
Millettiana Banner, Pereira & Desai, 1985
Millettiana milletti (Heron-Allen & Earland, 1915) - p. 244
1903b *Cymbalopora bulloides* - Millett, p. 697, pl. 7, figs 4a-c.
1915 *Cymbalopora milletti* - Heron-Allen & Earland, p. 689, pl. 51, figs 32-35.

1993 *Millettiana milletti* (Heron-Allen & Earland) - Hottinger *et al.*, p. 120, pl. 160, figs 9-13.
2009 *Millettiana milletti* (Heron-Allen & Earland) - Parker, p. 640; figs 452a-k, 453a-g.

Family Victoriellidae Chapman & Crespin, 1930

Subfamily Carpenteriinae Saidova, 1981

Carpenteria Gray, 1858

+*Carpenteria monticularis* Carter, 1877 - p. 190

1877b *Carpenteria monticularis* - Carter, p. 211; pl. 13, figs 9-12.
1884 *Carpenteria monticularis* Carter - Brady, p. 677; pl. 98, figs 13-15; pl. 99, figs 1-5.
1994 *Carpenteria monticularis* Carter - Loeblich & Tappan, 1994, p. 153; pl. 391, fig. 5.

+*Carpenteria* cf. *C. utricularis* (Carter, 1876) - p. 190

1876 *Polytrema utriculare* - Carter, p. 210; pl. 13, figs 11-16.
1884 *Carpenteria utricularis* (Carter) - Brady, p. 678, pl. 99, figs 6-7; pl. 100, figs 1-4.
1921 *Carpenteria utricularis* (Carter) - Cushman, p. 360; pl. 73, figs 4-5.
1994 *Carpenteria utricularis* (Carter) - Loeblich & Tappan, 1994, p. 153; pl. 330, figs 4-12.

Subfamily Rupertuninae Loeblich & Tappan, 1961

Biarritzina Loeblich & Tappan, 1964

Biarritzina proteiformis (Goës, 1882) [*Carpenteria proteiformis*] - p. 235

1882 *Carpenteria balaniformis* var. *proteiformis* - Goës, p. 94; pl. 6, figs 208-214; pl. 7, figs 215-219.
1884 *Carpenteria proteiformis* Goës - Brady, p. 679, pl. 97, figs 8-14.
1992b *Biarritzina proteiformis* (Goës) - Hatta & Ujiié, p. 191; pl. 41, fig. 1.
1994 *Biarritzina proteiformis* (Goës) - Loeblich & Tappan, p. 153; pl. 331, figs 4-8.

Rupertina Loeblich & Tappan, 1961

+*Rupertina pustulosa* Hatta, 1992 - p. 213

1992b *Rupertina pustulosa* - Hatta in Hatta & Ujiié, p. 192; pl. 41, figs 2-4.
1994 *Rupertina pustulosa* Hatta - Loeblich & Tappan, p. 154; p1. 331, figs 2-4.
1999 *Rupertina pustulosa* Hatta - Hayward *et al.*, p. 155; p1. 15, fig. 1.

Superfamily Acervulinacea Schultze, 1854

Family Acervulinidae Schultze, 1854

Acervulina Schultze, 1854

****Acervulina inhaerens*** Schultze, 1854

Acervulina mabahethi (Said, 1949) - p. 234

1949 *Planorbulina mabahethi* - Said, p. 44, pl. 4, fig. 26.
1993 *Acervulina mabahethi* (Said) - Hottinger *et al.*, p. 122; pl. 165, figs 1-7; pl. 166, figs 1-8.
1994 *Planorbulina mabahethi* Said - Loeblich & Tappan, p. 152; pl. 323, figs 11-13.
2009 *Acervulina mabahethi* (Said) - Parker, p. 475; figs 341a-i; 342a-j; 343a-i.

Gypsina Carter, 1877

****Gypsina fimbriata*** (Chapman)

+*Gypsina plana* (Carter, 1876) - p. 240

1876 *Polytrema planum* - Carter, p. 211; pl. 13, figs 18-19.
1957 *Acervulina inhaerens* Scultze *plana* (Carter) - Hanzawa, p. 67; pl. 24, figs 2a-c.
1993 *Gypsina plana* (Carter) - Hottinger *et al.*, p. 123; pl. 167, figs 1-12; pl. 168, figs 1-6.

Gypsina vesicularis (Parker & Jones, 1860) - p. 241

1860 *Orbitolina vesicularis* - Parker & Jones, p. 31.
1884 *Gypsina vesicularis* (Parker & Jones) - Brady, p. 718; pl. 101, figs 9-12.
1988 *Gypsina vesicularis* (Parker & Jones) - Loeblich & Tappan, p. 597; pl. 661, figs 1-6.
1994 *Gypsina vesicularis* (Parker & Jones) - Loeblich & Tappan, p. 154; pl. 333, figs 1-9; pl. 334, figs 1-3.

Planogypsina Bermúdez, 1952

Planogypsina acervalis (Brady, 1884) - p. 246

1884 *Planorbulina acervalis* - Brady, p. 657, pl. 92, fig. 4.
1987 *Planorbulina acervalis* Brady - Baccaert, p. 220; pl. 88, figs 1-3.
1993 *Planogypsina acervalis* (Brady) - Hottinger *et al.*, p. 125; pl. 169, figs 1-9; pl. 170, figs 1-8.
2009 *Planogypsina acervalis* (Brady) - Parker, p. 697; figs 490a-d; 491a-i.

+*Planogypsina squamiformis* (Chapman, 1901) - p. 246

1901 *Gypsina vesicularis* (Parker & Jones) var. *squamiformis* - Chapman, p. 200; pl. 19, fig. 15.
1964 *Planogypsina squamiformis* (Chapman) - Loeblich & Tappan, p. C698; fig. 568.
1993 *Planogypsina* cf. *P. squamiformis* (Chapman) - Hottinger *et al.*, p. 126; pl. 171, figs 1-9.

+*Planogypsina*? sp. 1 - p. 246

Sphaerogypsina Galloway, 1933

Sphaerogypsina globula (Reuss, 1848) - p. 249

1848 *Ceriopora globulus* - Reuss, p. 33; pl. 5, fig. 7.
1860 *Orbitolina concava* Lamarck var. *vesicularis* - Parker & Jones, p. 31, 38.
1993 *Sphaerogypsina globulus* (Reuss) - Hottinger *et al.*, p. 128; pl. 173, figs 1-10.
2009 *Sphaerogypsina globula* (Reuss) - Parker, p. 736, figs 517a-j.

Family Homotrematidae Cushman, 1927

Homotrema Hickson, 1911

Homotrema rubra (Lamarck, 1816) - p. 241

1816 *Millepora rubra* - Lamarck, p. 202.

1993 *Homotrema rubra* (Lamarck) - Hottinger *et al.*, p. 128; pl. 174, figs 1-6; pl. 175, figs 1-8.

1994 *Homotrema rubrum* (Lamarck) - Loeblich & Tappan, p. 154; pl. 335, figs 1-4.

2009 *Homotrema rubra* Lamarck - Parker, p. 626; figs 444a-i, 445a-c, 446a-e.

Miniacina Galloway, 1933

Miniacina miniacea (Pallas, 1766) - p. 244

1766 *Millepora miniacea* - Pallas, p. 251.

1884 *Polytrema miniacea* (Pallas) - Brady, p. 721; pl. 100, figs 5-9; pl. 101, fig. 1.

1994 *Miniacina miniacea* (Pallas) - Loeblich & Tappan, p. 155; pl. 335, figs 5-6.

+*Miniacina sublarvata* (Hatta, 1992) - p. 244

1992 *Planorbulinella? sublarvata* - Hatta, in Hatta & Ujiié, p. 189; pl. 38, figs 4-6; pl. 39, figs 1a-c.

Sporadotrema Hickson, 1911

+*Sporadotrema cylindrica* (Carter, 1880) - p. 249

1880 *Polytrema cylindricum* Carter, p. 441; pl. 18, fig. 1

1911 *Sporadotrema cylindricum* (Carter) - Hickson, p. 447.

1993 *Sporadotrema cylindrica* (Carter) - Hottinger *et al*., p. 130; pl. 161, figs 8-9; pl. 178, figs 1-7; pl. 179, figs 1-8.

1994 *Sporadotrema cylindricum* (Carter) - Loeblich & Tappan, p. 155, pl. 336, figs 1-6.

Superfamily Asterigerinacea d'Orbigny, 1839

Family Epistomariidae Hofker, 1954

Subfamily Epistomariinae Hofker, 1954

Asanonella Huang, 1965

Asanonella tubulifera (Heron-Allen & Earland, 1915) - p. 187

1915 *Truncatulina tubulifera* - Heron-Allen & Earland, p. 710, pl. 52, figs 37-40.

1951 *Alabamina tubulifera* (Heron-Allen & Earland) - Hofker, p. 392; figs 170-273.

1992b *Asanonella tubulifera* (Heron-Allen & Earland) - Hatta & Ujiié, p. 193, 194; pl. 42, figs 1a-c.

2009 *Asanonella tubulifera* (Heron-Allen & Earland) - Parker, p. 514; figs 365a-k, 366a-f.

Monspeliensina Glacon & Lys, 1968

+*Monspeliensina vulpesi* Glaçon & Lys, 1968 - p. 202

1968 *Monspeliensina vulpesi* - Glaçon & Lys, p. 2302; pl. 1, figs 1-3, 5, 7, 9; pl. 2, figs 1-4, 7.

1988 *Monspeliensina vulpesi* Glaçon & Lys - Loeblich & Tappan, p. 601; pl. 668, figs 1-10.

2009 *Monspeliensina* sp. 1 - Parker, p. 649; figs 459a-e, 460a-i.

Subfamily Nuttallidinae Saidova, 1981

Nuttallides Finlay, 1939

+*Nuttallides bradyi* (Earland, 1934) - p. 205

1934 *Eponides bradyi* - Earland, p. 187; pl. 8, figs 36-38.

1988 *Nuttallides bradyi* (Earland) - Loeblich & Tappan, p. 603; pl. 669, figs 17-20.

2010 *Nuttallides bradyi* (Earland) - Hayward *et al.*, p. 215; pl. 25, figs 13-15.

Family Alfredinidae Singh & Kalia, 1972

Epistomaroides Uchio, 1952

Epistomaroides polystomelloides (Parker & Jones, 1865) - p. 195

1865 *Discorbina polystomelloides* - Parker & Jones, p. 421; p1. 19, figs 8a-c.

1988 *Epistomaroides polystomelloides* (Parker & Jones) - Loeblich & Tappan, p. 604; pl. 671, figs 8-13.

1992 *Epistomaroides polystomelloides* (Parker & Jones) - Hatta & Ujiié, p. 194; pl. 42, fig. 2.

1994b *Epistomaroides polystomelloides* (Parker & Jones) - Loeblich & Tappan, p. 156; pl. 339, figs 1-3.

Family Asterigerinatidae Reiss, 1963

Eoeponidella Wickenden, 1949

+*Eoeponidella pulchella* (Parker, 1952) - p. 195

1952 *Pnineaella? pulchella* - Parker, p. 420; pl. 6, figs 18-20.

1988 *Eoeponidella pulchella* (Parker) - Loeblich & Tappan, p. 607; pl. 675, figs 8-11.

Family Amphisteginidae Cushman, 1927

Amphistegina d'Orbigny, 1826

Amphistegina bicirculata Larsen, 1976 - p. 215

1976 *Amphistegina bicirculata* - Larsen, p. 10; pl. 2, figs 1-5; p. 16, text figs 9.2, 10.2.

1993 *Amphistegina bicirculata* Larsen - Hottinger *et al.*, p. 132; pl. 182, figs 1-11; pl. 183, figs 1-7.

Amphistegina lessonii d'Orbigny, 1826 - p. 215

1826 *Amphistegina lessonii* - d'Orbigny, p. 304.

1978 *Amphistegina lessonii* d'Orbigny - Larsen, p. 225; pl. 5, figs 8, 9, 11, 12; pl. 7, fig. 2.

1993 *Amphistegina lessonii* d'Orbigny - Hottinger *et al*., p. 132; pl. 184, figs 1-11; pl. 185, figs 1-7.

2009 *Amphistegina lessonii* d'Orbigny - Parker, p. 498; figs 355a-d.

Amphistegina lobifera Larsen, 1976 - p. 216
1976 *Amphistegina lobifera* - Larsen, p. 4-6, pl. 3, figs 1-5; pl. 7, fig. 3; pl. 8, fig. 3.
1993 *Amphistegina lobifera* Larsen - Hottinger *et al.*, p. 133, pl. 186, figs 1-11; pl. 187, figs 1-7; pl. 188, figs 1-6.
2003 *Amphistegina lobifera* Larsen - Renema, p. 344, figs 9a, b.
2009 *Amphistegina lobifera* Larsen - Parker, p. 498; figs 355e-o.
Amphistegina papillosa Said, 1949 - p. 216
1949 *Amphistegina radiata* (Fichtel & Moll) var. *papillosa* - Said, p. 39; pl. 4, fig. 12.
1976 *Amphistegina papillosa* Said - Larsen, p. 8, pl. 4, figs 1-5; pl. 7, fig. 4; pl. 8, fig. 4.
1992b *Amphistegina papillosa* Said - Hatta & Ujiié, p. 196; pl. 42, fig. 3.
1999 *Amphistegina papillosa* Said - Hayward *et al.*, p. 157; pl. 15, fig. 7.
Amphistegina quoii d'Orbigny, 1826 - p. 216
1826 *Amphistegina quoii* - d'Orbigny, p. 304.
1974 *Amphistegina quoii* d'Orbigny - O'Herne, p. 5; pl. 1, figs 5-7; pl. 7, figs 1-2; pl. 11, figs 1-2.
1985b *Amphistegina quoii* d'Orbigny - Debenay, p. 169; pl. 1, figs 5, 8; pl. 3, figs 2, 4.
1993 *Amphistegina papillosa* Said - Hottinger *et al.*, p. 134, pl. 189, figs 1-10; pl. 190, figs 1-7.
Amphistegina radiata (Fichtel & Moll, 1798) - p. 216
1798 *Nautilus radiata* - Fichtel & Moll, p. 58; pl. 8, figs a-d.
1976 *Amphistegina radiata* (Fichtel & Moll) - Larsen, p. 7-8; pl. 5, figs 1-4; pl. 6, figs 1, 2; pl. 7, fig. 5; pl. 8, fig. 5.
1992b *Amphistegina radiata* (Fichtel & Moll) - Hatta & Ujiié, p. 196; pl. 42, fig. 5; text-figs 1-2.
2009 *Amphistegina radiata* (Fichtel & Moll) - Parker, p. 499; figs 356a-j.
+*Amphistegina* sp. 1 - p. 216
1884 *Amphistegina lessonii* d'Orbigny - Brady, p. 740; pl. 111, fig. 1.
1960 *Amphistegina quoii* d'Orbigny - Barker; pl. 111, fig. 1.

Superfamily Nonionacea Schultze, 1854

Family Nonionidae Schultze, 1854

Subfamily Astrononoininae Saidova 1981

Astrononion Cushman & Edwards, 1937
+*Astrononion novozealandicum* Cushman & Edwards, 1937 - p. 218
1937 *Astrononion novozealandicum* - Cushman & Edwards, p. 35; pl. 3, figs 18a-b.
1999 *Astrononion novozealandicum* Cushman & Edwards - Hayward *et al*., p. 157; pl. 15, figs 8-9.

Fijinonion Hornibrook, 1964
+*Fijinonion fijiense* (Cushman & Edwards, 1937) - p. 222
1884 *Nonionina asterizans* Fichtel & Moll - Brady (not Fichtel & Moll, 1798), p. 728; pl. 109, figs 1-2.
1937 *Astrononion fijiense* - Cushman & Edwards, p. 35, pl. 3, figs 15-16.
1994 not *Fijinonion fijiense* (Cushman & Edwards) - Loeblich & Tappan, p. 159; pl. 346, figs 1-4.
2001 not *Fijinonion fijiense* (Cushman & Edwards) - Szareck, p. 142; pl. 23, figs 7-8.

Subfamily Nonioninae Schultze, 1854

Haynesina Banner & Culver, 1978
+*Haynesina depressula* (Walker & Jacob, 1798) - p. 222
1798 *Nautilus depressulus* - Walker & Jacob, p. 641; fig. 33.
1997 *Haynesina depressula depressula* (Walker & Jacob) - Hayward *et al*., p. 98; pl. 19, figs 4-7.
1999 *Haynesina depressula* (Walker & Jacob) - Hayward *et al*., p. 158; pl. 15, figs 10-11.

Nonion Montfort, 1808
****Nonion* cf. *asterizans*** (Fichtell & Moll)
+*Nonion grossepertusum* Loeblich & Tappan, 1994 - p. 227
1994 *Nonion grossepertusum* - Loeblich & Tappan, p. 157; pl. 342, figs 6-7.
****Nonion pacificum*** (Cushman) as ***Melonis pacificum***
+*Nonion pauperatum* (Balkwill & Wright, 1885) - p. 227
1885 *Nonionina pauperata* - Balkwill & Wright, p. 353; pl. 13, figs 25, 26.
1939 *Nonion pauperatum* (Balkwill & Wright) - Cushman, p. 24; pl. 6, figs 21-23.
1994 *Nonion pauperatum* (Balkwill & Wright) - Loeblich & Tappan, p. 158; pl. 344, figs 1-4.
2001 *Nonion pauperatum* (Balkwill & Wright) - Debenay *et al*., pl. 6, fig. 16.
+*Nonion scaphum* (Fichtel & Moll, 1803) - p. 227
1803 *Nautilus scapha* - Fichtel & Moll, p. 105; pl. 19, figs d-f.
1884 *Nonionina scapha* (Fichtel & Moll) - Brady, p. 730; pl. 109, figs 14-15.
1914 *Nonionina scapha* (Fichtel & Moll) - Cushman, p. 28; pl. 15, fig. 1; pl. 16, figs 3-4.
1960 *Nonion scaphum* (Fichtel & Moll) - Barker, p. 224; pl. 109, figs 14-15.
Nonion subturgidum (Cushman, 1924) - p. 227
1924 *Nonionina subturgida* - Cushman, p. 47; pl. 16, fig. 2.
1994 *Nonion subturgidum* (Cushman) - Loeblich & Tappan, p. 158; pl. 343, figs 1-9.
2000 *Nonion subturgidum* (Cushman) - Revets, p. 371; pl. 4, figs 31, 32.
2009 *Nonion* cf. *N. subturgidum* Cushman - Parker, p. 671; figs 474a-j.

Nonionella Cushman, 1926

****Nonionella bradyi*** Chapman

Nonionoides Saidova, 1975

Nonionoides grateloupi (d'Orbigny, 1839) - p. 227

1839a *Nonionina grateloupi* - d'Orbigny, p. 46; pl. 6, figs 6-7.

1992b *Nonionoides grateloupi* (d'Orbigny) - Hatta & Ujiié, p. 196; pl. 43, fig. 1.

1994 *Nonionoides grateloupi* (d'Orbigny) - Loeblich & Tappan, p. 158; pl. 342, figs 1-5.

2009 *Nonionoides grateloupi* (d'Orbigny) - Parker, p. 675; figs 475a-h.

Nonionoides turgidum (Williamson, 1858) - p. 228

1858 *Rotalina turgida* - Williamson, p. 50; pl. 4, figs 95-97.

1939 *Nonionella turgida* (Williamson) - Cushman, p. 32; pl. 9, figs 2-3.

1999 *Nonionoides turgida* (Williamson) - Hayward *et al*., p. 159; pl. 15, figs 16-17.

Pseudononion Asano, 1936

+*Pseudononion granuloumbilicatum* Zheng, 1979 - p. 210

1979 *Pseudononion granuloumbilicatum* - Zheng, p. 229; pl. 25, fig. 9.

1994 *Pseudononion granuloumbilicatum* Zheng - Loeblich & Tappan, p. 158; pl. 344, figs 5-10.

****Pseudononion japonicum*** (Asano)

+*Pseudononion* sp. 1 - p. 210

Subfamily Pulleniinae Schwager, 1877

Melonis Montfort, 1808

+*Melonis affinis* (Reuss, 1851) - p. 226

1851 *Nonionina affine* - Reuss, p. 72; pl. 5, fig. 32.

1929d *Nonion affinis* (Reuss) - Cushman, p. 89; pl. 13, fig. 24.

1994 *Melonis barleeanus* (Williamson) - Loeblich & Tappan, p. 159; pl. 347, figs 1-5.

2001 *Melonis affinis* (Reuss) - Szareck, p. 143; pl. 23, figs 12-14.

Melonis pompilioides (Fichtel & Moll, 1798) - p. 226

1798 *Nautilus pompilioides* - Fichtel & Moll, p. 31; pl. 2, figs a-c.

1884 *Nonionina pompilioides* (Fichtel & Moll) - Brady, p. 727; pl. 109, figs 10-11.

1930 *Nonion pompilioides* (Fichtel & Moll) - Cushman, p. 4; pl. 1, figs 7-11; pl. 2, figs 1-2.

1994 *Melonis pompilioides* (Fichtel & Moll) - Loeblich & Tappan, p. 159; pl. 347, figs 8-10.

Pullenia Parker & Jones, in Carpenter *et al.,* 1862

****Pullenia bulloides*** (d'Orbigny, 1826)

+*Pullenia quadriloba* Reuss, 1867 - p. 231

1867 *Pullenia compressiuscula* Reuss, var. *quadriloba* - Reuss, p. 87; pl. 3, fig. 8.

1943 *Pullenia quadriloba* Reuss - Cushman & Todd, p. 15; pl. 2, figs 20-21.

1990 *Pullenia quadriloba* Reuss - Ujiié, p. 43; pl. 23, figs 5-7.

+*Pullenia quinqueloba* (Reuss, 1851) - p. 231

1851 *Nonionina quinqueloba* - Reuss, p. 71; pl. 5, fig. 31.

1884 *Pullenia quinqueloba* (Reuss) - Brady, p. 617; pl. 84, figs 14-15.

1990 *Pullenia quinqueloba* (Reuss) - Ujiié, p. 43; pl. 24, figs 1-5.

2010 *Pullenia quinqueloba* (Reuss) - Hayward *et al*., p. 226; pl. 29, figs 18-20.

****Pullenia subcarinata*** (d'Orbigny)

Family Almaenidae Myatlyuk, 1959

Subfamily Anomalinellinae Saidova, 1981

Anomalinella Cushman, 1927

Anomalinella rostrata (Brady, 1881) - p. 217

1881 *Truncatulina rostrata* - Brady, p. 65.

1915 *Truncatulina rostrata* Brady - Heron-Allen & Earland, p. 709; pl. 52, figs 33-36.

1992 *Anomalinella rostrata* (Brady) - Hatta & Ujiié, p. 197; pl. 43, fig. 3.

1994b *Anomalinella rostrata* (Brady) - Loeblich & Tappan, p. 160; pl. 349, figs 1-8.

Superfamily Chilostomellacea Brady, 1881

Family Quadrimorphinidae Saidova, 1981

Quadrimorphina Finlay, 1933

Quadrimorphina laevigata (Phleger & Parker, 1951) - p. 210

1951 *Valvulineria laevigata* - Phleger & Parker, p. 25; pl. 13, figs 11-12.

1990 *Quadrimorphina laevigata* (Phleger & Parker) - Ujiié, p. 41; pl. 15, fig. 1.

2010 *Quadrimorphina laevigata* (Phleger & Parker) - Hayward *et al*., p. 229; pl. 31, figs 11-13.

Family Alabaminidae Hofker, 1951

Svratkina Pokorny, 1956

Svratkina australiensis (Chapman, Parr & Collins, 1934) - p. 214

1934 *Discorbis tuberculata* var. *australiensis* - Chapman, Parr & Collins, p. 563; pl. 8, fig. 9.

1999 *Svratkina australiensis* (Chapman, Parr & Collins) - Hayward *et al.*, p. 160; pl. 15, figs 21-23.

Family Osangulariidae Loeblich & Tappan, 1964

Osangularia Brotzen, 1940

+*Osangularia rugosa* (Phleger & Parker, 1951) - p. 205

1951 *Pseudoparrella? rugosa* - Phleger & Parker, p. 28; pl. 15, figs 8-9.
1954 *Epistominella rugosa* (Phleger & Parker) - Parker, p. 533; pl. 10, figs 24-25.
1984 *Osangularia rugosa* (Phleger and Parker) - Murray, p. 528; pl. 2, figs 14-15.
1990 *Alabamina? rugosa* (Phleger & Parker) - Ujiié, p. 49; pl. 29, figs 1-2.
1994 *Nuttallides rugosus* (Phleger & Parker) - Loeblich & Tappan, p. 156; pl. 350, figs 11-13.

Family Oridorsalidae Loeblich & Tappan, 1984

Oridorsalis Andersen, 1961

Oridorsalis umbonatus (Reuss, 1851) - p. 205

1851 *Rotalina umbonata* - Reuss, p. 75; pl. 5, fig. 35.
1884 *Truncatulina tenera* - Brady, p. 665; pl. 95, fig. 11.
1994 *Oridorsalis tenera* (Brady) - Loeblich & Tappan, p. 161; pl. 354, figs 1-10.
1999 *Oridorsalis umbonatus* (Reuss) - Hayward *et al.*, p. 160; pl. 15, figs 24-26.

Family Osangulariidae Loeblich & Tappan, 1964

Cribroparrella Ten Dam, 1948

+*Cribroparrella* sp. 1 - p. 193

Family Heterolepidae Gonzáles-Donoso, 1969

Anomalinoides Brotzen, 1942

+*Anomalinoides colligerus* (Chapman & Parr, 1937) - p. 186

1884 *Anomalina ammonoides* (Reuss) - Brady (non *Rosalina ammonoides*, Reuss, 1844), p. 672; pl. 94, figs 2-3.
1937 *Anomalina colligera* - Chapman & Parr, p. 117; pl. 9, fig. 26.
1991 *Anomalina colligera* Chapman & Parr - Lambert *et al.*; pl. 8, figs 21-23.
1994 *Anomalinoides colligerus* (Chapman & Parr) - Loeblich & Tappan, p. 162; pl. 355, figs 1-3.

Anomalinoides globulosus (Chapman & Parr, 1937) - p. 186

1937 *Anomalina globulosa* - Chapman & Parr, p. 117 ; pl. 9, fig. 27.
1992b *Anomalinoides globulosus* (Chapman & Parr) - Hatta & Ujiié, p. 197; pl. 43, fig. 4.
1994 *Anomalinoides globulosus* (Chapman & Parr) - Loeblich & Tappan, p. 162; pl. 354, figs 11-13; pl. 355, figs 4-9.
2001 *Anomalinoides globulosus* (Chapman & Parr) - Szareck, p. 144; pl. 24, figs 6-7.

+*Anomalinoides semicribratus* (Beckman, 1954) - p. 187

1954 *Anomalina pompilioides* var. *semicribrata* - Beckman, p. 400; pl. 27, fig. 3.
1994 *Linaresia bikiniensis* (McCulloch) - Loeblich & Tappan, p. 164; pl. 368, figs 1-6.
2010 *Anomalinoides semicribratus* (Beckman) - Hayward *et al*., p. 221; pl. 28, figs 7-9.

Heterolepa Franzenau, 1884

Heterolepa coudrayi Margerel

Heterolepa inagawaensis (Matsunaga, 1963) - p. 198

1963 *Cibicides inagawaensis* **-** Matsunaga, p. 116; pl. 51, figs 5a-c.
1994 *Heterolepa inagawaensis* (Matsunaga) - Loeblich & Tappan, p. 162; pl. 356, figs 1-7; pl. 357, figs 1-5.
2000 *Cibicides inagawaensis* Matsunaga - Scott *et al*., p. 14; fig. 4, no 61-63.

+*Heterolepa margaritifera* (Brady, 1881) - p. 199

1881 *Truncatulina margaritifera* - Brady, p. 66.
1884 *Truncatulina margaritifera* Brady - Brady, p. 667; pl. 96, fig. 2.
1994 *Heterolepa margaritifera* (Brady) - Loeblich & Tappan, p. 162; pl. 358, figs 1-7.
2001 *Heterolepa margaritifera* (Brady) - Szarek, p. 145; pl. 25, figs 4-7

Heterolepa praecincta (Karrer, 1868) - p. 199

1868 *Rotalina praecincta* - Karrer, p. 189; pl. 5, fig. 7.
1884 *Truncatulina praecincta* (Karrer) - Brady, p. 667; pl. 95, figs 1-3.
1915 *Truncatulina praecincta* (Karrer) - Cushman, p. 39; pl. 26, fig. 2.
1994 *Heterolepa praecincta* (Karrer) - Loeblich & Tappan, p. 163; pl. 360, figs 1-10.

Heterolepa subhaidingeri (Parr, 1950) - p. 199

1884 *Truncatulina haidingeri* (d'Orbigny) - Brady, p. 663; pl. 95, fig. 7.
1921 *Truncatulina haidingeri* (d'Orbigny) - Cushman, p. 315; pl. 64, fig. 3.
1950 *Cibicides subhaidingeri* - Parr, p. 364; pl. 15, fig. 7.
1994 *Heterolepa subhaidingeri* (Parr) - Loeblich & Tappan, p. 163; pl. 359, figs 1-13.

+*Heterolepa* sp. 1 - p. 199

Family Gavelinellidae Hofker, 1951

Subfamily Gavelinellinae Hofker, 1956

Anomalinulla Saidova, 1975

Anomalinulla glabrata (Cushman, 1924) - p. 187

1924 *Anomalina glabrata* - Cushman, p. 39; pl. 12, figs 5-7.

1993 *Anomalinulla glabrata* (Cushman) - Hottinger *et al.*, p. 139; pl. 197, figs 6-11.
1995 *Melonis asymmetrica* - Yassini & Jones, p. 170; figs 915, 918, 919.
2009 *Anomalinulla glabrata* (Cushman) - Parker, p. 508; figs 361a-l.

Discanomalina Asano, 1951

+*Discanomalina coronata* (Parker & Jones, 1857) - p. 193
1857 *Anomalina coronata* - Parker & Jones, p. 294; pl. 10, figs 15-16.
1884 *Anomalina coronata* (Parker & Jones) - Brady, p. 675; pl. 97, figs 1-2.
1931a *Anomalina coronata* (Parker & Jones) - Cushman, p. 104; pl. 18, figs 3-4.
2010 *Discanomalina coronata* (Parker & Jones) - Hayward *et al.*, p. 217; pl. 26, figs 7-8.

+*Discanomalina semipunctata* (Bailey, 1851) - p. 194
1851 *Rotalina semipunctata* - Bailey, p. 11; figs 17-19.
1931a *Anomalina semipunctata* (Bailey) - Cushman, p. 106; pl. 18, figs 1-2.
1994 *Discanomalina semipunctata* (Bailey) - Loeblich & Tappan, p. 163; pl. 361, figs 4-6.

Gyroidina d'Orbigny, 1826

***Gyroidina broeckhiana** (Karrer, 1878)

Gyroidina lamarckiana (d'Orbigny, 1839) - p. 197
1839b *Rotalina lamarckiana* - d'Orbigny, p. 131; pl. 2, figs 13-15.
1965 *Gyroidina lamarckiana* (d'Orbigny) - Todd, p. 19; pl. 6, figs 3a-c.

Hansenisca Loeblich & Tappan, 1988

Hansenisca soldanii (d'Orbigny, 1826) [*Gyroidina neosoldanii*] - p. 197
1826 *Rotalia soldanii* - d'Orbigny, p. 276, no. 5.
1990 *Gyroidinoides soldanii* (d'Orbigny) - Ujiié, p. 45; pl. 25, figs 1-5.
1994 *Hansenisca soldanii* (d'Orbigny) - Loeblich & Tappan, p. 164; pl. 362, figs 8-10.
1996 *Gyroidina soldanii* (d'Orbigny) - Collins *et al.*; pl. 2, figs 9-10.

Hanzawaia Asano, 1944

+*Hanzawaia grossepunctata* (Earland, 1934) - p. 198
1934 *Cibicides grossepunctatus* - Earland, p. 184; pl. 8, figs 39-41.
1994 *Hanzawaia grossepunctata* (Earland) - Loeblich & Tappan, p. 164; pl. 364, figs 9-13; pl. 365, figs 1-13.
2001 *Hanzawaia grossepunctata* (Earland) - Szareck, p. 147; pl. 26, figs 6-7.

Family Karreriidae Saidova, 1981

Karreria Rzehak, 1891

+*Karreria maoria* (Finlay, 1939) - p. 242
1939c *Vagocibicides maoria* - Finlay, p. 326; pl. 29, figs 148, 151, 158.
1999 *Karreria maoria* (Finlay) - Hayward *et al.*, p. 161; pl. 15, fig. 30.

Superfamily Rotaliacea Ehrenberg, 1839

Family Rotaliidae Ehrenberg, 1839

Subfamily Pararotaliinae Reiss, 1963

Ammonia Brünnich, 1772

+*Ammonia* cf. *A. aomoriensis* (Asano, 1951) - p. 184
1951 *Rotalia beccarii aomoriensis* - Asano, p. 18; figs 96-98.
2004 *Ammonia aomoriensis* (Asano) - Hayward *et al*, p. 262; pl. 2, fig. T6; pl. 3, fig. T6; pl. 4, fig. T6.

+*Ammonia aoteana* (Finlay, 1940) - p. 185
1940 *Streblus aoteanus* - Finlay, p. 461.
1999 *Ammonia beccarii* (Linné) f. *aoteana* (Finlay) - Hayward *et al.*, p. 162; pl. 16, figs 7-9.
2004 *Ammonia aoteana* (Finlay) - Hayward *et al.*; pl. 2, fig. T5; pl. 3, fig. T5; pl. 4, fig. T5.
2009 *Ammonia aoteana* (Finlay) Parker, p. 480; figs 344a-h.

***Ammonia beccarii** (Linné, 1758)

Ammonia convexa (Collins, 1958) - p. 185
1958 *Streblus convexus* - Collins, p. 414; pl. 5, figs 10a-c.
1987 *Ammonia convexa* (Collins) - Baccaert, p. 232; pl. 94, figs -6.
1994 *Ammonia tepida* (Cushman) - Loeblich & Tappan; pl. 371, figs 1-3, not figs 4-10.
2004 *Ammonia convexa* (Collins) - Hayward *et al*, p. 262; pl. 2, fig. T13; pl. 3, fig. T13; pl. 4, fig. T13.

+*Ammonia* cf. *irridescens* (Arnal, 1958) - p. 185
1958 *Streblus irridescens* - Arnal, p. 41 ; pl. 4, figs 14-16.
1977 *Ammonia irridescens* (Arnal) - McCulloch, p. 431; pl. 151, figs 1-2.
2004 *Ammonia irridescens* (Arnal) - Hayward *et al*, p. 262; pl. 2, fig. T11; pl. 3, fig. T11; pl. 4, fig. T11.

***Ammonia parkinsoniana** (d'Orbigny, 1839)

Ammonia pustulosa (Albani & Barbero, 1982) - p. 185
1982 *Buccella pustulosa* - Albani & Barbero, p. 238; pl. 1, figs 1-2.
1995 *Buccella pustulosa* Albani & Barbero - Yassini & Jones, p. 174; figs 985-987.
1999 *Ammonia pustulosa* (Albani & Barbero) - Hayward *et al.*, p. 163; pl. 16, figs 4-6.

+*Ammonia takanabensis* (Ishizaki, 1948) - p. 185
1948 *Streblus takanabensis* - Ishizaki, p. 57; pl. 1, fig. 5.
1951c *Rotalia takanabensis* (Ishizaki) - Asano, p. 16; figs 124-126.
1994 *Ammonia takanabensis* (Ishizaki) - Loeblich & Tappan; p. 166; pl. 370, figs 10-13.
Ammonia tepida (Cushman, 1926) - p. 185, 186
1926b *Rotalia beccarii* (Linnaeus) var. *tepida* - Cushman, p. 79; pl. 1.
1987 *Ammonia* (?) *tepida* (Cushman) - Baccaert, p. 233; pl. 94, fig. 7; pl. 95, figs 1-3.
2004 *Ammonia tepida* (Cushman), molecular type T - Hayward *et al*, p. 262; pl. 2, fig. T; pl. 3, fig. T; pl. 4, fig. T.
+*Ammonia* sp. 1 - p. 186
1995 *Ammonia parkinsoniana* (d'Orbigny) - Basov & Krashenninnikov (non d'Orbigny 1839); pl. 7, figs 6-8.
Neorotalia Bermúdez 1952
Neorotalia calcar (d'Orbigny, 1826) [*Pararotalia calcar*] - p. 204, 205
1826 *Calcarina calcar* - d'Orbigny, p. 276, model 34.
1987 *Calcarina calcar* d'Orbigny - Baccaert, p. 240; pl. 97, figs 1, 2.
1993 *Neorotalia calcar* (d'Orbigny) - Hottinger *et al.*, p. 140; pl. 199, figs 1-10.
2009 *Neorotalia calcar* (d'Orbigny) - Parker, p. 668, figs 472a-f; 473a-i.
Pararotalia Le Calvez, 1949
Pararotalia nipponica (Asano, 1936) - p. 206
1936 *Rotalia nipponica* - Asano, p. 614; pl. 31, figs 2a-c.
1951c *Rotalia nipponica* Asano - Asano, p. 15, text figs 112-114.
1997 *Pararotalia nipponica* (Asano) - Haig, p. 278; fig. 7, nos 19, 20.
2009 *Pararotalia nipponica* (Asano) - Parker, p. 682; figs 480a-f, 481a-i.
+*Pararotalia* cf. *P. ozawai* (Asano, 1951) - p. 206
1951c *Rotalia ozawai* - Asano, p. 15; figs 115-117.
1965 *Pararotalia ozawai* (Asano) - Todd, p. 29; pl. 9, figs 1a-c.
****Pararotalia venusta*** (Brady)
Pseudorotalia Reiss & Merling, 1958
****Pseudorotalia schroeteriana*** (Parker & Jones)

Family Calcarinidae Schwager, 1877

Baculogypsina Sacco, 1893
Baculogypsina sphaerulata (Parker & Jones, 1860) - p. 234
1860 *Orbitolina sphaerulata* Parker & Jones, p. 33.
1884 *Tinoporus baculatus* Montfort - Brady, p. 716; pl. 101, figs 4-7.
1992b *Baculogypsina sphaerulata* (Parker & Jones) - Hatta & Ujiie, p. 199; pl. 44, figs 3-5.
1994 *Baculogypsina sphaerulata* (Parker & Jones) - Hohenegger, p. 301; fig. 6, no. 8.
Baculogypsinoides Yabe & Hanzawa, 1930
****Baculogypsinoides spinosus*** (Yabe & Hanzawa)
Calcarina d'Orbigny, 1826
****Calcarina defrancii*** d'Orbigny
Calcarina exuberans new name [*Calcarina spengleri pulchella*] - p. 188
1900 *Calcarina hispida* Brady var. *pulchella* Chapman, p. 15; pl. 1, fig. 10.
1986 *Calcarina hispida pulchella* Chapman - Cabioch *et al*., p. 20; pl. 5, fig. 3.
Calcarina hispida Brady, 1876 - p. 189
1876 *Calcarina hispida* - Brady, p. 589.
1884 *Calcarina hispida* Brady - Brady, p. 713; pl. 108, figs 8, 9.
1992b *Calcarina hispida* Brady - Hatta & Ujiie, p. 201; pl. 47, figs 7a-c.
2005 *Calcarina hispida* Brady - Renema & Hohenegger, p. 18; pl. 1, figs 11-19.
Calcarina mayori Cushman, 1924 - p. 189
1924 *Calcarina mayori* - Cushman, p. 44; pl. 14, figs 4-7.
1992b *Calcarina "spengleri"* (Gmelin) - Hatta & Ujiie, p. 202; pl. 48, figs 1-5.
1994 *Calcarina mayori* Cushman - Loeblich & Tappan, p. 167; pl. 375, figs 1-2; pl. 376, figs 1-3.
2005 *Calcarina mayori* Cushman - Renema & Hohenegger, p. 16; pl. 1, figs 20-24.
+*Calcarina* sp. 1 - p. 189

Family Elphidiidae Galloway, 1933

Subfamily Elphidiinae Galloway, 1933
Elphidium Montfort, 1808
****Elphidium aculeatum*** (Silvestri)
Elphidium advenum (Cushman, 1922) - p. 218
1922a *Polystomella advena* - Cushman, p. 56; pl. 9, figs 11-12.
1993 *Elphidium* cf. *E. advenum* (Cushman) - Hottinger *et al.*, p. 146; pl. 207, figs 1-7.

1995 *Elphidium advenum* (Cushman) - Yassini & Jones, p. 176; figs 1026-1029, 1034-1036.
1997 *Elphidium advenum advenum* - Hayward *et al.*, p. 65; pl. 2, figs 9, 14-15.

+*Elphidium botaniense* Albani, 1981 - p. 218
1981 *Elphidium botaniense* - Albani, p. 155, figs 4j, n.
1995 *Elphidium botaniense* Albani - Yassini & Jones, p. 176; figs 1030-1033.
1997 *Elphidium advenum botaniense* Albani - Hayward *et al*., p. 66; pl. 3, figs 1-4.
2009 *Elphidium botaniense* Albani - Parker, p. 572, figs 404a-h.

+*Elphidium charlottense* (Vella, 1957) - p. 218
1884 *Polystomella subnodosa* (Münster) - Brady, p. 734; pl. 110, figs 1a-c.
1957 *Elphidiononion charlottensis* - Vella, p. 38; pl. 9, figs 187, 188.
1997 *Elphidium charlottense* (Vella) - Hayward *et al*., p. 72; pl. 6, figs 13-16; pl. 7, figs 1, 2.
1999 *Elphidium charlottense* (Vella) - Hayward *et al*., p. 165; pl. 17, figs 6-8.

+*Elphidium clavatum* Cushman, 1930 - p. 219
1930 *Elphidium incertum* (Williamson) var. *clavatum* - Cushman, p. 20; pl. 7, fig. 10.
1997 *Elphidium excavatum clavatum* Cushman - Hayward *et al*., p. 76; pl. 9, figs 1-4.

Elphidium craticulatum (Fichtel & Moll, 1798) - p. 219
1798 *Nautilus craticulatus* - Fichtel & Moll, p. 51; pl. 5, figs h-k.
1987 *Elphidium craticulatum* (Fichtel & Moll) - Baccaert, p. 252; pl. 102, fig. 8; pl. 103, figs 1a, b.
1994 *Cellanthus craticulatum* (Fichtel & Moll) - Loeblich & Tappan, p. 167; pl. 380, figs 1, 2, 7-10.
1997 *Elphidium craticulatum* (Fichtel & Moll) - Hayward *et al*., p. 73; pl. 7, figs 5-12.

Elphidium crispum (Linné, 1758) - p. 219
1758 *Nautilus crispus* - Linnaeus, p. 709.
1992b *Elphidium crispum* (Linné) - Hatta & Ujiié, p. 203; pl. 49, fig. 5.
1994 *Elphidium crispum* (Linné) - Loeblich & Tappan, p. 168, pl. 378, figs 4-6.
2009 *Elphidium crispum* (Linné) - Parker, p. 575; figs 406a-h.

****Elphidium* cf. *earlandi*** Cushman

Elphidium excavatum (Terquem, 1875) [*Cribroelphidium excavatum*] - p. 219
1875 *Polystomella excavata* - Terquem, p. 429; pl. 2, figs 2a, b.
1975 *Elphidium excavatum* (Terquem) - Lévy *et al*., p. 174; pl. 3, figs 1, 2.
1997 *Elphidium excavatum excavatum* (Terquem) - Hayward *et al*., p. 77; pl. 9, figs 15-18, not figs 9-14.
2009 *Elphidium* cf. *E. excavatum* (Linné) - Parker, p. 576, figs 407a-e.

+*Elphidium fichtelianum* (d'Orbigny, 1846) - p. 219
1846 *Polystomella fichtelianum* - d'Orbigny, p. 125; pl. 6, figs 7-8.
1939 *Elphidium fichtelianum* (d'Orbigny) - Cushman, p. 42; pl. 11, fig. 12.
1997 *Elphidium fichtelianum* (d'Orbigny) - Hayward *et al.*, p. 79; pl. 11, figs 1-8.

+*Elphidium fijiense* Hayward, 1997 - p. 219
1997 *Elphidium fijiense* - Hayward *et al.*, p. 80; pl. 11, figs 9-12.

Elphidium gunteri Cole, 1931 [*Cribroelphidium gunteri*] - p. 220
1931 *Elphidium gunteri* - Cole, p. 34; pl. 4, figs 9, 10
1995 *Elphidium vadescens* Cushman & Brönnimann - Yassini & Jones, p. 178; fig. 1043.
1997 *Elphidium gunteri* Cole - Hayward *et al*., p. 80; pl. 11, figs 13-15.

+*Elphidium hyalocostatum* Todd, 1957 - p. 220
1957 *Elphidium hyalocostatum* - Todd, p. 300; pl. 88, fig. 19.
1994 *Elphidium hyalocostatum* Todd - Loeblich & Tappan, p. 169, pl. 386, figs 7-8.

****Elphidium jenseni*** (Cushman)

+*Elphidium lene* (Cushman & McCulloch, 1940) - p. 220
1940 *Elphidium incertum* (Williamson) var. *lene* - Cushman & McCulloch, p. 170; pl. 19, figs 2, 4.
1997 *Elphidium lene* Cushman & McCulloch - Hayward *et al.*, p. 84, pl. 13, figs 1-8.
2009 *Elphidium lene* Cushman & McCulloch- Parker, p. 579; figs 408a-h, 409a-i.

Elphidium limbatum (Chapman, 1907) - p. 220
1907 *Polystomella macellum* var. *limbatum* - Chapman, p. 142; pl. 10, fig. 9.
1933 *Elphidium depressulum* - Cushman, p. 51; pl. 12, fig. 4.
1997 *Elphidium advenum limbatum* (Chapman) - Hayward *et al*., p. 67; pl. 3, figs 9-17; pl. 4, figs 1-10.

Elphidium macellum (Fichtel & Moll, 1798) - p. 220
1798 *Nautilus macellus* var. beta - Fichtel & Moll, p. 66; pl. 5, figs h, i, k.
1884 *Polystomella macella* (Fichtel & Moll) - Brady, p. 737; pl. 110, figs 8, 11.
1997 *Elphidium macellum* (Fichtel & Moll) - Hayward *et al.*, p. 84; pl. 13, figs 9-10, ?figs 11-14.
2009 *Elphidium* cf. *E. macellum* (Fichtel & Moll) - Parker, p. 582; figs 410a-e.

+*Elphidium maorium* Hayward, 1997 - p. 220
1997 *Elphidium maorium* - Hayward *et al*., p. 69; pl. 4, figs 11-16; pl. 5, figs 1-5.

Elphidium milletti (Heron-Allen & Earland, 1915) [*Parrellina milletti*] - p. 221
1915 *Polystomella milletti* - Heron-Allen & Earland, p. 735; pl. 53, figs 38-42.
1987 *Parrellina milletti* (Heron-Allen & Earland) - Baccaert, p. 245-246; pl. 100, figs 4, 5; pl. 101, fig. 1.

1993 *Parrellina*? cf. *P.*? *milletti* (Heron-Allen & Earland) - Hottinger *et al.*, p. 152; pl. 218, figs 5-9; pl. 219, figs 1-4.
2009 *Elphidium milletti* (Heron-Allen & Earland) - Parker, p. 582, figs 411a-i; 412a-f.

Elphidium oceanicum Cushman, 1933 [*Cribroelphidium oceanicum*] - p. 221
1933a *Elphidium oceanicum* - Cushman, p. 49; pl. 12, figs 7a, b.
1995 *Cribrononion schmitti* (Cushman & Wickenden) - Yassini & Jones, p. 179, fig. 1040.
1997 *Elphidium oceanicum* Cushman - Hayward *et al.*, p. 88; pl. 15, figs 1-5.
2009 *Elphidium oceanicum* Cushman - Parker, p. 586; figs 413a-e; 414a-j.

Elphidium poeyenum (d'Orbigny) (as *Cribroelphidium poeyanum*)

Elphidium sandiegoense (Lankford, 1973) - p. 221
1973 *Cribrononion sandiegoense* - Lankford in Lankford & Phleger, p. 118; pl. 3, figs 19a-b.
1994 *Fijinonion fijiense* (Cushman & Edwards) - Loeblich & Tappan, p. 159; pl. 346, figs 1-4.
1999 *Elphidium sandiegoense* (Lankford) - Hayward *et al*., p. 90; pl. 16, figs 9-11.

Elphidium tongaense (Cushman, 1931) [*Ozawaia tongaensis*] - p. 221
1931b *Ozawaia tongaensis* - Cushman, p. 80, pl. 10, figs 7-10.
1997 *Elphidium advenum tongaense* (Cushman) - Hayward *et al.*, p. 70; pl. 5, figs 13-18.

Elphidium williamsoni Haynes, 1973 [*Cribroelphidium williamsoni* = *Elphidium articulatum*] - p. 221
1973 *Elphidium williamsoni* - Haynes, p. 207, pl. 24, fig. 7; pl. 25, figs 6, 9; pl. 27, figs 1-3.
1993 *Elphidium williamsoni* Haynes - Hottinger *et al*., p. 150; pl. 215, figs 1-5.
1997 *Elphidium excavatum williamsoni* Haynes - Hayward *et al.*, p. 78; pl. 10, figs 1-8.
2009 *Elphidium* cf. *E. williamsoni* Haynes - Parker, p. 591; figs 418a-l, 419a-e.

+*Elphidium* sp. 1 - p. 221

Porosononion Putrya in Voloshinova, 1958

+*Porosononion shansiense* (Wang, 1964) - p. 230
1964 *Evolutononion shansiense* - Wang, p. 58.
1993 *Porosononion* sp. A, - Hottinger *et al*., p. 153; pl. 219, figs 5-6; pl. 220, figs 1-6.
1994 *Evolutononion shansiense* Wang - Loeblich & Tappan, p. 157; pl. 342, figs 13-14.
2009 *Porosononion* sp. 1 - Parker, p. 713; figs 501a-h.

Porosononion simplex (Cushman, 1933) [*Haynesina simplex*] - p. 230
1933a *Elphidium simplex* - Cushman, p. 52; pl. 12, figs 8-9.
1995 *Cribrononion simplex* (Cushman) - Yassini & Jones, p. 179, fig. 1053.
1997 *Haynesina depressula simplex* (Cushman) - Hayward *et al*., p. 99; pl. 19, figs 8-10.
2009 *Porosononion simplex* (Cushman) - Parker, p. 711; figs 499a-e; 500a-l.

+*Porosononion* sp. 1 - p. 230

Subfamily Notorotaliinae Hornibrook, 1961

Cristatavultatus Loeblich & Tappan, 1994

Cristatavultatus pacificus (Collins, 1958) [*Parrellina pacifica*] - p. 218
1958 *Elphidium pacificum* - Collins, p. 421; pl. 5, fig. 13.
1992b *Parrellina pacifica* (Collins) - Hatta & Ujiié, p. 204; pl. 49, figs 8a-b; pl. 50, figs 1a-c.
1994 *Cristatavultatus pacificus* (Collins) - Loeblich & Tappan, p. 168; pl. 377, figs 7-8; pl. 378, figs 1-3.
1997 *Cristatavultatus pacificus* (Collins) - Hayward *et al.*, p. 94 ; pl. 17, figs 14-15; pl. 18, figs 1-3.

Parrellina Thalmann, 1951

Parrellina hispidula (Cushman, 1936) - p. 229
1936 *Elphidium hispidulum* - Cushman, p. 83; pl. 14, fig. 13.
1994 *Parrellina hispidula* (Cushman) - Loeblich & Tappan, p. 170; pl. 384, figs 5-7; pl. 387, figs 1-3.
1997 *Elphidium hispidulum* Cushman - Hayward *et al.*, p. 82; pl. 1, fig. 14; pl. 12, figs 5-7.
2009 *Parrellina hispidula* (Cushman 1936) - Parker, p. 683; figs 482a-f, 483a-e.

Parrellina reticulosa (Cushman, 1951)

Superfamily Nummulitacea de Blainville, 1827

Family Nummulitidae de Blainville, 1827

Cycloclypeus Carpenter, 1856

Cycloclypeus carpenteri Brady, 1881 - p. 235
1881 *Cycloclypeus carpenteri* - Brady, p. 67.
1884 *Cycloclypeus carpenteri* Brady - Brady, p. 752.
1992b *Cycloclypeus carpenteri* Brady - Hatta & Ujiié, p. 204; pl. 50, figs 2, 3a-b.
2000 *Cycloclypeus carpenteri* Brady - Hohenegger *et al*., p. 25; pl. 4, fig. 7.

Heterostegina d'Orbigny, 1826

Heterostegina curva Moebius

Heterostegina depressa d'Orbigny, 1826 - p. 222
1826 *Heterostegina depressa* - d'Orbigny, p. 305; pl. 17, figs 5-7.
1993 *Heterostegina depressa* d'Orbigny - Hottinger *et al.*, p. 157; pl. 228, figs 1-11; pl. 229, figs 1-8; pl. 230, fig. 9.

1994 *Heterostegina depressa* d'Orbigny - Loeblich & Tappan, p. 171; pl. 389, figs 1-6; pl. 390, figs 1-3.
2003 *Heterostegina depressa* d'Orbigny - Renema, p. 355, 356, figs 30a, b.

Heterostegina operculinoides Hofker, 1927 - p. 222

1927 *Heterostegina operculinoides* - Hofker, p. 67; pl. 34, figs 2, 4, 5.
1979 *Heterostegina longisepta* - Zheng, p. 226, pl. 23, fig. 8; pl. 27, fig. 8.
1992b *Heterostegina longisepta* Zheng - Hatta & Ujiié, p. 204, pl. 50, figs 5a-b, 6.
1993 *Heterostegina operculinoides* Hofker - Hottinger *et al.*, p. 158; pl. 230, figs 1-8, 11.

****Heterostegina suborbicularis*** (d'Orbigny)

Nummulites Lamarck, 1801

Nummulites venosus (Fichtel & Moll, 1798) = *Nummulites cumingii* - p. 228

1798 *Nautilus venosus* - Fichtel & Moll, p. 59; pl. 8, figs e-h.
1884 *Nummulites cumingii* (Carpenter) - Brady, p. 749; pl. 112, figs 11-13; text-fig. 22.
1933a *Operculinella venosa* (Fichtel & Moll) - Cushman, p. 54; pl. 18, figs 2-6.
2000 *Nummulites venosus* (Fichtel & Moll) - Hohenegger *et al.*, p. 11; pl. 1, figs 1-10.

Operculina d'Orbigny, 1826

Operculina ammonoides (Gronovius, 1781) - p. 228

1781 *Nautilus ammonoides* - Gronovius, p. 282; pl. 19, figs 5, 6.
1993 *Assilina ammonoides* (Gronovius) - Hottinger *et al.*, p. 154; pl. 222, figs 1-8; pl. 223, figs 1-14; pl. 224, figs 1-8; pl. 225, figs 1-9.
2000 *Operculina ammonoides* (Gronovius) - Hohenegger *et al.*, p. 18; pl. 2, figs 7-12; pl. 5, figs 7-12.
2009 *Assilina ammonoides* (Schröter 1783) - Parker, p. 515; figs 367a-j.

Operculina bartschi Cushman, 1921 - p. 228

1921 *Operculina bartschi* - Cushman, p. 376; text-fig. 13.
1938 *Operculina bartschi* Cushman - Chapman & Parr, p. 292; pl. 17, figs 17-18; text-fig. 6.
1979 *Operculina bartschi* Cushman - Whittaker & Hodgkinson, p. 94; pl. 9, figs 10-12; pl. 10, figs 1-4, 6, 10-11.

Operculina discoidalis (d'Orbigny, 1826) - p. 228

1826 *Nummulina* (*Assiline*) *discoidalis* - d'Orbigny, p. 296, modèle no 88.
1865 *Nummulina* (*Assilina*) *discoidalis* d'Orbigny - Parker, Jones & Brady, p. 33; pl. 3, fig. 94.
2000 *Operculina discoidalis* (d'Orbigny) - Hohenegger *et al.*, p. 21; pl. 2, figs 1-6; pl. 5, figs 1-6.
2009 *Assilina discoidalis* (d'Orbigny) - Parker, p. 519; figs 368a-e.

Operculina gaimardi d'Orbigny, 1826 - p. 228

1826 *Operculina gaimardi* - d'Orbigny, p. 281, no 5.
1921 *Operculina gaimardi* d'Orbigny - Cushman, p. 375.

****Operculina mayottana*** Le Calvez

Operculina philippinensis Cushman, 1921 - p. 229

1921 *Operculina philippinensis* - Cushman, p. 378; text-fig. 15.

Unassigned genus

Stictogongylus Loeblich & Tappan, 1994

Stictogongylus rugata (Heron-Allen & Earland, 1928) - p. 161

1928 *Sphaeridia rugata* - Heron Allen & Earland, p. 295; pl. 3, figs 38-43.
1994 *Stictogongylus vandiemenensis* - Loeblich & Tappan, p. 171; pl. 392, figs 1-8.
2009 *Stictogongylus rugata* (Heron Allen & Earland) - Parker, p. 740; figs 519a-g, 520a-f.

References

Abu-Zied R. H., Keatings K. W., Flower R. J., 2007 – Environmental controls on foraminifera in Lake Qarun, Egypt. *Journal of Foraminiferal Research*, 37: 136-149.

Adjas A., 1988 – *Sédimentologie comparée de quelques modèles lagonaires actuels des milieux récifaux coralliens du Pacifique (Nouvelle-Calédonie, Polynésie)*. Unpublished PhD thesis, université de Provence, 334 p.

Albani A. D., 1968 – Recent Foraminiferida from Port Hacking, New South Wales. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 19: 85-119.

Albani A. D., 1974 – New benthonic foraminiferida from Australian waters. *Journal of Foraminiferal Research*, 4: 35-37.

Albani A. D., 1978 – Recent foraminifera of an estuarine environment in Broken Bay, New South Wales. *Australian Journal of Marine and Freshwater Research*, 29: 355-398.

Albani A. D., 1981 – Pleistocene foraminifera from Botany Bay, New South Wales. *Alcheringa*, 5: 147-160.

Albani A. D., Barbero S. R., 1982 – A foraminiferal fauna from the lagoon of Venice, Italy. *Journal of Foraminiferal Research*, 12: 234-241.

Albani A. D., Yassini I., 1989 – Taxonomy and distribution of shallow-water lagenid Foraminiferida from the southeastern coast of Australia. *Australian Journal of Marine and Freshwater Research*, 40: 369-401.

Alcock T., 1865 – Notes on the natural history of specimens lately recorded from Connemara. *Manchester Literary and Philosophical Society Memoirs and Proceedings*, 4: 192-208.

Alongi D. M., 1992 – Benthic infauna and organism-sediment relations in a shallow, tropical coastal area: influence of outwelled mangrove detritus and physical disturbance. *Marine Ecology Progress Series*, 81: 229-245.

Alory G., Vega A., Ganachaud A., Despinoy M., 2006 – Influence of upwelling, subsurface stratification, and heat fluxes on coastal sea surface temperature off southwestern New Caledonia. *Journal of Geophysical Research*, 111 C07023:1-9.

Altenbach A. V., 1992 – Short-term processes and patterns in the foraminiferal response to organic flux rates. *Marine Micropaleontology*, 19: 119-129.

Andersen H. V., 1953 – Two new species of *Haplophragmoides* from the Louisiana Coast. *Contributions from the Cushman Foundation for Foraminiferal Research*, 4: 21-22.

Andersen H. V., 1961 – Genesis and paleontology of the Mississippi River mudlumps, Part II: Foraminifera of the mudlumps, lower Mississippi River delta. *Louisiana Department of Conservation, Geological Bulletin*, 35: 1-208.

Andréfouët S., Cabioch G., Flamand B., Pelletier B., 2007 – "The diversity of New Caledonia coral reef geomorphology and genetic processes: a synthesis from optical remote sensing, coring and acoustic multi-beam observations". *In* Payri C., Richer de Forges B. (ed.): *Compendium of marine species from New Caledonia, Nouméa*, IRD: 33-49.

Andréfouët S., Cabioch G., Flamand B., Pelletier B., 2009 – A reappraisal of the diversity of geomorphological and genetic processes of New Caledonian coral reefs: a synthesis from optical remote sensing, coring and acoustic multibeam observations. *Coral Reefs*, 28: 691-707.

Arnal R. E., 1958 – Rhizopoda from the Salton Sea, California. *Contributions from the Cushman Foundation for Foraminiferal Research*, 9: 36-45.

Asano K., 1936 – Fossil foraminifera from Muraoka-mura, Kamakura-gori, Kanagawa Prefecture. *Journal of the Geological Society of Japan*, 43: 603-615.

Asano K., 1951a – "Part 13: Anomalinidae". *In* Stach L. W. (ed.): *Illustrated catalogue of Japanese Tertiary smaller foraminifera*, Tokyo, Hosokawa Printing Co: 12-19.

Asano K., 1951b – "Part 6: Miliolidae". *In* Stach L. W. (ed.): *Illustrated catalogue of Japanese Tertiary smaller foraminifera*, Tokyo, Hosokawa Printing Co: 1-20.

Asano K., 1951c – "Part 14: Rotaliidae". *In* Stach L. W. (ed.): *Illustrated catalogue of Japanese Tertiary smaller foraminifera*, Tokyo, Hosokawa Printing Co: 1-21.

Asano K., 1956 – The Foraminifera from the adjacent seas of Japan, collected by S. S. SoyoMaru, 1922-1930. Pt. 1, Nodosariidae. *Tohoku University Science Reports, Sendai, Japan, 2nd series (Geology)*, 27: 1-55.

Asano K., Nakamura M., 1937 – On the Japanese species of *Cassidulina*. *Japanese Journal of Geology and Geography*, 14: 143-153.

Baccaert J., 1987 – *Distribution patterns and taxonomy of benthic foraminifera in the Lizard Island Reef Complex, northern Great Barrier Reef, Australia.* Unpublished PhD Thesis, University of Liège. 3 vols, 109 pls.

Bagg R. M. J., 1908 – Foraminifera collected near the Hawaiian Islands by the steamer *"Albatross"* in 1902. *Proceedings of the U.S. National Museum,* 34 (1603): 113-172.

Bagg R. M. J., 1912 – Pliocene and Pleistocene Foraminifera from southern California. *U.S. Geological Survey Bulletin*, 513: 1-153, 28 pls.

Bailey J. W., 1851 – Microscopical examination of soundings made by the United States Coast Survey, off the Atlantic Coast of the United States. *Smithsonian Contributions*, 2: 1-15.

Balkwill F. P., Wright J., 1885 – Report on some Recent foraminifera found off the coast of Dublin in the Irish Sea. *Transactions of the Royal Irish Academy*, 28: 317-368.

Banner F. T., Pereira C. P. G., Desai D., 1985 – "Tretomphaloid" float chambers in the Discorbidae and Cymbaloporidae. *Journal of Foraminiferal Research,* 15: 159-174.

Barker R. W., 1960 – Taxonomic notes on the species figured by H. B. Brady in his report on the foraminifera dredged by the H. M. S. Challenger during the years 1873-1876. *Society of Economic Paleontologists and Mineralogists, Special Publication*, 9: 1- 240.

Basov I. A., Krashenninnikov V. A., 1995 – Stratigraphy and foraminifera of Pliocene-Quarternary deposits of the Timor Trough. *Izdatelstvo "Nauchniy Mir", Moscow*, 1995: 1-112.

Batsch A. I. G. C., 1791 – Sechs Kupfertafeln mit Conchylien des Seesandes, gezeichnet und gestochen von A.J.G.K. Batsch. Jena.

Beckman J. P., 1954 – Foraminiferen der Oceanic Formation, Barbados. *Ecologae Geologicae Helvetiae*, 46: 301-407.

Belford D. J., 1966 – Miocene and Pliocene foraminifera from Papua and New Guinea. *Bureau of Mineral Resources (Australia) Bulletin*, 79: 1-306.

Bermúdez P. J., 1935 – Foraminiferos de la costa norte de Cuba. *Memorias de la Sociedad Cubana de Historia Natural,* 9: 129-224.

Bermúdez P. J., 1952 – Estudio sistemático de los foraminiferos rotaliformis. *Boletín de Geología (Caracas)*, 2: 1-230.

Bermúdez P. J., Seiglie G. A., 1963 – Estudio sistemático de los foraminiferos del golfo de Cariaco. *Boletín del Instituto de Oceanográphica de la Universidad de Oriente,* 2: 3-253.

Bernhard J. M., Bowser S. M., 1999 – Benthic foraminifera of dysoxic sediments: chloroplast sequestration and functional morphology. *Earth Science Reviews*, 46: 149-165.

Bicchi E., Debenay J. P., Pagès J., 2002 – Relationship between benthic foraminiferal assemblages and environmental factors in atoll lagoons of the central Tuamotu Archipelago (French Polynesia). *Coral Reefs*, 21: 275-290.

Billman H., Hottinger L., Oesterle H., 1980 – Neogene to Recent Rotaliid Foraminifera from the Indopacific Ocean; their canal system, their classification and their stratigraphic use. *Schweizerische Palaeontologische Abhandlungen*, 101: 71-113.

Blainville H. M. Ducrotay de, 1830 – Zoophytes. *Dictionnaire des sciences naturelles.* Paris, F. G. Levrault, 60: 1-546.

Boltovskoy E., Giussani de Kahn G., 1981 – Cinco nuevos taxones en Orden Foraminiferida. *Comunicaciones del Museo Argentino de Ciencias Naturales (Bernardino Rivadavia) Hidrobiología*, 2: 43-51.

Bornemann J. G., 1855 – Die mikroskopische Fauna des Septarienthones von Hermsdorf bei Berlin. *Zeitschrift der Deutschen Geologischen Gesellschaft*, 7: 307-371.

Brady H. B., 1864 – Contributions to the Knowledge of the Foraminifera. On the Rhizopodal Fauna of the Shetlands. *Transactions of the Linnean Society of London*, 24: 463-476.

Brady H. B., 1870 – Analysis and descriptions of the foraminifera. *Annuals and Magazine of Natural History*, ser. 4, 6: 273-309.

Brady H. B., 1876 – On some foraminifera from the Loo Choo islands. *Proceedings of the Royal Irish Academy 2nd series*, 2: 1-600.

Brady H. B., 1879 – Notes on some of the reticularian Rhizopoda of the Challenger Expedition. Part I. On new or little known arenaceous types, part II. Additions to the Knowledge of porcellaneous and hyaline types. *Quarterly Journal of Microscopical Science, new ser*ies, 19: 20-63; 261-299.

Brady H. B., 1881 – Notes on some of the reticularian Rhizopoda of the Challenger Expedition. part III. 1. Classification. 2. Further notes on new species. 3. Note on *Biloculina* mud. *Quarterly Journal of Microscopical Science, new series*, 21: 31-71.

Brady H. B., 1882 – "Report on the Foraminifera". *In* Tizard T. H., Murray J. (eds): *Exploration of the Faröe Channel during the summer of 1880, in Her Majesty's hired ship "Knight Errant"*, Proceedings of the Royal Society of Edinburgh, 11: 638-720.

Brady H. B., 1884 – Report of the Foraminifera Dredged by H. M. S. Challenger during the years 1873-1876. *Reports of the Scientific Results of the Voyage of H. M. S. Challenger during the years 1873-187, Zoology*, 9: 1-814.

Brady H. B., 1890 – Notes on a new type of foraminifera of the famiy chilostomellidae. *Journal of the Royal Microscopical Society, London*: 567-571.

Brady H. B., Parker W. K., Jones T. R., 1870 – A monograph of the genus *Polymorphina*. *Transactions of the Linnean Society of London,* 27: 197-253.

Brönnimann P., Beurlen G., 1977 – *Paraibaella*, New Name for the Foraminiferal Genus *Spiroplectammina* Brönnimann and Beurlen, 1977. *Archives Sciences, Genève*, 320: 279.

Brönnimann P., Whittaker J.E., 1980 – A Revision of *Reophax* and its Type-Species, with Remarks on Several Other Recent Hormosinid (Protozoa: Foraminiferida) in the Collections of the British Museum (Natural History). *Bulletin of the British Museum of Natural History (Zoology)*, *London*, 39/5: 259-272.

Brönnimann P., Whittaker J. E., 1983 – *Zaninettia* n. gen., a Spicular-Walled Remaneicid (Foraminiferida, Trochamminacea) from the Indian and South Atlantic Oceans with Remarks on the Origin of the Spicules. *Revue de Paléobiologie, Genève*, 2: 13-33.

Brönnimann P., Whittaker J. E., 1984 – A neotype for *Trochammina inflata* (Montagu) (Protozoa: Foraminiferida) with notes on the wall structure. *Bulletin of the British Museum of Natural History (Zoology)*, 46: 311-315.

Brönnimann P., Zaninetti L., 1965 – Note sur *Lituola salsa* (Cushman et Brönnimann, 1948), un foraminifère de la mangrove de l'île de la Trinité, W. I. *Archives Sciences, Genève*, 18 (3): 608-615.

Brönnimann P., Zaninetti L., 1984 – Agglutinated Foraminifera mainly Trochamminacea from the Baia de Sepetiba, near Rio de Janeiro, Brazil. *Revue de Paléobiologie, Genève*, 3: 63-115.

Brönnimann P., Whittaker J. E., Zaninetti L., 1992 – Brackish water foraminifera from mangrove sediments of southwestern Viti Levu, Fiji Islands, southwest Pacific. *Revue de Paléobiologie*, 11: 13-65.

Buchner P., 1940 – Die Lagenen des Golfes von Neapol und der marinen Ablagerungen auf Ischia (Beiträge zur Naturgeschichte der Insel Ischia 1). *Nova Acta Leopoldina,* n.f. 9(26): 363-560.

Buzas M. A., Smith R. K., Beem K. A., 1977 – Ecology and systematics of foraminifera in two *Thalassia* habitats, Jamaica, West Indies. *Smithsonian Contributions to Paleobiology*, 31: 1-139.

Cabioch G., 1988 – *Récifs frangeants de Nouvelle-Calédonie (Pacifique sud-ouest). Structure interne et influences de l'eustatisme et de la néotectonique*. Unpublished PhD thesis, université de Provence (Aix-Marseille I), 322 p., 25 pls.

Cabioch G., 2001 – *Synthèse scientifique : « Croissance récifale postglaciaire dans le Pacifique occidental et central - exemples de la Nouvelle-Calédonie, du Vanuatu et de la Polynésie française ». Perspectives scientifiques : « Détermination des facteurs à l'origine de l'arrêt de la croissance des récifs indo-pacifiques lors de la dernière déglaciation - exemple des récifs ennoyés des Marquises et de Madagascar et cas particuliers des récifs de Nouvelle-Calédonie et du Vanuatu »*. Unpublished Mémoire d'habilitation à diriger des recherches (Aix-Marseille I), 125 p.

Cabioch G., Anglada R., Babinot J. F., 1986 – Microfaunes et paléoenvironnements des récifs frangeants quaternaires de Mamié et Ricaudy (Nouvelle-Calédonie). *Cahiers de Micropaléontologie*, 1(1-2): 5-36, 13 pls.

Carpenter W. B., Parker W. K., Jones T. R., 1862 – Introduction to the study of foraminifera. *Ray Society, London*: 1-319, 22 pls.

Carter H. J., 1876 – On the Polytremata (Foraminifera), especially with reference to their Mythical Hybrid Nature. *Annals and Magazine of Natural History, London*, 4 (17): 185-214.

Carter H. J., 1877a – Description of a new species of Foraminifera (*Rotalia spiculotesta*). *Annals and Magazine of Natural History, London,* 4 (20): 470-473.

Carter H. J., 1877b – On the locality of *Carpenteria balaniformis*, with description of a new species and other Foraminifera, found in and about *Tubipora musica*. *Annals and Magazine of Natural History, London*, 4 (19): 209-219.

Carter H. J., 1880 – Report on specimens dredged up from the Gulf of Manaar, and presented to the Liverpool Free Museum by Capt. W.H. Cawne Warren. *Annals and Magazine of Natural History, London*, 5: 437-457.

Chapman F., 1898 – On *Haddonia*, a new genus of the foraminifera from Torres Straits. *Journal of the Linnaean Society of London, Zoology*, 26: 452-456.

Chapman F., 1900 – On some new and interesting foraminifera from the Funafuti Atoll, Ellice Islands. *Journal of the Linnaean Society of London, Zoology,* 28: 1-27.

Chapman F., 1901 – Foraminifera from the lagoon at Funafuti. *Journal of the Linnaean Society of London, Zoology*, 28: 161-210.

Chapman F., 1902 – On the foraminifera collected around the Funafuti Atoll from shallow and moderately deep water. *Journal of the Linnaean Society of London, Zoology*, 28: 379-417.

Chapman F., 1907 – Recent foraminifera of Victoria: Some littoral gatherings. *Journal of the Quekett Microscopical Club series 2*, 10: 117-146.

Chapman F., 1909 – On some microzoa from the Wianamatta Shales, New South Wales. *New South Wales Geological Survey Records, Department of Mines, Sydney, Australia*, 8: 334-339.

Chapman F., Parr W. J., 1931 – Notes on new and aberrant types of foraminifera. *Proceedings of the Royal Society of Victoria,* 43 (2): 236-240.

Chapman F., Parr W. J., 1935 – Foraminifera and Ostracoda from soundings made by the trawler "Bonthorpe" in the Great Australian Bight. *Royal Society of Western Australia, Journal*, 21: 1-6.

Chapman F., Parr W. J., 1937 – Foraminifera. *Australasian Antarctic Expedition 1911-1914 Scientific Reports Series C*, 1: 1-190.

Chapman F., Parr W. J., 1938 – Australian and New Zealand species of foraminiferal genera *Operculina* and *Operculinella*. *Proceedings of the Royal Society of Victoria*, 50: 279-294.

Chapman F., Parr W. J., Collins A. C., 1934 – Tertiary foraminifera of Victoria, Australia. The Balcombian deposits of Port Philip; Part III. *Journal of the Linnaean Society of London, Zoology*, 38: 533-577.

Chardon D., Austin J. A. jr., Cabioch G., Pelletier B., Saustrup S., Sage F., 2008 – Neogene history of the northeastern New Caledonia continental margin from multichannel reflection seismics profiles. *Comptes-Rendus de Géoscience*, 340 (1): 68-73.

Chaster G. W., 1892 – Report upon the Foraminifera of the Southport Society of Natural Science District. *Report of the Southport Society of Natural Science*, 1: 54-72.

Cheng T. C., Zheng S. Y., 1978 – The recent foraminifera of the Xisha Islands, Guangdong Province, China, I. *Studia Marina Sinica*, 12: 149-227. [Chinese with summary and new genera and species in English]

Chevillon C., 1996 – Skeletal composition of modern lagoon sediments in New Caledonia: Coral, a minor constituent. *Coral Reefs*, 15 (3): 199-207.

Chevillotte V., Douillet P., Cabioch G., Lafoy Y., Lagabrielle Y., Maurizot P., 2005 – Évolution géomorphologique de l'avant-pays du sud-ouest de la Nouvelle-Calédonie durant les derniers cycles glaciaires. *Comptes Rendus Geosciences*, 337 (7): 695-701.

Cimerman F., Langer M., 1991 – *Mediterranean foraminifera*. *Slovenska Akademija Znanosti in Umetnosti, Ljubljana*. 1-118, 93 pls.

Clark F. L., 1993 – *Rhaptohelenina papuanensis*, a new genus and species of benthic foraminifer from the Recent of the Papuan Platteau and Alexa Bank. *Journal of Paleontology*, 67: 899-901.

Clark F. L., 1995 – New species of unilocular calcareous foraminifera from the Holocene of the southwest Pacific Ocean. *Journal of Micropaleontology,* 14: 1-5.

Closs D., 1963 – Foraminíferos e Tecamebas da Lagoa dos Patos (RGS). *Boletim da Escola de Geologia, Porto Alegre*, 11: 1-130.

Cole W. S., 1931 – The Pliocene and Pleistocene foraminifera of Florida. *Bulletin of the Florida State Geological Survey*, 6: 7-79.

Collen J. D., 1998 – *Metarotaliella tuvaluensis* sp. nov. from Funafuti Atoll, western Pacific Ocean: relationship to miliolid foraminifera. *Journal of Foraminiferal Research,* 28: 66-75.

Collins A. C., 1958 – "Foraminifera". In: *Great Barrier Reef Expedition 1928-1929*, British Museum of Natural History, 6: 335-437.

Collins A. C., 1974 – Port Phillip survey 1957-63 Foraminiferida. *Memoirs of the National Museum of Victoria,* 35: 1-61.

Collins E. S., Scott D. B., Zhang J., 1996 – Neogene benthic foraminifers from Ocean Drilling Project sites 898 and 900, Leg 149, Iberia Abyssal Plain. *Proceedings of the Ocean Drilling Program, Scientific Results,* 149: 217-239.

COUDRAY J., 1976 – *Recherches sur le Néogène et le Quaternaire marins de la Nouvelle-Calédonie. Contribution de l'étude sédimentologique à la connaissance de l'histoire géologique post-éocène de la Nouvelle-Calédonie*. Thèse doc. d'État, université de Montpellier *In*: *Expéd. française sur les récifs coralliens de Nouvelle-Calédonie*, Fond. Singer-Polignac, Paris, 8: 1-276.

COUDRAY J., MARGEREL J. P., 1974 – Les foraminifères de la série récifale traversée par le sondage Ténia (côte sud-ouest de Nouvelle-Calédonie). *Comptes-Rendus de l'Académie des Sciences, Paris (D),* 279: 231-234.

CUSHMAN J. A., 1910 – A monograph of the foraminifera of the North Pacific Ocean. Part 1. Astrorhizidae and Lituolidae. *Bulletin of the United States National Museum*, 71(1): 1-134.

CUSHMAN J. A., 1911 – A monograph of the foraminifera of the North Pacific Ocean. Part 2. Textulariidae. *Bulletin of the United States National Museum*, 71 (2): 1-108.

CUSHMAN J. A., 1913a – New Textulariidae and other arenaceous foraminifera from the Philippine Islands and contiguous waters. *Proceedings of the United States National Museum,* 44: 633-638.

CUSHMAN J. A., 1913b – A monograph of the foraminifera of the North Pacific Ocean. Pt. 3 - Lagenidae. *Bulletin of the United States National Museum*, 71 (3): 1-125.

CUSHMAN J. A., 1914 – A monograph of the foraminifera of the North Pacific Ocean. Part 4. Chilostomellidae, Globigerinidae, Nummulitidae. *Bulletin of the United States National Museum*, 71(4): 1-45.

CUSHMAN J. A., 1915 – A monograph of the foraminifera of the North Pacific Ocean. Part 5. Rotaliidae. *Bulletin of the United States National Museum*, 71 (5): 1-81.

CUSHMAN J. A., 1917 – A monograph of the foraminifera of the North Pacific Ocean. Part 6. Miliolidae. *Bulletin of the United States National Museum*, 71 (6): 1-108.

CUSHMAN J. A., 1919 – Recent foraminifera from off New Zealand. *Proceedings of the United States National Museum*, 56: 593-640.

CUSHMAN J. A., 1920 – The foraminifera of the Atlantic Ocean, Part II. Lituolidae. *Bulletin of the United States National Museum,* 104 (2): 1-111.

CUSHMAN J. A., 1921 – Foraminifera of the Philippine and adjacent seas. *Bulletin of the United States National Museum*, 100: 1-608.

CUSHMAN J. A., 1922a – Shallow-water Foraminifera of the Tortugas region. *Publications of the Carnegie Institutue of Washington, no. 311, Department of Marine Biology Papers*, 17: 1-85.

CUSHMAN J. A., 1922b – The foraminifera of the Atlantic Ocean, Part 3. Textulariidae. *Bulletin of the United States National Museum,* 104 (3): 1-143.

CUSHMAN J. A., 1922c – The foraminifera of the Byram calcareous marl at Byram, Mississippi. *Professional Papers U.S. Geological Survey*, 129-E: 87-152.

CUSHMAN J. A., 1923 – The foraminifera of the Atlantic Ocean, Part 4. Lagenidae. *Bulletin of the United States National Museum,* 104 (4): 1-228.

CUSHMAN J. A., 1924 – Samoan Foraminifera. *Publications of the Carnegie Institution of Washington, no 342, Department of Marine Biology Papers*, 21: 1-85.

CUSHMAN J. A., 1925 – Foraminifera of the tropical central Pacific. *Bernice Pauachi Bishop Museum Bulletin, Honolulu, Hawaii*, 27: 121-144.

CUSHMAN J. A., 1926a – Foraminifera of the genera *Siphogenerina* and *Pavonina*. *Proceedings of the United States National Museum*, 67 (25): 1-24.

CUSHMAN J. A., 1926b – Recent foraminifera from Porto Rico. *Publications of the Carnegie Institution of Washington, no. 344, Department of Marine Biology Papers*, 23: 73-84.

CUSHMAN J. A., 1927 – An outline of a reclassification of the foraminifera. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 3: 1-105.

CUSHMAN J. A., 1929a – The foraminifera of the Atlantic Ocean, Part 6. Miliolidae, Opthalmidiidae and Fischerinidae. *Bulletin of the United States National Museum,* 104 (6): 1-129.

CUSHMAN J. A., 1929b – The genus *Trimosina* and its relationships to other genera of the foraminifera. *Contributions from the Cushman Laboratory for Foraminiferal Research,* 19: 155-159.

CUSHMAN J. A., 1929c – Notes on the Foraminiferal Fauna of the Byram marl. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 5: 40-48.

CUSHMAN J. A., 1929d – A late Tertiary fauna of Venezuela and other related regions. *Contributions from the Cushman Laboratory for Foraminiferal Research,* 5: 77-101.

CUSHMAN J. A., 1930 – The foraminifera of the Atlantic Ocean, Part. 7: Nonionidae, Camerinidae, Peneroplidae, and Alveolinellidae. *Bulletin of the United States National Museum*, 104 (7): 1-79.

CUSHMAN J. A., 1931a – The foraminifera of the Atlantic Ocean, Part 8. Rotaliidae, Amphisteginidae, Calcarinidae, Cymbaloporettidae, Globorotaliidae, Anomalinidae, Planorbulinidae, Rupertiidae and Homotrematidae. *Bulletin of the United States National Museum,* 104 (8): 1-144.

CUSHMAN J. A., 1931b – Two new foraminiferal genera from the south Pacfic. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 7: 78-82.

CUSHMAN J. A., 1932 – The foraminifera of the Tropical Pacific collections of the "Albatross", 1899-1900. Part 1. Astrorhizidae to Trochamminidae. *Bulletin of the United States National Museum*, 161: 1-88.

CUSHMAN J. A., 1933a – The foraminifera of the Tropical Pacific collections of the "Albatross", 1899-1900. Part 2. Lagenidae to Alveolinellidae. *Bulletin of the United States National Museum*, 161: 1-79.

CUSHMAN J. A., 1933b – Some new Recent foraminifera from the tropical Pacific. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 9: 77-95.

CUSHMAN J. A., 1934 – Notes on the genus *Tretomphalus*, with descriptions of some new species and a new genus, *Pyropilus*. *Contributions from the Cushman Foundation for Foraminiferal Research*, 10: 79-101.

CUSHMAN J. A., 1936 – New genera and species of the families Verneuilinidae and Valvulinidae and of the subfamily Virgulininae. *Cushman Laboratory for Foraminiferal Research, Special Publication,* 6: 1-71.

CUSHMAN J. A., 1937 – A monograph of the foraminiferal family Valvulinidae. *Cushman Laboratory for Foraminiferal Research, Special Publication*, 8: 1-210.

CUSHMAN J. A., 1939 – A monograph of the foraminiferal family Nonionidae. *Professional Papers U.S. Geological Survey*, 191: 1-100.

CUSHMAN J. A., 1942 – The foraminifera of the tropical Pacific collections of the "Albatross", 1899-1900. Part 3, Heterohelicidae and Buliminidae. *Bull. U.S. Nat. Mus.*, 161: 1-67.

CUSHMAN J. A., 1944a – The genus *Articulina* and its species. *Special Publications, Cushman Laboratory for Foraminiferal Research*, 10: 1-37.

CUSHMAN J. A., 1944b – Foraminifera from the shallow water of the New England coast. *Special Publications, Cushman Laboratory for Foraminiferal Research*, 12: 1-37.

CUSHMAN J. A., 1945 – The species of the subfamiliy Reussellinae of the foraminiferal family Buliminidae. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 21: 23-54.

CUSHMAN J. A., 1946 – Upper Cretaceous Foraminifera of the Gulf Coastal region of the United States and adjacent areas. *Professional Papers U.S. Geological Survey*, 206: 1-241.

CUSHMAN J. A., BRÖNNIMANN P., 1948 – Some new genera and species of Foraminifera from brackish water of Trinidad. *Contributions from the Cushman Laboratory for Foraminiferal Research,* 24: 15-21.

CUSHMAN J. A., EDWARDS P. G., 1937 – *Astrononion* a new genus of the foraminifera, and its species. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 13: 29-36.

CUSHMAN J. A., GRAY H. B., 1946 – A Foraminiferal Fauna from the Pliocene of Timms Point,. California. *Contributions from the Cushman Laboratory for Foraminiferal Research*, *Spec. Publ.*, 19: 1-46.

CUSHMAN J. A., HANZAWA S., 1936 – New genera and species of foraminifera of late Tertiary of the Pacific. *Contributions from the Cushman Laboratory for Foraminiferal Research,* 12: 45-48.

CUSHMAN J. A., HANZAWA S., 1937 – Notes on Some of the Species Referred to Vertebralina and Articulina, and a New Genus Nodobaculariella, *Contributions from the Cushman Laboratory for Foraminiferal Research,* 13: 41-46.

CUSHMAN J. A., MCCULLOCH I., 1939 – A report on some arenaceous Foraminifera. *Southern California University Publications, Allan Hancock Pacific Expedition, Los Angeles, California*, 6: 1-113.

CUSHMAN J. A., MCCULLOCH I., 1940 – Some Nonionidae in the collections of the Allan Hancock Foundation. *Southern California University Publications, Allan Hancock Pacific Expedition, Los Angeles, California*, 6: 145-178.

CUSHMAN J. A., MCCULLOCH I., 1942 – Some Virgulininae in the collections of the Allan Hancock Foundation. *Allan Hancock Pacific Expeditions*, 6 (4): 179-230.

CUSHMAN J. A., MCCULLOCH I., 1948 – The species of *Bulimina* and related genera in the collections of the Allan Hancock Foundation. *Southern California University Publications, Allan Hancock Pacific Expedition, Los Angeles, California*, 6: 179-230.

CUSHMAN J. A., MCCULLOCH I., 1950 – Reports on the collections obtained by Allan Hancock Expeditions of Velero III off the coast of Mexico, Central America, South America and Galapagos Islands in 1932-1941, and Velero IV in 1949. Some Lagenidae in the collections of the Allan Hancock Foundation. *Allan Hancock Pacific Expeditions*, 6: 295-364.

CUSHMAN J. A., OZAWA Y., 1928 – An outline of a revision of the Polymorphinidae. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 4: 13-21.

CUSHMAN J. A., OZAWA Y., 1930 – A monograph of the foraminiferal family Polymorphinidae, Recent and fossil. *Proceedings of the United States National Museum*, 77: 1-195.

CUSHMAN J. A., PARKER F. L., 1931 – Recent foraminifera from the Atlantic coast of South America. *Proceedings of the United States National Museum,* 80: 1-24.

CUSHMAN J. A., PARKER F. L., 1936 – Some species of Robertina. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 12: 92-100.

CUSHMAN J. A., PARKER F. L., 1942 –The foraminifera of the tropical Pacific Collections of the 'Alhatross' 1899-1900; Part 3 -Heterohelicidae and Buliminidae. *Bulletin of the United States National Museum*, 161: 1-67.

CUSHMAN J. A., PARKER F. L., 1947 – *Bulimina* and related foraminiferal genera. *Professional Papers U.S. Geological Survey*, 210: 55-176.

CUSHMAN J. A., TODD R., 1943 – The genus *Pullenia* and its species. *Contributions from the Cushman Laboratory for Foraminiferal Research*, 19 (1): 1-23.

CUSHMAN J. A., TODD R., 1944 –The genus *Spiroloculina* and its species. *Special Publications, Cushman Laboratory for Foraminiferal Research*, 11: 1-82.

CUSHMAN J. A., VALENTINE W. W., 1930 – Shallow-water Foraminifera from the Channel Islands of southern California. *Contributions of the Department of Geology, Stanford University*, 1: 1-51.

CUSHMAN J. A., WICKENDEN R. T. D., 1929 – Recent Foraminifera from off Juan Fernandez Islands. *Proceedings of the United States Natural Museum*, 75 (9): 1-16, 6 pls.

CUSHMAN J. A., TODD R., POST R. J., 1954 – Recent foraminifera of the Marshall Islands, Bikini and nearby atolls, Part II, oceanography (biologic). *Professional Papers U.S. Geological Survey*, 260-H: 319-384.

CZJZEK J., 1848 – Beitrag zur Kenntniss der fossilen Foraminiferen des Wiener Beckens. *Haidinger's Natur-wissenschaftliche Abhandlungen, Wien*, 2 (1): 137-150.

DE MONTFORT P. D., 1808 – *Conchyliologie systématique et classification méthodique des coquilles*, t. 1. Paris, France, F. de Schoell ed.: 1-410.

DEBENAY J.-P., 1985a – Le lagon sud-ouest et la marge insulaire sud de la Nouvelle-Calédonie : importance et répartition des foraminifères de grande taille. *Océanographie tropicale*, 20 (2) : 171-192.

DEBENAY J.-P., 1985b – Le genre *Amphistegina* dans le lagon de Nouvelle-Calédonie (S.W. Pacifique). *Revue de Micropaléontologie*, 28 (3) : 167-180.

DEBENAY J.-P., 1986 – *Recherche sur la sédimentation actuelle et les thanatocoenoses des Foraminifères de grande taille du lagon sud-ouest et de la marge insulaire sud de Nouvelle-Calédonie*. Paris, Orstom, Travaux et documents microédités, 20 (3 vol.) : 1-200, 22 pl.

DEBENAY J.-P., 1987 – Sedimentology in the south western lagoon of New Caledonia (SW Pacific). *Journal of Coastal Research,* 3 (1): 77-91.

DEBENAY J.-P., 1988a – Foraminifera larger than 0.5 mm in the Southwestern lagoon of New Caledonia: distribution related to abiotic properties. *Journal of Foraminiferal Research*, 18 (2): 158-175.

DEBENAY J.-P., 1988b – Recent Foraminifera tracers of oceanic water movements in the Southwestern lagoon of New Caledonia. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 65: 59-72.

DEBENAY J.-P., 1988c – Dynamique sédimentaire au débouché de la baie du Prony (Nouvelle-Calédonie) : dispersion des lutites et d'un test de Foraminifère, *Operculina bartschi* Cushman. *Benthos 86,* Genève, 1986. *Revue de paléobiologie, Genève, volume special,* 2 : 765-770.

DEBENAY J.-P., 1990 – Recent foraminiferal assemblages and their distribution related to environmental stress in the paralic environments of West Africa (Cape Timiris to Ebrie Lagoon). *Journal of Foram. Research,* 20: 267-282.

DEBENAY J.-P., CABIOCH G., 2007 – "Recent and Quaternary foraminifera collected around NewCaledonia". *In* Payri C. E., Richer de Froges B. (eds): *Compendium of marine species of New Caledonia.* IRD Nouméa, Documents Scientifiques et Techniques, 117, seconde edition: 69-94.

DEBENAY J.-P., DECROUEZ D., 1989 – Les collections du département de Géologie et de Paléontologie des invertébrés du Muséum d'histoire naturelle de Genève. 30. La collection de micropaléontologie (4e partie). *Revue de paléobiologie, Genève*, 8 (1) : 255-258.

DEBENAY J.-P., DELLA PATRONA L., 2009 – Foraminifères : bio-indicateurs de la qualité des fonds de bassins d'élevage de crevettes en Nouvelle-Calédonie. *Édition conjointe IRD-Ifremer* : 1-77.

DEBENAY J.-P., FERNANDEZ J.-M., 2009 – Benthic foraminifera records of complex anthropogenic environmental changes combined with geochemical data in a tropical bay of New Caledonia (SW Pacific). *Marine Pollution Bulletin*, 59: 311-322.

DEBENAY J.-P., GUILLOU J. J., 2002 – Ecological transitions indicated by foraminiferal assemblages in paralic environments. *Estuaries,* 25: 1107-1120.

DEBENAY J.-P.,. GUIRAL D., 2006 – Mangrove swamp foraminifera, indicators of sea level or paleoclimate? *Revue de Paléobiologie*, 25: 567-574.

DEBENAY J.-P., LUAN B. T., 2006 – Foraminiferal assemblages and the confinement index as tools for assessment of saline intrusion and human impact in the Mekong delta. *Revue de Micropaléontologie*, 49: 74-85.

DEBENAY J.-P., PAYRI C., 2010 – Epiphytic foraminiferal assemblages on macroalgae in reefal environments of New Caledonia. *Journal of Foraminiferal Research*, 40: 36-60.

DEBENAY J.-P., PAWLOWSKI J., DECROUEZ D., 1996 – *Les foraminifères actuels*. Paris, Éditions Masson : 1-329.

DEBENAY J.-P., EICHLER B. B, DULEBA W., BONETTI C., EICHLER-COELHO P., 1998 – Water stratification in coastal lagoons: its influence on foraminiferal assemblages in two Brazilian lagoons. *Marine Micropaleontology*, 35 (1-2): 65-89.

DEBENAY J.-P., TSAKIRIDIS E., SOULARD R., GROSSEL H., 2001 – Factors determining the distribution of foraminiferal assemblages in Port Joinville Harbor (île d'Yeu, France): the influence of pollution. *Marine Micropaleontology*, 43: 75-118.

DEBENAY J.-P., GUIRAL D., PARRA M., 2002 – Ecological factors acting on the microfauna in mangrove swamps. The case of foraminiferal assemblages in French Guiana. *Estuarine, Coastal and Shelf Science*, 55 (4): 509-533.

DEBENAY J.-P., MILLET B., ANGELIDIS M. O., 2005 – Relationships between foraminiferal assemblages and hydrodynamics in the Gulf of Kalloni, Greece. *Journal of Foraminiferal Research*, 35: 327-343.

DEBENAY J.-P., DELLA PATRONA L., HERBLAND A., GOGUENHEIM H., 2009a – Colonization of coastal environments by Foraminifera: Insight from shrimp ponds in New Caledonia. *Journal of Foraminiferal Research*, 39: 249-266.

DEBENAY J.-P., DELLA PATRONA L., HERBLAND A., GOGUENHEIM H., 2009b – The impact of Easily Oxidized Material (EOM) on the meiobenthos: Foraminifera abnormalities in Shrimp ponds of New Caledonia; implications for environment and paleoenvironment survey. *Marine Pollution Bulletin*, 59: 323-335.

DEBENAY J.-P., SIGURA A., JUSTINE J.-L., 2011 – Foraminifera in the diet of coral reef fish from the lagoon of New Caledonia: predation, digestion, dispersion. *Revue de Micropaléontologie*, 54: 87-103.

DEGAUGUE-MICHALSKI F.M., 1993 – *Croissance et évolution d'édifices récifaux du Pacifique occidental (Nouvelle-Calédonie, Chesterfield) à l'Holocène et au Pléistocène*. Unpublished PhD thesis, université Aix-Marseille I, 227 p.

DOUILLET P., 1998 – Tidal dynamics of the south-west lagoon of New Caledonia: observations and 2D numerical modelling. *Oceanologica Acta*, 21: 69-79.

DOUILLET P., OUILLON S., CORDIER E., 2001 – A numerical model for fine suspended sediment transport in the south-west lagoon of New Caledonia. *Coral Reefs*, 20: 361-372.

DUBOIS J., LAUNAY J., RÉCY J., 1974 – Uplift movements in New Caledonia - Loyalty islands area and their plate tectonics interpretation. *Tectonophysics*, 24: 133-150.

DUGAS F., DEBENAY J.-P., 1978 – Carte sédimentologique et carte annexe du lagon de Nouvelle-Calédonie (1/50 000). Pub. Orstom Feuille « Mont-Dore ».

DUGAS F., DEBENAY J.-P., 1980 – Carte sédimentologique et carte annexe du lagon de Nouvelle-Calédonie au 1/50 000. Publ. Orstom Feuille « Tontouta ».

DUGAS F., DEBENAY J.-P., 1981a – Carte sédimentologique du lagon de Nouvelle-Calédonie au 1/200 000. 1 carte + notice, 3 p. (format 53 x 38) in Atlas de Nouvelle-Calédonie.

DUGAS F., DEBENAY J.-P., 1981b – Carte sédimentologique et carte annexe du lagon de Nouvelle-Calédonie au 1/50 000. Publ. Orstom Feuille « Prony ».

DUGAS F., DEBENAY J.-P., 1982 – Carte sédimentologique et carte annexe du lagon de Nouvelle-Calédonie au 1/50 000. Publ. Orstom Feuille « Nouméa ».

DUJARDIN F., 1835 – Observations nouvelles sur les prétendus Céphalopodes microscopiques. *Annales de Sciences Naturelles*, 2 (3) : 312-314.

EARLAND A., 1933 – Foraminifera. Part II. South Georgia. *Discovery Reports,* 7: 27-138.

EARLAND A., 1934 – Foraminifera. Part III. The Falklands sector of the Antarctic (excluding South Georgia). *Discovery Reports*, 10: 1-208.

EGGER J. G., 1857 – Die Foraminiferen der Miocän-Schichten bei Ortenburg in Nieder- Bayern. *Neues Jahrbuch für Mineralogie, Geognosie, Geologie, und Petrefakten- Kunde*: 266-311.

EGGER J. G., 1893 – Foraminiferen aus Meeresgrundproben, gelothet von 1874 bis 1876 von S. M. Sch. "Gazelle." *Abhandlungen der Bayerischen Akademie der Wissenschaften, Mathematisch- Physikalischen Klasse*, 18: 193-458.

EHRENBERG C. G., 1839 – Über die Bildung der Kreidefelsen und des Kreidemergels durch unsichtbare Organismen. *Physikalisch abhandlungen der königlichen Akademie der Wissenschaften zu Berlin*: 59-147.

EHRENBERG C. G., 1840 – Über noch jetzt zahlreich lebende Thierarten der Kreidebildung und den Organismus der Polythalamien. *Physikalische Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin,* 1839: 81-147.

EHRENBERG C. G., 1843 – Verbreitung und Einfluss des mikroskopischen Lebens in Süd- und Nord-Amerika. *Physikalische Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin*, 1841: 291- 446.

EHRENBERG C. G., 1844 ? Ueber Spirobotrys, eine neue physiologisch merkwurdige Gattung von Polythalamien. *Königliche Preussischen Akademie der Wissenschaften zu Berlin Bericht*: 245-248.

FARÍAS J. R., 1977 – *Murrayinella*: taxa nuevo para la ciencia de foraminiferos del Reciente de Agua Somera. *Revista Española de Micropaleontología*, 9: 343-345.

FERNANDEZ J.-M., OUILLON S., CHEVILLON C., DOUILLET P., FICHEZ R., LE GENDRE R., 2006 – A combined modelling and geochemical study of the fate of terrigenous inputs from mixed natural and mining sources in a coral reef lagoon (New Caledonia). *Marine Pollution Bulletin,* 52: 320-331.

FICHTEL L. von, MOLL J. P. C. von, 1798 – *Testacea microscopica, aliaque minuta ex generibus Argonauta et Nautilus, ad naturam picta et descripta (Microscopische und andere kleine Schalthiere aus den geschlechtern Argonaute und Schiffer)*. Vienna. Camesina.

FICHTEL L. von, MOLL J. P. C. von, 1803 – Testacea microscopica aliaque minuta ex generibus Argonauta et Nautilus ad naturam delineata et descripta. Cum 24 tabulis æri incisis. - Mikroskopische und andere kleine Schalthiere aus den Geschlechtern Argonaute und Schiffer, nach der Natur gezeichnet und beschrieben. Mit 24 Kupfertafeln. - pp. j-xjj [= 1-12], [1-4], 1-123, [1], Tab. 1-24. Wien. (Camesina).

FINLAY H. J., 1939 – New Zealand foraminifera; Key species in stratigraphy - No. 3. *Transactions and Proceedings of the Royal Society of New Zealand,* 69: 309-329.

FINLAY H. J., 1940 – New Zealand foraminifera; Key species in stratigraphy - No. 4. *Transactions and Proceedings of the Royal Society of New Zealand,* 69: 448-472.

FISCHER M., DEWITTE B., MAÎTREPIERRE L., 2004 – A non-linear statistical downscaling model: El Niño/Southern Oscillation impact on precipitation over New Caledonia, *Geophysical Research Letter,* 31, L16204, doi:10.1029/2004GL020112.

FLINT J. M., 1899 – Recent Foraminifera. A descriptive catalogue of specimens dreged by the U.S. Fish Commission steamer Albatross. *Report of the U.S. National Museum for 1897*, 1: 249-349.

FOLLAND C. K., RENWICK J. A., SALINGER M. J., MULLAN A. B., 2002 – Relative influences of the interdecadal Pacific Oscillation and ENSO on the South Pacific Convergence Zone. *Geophysical Research Letter,* 29, doi:10.1029/2001GL014201.

FORNASINI C., 1896 – Ottavo Contributo alla conoscenza della microfanna terziarii. Italiana - *Memorie dell'Accademia della Scienze dell'Istituto di Bologna* 5/6: 1-6.

FORNASINI C., 1908 – Illustrazione di specie orbignyane di Nodosaridi, di Rotalidi e d'altri foraminiferi. *Memorie della Reale Accademie della Scienze dell'Istituto di Bologna, Scienze Naturali*, 6 (5): 41-54.

FORSKAL P., 1775 – *Descriptiones animalium*. Copenhagen. Hauniae, Carsten Niebuhr.

FUJITA K., HALLOCK P., 1999 – A comparison of phytal substrate preferences of *Archaias angulatus* and *Sorites orbiculus* in mixed macroalgal-seagrass beds in Florida Bay. *Journal of Foraminiferal Research*, 29: 143-151.

GALLOWAY J. J., MORREY M., 1929 – A Lower Tertiary foraminiferal fauna from Manta, Ecuador. *American Paleontological Bulletin*, 15 (55): 7-57.

GALLOWAY J. J., WISSLER S. G., 1927 – Pleistocene Foraminifera from the Lomita quarry, Palos Verdes Hills, California. *Journal of Paleontology*, 1: 35-87.

GAMBINI A., 1958 – Contribution à l'étude des sables à *Marginopora vertebralis* de la Nouvelle-Calédonie. *D.E.S., Laboratoire de géologie, université de Montpellier* : 1-103.

GAMBINI A., 1959 – Sur la composition de quelques sables coquilliers à foraminifères des lagons de la Nouvelle-Calédonie. *Bulletin de la Société géologique de France*, 1 : 431-433.

GANACHAUD A., KESSLER W., WIJFFELS S., RIDGWAY K., CAI W., HOLBROOK N., BOWEN M., SUTTON P., QIU B., TIMMERMANN A., ROEMMICH D., SPRINTALL J., CRAVATTE S., GOURDEAU L., AUNG T., 2007 – Southwest Pacific Ocean Circulation and Climate Experiment (SPICE) – Part I. Scientific Background. *CLIVAR Publication Series No. 111, NOAA OAR Special Report*:1-37.

GERMERAAD J. H., 1946 – "Geology of central Ceram". *In* Rutten L., Hotz W. (eds): *Geological, petrographical and paleontological results of explorations carried out from 1917 till 1919 in the Island of Ceram*,Bussy, J.H., Amsterdam: 7-135.

GLAÇON G., LYS M., 1968 – Note préliminaire à une révision des espèces de *Monspeliensina*, nouveau genre de foraminifère accompagnant la transgression Miocène dans le Languedoc. *Compte Rendu Hebdomadaire des Séances de l'Acadamie des Sciences, Paris*, 267 : 2302-2305.

GLOVER E., TAYLOR J., WHITTAKER J., 2003 – "Distribution, abundance and foraminiferal diet of an intertidal scaphopod, *Laevidentalium lubricatum*, around the Burrup Peninsula, Dampier, Western Australia". *In* Wells F. E., Walker D. I., Jones D. S. (eds): *The Marine Flora and Fauna of Dampier, Western Australia* - Western Australian Museum, Perth: 225-240.

GOËS A., 1882 – On the reticularian Rhizopoda of the Caribbean Sea. *Kongelike Svenska Vetenskaps-Akademiens Handllingar,* 19 (4): 1-151.

GOËS A., 1894 – A synopsis of the Arctic and Scandinavian recent marine Foraminifera hitherto discovered. *Kongelike Svenska Vetenskaps- Akademiens Handllingar*, 25 (9): 1-127.

GOËS A., 1896 – "The Foraminifera". *In*: *Reports on the dredging operations off the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U.S. Fish Commission Steamer "Albatross", during 1891, Lieut. Commander Z.L. Tanner U.S.N., commanding*, Bulletin of the Museum of Comparative Zoology at Harvard College, 29 (1): 1-103.

GOLDSTEIN S. T., CORLISS J. O., 1994 – Deposit feeding in selected deep-sea and shallow-water benthic foraminifera. *Deep-Sea Research*, 41: 229-441.

GOODAY A. J., LEVIN L. A., LINKE P., HEEGER T., 1992 – "The role of benthic foraminifera in deep-sea food webs and carbon cycling". *In* Rowe G. T., Parient V. (eds): *Deep-sea Food Chains and the global Carbon Cycle*, Kluwer, Dordrecht: 63-91.

GRONOVIUS L. T., 1781 – *Zoophylacium Gronovianum* vol. 3. Lugduni Batavorum, T. Haak, Leiden, Netherlands: 241-380.

GUERIN-MENEVILLE F. E., 1843 – « Crustacés ». *In*: *Iconographie du règne animal de G. Cuvier. Mollusques*, Paris, J. B. Baillière, vol. 3.

HADLEY W. H.Jr, 1934 – Some Tertiary Foraminifera from the North Coast of Cuba. *Bulletin of American Paleontology*, 20 (70A): 1-40.

HAIG D. W., 1988 – Miliolid foraminifera from inner neritic and mud facies of the Papuan Lagoon. *Journal of Foraminiferal Research*, 18: 203-236.

HAIG D. W., 1997 – Foraminifera from Exmouth Gulf, Western Australia. *Journal of the Royal Society of Western Australia*, 80: 263-280.

HANSEN H. J., 1970 – Danian Foraminifera from Nûgssuaq, West Greenland. Meddelelser om Grønland 193 (2). *Grønlands Undersøgelse*, 93: 1-132.

HANSEN H. J., REVETS, R., 1992 – A revision and reclassification of the Discorbidae, Rosalinidae, and Rotaliidae. *Journal of Foraminiferal Research*, 22: 166-180.

HANZAWA S., 1957 – Cenozoic foraminifera of micronesia. *Memoir of the Geological Society of America*, 66: 1-165.

HATTA A., 1996 – *Pyrgo rasheedi,* n. sp., Foraminifera. *South Pacific Study*, 17: 21-28.

HATTA A., UJIIÉ J., 1992a – Benthic foraminifera from Coral Seas between Ishigaki and Iriomote Islands, Southern Ryukyu Island Arc, Northwestern Pacific, Part 1, Systematic descriptions of Textulariina and Miliolina. *Bulletin of the College of Science, University of the Ryukyus*, 53: 49-119.

HATTA A., UJIIÉ J., 1992b – Benthic foraminifera from Coral Seas between Ishigaki and Iriomote Islands, Southern Ryukyu Island Arc, Northwestern Pacific, Part 2, Systematic descriptions of Rotalina. *Bulletin of the College of Science, University of the Ryukyus*, 54: 163-287.

HAYNES J. R., 1973 – Cardigan Bay foraminifera (cruises of the R. V. Antur, 1962-1964). *Bulletin of the British Museum (Natural History), Zoology*. Supplement 4: 1-245.

HAYNES J. R., 1981 – *Foraminifera*. London, Macmillan Publishers.

HAYWARD B. W., 1990 – Taxonomy, paleobiogeography and evolutionary history of the Bolivinellidae (Foraminiferida). *New Zealand Geological Survey Paleontological Bulletin*, 63: 1-132.

HAYWARD B. W., BRAZIER R. C., 1980 – Taxonomy and distribution of present-day *Bolivinella*. *Journal of Foraminiferal Research*, 10: 102-116.

HAYWARD B. W., BUZAS M. A., 1979 – Taxonomy and paleoecology of early Miocene benthic foraminifera of northern New Zealand and the north Tasman Sea. *Smithsonian Contributions to Paleobiology*, 36: 154.

HAYWARD B. W., HOLLIS C., 1994 – Brackish foraminifera in New Zealand: A taxonomic and ecologic review. *Micropaleontology*, 40: 185-22.

HAYWARD B. W., TRIGGS, C. M., 1994 – Computer analysis of benthic foraminiferal associations in a tidal New Zealand inlet. *Journal of Micropalaeontology,* 13: 103-117.

HAYWARD B. W., HOLLIS C. J., GRENFELL H. R., 1997 – Recent Elphidiidae (Foraminiferida) of the South-west Pacific and fossil Elphidiidae of New Zealand. *Institute of Geological and Nuclear Sciences monographs,* 16: 1-170.

HAYWARD B. W., GRENFELL H. R., RIED C. M., HAYWARD K. A., 1999 – Recent New Zealand shallow-water benthic foraminifera: taxonomy, ecologic distribution, biogeography, and use in paleoenvironmental assessment. *Institute of Geological and Nuclear Sciences monographs,* 21: 1-264.

HAYWARD B. W., HOLZMANN M., GRENFELL H. R., PAWLOWSKI J., TRIGGS C. M., 2004 – Morphological distinction of molecular types in *Ammonia* - towards a taxonomic revision of the world's most commonly misidentified foraminifera. *Marine Micropaleontology,* 50: 237-271.

HAYWARD B. W., GRENFELL H. R., SABAA A. T., NEIL H. L., BUZAS M. A., 2010 – Recent New Zealand deep-water benthic foraminifera: taxonomy, ecologic distribution, biogeography, and use in paleoenvironmental assessment. *Institute of Geological and Nuclear Sciences monographs,* 26: 1-363.

HEDBERG H. D., 1937 – Foraminifera of the Middle Tertiary Carapita formation of northeastern Venezuela. *Journal of Paleontology*, 11: 661-697.

HEMLEBEN C. H., ANDERSON O. R., BERTHOLD W., SPINDLER M., 1986 – Calcification and chamber formation in Foraminifera - a brief overview. *In* Leadbeater B. S. C., Riding R. (eds) : *Biomineralization in lower plants and animals. Systematics Association, Special Vol. 30 : 237-249.*

HERON-ALLEN E., EARLAND A., 1911 – On the recent and fossil foraminifera of the shore-sands of Selsey Bill, Sussex, IV. *Journal of the Royal Microscopy Society*: 436-448.

HERON-ALLEN E., EARLAND A., 1912 – On some foraminifera from the North Sea, etc., dredged by the Fisheries Cruiser "Goldseeker" (International North Sea Investigations-Scotland). On some new Astrorhizidae and their shell-structure. *Journal of the Royal Microscopical Society, London*: 382-389.

HERON-ALLEN E., EARLAND A., 1913 – Clare Island survey, Part 64, Foraminifera. *Proceedings of the Royal Irish Academy*, 31: 1-188.

HERON-ALLEN E., EARLAND A., 1914 – Foraminifera of the Kerimba Archipelago (Portuguese East Africa) Part I. *Transactions of the Zoological Society of London,* 20: 363-390.

HERON-ALLEN E., EARLAND A., 1915 – The foraminifera of the Kerimba Archipelago (Portuguese East Africa). Part II. *Transactions of the Zoological Society of London*, 20: 543-795.

HERON-ALLEN E., EARLAND A., 1916 – The foraminifera of the west coast of Scotland. *Transactions of the Linnean Society of London*, *Zoology, series 2*, 11: 197-299.

HERON-ALLEN E., EARLAND A., 1922 – Protozoa, Part 2, Foraminifera. *Natural history reports of the British Antarctic ("Terra Nova") Expedition, 1910*, 6 (2): 25-268.

HERON-ALLEN E., EARLAND A., 1924 – The Foraminifera of Lord Howe Island, South Pacific. *Journal of the Linnean Society, Zoology*, 35: 599-647.

HERON-ALLEN E., EARLAND A., 1928 – On the Pegididae, a new family of foraminifera. *Journal of the Royal Microscopical Society of London, series 3*, 48: 283-299.

HERON-ALLEN E., EARLAND A., 1930 – Some new foraminifera from the South Atlantic, Part 3. *Journal of the Royal Microscopical Society, London,* 50: 38-45.

HERON-ALLEN E., EARLAND A., 1932a – Some new foraminifera from the South Atlantic; IV. Four new genera from South Georgia. *Journal of the Royal Microscopical Society of London,* 52: 253-261.

HERON-ALLEN E., EARLAND A., 1932b – Foraminifera Part 1. The ice free area of the Falkland Islands and adjacent seas. *Discovery Reports*, 4: 291-460.

HICKSON S. J., 1911 – On *Polytrema* and some allied genera. A study of some sedentary foraminifera based mainly on a collection made by Prof. Stanley Gardiner in the Indian Ocean. *Transactions of the Linnean Society of London, Zoology, series 2*, 14: 443-462.

HOBSON E. S., CHESS J. R., 1973 – Feeding oriented movements of the atherinid fish *Pranesus pinguis* at Majuro atoll, Marshall Islands. *Fishery Bulletin*, 71: 777-786.

HOFKER J., 1927 – The Foraminifera of the Siboga Expedition. Part 1. Families Tinoporidae, Rotaliidae, Nummulitidae, Amphisteginidae. *Siboga Expeditie*, *Monographie IVa.* Leiden. E. J. Brill: 1-78.

HOFKER J., 1930 – The foraminifera of the Siboga Expedition; Part 2, families Astrorhizidae, Rhizamminidae, Reophacidae, Anomalinidae, Peneroplidae. *Siboga Expeditie, Monographie IVa.* Leiden. E. J. Brill: 79-170.

HOFKER J., 1951 – The foraminifera of the Siboga Expedition; Part 3. *Siboga Expeditie*, *Monographie IVb*. Leiden. E. J. Brill: 1-513.

HOFKER J., 1956 – Foraminifera Dentata-Foraminifera of Santa Cruz and Thach Island, Virginia Archipelago West Indies. Copenhagen University, Zoological Museum, Spolia, 15: 1-237.

HOFKER J., 1976 – Further studies on Caribbean foraminifera. *Studies on the Fauna of Curaçao and other Caribbean Islands*, 49: 1-256.

HOFKER J., 1978 – Biological results of the Snellius Expedition: The foraminifera collected in 1929 and 1930 in the eastern part of the Indonesian Archipelago. *Zoologische Verhandelingen Rijksmuseum van Natuurlijke Historie te Leiden*, 161: 1-69.

HOFKER J., 1983 – Zoological exploration of the continental shelf of Surinam: The Foraminifera of the shelf of Surinam and the Guyanas. *Zoologische Verhandelingen*, 201: 3-75, 17 pls.

HÖGLUND H., 1947 – Foraminifera in the Gullmar Fjord and the Skagerak. *Zoologiska Bidrag Från Uppsala,* 26: 1-328.

HÖGLUND H., 1948 – New names for four homonym species described in 'Foraminifera in the Gullmar Fjord and the Skagerak'. *Contributions from the Cushman Laboratory for Foraminiferal Research,* 24: 45-46.

HOHENEGGER J., 1994 – Distribution of living larger foraminifera NW of Sesoko-jima, Okinawa, Japan. *Marine Ecology*, 15: 291-334.

HOHENEGGER J., YORDANOVA E., HATTA A., 2000 – Remarks of West Pacific Nummulitidae (Foraminifera). *Journal of Foraminiferal Research*, 30: 3-28.

HOLZMANN M., PILLER W., ZANINETTI L., FENNER R., MARTINI R., SERANDREIBARBERO R., PAWLOWSKI J., 1998 – Molecular versus morphologic variability in *Ammonia* spp. (Foraminifera, Protozoa) from the Lagoon of Venice, Italy. *Revue de Micropaléontology*, 41: 59-69.

HOLZMANN M., HABURA A., GILES H., BOWSER S. S., PAWLOWSKI J., 2003 – Freshwater Foraminiferans Revealed by Analysis of Environmental DNA Samples. *Journal of Eukaryotic Microbiology*, 50: 135-139.

HOTTINGER L., 1977 – Distribution of larger Peneroplidae, *Borelis* and Nummulitidae in the Gulf of Elat, Red Sea. Utrecht. *Micropaleontological Bulletins*, 15: 35-110.

HOTTINGER L., 1978 – "Comparative Anatomy of Elementary Shell Structures in Selected Larger Foraminifera". *In* Hedley R. H., Adams C. G. (eds): *Foraminifera*. Volume 3. Academic Press: 203-266.

HOTTINGER L., 1986 – Construction, structure and function of foraminiferal shells. *The Systematics Association*, Special Volume 30: 219-235.

HOTTINGER L., 2006 – *Illustrated glossary of terms used in foraminiferal research*. Notebooks on Geology (Brest), Memoir 2006/2, 126 p. 83 figs.

HOTTINGER L., HALICZ E., REISS Z., 1993 – Recent Foraminifera from the Gulf of Aqaba, Red Sea. *Academia Scientiarum et Artium Slovenica, Classis IV: Historia Naturalis, Paleon toloski Institut ivana Rkovka* 33/3: 1-179.

HOWCHIN W., 1889 – The foraminifera of the Older Tertiary of Australia (n° 1, Muddy Creek, Victoria). *Transactions and Proceedings of the Royal Society of South Australia*, 12: 1-20.

HROMIC T., ANDRADE C., RAMÍREZ I., VIDAL S., 2004 – A new record of *Spirillina tuberculata* Brady (Protozoa Foraminiferida) in Chilian waters. *Anales del Instituto de la Patagonia* (Chile), 32: 35-41.

HUGHES G. W., 1977 – Recent Foraminifera from the Honiara Bay area, Salomon Islands. *Journal of Forarniniferal* Research, 7: 45-57.

HUGHES G. W., 1988 – Modern bathyal agglutinating foraminifera from the Vella Gulf and Blanche Channel, New Georgia, Solomon Islands, southwest Pacific. *Journal of Foraminiferal Research*, 18: 304-310.

ISHIZAKI K., 1939 – On the foraminifera of the so-called Upper Marine Fossil Beds in the vicinity of Kwansai, Sintiku Prefecture, Taiwan. *Taiwan Tigaku Kizi (Geological notes on Formosa)*, 10: 103-124. (Japanese with English abstract).

ISHIZAKI K., 1943 – New species of Neogene, Pleistocene and Recent Foraminifera of Japanese Empire. (I). *Transactions of the Natural History Society of Formosa*, 33 (233): 19-23.

ISHIZAKI K., 1948 – Six new fossil species of Streblus from eastern Asia. *Transactions of the Natural History Society of Formosa*, 21: 55-66.

JAVAUX E., SCOTT D. B., 2003 – Illustration of recent benthic foraminifera in Bermuda and remarks on species distribution. *Palaeontologica electronica*, 6, 29 p. (http://www.earthsci.carleton.ca/paleo/2003_1/benthic/issue1_03.htm).

JONES R. W., 1994 – *The Challenger Foraminifera*. Oxford University Press, Oxford: 1-149.

JONES T. R., 1895 – The Crag Foraminifera. Part 2. *Monograph of the Palaeontographical Society London,* 230 (49): 73-210, pls 5-7.

JONES T. R., 1896 – The Crag Foraminifera. Part 3. *Monograph of the Palaeontographical Society London*, 234 (50): 211-314.

JONES T. R., CHAPMAN F., 1896 – On the Fistulose Polymorphinæ, and on the Genus *Ramulina*. *Journal of the Linnean Society of London, Zoology*, 25 (165): 496–516.

JONES T. R., PARKER W. K., 1860 – On the Rhizopodal fauna of the Mediterranean, compared with that of the Italian and some older Tertiary deposits. *Quarterly Journal of the Geological Society of London*, 16: 292-307.

KAMINSKI M. A., 2000 – "The New and Reinstated Genera of Agglutinated Foraminifera published between 1986 and 1996". *In* Hart M. B., Kaminski M. A., Smart C. W. (eds): *Proceedings of the Fifth International Workshop on Agglutinated Foraminifera*, Grzybowski Foundation Special Publication, 7: 185-219.

KAMINSKI M., 2004 – "The year 2000 classification of the agglutinated foraminifera". *In* Bubík M., Kaminski M. A. (eds): *Proceedings of the Sixth International Workshop on Agglutinated Foraminifera*. Grzybowski Foundation Special Publication*,* 8: 237-255.

KARRER F., 1865 – Die Foraminiferen-Fauna des tertiären Grünsandsteines der Orakei-Bay bei Auckland. *Novara* Expedition 1857-1859. *Geologisches Theil*, 1: 69-86.

Karrer. F., 1868 – Die Miocene Foraminiferenfauna von Kostej im Batat. *Sitzungsberichte der Mathematisch-Naturwissenschaftlichen Klasse der Kaiserlichen Akademie der Wissenschaften zu Wien*, 58, 121-93.

Kohl B., 1985 – Early Pliocene benthic foraminifers from the Salina basin, southeastern Mexico. *Bulletins of American Paleontology*, 88 (322): 1-173.

Kornfeld M. M., 1931 – Recent littoral foraminifera from Texas and Louisiana. *Contributions from the Department of Geology of Stanford University*, 1: 77-101.

Lacroix E., 1928 – De la présence d'une faune d'Astrorhizidés tubulaires dans des fonds littoraux de Saint-Raphaël à Monaco. *Bulletin de l'Institut Océanographique Monaco,* 527 : 61-144.

Lacroix E., 1930 – Les Lituolides de plateau continental méditerranéen entre Saint-Raphael et Monaco. *Bulletin de l'Institut Océanographique Monaco,* 549 : 547-550.

Lacroix E., 1938 – Révision du genre *Massilina*. *Bulletin de l'Institut Océanographique Monaco,* 754 : 1-11.

Lalicker C. G., 1935 – Two new foraminifera of the genus *Textularia*. *Smithsonian Miscellaneous Collections,* 91 (22): 1-2.

Lalicker C. G., McCulloch I., 1940 – Some Textulariidae of the Pacific Ocean. *Allan Hancock Pacific Expeditions,* 6 (6): 115-143.

Lamarck J. B., 1804 – Suite des mémoires sur les fossiles des environs de Paris. *Annales du Muséum national d'histoire naturelle*, 5 : 349-357.

Lamarck J. B., 1816 – *Histoire naturelle des animaux invertébrés 2*. Paris, Verière.

Lamb J. L., Miller T. H., 1984 – Stratigraphic significance of Uvigerinid foraminifers in the western hemisphere. *The University of Kansas Paleontological Contribution*, 66: 1-98, 40 pls.

Lambert B., Gomez A.-M., Mathieu R., 1991 – De la production planctonique au sédiment. *Documents et Travaux de l'IGAL, Paris*, 15 : 109-126.

Langer M., 2011 – http://www.paleontology.uni-bonn.de/en_/micropaleontology/index.html

Langer M. R., 1992 – New Recent foraminiferal genera and species from the lagoon at Madang, Papua New Guinea. *Journal of Micropalaeontology*, 11: 85-93.

Langer M. R., Gehring C. A., 1993 – Bacteria farming: a possible feeding strategy of some smaller, motile foraminifera. *Journal of Foraminiferal Research*, 23: 40-46.

Langer M. R., Lipps J. H., Moreno G., 1995 – Predation on foraminifera by the dentaliid deep-sea scaphopod *Fissidentalium megathyris*. *Deep-Sea Research*, 42: 849-857.

Lankford R. R., Phleger F. B., 1973 – Foraminifera from the nearshore turbulent zone, western North America. *Journal of Foraminiferal Research*, 3: 101-132.

Larsen A. R., 1976 – Studies of recent *Amphistegina*, taxonomy and some ecological aspects. *Israel Journal of Earth Sciences*, 25: 1-26.

Larsen A. R., 1978 – Phylogenetic and paleobiogeographic trends in the foraminiferal genus *Amphistegina*. *Revista Española de Micropaleontología*, 10: 217-243.

Le Borgne R., Douillet P., Fichez R., Torréton J.-P., 2010 – Hydrography and plankton temporal variabilities at different time scales in the southwest lagoon of New Caledonia: A review. *Marine Pollution Bulletin*, 61 (7-12): 297-308.

Le Calvez J., 1947 – *Entosolenia marginata*, foraminifère apogamique ectoparasite d'un autre foraminifére *Discorbis vilardeboanus*. *Compte Rendus de l'Académie des Sciences,* Paris, 224 : 1448-1450.

Le Calvez Y., 1958 – Les foraminifères de la mer celtique. *Revue des Travaux de l'Institut des Pêches Maritimes*, 22 : 147-209.

Le Calvez Y., 1974 – Révision des foraminifères de la collection d'Orbigny. I. Foraminifères de îles Canaries. *Cahiers de Micropaléontologie*. 1974 (2) : 1-108.

Le Calvez Y., 1977 – Révision des foraminifères de la collection d'Orbigny. II - Foraminifères de l'île de Cuba. *Cahiers de Micropaléontologie*, 1977 (1) : 1-127.

Le Calvez J., Le Calvez Y., 1958 – Répartition des foraminifères dans la baie de Villefranche. I Miliolidae. *Annales de l'Institut Océanographique,* Paris, 35 : 159-234.

Le Calvez Y., Salvat B., 1980 – Foraminifères des récifs et lagons coralliens de Mooréa, îles de la Société. *Cahiers de Micropaléontologie*, 1980 (4) : 1-15.

Le Roy P., Cabioch G., Monod B., Lagabrielle Y., Pelletier B., Flamand B., 2008 – Late Quaternary history of the Noumea lagoon (New Caledonia, S-W Pacific) as depicted by seismic stratigraphy and multibeam bathymetry. A modern model of tropical rimmed shelf. *Palaeogeography Palaeoclimatology Palaeoecology*, 270: 29-45.

Lee J. J., Muller W. A., 1973 – Trophic dynamics and niches of salt marsh foraminifera. *American zoology*, 13: 215-223.

Lee J. J., Burnham B., Cevasco M. E., 2004 – A new modern soritid foraminifer, *Amphisorus saurensis* n. sp., from the Lizard Island Group (Great Barrier Reef, Australia). *Micropaleontology*, 50: 357-368.

Lee J. J., McEnery M., Pierce S., Freudenthal H. D., Muller W. A., 1966 – Tracer experiments in feeding littoral foraminifera. *Journal of Protozoology,* 16: 659-670 .

Lee J. J., Pawlowski J., Debenay J.-P., Whittaker J. E., Banner F. T., Gooday A. J., Tendal O., Haynes J., Faber W. W., 2000 – "Class Foraminifera". *In* Lee J. J., Leedale G. F., Bradbury P. (eds): *An Illustrated Guide to the Protozoa, second edition*, Society of Protozoologists (Allen Press, Lawrence Kansas): 877-951.

LeRoy L. W., 1944 – Miocene foraminifera from Sumatra and Java, Nederlands East Indies, Part I, Miocene foraminifera of central Sumatra, Nederlands East Indies. *Colorado School of Mines Quarterly*, 39 (3): 1-69.

Levy A., Mathieu R., Poignant A., Rosset-Moulinier M., Ubaldo M. L., Lebreiro S., 1995 – Foraminifères actuels de la marge continentale portugaise. Inventaire et distribution. *Memorias Instituto Geologico e mineiro, Lisboa*, 32 : 1-116.

Levy A., Poignant A., Rosset-Moulinier M., Rouvillois A., 1975 – Sur quelques foraminifères actuels des plages de Dunkerque et des environs: néotypes et espèces nouvelles. *Revue de Micropaléontologie*, 17 : 171-181.

Linnaeus C., 1758 – *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis.* G. Engelmann, 10: 1-824.

Linnaeus C., 1766 – *Systema naturae sive regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis.* Laurentii Salvii, Holmiae. 12th ed. v. 1 (pt 1):1-532.

Lipps J. H., 1983 – "Biotic interactions in benthic foraminifera". *In* Tevesz M. J. S., Mc Call P. L. (eds): *Biotic interactions in recent and fossil benthic communities*, Plenum Press, New- York: 331-373.

LIPPS J. H., 1988 – Predation on foraminifera by coral reef fish: taphonomic and evolutionary implications. *Palaios,* 3: 1-12.

LIPPS J. H., Ronan T. E. Jr, 1974 – Predation on foraminifera by the polychaete worm *Diopatra*. *Journal of Foraminiferal Research*, 4: 139-143.

LOBEGEIER M., 2001 – *Foraminiferal assemblages and their bulk contribution to carbonate sediment, Green Island Reef, Great Barrier Reef Province*. Unpublished Ph.D. Thesis, James Cook University, Townsville, 457 p.

LOBEGEIER M. K., 2002 – Benthic foraminifera of the family Calcarinidae from Green Island Reef, Great Barrier Reef Province. *Journal of Foraminiferal Research,* 32: 201-216.

LOBEGEIER M. K., SEN GUPTA B. K., 2008 – Foraminifera of hydrocarbon seeps, Gulf of Mexico. *Journal of Foraminiferal Research*, 38: 93-116.

LOEBLICH A. R. Jr, TAPPAN H., 1953 – Studies of Arctic foraminifera. *Smithsonian Miscellaneous Collections*, 121: 1-150.

LOEBLICH A. R. Jr, TAPPAN H., 1955 – Revision of some recent foraminiferal genera. *Smithsonian Miscellaneous Collections*, 128: 1-37.

LOEBLICH A. R. Jr, TAPPAN H., 1957 – Eleven new genera of Foraminifera. *United States National Museum Bulletin,* 215: 223-232.

LOEBLICH A. R. Jr, TAPPAN H., 1964 – "Protista 2: Sarcodinia, chiefly 'Thecamoebians' and Foraminiferida". *In*: *Treatise on Invertebrate Palaeontology*, Geological Society of America and University of Kansas Press, Lawrence, Kansas 2 vol.: 1-900.

LOEBLICH A. R. Jr, TAPPAN H., 1985 – Some new and redefined genera of agglutinated foraminifera II. *Journal of Foraminiferal Research*, 15: 175-217.

LOEBLICH A. R. Jr, TAPPAN H., 1988 – *Foraminiferal genera and their classification*. Van Nostrand Reinhold Company, New York, 1, 970 p., 2, 847 pl.

LOEBLICH A. R. Jr, TAPPAN H., 1992 – "Present status of foraminiferal classification". *In* Takayanagi Y., Saito T. (eds): *Studies in Benthic Foraminifera, Proceedings of the Fourth International Symposium on Benthic Foraminifera, Sendai, 1990 (Benthos'90)*, Tokai University Press, Tokyo: 93-102.

LOEBLICH A. R. Jr, TAPPAN H., 1994 – Foraminifera of the Sahul Shelf. *Cushman Foundation for Foraminiferal Research,* Special Publication 31: 1-661.

LUTZE G. F., 1974 – *Benthische Foraminiferen in Oberflächen-Sedimenten des Persischen Golfes*. Teil 1: Arten. Meteor Forschungsergebnisse, Deutsche Forschungsgemeinschaft, Reihe C Geologie und Geophysik, Gebrüder Bornträger, Berlin, Stuttgart, C17, 1-66.

MAES C., VEGA A., SUDRE J., 2007 – "Hydroclimatic conditions in the southwest Pacific Ocean". *In* Payri C., Richer de Forges B. (eds): *Compendium of marine species of New Caledonia*, IRD Nouméa, Documents Scientifiques et Techniques, 117, seconde édition: 51-62.

MARGEREL J.-P., 1981 – Espèces nouvelles de foraminifères de la baie de Saint-Vincent (Nouvelle-Calédonie). *Cahiers de Micropaléontologie*, 4 : 67-72.

MARGEREL J.-P., 1984 – *Les foraminifères de la baie de Saint-Vincent (Nouvelle-Calédonie).* Unpublished memoir of the laboratoire de géologie historique, université de Nantes, 121 p., 39 pls.

MARGEREL J.-P., 2009 – Les foraminifères benthiques des Faluns du Miocène moyen du Blésois (Loir-et-Cher) et de Mirebeau (Vienne) dans le centre-ouest de la France. *Geodiversitas,* 31 (3) : 577-621.

MATEU G., 1969 – Foraminiferos del contenido gástrico del *Spatangus purpureus* O. F. Muller y su degradación protoplasmática a través del aparato digestivo de este equinido. *Boletín de la Sociedad de Historia Natural de Baleares,* 15: 75-84.

MATOBA Y., 1970 – Distribution of Recent shallow benthic foraminifera of Matsushima Bay, Miyagi Prefecture, Northeast Japan. *Tohoku University Science Reports, Sendai, Japan, 2nd series (Geology)*, 42: 1-85.

MATSUNAGA T., 1963 – Benthonic smaller foraminifera from the oil fields of northern Japan. *Tohoku University Science Reports, Sendai, Japan, 2nd series (Geology)*, 35: 65-122, 29 pls.

MCCULLOCH I., 1977 – *Qualitative observations on Recent foraminiferal tests with emphasis on the Eastern Pacific parts I, II, III.* University of Southern California, Los Angeles, 676 p., 200 pls.

MCCULLOCH I., 1981 – *Qualitative observations on Recent foraminiferal tests. Part IV, with emphasis on the Allan Hancock Atlantic Expedition collections*. University of Southern California, Los Angeles, 362 p., 72 pls.

MCLEAN J. D., 1956 – The foraminifera of the Yorktown Formation in the York-James. Peninsula of Virginia with notes on the associated Mollusks. *Bulletins of the American Paleontology*, 36: 261-394.

MEISTERFELD R., HOLZMANN M., PAWLOWSKI J., 2001 – Morphological and molecular characterization of a new terrestrial allogromiid species: *Edaphoallogromia australica* gen. et spec. nov. (Foraminifera) from northern Queensland (Australia). *Protist*, 152: 185-192.

MIKHALEVICH V. I., 1977 – New species of Foraminifera of the North-Western Coast of Africa, Issledovanija fauny morej. *Zoological institute Academy of Sciences of the USSR*, 21 (29): 5-9.

MIKHALEVICH V. I., 1983 – *The bottom foraminifera from the shelves of the Tropical Atlantic*. Zoological Institute of USSR Academy of Sciences, Leningrad, 247 p. (in Russian).

MILLETT F. W., 1894 – The Foraminifera of the Pliocene beds of St. Erth. *Transactions of the Royal Geological Society of Cornwall*, 11: 655–661.

MILLETT F. W., 1898a – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S. *Journal of the Royal Microscopical Society*, 1898: 258-269.

MILLETT F. W., 1898b – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part II. *Journal of the Royal Microscopical Society*, 1898: 497-513.

MILLETT F. W., 1898c – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part III. *Journal of the Royal Microscopical Society*, 1898: 607-614.

MILLETT F. W., 1898d – Additions to the list of foraminifera from the St. Erth Clay. *Transactions of the Royal Geological Society of Cornwall,* 12: 174-176.

MILLETT F. W., 1899a – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part V. *Journal of the Royal Microscopical Society*, 1899: 356-365.

MILLETT F. W., 1899b – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part VI. *Journal of the Royal Microscopical Society*, 1899: 556-564.

MILLETT F. W., 1900a – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part VIII. *Journal of the Royal Microscopical Society*, 1900: 273-281.

Millett F. W., 1900b – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part IX. *Journal of the Royal Microscopical Society*, 1900: 539-549.

Millett F. W., 1901a – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part X. *Journal of the Royal Microscopical Society*, 1901: 1-11.

Millett F. W., 1901b – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part XI. *Journal of the Royal Microscopical Society*, 1901: 485-497.

Millett F. W., 1901c – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part XII. *Journal of the Royal Microscopical Society*, 1901: 619-628.

Millett F. W., 1902 – Report on the recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S, Part XIII. *Journal of the Royal Microscopical Society*, 1902: 509-528.

Millett F. W., 1903a – Report on the Recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S Part XIV. *Journal of the Royal Microscopical Society,* 1903: 253-275.

Millett F. W., 1903b – Report on the Recent foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S Part XV. *Journal of the Royal Microscopical Society,* 1903: 685-704.

Moebius K. A., 1880 – "Foraminifera von Mauritius". *In* Mobius K. A., Richter, F., von Martens E. (eds): *Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, Gutman, Berlin: 65-122.

Montagu G., 1803 – *Testacea Britannica, or natural history of British shells, marine, land, and fresh-water, including the most minute.* J. S. Hollis, Romsey, England.

Montagu G., 1808 – *Testacea Britannica; supplement.* Exeter. England. J. S. Hollis.

Monfort D. de, 1808 – *Conchyliologie systématique et classification méthodique des coquilles*. Paris, Schoell.

Moodley L., Boshker H. T. S., Middelburg J. J., Pel R., Herman P., de Deckere E., Heip C. H. R., 2000 – Ecological significance of benthic foraminifera: ^{13}C labelling experiments. *Marine Ecology Progress Series*, 202: 289-295.

Murray J. W., 2006 – *Ecology and applications of benthic foraminifera*. Cambridge University Press, Cambridge, United Kingdom.

Narayan Y. R., Barnes C. R., Johns M. J., 2005 – Taxonomy and biostratigraphy of Cenozoic foraminifers from Shell Canada wells, Tofino Basin, offshore Vancouver Island, British Columbia. *Micropaleontology,* 51: 101-167.

Neugeboren J. L., 1856 – Die Foraminiferen aus der Ordnung der Stichostegier von Ober-Lapugy in Siebenbiirgen. *Denkschriften der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche*, 12: 65-108

Nicet J. B., Delcroix T., 2000 – ENSO-related precipitation changes in New Caledonia, Southwestern tropical Pacific: 1969-98. *Monthly Weather Review,* 128: 3001-3006.

Nomura R., 1983 – Cassidulinidae (Foraminiferida) from the Uppermost Cenozoic of Japan (Parts 1 and 2). *Tohoku University Science Reports, Sendai, Japan, 2nd series (Geology)*, 53: 1-101; 54: 1-93.

Nomura R., Takayanagi Y., 2000 – The suprageneric classification of the foraminiferal genus *Murrayinella* and a new species from Japan. *Paleontological Research*, 4: 171-181.

Norman A. M., 1878 – On the genus *Haliphysema*, with description of several forms apparently allied to it. *Annals and Magazine of Natural History,* 1: 265-284.

Oflaz S. A., 2006 – *Taxonomy and Distribution of the Benthic Foraminifera in the Gulf of Iskenderun, Eastern Mediterranean*. Unpublished MSc. thesis, Middle East Technical University, Ankara, 306 p.

O'Herne L., 1974 – A reconsideration of *Amphistegina lessonii* d'Orbigny 1826, sensu Brady, 1884 (Foraminifera). *Scripta Geol*., 26: 1-52.

Ohkushi K., Thomas E., Kawahata H., 2000 – Abyssal benthic foraminifera from the northwestern Pacific (Shatsky Rise) during the last 298 kyr. *Marine Micropaleontology*, 38: 119-147.

Öki K., 1989 – Ecological analysis of benthonic foraminifera in Kagoshima Bay, South Kyushu, Japan. *South Pacific Study,* 10: 1-191.

Orbigny A. d', 1826 – Tableau méthodique de la classe des Céphalopodes, 3e Ordre, Foraminifères. *Annales de Sciences Naturelles,* 7 : 254-314.

Orbigny A. d', 1839a – « Foraminifères ». *In* de la Sagra R. (ed.) : *Histoire physique, politique et naturelle de l'île de Cuba*, Paris, Arthus Bertrand : 1-224.

Orbigny A. d', 1839b – « Foraminifères des îles Canaries ». *In:* Barker-Web P., Berthelot S. (eds): *Histoire naturelle des îles Canaries*, Paris, Bethune, 2 (Zoologie) : 119-146.

Orbigny A. d', 1839c – *Voyage dans l'Amérique méridionale, foraminifères*. Levrault, Paris and Strasbourg, vol. 5, 86 p.

Orbigny A. d', 1846 – *Foraminifères fossiles du bassin tertiaire de Vienne (Autriche)*. Paris, Gide et Compe, 312 p.

Ouillon S., Douillet P., Lefebvre J. P., Le Gendre R., Jouon A., Bonneton P., Fernandez J. M., Chevillon C., Magand O., Lefèvre J., Le Hir P., Laganier R., Dumas F., Marchesiello P., Bel Madani A., Andréfouët S., Panché J. Y. & Fichez R., 2010 – Circulation and suspended sediment transport in a coral reef lagoon: the south-west lagoon of New Caledonia. *Marine Pollution Bulletin*, Special Issue on New Caledonia 61: 269-296.

Pallas P. S., 1766 – *Elenchus Zoophytorum sistens generum adumbrations generaliores et specierum cognitarum succinctas descriptions cum selectis auctorum synonymis*. The Hague, P. van Cleef.

Palmer M. A., 1988 – Epibenthic predators and marine meiofauna: separating predation, disturbance, and hydrodynamic effects. *Ecology*, 69: 1251-1259.

Parker F. L., 1952 – Foraminifera species off Portsmouth, New Hampshire. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 106: 391-423.

Parker F. L., 1954 – Distribution of the foraminifera in the north-eastern Gulf of Mexico. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 111: 453-588.

Parker J. H., 2009 – Taxonomy of Foraminifera from Ningaloo Reef, Western Australia. *Memoirs of the Association of Australasian Palaeontologists*, 36: 1-810.

Parker J. H., Gischler E., 2011 – Modern foraminiferal distribution and diversity in two atolls from the Maldives, Indian Ocean. *Marine Micropaleontology,* 78: 30-49.

Parker W. K., Jones T. R., 1857 – Description of some foraminifera from the coast of Norway. *Annals and Magazine of Natural History,* series 2, 19: 273-303.

Parker W. K., Jones T. R., 1859 – On the nomenclature of the foraminifera. II. On the species enumerated by Walker and Montagu. *Annals and Magazine of Natural History*, series 3, 4: 333-351.

Parker W. K., Jones T. R., 1860 – On the nomenclature of the foraminifera. 4 (continued). *Annals and Magazine of Natural History,* series 3, 4: 333-351.

Parker W. K., Jones T. R., 1865 – On some foraminifera from the North Atlantic and Arctic Oceans, including Davies Straits and Baffin's Bay. *Philosophical Transactions of the Royal Society*, 155: 325-441.

ParkerW. K., Jones T. R., Brady H. B., 1865 – On the nomenclature of the foraminifers, Part XII. The species enumerated by d'Orbigny in the "Annales des Sciences Naturelles", 7, 1826. *Annals and Magazine of Natural History*, series 3, 16: 15-41.

Parr W. J., 1932 – Victorian and South Australian foraminifera - *Proceedings of the Royal Society of Victoria,* 44, Part I: 1-14; Part II: 218-234.

Parr W. J., 1941 – A new genus, Planulinoides, and some species of foraminifera from South Australia. *Mining and Geological Journal*, 2: 305.

Parr W. J., 1945 – Recent Foraminifera from Barwon Heads, Victoria. *Proceedings of the Royal Society of Victoria,* 56: 189-227.

Parr W. J., 1950 – Foraminifera. *Reports of the British, Australian and New Zealand Antarctic Research Expedition 1929-1931, series B (Zoology and Botany),* 5: 233-392.

Patterson R. T., Richardson R. P., 1987 – A taxonomic revision of the unilocular foraminifera. *Journal of Foraminiferal Research,* 17: 212-226.

Pawlowski J., Bolivar I., Fahrni J. F., de Vargas C., Bowser S. S., 1999a – Molecular evidence that *Reticulomyxa filosa* is a freshwater naked foraminifera. *Journal of Eukaryotic Microbiology* 46: 612-617.

Payri C., Richer de Forges B., 2007 – "Compendium of New Caledonian Marine species: overview". In Payri C. E., Richer de Forges B. (eds): *Compendium of marine species of New Caledonia*, IRD Nouméa, Documents Scientifiques et Techniques, 117, seconde édition: 13-18.

Perelis L., Reiss Z., 1975 – Cibicididae from the Gulf of Elat. *Israel Journal of Earth Sciences*, 24: 73-96.

Petri S., 1957 – Foraminíferos miocênicos da Formação Pirabas. *Boletim da Faculdade de Filosofia, Ciências e Letras, Universidade de São Paulo, São Paulo*, 216: 1-79.

Philippi R. A., 1844 – Nachtrag zum zweiten Bande der Enumeratio Molluscorum Siciliae. *Zeitschrift für Malakozoologie*, 1: 100-112.

Phleger F. B., Parker F. L, 1951 – Ecology of foraminifera, northwest Gulf of mexico, part 2: foraminifera species. *Geological Society of America Memoir*, 46: 1-64.

Phleger F. B., Parker F. L., Peirson J. F., 1953 – North Atlantic Foraminifera. *Reports Swedish Deep-Sea Expedition*, 7: 1-122.

Popescu G., 1983 – Marine Middle Miocene monothalamous Foraminifera from Romania. *Memorii Institutul de Geologie si Geofizica,* 31: 261-280.

Popescu G., Crihan I.-M., 2004 – Contributions to the knowledge of the calcareous unicameral foraminifera from the Middle Miocene from Romania. *Acta Palaeontologica Romaniae*, 4: 403-421.

Quilty P. G., 1974 – Tasmanian Tertiary foraminifera, Part 1, *Textularia, Miliolina,* Nodosariacea: *The Papers and Proceedings of the Royal Society of Tasmania*, 108: 31-106.

Rainer S. F., 1992 – Diet of prawns from the continental slope of North-Western Australia. *Bulletin of Marine Science*, 50: 258-274.

Rasheed D. A., 1971 – Some foraminifera belonging to Miliolidae and Opthalmidiidae from the Coral Sea, south of Papua (New Guinea), Part 2. *Journal of the Madras University, Section B*, 37-38: 19-68.

Reichel M., 1937 – Étude sur les Alvéolines, II. *Schweizerische Paläontologische Abhandlung*, 59 : 95-147.

Renaud-Debyser J., 1965 – Note préliminaire sur la microfaune des fonds meubles du lagon (Baie de Saint-Vincent), Nouvelle-Calédonie. *Cahiers du Pacifique*, 7 : 107-116.

Renema W., 2003 – Foraminifera on reefs around Bali (Indonesia). *Zoologische Verhandelingen*, 345: 337-366.

Renema W., Hohenegger J., 2005 – On the identity of Calcarina spengleri (Gmelin, 1791). *Journal of Foraminiferal Research,* 35: 15-21.

Reuss A. E., 1848 – Die fossilen Polyparien des Wiener Tertiarbeckens. *Haidengers Naturwissenshaftliche Abhandlungen, Wien,* 2: 1-109.

Reuss A. E., 1850 – Neues Foraminiferan aus den Schichten des österreichischen Tertiärbeckens. *Denkschriften der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse*, 1: 365-390.

Reuss A. E., 1851 – Ueber die fossilen Foraminiferen und Entomostraceen der Septarienthone der Umgegend von Berlin. *Zeitschrift der Deutschen Geologischen Gesellschaft, Berlin*, 3: 49-91.

Reuss A. E., 1858 – Ueber die Foraminiferen von Pietzpuhl. *Zeitschrift der Deutschen Geologischen Gesellschaft, Berlin*. 10, 433- 438.

Reuss A. E., 1861 – Beiträge zur Kenntnis der tertiären Foraminiferen Fauna: *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse in Wien*, 42: 355-370.

Reuss A. E. 1863 – Die Foraminiferen des norddeutschen Hils und Gault. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse in Wien*, 46: 5-100. (Synonymous with Reuss 1862).

Reuss A. E., 1866 – Die Foraminiferen, Anthozoa und Bryozoa des deutschen Septarientons. *Denkschriften der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse*, 25: 117-214.

Reuss A. E., 1867 – Die fossile Fauna der Steinsalzablagerungen von Wieliczka in Galizien. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Klasse*, 55: 17-182.

Revets S. A., 1991 – The generic revision of the Reussellids (Foraminifera). *Journal of Micropalaeontology*, 10: 1-15.

Revets S. A., 1992 – The structure and taxonomic position of Millettia Schubert, 1911 (Foraminiferida). *Journal of Micropalaeontology*, 11: 37-46.

Revets S. A., 1993 – The revision of the genus *Elongobula* Finlay 1939. *Journal of Foraminiferal Research*, 23: 254-266.

Revets S. A., 1996 – The generic revision of five families of rotaliine foraminifera: Part I. The Bolivinitidae. *Cushman Foundation for Foraminiferal Research Special Publication*, 34: 1-55.

Revets S. A., 2000 – Foraminifera of Leschenault Inlet. *Journal of the Royal Society of Western Australia*, 83: 365–375.

Revets S. A., Whittaker J. E., 1991 – The taxonomic position of *Orthoplecla* Brady, 1884 (Foraminiferida). *Journal of Micropalaeontology*, 9: 167-172.

Rhumbler L., 1906 – Foraminifera von Laysan und den Chatham-Inseln. *Zoologischer Jahresbericht*, 24: 21-80.

Rhumbler L., 1911 – Die Foraminiferen (Thalamophoren) der Plankton-Expedition. *Ergebnisse der Plankton-Expedition der Humoldt- Stiftung, Kiel und Leipzig,* 3: 1-476.

Richardson S. L., 2006 – Response of epiphytic foraminiferal communities to natural eutrophication in seagrass habitats off Man O'War Cay, Belize. *Marine Ecology*, 27: 404-416.

Rougerie P., 1986 – *Le lagon sud-ouest de la Nouvelle-Calédonie : spécificité hydrologique, dynamique, productivité*. Paris, Orstom, Études et Thèses, 234 p.

Rymer Jones F. W. O., 1872 – On some Recent forms of Lagenae from deep-sea soundings in the Java seas. *Transactions of the Linnean Society of London*, 30: 45-69.

Rzehak A., 1886 – Die Foraminiferenfauna der Neogenformation der Umgebung von Mähr.-Ostrau. *Naturforschender Verein Brünn, Verhandlungen, Brünn*, 1885*,* 24: 77-126.

Said R., 1949 – Foraminifera of the northern Red Sea. *Cushman Laboratory of Foraminiferal Research Special Publication*, 26: 1-44.

Saidova Kh. M., 1975 – *Bentosyne foraminifery Tikhogo Okeana* [Benthonic foraminifera of the Pacific Ocean]. Institut Okeanologii im. P.P. Shirshova, Akademiya Nauk SSSR, Moskva. [Russian]

Saidova Kh. M., 1981 – *O sovremennomsostoyanii sistemy nadvidovykh taksonov Kaynozoyskikh bentosnykh foraminifer (On an up-to-date system of supraspecific taxonomy of Cenozoic benthonic foraminifera).* Moscow, Institut Okeanologii P.P. Shirshova, Akademiya Nauk SSSR.

Saraswati P. K., 2002 – Growth and habitat of some recent miliolid foraminifera: Palaeoecological implications. *Current Science*, 82: 81-84.

Sars G. O., 1872 – Undersoslashgelser over Hardangerfjordens Fauna. Forhandlinger i Videnskasselsbet i Kristiana 1871: 246-255.

Saunders J. B., 1957 – Trochamminidae and certain Lituolidae (foraminifera) from the recent brackish-water sediments of Trinidad, British West Indies. *Smithsonian miscellaneous contributions,* 134: 1-16.

Schlumberger C., 1891 – Révision des Biloculines des grands fonds. *Mémoires de la Société Zoologique de France*, 4 : 542-579.

Schlumberger C., 1893 – Monographie des Miliolidées du golfe de Marseille. *Mémoires de la Société Zoologique de France*, 6 : 57- 80.

Schnitker D., 1971 – Distribution of foraminifera on the North Carolina continental Shelf. *Tulane Studies in Geology and Paleontology*, 8: 169-215.

Schröder, C. J., 1986 – Deep-water arenaceous foraminifera in the northwest Atlantic Ocean. *Canadian Technical Report of Hydrography and Ocean Sciences*. Atlantic Geoscience Centre. Bedford Institute of Oceanography: 1-191.

Schubert R. J., 1904 – Die Ergebnisse der mikroskopischen Untersuchung der bei der aerarischen Tiefbohrung zu Wels durchteuften Schichten. *Jahrbuch Der Kaiserlich-Koniglichen Geologischen Reichsanstalt, Wien*, 53: 385-422.

Schultze F. E., 1875 – *Zoologische Ergebnisse der Nord-seefahrt, vom 21 Juli bis 9 September, 1872. I Rhizopoden, II Jahresbericht der Commission zur Wissenschaftl.* Untersuchung Deutschen Meere in Kiel für die Jahre 1872, 1873, Berlin: 99-114.

Schultze M. S., 1854 – *Ueber den Organismus der Polythalamien (Foraminiferen), nebst Bemerkungen uber die Rhizopoden im Allgemeinen.* Leipzig. Wilhelm Engelmann.

Schwager C., 1866 – Fossile Foraminiferen von Kar Nikobar, Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. Vo Wüllerstorf-Urbair. Geologischer Theil 2 (1); Geologische Beobachtungen 2; Paläontologische Mittheilungen: 187-268.

Scott D. B., Medioli F. S., 1980 – Quantitative studies of marsh foraminiferal distributions in Nova Scotia and comparison with those in other parts of the world: implications for sea level studies. *Cushman Foundation for Foraminiferal Research Special Publication,* 17: 1-58.

Scott D. B., Takayanagi Y., Hasegawa S., Saito T., 2000 – Illustration and reevaluation of affinities of neogene foraminifera described from Japan. Palaeontologia Electronica, 3 (2): 41 p. http://palaeo-electronica.org/2000_2/foram/issue2_00.htm

Seguenza G., 1862 – Dei terreni Terziarii del distretto di Messina; Parte II - Descrizione dei foraminiferi monotalamici delle marne Mioceniche del distretto di Messin. Messina. T. Capra.

Seguenza G., 1880 – Le formazioni Terziarie nella provincia di Reggio (Calabria), Classe di Scienze Fisiche, Matematiche e Naturali, Ser. 3. 6, 446 p. Atti Reale Accademie dei Lincei, Roma.

Seiglie G. A., 1964 – New and rare foraminifers from Los Testigos Reefs, Venezuela. *Caribbean Journal of Science*, 4: 497-512.

Sellier de Civrieux J. M., 1977 – Las Discorbidae del Mar Caribe, frente a Venezuela. *Cuadernos Oceanográficos, Universidad de Oriente, Cumana*, 6: 1-44.

Sen Gupta B. K., 1999 – Systematics of Modern Foraminifera. *In* Sen Gupta B. K. (ed.): *Modern Foraminifera*, Kluwer Academic Publishers, Dordrecht, Boston, London: 7-36.

Sgarella F., Moncharmont Zei M., 1993 – Benthic foraminifera of the Gulf of Naples (Italy): systematics and autoecology. *Bollettino della Società paleontologica italiana*, 32: 145-264.

Shuto T., 1953 – A study on the foraminiferal assemblage of Omura Bay, Nagasaki Prefecture, Kyushu. *Japanese Journal of Geology and Geography,* 23: 127-138.

Siddal J. D., 1878 – On the foraminifera of the River Dee. Proc. *Chester Soc. Nat. Sci*., 2: 42-56.

Sidebottom H., 1906 – Report on the recent Foraminifera from the coast of the Island of Delos (Grecian Archipelago). Part. 3. *Manchester Literary and Philosophical Society Memoirs and Proceedings,* 50 (5): 1-18.

Sidebottom H., 1907 – Report on the recent Foraminifera from the coast of the Island of Delos (Grecian Archipelago). *Manchester Literary and Philosophical Society Memoirs and Proceedings,* 51 (9): 1-28.

Sidebottom H., 1908 – Report on the recent Foraminifera from the Coast of the Island of Delos (Grecian Archipielago), Part V. *Manchester Literary and Philosophical Society Memoirs and Proceedings* pt. 5, 52 (13): 1-28.

Sidebottom H., 1910 – Two new species of *Cassidulina*. *Journal of the Quekett Microscopical Club*, series 2, 11 (67): 105-108.

SIDEBOTTOM H., 1912 – Lagenae of the Southwest Pacific Ocean, from soundings taken by HMS Waterwich, 1895. *Journal of the Queckett Microscopical Club*, series 2, 11: 70-44.

SIDEBOTTOM H., 1913 – Lagenae of the Southwest Pacific Ocean (supplementary paper). *Journal of the Queckett Microscopical Club*, series 2, 12: 161-210.

SIDEBOTTOM H., 1918 – Report on the Recent foraminifera dredged off the east coast of Australia, H. M.S. "Dart" Station 19 (May 14, 1895), lat. 29°22'S long. 153°51'E, 465 fathoms, Pteropod ooze. *Journal of the Royal Microscopical Society*, 1918: 121-152.

SILVESTRI A., 1904 – Forme nuove o poco conosciute di Protozoi Miocenici piemontesi. *Atti dell'Accademia della Scienze, Torino, Italia (1903-04)*, 39: 4-15.

SKINNER H. C., 1961 – Revision of "*Proteonina difflugiformis*". *Journal of Paleontology,* 35 (6): 1239-1240.

SLITER W. V., 1971 – Predation on benthic foraminifera. *Journal of Foraminiferal Research*, 1: 20-28.

STACHE G., 1864 – Die Foraminiferen der tertiaren Mergel des Whaingaroa-Hafens (Provinz Auckland). Novara-Exped., 1857-1859. *Geologische Theil*, 1 (2): 161-304.

STEVENSON J., DODSON J. R., PROSSER I. P., 2001 – A late Quaternary record of environmental change and human impact from New Caledonia. *Palaeogeography, Palaeoclimatology, Palaeoecology,* 168: 97-123.

SURESH GANDHI M., RAJAMANICKAM G. V., NIGAM R., 2002 – Taxonomy and distribution of Benthic foraminifera from the sediments off Palk strait, Tamil Nadu, east coast of India. *Journal of The Palaeontological Society of India*, 47: 47-64.

SZARECK R., 2001 – *Biodiversity and biogeography of recent benthic foraminiferal assemblages in the south-western South China Sea (Sunda Shelf).* Unpublished Ph.D. thesis, Universitätbibliotek der Christian-Albrechts-Universität Kiel, 273 p., 28 pls.

TAKAYANAGI Y., 1951 – On some *Ehrenbergina* from Japan. *Transactions and Proceedings of the Paleontological Society of Japan*, new series, 3: 85-93.

TERQUEM O., 1875 – *Essai sur le classement des animaux qui vivent sur la plage et dans les environs de Dunkerque*. Fascicule 1, Paris : 1-54.

TERQUEM O., 1878 – Les foraminifères et les Entomostracés-Ostracodes de Pliocène supérieur de l'île de Rhodes. *Mémoires de la Société Géologique de France,* série 3, 1 : 1-135.

TESTAU J. L., CONAND F., 1983 – *Estimation des surfaces des différentes zones du lagon de Nouvelle-Calédonie*. Unpublished Rapport Orstom, Nouméa, 5 p.

THALMANN H. E., 1950 – New names and homonyms in foraminifera. *Contributions from the Cushman Foundation for Foraminiferal Research*, 1: 41-45.

THOMASSIN B. A., 1984 – Les récifs coralliens dans l'Indopacifique ouest : grands types de constructions et successions des phases d'édification. *Oceanis,* l0 : 1-49.

TIZARD T. H., MURRAY J., 1981 – Exploration of the Faröe Shetland Channel during the Summer of 1880 in H. M. hired ship "Knight Errant". *Proceedings of the Royal Society of Edinburgh*, 11: 638-720.

TODD R., 1957 – "Smaller foraminifers". *In*: *Geology of Saipan, Mariana Islands (Pt. 3) Paleontology*, *Professional Papers U.S. Geological Survey*, 280-H: 265-320.

TODD R., 1961 – Foraminifera from the Onotoa Atoll, Gilbert Islands. *Professional Papers U.S. Geological Survey*, 354-H: 171-191.

TODD R., 1965 – The foraminifera of the tropical Pacific collections of the "Albatross",1899-1900, Part. 4. Rotaliform families and Planctonic families. *United States National Museum Bulletin,* 61: 1-127.

TODD R., 1966 – Smaller Foraminifera from Guam. *Professional Papers U.S. Geological Survey*, 403-I: 1-41.

TODD R., 1971 – *Tretomphalus* (Foraminifera) from Midway. *Journal of Foraminiferal Research*, 1: 162-169.

TODD R., BRÖNNIMANN P., 1957 – Recent foraminifera and thecamoebina from the eastern Gulf of Paria. *Cushman Foundation for Foraminiferal Research, Special Publication,* 3: 1-43.

TOULOUSE M., 1965 – *Introduction à l'étude des foraminifères des sédiments actuels de la baie de Saint-Vincent (lagon de la côte ouest de Nouvelle-Calédonie)*. Unpublished DES Géologie, université de Montpellier, 87 p.

TOULOUSE M., 1966 – Première étude des foraminifères des sédiments actuels de la baie de Saint-Vincent (Nouvelle-Calédonie). *Comptes-Rendus de l'Académie des Sciences,* Paris, (D), 262 : 1517-1518.

TOWE K. M., CIFELLI R., 1967 – Wall Ultrastructure in the calcareous foraminifera: Crystallographic aspects and a model for calcification. *Journal of Paleontology*, 41: 742-762.

TRAUTH F., 1918 – Das Eozänvorkommen bei Radstadt im Pongau und seine Beziehungen zu den gleichalterigen Ablagerunden bei Kirchberg am Wechsel und Wimpassing am Leithagebirge. *Denkschriften der Kaiserlichen Akademie der Wissenschaften, Wien, Mathematisch-Naturwissenschaftliche Klasse*, 95: 171-278.

UCHIO T., 1952 – New genera and species of foraminifera from Hachijo Island, Tokyo Prefecture. *Japanese Journal of Geology and Geography*, 22: 145-159.

UCHIO T., 1953 – On some foraminiferal genera in Japan. *Japanese Journal of Geology and Geophysics*, 23: 151-162.

UCHIO T., 1960 – Ecology of living benthonic foraminifera from the San Diego, California, area. *Cushman Foundation for Foraminiferal Research Special Publications*, 5: 1-72.

UJIIÉ H., 1963 – Foraminifera from the Yûrakuchô Formation (Holocene), Tokyo City. *Science Reports of the Tokyo Kyoiku Daigaku.* Section C., 8 (79): 27-41.

UJIIÉ H. H., 1990 – Bathyal benthic foraminifera in a piston core from east off the Miyako islands, Ryukyu Island Arc. *Bulletin of the College of Science*, *University of the Ryukyus*, 49: 1-60, 32 pls.

UJIIÉ H., RIFARDI D., 1993 – Some benthic foraminifera from the Oura River. Estuary and its Environs, Okinawa. *Bulletin of the College of Science University of the Ryukyus,* 5: 121-243.

VAN MORKHOVEN F. P. C. M., BERGGREN W. A., EDWARDS A. S., 1986 – *Cenozoic cosmopolitan deep-water benthic foraminifera*. Bulletin des centres de recherches exploration-production Elf-Aquitaine, Mémoire 11, 421 p.

VEGA A., GANACHAUD A., BOSSON J., 2005 – *Atlas climatologique satellite des courants, vents, élévation et température de surface dans la ZEE de la Nouvelle-Calédonie*. Nouméa, IRD Éditions, 27 p.

Vella P., 1957 – Studies in New Zealand foraminifera;
Part I – Foraminifera from Cook Strait.
Part II – Upper Miocene to Recent species of the genus *Notorotalia*. *New Zealand Geological Survey Paleontological Bulletin,* 28: 1- 64.

Venec-Peyré M. T., Salvat B., 1981 – Les foraminifères de l'atoll de Scilly (archipel de la Société): Étude comparée de la biocoenose et de la thanatocoenose. *Annales de l'Institut Océanographique*, Paris, 57 : 79-110.

Vickerman K., 1992 – The diversity and ecological significance of protozoa. *Biodiversity and Conservation*, 1: 334-341.

Vincent E., 1986 – *Les associations de foraminifères benthiques du bassin des Loyauté (Nouvelle-Calédonie), rapports avec la sédimentation (campagne BIOCAL, 1985)*. Unpublished DEA, Centre des Sciences de la Terre, université de Bourgogne, 28 p.

Vincent E., Laurin B., 1988 – Les associations de foraminifères benthiques du bassin des Loyauté (Nouvelle-Calédonie) : autochtonie et allochtonie. *Revue de Micropaléontologie*, 31 : 196-206.

Vincent E., Lambert B., Laurin B., Mathieu R., 1991 – Distribution des foraminifères benthiques dans le bassin des Loyauté. *Documents et Travaux de l'IGAL*, *Paris*, 15 : 127-149.

Walker G., Jacob E., 1798 – *In* Kanmacher F.: *Adam's Essays on the Microscope, Ed. 2*.

Wang Nai-wen, 1964 – *The discovery of Evolutononion shansiense gen. et sp. nov. (foraminifera) and its significance for stratigraphy and paleogeography. Annual meeting of the society of Oceanography and Limnology of China*. Beijing, 1963, service press: abstract.

Warren A. D., 1957 – Foraminifera of the Buras-Scofield Bayou region, southeast Louisiana. *Contributions from the Cushman Foundation for Foraminiferal Research*, 8 (1): 29-40.

Wells P. E., 1985 – Recent agglutinated benthonic Foraminifera (suborder Textulariina) of Wellington Harbour, New Zealand. *New Zealand Journal of Marine and Freshwater Research*, 19: 575-599.

Wetmore K. L., 1995 – Foraminifera: Life History and Ecology. *University of California, Berkeley, Museum of Paleontology*. Available at: http://www.ucmp.berkeley.edu/foram/foramlh.html (viewed march 08, 2012).

Whittaker J. E., Hodgkinson R. L., 1979 – Foraminifera of the Togopi Formation, eastern Sabah, Malaysia. *Bulletin of the British Museum* (*Natural History*), 31: 1-120.

Wiesner H., 1923 – *Die Milioliden der östlichen Adria*. Prag-Bubenc. The author.

Wiesner H., 1931 – Die foraminiferen der deutschen Sudpolar Expedition 1901-1903. *Deutsche Südpolar Expedition, v. 20, Zoologie*, 12: 53-165.

Williamson W. C., 1848 – On the Recent British species of the genus Lagena. *Annals and Magazine of Natural History,* series 2, 1: 1-20.

Williamson W. C., 1858 – *On the recent foraminifera of Great Britain*. London Ray Society, 107 p.

Wilson B., Ramsook A., 2007 – Population densities and diversities of epiphytal foraminifera on nearshore substrates, Nevis, west India. *Journal of Foraminiferal Research*, 37: 213-222.

Wirrmann D., Sémah A.-M., Debenay J.-P., Chacornac-Rault M., 2011 – Mid- to late Holocene environmental and climatic changes in New Caledonia, southwest tropical Pacific, inferred from the littoral plain Gouaro-Déva. *Quaternary Research*, *Online 14 June 2011,* doi:10.1016/j.yqres.2011.04.007.

Wright J., 1886 – *In* Haddon A. C.: *First report on the marine fauna of south-west of Ireland*, Proceedings of the Royal Irish Academy, Dublin, series 2, 4: 599-638.

Wright J., 1900 – The foraminifera of Dog's Bay, Connemara. *Irish Naturalist*, 9: 50-55.

Wright T. J., 1902 – "Foraminifera". *In* Reade T. M. (ed.): *Glacial and Post-Glacial features of the lower valley of the River Lune and its estuary*, Proceedings of the Geological Society, Liverpool, 9, 183 p.

Yassini I., Jones B. G., 1995 – *Foraminiferida and ostracoda from estuarine and shelf environments on thr southeastern coast of Australia, Wollongong, NSW*. University of Wollongong, 484 p.

Zheng S. Y., 1979 – The recent foraminifera of the Xisha Islands, Guangdong Province, China, II. *Studia Marina Sinica*, 15: 101-232. [Chinese with summary and new genera and species in English]

Zheng S. Y., 1980 – The recent foraminifera of the Zhongsha Islands, Guangdong Province, China, I. *Studia Marina Sinica*, 16: 143-182. [Chinese with summary and new genera and species in English]

Zheng S. Y., 1988 – *The agglutinated and porcelaneous foraminifera of the East China Sea*. China Ocean Press, Beijing, 337 p. [Chinese with summary in English]

Zheng S. Y., Cheng T. S. Wang X., Fu Z., 1978 – The Quaternary foraminifera of the Dayuzhang irrigation area, Shandong Province, and a preliminary attempt at an interpretation of its depositional environment. *Studia Marina Sinica*, 13: 16–78.

Alphabetical Index

Bold: Species illustrated in the present book.
Underline: Species reported in the literature, but not found for being illustrated in this book.
Italic: Synonymous taxonomic names.

Abstract

The first part of this guide is designed to introduce the reader to New Caledonia, a French archipelago in the tropical-subtropical southwestern Pacific (latitude 15°-26° S and longitude 156°-174° E), with the main island (400 km long and 50 km wide) being the third largest island in the southwestern Pacific after New Guinea and New Zealand. It presents an overview of the geologic, geomorphic, oceanographic and climatic setting of New Caledonia at general, regional, and local scales. Then, the current knowledge of foraminifera, including biology and the main test components used for identification is summarized and illustrated. It is mostly destined for non-specialists and people new to foraminifera. In the following chapters, foraminiferal studies of New Caledonia are synthesized, with emphasis on studies carried out in lagoonal, reefal and paralic environments during the past 35 years, including distribution maps of the main species, distribution models related to depth and mud content of the sediment, and examples of foraminifera as environmental indicators at various space and time scales.

The main part of this work is a guide to the taxonomy and identification of benthic foraminifera that are very diversified and abundant around New Caledonia. It aims to assist micropaleontologists and students of foraminifera, but also to provide a resource for environmental managers and scientists who may use foraminifera as a tool for environmental monitoring and assessment, without being specialists of this group. For achieving this goal, species are classified by the nature of the wall and the dominant morphological feature. First, a photographical summary presents full-page plates showing small images of all species divided into agglutinated, porcelaneous and hyaline, with the hyaline species further classified by the coiling mode. It will allow an easy comparison between related species and a quick pre-identification of specimens before advancing to the next chapter for confirmation on the basis of descriptions and larger photographs of the species. At the end of the book, and mostly for specialists, a systematics list of foraminiferal species identified from New Caledonia is provided, with a brief synonymy list including the original type reference, and a few references that illustrate the species clearly. Systematics is organized following Loeblich & Tappan (1992, 1994) and Kaminski (2004).

A total of 1,043 species are described and illustrated by scanning electron and light microscope photographs. They were collected from over 800 samples that span 0-700 m water depths in a high diversity of habitats including mangrove, estuaries, lagoons, coral reef and shelf. Among them, 665 had not been reported around New Caledonia before the compilation published in 2007. Two new species are described: *Triloculina elongotricarinata* and *Hoeglundina neocarinata*, a new species name is proposed for *Calcarina exuberans*, instead of *Calcarina hispida* var. *pulchella*, and a new genus name is proposed for *Quirimbatina rimosa* instead of *Mimosina rimosa*. One hundred and forty-two species could not be determined at a specific level and are recorded under open nomenclature. A high proportion of them are presumably new species, but more specimens are needed before proposing new species names. Including the 158 species reported in the literature, and not found for being illustrated in this book, the number of benthic foraminifera species identified hitherto around New Caledonia reaches 1,201. Most of them had been reported from the central and western Pacific, and/or the Indo-Pacific area, but some species had been found from remote areas, such as the spectacular *Quinqueloculina erinacea* Mikhalevich, reported from the tropical Atlantic, or *Rotaliammina siphonata* (Seiglie), reported from Venezuela, showing the high dispersal potential of some species.

Résumé

La première partie de ce guide est une présentation de la Nouvelle-Calédonie, archipel français du sud-ouest Pacifique tropical et subtropical (latitude 15°-26° S, longitude 156°-174° E), dont l'île principale, longue de 400 km et large de 50 km est la troisième île du sud-ouest Pacifique par ses dimensions, après la Nouvelle-Guinée et la Nouvelle-Zélande. Cette partie donne un aperçu des caractéristiques géologiques, géomorphologiques, océanographiques et climatiques à l'échelle locale, régionale et générale. Ensuite, les connaissances actuelles sur les foraminifères, incluant leur biologie et les caractéristiques du test utilisées pour leur détermination sont résumées et illustrées à destination des non-spécialistes et des débutants en « foraminiférologie ». Dans les chapitres suivants, les études sur les foraminifères de Nouvelle-Calédonie sont synthétisées, avec une attention particulière pour celles qui ont été réalisées durant les 35 dernières années dans les environnements lagonaires, récifaux et paraliques. Cette synthèse est illustrée par des cartes et des modèles de répartition en fonction de la profondeur et de la teneur en vase du sédiment. Des exemples sont donnés sur l'utilisation des foraminifères comme indicateurs des conditions environnementales à différentes échelles de temps et d'espace.

La partie principale de cet ouvrage est un guide taxonomique pour l'identification des foraminifères benthiques, très diversifiés et très abondants autour de la Nouvelle-Calédonie. Elle est destinée aux micropaléontologistes et aux étudiants, mais son but est également de fournir une base de données accessible aux décideurs environnementaux et aux scientifiques qui pourraient avoir à utiliser les foraminifères comme un outil pour la surveillance et l'évaluation environnementale sans être spécialistes de ce groupe. Dans ce but, les espèces sont classées en fonction de la nature de leur test et de leur caractéristique morphologique dominante. Tout d'abord, un sommaire photographique présente des planches en pleine page avec de petites illustrations pour toutes les espèces, réparties en agglutinées, porcelanées et hyalines, ces dernières étant subdivisées en fonction de l'arrangement des loges. Ce sommaire permet une comparaison aisée entre les espèces et une prédétermination des spécimens avant le passage au chapitre suivant, où une description et de plus grandes illustrations permettent d'affiner la détermination. À la fin de l'ouvrage, et plus particulièrement destinée aux spécialistes, une liste systématique des foraminifères identifiés en Nouvelle-Calédonie est fournie, avec une brève liste de synonymies qui inclut la référence du type original de l'espèce et quelques références qui l'illustrent clairement. La systématique suit les conceptions de Loeblich & Tappan (1992, 1994) et de Kaminski (2004).

Au total, 1 043 espèces sont décrites et illustrées par des images au microscope électronique à balayage et des photos au microscope optique. Ces espèces ont été récoltées dans 800 échantillons prélevés entre 0 et 700 m dans des environnements très divers incluant la mangrove, les estuaires, les lagons, les environnements récifaux et la plateforme continentale. Parmi ces espèces, 665 n'avaient jamais été signalées en Nouvelle-Calédonie avant la compilation publiée en 2007. Deux espèces nouvelles sont décrites : *Triloculina elongotricarinata* et *Hoeglundina neocarinata*, un nouveau nom d'espèce est proposé pour *Calcarina exuberans*, en remplacement de *Calcarina hispida* var. *pulchella* et un nouveau nom de genre est proposé pour *Quirimbatina rimosa* en remplacement de *Mimosina rimosa*. 142 espèces n'ont pas pu être déterminées au niveau spécifique et ont été laissées en nomenclature ouverte. Une proportion notable d'entre elles correspond probablement à des espèces nouvelles, mais davantage de spécimens sont nécessaires avant de pouvoir proposer un nouveau nom d'espèce. En rajoutant les 158 espèces rapportées dans la littérature, et non retrouvées pour être illustrées dans cet ouvrage, le nombre de foraminifères benthiques inventoriés jusqu'à maintenant en Nouvelle-Calédonie atteint 1 201. La plupart de ces espèces ont été signalées dans le centre et l'ouest Pacifique, et/ou dans la région Indopacifique, mais quelques espèces ont été trouvées dans des zones très éloignées comme la spectaculaire *Quinqueloculina erinacea* Mikhalevich, décrite dans l'Atlantique tropical, ou *Rotaliammina siphonata* (Seiglie), décrite au Venezuela, montrant le fort potentiel dispersif de certains foraminifères.

Contents

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With about 10,000 species living in salted and brackish waters, foraminifera constitute the most diverse group of shelled microorganisms in modern oceans, and substantially contribute to biodiversity. Abundant and sensitive to environmental conditions, they constitute one of the most valuable tools for environmental assessment and monitoring programs. Preservation of their mineralized test in the sediment allows the reconstruction of past conditions, including Global Change.

This guide first presents the regional setting and environmental conditions prevailing around New Caledonia. The following sections give an introduction to foraminifera, designed to be accessible to non-specialists, and summarize the main researches that have been carried out on foraminifera from New Caledonia. The main part of the guide describes and illustrates more than 1,000 species of foraminifera collected in a great variety of environments around New Caledonia. For each species, SEM micrographs are associated with a description and notes on its distribution. In order to facilitate identification, even by non-specialists, species are recorded in alphabetical order within groups made on the basis of (1) the nature of the test and (2) the dominant morphological feature. A photographical summary is provided for preliminary identification.

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