

NEW ZEALAND
DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH

BULLETIN 182

**A Checklist of Recent New Zealand
Foraminifera**

by

J. V. EADE

New Zealand Oceanographic Institute

Memoir No. 44

1967

A CHECKLIST OF RECENT NEW ZEALAND FORAMINIFERA



Photo: J. J. Whalan

Laticarinina pauperata (Parker and Jones) from 1,858 metres off Great Barrier Island, New Zealand. (New Zealand Oceanographic Station F. 46; magnification $\times 82$. P.M. 1, in appropriate N.Z.O.I. type register).

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FOREWORD

The remains of Foraminifera constitute the predominant part of the present-day sediments in a wide area around New Zealand, and a fuller knowledge of the biology and ecology of these organisms is essential to a proper understanding of their role as sediments.

Over the years there has been relatively little work carried out in New Zealand on the Recent Foraminifera. Activity in this field has latterly increased, however, and one of the first needs that becomes evident is that for a checklist of the species already described as constituting the New Zealand Recent fauna.

The present memoir fills this requirement and as well draws attention to the broad outlines of the basic environmental groupings.

J. W. BRODIE,
Director,
N.Z. Oceanographic Institute.

CONTENTS

| | <i>Page</i> |
|------------------------------|-------------|
| Introduction | 9 |
| Historical Outline | 9 |
| Distribution | 10 |
| Planktonic Species . . | 10 |
| Benthonic Species . . | 10 |
| Depth Distribution | 12 |
| Geographic Distribution | 12 |
| Summary | 13 |
| Checklist | 14 |
| Suborder Allogromiina | 14 |
| Superfamily Lagynacea | 14 |
| Suborder Textulariina | 14 |
| Superfamily Ammodiscacea | 14 |
| Superfamily Lituolacea | 17 |
| Suborder Miliolina | 22 |
| Superfamily Miliolacea | 22 |
| Suborder Rotaliina | 28 |
| Superfamily Nodosariacea | 28 |
| Superfamily Buliminacea | 37 |
| Superfamily Discorbacea | 42 |
| Superfamily Spirillinacea | 45 |
| Superfamily Rotaliacea | 46 |
| Superfamily Globigerinacea | 47 |
| Superfamily Orbitoidacea . . | 49 |
| Superfamily Cassidulinacea | 51 |
| Superfamily Robertinacea | 54 |
| List of References | 57 |
| Index | 63 |

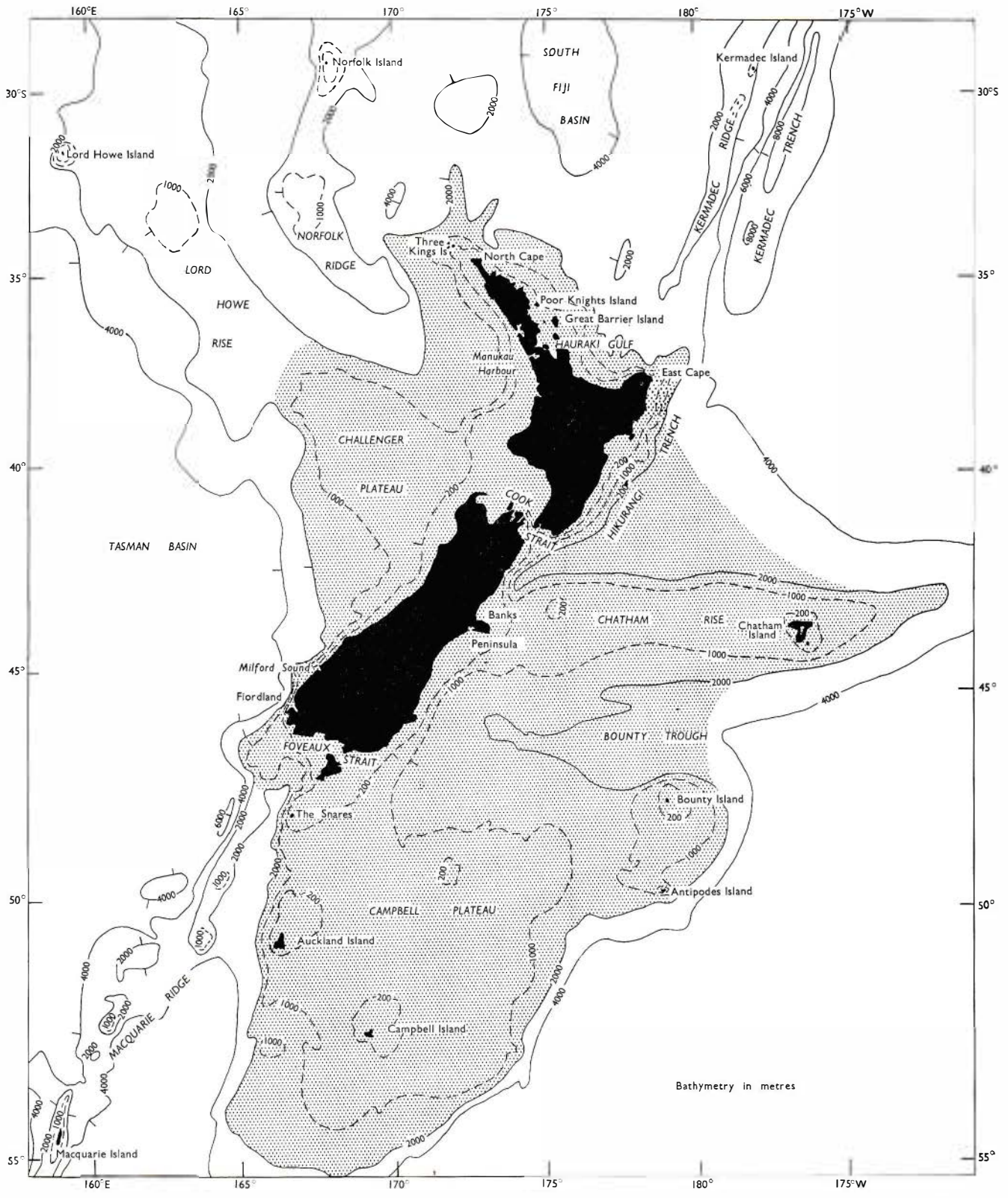


Fig. 1: Locality chart showing the New Zealand Plateau (shaded). Bathymetry based on Brodie (1964) and Brodie and Dawson (1965). Depth in metres.

A Checklist of Recent New Zealand Foraminifera

INTRODUCTION

Foraminifera live in almost every marine and brackish-water environment. They reproduce abundantly and their tests commonly accumulate in large numbers on the sea floor where they may constitute more than 90 per cent of the sediment. As well as abundant specimens there are large numbers of different species present in numerous environments. At most localities there are 50 to 100 species present and at some positions as many as 200 or more.

The present knowledge of New Zealand Recent Foraminifera is based on 23 contributions and several minor references in other papers published over a period of about 80 years. Most of these are systematic descriptions or lists of species, many from a single sample, and no attempts have yet been made to study the New Zealand foraminiferal fauna as a whole or to establish any patterns of distribution within the region. From the work already done, however, it is possible to derive a provisional list of New Zealand Recent Foraminifera and draw some general conclusions about their distribution and ecology.

All Foraminifera recorded from localities within the boundaries of the New Zealand Plateau as designated by Brodie (1964) (Fig. 1), are listed here. Genera and higher taxa are listed in systematic order, the classification followed being that of Loeblich and Tappan (1964). Species, subspecies, and varieties are listed alphabetically under each genus. The following information is given for each form.

- (a) Name.
- (b) Original reference.

(c) All references to New Zealand Recent occurrences, listed chronologically. Each reference consists of author's name, year of publication, page, plate, and figure numbers, and in brackets the generic and specific names if different from those in the immediately preceding reference. For example:

Hyperammina novae-zealandiae Heron-Allen and Earland, 1922.

Heron-Allen and Earland, 1922: 89, pl. 3, figs. 1-5;
Cushman, 1919: 595, pl. 74, fig. 4 (as *Techmitella mestayeri*).

(d) Taxonomic notes discussing forms with specific names in the literature differing from those under which they are listed here. For example, following the information given in (c) would come:

Heron-Allen and Earland (1922) show that *T. mestayeri* is a *Hyperammina* but not *Hyperammina mestayeri* Cushman, 1919, and so requires a new name.

Full synonymies for the species are not given but synonymies contain, as far as the writer is aware, all references giving New Zealand Recent occurrences. References to papers containing descriptions of new genera or higher taxa are not given, as these are readily obtainable from Loeblich and Tappan (1964).

This checklist has been compiled solely from the literature and no attempt has been made to compare different workers' material or to check identifications. Such a study would almost certainly show that some forms are listed under more than one name.

HISTORICAL OUTLINE

The only checklist previously given for New Zealand Recent Foraminifera was compiled by Hutton (1904) in his "Faunae Novae Zealandiae". He listed 190 species and varieties recorded by Brady (1884) and Haeusler (1887) from six sediment samples.

The first report on Foraminifera containing descriptions of New Zealand Recent forms was by Brady (pl. 1)

who in 1884 described Foraminifera from five sediment samples collected from HMS *Challenger*. Two were collected west of Cook Strait, one from Port Nicholson, and two east of the North Island. Brady gave generalised distributions for each species but gave no full species lists for his samples. Full lists for the two east coast dredgings were given by Murray (1895) in the summary

of results of the *Challenger* Expedition. Nuttall (1927, 1931) and later Barker (1960) published localities for Brady's figured specimens, many of which were from New Zealand.

Following Brady's work species were listed by Haeusler (1887) from beaches in the Hauraki Gulf and by Murray (1906, planktonic species only) from the Chatham Rise.

Chapman (pl. 1) (1906) described Foraminifera from a sediment sample taken off Great Barrier Island and later (1909) described Foraminifera from five shallow-water dredgings near the New Zealand Subantarctic islands.

Sidebottom (1912) described Foraminifera of the sub-family Lageninae from 10 sediment samples collected off the north of the North Island.

In 1916 Mestayer listed a large foraminiferal fauna from one dredging near Three Kings Islands.

Cushman (1919) described Foraminifera from one sediment sample from off Poor Knights Islands.

Foraminifera from many dredgings collected by the British Antarctic (Terra Nova) Expedition of 1910–13 were described by Heron-Allen (pl. 1) and Earland (1922). Twelve of these dredgings were from the New Zealand Plateau – six from near Three Kings Islands and North Cape, three from off the east coast of New Zealand and three from the Campbell Plateau.

Between 1922 and 1957 very little was added to the knowledge of New Zealand Recent Foraminifera. There were occasional references to New Zealand occurrences by Cushman and co-authors* in several monographs,

by Parr and Collins in their descriptions of Australian Recent Foraminifera, and by Finlay (pl. 1) in his papers on key species in stratigraphy. Hornibrook listed foraminiferal faunas from single sediment samples: off Banks Peninsula (*in* Knox, 1951), from Foveaux Strait (*in* Fleming, 1952), and from Chatham Rise (1952).

The first detailed distribution study was by Vella (1957) who described Foraminifera from 61 dredgings from Cook Strait. Their distribution was found to be controlled by strong bottom currents which mixed faunas from different depths and prevented the recognition of biofacies.

Distribution of planktonic species in surface sediments of the New Zealand Plateau was described in general terms by Parker (1962) and later in more detail by Kustanowich (1963).

Hulme (1964) described the foraminiferal distribution in Manukau Harbour and found little variation in faunas throughout the area.

Kustanowich (1965) recognised three faunal zones in Milford Sound based on the frequency distribution of benthonic Foraminifera from seven sediment samples.

Hedley, Hurdle, and Burdett (1965) described the Foraminifera from one dredging off the west coast of North Auckland and later (1967) described the Foraminifera associated with the intertidal alga *Corallina* from many localities around New Zealand.

*Papers referring to New Zealand occurrences are marked with an asterisk in the list of references.

DISTRIBUTION

Most earlier workers did not attempt to establish whether specimens were living at the time of collection. It is almost certain that species have been recorded from environments in which they do not live. Specimens relict from late Pleistocene time may also have been listed as Recent species.

PLANKTONIC SPECIES

Planktonic foraminiferal faunas show a marked north-south change over the 22 degrees of latitude of the New Zealand Plateau (Parker, 1962; Kustanowich, 1963). Faunas with numerous species (as many as 30) occur off the north of the North Island whereas faunas with few species (often fewer than 10) occur in the southern part of the New Zealand Plateau region.

Typical northern species are:

Globorotalia crassaformis (Galloway and Wissler),
Globigerinoides conglobatus (Brady),
Globigerinoides sacculifer (Brady),
Pulleniatina obliquiloculata (Parker and Jones).

Typical species of the southern part of the area are:
Globigerina pachyderma (Ehrenberg),
Globigerina quinqueloba Natland.

Species typical of the planktonic faunas of most of the New Zealand Plateau are:

Globorotalia inflata (d'Orbigny),
Globorotalia truncatulinoides (d'Orbigny),
Globigerina bulloides d'Orbigny,
Globigerinoides ruber (d'Orbigny),
Orbulina universa d'Orbigny.

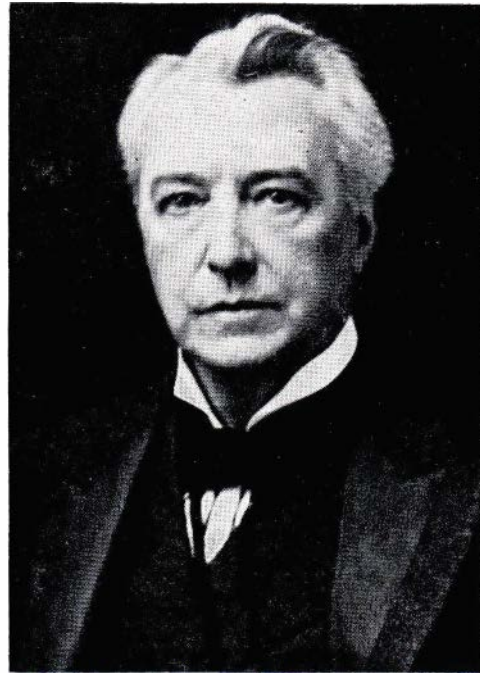
BENTHONIC SPECIES

There is no dominant endemic group of species in the New Zealand benthonic foraminiferal fauna. Most species are cosmopolitan or occur throughout the Pacific Ocean although some appear to be restricted to the Australia - New Zealand region. Only a few species, mainly from shallow water, have not been recorded

PLATE 1



HENRY B. BRADY
1835-1891



EDWARD HERON-ALLEN
1861-1943



FREDERICK CHAPMAN
1864-1943



HAROLD J. FINLAY
1901-1951

Photo credits: Brady and Heron-Alen—Professor Dr. H. Hiltnermann of the Bundesanstalt für Bodenforschung; Chapman—Mr J. L. Knight, Mines Department, Victoria; Finlay (photograph by Spencer Digby, Wellington)—Mr N. de B. Hornibrook.

outside the New Zealand region (e.g., *Hyperammina novae-zealandiae* Heron-Allen and Earland, *Alveolophragmium zealandicum* Vella, *Quinqueloculina* spp., *Ammonia aoteanus* (Finlay), *Elphidium novo-zealandicum* Cushman, *Notorotalia* spp., *Astrononion novo-zealandicum* Cushman and Edwards, *Florilus flemingi* (Vella), *Zeaflorilus parri* (Cushman), *Anomalinoidea spherica* (Finlay).

Distribution studies of benthonic foraminifera have been made in Cook Strait, Manukau Harbour, and Milford Sound. The only study made of a distribution in terms of the New Zealand Plateau as a whole was that by Hedley, Hurdle, and Burdett (1967) on the intertidal fauna. Tentative conclusions on the ecology, in terms of geographic and depth distribution of some species, have been drawn from this checklist, but such conclusions are limited by the positions of samples studied.

Foraminifera have been described from about 200 localities within the New Zealand Plateau: 61 from Cook Strait, 64 from Manukau Harbour, and most of the rest from positions evenly distributed over that part of the New Zealand Plateau shallower than 300 metres. Much less is known of the fauna from greater depths; the present knowledge is based on Foraminifera from 12 widely distributed localities.

DEPTH DISTRIBUTION

Generalisations on the depth distribution of some species are possible. The following shallow-water forms are common at depths less than 80 metres:

Gaudryina convexa (Karrer), *Quinqueloculina colleenae* Vella, *Quinqueloculina delicatula* Vella, *Quinqueloculina incisa* Vella, *Quinqueloculina neosigmoilinoides* Kennett, *Miliolinella labiosa* (d'Orbigny), *Discorbis dimidiatus* (Jones and Parker), *Rosalina bradyi* (Cushman), *Rosalina irregularis* (Rhumbler), *Patellina corrugata* Williamson, *Ammonia aoteanus* (Finlay), *Elphidium novo-zealandicum* Cushman, *Criboelphidium charlottensis* (Vella), *Criboelphidium simplex* (Cushman), *Notorotalia depressa* Vella, *Notorotalia finlayi* Vella, *Cibicides lobatulus* (Walker and Jacob), *Florilus flemingi* (Vella), *Zeaflorilus parri* (Cushman).

Species which occur abundantly at depths ranging from 80 to 220 metres and occasionally deeper are:

Sphaeroidina bulloides d'Orbigny, *Bulimina marginata* d'Orbigny, *Euuvigerina peregrina* (Cushman), *Loxostomum karrierianum* (Brady), *Cassidulina neocarinata* Thalmann.

Species which are less common but persist at similar depths are:

Miliolinella vigilax Vella, *Lenticulina subgibba* Parr, *Planularia tricarinella* (Reuss), *Robulus cultratus* Montfort, *Brizalina spathulata* (Williamson), *Cassidulinoidea*

orientalis (Cushman), *Discorbinaella bertheloti* (d'Orbigny), *Gavelinopsis lobatulus* (Parr), *Eponides tenera* (Brady), *Cibicides marlboroughensis* Vella, *Astrononion novo-zealandicum* Cushman and Edwards, *Anomalinoidea spherica* (Finlay), *Hoeglundina elegans* (d'Orbigny).

Species persistent at depths greater than 1,000 metres are:

Hormosina normani Brady, *Eggerella bradyi* (Cushman), *Laticarinina pauperata* (Parker and Jones).

GEOGRAPHIC DISTRIBUTION

Most benthonic species have a broad geographic distribution throughout the New Zealand Plateau. The most common and persistent species are:

Psammosphaera fusca Schulze, *Reophax scoriurus* Montfort, *Haplophragmoides canariensis* (d'Orbigny), *Alveolophragmium zealandicum* Vella, *Siphotextularia concava* (Karrer), *Martinottiella communis* (d'Orbigny), *Quinqueloculina seminulum* (Linnaeus), *Pyrgo pisum* (Schlumberger), *Triloculina insignis* (Brady), *Biloculina depressa* (d'Orbigny), *Amphicoryna scalaris* (Batsch), *Astacolus crepidulus* (Fichtel and Moll), *Astacolus reniformis* (d'Orbigny), *Dentalina emaciata* Reuss, *Lenticulina articulata* (Reuss), *Lenticulina gibba* (d'Orbigny), *Robulus cultratus* Montfort, *Sphaeroidina bulloides* d'Orbigny, *Bolivina robusta* Brady, *Brizalina spathulata* (Williamson), *Bulimina aculeata* d'Orbigny, *Bulimina marginata* d'Orbigny, *Trifarina angulosa* (Williamson), *Discorbinaella bertheloti* (d'Orbigny), *Laticarinina altocamerata* (Heron-Allen and Earland), *Patellinella inconspicua* (Brady), *Patellina corrugata* Williamson, *Planodiscorbis rarescens* (Brady), *Ammonia aoteanus* (Finlay), *Notorotalia zealandica* Finlay, *Eponides repandus* (Fichtel and Moll), *Planulina wuellerstorfi* (Schwager), *Cibicides lobatulus* (Walker and Jacob), *Dyocibicides biserialis* Cushman and Valentine, *Loxostomum karrierianum* (Brady), *Cassidulina laevigata* d'Orbigny, *Globocassidulina subglobosa* (Brady), *Astrononion novozealandicum* Cushman and Edwards, *Pullenia bulloides* (d'Orbigny), *Pullenia quinqueloba* (Reuss), *Oridorsalis tenera* (Brady), *Paromalina coronata* (Parker and Jones), *Hoeglundina elegans* (d'Orbigny).

A conspicuous warm-water element is restricted to the northernmost part of the New Zealand Plateau. The following species have been recorded only from localities north of approximately latitude 40° S to the west of New Zealand, and north of approximately latitude 38° S to the east:

Textularia goesii Cushman, *Textularia stricta* Cushman, *Tritaxis fusca* (Williamson), *Cornuspirella diffusca* (Heron-Allen and Earland), *Siphonaperta agglutinans* (d'Orbigny), *Spiroloculina communis* Cushman and Todd, *Marginulina tenuis* Bornemann, *Planularia tricarinella* (Reuss), *Robulus costatus* (Fichtel and Moll), *Neouvigerina interrupta* (Brady), *Cancriis mauricus* Finlay.

Species recorded only from localities north of about latitude 45° S to the west of New Zealand and north of about latitude 44° S to the east are:

Gaudryina convexa (Karrer), *Spiroloculina disparilis* Terquem, *Saracenaria latifrons* (Brady), *Sigmoidella*

elegantissima (Parker and Jones), *Brizalina alata* (Seguenza).

Species recorded only from localities south of approximately latitude 45° S are:

Reophax subfusiformis Earland, *Cerobertina tenuis* (Chapman and Parr).

SUMMARY

There can therefore be recognised in the planktonic foraminiferal fauna of the New Zealand Plateau a strong cosmopolitan element and distinct warm- and cold-water groups.

For the benthonic species the most notable feature is the low degree of endemism. Distinct changes in the benthonic foraminiferal fauna with depth occur at about

80 metres and 220 metres. Little is known of the benthonic fauna below 300 metres. In the northernmost part of the New Zealand Plateau a warm-water element is conspicuous; in the central region of New Zealand a small intermediate element can be recognised; a small cool-water group exists south of latitude 45° S.

CHECKLIST

Order FORAMINIFERIDA

Suborder ALLOGROMIINA

Superfamily LAGYNACEA

Family LAGYNIDAE

Genus **IRIDIA** Heron-Allen and Earland, 1914

Iridia diaphana Heron-Allen and Earland, 1914

Heron-Allen and Earland, 1914: 371, pl. 36, figs. 1–12;
Heron-Allen and Earland, 1922: 75; Hedley, Hurdle, and
Burdett, 1967: pl. 5, fig. 2.

Family ALLOGROMIIDAE

Genus **SHEPHEARDELLA** Siddall, 1880

Shepheardella taeniformis Siddall, 1880

Siddall, 1880: 131, pl. 15, figs. 1–19, pl. 16, figs. 1–7; Hedley,
Hurdle, and Burdett, 1967: pl. 3.

Suborder TEXTULARIINA

Superfamily AMMODISCACEA

Family ASTRORHIZIDAE

Subfamily ASTRORHIZINAE

Genus **ASTRORHIZA** Sandahl, 1858

Astrorhiza arenaria Carpenter, 1877

Carpenter *in* Norman, 1877: 213; Heron-Allen and Earland,
1922: 75.

Genus **RHABDAMMINA** M. Sars, 1869

Rhabdammina abyssorum M. Sars, 1869

M. Sars, 1869: 248; Haeusler, 1877: 200; Heron-Allen and
Earland, 1922: 91.

Rhabdammina cornuta (Brady, 1879)

Brady, 1879: 43, pl. 4, figs. 14, 15 (as *Astrorhiza*); Brady,
1884: 270, pl. 22, figs. 11–13 (as *Rhabdammina*); Murray,
1895: 604.

Rhabdammina linearis Brady, 1879

Brady, 1879: 37, pl. 3, figs. 10, 11; Brady, 1884: 91–92, 269,
pl. 22, figs. 1–6; Murray, 1895: 604, 610.

Subfamily RHIZAMMININAE

Genus **RHIZAMMINA** Brady, 1879

Rhizammina algaeformis Brady, 1879

Brady, 1879: 39; Heron-Allen and Earland, 1922: 92.

Rhizammina indivisa Brady, 1884

Brady, 1884: 277, pl. 29, figs. 5–7; Chapman, 1909: 325.

Genus **BATHYSIPHON** M. Sars, 1872

Bathysiphon argenteus Heron-Allen and Earland, 1913

Heron-Allen and Earland, 1913a: 38, pl. 3, figs. 1–3; Heron-
Allen and Earland, 1922: 82.

Bathysiphon discreta (Brady, 1881)

Brady, 1881: 48 (as *Rhabdammina*); Murray, 1895: 610;
Heron-Allen and Earland, 1922: 91.

Bathysiphon filiformis M. Sars, 1872

M. Sars (MS) *in* G. O. Sars, 1872: 251; Murray, 1895: 604,
610.

Genus **MARSIPELLA** Norman, 1878

Marsipella chapmani Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 90, pl. 3, figs. 8, 9.

Marsipella cylindrica Brady, 1882

Brady, 1882: 714; Heron-Allen and Earland, 1922: 90.

Marsipella elongata Norman, 1878

Norman, 1878: 281, pl. 16, fig. 7; Heron-Allen and Earland,
1922: 90, pl. 3, figs. 10–12.

Subfamily HIPPOCREPININAE

Genus **HYPERAMMINA** Brady, 1878

Hyperammina elongata Brady, 1878

Brady, 1878: 433, pl. 20, fig. 2; Heron-Allen and Earland,
1922: 87, pl. 1, fig. 21.

Hyperammina friabilis Brady, 1884

Brady, 1884: 258, pl. 23, figs. 1–3, 5, 6; Murray, 1895: 610;
Mestayer, 1916: 128.

Hyperammina laevigata Wright, 1891

Wright, 1891: 466, pl. 20, fig. 1 (as *Hyperammina elongata*
var.); Mestayer, 1916: 128; Cushman, 1919: 596 (as *Hy-*
perammina); Heron-Allen and Earland, 1922: 88 (as *H.*
elongata var.).

Hyperammina mestayeri Cushman, 1919

Cushman, 1919: 596, pl. 74, fig. 3.

Hyperammina novae-zealandiae Heron-Allen and Ear-
land, 1922

Heron-Allen and Earland, 1922: 89, pl. 3, figs. 1–5; Cushman,
1919: 595, pl. 74, fig. 4 (as *Technitella mestayeri*).

Heron-Allen and Earland (1922) show that *T.*
mestayeri is a *Hyperammina* but not *H. mestayeri*
Cushman, 1919 and so requires a new name.

Hyperammina subnodosa Brady, 1884

Brady, 1884: 259, pl. 23, figs. 11–14; Cushman, 1919: 596 (?).

Genus **JACULELLA** Brady, 1879

Jaculella acuta Brady, 1879

Brady, 1879: 35, pl. 3, figs. 12, 13; Brady, 1884: 255, pl. 22, figs. 14–18; Murray, 1895: 604; Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 85, pl. 1, figs. 19, 20.

Jaculella obtusa Brady, 1882

Brady, 1882: 714; Heron-Allen and Earland, 1922: 86.

Genus **SACCORHIZA** Eimer and Fickert, 1899

Saccorhiza ramosa (Brady, 1879)

Brady, 1879: 33, pl. 3, figs. 14, 15 (as *Hyperammia*); Murray, 1895: 604, 610; Chapman, 1909: 325; Heron-Allen and Earland, 1922: 86, pl. 1, fig. 13.

Subfamily **BOTELLININAE**

Genus **BOTELLINA** Carpenter, Jeffreys and Thomson, 1870

Botellina labyrinthica Brady, 1881

Brady, 1881: 48; Mestayer, 1916: 128.

Subfamily **DENDROPHRYINAE**

Genus **DENDRONINA** Heron-Allen and Earland, 1922

Dendronina arborescens Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 78, pl. 2, figs. 10–12.

Dendronina limosa Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 81, pl. 2, figs. 1–6.

Genus **SYRINGAMMINA** Brady, 1883

Syringammina tasmanensis Lewis, 1966

Lewis, 1966: 114–23, figs. 1–8.

Family **SACCAMMINIDAE**

Subfamily **PSAMMOSPHAERINAE**

Genus **PSAMMOSPHAERA** Schulze, 1875

Psammosphaera bowmanni Heron-Allen and Earland, 1912

Heron-Allen and Earland, 1912: 385, pl. 6, fig. 5; pl. 5, figs. 5, 6; Heron-Allen and Earland, 1922: 83; Hulme, 1964: 320.

Psammosphaera fusca Schulze, 1875

Schulze, 1875: 113, pl. 2, figs. 8a–f; Murray, 1895: 610; Mestayer, 1916: 128; Cushman, 1919: 594; Heron-Allen and Earland, 1922: 83, pl. 1, fig. 18; Hulme, 1964: 320; Hedley, Hurdle, and Burdett, 1965: 11.

Psammosphaera parva Flint, 1899

Flint, 1899: 268, pl. 9, fig. 1; Cushman, 1919: 594, pl. 75, fig. 3; Heron-Allen and Earland, 1922: 83.

Psammosphaera rustica Heron-Allen and Earland, 1912

Heron-Allen and Earland, 1912: 383, pl. 6, figs. 2–4, pl. 5, figs. 3, 4; Heron-Allen and Earland, 1922: 84.

Psammosphaera testacea Flint, 1899

Flint, 1899: 268, pl. 8, fig. 2 (as *Psammosphaera fusca* var.); Heron-Allen and Earland, 1922: 83.

Genus **STORTHOSPHAERA** Schulze, 1875

Storthosphaera albida Schulze, 1875

Schulze, 1875: 113, pl. 2, fig. 9; Heron-Allen and Earland, 1922: 77.

Subfamily **SACCAMMININAE**

Genus **SACCAMMINA** M. Sars, 1869

Saccamina alba Hedley, 1962

Hedley, 1962: 387, figs. 1–6; Hedley, Hurdle, and Burdett, 1967: 16, pl. 4, text figs. 2, 3.

Saccamina difflugiformis (Brady, 1879)

Brady, 1879: 51, pl. 4, fig. 3 (as *Reophax*); Murray, 1895: 604, 610; Heron-Allen and Earland, 1922: 92; Hulme, 1964: 321.

Saccamina cf. **difflugiformis** (Brady, 1879)

Kustanowich, 1965: 52 (as *Proteonina* cf.).

Saccamina sphaerica M. Sars, 1869

M. Sars, 1869: 248; Heron-Allen and Earland, 1922: 85, pl. 1, fig. 16.

Genus **BRACHYSIPHON** Chapman, 1906

Brachysiphon corbuliniformis Chapman, 1906

Chapman, 1906: 84, pl. 3, figs. 2, 3.

Genus **PELOSINA** Brady, 1879

Pelosina cylindrica Brady, 1884

Brady, 1884: 236, pl. 26, figs. 1–6; Murray, 1895: 610; Chapman, 1906: 83.

Pelosina rotundata Brady, 1879

Brady, 1879: 31, pl. 3, figs. 4, 5; Murray, 1895: 604, 610; Chapman, 1906: 83.

Pelosina variabilis Brady, 1879

Brady, 1879: 30, pl. 3, figs. 1–3; Brady, 1884: 235, pl. 26, figs. 7–9; Murray, 1895: 604, 610; Chapman, 1906: 83; Heron-Allen and Earland, 1922: 77; Barker, 1960: 52, pl. 26, figs. 7–9.

Genus **TECHNITELLA** Norman, 1878

Technitella bradyi Earland, 1934

Earland, 1934: 65, pl. 2, figs. 7–9; Murray, 1895: 610 (as *Technitella melo*).

Earland (1934) includes *T. melo* of Brady (1884) (not of Norman, 1878), listed by Murray (1895), in the synonymy of *T. bradyi*.

Technitella raphanus Brady, 1884

Brady, 1884: 247, pl. 25, figs. 13, 14; Cushman, 1919: 594.

Genus **THURAMMINA** Brady, 1879

Thurammia albicans Brady, 1879

Brady, 1879: 46; Heron-Allen and Earland, 1922: 108 (as *Thurammia papillata* var.).

Thurammia papillata Brady, 1879

Brady, 1879: 45, pl. 5, figs. 4–8; Haeusler, 1887: 200; Murray, 1895: 604; Heron-Allen and Earland, 1922: 107.

Thurammia papillata var. **castanea** Heron-Allen and Earland, 1917

Heron-Allen and Earland, 1917: 545, pl. 26, figs. 14–18; pl. 29, figs. 17, 20; Heron-Allen and Earland, 1922: 107.

Thurammia papillata var. **haeusleri** Heron-Allen and Earland, 1917

Heron-Allen and Earland, 1917: 547, pl. 28, figs. 1–12; pl. 29, fig. 16; pl. 30, fig. 8; Heron-Allen and Earland, 1922: 107.

Subfamily HEMISPHAERAMMININAE

Genus **HEMISPHAERAMMINA** Loeblich and Tappan, 1957

Hemisphaerammina bradyi Loeblich and Tappan, 1957

Loeblich and Tappan, 1957: 224, pl. 72, fig. 2; Murray, 1895: 610 (as *Webbina hemisphaerica*).

Loeblich and Tappan (1957) include *W. hemisphaerica* of Brady, 1884 (not Jones, Parker, and Brady, 1866), listed by Murray (1895), in the synonymy of *H. bradyi*.

Hemisphaerammina depressa (Heron-Allen and Earland, 1932)

Heron-Allen and Earland, 1932: 329, pl. 7, figs. 10, 11 (as *Webinella*); Hedley, Hurdle, and Burdett, 1967: pl. 5, fig. 1 (as *Hemisphaerammina*).

Genus **THOLOSINA** Rhumbler, 1895

Tholosina bulla (Brady, 1881)

Brady, 1881: 51 (as *Placopsilina*); Murray, 1895: 604.

Tholosina protea Heron-Allen and Earland, 1932

Heron-Allen and Earland, 1932: 330, pl. 8, figs. 5–8; Hulme, 1964: 320; Hedley, Hurdle, and Burdett, 1967.

Tholosina vesicularis (Brady, 1879)

Brady, 1879: 51, pl. 5, fig. 2 (as *Placopsilina*); Cushman, 1919: 595 (as *Tholosina*).

Subfamily DIFFUSILININAE

Genus **CRITHIONINA** Goes, 1894

Crithionina granum Goes, 1894

Goes, 1894: 15, pl. 3, figs. 28–33; Heron-Allen and Earland, 1922: 105.

Crithionina hispida Flint, 1899

Flint, 1899: 267, pl. 6, fig. 2 (as *Crithionina pisum* var.); Heron-Allen and Earland, 1922: 106.

Crithionina mamilla Goes, 1894

Goes, 1894: 15, pl. 3, figs. 34–36; Heron-Allen and Earland, 1922: 105.

Crithionina pisum Goes, 1896

Goes, 1896: 24, pl. 2, figs. 1, 2; Heron-Allen and Earland, 1922: 106.

Crithionina rugosa Goes, 1896

Goes, 1896: 24, pl. 2, figs. 3, 4; Heron-Allen and Earland, 1922: 106, pl. 4, fig. 5.

Genus **DAITRONA** Loeblich and Tappan, 1961

Daitrona lens (Goes, 1896)

Goes, 1896: 24, pl. 2, figs. 5–8 (as *Crithionina*); Heron-Allen and Earland, 1922: 107, pl. 4, figs. 1, 2; Hedley, Hurdle, and Burdett, 1967: text fig. 4 (as *Daitrona*).

Family AMMODISCIDAE

Subfamily AMMODISCINAE

Genus **AMMODISCUS** Reuss, 1862

Ammodiscus exsertus Cushman, 1910

Cushman, 1910a: 75, text fig. 97; Hornibrook, 1952: 185.

Ammodiscus incertus (d'Orbigny, 1839)

d'Orbigny, 1839a: 49, pl. 6, figs. 16, 17 (as *Operculina*); Murray, 1895: 610 (as *Ammodiscus*); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 109.

Ammodiscus tenuis Brady, 1881

Brady, 1881: 51; Brady, 1884: 91, 92, 332, pl. 38, figs. 4–6; Murray, 1895: 604, 610; Chapman, 1906: 85; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 109; Barker, 1960: 78; pl. 38, figs. 5, 6 (as *Involutina*).

Genus **AMMODISCOIDES** Cushman, 1909

Ammodiscoides mestayeri (Cushman, 1919)

Cushman, 1919: 597, pl. 74, figs. 1, 2 (as *Ammodiscus*); Heron-Allen and Earland, 1922: 109; Hornibrook, 1952: 185 (as *Ammodiscoides*).

Genus **GLOMOSPIRA** Rzehak, 1885

Glomospira charoides (Jones and Parker, 1860)

Jones and Parker, 1860: 304 (as *Trochammina squamata* var.); Murray, 1895: 604 (as *Ammodiscus*).

Genus **TURRITELLELLA** Rhumbler, 1904

Turritellella shoneana (Siddall, 1878)

Siddall, 1878: 46, figs. 1, 2 (as *Trochammina*); Heron-Allen and Earland, 1922: 110, pl. 1, fig. 22 (as *Ammodiscus*); Hulme, 1964: 321.

Subfamily TOLYPAMMININAE

Genus **TOLYPAMMINA** Rhumbler, 1895

Tolypammina horrida Cushman, 1919

Cushman, 1919: 597, pl. 74, fig. 5.

Tolypammina vagans (Brady, 1879)

Brady, 1879: 33, pl. 5, fig. 3 (as *Hyperammina*); Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 86.

Tolypammina sp. Hedley, Hurdle, and Burdett, 1967

Heron-Allen and Earland, 1922: 110 (as *Ammodiscus gordialis*); Hedley, Hurdle, and Burdett, 1967: pl. 1, fig. 5, pl. 5, fig. 3, text fig. 5–6 (as *Tolypammina* sp.).

Hedley *et al.* (1967) include *A. gordialis* of Heron-Allen and Earland (1922) in the synonymy of *Tolypammina* sp.

Genus **AMMOLAGENA** Eimer and Fickert, 1899

Ammolagena clavata (Jones and Parker, 1860)

Jones and Parker, 1860: 304 (as *Trochammina irregularis* var.); Murray, 1895: 604, 610 (as *Webbina*); Cushman, 1919: 597 (as *Ammolagena*); Heron-Allen and Earland, 1922: 115 (as *Webbina*).

Ammolagena irregularis (d'Orbigny, 1850)

d'Orbigny, 1850: 111, No. 783 (as *Webbina*); Heron-Allen and Earland, 1922: 115, pl. 3, fig. 24.

Superfamily LITUOLACEA

Family HORMOSINIDAE

Subfamily HORMOSININAE

Genus **HORMOSINA** Brady, 1879

Hormosina globulifera Brady, 1879

Brady, 1879: 60, pl. 4, figs. 4, 5; Murray, 1895: 604, 610; Heron-Allen and Earland, 1922: 108.

Hormosina monile Brady, 1881

Brady, 1881: 52; Murray, 1895: 610.

Hormosina normani Brady, 1881

Brady, 1881: 52; Brady, 1884: 91–92, 329, pl. 39, figs. 19–23; Murray, 1895: 604.

Genus **REOPHAX** Montfort, 1808

Reophax aduncus Brady, 1882

Brady, 1882: 715; Murray, 1895: 604; Heron-Allen and Earland, 1922: 96.

Reophax advena Cushman, 1919

Cushman, 1919: 599, pl. 75, fig. 2.

Reophax dentaliniformis Brady, 1881

Brady, 1881: 49; Murray, 1895: 604, 610.

Reophax distans Brady, 1881

Brady, 1881: 50; Murray, 1895: 604, 610; Hornibrook, 1952: 185.

Reophax euneta Jensen, 1905

Jensen, 1905: 821, pl. 23, figs. 5–7; Heron-Allen and Earland, 1922: 96, pl. 3, figs. 13, 14.

Reophax fusiformis (Williamson, 1858)

Williamson, 1858: 1, pl. 1, fig. 1 (as *Proteonina*); Heron-Allen and Earland, 1922: 93.

Reophax guttifer Brady, 1881

Brady, 1881: 49; Murray, 1895: 604.

Reophax nana Rhumbler, 1911

Rhumbler, 1911: 182, pl. 8, figs. 6–12; Hulme, 1964: 321.

Reophax nodulosus Brady, 1879

Brady, 1879: 52, pl. 4, figs. 7, 8; Murray, 1895: 604; Chapman, 1909: 327.

Reophax pilulifer Brady, 1884

Brady, 1884: 292, pl. 30, figs. 18–20; Heron-Allen and Earland, 1922: 93.

Reophax pseudodistans Cushman, 1919

Cushman, 1919: 598, pl. 75, fig. 1 (as *Reophax spiculifera* var.); Heron-Allen and Earland, 1922: 95.

Reophax scorpiurus Montfort, 1808

Montfort, 1808: 331, text fig. p. 330; Haeusler, 1887: 200; Murray, 1895: 604; Chapman, 1906: 84; Chapman, 1909: 327; Mestayer, 1916: 129; Cushman, 1919: 598; Heron-Allen and Earland, 1922: 93; Hornibrook, 1952: 185; Vella, 1957: 8, 13; Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 11, pl. 1, fig. 1.

Reophax spiculifera Brady, 1879

Brady, 1879: 54, pl. 4, figs. 10, 11; Cushman, 1919: 598; Heron-Allen and Earland, 1922: 95; Hornibrook, 1952: 185.

Reophax subfusiformis Earland, 1933

Earland, 1933: 74, pl. 2, figs. 16–19; Kustanowich, 1965: 52.

Family NOURIIDAE

Genus **NOURIA** Heron-Allen and Earland, 1914

Nouria harrisii Heron-Allen and Earland, 1914

Heron-Allen and Earland, 1914: 376, pl. 37, figs. 16–20; Heron-Allen and Earland, 1922: 103.

Nouria polymorphinoides Heron-Allen and Earland, 1914

Heron-Allen and Earland, 1914: 376, pl. 37, figs. 1–15; Cushman, 1919: 601, pl. 75, figs. 4, 5; Heron-Allen and Earland, 1922: 103.

Family RZEHAKINIDAE

Genus **MILIAMMINA** Heron-Allen and Earland, 1930

Miliammina pelita Saunders, 1958

Saunders, 1958: 87, pl. 1, figs. 10, 11; Hulme, 1964: 325.

Family LITUOLIDAE

Subfamily HAPLOPHRAGMOIDINAE

Genus **HAPLOPHRAGMOIDES** Cushman, 1910

Haplophragmoides canariensis (d'Orbigny, 1839)

d'Orbigny, 1839b: 128, pl. 2, figs. 33, 34 (as *Nonionina*); Haeusler, 1887: 200 (as *Haplophragmium*); Chapman, 1906: 84; Chapman, 1909: 327, pl. 14, fig. 6; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 100; Hornibrook in Fleming, 1952: 82 (as *Haplophragmoides*); Vella, 1957: 8; Hulme, 1964: 322; Hedley, Hurdle, and Burdett, 1967: pl. 5, fig. 4, text fig. 7.

Haplophragmoides grandiformis Cushman, 1910

Cushman, 1910b: 440, text fig. 11; Cushman, 1919: 599.

Haplophragmoides rotulatum (Brady, 1881)

Brady, 1881: 50 (as *Haplophragmium*); Heron-Allen and Earland, 1922: 99.

Haplophragmoides cf. rotulatum (Brady, 1881)

Cushman, 1919: 599.

Haplophragmoides scitulum (Brady, 1881)

Brady, 1881: 50 (as *Haplophragmium*); Brady, 1884: 91–92, 308, pl. 34, figs. 11–13; Murray, 1895: 604.

Haplophragmoides sphaeriloculus Cushman, 1910

Cushman, 1910a: 107, text fig. 175; Heron-Allen and Earland, 1922: 101 (as *Haplophragmium*).

Haplophragmoides sp. (coarser, more evolute than *H. canariensis*).

Vella, 1957: 8.

Genus **ADERCOTRYMA** Loeblich and Tappan, 1952

Adercotryma glomeratum (Brady, 1878)

Brady, 1878: 433, pl. 20, fig. 1 (as *Lituola*); Murray, 1895: 610 (as *Haplophragmium*); Mestayer, 1916: 129.

Genus **CRIBROSTOMOIDES** Cushman, 1910

Cribrostomoides cf. **crassimargo** (Norman, 1892)

cf. Norman, 1892: 17 (as *Haplophragmium*); Kustanowich, 1965: 52 (as *Alveolophragmium* cf.).

Cribrostomoides cf. **jeffreysi** (Williamson, 1858)

cf. Williamson, 1858: 34, figs. 72, 73 (as *Nonionina*); Kustanowich, 1965: 52 (as *Alveolophragmium* cf.).

Cribrostomoides ringens (Brady, 1879)

Brady, 1879: 57, pl. 5, fig. 12 (as *Trochammina*); Heron-Allen and Earland, 1922: 114.

Genus **DISCAMMINA** Lacroix, 1932

Discammina compressa (Goes, 1882)

Goes, 1882: 141, pl. 12, figs. 421, 423 (as *Lituolina irregularis* var.); Murray, 1895: 610 (as *Haplophragmium emaciatum*); Heron-Allen and Earland, 1922: 98.

Goes (1896: 31) includes *H. emaciatum* in the synonymy of *Haplophragmium compressum*.

Genus **RECURVOIDES** Earland, 1934

Recurvoides contortus Earland, 1934

Earland, 1934: 91, pl. 10, figs. 7–19; Heron-Allen and Earland, 1922: 99 (as *Haplophragmium scitulum*).

Earland (1934) includes *H. scitulum* of Heron-Allen and Earland (1922) from New Zealand in the synonymy of *R. contortus*.

Genus **TROCHAMMINITA** Cushman and Bronnimann, 1948

Trochamminita cf. **salsa** (Cushman and Bronnimann, 1948)

cf. Cushman and Bronnimann, 1948: 16, pl. 3, figs. 5–6 (as *Labrospira*); Hulme, 1964: 322.

Subfamily **CYCLAMMININAE**

Genus **CYCLAMMINA** Brady, 1879

Cyclammina cancellata Brady, 1879

Brady, 1879: 62; Murray, 1895: 604; Barker, 1960: 76, pl. 37, figs. 8–16.

Cyclammina orbicularis Brady, 1881

Brady, 1881: 53; Brady, 1884: 353, pl. 37, figs. 17–19; Murray, 1895: 604; Heron-Allen and Earland, 1922: 116.

Cyclammina trullissata (Brady, 1879)

Brady, 1879: 56, pl. 5, figs. 10, 11 (as *Trochammina*); Murray, 1895: 604, 610; Heron-Allen and Earland, 1922: 113.

Genus **ALVEOLOPHRAGMIUM** Shchedrina, 1936

Alveolophragmium zealandicum Vella, 1957

Vella, 1957: 15, pl. 3, figs. 44, 45; Heron-Allen and Earland, 1922: 99 (as *Haplophragmium latidorsatum*); Hedley, Hurdle, and Burdett, 1965: 11, pl. 1, fig. 4 (as *A. zealandicum*).

Hedley *et al.* (1965) include *H. latidorsatum* of Heron-Allen and Earland (1922) in the synonymy of *A. zealandicum*.

Subfamily **LITUOLINAE**

Genus **AMMOBACULITES** Cushman, 1910

Ammobaculites agglutinans (d'Orbigny, 1846)

d'Orbigny, 1846: 137, pl. 7, figs. 10–12 (as *Spirolina*); Mestayer, 1916: 129 (as *Haplophragmium*); Cushman, 1919: 600 (as *Ammobaculites*); Heron-Allen and Earland, 1922: 97, pl. 3, fig. 15 (as *Haplophragmium*); Hedley, Hurdle, and Burdett, 1965: 11, pl. 1, figs. 2, 3 (as *Ammobaculites*).

Ammobaculites americanus Cushman, 1910

Cushman, 1910a: 117, text fig. 184, 185; Heron-Allen and Earland, 1922: 98 (as *Haplophragmium fontinense*).

Recent forms ascribed to the Jurassic species *H. fontinense* are named *A. americanus* by Cushman (1910a).

Ammobaculites calcareus (Brady, 1884)

Brady, 1884: 302, pl. 33, figs. 5–12 (as *Haplophragmium*); Chapman, 1906: 85; Heron-Allen and Earland, 1922: 98.

Ammobaculites exiguus Cushman and Bronnimann, 1948

Cushman and Bronnimann, 1948: 38, pl. 7, figs. 7–8; Hulme, 1964: 322; Hedley, Hurdle, and Burdett, 1967: pl. 5, fig. 5.

Genus **AMMOBACULOIDES** Plummer, 1932

Ammobaculoides earlandi (Barker, 1960)

Barker, 1960: 92, pl. 45, figs. 22, 23 (as *Spiroplectella*); Heron-Allen and Earland, 1922: 121 (as *Spiroplecta annectens*).

Recent forms ascribed to *S. annectens*, have been shown by Earland (1934: 113) to be different from the Cretaceous species and have been named *S. earlandi* by Barker (1960).

Genus **AMMOMARGINULINA** Wiesner, 1931

Ammomarginulina foliaceus (Brady, 1881)

Brady, 1881: 50 (as *Haplophragmium*); Murray, 1895: 604, 610.

Genus **AMMOSCALARIA** Høglund, 1947

Ammoscalaria pseudospiralis (Williamson, 1858)

Williamson, 1858: 2, pl. 1, figs. 2, 3 (as *Proteonina*); Heron-Allen and Earland, 1922: 97 (as *Haplophragmium*).

Ammoscalaria tenuimargo (Brady, 1882)

Brady, 1882: 715 (as *Haplophragmium*); Brady, 1884: 303, pl. 33, figs. 13–16; Murray, 1895: 604; Heron-Allen and Earland, 1922: 98.

Genus **AMMOTIUM** Loeblich and Tappan, 1953

Ammotium cassis (Parker, 1870)

Parker in Dawson, 1870: 177, 180, fig. 3; Hulme, 1964: 322.

Subfamily **PLACOPSILININAE**

Genus **PLACOPSILINA** d'Orbigny, 1850

Placopsilina cenomana d'Orbigny, 1850

d'Orbigny, 1850: 185, No. 758; Heron-Allen and Earland, 1922: 103.

Confusion exists as to the identity of the recent species (see Barker, 1960: 74).

Family **TEXTULARIIDAE**

Subfamily **SPIROPLECTAMMININAE**

Genus **SPIROPLECTAMMINA** Cushman, 1927

Spiroplectamina biformis (Parker and Jones, 1865)

Parker and Jones, 1865: 370, pl. 15, figs. 23, 24 (as *Textularia agglutinans* var.); Heron-Allen and Earland, 1922: 122 (as *Spiroplecta*).

Subfamily **TEXTULARIINAE**

Genus **TEXTULARIA** DeFrance, 1824

Textularia abbreviata d'Orbigny, 1846

d'Orbigny, 1846: 249, pl. 15, figs. 9–12 (7–12); Cushman, 1919: 602; Heron-Allen and Earland, 1922: 120.

Textularia agglutinans d'Orbigny, 1839

d'Orbigny, 1839a: 144, pl. 1, figs. 17, 18, 32–34; Chapman, 1909: 328; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 119.

Textularia aspera Brady, 1882

Brady, 1882: 715; Murray, 1895: 610; Chapman, 1906: 87 (as *Textularia gibbosa* var. *tuberosa*); Chapman, 1909: 328, pl. 14, fig. 7.

Chapman (1906) includes *T. aspera* in the synonymy of *T. gibbosa* var. *tuberosa*.

Textularia candeiana d'Orbigny, 1839

d'Orbigny, 1839a: 143, pl. 1, figs. 25–27; Chapman, 1909: 329; Heron-Allen and Earland, 1922: 119; Vella, 1957: 8, 14 (?).

Textularia conica d'Orbigny, 1839

d'Orbigny, 1839a: 143, pl. 1, figs. 19, 20; Chapman, 1906: 86; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 121; Kustanowich, 1965: 52.

Textularia earlandi Parker, 1952

Parker, 1952: 458; Hulme, 1964: 321 (as *Textularia tenuissima* Earland).

Parker (1952) proposes *T. earlandi* new name for *T. tenuissima* Earland (not Haeusler, 1881).

Textularia cf. earlandi Parker, 1952

Kustanowich, 1965: 52 (as *Textularia cf. tenuissima*).

Textularia ensis Vella, 1957

Vella, 1957: 16, pl. 3, figs. 46, 47; Cushman, 1919: 601 (as *Textularia sagittula*); Kustanowich, 1965: 52 (as *T. ensis*).

Vella includes *T. sagittula* of Cushman (1919) in the synonymy of *T. ensis*.

Textularia fistula Cushman, 1911

Cushman, 1911: 10, text fig. 11 (as *Textularia agglutinans* var.); Hornbrook, 1952: 185 (as *Textularia*); Vella, 1957: 8, 13.

Textularia fungiformis Fornasini, 1887

Fornasini, 1887: 387, pl. 10, fig. 1; Heron-Allen and Earland, 1922: 120.

Textularia goesii Cushman, 1911

Cushman, 1911: 15, text fig. 24; Chapman, 1906: 86 (as *Textularia trochus*); Mestayer, 1916: 129; Cushman, 1919: 602; Heron-Allen and Earland, 1922: 121; Hedley, Hurdle, and Burdett, 1965: 11 (as *T. goesii*).

Recent forms ascribed to the Cretaceous species *T. trochus* are named *T. goesii* by Cushman (1911).

Textularia cf. goesii Cushman, 1911

Vella, 1957: 8, 13

Textularia gramen d'Orbigny, 1846

d'Orbigny, 1846: 248, pl. 15, figs. 4–6; Chapman, 1906: 87; Chapman, 1909: 328; pl. 14, fig. 8.

Textularia aff. gramen d'Orbigny, 1846

Heron-Allen and Earland, 1922: 121; Hedley, Hurdle, and Burdett, 1965: 12, pl. 1, fig. 5.

Textularia horrida Egger, 1893

Egger, 1893: 270, pl. 6, figs. 11, 12; Heron-Allen and Earland, 1922: 121, pl. 4, figs. 3, 4 (as *Textularia conica* var.).

Textularia lythostrota (Schwager, 1866)

Schwager, 1866: 194, pl. 4, fig. 4 (as *Plecanium*); Chapman, 1909: 329, pl. 14, fig. 9 (as *Textularia gramen* var. *jugosa*); Heron-Allen and Earland, 1922: 118 (as *Textularia milletti*).

Lalicker and McCulloch (1940: 131) include *T. milletti* of Heron-Allen and Earland (1922), and *T. gramen* var. *jugosa* in the synonymy of *T. lythostrota*.

Textularia porrecta Brady, 1884

Brady, 1884: 364, pl. 43, fig. 4 (as *Textularia agglutinans* var.); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 119, pl. 4, figs. 6, 7 (as *Textularia*).

Textularia proxispira Vella, 1957

Vella, 1957: 15, pl. 3, figs. 48, 52; Heron-Allen and Earland, 1922: 118 (as *Textularia sagittula*, part); Kustanowich, 1965: 52 (as *T. proxispira*); Hedley, Hurdle, and Burdett, 1967: pl. 5, fig. 6.

Hedley *et al.* (1967) include *T. sagittula* of Heron-Allen and Earland (1922, part) in the synonymy of *T. proxispira*.

Textularia sagittula DeFrance, 1824

DeFrance, 1824: 177, Atlas Conch. pl. 13, fig. 5; Murray, 1895: 610; Chapman, 1909: 329 (as *Spiroplecta*); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 118 (as *T. sagittula* and *Spiroplecta wrighti*); Hornibrook in Fleming, 1952: 82 (as *T. sagittula*); Hulme, 1964: 321.

Lacroix (1929: 1–12) includes *S. wrighti* in the synonymy of *T. sagittula*.

Textularia sagittula var. **atrata** Cushman, 1911

Cushman, 1911: 7, text figs. 2–5; Cushman, 1919: 601.

Textularia sagittula var. **fistulosa** Brady, 1884

Brady, 1884: 362, pl. 42 figs. 19–22; Cushman, 1919: 601.

Textularia stricta Cushman, 1911

Cushman, 1911: 11, text fig. 13; Chapman, 1906: 87, pl. 3, fig. 4 (as *Spiroplecta sagittula* and *S. sagittula* var. *fistulosa*); Cushman, 1919: 602 (as *T. stricta*); Finlay, 1939b: 91; Vella, 1957: 8, 13.

Cushman (1919) includes both *S. sagittula* and *S. sagittula* var. *fistulosa* of Chapman (1906) in the synonymy of *T. stricta*.

Textularia subantarctica Vella, 1957

Vella, 1957: 8, 14, 16, pl. 3, figs. 49–51.

Textularia torquata Parker, 1952

Parker, 1952: 403, pl. 3, figs. 9–11; Hedley, Hurdle, and Burdett, 1967: pl. 5, fig. 7.

Textularia turris d'Orbigny, 1840

d'Orbigny, 1840: 46, pl. 4, figs. 27, 28; Chapman, 1906: 86; Mestayer, 1916: 129.

Genus **BIGENERINA** d'Orbigny, 1826

Bigenerina nodosaria d'Orbigny, 1826

d'Orbigny, 1826: 261, pl. 11, figs. 9–11; Cushman, 1919: 603.

Subfamily **PSEUDOBOLIVININAE**

Genus **PARVIGENERINA** Vella, 1957

Parvigerina arenacea (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 132, pl. 4, figs. 23–26 (as *Bifarina porrecta* var.); Vella, 1957: 8, 14, 18 (as *Parvigerina*).

Parvigerina heronalleni Seiglie, 1964

Seiglie, 1964: 7; Heron-Allen and Earland, 1922: 136, pl. 4, figs. 34, 35 (as *Bolivina tortuosa* var. *arenacea*).

Seiglie (1964) proposes *P. heronalleni* new name for *B. tortuosa* var. *arenacea*.

Parvigerina inflata var. **arenacea** (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 135; pl. 4, figs. 31–33 (as *Bolivina inflata* var.).

Genus **SIPHOTEXTULARIA** Finlay, 1939

Siphotextularia aperturalis (Cushman, 1911)

Cushman, 1911: 20, figs. 34, 35 (as *Textularia*); Cushman, 1919: 602.

Siphotextularia blacki Vella, 1957

Vella, 1957: 8, 16, pl. 4, figs. 53, 54; Hulme, 1964: 321.

Siphotextularia concava (Karrer, 1868)

Karrer, 1868: 129, pl. 1, fig. 3 (as *Plecanium*); Murray, 1895: 604 (as *Textularia*); Chapman, 1909: 328; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 117; Hedley, Hurdle, and Burdett, 1965: 12, pl. 1, fig. 6 (as *Siphotextularia*).

Siphotextularia fretensis Vella, 1957

Vella, 1957: 8, 14, 17, pl. 4, figs. 58, 59; Kustanowich, 1965: 52.

Siphotextularia heterostoma (Fornasini, 1896)

Fornasini, 1896: 2, figs. 6–12 (as *Textilaria*); Heron-Allen and Earland, 1922: 117 (as *Textularia concava* var.).

Siphotextularia cf. **heterostoma** (Fornasini, 1896)

Hornibrook in Knox, 1951: 43.

Siphotextularia mestayerae Vella, 1957

Vella, 1957: 8, 17, pl. 4, figs. 55–57; Heron-Allen and Earland, 1922: 117 (as *Textularia concava*, part); Hulme, 1964: 321 (as *S. mestayerae*); Hedley, Hurdle, and Burdett, 1967: pl. 5, fig. 8.

Hedley, Hurdle, and Burdett (1967) include *T. concava* of Heron-Allen and Earland (1922, part) in the synonymy of *S. mestayerae*.

Siphotextularia aff. **mestayerae** Vella, 1957

Kustanowich, 1965: 52.

Family **TROCHAMMINIDAE**

Subfamily **TROCHAMMININAE**

Genus **TROCHAMMINA** Parker and Jones, 1859

Trochammina adaperta Rhumbler, 1938

Rhumbler, 1938: 184, figs. 21–26 (as *Trochammina squamata* forma *adaperta*); Hulme, 1964: 323 (as *Trochammina*); Hedley, Hurdle, and Burdett, 1967: pl. 6, fig. 1, text fig. 8.

Trochammina cf. **astrifica** Rhumbler, 1938

cf. Rhumbler, 1938: 188, text fig. 27 (as *Trochammina squamata* forma); Kustanowich, 1965: 52 (as *Trochammina* cf.).

Trochammina bartrami Hedley, Hurdle, and Burdett, 1967

Hedley, Hurdle, and Burdett, 1967: pl. 6, fig. 2, text fig. 9–10; Heron-Allen and Earland, 1922: 111 (as *Trochammina ochracea*, part).

Hedley *et al.* (1967) include *T. ochracea* of Heron-Allen and Earland (1922, part) in the synonymy of *T. bartrami*.

Trochammina globigeriniformis (Parker and Jones, 1865)

Parker and Jones, 1865: 407, pl. 15, figs. 46, 47, pl. 17, figs. 96–98 (as *Lituola nautiloidea* var.); Haeusler, 1887: 200 (as *Haplophragmium*); Murray, 1895: 604, 610; Chapman, 1906: 84; Heron-Allen and Earland, 1922: 102.

Trochammina inflata (Montagu, 1808)

Montagu, 1808: 81, pl. 18, fig. 3 (as *Nautilus*); Heron-Allen and Earland, 1922: 112 (as *Trochammina*); Hulme, 1964: 323; Hedley, Hurdle, and Burdett, 1967: pl. 6, fig. 3.

Trochammina moniliformis Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 112, pl. 3, figs. 18–23.

Trochammina nana (Brady, 1881)

Brady, 1881: 50 (as *Haplophragmium*); Murray, 1895: 610; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 101.

Trochammina cf. nana (Brady, 1881)

Cushman, 1919: 600.

Trochammina nitida Brady, 1881

Brady, 1881: 52; Heron-Allen and Earland, 1922: 112.

Trochammina ochracea (Williamson, 1858)

Williamson, 1858: 55, pl. 4, fig. 112; pl. 5, fig. 113 (as *Rotalina*); Heron-Allen and Earland, 1922: 111 (as *Trochammina*).

Trochammina rotaliformis Wright, 1911

Wright (MS) in Heron-Allen and Earland, 1911: 309; Heron-Allen and Earland, 1922: 114.

Trochammina cf. rotaliformis Wright, 1911

Hulme, 1964: 323.

Trochammina sorosa Parr, 1950

Parr, 1950: 278, pl. 5, figs. 15–17; Hedley, Hurdle, and Burdett, 1967: pl. 6, fig. 4, text figs. 11–15.

Trochammina squamata Jones and Parker, 1860

Jones and Parker, 1860: 304; Murray, 1895: 610; Cushman, 1919: 600 (?); Heron-Allen and Earland, 1922: 111; Hulme, 1964: 323.

Trochammina cf. squamata Jones and Parker, 1860

Kustanowich, 1965: 52.

Trochammina cf. squamata Jones and Parker, 1860

Hulme, 1964: 323.

Trochammina tasmanica Parr, 1950

Parr, 1950: 279, pl. 5, fig. 18; Hulme, 1964: 322.

Trochammina uviformis Grzybowski, 1901

Grzybowski, 1901: 221, pl. 8, figs. 1, 2; Heron-Allen and Earland, 1922: 113, pl. 3, figs. 16, 17.

Trochammina cf. wiesneri Parr, 1950

cf. Parr, 1950: 279, pl. 5, fig. 14; Hulme, 1964: 323.

Genus **AMMOSPHAEROIDINA** Cushman, 1910

Ammosphaeroidina sphaeroidiniformis (Brady, 1884)

Brady, 1884: 313 (as *Haplophragmium*); Cushman, 1919: 600 (as *Ammosphaeroidina*); Heron-Allen and Earland, 1922: 102 (as *Haplophragmium*).

Genus **CYSTAMMINA** Neumayr, 1889

Cystammina pauciloculata (Brady, 1879)

Brady, 1879: 58, pl. 5, figs. 13, 14 (as *Trochammina*); Heron-Allen and Earland, 1922: 114.

Genus **TRITAXIS** Schubert, 1921

Tritaxis conica (Parker and Jones, 1865)

Parker and Jones, 1865: 406, pl. 15, fig. 27 (as *Valvulina triangularis* var.); Haeusler, 1887: 200 (as *Valvulina*); Heron-Allen and Earland, 1922: 125.

Tritaxis fusca (Williamson, 1858)

Williamson, 1858: 55, pl. 5, figs. 114, 115 (as *Rotalina*); Mestayer, 1916: 129 (as *Valvulina*); Cushman, 1919: 604; Heron-Allen and Earland, 1922: 125; Barker, 1960: 100, pl. 49, figs. 13, 14 (as *Tritaxis*).

Subfamily **REMANEICINAE**

Genus **REMANEICA** Rhumbler, 1938

Remaneica plicata (Terquem, 1876)

Terquem, 1876: 72, pl. 8, fig. 9 (as *Patellina*); Heron-Allen and Earland, 1922: 112 (as *Trochammina*).

Family **ATAXOPHRAGMIIDAE**

Subfamily **VERNEUILINIDAE**

Genus **VERNEUILINA** d'Orbigny, 1839

Verneuilina polystropha (Reuss, 1846)

Reuss, 1846: 109, pl. 24, fig. 53 (as *Bulimina*); Heron-Allen and Earland, 1922: 124 (as *Verneuilina*).

Verneuilina triquetra (Munster, 1838)

Munster, in Roemer, 1838: 384, pl. 3, fig. 19 (as *Textularia*); Heron-Allen and Earland, 1922: 124 (as *Verneuilina*).

Genus **GAUDRYINA** d'Orbigny, 1839

Gaudryina convexa (Karrer, 1865)

Karrer, 1865: 78, pl. 16, fig. 8 (as *Textularia*); Mestayer, 1916: 129 (as *Gaudryina rugosa*); Heron-Allen and Earland, 1922: 122, pl. 4, figs. 16, 17; Cushman, 1937c: 98, pl. 14, figs. 7, 8 (as *Gaudryina (Pseudogaudryina) hastata*); Vella, 1957: 8; Burdett, Hedley, Hornibrook, and Hurdle, 1963: 516, figs. 2–6 (as *G. convexa*); Hedley, Hurdle, and Burdett, 1967: pl. 6, fig. 5.

Burdett *et al.* (1963) include *G. rugosa* of Brady (1884) and later authors, and *G. hastata* in the synonymy of *G. convexa*.

Gaudryina ferruginea Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 123, pl. 4, figs. 13–15.

Gaudryina quadrangularis Bagg, 1908

Bagg, 1908: 133, pl. 5, fig. 1; Cushman, 1919: 604; Vella, 1957: 8, 14.

Gaudryina rugulosa Cushman, 1932

Cushman, 1932a: 15, pl. 4, fig. 1; Mestayer, 1916: 129 (as *Textularia rugosa*); Cushman, 1919: 601; Heron-Allen and Earland, 1922: 118.

Recent forms referred to the Upper Cretaceous species *T. rugosa*, are named *G. rugulosa* by Cushman (1932a).

Gaudryina triangularis Cushman, 1911

Cushman, 1911: 65, text fig. 104; Cushman, 1919: 604.

Subfamily GLOBOTEXTULARIINAE

Genus **GLOBOTEXTULARIA** Eimer and Fickert, 1899

Globotextularia anceps (Brady, 1884)

Brady, 1884: 313, pl. 35, figs. 12–15 (as *Haplophragmium*); Heron-Allen and Earland, 1922: 102.

Genus **DOROTHIA** Plummer, 1931

Dorothia filiformis (Berthelin, 1880)

Berthelin, 1880: 25, pl. 24, fig. 8 (as *Gaudryina*); Heron-Allen and Earland, 1922: 122.

Dorothia? subrotundata (Schwager, 1866)

Schwager, 1866: 198, pl. 4, fig. 9 (as *Gaudryina*); Heron-Allen and Earland, 1922: 122.

Genus **EGGERELLA** Cushman, 1933

Eggerella bradyi (Cushman, 1911)

Cushman, 1911: 54, text fig. 87 (as *Verneuilina*); Murray, 1895: 604 (as *Verneuilina pygmaea*); Heron-Allen and Earland, 1922: 125.

Cushman (1911) includes *V. pygmaea* of Brady (1884) and other authors whose specimens are from the Recent, in the synonymy of *V. bradyi*.

Eggerella humboldti Todd and Bronnimann, 1957

Todd and Bronnimann, 1957: 26, pl. 2, fig. 26; Hulme, 1964: 322.

Eggerella propinqua (Brady, 1884)

Brady, 1884: 387, pl. 47, figs. 8–14 (as *Verneuilina*); Murray, 1895: 604.

Genus **KARRERIELLA** Cushman, 1933

Karreriella apicularis (Cushman, 1911)

Cushman, 1911: 69, text fig. 110 (as *Gaudryina*); Heron-Allen and Earland, 1922: 123 (as *Gaudryina siphonella*).

Recent forms ascribed to the fossil species *G. siphonella* are named *G. apicularis* by Cushman (1911).

Karreriella bradyi (Cushman, 1911)

Cushman, 1911: 67, text fig. 107 (as *Gaudryina*); Murray, 1895: 610 (as *Gaudryina pupoides*); Heron-Allen and Earland, 1922: 122; Hulme, 1964: 321 (as *K. bradyi*).

Recent forms ascribed to *G. pupoides* are named *G. bradyi* by Cushman (1911).

Subfamily VALVULININAE

Genus **CYLINDROCLAVULINA** Bermudez and Key, 1952

Cylindroclavulina bradyi (Cushman, 1911)

Cushman, 1911: 73, text figs. 118, 119 (as *Clavulina*); Brady, 1884: 91, 396, pl. 48, figs. 32–38 (as *Clavulina cylindrica*); Chapman, 1906: 88 (as *Clavulina rudis* and *Clavulina soldanii*); Cushman, 1919: 605 (as *Clavulina bradyi*); Heron-Allen and Earland, 1922: 126 (as *Clavulina cylindrica*); Finlay, 1939b: 96 (as *Liebusella bradyi*).

C. cylindrica of Brady (1884) is placed in the synonymies of *C. rudis* in Chapman (1906) and *C. cylindrica*

in Heron-Allen and Earland (1922). Cushman (1911) places *C. cylindrica* of Brady (1884) and later (1919), *C. soldanii* of Chapman (1906) in the synonymy of *C. bradyi*.

Genus **GOESSELLA** Cushman, 1933

Goesella obscura (Chaster, 1892)

Chaster, 1892: 58, pl. 1, fig. 4 (as *Clavulina*); Heron-Allen and Earland, 1922: 126.

Genus **MARTINOTTIELLA** Cushman, 1933

Martinottiella communis (d'Orbigny, 1826)

d'Orbigny, 1826: 268, No. 4 (as *Clavulina*); Brady, 1884: 91, 394, pl. 48, figs. 1–13; Chapman, 1906: 87; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 126; Hornibrook, 1952: 185 (as *Martinottiella*).

Martinottiella cf. communis (d'Orbigny, 1926)

Cushman, 1919: 604 (as *Clavulina cf.*).

Subfamily ATAXOPHRAGMIINAE

Genus **LIEBUSELLA** Cushman, 1933

Liebusella soldanii (Jones and Parker, 1860)

Jones and Parker, 1860: 307, No. 184 (as *Lituola*); Brady, 1884: 318, pl. 32, figs. 12–18 (as *Haplostiche*); Mestayer, 1916: 129.

Family PAVONITINIDAE

Subfamily PAVONITININAE

Genus **TEXTULARIELLA** Cushman, 1927

Textulariella barrettii (Jones and Parker, 1863)

Jones and Parker, 1863: 80, 105 (as *Textularia*); Mestayer, 1916: 129.

Textulariella simplex Cushman, 1936

Cushman, 1936a: 45, pl. 6, fig. 20; Cushman, 1937b: 67, pl. 7, fig. 14.

Suborder MILIOLINA

Superfamily MILIOLACEA

Family FISCHERINIDAE

Subfamily CYCLOGYRINAE

Genus **CYCLOGYRA** Wood, 1842

Cyclogyra carinata (Costa, 1856)

Costa, 1856: 209, pl. 17, fig. 15 (as *Operculina*); Mestayer, 1916: 128 (as *Cornuspira*).

Cyclogyra involvens (Reuss, 1850)

Reuss, 1850: 370, pl. 46, fig. 30 (as *Operculina*); Chapman, 1909: 325 (as *Cornuspira*); Mestayer, 1916: 128; Cushman, 1919: 634; Heron-Allen and Earland, 1922: 74; Hulme, 1964: 323; Hedley, Hurdle, and Burdett, 1967: text fig. 16 (as *Cyclogyra*).

Cyclogyra cf. involvens (Reuss, 1850)

Kustanowich, 1965: 52 (as *Cornuspira*).

Cyclogyra lacunosa (Brady, 1884)

Brady, 1884: 202, pl. 113, fig. 21 (as *Cornuspira*); Cushman, 1919: 634.

Cyclogyra selseyensis (Heron-Allen and Earland, 1909)

Heron-Allen and Earland, 1909: 319, pl. 15, figs. 9–11 (as *Cornuspira*); Heron-Allen and Earland, 1922: 74.

Cyclogyra tasmanica (Parr, 1950)

Parr, 1950: 285, pl. 5, fig. 28 (as *Cornuspira*); Vella, 1957: 8, 14.

Cyclogyra sp. Cushman, 1919

Cushman, 1919: 634 (as *Cornuspira*).

Genus **CORNUSPIRELLA** Cushman, 1928

Cornuspirella diffusa (Heron-Allen and Earland, 1913)

Heron-Allen and Earland, 1913b: 272, pl. 12, text fig. 37 (as *Cornuspira*); Heron-Allen and Earland, 1922: 74; Hedley, Hurdle, and Burdett, 1965: 12 (as *Cornuspirella*).

Genus **CORNUSPIROIDES** Cushman, 1928

Cornuspiroides expansus (Chapman, 1915)

Chapman, 1915: 12, pl. 1, fig. 3 (as *Cornuspira carinata* var.); Cushman, 1919: 633 (as *Cornuspira foliacea* var.).

Cornuspiroides foliaceus (Philippi, 1844)

Philippi, 1844: 147, pl. 24, fig. 26 (as *Orbis*); Murray, 1895: 604, 610 (as *Cornuspira*); Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 73.

Subfamily FISCHERININAE

Genus **FISCHERINA** Terquem, 1878

Fischerina antarctica (Chapman, 1909)

Chapman, 1909: 324, pl. 14, fig. 5 (as *Planispirina*).

Fischerina cliarensis (Heron-Allen and Earland, 1913)

Heron-Allen and Earland, 1913a: 35, pl. 2, figs. 7, 8 (as *Planispirina*); Heron-Allen and Earland, 1922: 73.

Genus **FISCHERINELLA** Loeblich and Tappan, 1962

Fischerinella helix (Heron-Allen and Earland, 1915)

Heron-Allen and Earland, 1915: 591, pl. 46, figs. 10–14 (as *Fischerina*); Heron-Allen and Earland, 1922: 73.

Fischerinella pellucida (Millett, 1898)

Millett, 1898: 611, pl. 13, figs. 14, 15 (as *Fischerina*); Cushman, 1919: 636, pl. 75, figs. 7, 8.

Genus **PLANISPIRINELLA** Wiesner, 1931

Planispirinella exigua (Brady, 1879)

Brady, 1879: 267 (as *Hauerina*); Chapman, 1909: 323 (as *Planispirina*).

Family NUBECULARII DAE

Subfamily NUBECULARIINAE

Genus **NUBECULARIA** Defrance, 1825

Nubecularia decorata Heron-Allen and Earland, 1915

Heron-Allen and Earland, 1915: 549, pl. 40, figs. 6, 7 (as *Nubecularia lucifuga* var.); Heron-Allen and Earland, 1922: 60.

Nubecularia lucifuga Defrance, 1825

Defrance, 1825: 210, Atlas Zooph. pl. 44, fig. 3; Haeusler, 1887: 199; Chapman, 1909: 313; Cushman, 1919: 635; Heron-Allen and Earland, 1922: 60.

Nubecularia tubulosa Heron-Allen and Earland, 1915

Heron-Allen and Earland, 1915: 548, pl. 40, figs. 1–5; Heron-Allen and Earland, 1922: 60.

Genus **CALCITUBA** Roboz, 1884

Calcituba polymorpha Roboz, 1884

Roboz, 1884: 420, figs. 1–16; Hedley, Hurdle, and Burdett, 1967: 25, pl. 7.

Subfamily OPHTHALMIDIINAE

Genus **OPHTHALMIDIUM** Kubler and Zwingli, 1870

Ophthalmidium margariferum Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 72, pl. 1, figs. 9–12.

Genus **CORNULOCULINA** Burbach, 1886

Cornuloculina aff. *inconstans* (Brady, 1879)

aff. Brady, 1879: 268 (as *Hauerina*); Kustanowich, 1965: 52 (as *Hauerinella*).

Subfamily SPIROLOCULININAE

Genus **SPIROLOCULINA** d'Orbigny, 1826

Spiroloculina circularis Chapman, 1915

Chapman, 1915: 7, pl. 1, fig. 1 (as *Spiroloculina dorsata* var.); Cushman and Todd, 1944: 49–50, pl. 7, figs. 15, 16 (as *Spiroloculina*).

Spiroloculina communis Cushman and Todd, 1944

Cushman and Todd, 1944: 63, pl. 9, figs. 4, 5, 7, 8; Cushman, 1919: 634 (as *Spiroloculina grateloupi*); Heron-Allen and Earland, 1922: 63 (as *Spiroloculina excavata*); Hedley, Hurdle, and Burdett, 1965: 13, pl. 2, fig. 9 (as *S. communis*).

Hedley *et al.* (1965) include *S. excavata* of Heron-Allen and Earland (1922) and *S. grateloupi* of Cushman (1919) in the synonymy of *S. communis*.

Spiroloculina depressa d'Orbigny, 1826

d'Orbigny, 1826: 298. No. 92; Hulme, 1964: 326.

Spiroloculina disparilis Terquem, 1878

Terquem, 1878: 55, pl. 5, (10), fig. 12; Cushman, 1919: 635 (as *Spiroloculina affixa*); Heron-Allen and Earland, 1922: 63; Cushman and Todd, 1944: 35, pl. 5, figs. 22–31 (as *S. disparilis*); Vella, 1957: 9, 27, pl. 6, figs. 122, 123; Hulme, 1964: 326; Kustanowich, 1965: 52 (as *Spiroloculina elevata*).

Cushman and Todd (1944) include *S. affixa* of Cushman (1919) and Heron-Allen and Earland (1922) and *S. elevata* in the synonymy of *S. disparilis*.

Spiroloculina excavata d'Orbigny, 1846

d'Orbigny, 1846: 271, pl. 16, figs. 19–21; Mestayer, 1916: 128.

Spiroloculina foveolata Egger, 1893

Egger, 1893: 224, pl. 1, figs. 33, 34; Cushman, 1919: 635 (as *Spiroloculina antillea* var. *reticosa*).

Cushman and Todd (1944: 48) include *S. antillea* var. *reticosa* of Cushman (1919) in the synonymy of *S. foveolata*.

Spiroloculina henbesti Petri, 1955

Petri in Thalmann, 1955: 82; Heron-Allen and Earland, 1922: 63 (as *Spiroloculina planulata*).

Recent species ascribed to *S. planulata* are named *S. henbesti* by Petri.

Spiroloculina nitida d'Orbigny, 1826

d'Orbigny, 1826: 298, No. 4; Heron-Allen and Earland, 1922: 63.

Spiroloculina tenuiseptata Brady, 1884

Brady, 1884: 153, pl. 10, figs. 5, 6; Mestayer, 1916: 128.

Genus **PLANISPIRINOIDES** Parr, 1950

Planispirinoides bucculentus (Brady, 1884)

Brady, 1884: 170, pl. 114, fig. 3 (as *Miliolina*); Chapman, 1909: 324, pl. 14, fig. 2 (as *Planispirina*); Heron-Allen and Earland, 1922: 65 (as *Miliolina*).

Planispirinoides bucculentus var. **placentiformis** (Brady, 1884)

Brady, 1884: 171, pl. 4, figs. 1, 2 (as *Miliolina bucculenta* var.); Chapman, 1909: 324 (as *Planispirina bucculentus* var.).

Subfamily **NODOBACULARIINAE**

Genus **NODOBACULARIA** Rhumbler, 1895

?**Nodobacularia tibia** (Jones and Parker, 1860)

Jones and Parker, 1860: 455, pl. 20, figs. 48–51 (as *Nubecularia lucifuga* var.); Heron-Allen and Earland, 1922: 59 (as *Nubecularia*).

N. tibia is a Jurassic species and the recent species recorded under this name could well be a new species.

Family **MILIOLIDAE**

Subfamily **QUINQUELOCULININAE**

Genus **QUINQUELOCULINA** d'Orbigny, 1826

Quinqueloculina cf. **akneriana** d'Orbigny, 1846

cf. d'Orbigny, 1846: 290, pl. 18, figs. 16–21; Hornibrook in Fleming, 1952: 82.

Quinqueloculina angulata (Williamson, 1858)

Williamson, 1858: 88, pl. 7, fig. 196 (as *Miliolina bicornis* var.); Chapman, 1909: 321, pl. 13, fig. 5 (as *Miliolina*).

Quinqueloculina cf. **ariminensis** d'Orbigny, 1902

cf. d'Orbigny in Fornasini, 1932b: 22, text fig. 15; Hulme, 1964: 325.

Quinqueloculina auberiana d'Orbigny, 1839

d'Orbigny, 1839a: 193, pl. 12, figs. 1–3; Mestayer, 1916: 128 (as *Miliolina*); Heron-Allen and Earland, 1922: 68; Hedley, Hurdle, and Burdett, 1967: pl. 8, fig. 5 (as *Quinqueloculina*).

Quinqueloculina bicornis (Walker and Jacob, 1798)

Walker and Jacob, 1798: 633, pl. 14, fig. 2 (as *Serpula*); Haeusler, 1887: 200 (as *Miliolina*); Chapman, 1906: 82; Mestayer, 1916: 128.

Quinqueloculina bicostata d'Orbigny, 1839

d'Orbigny, 1839a: 195, pl. 12, figs. 8–10; Cushman, 1919: 637.

Quinqueloculina bicostoides Vella, 1957

Vella, 1957: 9, 14, 25, pl. 5, figs. 89–92.

Quinqueloculina bosciana d'Orbigny, 1839

d'Orbigny, 1839a: 191, pl. 11, figs. 22–24; Heron-Allen and Earland, 1922: 66 (as *Miliolina*).

Quinqueloculina bradyana Cushman, 1917

Cushman, 1917a: 52, pl. 18, fig. 2; Cushman, 1919: 637.

Quinqueloculina cf. **bradyana** Cushman, 1917

Hornibrook in Fleming, 1952: 82.

Quinqueloculina candeiana d'Orbigny, 1839

d'Orbigny, 1839a: 199, pl. 12, figs. 24–26; Heron-Allen and Earland, 1922: 68 (as *Miliolina*).

Quinqueloculina colleenae Vella, 1957

Vella, 1957: 9, 13, 25, pl. 5, figs. 86, 93; Heron-Allen and Earland, 1922: 70 (as *Miliolina ferussacii*, part) and 69 (as *Miliolina contorta*, part); Hedley, Hurdle, and Burdett, 1965: 13 (as *Quinqueloculina colleenae*); Hedley, Hurdle, and Burdett, 1967.

Hedley *et al.* (1965) place *M. ferussacii* and *M. contorta* of Heron-Allen and Earland (1922, part) in the synonymy of *Q. colleenae*.

Quinqueloculina cooki Vella, 1957

Vella, 1957: 9, 13, 25, pl. 5, figs. 82, 83, 87.

Quinqueloculina cultrata (Brady, 1881)

Brady, 1881: 45 (as *Miliolina*); Hulme, 1964: 324 (as *Quinqueloculina*).

Quinqueloculina delicatula Vella, 1957

Vella, 1957: 9, 13, 26, pl. 4, figs. 77–79; Hulme, 1964: 324; Kustanowich, 1965: 52.

Quinqueloculina disparilis d'Orbigny, 1826

d'Orbigny, 1826: 302, No. 21; Cushman, 1919: 637.

Quinqueloculina aff. **disparilis** d'Orbigny, 1826

Hornibrook in Knox, 1951: 43.

Quinqueloculina ferussacii d'Orbigny, 1826

d'Orbigny, 1826: 301, No. 18; Chapman, 1909: 322 (as *Miliolina*); Mestayer, 1916: 128.

Quinqueloculina cf. **flexuosa** d'Orbigny, 1839

cf. d'Orbigny, 1839c: 73, pl. 4, figs. 4–6; Hulme, 1964: 324.

Quinqueloculina fusca Brady, 1870

H. B. Brady in Brady, Robertson, and Brady, 1870: 286, pl. 11, figs. 2, 3; Heron-Allen and Earland, 1922: 69 (as *Miliolina*).

Quinqueloculina gualtieriana d'Orbigny, 1839

d'Orbigny, 1839a: 186, pl. 11, figs. 1–3; Hulme, 1964: 324.

Quinqueloculina incisa Vella, 1957

Vella, 1957: 9, 13, 24, pl. 6, figs. 118–121; Hulme, 1964: 323; Hedley, Hurdle, and Burdett, 1967.

Quinqueloculina kapitensis Vella, 1957

Vella, 1957: 9, 13, 26, pl. 4, figs. 74, 80, 81; Kustanowich, 1965: 52.

Quinqueloculina lamarckiana d'Orbigny, 1839

d'Orbigny, 1839a: 189, pl. 11, figs. 14, 15; Mestayer, 1916: 128 (as *Miliolina cuvieriana*); Heron-Allen and Earland, 1922: 69; Hulme, 1964: 324 (as *Q. lamarckiana*); Kustanowich, 1965: 52.

Cushman (1922a: 64) places *Q. cuvieriana* in the synonymy of *Q. lamarckiana*.

Quinqueloculina cf. *lamarckiana* d'Orbigny, 1839

Vella, 1957: 8, 13, 23.

Quinqueloculina aff. *lata* Terquem, 1876

aff. Terquem, 1876: 82, pl. 11, fig. 8; Vella, 1957: 8, 24, pl. 6, figs. 112–114.

Quinqueloculina laevigata d'Orbigny, 1826

d'Orbigny, 1826: 301; Hulme, 1964: 324.

Quinqueloculina miles Vella, 1957

Vella, 1957: 9, 27, pl. 6, figs. 109–111.

Quinqueloculina neosigmoilinoidea Kennett, 1966

Kennett, 1966: 71; Vella, 1957: 24, pl. 6, figs. 115–117 (as *Quinqueloculina sigmoilinoidea*); Hulme, 1964: 323.

Kennett (1966) proposes *Q. neosigmoilinoidea*, new name for *Q. sigmoilinoidea* Vella, 1957, not of Gianotti, 1953.

Quinqueloculina patagonica d'Orbigny, 1839

d'Orbigny, 1839c: 74, pl. 4, figs. 14–16; Hedley, Hurdle, and Burdett, 1967: pl. 8, fig. 6.

Quinqueloculina poeyana d'Orbigny, 1839

d'Orbigny, 1839a: 191, pl. 11, figs. 25–27; Hulme, 1964: 325.

Quinqueloculina polygona d'Orbigny, 1839

d'Orbigny, 1839a: 198, pl. 12, figs. 21–23; Chapman, 1909: 321, pl. 13, fig. 6 (as *Miliolina*); Cushman, 1919: 637 (as *Quinqueloculina*); Heron-Allen and Earland, 1922: 70 (as *Miliolina*).

Quinqueloculina pygmaea Reuss, 1850

Reuss, 1850: 384, pl. 50, fig. 3; Heron-Allen and Earland, 1922: 67 (as *Miliolina*).

Quinqueloculina rebecca Vella, 1957

Vella, 1957: 9, 14, 25, pl. 5, figs. 84, 85, 88.

Quinqueloculina sclerotica Karrer, 1868

Karrer, 1868: 152, pl. 3, fig. 5; Cushman, 1919: 636; Heron-Allen and Earland, 1922: 70 (as *Miliolina*).

Quinqueloculina seminulum (Linnaeus, 1767)

Linnaeus, 1767: 1264, No. 791 (as *Serpula*); Haeusler, 1887: 199 (as *Miliolina*); Chapman, 1906: 81; Chapman, 1909: 319; Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 67; Vella, 1957: 8, 23, pl. 6, figs. 100, 101, 108 (as *Quinqueloculina triangularis*); Hulme, 1964: 324; Hedley, Hurdle, and Burdett, 1965: 13, pl. 2, fig. 8 (as *Q. seminulum*); Hedley, Hurdle, and Burdett, 1967.

Hedley *et al.* (1965) include *Q. triangularis* of Vella (1957) in the synonymy of *Q. seminulum*.

Quinqueloculina cf. *seminulum* (Linnaeus, 1767)

Hornibrook in Fleming, 1952: 82.

Quinqueloculina suborbicularis d'Orbigny, 1826

d'Orbigny, 1826: 302, No. 29; Vella, 1957: 8, 23, pl. 6, figs. 102–104; Hulme, 1964: 324; Kustanowich, 1965: 52.

Quinqueloculina tenagos Parker, 1962

Parker, 1962a: 110; Hulme, 1964: 324 (as *Quinqueloculina costata*); Hedley, Hurdle, and Burdett, 1967: pl. 9, fig. 1 (as *Q. tenagos*).

Hedley *et al.* (1967) include *Q. costata* of Hulme (1964) in the synonymy of *Q. tenagos*.

Quinqueloculina venusta Karrer, 1868

Karrer, 1868: 147, pl. 2, fig. 6; Murray, 1895: 604 (as *Miliolina*); Chapman, 1909: 321; Heron-Allen and Earland, 1922: 68.

Quinqueloculina vulgaris d'Orbigny, 1826

d'Orbigny, 1826: 302, No. 33; Chapman, 1906: 81 (as *Miliolina*); Chapman, 1909: 320; Cushman, 1919: 637 (as *Quinqueloculina*).

Genus **MASSILINA** Schlumberger, 1893

Massilina arenaria (Brady, 1884)

Brady, 1884: 153, pl. 8, fig. 12 (as *Spiroloculina*); Heron-Allen and Earland, 1922: 64.

Massilina asperula (Karrer, 1868)

Karrer, 1868: 136, pl. 1, fig. 10 (as *Spiroloculina*); Chapman, 1909: 318.

Massilina brodiei Hedley, Hurdle, and Burdett, 1967

Hedley, Hurdle, and Burdett, 1967: pl. 8, fig. 1, text-figs. 17–19.

Massilina milletti (Wiesner, 1912)

Wiesner, 1912: 207 (as *Spiroloculina*); Hulme, 1964: 325.

Massilina secans (d'Orbigny, 1826)

d'Orbigny, 1826: 303, No. 43 (as *Quinqueloculina*); Haeusler, 1887: 199 (as *Miliolina*).

Genus **PATEORIS** Loeblich and Tappan, 1953

Pateoris hauerinoides (Rhumbler, 1936)

Rhumbler, 1936: 226, text figs. 167, 208–212 (as *Quinqueloculina subrotunda* var.); Heron-Allen and Earland, 1922: 65 (as *Miliolina subrotunda*, part); Hedley, Hurdle, and Burdett, 1967: pl. 8, fig. 4.

Hedley *et al.* (1967) include *M. subrotunda* of Heron-Allen and Earland (1922, part) in the synonymy of *P. hauerinoides*.

Pateoris cf. *hauerinoides* (Rhumbler, 1936)

Kustanowich, 1965: 52.

Genus **PYRGO** Defrance, 1824

Pyrgo anomala (Schlumberger, 1891)

Schlumberger, 1891: 569, pl. 11, figs. 84–86; pl. 12, fig. 101, text figs. 32–34 (as *Biloculina*); Chapman, 1906: 80; Cushman, 1919: 639; Vella, 1957: 9, 29, pl. 7, figs. 135, 136.

Pyrgo bulloides (d'Orbigny, 1826)

d'Orbigny, 1826: 297, No. 1, pl. 16, figs. 1–4 (as *Biloculina*); Heron-Allen and Earland, 1922: 61.

Pyrgo comata (Brady, 1881)

Brady, 1881 (as *Biloculina*); Murray, 1895: 604; Mestayer, 1916: 128; Cushman, 1919: 640; Heron-Allen and Earland, 1922: 62.

Pyrgo denticulata (Brady, 1884)

Brady, 1884: 143, pl. 3, figs. 4, 5 (as *Biloculina ringens* var.); Chapman, 1909: 315, pl. 13, fig. 2 (as *Biloculina bradyi* var.).

Pyrgo elongata (d'Orbigny, 1826)

d'Orbigny, 1826: 298, No. 4 (as *Biloculina*); Chapman, 1909: 317; Mestayer, 1916: 218.

Pyrgo aff. ezo Asano, 1938

aff. Asano, 1938: 93, pl. 9, fig. 1; Vella, 1957: 9, 29, pl. 7, figs. 138, 139; Kustanowich, 1965: 52.

Pyrgo fornasinii Chapman and Parr, 1935

Chapman and Parr, 1935: 5; Murray, 1895: 604, 610 (as *Biloculina ringens*); Chapman, 1909: 314, pl. 13, fig. 1 (as *Biloculina bradyi*); Cushman, 1919: 640.

Schlumberger (1891: 557) referred *B. ringens* of Brady, listed by Murray (1895), to *B. bradyi* Schlumberger, which is preoccupied by *B. bradyi* Fornasini, 1886. Chapman and Parr (1935) propose *P. fornasini* new name for *B. bradyi* Schlumberger.

Pyrgo globulus (Bornemann, 1855)

Bornemann, 1855: 349, pl. 19, fig. 3 (as *Biloculina*); Chapman, 1909: 317.

Pyrgo guerreri Silvestri, 1900

Silvestri, 1900a: 22, text figs. 1–5 (as *Biloculina*); Vella, 1957: 9, 29, pl. 7, figs. 144, 145.

Pyrgo laevis Defrance, 1824

Defrance, 1824: 273, Atlas Conch. pl. 88, fig. 2; Hornibrook in Fleming, 1952: 82.

Pyrgo lucernula (Schwager, 1866)

Schwager, 1866: 202, pl. 4, figs. 14, 17 (as *Biloculina*); Chapman, 1909: 315.

Pyrgo murrhyna (Schwager, 1866)

Schwager, 1866: 203, pl. 4, fig. 15 (as *Biloculina*); Murray, 1895: 604 (as *Biloculina depressa* var.); Heron-Allen and Earland, 1922: 62.

Pyrgo pisum (Schlumberger, 1891)

Schlumberger, 1891: 569, pl. 11, figs. 81–83, text fig. 31 (as *Biloculina*); Chapman, 1906: 80; Chapman, 1909: 315; Cushman, 1919: 639; Heron-Allen and Earland, 1922: 61 (as *Biloculina ringens*); Vella, 1957: 9, 29, pl. 7, figs. 130, 131 (as *B. pisum*); Hedley, Hurdle, and Burdett, 1965: 14 (as *Pyrgo pisum*).

Hedley *et al.* (1965) include *B. ringens* of Heron-Allen and Earland (1922) in the synonymy of *P. pisum*.

Pyrgo ringens (Lamarck, 1804)

Lamarck, 1804: 351, No. 1 (as *Miliolites*); Haeusler, 1887: 199 (as *Biloculina*); Mestayer, 1916: 128.

Pyrgo sarsii (Schlumberger, 1891)

Schlumberger, 1891: 553, pl. 9, figs. 55–59 (as *Biloculina*); Chapman, 1909: 314, pl. 13, fig. 3; Cushman, 1919: 640.

Pyrgo serrata (Bailey, 1862)

Bailey, 1862: 350, pl. 8, fig. E (as *Biloculina*); Murray, 1895: 604 (as *Biloculina depressa* var.); Chapman, 1909: 314 (as *Biloculina*); Heron-Allen and Earland, 1922: 63 (as *B. depressa* var.); Barker, 1960: 6, pl. 3, fig. 3 (as *Pyrgo*).

Pyrgo tasmanensis Vella, 1957

Vella, 1957: 30, pl. 7, figs. 141, 142.

Pyrgo vesperilio (Schlumberger, 1891)

Schlumberger, 1891: 561, pl. 10, figs. 74–76; text figs. 20–22 (as *Biloculina*); Chapman, 1909: 315, pl. 13, fig. 4.

Genus **PYRGOELLA** Cushman and White, 1936

Pyrgoella sphaera (d'Orbigny, 1839)

d'Orbigny, 1839c: 66, pl. 8, figs. 13–16 (as *Biloculina*); Murray, 1895: 610; Chapman, 1906: 82, pl. 3, fig. 1 (as *Planispirina*); Chapman, 1909: 324; Mestayer, 1916: 128 (as *Biloculina*); Cushman, 1919: 635 (as *Planispirina*); Heron-Allen and Earland, 1922: 61 (as *Biloculina*).

Genus **SIGMOILINA** Schlumberger, 1887

Sigmoilina edwardsi (Schlumberger, 1887)

Schlumberger, 1887: 483, pl. 7, figs. 15–18; woodcut 8 (as *Planispirina*); Heron-Allen and Earland, 1922: 71 (as *Sigmoilina*).

Sigmoilina ovata Sidebottom, 1904

Sidebottom, 1904: 6, pl. 2, figs. 12, 13; text fig. 1; Heron-Allen and Earland, 1922: 70.

Sigmoilina sigmoidea (Brady, 1884)

Brady, 1884: 197, pl. 2, figs. 1–3, 194, fig. 5c (as *Planispirina*); Murray, 1895: 610; Heron-Allen and Earland, 1922: 71 (as *Sigmoilina*).

Sigmoilina tenuis (Czjzek, 1848)

Czjzek, 1848: 149, pl. 13, figs. 31–34 (as *Quinqueloculina*); Heron-Allen and Earland, 1922: 63 (as *Spiroloculina*).

Sigmoilina cf. tenuis (Czjzek, 1848)

Vella, 1957: 9 (as *Massilina*).

Genus **SIGMOILOPSIS** Finlay, 1947

Sigmoilopsis celata (Costa, 1855)

Costa, 1855: 126, pl. 1, fig. 14 (as *Spiroloculina*); Chapman, 1909: 323 (as *Sigmoilina*); Mestayer, 1916: 128 (as *Planispirina*); Heron-Allen and Earland, 1922: 71 (as *Sigmoilina*).

Sigmoilopsis finlayi Vella, 1957

Vella, 1957: 8, 14, 20, pl. 4, figs. 75, 76.

Sigmoilopsis schlumbergeri (Silvestri, 1904)

Silvestri, 1904a: 267 (as *Sigmoilina*); Murray, 1895: 634 (as *Planispirina celata*); Chapman, 1939: 323 (as *Sigmoilina schlumbergeri*); Heron-Allen and Earland, 1922: 71 (as *Sigmoilina celata*, part); Vella, 1957: 8 (as *Sigmoilopsis schlumbergeri* ?).

Silvestri (1904a) places *P. celata* of Brady (1884), listed by Murray (1895), in the synonymy of *S. schlumbergeri*. Heron-Allen and Earland (1922) place *S. schlumbergeri* in the synonymy of *S. celata*.

Sigmoilopsis wanganuiensis Vella, 1957

Vella, 1957: 8, 20, pl. 4, figs. 67–70.

Genus **SIPHONAPERTA** Vella, 1957

Siphonaperta agglutinans (d'Orbigny, 1839)

d'Orbigny, 1839a: 195, pl. 12, figs. 11–13 (as *Quinqueloculina*); Chapman, 1906: 82 (as *Miliolina*); Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 69; Hulme, 1964: 325 (as *Quinqueloculina*); Hedley, Hurdle, and Burdett, 1965: 12, pl. 2, fig. 7; Hedley, Hurdle, and Burdett, 1967.

Siphonaperta crassa Vella, 1957

Vella, 1957: 8, 14, 19, pl. 4, figs. 62, 64–66.

Siphonaperta parvagguta (Vella, 1957)

Vella, 1957: 9, 27, pl. 4, figs. 71–73 (as *Quinqueloculina*).

Genus **TRILOCULINA** d'Orbigny, 1826

Triloculina brevidentata Cushman, 1944

Cushman, 1944: 16, pl. 2, fig. 25; Hulme, 1964: 325.

Triloculina brongniartii d'Orbigny, 1826

d'Orbigny, 1826: 300, No. 23; Heron-Allen and Earland, 1922: 70 (as *Miliolina*).

Triloculina chrysostoma (Chapman, 1909)

Chapman, 1909: 322, pl. 13, figs. 8–10; pl. 14, figs. 1, 4 (as *Miliolina*); Heron-Allen and Earland, 1922: 64; Vella, 1957: 9, 14, 28, pl. 5, figs. 97–99 (as *Triloculina*).

Triloculina gracilis d'Orbigny, 1839

d'Orbigny, 1839a: 181, pl. 11, figs. 10–12; Heron-Allen and Earland, 1922: 67 (as *Miliolina*).

Triloculina idae Vella, 1957

Vella, 1957: 9, 14, 28, pl. 7, figs. 132–134.

Triloculina insignis (Brady, 1881)

Brady, 1881: 45 (as *Miliolina*); Chapman, 1906: 81; Chapman, 1909: 318; Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 65; Vella, 1957: 9, 23, pl. 5, figs. 94–96 (as *Triloculina* cf.); Hedley, Hurdle, and Burdett, 1965: 14, pl. 3, fig. 10 (as *Triloculina*).

Hedley *et al.* (1965) include *T. cf. insignis* of Vella (1957) in the synonymy of *T. insignis*.

Triloculina linneiana d'Orbigny, 1839

d'Orbigny, 1839a: 172, pl. 9, figs. 11–13; Haeusler, 1887: 200 (as *Miliolina*); Heron-Allen and Earland, 1922: 70.

Triloculina oblonga (Montagu, 1803)

Montagu, 1803: 522, pl. 14, fig. 9 (as *Vermiculum*); Haeusler, 1887: 199 (as *Miliolina*); Chapman, 1909: 320; Mestayer, 1916: 128; Cushman, 1919: 638 (as *Triloculina*); Heron-Allen and Earland, 1922: 66 (as *Miliolina*).

Triloculina rotunda d'Orbigny, 1826

d'Orbigny, 1826: 299, No. 4; Mestayer, 1916: 128 (as *Miliolina*); Cushman, 1919: 639 (as *Triloculina*).

Triloculina subvalvularis Parr, 1950

Parr, 1950: 296, pl. 7, fig. 4; Brady, 1884: 161, pl. 4, figs. 4, 5 (as *Miliolina valvularis*); Murray, 1895: 604.

Parr (1950) includes *M. valvularis* of Brady (1884) in the synonymy of *T. subvalvularis*.

Triloculina tricarinata d'Orbigny, 1826

d'Orbigny, 1826: 299, No. 7; Murray, 1895: 610 (as *Miliolina*); Chapman, 1909: 320; Mestayer, 1916: 128; Cushman, 1919: 638 (as *Triloculina*); Heron-Allen and Earland, 1922: 66 (as *Miliolina*).

Triloculina trigonula (Lamarck, 1804)

Lamarck, 1804: 351, No. 3 (as *Miliolites*); Chapman, 1909: 320 (as *Miliolina*); Cushman, 1919: 638 (as *Triloculina*); Heron-Allen and Earland, 1922: 65 (as *Miliolina*); Hulme, 1964: 325.

Triloculina cf. **trigonula** (Lamarck, 1804)

Vella, 1957: 9.

Triloculina cf. **trigonula** (Lamarck, 1804)

Hornibrook *in* Fleming, 1952: 82.

Triloculina valvularis Reuss, 1851

Reuss, 1851b: 85, pl. 7, fig. 56; Mestayer, 1916: 128 (as *Miliolina*); Heron-Allen and Earland, 1922: 64.

Subfamily **MILIOLINELLINAE**

Genus **MILIOLINELLA** Wiesner, 1931

Miliolinella australis (Parr, 1932)

Parr, 1932: 7, pl. 1, fig. 8 (as *Quinqueloculina*); Hornibrook *in* Fleming, 1952: 82 (as *Miliolinella*).

Miliolinella aff. **australis** (Parr, 1932)

Vella, 1957: 9 (as *Sigmoilina* aff.).

Miliolinella circularis (Bornemann, 1855)

Bornemann, 1855: 349, pl. 19, fig. 4 (as *Triloculina*); Haeusler, 1887: 199 (as *Miliolina*); Murray, 1895: 604, 610; Chapman, 1906: 81; Chapman, 1909: 318; Mestayer, 1916: 128; Cushman, 1919: 638 (as *Triloculina*); Heron-Allen and Earland, 1922: 64 (as *Miliolina*).

Miliolinella labiosa (d'Orbigny, 1839)

d'Orbigny, 1839a: 178, pl. 10, figs. 12–14 (as *Triloculina*); Haeusler, 1887: 199 (as *Miliolina*); Cushman, 1919: 639 (as *Triloculina*); Heron-Allen and Earland, 1922: 65 (as *Miliolina*); Hulme, 1964: 325 (as *Miliolinella*); Hedley, Hurdle, and Burdett, 1967: pl. 8, fig. 2.

Miliolinella labiosa var. **schauinslandi** (Rhumbler, 1906)

Rhumbler, 1906: 41, pl. 3, figs. 20, 21 (as *Miliolina*); Hedley, Hurdle, and Burdett, 1967: pl. 8, fig. 3 (as *Miliolinella labiosa* var.).

Miliolinella sublineata (Brady, 1884)

Brady, 1884: 169, pl. 4, fig. 7 (as *Miliolina circularis* var.); Chapman, 1909: 319, pl. 13, fig. 7.

Miliolinella subrotunda (Montagu, 1803)

Montagu, 1803: 521 (as *Vermiculium*); Chapman, 1909: 319 (as *Miliolina*); Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 65.

Miliolinella vigilax Vella, 1957

Vella, 1957: 9, 13, 21, pl. 7, figs. 124–126; Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 12.

Genus **BILOCULINELLA** Wiesner, 1931

Biloculinella depressa (d'Orbigny, 1826)

d'Orbigny, 1826: 298, No. 7 (as *Biloculina*); Murray, 1895: 604; Chapman, 1909: 313; Mestayer, 1916: 128; Heron-Allen and Earland, 1922: 62; Hornibrook in Fleming, 1952: 82 (as *Pyrgo*); Vella, 1957: 9, 29, pl. 7, figs. 137, 140; Hedley, Hurdle, and Burdett, 1965: 14 (as *Biloculinella*).

Genus **NUMMOLOCULINA** Steinmann, 1881

Nummoloculina contraria (d'Orbigny, 1846)

d'Orbigny, 1846: 266, pl. 16, figs. 4–6 (as *Biloculina*); Mestayer, 1916: 128 (as *Planispirina*).

Nummoloculina irregularis (d'Orbigny, 1839)

d'Orbigny, 1839c: 67, pl. 8, figs. 20, 21 (as *Biloculina*); Murray, 1895: 604; Chapman, 1909: 317; Heron-Allen and Earland, 1922: 61.

Genus **SCUTULORIS** Loeblich and Tappan, 1953

Scutuloris hornibrooki (Vella, 1957)

Vella, 1957: 9, 21, pl. 7, figs. 127–129 (as *Quinquinella*); Kustanowich, 1965: 52.

Subfamily **MILIOLINAE**

Genus **HAUERINA** d'Orbigny, 1839

Hauerina fragilissima (Brady, 1884)

Brady, 1884: 149, pl. 9, figs. 12–14 (as *Spiroloculina*); Cushman, 1919: 638 (as *Hauerina*).

Subfamily **TUBINELLINAE**

Genus **TUBINELLA** Rhumbler, 1906

Tubinella chapmani Cushman, 1924

Cushman, 1924: 55, pl. 19, figs. 5, 6; Chapman, 1909: 323, pl. 14, fig. 3 (as *Articulina funalis*).

Cushman (1924) includes *A. funalis* of Chapman (1909) in the synonymy of *T. chapmani*.

Tubinella funalis (Brady, 1884)

Brady, 1884: 185, pl. 13, figs. 6–11 (as *Articulina*); Heron-Allen and Earland, 1922: 72.

Tubinella inornata (Brady, 1884)

Brady, 1884: 186, pl. 13, figs. 3–5 (as *Articulina funalis* var.); Heron-Allen and Earland, 1922: 72.

Genus **PARRINA** Cushman, 1931

Parrina bradyi (Millett, 1898)

Millett, 1898: 261, pl. 5, fig. 6 (as *Nubecularia*); Cushman, 1919: 636, pl. 75, fig. 6; Heron-Allen and Earland, 1922: 60.

Suborder **ROTALIINA**

Superfamily **NODOSARIACEA**

Family **NODOSARIIDAE**

Subfamily **NODOSARIINAE**

Genus **NODOSARIA** Lamarck, 1812

Nodosaria calomorpha Reuss, 1866

Reuss, 1866: 129, pl. 1, figs. 15–19; Heron-Allen and Earland, 1922: 168.

Nodosaria catenulata Brady, 1884

Brady, 1884: 515, pl. 63, figs. 32–34; Heron-Allen and Earland, 1922: 172.

Nodosaria comata (Batsch, 1791)

Batsch, 1791: 2, pl. 2, fig. 4 (as *Nautilus*); Heron-Allen and Earland, 1922: 171 (as *Nodosaria*).

Nodosaria flintii Cushman, 1923

Cushman, 1923: 85, pl. 14, fig. 1; Murray, 1895: 610 (as *Nodosaria obliqua*).

Cushman (1923) includes *N. obliqua* of Brady (1884), listed by Murray (1895), in the synonymy of *N. flintii*.

Nodosaria gracilis Neugeboren, 1852

Neugeboren, 1852: 51, pl. 1, figs. 27–29; Heron-Allen and Earland, 1922: 169.

Nodosaria obliqua (Linnaeus, 1758)

Linnaeus, 1758: 711 (as *Nautilus*); Chapman, 1906: 94 (as *Nodosaria*); Chapman, 1909: 341; Heron-Allen and Earland, 1922: 171.

Nodosaria pellita Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 173, pl. 6, figs. 28, 29.

Nodosaria pyrula d'Orbigny, 1826

d'Orbigny, 1826: 253, No. 13; Chapman, 1906: 92; Chapman, 1909: 341; Cushman, 1919: 611; Heron-Allen and Earland, 1922: 168.

Nodosaria radricula (Linnaeus, 1758)

Linnaeus, 1758: 711 (as *Nautilus*); Mestayer, 1916: 129 (as *Nodosaria*); Cushman, 1919: 611; Heron-Allen and Earland, 1922: 168.

Nodosaria radricula var. **glanduliniformis** Dervieux, 1893

Dervieux, 1893: 599, pl. 5, figs. 3–7; Murray, 1895: 605 (as *N. radricula*); Barker, 1960: 128, pl. 61, figs. 28–31 (as *N. radricula* var.).

Dervieux (1893) includes Brady's (1884) *N. radricula*, listed by Murray (1895), in the synonymy of *N. radricula* var. *glanduliniformis*.

Nodosaria raphanistrum (Linnaeus, 1758)

Linnaeus, 1758: 710 (as *Nautilus*); Heron-Allen and Earland, 1922: 171 (as *Nodosaria*).

Nodosaria simplex Silvestri, 1872

Silvestri, 1872: 95, pl. 11, figs. 268–272; Brady, 1884: 496, pl. 62, figs. 4, 5, ?6; Murray, 1895: 605; Chapman, 1909: 340 (as *Nodosaria oligostegia*); Heron-Allen and Earland, 1922: 168 (as *N. simplex*); Barker, 1960: 130, pl. 62, figs. 4, 5, ?6.

Chapman (1909) places *N. simplex* of Brady (1884) in the synonymy of *N. oligostegia*.

Nodosaria subradicula Schwager, 1866

Schwager, 1866: 222, pl. 5, fig. 50; Chapman, 1909: 340, pl. 16, fig. 2.

Nodosaria subtertenuata Schwager, 1866

Schwager, 1866: 235, pl. 6, fig. 74; Heron-Allen and Earland, 1922: 170.

Nodosaria vertebralis (Batsch, 1791)

Batsch, 1791: 3, No. 6, pl. 11, fig. 6 (as *Nautilus (Orthoceras)*); Chapman, 1906: 94, pl. 3, fig. 5 (as *Nodosaria (D) obliqua* var.); Chapman, 1909: 342; Cushman, 1919: 613 (as *Nodosaria*); Heron-Allen and Earland, 1922: 172; Hedley, Hurdle, and Burdett, 1965: 19, pl. 6, fig. 19, text fig. 4 (as *Dentalina*).

Genus **AMPHICORYNA** Schlumberger, 1881

Amphicoryna hirsuta (d'Orbigny, 1826)

d'Orbigny, 1826: 252, No. 7 (as *Nodosaria*); Chapman, 1906: 92 (as *Nodosaria hispida*); Cushman, 1919: 613 (as *N. hirsuta*); Heron-Allen and Earland, 1922: 171 (as *N. hispida*); Barker, 1960: 132, pl. 63, figs. 10–16 (as *Amphicoryna hirsuta*).

d'Orbigny places *N. hispida* in the synonymy of *N. hirsuta*.

Amphicoryna proxima (Silvestri, 1872)

Silvestri, 1872: 63, pl. 6, figs. 138–147 (as *Nodosaria*); Cushman, 1919: 611.

Amphicoryna scalaris (Batsch, 1791)

Batsch, 1791: No. 4, pl. 2, fig. 4 (as *Nautilus (Orthoceras)*); Brady, 1884: 556, pl. 65, figs. 7–9 (as *Amphicoryna falx*); Mestayer, 1916: 129 (as *Nodosaria scalaris*); Cushman, 1919: 613; Heron-Allen and Earland, 1922: 171; Hornibrook, 1952: 185 (as *Lagenonodosaria*); Vella, 1957: 9; Barker, 1960: 136, pl. 65, figs. 7–9 (as *Amphicoryna*).

Parr (1950: 328) places *A. falx* in the synonymy of *A. scalaris*.

Amphicoryna separans (Brady, 1884)

Brady, 1884: 511, pl. 64, figs. 16–19 (as *Nodosaria scalaris* var.); Barker, 1960: 136, pl. 64, figs. 16–19 (as *Amphicoryna*).

Genus **ASTACOLUS** Montfort, 1808

Astaculus crepidulus (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 107, pl. 19, figs. g–i (as *Nautilus*); Chapman, 1909: 343 (as *Cristellaria*); Mestayer, 1916: 129; Cushman, 1919: 615; Heron-Allen and Earland, 1922: 177.

Astaculus cf. crepidulus (Fichtel and Moll, 1798)

Vella, 1957: 9.

Astaculus cymboides (d'Orbigny, 1846)

d'Orbigny, 1846: 85, pl. 3, figs. 30, 31 (as *Cristellaria*); Heron-Allen and Earland, 1922: 178.

Astaculus latus (Cornuel, 1848)

Cornuel, 1848: 252, pl. 1, figs. 34–37 (as *Marginulina*); Chapman, 1909: 343, pl. 16, fig. 4 (as *Cristellaria*).

Astaculus neolatus Vella, 1957

Vella, 1957: 9, 14, 30, pl. 7, figs. 143, 146–148.

Astaculus aff. neolatus Vella, 1957

Vella, 1957: 30 (as *Astaculus australis*).

Hornibrook (1961: 39) places *A. australis* of Vella (1957) in the synonymy of *A. aff. neolatus*.

Astaculus reniformis (d'Orbigny, 1846)

d'Orbigny, 1846: 88, pl. 3, figs. 39, 40 (as *Cristellaria*); Brady, 1884: 91–92, 539, pl. 70, fig. 3; Murray, 1895: 605; Chapman, 1906: 96; Chapman, 1909: 344; Kustanowich, 1965: 52 (as *Astaculus*).

Genus **DENTALINA** Risso, 1826

Dentalina advena (Cushman, 1923)

Cushman, 1923: 79, pl. 14, fig. 12 (as *Nodosaria*); Chapman, 1906: 94 (as *Nodosaria (D) roemeri*); Chapman, 1909: 340; Heron-Allen and Earland, 1922: 170; Cushman, 1919: 612.

Dentalina aff. caudata d'Orbigny, 1826

aff. d'Orbigny, 1826: 254, No. 37; Vella, 1957: 9.

Dentalina communis d'Orbigny, 1826

d'Orbigny, 1826: 254, No. 35; Murray, 1895: 605 (as *Nodosaria*); Chapman, 1909: 341; Mestayer, 1916: 129; Cushman, 1919: 611; Heron-Allen and Earland, 1922: 169.

Dentalina cf. communis d'Orbigny, 1826

Hulme, 1964: 326.

Dentalina emaciata Reuss, 1851

Reuss, 1851b: 63, pl. 3, fig. 9; Chapman, 1906: 93 (as *Nodosaria (D) consobrina* var.); Chapman, 1909: 341; Mestayer, 1916: 129; Cushman, 1919: 612; Heron-Allen and Earland, 1922: 170; Hornibrook, 1952: 185 (as *Dentalina*); Vella, 1957: 9; Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 18, pl. 6, fig. 18.

Dentalina farcimen Reuss, 1863

Reuss, 1863d: 146, pl. 1, fig. 18; Chapman, 1906: 93 (as *Nodosaria (D)*); Heron-Allen and Earland, 1922: 168.

Dentalina filiformis (d'Orbigny, 1826)

d'Orbigny, 1826: 253, No. 14 (as *Nodosaria*); Chapman, 1906: 93, pl. 3, fig. 5; Mestayer, 1916: 129; Cushman, 1919: 612; Heron-Allen and Earland, 1922: 169; Hedley, Hurdle, and Burdett, 1965: 19 (as *Dentalina*).

Dentalina mucronata Neugeboren, 1856

Neugeboren, 1856: 83, pl. 3, figs. 8–11; Cushman, 1919: 612 (as *Nodosaria*); Heron-Allen and Earland, 1922: 170.

Dentalina soluta Reuss, 1851

Reuss, 1851b: 60, pl. 3, fig. 4; Chapman, 1906: 93 (as *Nodosaria*); Mestayer, 1916: 129; Cushman, 1919: 611; Heron-Allen and Earland, 1922: 169.

Dentalina subsoluta (Cushman, 1923)

Cushman, 1923: 74, pl. 13, fig. 1 (as *Nodosaria*); Murray, 1895: 610 (as *Nodosaria soluta*); Vella, 1957: 9 (as *Dentalina subsoluta*); Kustanowich, 1965: 52.

Cushman (1923) places *N. soluta* of Brady (1884), listed by Murray (1895) in the synonymy of *N. subsoluta*.

Genus **FRONDICULARIA** DeFrance, 1826

Frondicularia annularis d'Orbigny, 1846

d'Orbigny, 1846: 59, pl. 2, figs. 44–47; Heron-Allen and Earland, 1922: 175.

Frondicularia bradyi (Silvestri, 1903)

Silvestri, 1903: 48 (as *Lingulonodosaria*); Cushman, 1919: 613 (as *Lingulina carinata?*).

Cushman states that his specimen is the same as *L. carinata* of Brady (1884: pl. 65, fig. 16) which is referred to *L. bradyi* by Silvestri.

Frondicularia cf. californica Cushman and McCulloch, 1950

cf. Cushman and McCulloch, 1950: 328, pl. 43, figs. 5–8; Kustanowich, 1965: 52.

Frondicularia compta Brady, 1879

Brady, 1879: 271, pl. 8, fig. 6; Cushman, 1919: 618.

Frondicularia inaequalis Costa, 1855

Costa, 1855: 372, pl. 3, fig. 3; Heron-Allen and Earland, 1922: 175.

Frondicularia kiensis Barker, 1960

Barker, 1960: pl. 65, fig. 18; Heron-Allen and Earland, 1922: 174 (as *Frondicularia spathulata*).

Cushman (1913: 82) places *F. spathulata* Brady (non Williamson, 1858) in the synonymy of *Frondicularia bradyi* new species. Barker proposes *F. kiensis*, new name for *F. bradyi* Cushman (non Silvestri, 1903).

Frondicularia reussi Karrer, 1862

Karrer, 1862: 441, pl. 1, fig. 1; Chapman, 1906: 95, pl. 3, fig. 7.

Frondicularia scottii Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 175, pl. 4, figs. 30–32.

Genus **LAGENA** Walker and Jacob, 1798

Lagena acuticosta Reuss, 1862

Reuss, 1862: 305, pl. 1, fig. 4; Chapman, 1909: 334; Mestayer, 1916: 129; Cushman, 1919: 610; Heron-Allen and Earland, 1922: 146.

Lagena aspera Reuss, 1862

Reuss, 1862: 305, pl. 1, fig. 5; Sidebottom, 1913: 167, pl. 15, figs. 11–13; Heron-Allen and Earland, 1922: 144.

Lagena crenata Parker and Jones, 1865

Parker and Jones, 1865: 420, pl. 18, fig. 4; Heron-Allen and Earland, 1922: 149.

Lagena dentaliniformis Bagg, 1912

Bagg, 1912: 45, pl. 13, figs. 1, 2; Vella, 1957: 9.

Lagena distoma Parker and Jones, 1864

Parker and Jones (MS) in Brady, 1864: 467, pl. 48, fig. 6; Mestayer, 1916: 129.

Lagena distoma-margaritifera Parker and Jones, 1865

Parker and Jones, 1865: 357, pl. 18, fig. 6; Brady, 1884: 458, pl. 58, fig. 16.

Lagena elongata (Ehrenberg, 1844)

Ehrenberg, 1844: 274 (as *Miliola*); Chapman, 1906: 91 (as *Lagena*); Cushman, 1919: 608; Heron-Allen and Earland, 1922: 144.

Lagena flatulenta Loeblich and Tappan, 1953

Loeblich and Tappan, 1953: 60, pl. 11, figs. 9, 10; Hulme, 1964: 326.

Lagena foveolata Reuss, 1863

Reuss, 1863b: 332, pl. 5, fig. 65; Sidebottom, 1913: 177; Heron-Allen and Earland, 1922: 150.

Lagena gracilis Williamson, 1848

Williamson, 1848: 13, pl. 1, fig. 5; Murray, 1895: 604; Chapman, 1909: 333; Heron-Allen and Earland, 1922: 147; Hulme, 1964: 327.

Lagena gracillima (Seguenza, 1862)

Seguenza, 1862a: 51, pl. 1, fig. 37 (as *Amphorina*); Chapman, 1906: 91 (as *Lagena*); Heron-Allen and Earland, 1922: 144; Barker, 1960: 116, pl. 56, figs. 19–26.

Lagena hertwigiana Brady var. **undulata** Sidebottom, 1912

Sidebottom, 1912: 397, pl. 16, figs. 26–28; Sidebottom, 1913: 178.

Lagena hispida Reuss, 1858

Reuss, 1858: 434; Chapman, 1906: 91; Mestayer, 1916: 129; Cushman, 1919: 608; Heron-Allen and Earland, 1922: 145.

Lagena laevis (Montagu, 1803)

Montagu, 1803: 524 (as *Vermiculum laeve*); Mestayer, 1916: 129 (as *Lagena*); Cushman, 1919: 607; Heron-Allen and Earland, 1922: 143; Hulme, 1964: 327; Kustanowich, 1965: 52.

Lagena cf. laevis (Montagu, 1803)

Vella, 1957: 9.

Lagena laevis var. **distoma** Silvestri, 1900

Silvestri, 1900b: 244, pl. 6, figs. 74, 75; Sidebottom, 1913: 167.

Lagena lyelii (Seguenza, 1862)

Seguenza, 1862a: 52, pl. 1, fig. 40 (as *Amphorina*); Sidebottom, 1913: 169 (as *Lagena*); Heron-Allen and Earland, 1922: 146.

Lagena paradoxa Sidebottom, 1912

Sidebottom, 1912: 395, pl. 16, figs. 22, 23 (as *Lagena foveolata* var.); Sidebottom, 1913: 177, pl. 15, fig. 32.

Lagena plumigera Brady, 1881

Brady, 1881: 62; Heron-Allen and Earland, 1922: 147.

Lagena protea Chaster, 1892

Chaster, 1892: 62, pl. 1, fig. 14; Sidebottom, 1913: 203.

Lagena semistriata Williamson, 1848

Williamson, 1848: 14, pl. 1, figs. 9, 10 (as *Lagena striata* var.); Cushman, 1919: 610 (as *Lagena*); Heron-Allen and Earland, 1922: 147; Hulme, 1964: 327.

Lagena sphaerula Silvestri, 1902

Silvestri, 1902: 162, text figs. 68–70; Heron-Allen and Earland, 1922: 144.

Lagena spumosa Millett, 1901

Millett, 1901: 9, pl. 1, fig. 9; Sidebottom, 1913: 179, pl. 16, fig. 4.

Lagena stelligera Brady, 1881

Brady, 1881: 60; Sidebottom, 1913: 174; Heron-Allen and Earland, 1922: 148.

Lagena stelligera var. *eccentrica* Sidebottom, 1912

Sidebottom, 1912: 392, pl. 16, figs. 5, 6; Sidebottom, 1913: 175, pl. 15, figs. 30, 31; Heron-Allen and Earland, 1922: 148.

Lagena striata (d'Orbigny, 1839)

d'Orbigny, 1839c: 21, pl. 5, fig. 12 (as *Oolina*); Chapman, 1906: 91 (as *Lagena*); Sidebottom, 1913: 169, pl. 15, fig. 17; Mestayer, 1916: 129; Cushman, 1919: 609; Heron-Allen and Earland, 1922: 145; Vella, 1957: 9; Hulme, 1964: 326; Kustanowich, 1965: 52.

Lagena substriata Williamson, 1848

Williamson, 1848: 15, pl. 1, fig. 12; Hulme, 1964: 327.

Lagena sulcata (Walker and Jacob, 1798)

Walker and Jacob, 1798: 634, pl. 14, fig. 5 (as *Serpula* (*Lagena*)); Chapman, 1906: 91 (as *Lagena*); Chapman, 1909: 333, pl. 15, fig. 4; Sidebottom, 1913: 172, pl. 15, figs. 24, 25; Mestayer, 1916: 129; Cushman, 1919: 609; Heron-Allen and Earland, 1922: 146; Vella, 1957: 9; Hulme, 1964: 327; Hedley, Hurdle, and Burdett, 1965: 20.

Lagena sulcata var. *spicata* Cushman and McCulloch, 1950

Cushman and McCulloch, 1950: 360, pl. 48, figs. 3–7; Cushman, 1919: 609 (as *L. sulcata* var. *apiculata*).

Cushman and McCulloch (1950) propose *L. sulcata* var. *spicata*, new name for *L. sulcata* var. *apiculata* Cushman, 1913 (not Reuss, 1851).

Lagena sulcata cf. var. *spicata* Cushman and McCulloch, 1950

Vella, 1957: 9 (as *L. cf. apiculata*).

Lagena tubulata Sidebottom, 1912

Sidebottom, 1912: 385, pl. 15, figs. 3–5 (as *Lagena hispida* var.); Sidebottom, 1913: 168, pl. 15, fig. 16.

Genus **LENTICULINA** Lamarck, 1804

Lenticulina articulata (Reuss, 1863)

Reuss, 1863c: 53, pl. 5, fig. 62, pl. 6, fig. 63 (as *Cristellaria*); Chapman, 1906: 97; Chapman, 1909: 344; Cushman, 1919: 614; Hornibrook, 1952: 185 (as *Lenticulina*).

Lenticulina convergens (Bornemann, 1855)

Bornemann, 1855: 327, pl. 13, figs. 16, 17 (as *Cristellaria*); Heron-Allen and Earland, 1922: 178.

Lenticulina denticulifera (Cushman, 1913)

Cushman, 1913: 75, pl. 37, fig. 1 (as *Cristellaria*); Cushman, 1919: 616.

Lenticulina gibba (d'Orbigny, 1826)

d'Orbigny, 1826: 292, No. 17 (as *Cristellaria*); Chapman, 1909: 344; Mestayer, 1916: 129; Cushman, 1919: 615; Heron-Allen and Earland, 1922: 179 (as *Cristellaria articulata*, part); Hornibrook in Fleming, 1952: 82 (as *L. gibba*); Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 15, pl. 3, fig. 11.

Hedley *et al.* (1965) include *C. articulata* of Heron-Allen and Earland (1922, part) in the synonymy of *L. gibba*.

Lenticulina cf. *gibba* (d'Orbigny, 1826)

Hornibrook in Knox, 1951: 43.

Lenticulina cf. *gibba* (d'Orbigny, 1826)

Hulme, 1964: 326.

Lenticulina iota (Cushman, 1923)

Cushman, 1923: 111, pl. 29, fig. 2; pl. 30, fig. 1 (as *Cristellaria*); Vella, 1957: 9 (as *Robulus*).

Lenticulina mamilligera (Karrer, 1865)

Karrer, 1865: 76, pl. 16, fig. 5 (as *Cristellaria*); Chapman, 1906: 98.

Lenticulina peregrina (Schwager, 1866)

Schwager, 1866: 245, pl. 7, fig. 89 (as *Cristellaria*); Chapman, 1909: 343 (as *Cristellaria variabilis*); Mestayer, 1916: 129; Cushman, 1919: 615; Heron-Allen and Earland, 1922: 177; Kustanowich, 1965: 52 (as *L. peregrina*).

Recent forms ascribed to the Miocene species *C. variabilis* are considered different from them and are referred to *C. peregrina* by Cushman (1923: 113).

Lenticulina aff. *peregrina* (Schwager, 1866)

Vella, 1957: 9.

Lenticulina subgibba Parr, 1950

Parr, 1950: 321, pl. 11, figs. 1, 2; Heron-Allen and Earland, 1922: 179 (as *Cristellaria gibba*, part); Vella, 1957: 9 (as *L. subgibba*); Hedley, Hurdle, and Burdett, 1965: 16, pl. 3, fig. 12, text fig. 1.

Hedley *et al.* (1965) include *C. gibba* of Heron-Allen and Earland (1922, part) in the synonymy of *L. subgibba*.

Genus **MARGINULINA** d'Orbigny, 1826

Marginulina costata (Batsch, 1791)

Batsch, 1791: pl. 1, figs. 1a–1g (as *Nautilus* (*Orthoceras*)); Chapman, 1909: 342 (as *Marginulina*); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 176.

Marginulina glabra d'Orbigny, 1826

d'Orbigny, 1826: 259, No. 6; Chapman, 1906: 95; Mestayer, 1916: 129; Cushman, 1919: 617; Heron-Allen and Earland, 1922: 176; Kustanowich, 1965: 52.

Marginulina schloenbachi (Reuss, 1863)

Reuss, 1863a: 65, pl. 6, figs. 14, 15 (as *Cristellaria*); Chapman, 1906: 96; Chapman, 1909: 342; Cushman, 1919: 616; Heron-Allen and Earland, 1922: 177.

Marginulina tenuis Bornemann, 1855

Bornemann, 1855: 326, pl. 13, fig. 14; Brady, 1884: 535, pl. 66, figs. 21–23 (as *Cristellaria*); Chapman, 1906: 95; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 177; Barker, 1960: 140, pl. 66, figs. 21–23 (as *Marginulina*).

Genus **MARGINULINOPSIS** Silvestri, 1904

Marginulinopsis bradyi (Goes, 1894)

Goes, 1894: 64, pl. 11, figs. 643–645 (as *Cristellaria*); Brady, 1884: 528, pl. 65, figs. 10–13 (as *Marginulina costata*).

Goes (1894) places *M. costata* of Brady (1884) in the synonymy of *C. bradyi*.

Genus **ORTHOMORPHINA** Stainforth, 1952

Orthomorphina challengeriana (Thalman, 1937)

Thalman, 1937: 341 (as *Nodogenerina*); Hulme, 1964: 326 (as *Orthomorphina*).

Genus **PLANULARIA** DeFrance, 1824

Planularia compressa (d'Orbigny, 1846)

d'Orbigny, 1846: 86, pl. 3, figs. 32, 33 (as *Cristellaria*); Chapman, 1909: 343, pl. 16, fig. 5.

Planularia magnifica Thalman var. **falciformis** Thalman 1937

Thalman, 1937: 342; Murray, 1895: 605 (as *Cristellaria compressa*).

Thalman (1937) includes *C. compressa* of Brady (1884), listed by Murray (1895), in the synonymy of *P. magnifica* var. *falciformis*.

Planularia tricarinnella (Reuss, 1863)

Reuss, 1863a: 68, pl. 7, fig. 9 (as *Cristellaria*); Brady, 1884: 91, 540, pl. 68, figs. 3, 4; Chapman, 1906: 96; Chapman, 1909: 343, pl. 16, fig. 3; Mestayer, 1916: 129; Cushman, 1919: 615; Heron-Allen and Earland, 1922: 177; Barker, 1960: 142, pl. 68, figs. 3, 4 (as *Planularia australis*); Hedley, Hurdle, and Burdett, 1965: 17, pl. 4, fig. 13, text fig. 2 (as *P. tricarinnella*).

Planularia cf. **tricarinnella** (Reuss, 1863)

Hornibrook in Fleming, 1952: 82 (as *Astacolus*).

Planularia tricarinnella var. **spinipes** (Cushman, 1913)

Cushman, 1913: 72, pl. 33, fig. 2 (as *Cristellaria tricarinnella* var.); Cushman, 1919: 616; Heron-Allen and Earland, 1922: 177 (as *C. tricarinnella*, part); Hedley, Hurdle, and Burdett, 1965: 17, pl. 4, fig. 13, text fig. 2 (as *P. tricarinnella* var.).

Hedley, *et al.* (1965) include *C. tricarinnella* of Heron-Allen and Earland (1922, part) in the synonymy of *P. tricarinnella* var. *spinipes*.

Genus **PROXIFRONS** Vella, 1963

Proxifrons advena (Cushman, 1923)

Cushman, 1923: 141, pl. 20, figs. 1, 2 (as *Fronidularia*); Brady, 1879: 271, pl. 8, figs. 8–10 (as *Flabinella foliacea*); Brady, 1884: 91, 521, pl. 66, figs. 8–12 (as *Fronidularia inaequalis*).

Brady (1884: 521) places *F. foliacea* in the synonymy of *F. inaequalis* and Cushman (1923) places *F. inaequalis* in the synonymy of *F. advena*.

Genus **PSEUDONODOSARIA** Boomgaard, 1949

Pseudonodosaria rotundata (Reuss, 1850)

Reuss, 1850: 366, pl. 46, fig. 2 (as *Glandulina*); Mestayer, 1916: 129 (as *Nodosaria (Glandulina)*); Heron-Allen and Earland, 1922: 167.

Genus **ROBULUS** Montfort, 1808

Robulus antarcticus Parr, 1950

Parr, 1950: 323, pl. 11, fig. 11 (as *Lenticulina (Robulus)*); Vella, 1957: 9 (as *Robulus*).

Robulus australis Parr, 1950

Parr, 1950: 322, pl. 11, figs. 7, 8 (as *Lenticulina (Robulus)*); Vella, 1957: 9 (as *Robulus*).

Robulus calcar (Linnaeus, 1758)

Linnaeus, 1758: 709 (as *Nautilus*); Heron-Allen and Earland, 1922: 180 (as *Cristellaria*); Vella, 1957: 9 (as *Robulus*).

Robulus costatus (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 47, pl. 4, figs. g, h (as *Nautilus*); Chapman, 1906: 98 (as *Cristellaria*); Heron-Allen and Earland, 1922: 180, pl. 6, fig. 34; Hedley, Hurdle, and Burdett, 1965: 14, pl. 4, fig. 14, text fig. 3 (as *Lenticulina*).

Robulus cultratus Montfort, 1808

Montfort, 1808: 215, 54th genre; Murray, 1895: 610 (as *Cristellaria*) (Identification doubtful, see Barker, 1960: 146, pl. 70, figs. 4–8); Chapman, 1906: 98; Chapman, 1909: 345, pl. 16, fig. 6; Mestayer, 1916: 129; Cushman, 1919: 614; Heron-Allen and Earland, 1922: 180; Hedley, Hurdle, and Burdett, 1965: 15, pl. 4, fig. 15 (as *Lenticulina*).

Robulus limbosus (Reuss, 1863)

Reuss, 1863c: 55, pl. 6, fig. 69 (as *Robulina*); Kustanowich, 1965: 52 (as *Robulus*).

Robulus orbicularis (d'Orbigny, 1826)

d'Orbigny, 1826: 288, pl. 15, figs. 8, 9 (as *Robulina*); Brady, 1884: 549, pl. 69, fig. 17 (as *Cristellaria*); Chapman, 1906: 97; Chapman, 1909: 346; Mestayer, 1916: 129; Cushman, 1919: 615; Heron-Allen and Earland, 1922: 179; Hornibrook in Fleming, 1952: 82 (as *Robulus*); Kustanowich, 1965: 52.

Robulus rotulatus (Lamarck, 1804)

Lamarck, 1804: 188, No. 3 (as *Lenticulites*); Chapman, 1906: 97 (as *Cristellaria*); Chapman, 1909: 345; Mestayer, 1916: 129; Cushman, 1919: 614; Heron-Allen and Earland, 1922: 179.

Robulus cf. **rotulatus** (Lamarck, 1804)

Kustanowich, 1965: 52.

Robulus cf. **subcarinata** (Cushman, 1917)

cf. Cushman, 1917b: 657 (as *Cristellaria orbicularis* var.); Hornibrook, 1952: 185 (as *Robulus*).

Robulus suborbicularis Parr, 1950

Parr, 1950: 321, pl. 11, figs. 5, 6 (as *Lenticulina (Robulus)*); Heron-Allen and Earland, 1922: 179 (as *Cristellaria orbicularis*, part); Vella, 1957: 9 (as *R. suborbicularis*); Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 16, pl. 5, fig. 16 (as *Lenticulina*).

Hedley *et al.* (1965) include *C. orbicularis* of Heron-Allen and Earland (1922, part) in the synonymy of *L. suborbicularis*.

Robulus tasmanica Parr, 1950

Parr, 1950: 321, pl. 11, figs. 3, 4 (as *Lenticulina* (*Robulus*)); Heron-Allen and Earland, 1922: 179 (as *Cristellaria articulata*, part); Vella, 1957: 9 (as *R. tasmanica*); Hedley, Hurdle, and Burdett, 1965: 16, pl. 5, fig. 17 (as *Lenticulina*).

Hedley *et al.* (1965) include *C. articulata* of Heron-Allen and Earland (1922, part) in the synonymy of *L. tasmanica*.

Robulus thalmani Hessland, 1943

Hessland, 1943: 265, pl. 2, fig. 16; Murray, 1895: 605, 610 (as *Cristellaria rotulata*).

Hessland (1943) includes *C. rotulata* of Brady (1884), listed by Murray (1895), in the synonymy of *Robulus thalmani*.

Robulus vortex (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 33, pl. 2, figs. d-i (as *Nautilus*); Chapman, 1909: 345 (as *Cristellaria*); Heron-Allen and Earland, 1922: 179.

Robulus cf. vortex (Fichtel and Moll, 1798)

Hornibrook *in* Knox, 1951: 43.

Genus **SARACENARIA** Defrance, 1824

Saracenaria acutaureicularis (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 102, pl. 18, figs. g-i (as *Nautilus*); Heron-Allen and Earland, 1922: 178 (as *Cristellaria*).

Saracenaria italica Defrance, 1824

Defrance, 1824: 177; Chapman, 1906: 96 (as *Cristellaria*); Cushman, 1919: 617; Heron-Allen and Earland, 1922: 178.

Saracenaria latifrons (Brady, 1884)

Brady, 1884: 544, pl. 68, fig. 19, pl. 113, fig. 11 (as *Cristellaria*); Chapman, 1906: 97; Mestayer, 1916: 129; Cushman, 1919: 617; Heron-Allen and Earland, 1922: 178; Barker, 1960: pl. 68, fig. 19, pl. 113, fig. 11 (as *Saracenaria*); Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 17.

Genus **VAGINULINA** d'Orbigny, 1826

Vaginulina bruckenthalii Neugeboren, 1856

Neugeboren, 1856: 98, pl. 5, fig. 10; Heron-Allen and Earland, 1922: 176.

Vaginulina cf. inflata Parr, 1950

cf. Parr, 1950: 327, pl. 11, figs. 21, 22; Hulme, 1964: 326.

Vaginulina legumen (Linnaeus, 1758)

Linnaeus, 1758: 711 (as *Nautilus*); Chapman, 1909: 342 (as *Vaginulina*); Mestayer, 1916: 129; Cushman, 1919: 618; Heron-Allen and Earland, 1922: 176.

Vaginulina recta var. **parallela** Halkyard, 1919

Halkyard, 1919: 82, pl. 5, figs. 5, 6; Heron-Allen and Earland, 1922: 176.

Vaginulina spinigera Brady, 1884

Brady, 1884: 531, pl. 67, figs. 13, 14; Murray, 1895: 610.

Vaginulina vertebralis Parr, 1932

Parr, 1932: 221, pl. 22, fig. 42; Hulme, 1964: 326.

Genus **VAGINULINOPSIS** Silvestri, 1904

Vaginulinopsis tasmanica Parr, 1950

Parr, 1950: 324, pl. 11, figs. 13, 14; Kustanowich, 1965: 52.

Subfamily **LINGULININAE**

Genus **LINGULINA** d'Orbigny, 1826

Lingulina biloculi Wright, 1911

Wright, 1911: 12, pl. 2, fig. 10 (as *Lingulina carinata* var.); Hulme, 1964: 326 (as *Lingulina*).

Lingulina carinata d'Orbigny, 1826

d'Orbigny, 1826: 257, No. 1; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 173.

Lingulina grandis Cushman, 1917

Cushman, 1917b: 656; Cushman, 1919: 614.

Family **POLYMORPHINIDAE**

Subfamily **POLYMORPHININAE**

Genus **GLOBULINA** d'Orbigny, 1839

Globulina gibba (d'Orbigny, 1826)

d'Orbigny, 1826: 266, No. 20 (as *Polymorphina* (*Globulina*)); Chapman, 1909: 348 (as *Polymorphina*); Mestayer, 1916: 129; Cushman, 1919: 618; Heron-Allen and Earland, 1922: 181.

Globulina inaequalis Reuss, 1850

Reuss, 1850: 377, pl. 48, fig. 9; Cushman and Ozawa, 1930: 73, pl. 18, figs. 2-4; Vella, 1957: 10.

Globulina minuta (Roemer, 1838)

Roemer, 1838: 386, pl. 3, fig. 35 (as *Polymorphina* (*Globulina*)); Heron-Allen and Earland, 1922: 181, pl. 7, fig. 1 (as *Polymorphina sororia*).

Cushman and Ozawa (1930: 83) place *P. sororia* Reuss in synonymy with *G. minuta* (Roemer).

Globulina rotundata (Bornemann, 1855)

Bornemann, 1855: 346, pl. 18, fig. 3 (as *Guttulina*); Heron-Allen and Earland, 1922: 182 (as *Polymorphina*).

Genus **GUTTULINA** d'Orbigny, 1839

Guttulina australis d'Orbigny, 1839

d'Orbigny, 1839c: 60, pl. 1, figs. 1-4; Hulme, 1964: 329.

Guttulina austriaca d'Orbigny, 1846

d'Orbigny, 1846: 223, pl. 12, figs. 23-25; Chapman, 1909: 349 (as *Polymorphina oblonga*); Mestayer, 1916: 129; Cushman, 1919: 619.

Cushman and Ozawa (1930: 29) place *P. oblonga* d'Orbigny in the synonymy of *G. austriaca*.

Guttulina bartschi Cushman and Ozawa, 1930

Cushman and Ozawa, 1930: 23, pl. 1, fig. 10

Guttulina irregularis (d'Orbigny, 1846)

d'Orbigny, 1846: 226, pl. 13, figs. 9, 10 (as *Globulina*); Cushman and Ozawa, 1930: 25, pl. 3, figs. 3, 4; pl. 7, figs. 1, 2 (as *Guttulina*).

Guttulina lactea (Walker and Jacob, 1798)

Walker and Jacob, 1798: 634, pl. 14, fig. 4 (as *Serpula*); Chapman, 1909: 346 (as *Polymorphina*); Heron-Allen and Earland, 1922: 180.

Guttulina problema d'Orbigny, 1826

d'Orbigny, 1826: 266, No. 14; Chapman, 1909: 348 (as *Polymorphina communis*); Mestayer, 1916: 129 (as *Polymorphina problema*); Cushman, 1919: 619; Heron-Allen and Earland, 1922: 182 (as *P. problema* and *P. communis*); Hulme, 1964: 328 (as *P. problema*).

Cushman and Ozawa (1930: 20) place *P. communis* Roemer in the synonymy of *G. problema*.

Guttulina regina (Brady, Parker, and Jones, 1870)

Brady, Parker, and Jones, 1870: 241, pl. 41, fig. 32 (as *Polymorphina*); Cushman, 1919: 619.

Guttulina spicaeformis (Roemer, 1838)

Roemer, 1838: 386, pl. 3, fig. 31 (as *Polymorphina*); Cushman and Ozawa, 1930: 31, pl. 5, figs. 1, 2 (as *Guttulina*).

Guttulina yabei Cushman and Ozawa, 1929

Cushman and Ozawa, 1929: 68, pl. 13, fig. 2, pl. 14, fig. 6; Vella, 1957: 9.

Genus **PSEUDOPOLYMORPHINA** Cushman and Ozawa, 1928

Pseudopolymorphina ligua (Roemer, 1838)

Roemer, 1838: 385, pl. 3, fig. 25 (as *Polymorphina*); Chapman, 1909: 348 (as *Polymorphina compressa*); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 182.

Cushman and Ozawa (1930: 89) place *P. compressa* d'Orbigny in the synonymy of *Pseudopolymorphina ligua*.

Pseudopolymorphina ovalis Cushman and Ozawa, 1930

Cushman and Ozawa, 1930: 103, pl. 27, fig. 1, pl. 29, fig. 6; Heron-Allen and Earland, 1922: 181 (as *Polymorphina ovata*).

Cushman and Ozawa propose *P. ovalis*, new name for *P. ovata* d'Orbigny, 1846 (not 1826).

Pseudopolymorphina aff. *ovalis* Cushman and Ozawa, 1930

Vella, 1957: 10, 14.

Pseudopolymorphina tortuosa Vella, 1957

Vella, 1957: 9, 30, pl. 8, figs. 152, 153; Hedley, Hurdle, and Burdett, 1965: 20.

Genus **PYRULINA** d'Orbigny, 1839

Pyrulina angusta (Egger, 1857)

Egger, 1857: 290, pl. 13, figs. 13–15 (as *Polymorphina (Globulina)*); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 181.

Pyrulina cylindroides (Roemer, 1838)

Roemer, 1838: 385, pl. 3, fig. 26 (as *Polymorphina*); Parr and Collins, 1937: 198, pl. 13, fig. 7 (as *Pyrulina*).

Genus **SIGMOIDELLA** Cushman and Ozawa, 1928

Sigmoidella elegantissima (Parker and Jones, 1865)

Parker and Jones, 1865: 438, Table 10 (as *Polymorphina*); Chapman, 1909: 349; Mestayer, 1916: 129; Cushman, 1919: 619; Heron-Allen and Earland, 1922: 182; Cushman and Ozawa, 1930: 140, 141, pl. 39, fig. 1 (as *Sigmoidella*); Vella, 1957: 10; Hedley, Hurdle, and Burdett, 1965: 20, pl. 6, fig. 20.

Sigmoidella kagaensis Cushman and Ozawa, 1928

Cushman and Ozawa, 1928: 19, pl. 2, fig. 14; Vella, 1957: 10.

Sigmoidella novozealandica Parr and Collins, 1937

Parr and Collins, 1937: 208, pl. 15, fig. 8.

Sigmoidella cf. *novozealandica* Parr and Collins, 1937

Vella, 1957: 10, 31.

Sigmoidella pacifica Cushman and Ozawa, 1928

Cushman and Ozawa, 1928: 19, pl. 2, fig. 13; Cushman and Ozawa, 1930: 50, pl. 37, figs. 3–5 (as *Guttulina (Sigmoidina)*).

Sigmoidella cf. *pacifica* Cushman and Ozawa, 1928

Hornibrook in Fleming, 1952: 82 (as *Guttulina* cf.).

Sigmoidella silvestrii (Cushman and Ozawa, 1930)

Cushman and Ozawa, 1930: 51, pl. 37, figs. 6, 7 (as *Guttulina (Sigmoidina)*); Vella, 1957: 9, 14.

Genus **SIGMOMORPHINA** Cushman and Ozawa, 1928

Sigmomorphina lacrimosa Vella, 1957

Vella, 1957: 10, 31, pl. 8, figs. 149–151.

Sigmomorphina rhomboidalis Vella, 1957

Vella, 1957: 10, 14, 31, pl. 8, fig. 154.

Subfamily **RAMULININAE**

Genus **RAMULINA** Jones, 1875

Ramulina laevis Jones, 1875

Jones (MS) in Wright, 1875: 88, pl. 3, fig. 19; Chapman, 1906: 99.

Ramulina globulifera Brady, 1879

Brady, 1879: 272, pl. 8, figs. 32, 33; Brady, 1884: 91, 587, pl. 76, figs. 22–28; Chapman, 1906: 99; Mestayer, 1916: 129; Cushman, 1919: 620; Heron-Allen and Earland, 1922: 186.

Ramulina(?) Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 187, text fig.

Family **GLANDULINIDAE**

Subfamily **GLANDULININAE**

Genus **GLANDULINA** d'Orbigny, 1839

Glandulina laevigata (d'Orbigny, 1826)

d'Orbigny, 1826: 252, No. 1, pl. 10, figs. 1–3 (as *Nodosaria (Glandulina)*); Murray, 1895: 605 (as *Glandulina*); Cushman, 1919: 610; Heron-Allen and Earland, 1922: 167.

Genus **LARYNGOSIGMA** Loeblich and Tappan, 1953
Laryngosigma williamsoni (Terquem, 1878)

Terquem, 1878: 37 (as *Polymorphina*); Heron-Allen and Earland, 1922: 180, pl. 7, fig. 2 (as *Polymorphina oblonga*); Parr and Collins, 1937: 205, pl. 15, fig. 5 (as *Sigmomorphina williamsoni*); Vella, 1957: 10; Hulme, 1964: 329 (as *Laryngosigma*).

Terquem (1878) proposes *P. williamsoni*, new name for *P. lactea* var. *oblonga* Williamson, 1858, not *P. oblonga* d'Orbigny, 1846 and not *P. (Globulinen) oblonga* Roemer, 1838.

Subfamily **SEABROOKIINAE**

Genus **SEABROOKIA** Brady, 1890

Seabrookia earlandi Wright, 1891

Wright, 1891: 477, pl. 20, figs. 6, 7; Heron-Allen and Earland, 1922: 141.

Seabrookia cf. **earlandi** Wright, 1891

Kustanowich, 1965: 52.

Seabrookia pellucida Brady, 1890

Brady, 1890: 568, text fig. 60 (1, 2); Heron-Allen and Earland, 1922: 141.

Subfamily **OOLININAE**

Genus **OOLINA** d'Orbigny, 1839

Oolina ampulla-distoma (Jones, 1872)

Jones, 1872: 63, pl. 19, fig. 52 (as *Lagena vulgaris* var.); Heron-Allen and Earland, 1922: 145 (as *Lagena*).

Oolina apiculata Reuss, 1851

Reuss, 1851a: 22, pl. 1, fig. 1; Haeusler, 1887: 200 (as *Lagena*); Sidebottom, 1913: 165, pl. 15, fig. 4; Cushman, 1919: 608; Heron-Allen and Earland, 1922: 143.

Oolina borealis Loeblich and Tappan, 1954

Loeblich and Tappan, 1954: 384; Sidebottom, 1913: 170, pl. 15, figs. 18, 19 (as *Lagena costata*); Heron-Allen and Earland, 1922: 147; Vella, 1957: 9 (as *Oolina costata*); Hulme, 1964: 328; Kustanowich, 1965: 52 (as *Lagena costata*).

Loeblich and Tappan (1954) propose *O. borealis*, new name for *L. costata* (Williamson, 1858), not of Egger, 1857.

Oolina botelliformis (Brady, 1881)

Brady, 1881: 60 (as *Lagena*); Heron-Allen and Earland, 1922: 143.

Oolina desmophora (Jones, 1872)

Jones, 1872: 54, pl. 19, figs. 23, 24 (as *Lagena vulgaris* var.); Cushman, 1919: 609 (as *Lagena*).

Oolina globosa (Montagu, 1803)

Montagu, 1803: 523 (as *Vermiculium*); Murray, 1895: 604 (as *Lagena*); Chapman, 1909: 333; Sidebottom, 1913: 164, pl. 15 figs. 1–3; Mestayer, 1916: 129; Cushman, 1919: 607; Heron-Allen and Earland, 1922: 142; Vella, 1957: 9 (as *Oolina*).

Oolina globosa var. **lineato-punctata** (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 142, pl. 5, figs. 12–14 (as *Lagena globosa* var.).

Oolina hexagona (Williamson, 1848)

Williamson, 1848: 20, pl. 2, fig. 32 (as *Entosolenia squamosa* var.); Haeusler, 1887: 200 (as *Lagena*); Murray, 1895: 604; Chapman, 1906: 92; Chapman, 1909: 334; Mestayer, 1916: 129; Cushman, 1919: 608; Heron-Allen and Earland, 1922: 152; Hornibrook in Fleming, 1952: 82; Vella, 1957: 9, 13 (as *Oolina*); Hulme, 1964: 327.

Oolina lineata (Williamson, 1848)

Williamson, 1848: 18, pl. 2, fig. 18 (as *Entosolenia*); Chapman, 1909: 334, pl. 15, fig. 3 (as *Lagena*); Sidebottom, 1913: 170; Hulme, 1964: 328 (as *Oolina*).

Oolina melo d'Orbigny, 1839

d'Orbigny, 1839c: 20, pl. 5, fig. 9; Heron-Allen and Earland, 1922: 152 (as *Lagena*); Hulme, 1964: 327 (as *Oolina*).

Oolina squamosa (Montagu, 1803)

Montagu, 1803: 526, pl. 14, fig. 2 (as *Vermiculium*); Haeusler, 1887: 200 (as *Lagena*); Chapman, 1909: 335, pl. 15, fig. 5; Mestayer, 1916: 129; Cushman, 1919: 608; Heron-Allen and Earland, 1922: 151; Hornibrook in Fleming, 1952: 82; Vella, 1957: 9 (as *Oolina*).

Oolina striatopunctata (Parker and Jones, 1865)

Parker and Jones, 1865: 350, pl. 13, figs. 25–27 (as *Lagena sulcata* var.); Haeusler, 1887: 200 (as *Lagena*); Sidebottom, 1913: 175; Heron-Allen and Earland, 1922: 149, pl. 6, figs. 5, 19.

Oolina variata (Brady, 1881)

Brady, 1881: 61 (as *Lagena*); Sidebottom, 1913: 170.

Oolina williamsoni (Alcock, 1865)

Alcock, 1865: 193 (as *Entosolenia*); Heron-Allen and Earland, 1922: 146 (as *Lagena*).

Genus **FISSURINA** Reuss, 1850

Fissurina acuta Reuss, 1863

Reuss, 1863b: 340, pl. 7, figs. 90, 91; Sidebottom, 1913: 182, pl. 16, figs. 7, 8 (as *Lagena*); Heron-Allen and Earland, 1922: 154.

Fissurina alveolata (Brady, 1884)

Brady, 1884: 487, pl. 60, figs. 30, 32 (as *Lagena*); Sidebottom, 1913: 202, pl. 18, figs. 11, 12.

Fissurina alveolata var. **separans** (Sidebottom, 1912)

Sidebottom, 1912: 425, pl. 21, fig. 5 (as *Lagena alveolata* var.); Sidebottom, 1913: 203.

Fissurina annectens (Burrows and Holland, 1895)

Burrows and Holland in Jones, Parker, and Brady, 1895: 203, pl. 7, fig. 11 (as *Lagena*); Murray, 1895: 605 (as *Lagena quadricostulata*); Chapman, 1909: 338 (as *Lagena fasciata*); Heron-Allen and Earland, 1922: 155 (as *Lagena annectens*).

Chapman (1909) included *L. quadricostulata* of Brady (1884), listed by Murray (1895), in the synonymy of *L. fasciata*. Brady's form had previously been referred to *L. annectens* by Burrows and Holland (1895).

- Fissurina auriculata** (Brady, 1881)
Brady, 1881: 61 (as *Lagena*); Sidebottom, 1913: 198, pl. 17, figs. 21, 22, pl. 18, fig. 1; Heron-Allen and Earland, 1922: 166, pl. 6, fig. 26.
- Fissurina biancae** Seguenza, 1862
Seguenza, 1862a: 57, pl. 1, figs. 48–50; Chapman, 1909: 337, pl. 15, fig. 8 (as *Lagena*).
- Fissurina bicarinata** Terquem, 1882
Terquem, 1882: 31, pl. 1 (9), fig. 24; Sidebottom, 1913: 197, pl. 17, figs. 16, 17 (as *Lagena*); Heron-Allen and Earland, 1922: 160.
- Fissurina bicarinata** var. *villosa* (Heron-Allen and Earland, 1922)
Heron-Allen and Earland, 1922: 161, pl. 6, figs. 10–12 (as *Lagena bicarinata* var.).
- Fissurina castrensis** (Schwager, 1866)
Schwager, 1866: 208, pl. 5, fig. 22 (as *Lagena*); Heron-Allen and Earland, 1922: 164.
- Fissurina clathrata** (Brady, 1884)
Brady, 1884: 485, pl. 60, fig. 4 (as *Lagena*); Chapman, 1909: 338, pl. 15, fig. 11 (as *Lagena orbignyana* var.); Sidebottom, 1913: 196, pl. 17, fig. 14; Heron-Allen and Earland, 1922: 165; Hulme, 1964: 328 (as *Fissurina*).
- Fissurina clypeato-marginata** (Jones) var. *crassa* (Sidebottom, 1912)
Sidebottom, 1912: 425, pl. 21, fig. 7 (as *Lagena clypeato-marginata* var.); Heron-Allen and Earland, 1922: 165.
- Fissurina danica** (Madsen, 1895)
Madsen, 1895: 196, pl. 0, fig. 4 (as *Lagena*); Heron-Allen and Earland, 1922: 166.
- Fissurina danica** var. *pendulum* (Heron-Allen and Earland, 1922)
Heron-Allen and Earland, 1922: 166, pl. 6, figs. 13, 14 (as *Lagena danica* var.).
- Fissurina earlandi** Parr, 1950
Parr, 1950: 306, pl. 8, fig. 8; Vella, 1957: 9.
- Fissurina enderbiensis** (Chapman, 1909)
Chapman, 1909: 339, pl. 16, fig. 1 (as *Lagena*); Heron-Allen and Earland, 1922: 161.
- Fissurina exsculpta** (Brady, 1881)
Brady, 1881: 61 (as *Lagena*); Barker, 1960: 127, pl. 61, fig. 5 (as *Fissurina*).
- Fissurina fasciata** (Egger, 1857)
Egger, 1857: 270, pl. 5, figs. 12–15 (as *Oolina*); Heron-Allen and Earland, 1922: 155 (as *Lagena*); Hornibrook in Fleming, 1952: 82.
- Fissurina fasciata** var. *carinata* (Sidebottom, 1906)
Sidebottom, 1906: 7, pl. 1, fig. 17 (as *Lagena fasciata* var.); Sidebottom, 1913: 184, pl. 16, figs. 14–16.
- Fissurina fasciata** var. *fabae* (Balkwill and Millett, 1884)
Balkwill and Millett, 1884: 81, pl. 2, fig. 10 (as *Lagena*); Heron-Allen and Earland, 1922: 155 (as *Lagena fasciata* var.).
- Fissurina fimbriata** (Brady, 1881)
Brady, 1881: 61 (as *Lagena*); Heron-Allen and Earland, 1922: 166.
- Fissurina fimbriata** var. *oculosa* (Sidebottom, 1912)
Sidebottom, 1912: 423, pl. 20, figs. 27, 28 (as *Lagena fimbriata* var.); Sidebottom, 1913: 202.
- Fissurina formosa** (Schwager, 1866)
Schwager, 1866: 206, pl. 4, fig. 19 (as *Lagena*); Sidebottom, 1913: 191, pl. 17, figs. 3–7.
- Fissurina** aff. *formosa* (Schwager, 1866)
Vella, 1957: 9.
- Fissurina lacunata** (Burrows and Holland, 1895)
Burrows and Holland in Jones, Parker, and Brady, 1895: 205, pl. 7, fig. 12 (as *Lagena*); Chapman, 1906: 92; Heron-Allen and Earland, 1922: 164.
- Fissurina laevigata** Reuss, 1850
Reuss, 1850: 366, pl. 46, fig. 1; Cushman, 1919: 607 (as *Lagena*); Heron-Allen and Earland, 1922: 153.
- Fissurina lagenoides** (Williamson, 1858)
Williamson, 1858: 11, pl. 1, figs. 25, 26 (as *Entosolenia marginata* var.); Sidebottom, 1913: 190, pl. 16, figs. 26–29, pl. 17, fig. 1 (as *Lagena*); Heron-Allen and Earland, 1922: 158.
- Fissurina** cf. *lagenoides* (Williamson, 1858)
Hulme, 1964: 328.
- Fissurina lagenoides** var. *nuda* (Chapman, 1909)
Chapman, 1909: 338, pl. 15, fig. 9 (as *Lagena lagenoides* var.).
- Fissurina lagenoides** var. *tenuistriata* (Brady, 1881)
Brady, 1881: 61 (as *Lagena tubulifera* var.); Sidebottom, 1913: 191, pl. 17, fig. 2 (as *L. lagenoides* var.); Heron-Allen and Earland, 1922: 158.
- Fissurina lucida** (Williamson, 1858)
Williamson, 1858: 10, pl. 1, figs. 22, 23 (as *Entosolenia marginata* var.); Sidebottom, 1913: 183, pl. 16, fig. 9 (as *Lagena*); Heron-Allen and Earland, 1922: 154; Vella, 1957: 9, (as *Fissurina*); Hulme, 1964: 328.
- Fissurina malcomsonii** (Wright, 1911)
Wright, 1911a: 4, pl. 1, figs. 1, 2 (as *Lagena laevigata* var.); Heron-Allen and Earland, 1922: 155 (as *Lagena*).
- Fissurina marginata** (Montagu, 1803)
Montagu, 1803: 524 (as *Vermiculum*); Chapman, 1909: 335, pl. 15, fig. 6 (as *Lagena*); Sidebottom, 1913: 186, pl. 16, figs. 17–20; Mestayer, 1916: 129; Cushman, 1919: 610; Heron-Allen and Earland, 1922: 156; Hulme, 1964: 328 (as *Fissurina*); Kustanowich, 1965: 52.
- Fissurina marginata** var. *elegans* (Sidebottom, 1912)
Sidebottom, 1912: 409, pl. 18, fig. 12 (as *Lagena marginata* var.); Sidebottom, 1913: 188.
- Fissurina marginata** var. *striolata* (Sidebottom, 1912)
Sidebottom, 1912: 408, pl. 18, figs. 10, 11 (as *Lagena marginata* var.); Sidebottom, 1913: 188.
- Fissurina marginato-perforata** (Seguenza, 1880)
Seguenza, 1880: 332, pl. 17, fig. 34 (as *Lagena*); Sidebottom, 1913: 189, pl. 16, figs. 23–25; Heron-Allen and Earland, 1922: 158, pl. 6, figs. 8, 9; Vella, 1957: 9 (as *Fissurina*).

Fissurina orbignyana Seguenza, 1862

Seguenza, 1862a: 66, pl. 2, figs. 25, 26; Chapman, 1909: 337, pl. 15, fig. 10 (as *Lagena*); Sidebottom, 1913: 194, pl. 17, figs. 9–11; Mestayer, 1916: 129; Cushman, 1919: 610; Heron-Allen and Earland, 1922: 161; Hornibrook in Fleming, 1952: 82; Hulme, 1964: 328 (as *Fissurina*).

Fissurina orbignyana var. **baccata** (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 162, pl. 6, figs. 15, 16 (as *Lagena orbignyana* var.).

Fissurina orbignyana var. **selseyensis** (Heron-Allen and Earland, 1909)

Heron-Allen and Earland, 1909: 426, pl. 17, figs. 1, 2, (as *Lagena orbignyana* var.); Heron-Allen and Earland, 1922: 162.

Fissurina orbignyana var. **unicostata** (Sidebottom, 1912)

Sidebottom, 1912: 417, pl. 19, fig. 22 (as *Lagena orbignyana* var.); Sidebottom, 1913: 195.

Fissurina orbignyana var. **variabilis** (Wright, 1891)

Wright, 1891: 482, pl. 20, fig. 9 (as *Lagena orbignyana* var.); Sidebottom 1913: 196.

Fissurina orbignyana var. **walleriana** (Wright, 1891)

Wright, 1891: 481, pl. 20, fig. 8 (as *Lagena orbignyana* var.); Heron-Allen and Earland, 1922: 162.

Fissurina ornata (Williamson, 1858)

Williamson, 1858: 11, pl. 1, fig. 24 (as *Entosolenia marginata* var.); Heron-Allen and Earland, 1922: 159 (as *Lagena*).

Fissurina pulchella (Brady, 1867)

Brady, 1867: 70 (as *Lagena*); Heron-Allen and Earland, 1922: 165.

Fissurina pulchella var. **hexagona** (Heron-Allen and Earland, 1916)

Heron-Allen and Earland, 1916: 254, pl. 41, fig. 27 (as *Lagena pulchella* var.); Heron-Allen and Earland, 1922: 165.

Fissurina quadrata (Williamson, 1858)

Williamson, 1858: 11, pl. 1, figs. 27, 28 (as *Entosolenia marginata* var.); Chapman, 1909: 339 (as *Lagena*); Sidebottom, 1913: 185; Heron-Allen and Earland, 1922: 155; Vella, 1957: 9 (as *Fissurina*).

Fissurina quadrata var. **carinata** (Chapman, 1909)

Chapman, 1909: 339, pl. 15, fig. 12 (as *Lagena quadrata* var.).

Fissurina reniformis (Sidebottom, 1913)

Sidebottom, 1913: 204, pl. 18, fig. 14 (as *Lagena*); Heron-Allen and Earland, 1922: 155.

Fissurina rizzae Seguenza, 1862

Seguenza, 1862a: 72, pl. 2, fig. 50; Heron-Allen and Earland, 1922: 160 (as *Lagena*); Hornibrook in Fleming, 1952: 82 (as *Lagena quadrata* var.).

Fissurina scarabaeus (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 164, pl. 6, figs. 20–23 (as *Lagena*).

Fissurina semimarginata (Reuss, 1870)

Reuss, 1870: 469 (as *Lagena marginata* var.); Chapman, 1909: 337; Heron-Allen and Earland, 1922: 157.

Fissurina seminiformis (Schwager, 1866)

Schwager, 1866: 208, pl. 5, fig. 21 (as *Lagena*); Sidebottom, 1913: 188 (as *Lagena marginata* var.); Heron-Allen and Earland, 1922: 158 (as *Lagena*).

Fissurina squamoso-alata (Brady, 1881)

Brady, 1881: 61 (as *Lagena*); Sidebottom, 1913: 193, pl. 18, fig. 20.

Fissurina squamoso-marginata (Parker and Jones, 1865)

Parker and Jones, 1865: 356, pl. 18, fig. 2 (as *Lagena*); Brady, 1884: 481, pl. 60, fig. 24; Barker, 1960: 126, pl. 60, fig. 24 (as *Fissurina*).

Fissurina staphyllearia Schwager, 1866

Schwager, 1866: 209, pl. 5, fig. 24; Sidebottom, 1913: 185 (as *Lagena*); Heron-Allen and Earland, 1922: 154.

Fissurina wiesneri Barker, 1960

Barker, 1960: 124, pl. 59, fig. 23; Murray, 1895: 605, 610 (as *Lagena marginata*).

Barker (1960) proposes *F. wiesneri*, new name, for *L. marginata* of Brady (1884: pl. 59, fig. 23), listed by Murray (1895).

Fissurina yokoyamae (Millett, 1895)

Millett, 1895: 656 (as *Lagena*); Heron-Allen and Earland, 1922: 163, pl. 6, figs. 17, 18 (as *Lagena orbignyana* var.).

Genus **PARAFISSURINA** Parr, 1947

Parafissurina inaequilateralis (Wright, 1886)

Wright, 1886: 321, pl. 26, fig. 10 (as *Lagena marginata* var.); Heron-Allen and Earland, 1922: 157.

Parafissurina schlichti (Silvestri, 1902)

Silvestri, 1902: 142, text figs. 9–11 (as *Fissurina*); Chapman, 1909: 337, pl. 15, fig. 7 (as *Lagena*); Heron-Allen and Earland, 1922: 156.

Parafissurina sublata Parr, 1950

Parr, 1950: 319, pl. 10, fig. 11; Vella, 1957: 9.

Parafissurina unguis (Heron-Allen and Earland, 1913)

Heron-Allen and Earland, 1913a: 86, pl. 7, figs. 1–3 (as *Lagena*); Heron-Allen and Earland, 1922: 157.

Parafissurina ventricosa (Silvestri, 1904)

Silvestri, 1904b: 10, fig. 6 (as *Lagena*); Sidebottom, 1913: 206 (as *Lagena marginata* var.).

Superfamily **BULIMINACEA**

Family **TURRILINIDAE**

Subfamily **TURRILININAE**

Genus **BULIMINELLA** Cushman, 1911

Buliminella elegans (d'Orbigny, 1826)

d'Orbigny, 1826: 270, No. 10 (as *Bulimina*); Heron-Allen and Earland, 1922: 127.

Buliminella elegantissima (d'Orbigny, 1839)

d'Orbigny, 1839c: 51, pl. 7, figs. 13, 14 (as *Bulimina*); Chapman, 1909: 330; Cushman, 1919: 606 (as *Buliminella*); Heron-Allen and Earland, 1922: 129 (as *Bulimina*); Hulme, 1964: 329 (as *Buliminella*).

Buliminella cf. **elegantissima** (d'Orbigny, 1839)

Hornibrook in Fleming, 1952: 82.

Buliminella madagascariensis (d'Orbigny, 1826)

d'Orbigny, 1826: 270, No. 17 (as *Bulimina*); Cushman and Parker, 1947: 68, pl. 17, figs. 15–17 (as *Buliminella*).

Buliminella madagascariensis var. **spicata** Cushman and Parker, 1942

Cushman and Parker in Cushman, 1942: 8, pl. 3, figs. 5, 6; Chapman, 1909: 330 (as *Bulimina elegantissima* var. *apiculata*).

Cushman and Parker (1942) propose *B. madagascariensis* var. *spicata*, new name for *Bulimina elegantissima* var. *apiculata* Chapman, 1907, not *Bulimina ovata* var. *apiculata* Egger, 1895.

Buliminella seminuda (Terquem, 1882)

Terquem, 1882: 117, pl. 23, fig. 21 (as *Bulimina*); Heron-Allen and Earland, 1922: 129 (as *Bulimina elegantissima* var.).

Genus **BULIMINOIDES** Cushman, 1911

Buliminoides williamsoniana (Brady, 1881)

Brady, 1881: 56 (as *Bulimina*); Heron-Allen and Earland, 1922: 130.

Family **SPHAEROIDINIDAE**

Genus **SPHAEROIDINA** d'Orbigny, 1826

Sphaeroidina bulloides d'Orbigny, 1826

d'Orbigny, 1826: 267, No. 1; Murray, 1895: 605, 610; Chapman, 1906: 101; Chapman, 1909: 351; Heron-Allen and Earland, 1922: 194; Hornibrook, 1952: 185; Vella, 1957: 10; Kustanowich, 1963: 543, 563; Hulme, 1964: 331; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 22.

Sphaeroidina compressa Cushman and Todd, 1949

Cushman and Todd, 1949: 20, pl. 4, figs. 15, 16; Cushman, 1919: 622 (as *Sphaeroidina bulloides*).

Cushman and Todd (1949) include *S. bulloides* of Cushman (1919) in the synonymy of *S. compressa*.

Family **BOLIVINITIDAE**

Genus **BOLIVINITA** Cushman, 1927

Bolivinita cf. **grant-taylori** Vella, 1957

cf. Vella, 1957: 33, pl. 8, figs. 157–159; Vella, 1957: 10, 34, pl. 8, figs. 155, 156.

Bolivinita pliozea Finlay, 1939

Finlay, 1939c: 319; Vella, 1957: 10 (possibly reworked fossil); Hulme, 1964: 331.

Bolivinita pohana Finlay, 1939

Finlay, 1939c: 319, pl. 27, figs. 99, 100; Vella, 1957: 10.

Bolivinita quadrilatera (Schwager, 1866)

Schwager, 1866: 253, pl. 7, fig. 103 (as *Textularia*); Murray, 1895: 605, 610.

Bolivinita quadrilatera var. **tortilis** Chapman, 1941

Chapman, 1941: 169, pl. 3, fig. 3; Heron-Allen and Earland, 1922: 136 (as *Bolivina obsoleta*).

Chapman (1941) considers *B. obsoleta* of Heron-Allen and Earland (1922) to be probably the same as *B. quadrilatera* var. *tortilis*.

Genus **BOLIVINA** d'Orbigny, 1839

Bolivina pseudo-plicata Heron-Allen and Earland, 1930

Heron-Allen and Earland, 1930: 81, pl. 3, figs. 36–40; Heron-Allen and Earland, 1922: 135 (as *Bolivina plicata*); Hulme, 1964: 330 (as *B. pseudoplicata*); Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1967: pl. 9, fig. 4.

Hedley *et al.* (1967) include *B. plicata* of Heron-Allen and Earland (1922) in the synonymy of *B. pseudoplicata*.

Bolivina aff. **pseudo-plicata** Heron-Allen and Earland, 1930

Hornibrook in Fleming, 1952: 82.

Bolivina robusta Brady, 1881

Brady, 1881: 57; Chapman, 1906: 89; Chapman, 1909: 331; Heron-Allen and Earland, 1922: 136; Hornibrook, 1952: 185; Vella, 1957: 10, 13; Hedley, Hurdle, and Burdett, 1965: 21, pl. 6, fig. 22.

Genus **BRIZALINA** Costa, 1856

Brizalina aenariensis Costa, 1856

Costa, 1856: 297, pl. 15, figs. 1, 2; Heron-Allen and Earland 1922: 134 (as *Bolivina*).

Brizalina alata (Seguenza, 1862)

Seguenza, 1862b: 115, pl. 2, fig. 5 (as *Vulvulina*); Heron-Allen and Earland, 1922: 134 (as *Bolivina beyrichi* var.); Hornibrook, 1952: 185 (as *Bolivina*); Vella, 1957: 10.

Brizalina beyrichi (Reuss, 1851)

Reuss, 1851b: 83, pl. 6, fig. 51 (as *Bolivina*); Heron-Allen and Earland, 1922: 134.

Brizalina cacozela (Vella, 1957)

Vella, 1957: 33, pl. 8, figs. 162, 163 (as *Bolivina*); Heron-Allen and Earland, 1922: 132 (as *Bolivina punctata*, part); Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1967: pl. 9, fig. 2 (as *Brizalina*).

Hedley *et al.* (1967) include *B. punctata* of Heron-Allen and Earland (1922, part) in the synonymy of *B. cacozela*.

Brizalina compacta (Sidebottom, 1905)

Sidebottom, 1905: 15, pl. 3, fig. 7 (as *Bolivina robusta* var.); Heron-Allen and Earland, 1922: 135 (as *Bolivina inflata*); Hulme, 1964: 330; Hedley, Hurdle, and Burdett, 1967: 30, pl. 9, fig. 3, text figs. 20–27 (as *Bolivina compacta*).

Hedley *et al.* (1967) include *B. inflata* of Heron-Allen and Earland (1922) and Hulme (1964) in the synonymy of *B. compacta*.

Brizalina dilatata (Reuss, 1850)

Reuss, 1850: 381, pl. 48, fig. 15 (as *Bolivina*); Cushman, 1919: 603 (?).

Brizalina lowmani (Phleger and Parker, 1951)

Phleger and Parker, 1951: 13, pl. 6, figs. 20, 21 (as *Bolivina*); Hulme, 1964: 330.

Brizalina malovenssis (Heron-Allen and Earland, 1932)

Heron-Allen and Earland, 1932: 355, pl. 11, figs. 12–15 (as *Bolivina*); Kustanowich, 1965: 52.

Brizalina nobilis (Hantken, 1876)

Hantken, 1876: 56, pl. 15, fig. 4 (as *Bolivina*); Cushman, 1919: 604 (?).

Brizalina cf. parri (Cushman, 1936)

cf. Cushman, 1936a: 57, pl. 8, fig. 7 (as *Bolivina*); Vella, 1957: 10.

Brizalina punctata (d'Orbigny, 1839)

d'Orbigny, 1839c: 63, pl. 8, figs. 10–12 (as *Bolivina*); Haeusler, 1887: 200; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 132 (part).

Brizalina pygmaea (Brady, 1881)

Brady, 1881: 57 (as *Bolivina*); Chapman, 1909: 331, pl. 14, fig. 11; Heron-Allen and Earland, 1922: 135 (as *Bolivina difformis*); Kustanowich, 1965: 52 (as *Bolivina pygmaea*).

Heron-Allen and Earland (1922) include *B. pygmaea* Brady in the synonymy of *B. difformis*.

Brizalina seminuda (Cushman, 1911)

Cushman, 1911: 34, text fig. 55 (as *Bolivina*); Kustanowich, 1965: 52.

Brizalina spathulata (Williamson, 1858)

Williamson, 1858: 76, pl. 6, figs. 164, 165 (as *Textularia variabilis* var.); Heron-Allen and Earland, 1922: 134 (as *Bolivina dilatata*, part); Vella, 1957: 33, pl. 8, figs. 160, 161 (as *Bolivina numerosa*); Hulme, 1964: 330 (as *Bolivina spathulata*); Hedley, Hurdle, and Burdett, 1965: 21, pl. 6, fig. 23, text fig. 6 (as *Brizalina*); Hedley, Hurdle, and Burdett, 1967.

Hedley *et al.* (1965) include *B. dilatata* of Heron-Allen and Earland (1922, part) and *B. numerosa* Vella in the synonymy of *B. spathulata*.

Brizalina spinescens (Cushman, 1911)

Cushman, 1911: 46, fig. 76 (as *Bolivina*); Heron-Allen and Earland, 1922: 133 (as *Bolivina textilaroides* var.).

Brizalina striatula (Cushman, 1937)

Cushman, 1937: 154, pl. 18, figs. 30, 31 (as *Bolivina*); Hulme, 1964: 330.

Brizalina subreticulata (Parr, 1932)

Parr, 1932: 12, pl. 1, fig. 21 (as *Bolivina*); Heron-Allen and Earland, 1922: 135 (as *Bolivina reticulata*).

Cushman (1937a: 149) tentatively places *B. reticulata* of Heron-Allen and Earland (1922) in the synonymy of *B. subreticulata*.

Brizalina aff. subspinescens (Cushman, 1922)

aff. Cushman, 1922b: 48, pl. 7, fig. 5 (as *Bolivina*); Vella, 1957: 10.

Brizalina textilaroides (Reuss, 1863)

Reuss, 1863a: 81, pl. 10, fig. 1 (as *Bolivina*); Heron-Allen and Earland, 1922: 133.

Brizalina variabilis (Williamson, 1858)

Williamson, 1858: 76, pl. 6, figs. 162–168, “162 and 163 typica” (as *Textularia*); Heron-Allen and Earland, 1922: 135 (as *Bolivina*); Hulme, 1964: 330.

Genus **RECTOBOLIVINA** Cushman, 1927

Rectobolivina bifrons (Brady, 1881)

Brady, 1881: 64 (as *Sagrina*); Heron-Allen and Earland, 1922: 186.

Rectobolivina bifrons var. **striatula** (Cushman, 1917)

Cushman, 1917b: 662 (as *Siphogenerina bifrons* var.); Cushman, 1919: 620.

Rectobolivina columellaris (Brady, 1881)

Brady, 1881: 64 (as *Sagrina*); Heron-Allen and Earland, 1922: 185.

Rectobolivina dimorpha (Parker and Jones) var. **pacifica** (Cushman, 1926)

Cushman, 1926b: 13, pl. 2, fig. 9; pl. 3, fig. 6 (as *Siphogenerina dimorpha* var.); Heron-Allen and Earland, 1922: 186 (as *Sagrina dimorpha*).

Cushman (1926b) includes *S. dimorpha* of Heron-Allen and Earland (1922) in the synonymy of *S. dimorpha* var. *pacifica*.

Rectobolivina raphanus (Parker and Jones, 1865)

Parker and Jones, 1865: 364, pl. 18, figs. 16, 17 (as *Uvigerina (Sagrina)*); Heron-Allen and Earland, 1922: 186 (as *Sagrina*).

Rectobolivina cf. striatula (Cushman, 1913)

Cushman, 1913: 108, pl. 74, fig. 1 (as *Siphogenerina*); Hulme, 1964: 331 (as *Rectobolivina*).

Family **ISLANDIELLIDAE**

Genus **ISLANDIELLA** Nørvang, 1958

Islandiella islandica (Nørvang, 1945)

Nørvang, 1945, text figs. 7, 8 (as *Cassidulina*); Kustanowich, 1965: 53.

Genus **CASSIDULINOIDES** Cushman, 1927

Cassidulinoides bradyi (Norman, 1880)

Norman (MS) in Wright, 1880: 152 (as *Cassidulina*); Chapman, 1906: 90; Mestayer, 1916: 129; Vella, 1957: 10 (as *Cassidulinoides*).

Cassidulinoides orientalis (Cushman, 1925)

Cushman, 1922b: 129 (as *Cassidulina*); Cushman, 1919: 606 (as *Cassidulina bradyi*); Heron-Allen and Earland, 1922: 139; Hornibrook, 1952: 185 (as *Cassidulinoides orientalis*); Vella, 1957: 10, 13; Hulme, 1964: 331; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1967: pl. 12, fig. 5.

Hedley, *et al.* (1967) include *C. bradyi* of Cushman (1919) and Heron-Allen and Earland (1922) in the synonymy of *C. orientalis*.

Cassidulinoides parkerianus (Brady, 1881)

Brady, 1881: 59 (as *Cassidulina*); Heron-Allen and Earland, 1922: 139.

Family EOUVIGERINIDAE

Genus STILOSTOMELLA Guppy, 1894

Stilostomella adolphina (d'Orbigny, 1846)

d'Orbigny, 1846: 51, pl. 2, figs. 18–20 (as *Dentalina*); Heron-Allen and Earland, 1922: 172 (as *Nodosaria*).

Stilostomella consobrina (d'Orbigny, 1846)

d'Orbigny, 1846: 46, pl. 2, figs. 1–3 (as *Dentalina*); Chapman, 1906: 93 (as *Nodosaria* (*Dentalina*)); Chapman, 1909: 341; Heron-Allen and Earland, 1922: 170.

Stilostomella pauperata (d'Orbigny, 1846)

d'Orbigny, 1846: 46, pl. 1, figs. 57, 58 (as *Dentalina*); Chapman, 1906: 94 (as *Nodosaria* (*Dentalina*)); Heron-Allen and Earland, 1922: 170.

Family BULIMINIDAE

Subfamily BULIMININAE

Genus BULIMINA d'Orbigny, 1826

Bulimina cf. acanthia Costa, 1856

cf. Costa, 1856: 335, pl. 13, figs. 35, 36; Vella, 1957: 10.

Bulimina aculeata d'Orbigny, 1826

d'Orbigny, 1826: 269, No. 7; Murray, 1895: 605; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 128; Hornibrook, 1952: 185; Kustanowich, 1965: 52.

Bulimina affinis d'Orbigny, 1839

d'Orbigny, 1839a: 105, pl. 2, figs. 25, 26; Heron-Allen and Earland, 1922: 128.

Bulimina australis Vella, 1957

Vella, 1957: 10, 32, pl. 8, figs. 168, 169.

Bulimina buchiana d'Orbigny, 1846

d'Orbigny, 1846: 186, pl. 11, figs. 15–18; Heron-Allen and Earland, 1922: 129.

Bulimina denudata Cushman and Parker, 1938

Cushman and Parker, 1938: 57, pl. 10, figs. 1, 2 (as *B. pagoda* var.); Kustanowich, 1965: 52.

Bulimina echinata d'Orbigny, 1826

d'Orbigny, 1826: 269, No. 5; Heron-Allen and Earland, 1922: 128.

Bulimina elongata d'Orbigny var. **subulata** Cushman and Parker, 1937

Cushman and Parker, 1937: 51, pl. 7, figs. 6, 7; Hulme, 1964: 329.

Bulimina exilis Brady, 1884

Brady, 1884: 399, pl. 50, figs. 5, 6 (as *Bulimina elegans* var.); Heron-Allen and Earland, 1922: 127.

Bulimina cf. exilis Brady, 1884

Vella, 1957: 10, 14, 32, pl. 8, figs. 164, 165.

Bulimina gibba Fornasini, 1902

Fornasini, 1902a: 378, pl. 0, figs. 32, 34; Brady, 1884: 398, pl. 50, figs. 1–4 (as *Bulimina elegans*).

Cushman and Parker (1940: 48) place *B. elegans* of Brady (1884) in the synonymy of *B. gibba*.

Bulimina inflata Seguenza, 1862

Seguenza, 1862b: 109, pl. 1, fig. 10; Murray, 1895: 605 (identification doubtful, see Barker, 1960: pl. 51, figs. 10–13); Chapman, 1906: 89; Heron-Allen and Earland, 1922: 128.

Bulimina marginata d'Orbigny, 1826

d'Orbigny, 1826: 269, No. 4, pl. 12, figs. 10–12; Chapman, 1906: 89; Chapman, 1909: 330; Mestayer, 1916: 129; Cushman, 1919: 605; Heron-Allen and Earland, 1922: 128; Hornibrook *in* Knox, 1951: 43; Hornibrook *in* Fleming, 1952: 82; Hulme, 1964: 329; Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 20, pl. 6, fig. 21, text fig. 5.

Bulimina cf. patagonica d'Orbigny, 1839

cf. d'Orbigny, 1839c: 50, pl. 1, figs. 8, 9; Vella, 1957: 10.

Bulimina pyrula d'Orbigny, 1846

d'Orbigny, 1846: 184, pl. 11, figs. 9, 10; Chapman, 1906: 88; Mestayer, 1916: 129; Cushman, 1919: 605.

Bulimina rostrata Brady, 1884

Brady, 1884: 408, pl. 51, figs. 14, 15; Heron-Allen and Earland, 1922: 129.

Bulimina squammigera d'Orbigny, 1839

d'Orbigny, 1839b: 137, pl. 1, figs. 22–24; Heron-Allen and Earland, 1922: 131.

Bulimina submarginata Parr, 1950

Parr, 1950: 336, pl. 12, fig. 13; Vella, 1957: 10, 13.

Bulimina sp. nov. Barker, 1960

Barker, 1960: pl. 51, figs. 18, 19; Murray, 1895: 605, 610 (as *Bulimina buchiana*).

Barker (1960) considers *B. buchiana* of Brady (1884), listed by Murray (1895), to be a new species.

Genus GLOBOBULIMINA Cushman, 1927

Globobulimina notovata (Chapman, 1941)

Chapman, 1941: 166 (as *Bulimina*); Murray, 1895: 605 (as *Bulimina ovata*); Mestayer, 1916: 129; Cushman, 1919: 605; Heron-Allen and Earland, 1922: 128; Barker, 1960: 102, pl. 50, fig. 13 (as *B. notovata*).

Chapman (1941) includes all recent forms from off New Zealand recorded as *B. ovata* in the synonymy of *B. notovata*.

Globobulimina pacifica Cushman, 1927

Cushman, 1927a: 67, pl. 14, fig. 12; Murray, 1895: 610 (as *Bulimina pyrula*); Barker, 1960: 102, pl. 50, figs. 7–10 (as *G. pacifica*).

Galloway and Wissler (1927: 74) include *B. pyrula* of Brady (1884) listed by Murray (1895), in the synonymy of *G. pacifica*.

Globobulimina turgida (Bailey, 1851)

Bailey, 1851: 12, figs. 28–31 (as *Bulimina*); Heron-Allen and Earland, 1922: 127 (as *Bulimina pyrula*); Kustanowich, 1965: 52 (as *G. turgida*); Hedley, Hurdle, and Burdett, 1965: 23, pl. 7, fig. 26.

Hedley *et al.* (1965) include *B. pyrula* of Heron-Allen and Earland (1922) in the synonymy of *G. turgida*.

Genus **PRAEGLOBOBULIMINA** Hofker, 1951

Praeglobobulimina pupoides (d'Orbigny, 1846)

d'Orbigny, 1846: 185, pl. 11, figs. 11, 12 (as *Bulimina*); Murray 1895: 605 (as *Bulimina affinis*); Heron-Allen and Earland 1922: 127 (as *B. pupoides*).

B. affinis of Brady (1884), listed by Murray (1895), is regarded as probably *B. pupoides* by Cushman and Parker (1947: 105).

Praeglobobulimina spinescens (Brady, 1884)

Brady, 1884: 400, pl. 50, figs. 11, 12 (as *Bulimina pyrula* var.); Chapman, 1906: 89.

Genus **VIRGULOPSIS** Finlay, 1939

Virgulopsis turris (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 124, pl. 4, figs. 8–12 (as *Verneuilina*); Hornibrook *in* Fleming, 1952: 82 (as *Virgulopsis*); Vella, 1957: 10, 32; Hulme, 1964: 331; Hedley, Hurdle, and Burdett, 1967: pl. 9, fig. 5.

Subfamily **PAVONININAE**

Genus **REUSSELLA** Galloway, 1933

Reussella spinulosa (Reuss, 1850)

Reuss, 1850: 374, pl. 47, fig. 12 (as *Verneuilina*); Heron-Allen and Earland, 1922: 124.

Family **UVIGERINIDAE**

Genus **UVIGERINA** d'Orbigny, 1826

Uvigerina auberiana d'Orbigny, 1839

d'Orbigny, 1839a: 106, pl. 2, figs. 23, 24; Heron-Allen and Earland, 1922: 184.

Uvigerina auberiana var. **glabra** Millett, 1903

Millett, 1903: 268, pl. 5, figs. 8, 9; Heron-Allen and Earland, 1922: 185.

Uvigerina brunnensis Karrer, 1877

Karrer, 1877: 385, pl. 16 (b), fig. 49; Heron-Allen and Earland, 1922: 184.

Uvigerina canariensis d'Orbigny, 1839

d'Orbigny, 1839b: 138, pl. 1, figs. 25–27; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 183.

Uvigerina cf. **canariensis** d'Orbigny, 1839

Hulme, 1964: 329.

Uvigerina pygmaea d'Orbigny, 1826

d'Orbigny, 1826: 269, pl. 12, figs. 8, 9; Chapman, 1906: 99; Mestayer, 1916: 129; Cushman, 1919: 619; Heron-Allen and Earland, 1922: 183.

Uvigerina cf. **pygmaea** d'Orbigny, 1826

Vella, 1957: 10, 14, 34.

Genus **EUUVIGERINA** Thalmann, 1952

Euuvigerina aculeata (d'Orbigny, 1846)

d'Orbigny, 1846: 191, pl. 11, figs. 27, 28 (as *Uvigerina*); Heron-Allen and Earland, 1922: 184.

Euuvigerina hollocki (Thalmann, 1950)

Thalmann, 1950: 45 (as *Uvigerina*); Vella, 1957: 10, 14, 34 (as *Uvigerina angustiformis*).

U. angustiformis is a junior synonym of *U. hollocki*, as both are new names for *Uvigerina peregrina* var. *bradyana* Cushman (not Fornasini).

Euuvigerina peregrina (Cushman, 1923)

Cushman, 1923: 166, pl. 42, figs. 7–10 (as *Uvigerina*); Heron-Allen and Earland, 1922: 183 (as *Uvigerina pygmaea*, part); Kustanowich, 1965: 52 (as *U. peregrina*); Hedley, Hurdle, and Burdett, 1965: 22.

Hedley *et al.* (1965) include *U. pygmaea* of Heron-Allen and Earland (1922, part) in the synonymy of *U. peregrina*.

Euuvigerina tenuistriata (Reuss, 1870)

Reuss, 1870: 485 (as *Uvigerina*); Hornibrook, 1952: 185.

Genus **HOPKINSINA** Howe and Wallace, 1932

Hopkinsina pacifica Cushman, 1933

Cushman, 1933a: 86, pl. 8, fig. 16; Hulme, 1964: 330.

Genus **NEOUVIGERINA** Hofker, 1950

Neouvigerina ampullacea (Brady, 1884)

Brady, 1884: 579, pl. 75, figs. 10, 11 (as *Uvigerina asperula* var.); Cushman, 1919: 620 (as *Uvigerina*); Heron-Allen and Earland, 1922: 184 (as *U. asperula* var.).

Neouvigerina asperula (Czjzek, 1848)

Czjzek, 1848: 146, pl. 13, figs. 14, 15 (as *Uvigerina*); Murray, 1895: 605, 610; Chapman, 1906: 99; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 184.

Neouvigerina interrupta (Brady, 1879)

Brady, 1879: 274, pl. 8, figs. 17, 18 (as *Uvigerina*); Brady, 1884: 580, pl. 75, figs. 12–14; Cushman, 1919: 620; Heron-Allen and Earland, 1922: 185.

Neouvigerina vadescens (Cushman, 1933)

Cushman, 1933a: 85, pl. 8, figs. 14, 15 (as *Uvigerina proboscidea* var.); Vella, 1957: 10, 34 (as *Uvigerina*).

Genus **SIPHOGENERINA** Schlumberger, 1882

Siphogenerina striata (Schwager, 1866)

Schwager, 1866: 251, pl. 7, fig. 99 (as *Dimorphina*); Heron-Allen and Earland, 1922: 186 (as *Sagrina*).

Genus **TRIFARINA** Cushman, 1923

Trifarina angulosa (Williamson, 1858)

Williamson, 1858: 67, pl. 5, fig. 140 (as *Uvigerina*); Murray, 1895: 605, 610; Chapman, 1909: 349; Mestayer, 1916: 129 (as *U. angularis* – spelling mistake); Heron-Allen and Earland, 1922: 183 (as *U. angulosa*); Hornibrook *in* Knox, 1951: 43 (as *Angulogerina*); Hulme, 1964: 330; Kustanowich, 1965: 52.

Trifarina bradyi Cushman, 1923

Cushman, 1923: 99, pl. 22, figs. 3–9; Heron-Allen and Earland, 1922: 175 (as *Rhabdogonium tricarinatum*); Hornibrook in Fleming, 1952: 82 (as *T. bradyi*).

Chapman and Parr (1937: 98) place *R. tricarinatum* of Heron-Allen and Earland (1922) in the synonymy of *T. bradyi*.

Trifarina carinata (Cushman, 1927)

Cushman, 1927b: 159, pl. 4, fig. 3 (as *Angulogerina*); Hornibrook, 1952: 185.

Trifarina carinata var. **bradyana** (Cushman, 1932)

Cushman, 1932b: 45, pl. 6, figs. 9, 10 (as *Angulogerina carinata* var.); Vella, 1957: 10.

Trifarina gracilis (Vella, 1957)

Vella, 1957: 10, 14, 34, pl. 8, fig. 167 (as *Angulogerina*).

Superfamily DISCORBACEA

Family DISCORBIDAE

Subfamily DISCORBINAE

Genus DISCORBIS Lamarck, 1804

Discorbis baccata (Heron-Allen and Earland, 1913)

Heron-Allen and Earland, 1913a: 124, pl. 12, figs. 1–3 (*Discorbina*); Heron-Allen and Earland, 1922: 200.

Discorbis dimidiatus (Jones and Parker, 1862)

Jones and Parker, in Carpenter, Parker, and Jones, 1862: 201, text fig. 32B (as *Discorbina*); Parr, 1932: 227–229, pl. 21, figs. 27–29 (as *Discorbis vesicularis* var.); Vella, 1957: 10, 14, 35, pl. 8, figs. 166, 172–174 (as *Discorbis*); Hulme, 1964: 332; Hedley, Hurdle, and Burdett, 1967: 33, pl. 1, fig. 4, pl. 10, figs. 1–3, text figs. 28–43.

Discorbis? **polyrraphes** (Reuss, 1846)

Reuss, 1846: 35, pl. 12, fig. 18 (as *Rotalina*); Heron-Allen and Earland, 1922: 201 (as *Discorbina*).

Discorbis rosacea (d'Orbigny, 1826)

d'Orbigny, 1826: 273, No. 15 (as *Rotalia*); Haeusler, 1887: 200 (as *Discorbina*); Chapman, 1909: 355; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 200.

Discorbis cf. **subcomplanatus** Parr, 1950

cf. Parr, 1950: 355, pl. 14, figs. 1, 2; Hulme, 1964: 333.

Discorbis turbo (d'Orbigny, 1826)

d'Orbigny, 1826: 274, No. 39 (as *Rotalia*); Haeusler, 1887: 200 (as *Discorbina*); Chapman, 1909: 354; Cushman, 1919: 624; Heron-Allen and Earland, 1922: 200.

Genus BRONNIMANNIA Bermudez, 1952

Bronnimannia disparilis (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 205, pl. 7, figs. 20–22 (as *Discorbina*).

Genus BUCCELLA Anderson, 1952

Buccella cf. **depressa** Anderson, 1952

cf. Anderson, 1952: 145, text figs. 7, 8; Hulme, 1964: 334.

Buccella frigida (Cushman, 1922)

Cushman, 1922c: 12 (144) (as *Pulvinulina*); Heron-Allen and Earland, 1922: 218 (as *Pulvinulina karsteni*); Hulme, 1964: 333 (as *B. frigida*).

Recent forms ascribed to the Cretaceous species *P. karsteni* are placed in the synonymy of *P. frigida* by Cushman (1922c).

Genus DISCORBINELLA Cushman and Martin, 1935

Discorbinella bertheloti (d'Orbigny, 1839)

d'Orbigny, 1839b: 135, pl. 1, figs. 28–30 (as *Rosalina*); Chapman, 1909: 356 (as *Discorbina*); Cushman, 1919: 625 (as *Discorbis*); Heron-Allen and Earland, 1922: 202 (as *Discorbina*); Vella, 1957: 10 (as *Discopulvinulina*); Hulme, 1964: 334; Hedley, Hurdle, and Burdett, 1965: 24 (as *Discorbinella*); Hedley, Hurdle, and Burdett, 1967.

Discorbinella cf. **bertheloti** (d'Orbigny, 1839)

Hornibrook in Fleming, 1952: 82 (as *Discorbis*); Kustanowich, 1965: 53 (as *Discopulvinulina*).

Discorbinella cf. **complanata** (Sidebottom, 1918)

cf. Sidebottom, 1918: 253, pl. 6, figs. 1–3 (as *Discorbina bertheloti* var.); Vella, 1957: 10 (as *Discorbinella* cf.).

Genus EPISTOMINELLA Husezima and Maruhasi, 1944

Epistominella exigua (Brady, 1884)

Brady, 1884: 696, pl. 103, figs. 13, 14 (as *Pulvinulina*); Chapman, 1909: 361; Heron-Allen and Earland, 1922: 217.

Epistominella vitrea Parker, 1953

Parker, 1953: 9, pl. 4, figs. 34–36, 40–41; Hulme, 1964: 334.

Genus GAVELINOPSIS Hofker, 1951

Gavelinopsis hamatus Vella, 1957

Vella, 1957: 10, 13, 35, pl. 9, figs. 177–180; Hulme, 1964: 333.

Gavelinopsis isabelleana (d'Orbigny, 1839)

d'Orbigny, 1839c: 43, pl. 6, figs. 10–12 (as *Rosalina*); Heron-Allen and Earland, 1922: 199 (as *Discorbina*).

Gavelinopsis aff. **isabelleana** (d'Orbigny, 1839)

Hornibrook in Fleming, 1952: 82.

Gavelinopsis lobatulus (Parr, 1950)

Parr, 1950: 354, pl. 13, figs. 23–25 (as *Discorbis*); ?Heron-Allen and Earland, 1922: 202 (as *Discorbina rugosa*); Vella, 1957: 10, 36 (as *G. lobatulus*); Hedley, Hurdle, and Burdett, 1965: 24.

Hedley *et al.* (1965) state that *D. rugosa* of Heron-Allen and Earland (1922) is possibly synonymous with *G. lobatulus*.

Gavelinopsis aff. **lobatulus** (Parr, 1950)

Kustanowich, 1965: 53.

Gavelinopsis praegeri (Heron-Allen and Earland, 1913)

Heron-Allen and Earland, 1913a: 122, pl. 10, figs. 8–10 (as *Discorbina*); Heron-Allen and Earland, 1922: 199.

Gavelinopsis cf. umbonifer (Parr, 1950)

cf. Parr, 1950: 353, pl. 13, fig. 22 (as *Discorbis*); Vella, 1957: 10, 36 (as *Gavelinopsis*).

Genus **LATICARININA** Galloway and Wissler, 1927

Laticarinina altocamerata (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 209, pl. 7, figs. 24–27 (as *Truncatulina tenuimargo* var.); Chapman, 1906: 102 (as *T. tenuimargo*); Chapman, 1909: 358; Cushman, 1919: 628; Hornibrook in Knox, 1951: 43 (as *Parvicarinina altocamerata*); Barker, 1960: 192, pl. 93, fig. 2.

Both Chapman (1906, 1909) and Cushman (1919) state that their forms are very close to Brady's fig. 2 (Brady, 1884: pl. 93, fig. 2) named by Heron-Allen and Earland (1922) *T. tenuimargo* var. *altocamerata*.

Laticarinina pauperata (Parker and Jones, 1865)

Parker and Jones, 1865: 395, pl. 16, figs. 50, 51 (as *Pulvinulina*); Brady, 1884: 91, 92, 696, pl. 104, figs. 3–11; Murray, 1895: 605, 610; Heron-Allen and Earland, 1922: 217.

Laticarinina? planoconcava (Chapman, Parr, and Collins, 1932)

Chapman, Parr, and Collins in Parr, 1932: 232, pl. 22, fig. 34 (as *Planulina biconcava* var.); Finlay, 1940: 468 (as *Parvicarinina?*).

Genus **NEOCONORBINA** Hofker, 1951

Neconorbina terquemi (Rzehak, 1888)

Rzehak, 1888: 228 (as *Discorbina*); Haeusler, 1887: 200 (as *Discorbina orbicularis* (Terquem)); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 200.

Rzehak (1888) proposes *Discorbina terquemi* new name, for *Rosalina orbicularis* Terquem, 1876 (not d'Orbigny, 1850).

Genus **PATELLINELLA** Cushman, 1928

Patellinella inconspicua (Brady, 1884)

Brady, 1884: 357, pl. 42, fig. 6 (as *Textularia*); Chapman, 1906: 86; Mestayer, 1916: 129; Cushman, 1919: 626 (as *Discorbis*); Heron-Allen and Earland, 1922: 116 (as *Textularia*); Hornibrook in Fleming, 1952: 82 (as *Patellinella*); Vella, 1957: 10, 13; Hulme, 1964: 332; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1967: pl. 9, fig. 7.

Genus **PLANODISCORBIS** Bermudez, 1952

Planodiscorbis baconica (Hantken, 1876)

Hantken, 1876: 66, pl. 10, fig. 3 (as *Discorbina*); Chapman, 1909: 356 (as *Discorbina bertheloti* var.); Heron-Allen and Earland, 1922: 203; Hornibrook, 1952: 185 (as *Discorbis*).

Planodiscorbis parisiensis (d'Orbigny, 1826)

d'Orbigny, 1826: 271, No. 5 (as *Rosalina*); Chapman, 1909: 356, pl. 17, figs. 6, 7 (as *Discorbina*); Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 203.

Planodiscorbis pustulata (Heron-Allen and Earland, 1913)

Heron-Allen and Earland, 1913a: 129, pl. 12, figs. 5–7 (as *Discorbina*); Heron-Allen and Earland, 1922: 203.

Planodiscorbis rarescens (Brady, 1884)

Brady, 1884: 651, pl. 90, figs. 2, 3, 4? (as *Discorbina*); Chapman, 1909: 357; Cushman, 1919: 625; Heron-Allen and Earland, 1922: 203; Hornibrook in Knox, 1951: 43 (as *Discorbis*); Vella, 1957: 10 (as *Planodiscorbis*); Hulme, 1964: 333.

Genus **PLANULINOIDES** Parr, 1941

Planulinoides biconcavus (Parker and Jones, 1862)

Parker and Jones in Carpenter, Parker, and Jones, 1862: 201 fig. 32G (as *Discorbina*); Chapman, 1909: 357, pl. 17, fig. 8; Cushman, 1919: 626 (as *Discorbis*); Heron-Allen and Earland, 1922: 206 (as *Discorbina*).

Planulinoides norcotti Hedley, Hurdle, and Burdett, 1967.

Hedley, Hurdle, and Burdett, 1967: pl. 11, fig. 1.

Genus **ROSALINA** d'Orbigny, 1826

Rosalina araucana d'Orbigny, 1839

d'Orbigny, 1839c: 44, pl. 6, figs. 16–18; Chapman, 1909: 356 (as *Discorbina*).

Rosalina bradyi (Cushman, 1915)

Cushman, 1915: 12, pl. 8, fig. 1 (as *Discorbis globularis* var.); Heron-Allen and Earland, 1922: 201 (as *Discorbina globularis*); Hornibrook in Fleming, 1952: 82 (as *Discorbis bradyi*); Vella, 1957: 10, 13 (as *R. bradyi*); Hulme, 1964: 333; Hedley, Hurdle, and Burdett, 1967: pl. 1, fig. 3, pl. 11, fig. 2, text figs. 50–55.

Hedley *et al.* (1967) include *D. globularis* of Heron-Allen and Earland in the synonymy of *R. bradyi*.

Rosalina cf. bradyi (Cushman, 1915)

Kustanowich, 1965: 53.

Rosalina concinna (Brady, 1884)

Brady, 1884: 646, pl. 90, figs. 7, 8 (as *Discorbina*); Hulme, 1964: 333 (as *Rosalina*).

Rosalina cora d'Orbigny, 1839

d'Orbigny, 1839c: 46, pl. 6, figs. 19–21; Heron-Allen and Earland, 1922: 199 (as *Discorbina*).

Rosalina globularis d'Orbigny, 1826

d'Orbigny, 1826: 271, No. 1, pl. 13, figs. 1–4; Haeusler, 1887: 200 (as *Discorbina*); Chapman, 1909: 355; Mestayer, 1916: 129.

Rosalina irregularis (Rhumbler, 1906)

Rhumbler, 1906: 70, pl. 5, figs. 57, 58 (as *Discorbina*); Heron-Allen and Earland, 1922: 201 (also as *Discorbina mediterranensis*, part); Hedley, Hurdle, and Burdett, 1967: pl. 11, fig. 3 (as *R. irregularis*).

Hedley *et al.* (1967) include *D. mediterranensis* of Heron-Allen and Earland (1922, part) in the synonymy of *R. irregularis*.

Rosalina mediterranensis d'Orbigny, 1826

d'Orbigny, 1826: 271, No. 2; Heron-Allen and Earland, 1922: 201 (as *Discorbina*).

Rosalina obtusa d'Orbigny, 1846

d'Orbigny, 1846: 179, pl. 11, figs. 4–6; Heron-Allen and Earland, 1922: 202 (as *Discorbina*).

Rosalina paupereques Vella, 1957

Vella, 1957: 10, 35, pl. 9, figs. 181, 182; Hulme, 1964: 333.

Rosalina perlucida (Heron-Allen and Earland, 1913)

Heron-Allen and Earland, 1913a: 139, pl. 13, figs. 7–9 (as *Rotalia*); Heron-Allen and Earland, 1922: 219.

Rosalina peruviana d'Orbigny, 1839

d'Orbigny, 1839c: 41, pl. 1, figs. 12–14; Heron-Allen and Earland, 1922: 200 (as *Discorbina*).

Rosalina valvulata d'Orbigny, 1826

d'Orbigny, 1826: 271, No. 4; Haeusler, 1887: 200 (as *Discorbina*); Heron-Allen and Earland, 1922: 202.

Rosalina vilardeboana d'Orbigny, 1839

d'Orbigny, 1839c: 44, pl. 6, figs. 13–15; Mestayer, 1916: 130 (as *Discorbina*); Cushman, 1919: 625 (as *Discorbis*); Heron-Allen and Earland, 1922: 200 (as *Discorbina*); Hulme, 1964: 333 (as *Rosalina*).

Rosalina vitrizea Hornibrook, 1961

Hornibrook, 1961: 101, pl. 13, figs. 264, 266, 269; Hulme, 1964: 333.

Rosalina williamsoni (Chapman and Parr, 1932)

Chapman and Parr *in* Parr, 1932: 226, pl. 21, fig. 25 (as *Discorbis*); Heron-Allen and Earland, 1922: 199 (as *Discorbina nitida*).

Rotalina nitida Williamson, 1858 (not Reuss, 1844) is renamed *D. williamsoni* by Chapman and Parr.

Rosalina sp. nov. ? Barker, 1960

Barker, 1960: 178, pl. 86, fig. 12.

Genus **TRETOMPHALUS** Mobius, 1880

Tretomphalus sp. Hedley, Hurdle, and Burdett, 1967

Hedley, Hurdle, and Burdett, 1967: pl. 9, fig. 6; Heron-Allen and Earland, 1922: 199 (as *Cymbalopora bulloides*).

Hedley *et al.* (1967) include *C. bulloides* of Heron-Allen and Earland (1922) in the synonymy of *Tretomphalus* sp.

Subfamily **BAGGININAE**

Genus **CANCERIS** Montfort, 1808

Canceris auriculus (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 108, pl. 20, figs. a–c (as *Nautilus auricula* var. ●); Chapman, 1906: 105 (as *Pulvinulina*); Mestayer, 1916: 130; Cushman, 1919: 631; Heron-Allen and Earland, 1922: 214 (as *Pulvinulina auricula*), 215 (as *Pulvinulina brongniartii*).

Cushman (1945: 20) includes *P. brongniartii* in the synonymy of *C. auriculus*.

Canceris aff. **auriculus** (Fichtel and Moll, 1798)

Vella, 1957: 11, 14.

Canceris hauerii (d'Orbigny, 1846)

d'Orbigny, 1846: 151, pl. 7, figs. 22–24 (as *Rotalina*); Heron-Allen and Earland, 1922: 214 (as *Pulvinulina*).

Canceris maoricus Finlay, 1940

Finlay, 1940: 464, pl. 64, figs. 102–104.

Canceris oblongus (Williamson, 1858)

Williamson, 1858: 51, pl. 4, figs. 98–100 (as *Rotalina*); Cushman, 1919: 630 (as *Pulvinulina*); Heron-Allen and Earland, 1922: 214.

Genus **VALVULINERIA** Cushman, 1926

Valvulineria sadonica Asano, 1951

Asano, 1951: 8, text figs. 55–57; Hulme, 1964: 334.

Valvulineria saulcii (d'Orbigny, 1839)

d'Orbigny, 1839c: 42, pl. 2, figs. 9–11 (as *Rosalina*); Heron-Allen and Earland, 1922: 202 (as *Discorbina*).

Family **GLABRATELLIDAE**

Genus **GLABRATELLA** Dorreen, 1948

Glabratella australensis (Heron-Allen and Earland, 1932)

Heron-Allen and Earland, 1932: 416; Mestayer, 1916: 130 (as *Discorbina pileolus*); Cushman, 1919: 626 (as *Discorbis pileolus*); Heron-Allen and Earland, 1922: 204 (as *Discorbina pileolus*); Hornibrook *in* Fleming, 1952: 82 (as *Discorbis pileolus*).

Recent Indo-Pacific form recorded under *D. pileolus* is named *D. australensis* by Heron-Allen and Earland (1932).

Glabratella calcarata (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 204, pl. 7, figs. 12–16 (as *Discorbina*).

Glabratella harmeri (Heron-Allen and Earland, 1922)

Heron-Allen and Earland, 1922: 204, pl. 7, figs. 9–11 (as *Discorbina*).

Glabratella margaritaceus (Earland, 1933)

Earland, 1933: 125, pl. 4, fig. 23–25 (as *Discorbis*); Hulme, 1964: 333 (as *Glabratella*).

Glabratella millettii (Wright, 1911)

Wright, 1911b: 13, pl. 2, figs. 14–17 (as *Discorbina*); Heron-Allen and Earland, 1922: 199.

Glabratella opercularis (d'Orbigny, 1826)

d'Orbigny, 1826: 271, No. 7 (as *Rosalina*); Heron-Allen and Earland, 1922: 203.

Glabratella patelliformis (Brady, 1884)

Brady, 1884: 647, pl. 88, fig. 3; pl. 89, fig. 1 (as *Discorbina*); Chapman, 1909: 355; Mestayer, 1916: 130; Cushman, 1919: 625 (as *Discorbis*); Heron-Allen and Earland, 1922: 204 (as *Discorbina*); Hornibrook *in* Knox, 1951: 42 (as *Discorbis*).

Glabratella radiata (Vella, 1957)

Vella, 1957: 10, 36, pl. 8, figs. 170, 171 (as *Pileolina*); Heron-Allen and Earland, 1922: 204 (as *Discorbina pileolus*, part); Kustanowich, 1965: 53 (as *P. radiata*); Hedley, Hurdle, and Burdett, 1967: (as *Glabratella*).

Hedley *et al.* (1967) include *D. pileolus* of Heron-Allen and Earland (1922) in the synonymy of *G. radiata*.

Glabratella tabernacularis (Brady, 1881)

Brady, 1881: 652 (as *Discorbina*); Heron-Allen and Earland, 1922: 205.

Glabratella zealandica (Vella, 1957)

Vella, 1957: 10, 13, 37, pl. 8, figs. 175, 176 (as *Pileolina*); Heron-Allen and Earland, 1922: 204 (as *Discorbina pileolus*, part); Hulme, 1964: 333 (as *Discorbis zealandica*); Hedley, Hurdle, and Burdett, 1967: (as *Glabratella*).

Hedley *et al.* (1967) include *D. pileolus* of Heron-Allen and Earland (1922, part) in the synonymy of *G. zealandica*.

Genus **HERONALLENIA** Chapman and Parr, 1931

Heronallenia lingulata (Burrows and Holland, 1896)

Burrows and Holland *in* Jones, 1896: 297, pl. 7, fig. 33 (as *Discorbina*); Heron-Allen and Earland, 1922: 206.

Heronallenia pulvinulinoides (Cushman, 1915)

Cushman, 1915: 23, pl. 6, fig. 3 (as *Discorbis*); Heron-Allen and Earland, 1922: 206 (as *Discorbina pulvinoïdes*, spelling mistake).

Heronallenia unguiculata (Sidebottom, 1918)

Sidebottom, 1918: 255, pl. 6, figs. 12–14 (as *Discorbina lingulata* var.); Heron-Allen and Earland, 1922: 207.

Family SIPHONINIDAE

Genus **SIPHONINA** Reuss, 1850

Siphonina reticulata (Czjzek, 1848)

Czjzek, 1848: 145, pl. 13, figs. 7, 8 (as *Rotalina*); Chapman, 1906: 102 (as *Truncatulina*); Chapman, 1909: 359; Cushman, 1919, 628 (as *Siphonina*); Heron-Allen and Earland, 1922: 212 (as *Truncatulina*).

Siphonina aff. *tubulosa* Cushman, 1924

aff. Cushman, 1924: 40, pl. 13, figs. 1, 2; Hornibrook *in* Fleming, 1952: 82.

Siphonina cf. *tubulosa* Cushman, 1924

Vella, 1957: 11.

Superfamily SPIRILLINACEA

Family SPIRILLINIDAE

Subfamily SPIRILLININAE

Genus **SPIRILLINA** Ehrenberg, 1843

Spirillina decorata Brady, 1884

Brady, 1884: 633, pl. 85, figs. 22, 25; Chapman, 1909: 353; Mestayer, 1916: 129; Cushman, 1919: 624; Heron-Allen and Earland, 1922: 197.

Spirillina inaequalis Brady, 1879

Brady, 1879: 278, pl. 8, fig. 25; Chapman, 1909: 353; Heron-Allen and Earland, 1922: 196.

Spirillina limbata Brady, 1879

Brady, 1879: 278, pl. 8, fig. 26; Chapman, 1909: 353; Heron-Allen and Earland, 1922: 196.

Spirillina lucida Sidebottom, 1908

Sidebottom, 1908: 9, pl. 2, fig. 9; Heron-Allen and Earland, 1922: 196.

Spirillina margaritifera Williamson, 1858

Williamson, 1858: 93, pl. 7, fig. 204; Heron-Allen and Earland, 1922: 197.

Spirillina novae-zealandiae Chapman, 1909

Chapman, 1909: 352, pl. 17, figs. 4, 5; Heron-Allen and Earland, 1922: 196.

Spirillina obconica Brady, 1879

Brady, 1879: 279, pl. 8, fig. 27; Chapman, 1909: 352; Heron-Allen and Earland, 1922: 195.

Spirillina selseyensis Heron-Allen and Earland, 1909

Heron-Allen and Earland, 1909: 440, pl. 18, figs. 6, 7; Heron-Allen and Earland, 1922: 197, pl. 7, fig. 3.

Spirillina spinigera Chapman, 1900

Chapman, 1900: 10, pl. 1, fig. 7; Chapman, 1909: 353.

Spirillina aff. *tuberculata* Brady, 1879

aff. Brady, 1879: 279, pl. 8, fig. 28; Kustanowich, 1965: 53.

Spirillina aff. *tuberculato-limbata* Chapman, 1900

aff. Chapman, 1900: 11, pl. 1, fig. 8; Vella, 1957: 10.

Spirillina vivipara Ehrenberg, 1843

Ehrenberg, 1843: 422, pl. 3, fig. 41; Chapman, 1909: 352; Mestayer, 1916: 129; Cushman, 1919: 623; Heron-Allen and Earland, 1922: 195, pl. 7, fig. 4; Hulme, 1964: 332; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1967: 46.

Genus **PLANISPIRILLINA** Bermudez, 1952

Planispirillina denticulata (Brady, 1884)

Brady, 1884: 632, pl. 85, fig. 17 (as *Spirillina limbata* var.); Chapman, 1909: 354, pl. 17, fig. 2 (as *S. limbata* var.), 354, pl. 17, fig. 3 (as *Spirillina denticulo-granulata*); Cushman, 1919: 624 (as *S. limbata* var.); Heron-Allen and Earland, 1922: 197; Hornibrook *in* Fleming, 1952: 82 (as *Spirillina*).

Parr (1950: 351) places *S. denticulo-granulata* in the synonymy of *S. denticulata*.

Planispirillina ornata (Sidebottom, 1908)

Sidebottom, 1908: 9, pl. 2, figs. 7, 8 (as *Spirillina*); Heron-Allen and Earland, 1922: 196.

Subfamily PATELLININAE

Genus **PATELLINA** Williamson, 1858

Patellina advena Cushman, 1922

Cushman, 1922e: 135, pl. 31, fig. 9; Cushman, 1930: 16, pl. 3, fig. 2.

Patellina corrugata Williamson, 1858

Williamson, 1858: 46, pl. 3, figs. 86–89; Haeusler, 1887: 200; Chapman, 1909: 354; Heron-Allen and Earland, 1922: 198, pl. 7, fig. 5; Parr and Collins, 1930: 90, pl. 4, fig. 7; Hornibrook *in* Fleming, 1952: 82; Vella, 1957: 10; Hulme, 1964: 332; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1967.

Superfamily ROTALIACEA

Family ROTALIIDAE

Subfamily ROTALIINAE

Genus **ROTALIA** Lamarck, 1804

Rotalia craticulata Parker and Jones, 1865

Parker and Jones, 1865: 387, pl. 19, fig. 12; Heron-Allen and Earland, 1922: 220.

Genus **AMMONIA** Brunnich, 1771

Ammonia aoteanus (Finlay, 1940)

Finlay, 1940: 461 (as *Streblus*); Haeusler, 1887: 200 (as *Rotalia beccarii*); Mestayer, 1916: 130; Heron-Allen and Earland, 1922: 219; Hornibrook *in* Fleming, 1952: 82 (as *S. aoteanus*); Vella, 1957: 11, 13; Hulme, 1964: 338; Hedley, Hurdle, and Burdett, 1967: pl. 11, fig. 4, text figs. 56–60 (as *Ammonia*).

Finlay (1940) states that true *R. beccarii* does not occur in New Zealand and named the local form, previously referred to *R. beccarii*, as *S. aoteanus*.

Ammonia gaimardii (d'Orbigny) var. **compressiuscula** (Brady, 1884)

Brady, 1884: 708, pl. 107, fig. 1; pl. 108, fig. 1 (as *Rotalia papillosa* var.); Chapman, 1906: 106; Heron-Allen and Earland, 1922: 220.

Subfamily RUPERTININAE

Genus **BIARRITZINA** Loeblich and Tappan, 1964

Biarritzina proteiforma (Goes, 1882)

Goes, 1882: 94, pl. 6, figs. 208–214, pl. 7, figs. 215–219 (as *Carpentaria balaniformis* var.); Cushman, 1919: 629 (as *Carpentaria*); Heron-Allen and Earland, 1922: 213; Hornibrook, 1952: 185.

Family CALCARINIDAE

Genus **BACULOGYPSINA** Sacco, 1893

Baculogypsina sphaerulata (Parker and Jones, 1860)

Parker and Jones, 1860: 34 (as *Orbitolina*); Brady, 1884: 716, pl. 101, figs. 4–7 (as *Tinoporus baculatus*).

Sacco (1894: 206) places *T. baculatus* of Brady (1884) in the synonymy of *B. sphaerulata*.

Family ELPHIDIIDAE

Subfamily ELPHIDIINAE

Genus **ELPHIDIUM** Montfort, 1808

Elphidium advenum (Cushman, 1922)

Cushman, 1922a: 56, pl. 9, figs. 11, 12 (as *Polystomella*); Hornibrook *in* Knox, 1951, 43 (as *Elphidium*); Hornibrook *in* Fleming, 1952: 82.

Elphidium aff. **advenum** (Cushman, 1922)

Kustanowich, 1965: 53.

Elphidium aff. **boseense** Fujita, 1956

cf. Fujita, 1956: 232, pl. 8, fig. 6; Hulme, 1964: 338.

Elphidium crispum (Linnaeus, 1758)

Linnaeus, 1758: 709 (as *Nautilus*); Haeusler, 1887: 200 (as *Polystomella*); Chapman, 1909: 364; Cushman, 1919: 632; Heron-Allen and Earland, 1922: 229.

Elphidium decipiens (Costa, 1856)

Costa, 1856: 220, pl. 19, fig. 13 (as *Polystomella*); Heron-Allen and Earland, 1922: 229.

Elphidium gunteri Cole, 1931

Cole, 1931: 34, pl. 4, figs. 9, 10; Hulme, 1964: 337.

Elphidium cf. **lidoense** Cushman, 1936

cf. Cushman, 1936b: 86, pl. 15, fig. 6; Hulme, 1964: 338.

Elphidium macellum (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 66, pl. 10, figs. h–k (as *Nautilus*); Brady, 1884: 737, pl. 110, figs. 8, 11 (as *Polystomella*); Haeusler, 1887: 200; Chapman, 1909: 364; Mestayer, 1916: 130; Cushman, 1919: 633.

Elphidium milletti (Heron-Allen and Earland, 1915)

Heron-Allen and Earland, 1915: 735, pl. 53, figs. 38–42 (as *Polystomella*); Cushman, 1919: 633.

Elphidium novo-zealandicum Cushman, 1936

Cushman, 1936b: 85, pl. 15, fig. 4; Heron-Allen and Earland, 1922: 230 (as *Polystomella macella*); Hornibrook *in* Fleming, 1952: 82 (as *E. novo-zealandicum*); Vella, 1957: 11, 13; Kustanowich, 1965: 53; Hulme, 1964: 338; Hedley, Hurdle, and Burdett, 1967: pl. 12, fig. 4.

Hedley *et al.* (1967) include *P. macella* of Heron-Allen and Earland (1922) in the synonymy of *E. novo-zealandicum*.

Elphidium cf. **oceanicum** Cushman, 1933

cf. Cushman, 1933b: 52, pl. 12, fig. 7; Vella, 1957: 11 (as *E. cf. oceanum*, spelling mistake).

Elphidium selseyense (Heron-Allen and Earland, 1911)

Heron-Allen and Earland, 1911: 448 (as *Polystomella striatopunctata* var.); Heron-Allen and Earland, 1922: 229.

Elphidium cf. **selseyense** (Heron-Allen and Earland, 1911)

Hulme, 1964: 338.

Elphidium striatopunctatum (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 61, pl. 9, figs. a–c (as *Nautilus*); Haeusler, 1886: 200 (as *Polystomella*); Mestayer, 1916: 130.

Elphidium subnodosa (Munster, 1838)

Munster *in* Roemer, 1838: 391, pl. 3, fig. 61 (as *Robulina*); Mestayer, 1916: 130 (as *Polystomella*).

Genus **CRIBROELPHIDIUM** Cushman and
Bronnimann, 1948

Criboelphidium argenteum (Parr, 1945)

Parr, 1945: 216, pl. 12, fig. 7 (as *Elphidium*); Heron-Allen and Earland, 1922: 229 (as *Polystomella striatopunctatum*); Hedley, Hurdle, and Burdett, 1967: pl. 12, fig. 2 (as *C. argenteum*).

Hedley, *et al.* (1967) include *P. striatopunctatum* of Heron-Allen and Earland (1922) in the synonymy of *C. argenteum*.

Criboelphidium charlottensis (Vella, 1957)

Vella, 1957: 11, 13, 38, pl. 9, figs. 187, 188 (as *Elphidiononion*); Heron-Allen and Earland, 1922: 229 (as *Polystomella subnodosa*); Hulme, 1964: 338 (as *E. charlottensis*); Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1966: pl. 12, fig. 3 (as *Criboelphidium*).

Hedley *et al.* (1967) include *P. subnodosa* of Heron-Allen and Earland (1922) in the synonymy of *C. charlottensis*.

Criboelphidium simplex (Cushman, 1933)

Cushman, 1933: 52, pl. 12, figs. 8, 9 (as *Elphidium*); Heron-Allen and Earland, 1922: 226 (as *Nonionina asterizans*); Vella, 1957: 11, 13, 38, pl. 9, figs. 185, 186 (as *Elphidiononion simplex aoteanum*); Hulme, 1964: 338; Kustanowich, 1965: 53 (as *E. simplex*); Hedley, Hurdle, and Burdett, 1967: pl. 12, fig. 1 (as *C. simplex*).

Hedley *et al.* (1967) consider the New Zealand form, described as a new subspecies by Vella (1957), to be identical with the type species from Tonga.

Genus **NOTOROTALIA** Finlay, 1939

Notorotalia aucklandia Vella, 1957

Vella, 1957: 57, pl. 3, figs. 39–43.

Notorotalia clathrata (Brady, 1884)

Brady, 1884: 709, pl. 107, fig. 8 (as *Rotalia*); Murray, 1895: 610; Chapman, 1906: 106; Chapman, 1909: 362; Mestayer, 1916: 130; Vella, 1957: 47 (as *Notorotalia*).

Notorotalia cf. clathrata (Brady, 1884)

Kustanowich, 1965: 53.

Notorotalia depressa Vella, 1957

Vella, 1957: 47, pl. 1, figs. 13, 19, 20; Hulme, 1964: 338; Hedley, Hurdle, and Burdett, 1967: (as *Polystomellina*).

Notorotalia finlayi Vella, 1957

Vella, 1957: 49, pl. 1, figs. 4, 5, 9, 10; Heron-Allen and Earland, 1922: 220 (as *Rotalia clathrata*, part); Hulme, 1964: 338 (as *N. finlayi*); Hedley, Hurdle, and Burdett, 1965: 25 (as *Polystomellina finlayi*); Hedley, Hurdle, and Burdett, 1967.

Hedley *et al.* (1965) place *R. clathrata* of Heron-Allen and Earland (1922, part) in the synonymy of *P. finlayi*.

Notorotalia inornata Vella, 1957

Vella, 1957: 11, 13, 54, pl. 2, fig. 29, pl. 3, figs. 36–38; Hulme, 1964: 338; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1967: (as *Polystomellina*).

Notorotalia olsoni Vella, 1957

Vella, 1957: 50, pl. 2, figs. 23, 24.

Notorotalia profunda Vella, 1957

Vella, 1957: 48, pl. 1, figs. 6–8.

Notorotalia zelandica Finlay, 1939

Finlay, 1939a: 518; Heron-Allen and Earland, 1922: 220 (as *Rotalia clathrata*, part); Hornibrook *in* Knox, 1951: 43 (as *N. zelandica*); Hornibrook *in* Fleming, 1952: 82; Vella, 1957: 11, 13, 55, pl. 2, figs. 31, 33, 34, text fig. 2; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 25 (as *Polystomellina*); Hedley, Hurdle, and Burdett, 1967.

Hedley *et al.* (1965) place *R. clathrata* of Heron-Allen and Earland (1922, part) in the synonymy of *N. zelandica*.

Notorotalia aff. zelandica Finlay, 1939

Hornibrook, 1952: 185.

Family NUMMULITIDAE

Genus NUMMULITES Lamarck, 1801

Nummulites ammonoides (Gronovius, 1781)

Gronovius, 1781: 282, pl. 19, figs. 5, 6 (as *Nautilus*); Heron-Allen and Earland, 1922: 230 (as *Operculina*).

Superfamily GLOBIGERINACEA

Family HANTKENINIDAE

Subfamily HASTIGERININAE

Genus HASTIGERINA Thomson, 1876

Hastigerina pelagica (d'Orbigny, 1839)

d'Orbigny, 1839c: 27, pl. 3, figs. 13, 14 (as *Nonionina*); Heron-Allen and Earland, 1922: 37, 193; Kustanowich 1963: 543, 562.

Hastigerina siphonifera (d'Orbigny, 1839)

d'Orbigny, 1839a: 83, pl. 4, figs. 15–18 (as *Globigerina*); Murray, 1895: 605, 610 (as *Globigerina aequilateralis*); Chapman, 1906: 100; Chapman, 1909: 351; Mestayer, 1916: 129; Cushman, 1919: 622 (as *G. aequilateralis* var. *involuta*); Heron-Allen and Earland, 1922: 192 (as *G. aequilateralis*); Vella, 1957: 11, 14 (as *Globigerinella*); Parker, 1962b: 228, pl. 2, figs. 22–28 (as *Globigerinella siphonifera*); Kustanowich, 1963: 543, 558, pl. 3, No. 36 (as *Globigerinella aequilateralis*); Hulme, 1964: 337 (as *G. siphonifera*); Kustanowich, 1965: 53 (as *G. aequilateralis*); Hedley, Hurdle, and Burdett, 1965: 23 (as *Hastigerina siphonifera*).

Banner and Blow (1960: 22) include *G. aequilateralis* Brady in the synonymy of *H. siphonifera* (d'Orbigny). Parker (1962b) includes *G. aequilateralis* var. *involuta* Cushman in the synonymy of *G. siphonifera*.

Family GLOBOROTALIIDAE

Subfamily GLOBOROTALIINAE

Genus GLOBOROTALIA Cushman, 1927

Globorotalia canariensis (d'Orbigny, 1839)

d'Orbigny, 1839b: 130, pl. 1, figs. 34–36 (as *Rotalina*); Chapman, 1906: 105 (as *Pulvinulina*); Chapman, 1909: 361; Cushman, 1919: 630; Heron-Allen and Earland, 1922: 36, 215; Hornibrook, 1952: 185 (as *Globorotalia*).

Globorotalia crassa (d'Orbigny, 1840)

d'Orbigny, 1840: 32, pl. 3, figs. 7, 8 (as *Rotalina*); Chapman, 1906: 105 (as *Pulvinulina*); Murray, 1906: 120; Mestayer, 1916: 130; Cushman, 1919: 631; Heron-Allen and Earland, 1922: 36, 37, 216.

Globorotalia crassaformis (Galloway and Wissler, 1927)

Galloway and Wissler, 1927: 41, pl. 5, fig. 12 (as *Globigerina*); Murray, 1895: 605, 610 (as *Pulvinulina crassa*); Parker, 1962b: 235, pl. 4, figs. 13–16, 19, 22 (as *Globorotalia crassaformis*); Kustanowich, 1963: 543, 561, pl. 2, Nos. 13, 14 (as *Globorotalia punctulata*).

Phleger, Parker, and Pierson (1953: 20) place *P. crassa* of Brady (1884), listed by Murray (1895), in the synonymy of *G. punctulata*. Parker (1962b) includes *G. punctulata* of Phleger, *et al.* (1953) in the synonymy of *G. crassaformis*. Kustanowich (1963) follows the nomenclature used by Phleger, *et al.* (1953).

Globorotalia hirsuta (d'Orbigny, 1839)

d'Orbigny, 1839b: 131, pl. 1, figs. 37–39 (as *Globigerina*); Murray, 1895: 605 (as *Pulvinulina canariensis*); Vella, 1957: 11 (as *Turborotalia crassula*); Parker, 1962b: 236, pl. 5, figs. 10–15, pl. 6, fig. 1 (as *Globorotalia hirsuta*); Kustanowich, 1963: 543, 560, pl. 3, figs. 30–32.

Cushman (1931a: 99) places *P. canariensis* of Brady (1884), listed by Murray (1895), in the synonymy of *G. hirsuta*. Phleger, Parker, and Pierson (1953: 21) place *Globorotalia crassula* in the synonymy of *G. hirsuta*.

Globorotalia inflata (d'Orbigny, 1839)

d'Orbigny, 1839b: 134, pl. 2, figs. 7–9 (as *Globigerina*); Murray, 1895: 605, 610; Murray, 1906: 120; Chapman, 1906: 100; Chapman, 1909: 350; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 188; Hornibrook *in* Knox, 1951: 43 (as *Globorotalia*); Hornibrook *in* Fleming, 1952: 82; Hornibrook, 1952: 185; Vella, 1957: 11; Parker, 1962b: 236, pl. 5, figs. 6–9; Kustanowich, 1963: 543, 560, pl. 2, Nos. 20–26; Hulme, 1964: 335 (as *Globigerina*); Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 23, pl. 7, fig. 25.

Globorotalia pumilio Parker, 1962

Parker, 1962b: 238, pl. 6, figs. 2, 3.

Globorotalia scitula (Brady, 1882)

Brady, 1882: 716 (as *Pulvinulina*); Heron-Allen and Earland, 1922: 215 (as *Pulvinulina patagonica* var.); Parker, 1962b: 238, pl. 6, figs. 4–6 (as *G. scitula*); Kustanowich, 1963: 543, 561, pl. 2, Nos. 15–19.

Globorotalia truncatulinoides (d'Orbigny, 1839)

d'Orbigny, 1839b: 132, pl. 2, figs. 25–27 (as *Rotalina*); Murray, 1895: 605, 610 (as *Pulvinulina micheliniana*); Murray, 1906: 120; Chapman, 1906: 105 (as *Pulvinulina truncatulinoides*); Chapman, 1909: 361; Mestayer, 1916: 130 (as *P. micheliniana*); Cushman, 1919: 630 (as *P. truncatulinoides*); Heron-Allen and Earland, 1922: 216; Hornibrook, 1952: 185 (as *Globorotalia*); Vella, 1957: 11; Parker, 1962b: 236, pl. 6, fig. 7; Kustanowich, 1963: 543, 561, pl. 2, Nos. 27–29; Hulme, 1964: 334; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 23, pl. 7, fig. 27.

Brady (1884: 695) considers *P. micheliniana* and *P. truncatulinoides* to be the same species. Cushman (1931b: 45) considers these forms to be two distinct species – the Cretaceous form *Globorotalia micheliniana* and the common Recent form *G. truncatulinoides*.

Globorotalia tumida (Brady, 1877)

Brady, 1877: 535 (as *Pulvinulina menardii* var.); Heron-Allen and Earland, 1922: 215.

Family GLOBIGERINIDAE

Subfamily GLOBIGERININAE

Genus GLOBIGERINA d'Orbigny, 1826

Globigerina bulloides d'Orbigny, 1826

d'Orbigny, 1826: 277, No. 1; Haeusler, 1887: 230; Murray, 1895: 605, 610; Murray, 1906: 120; Chapman, 1906: 100; Chapman, 1909: 350; Mestayer, 1916: 129; Cushman, 1919: 621; Heron-Allen and Earland, 1922: 36, 37, 187; Hornibrook *in* Knox, 1951: 43; Hornibrook *in* Fleming, 1952: 82; Hornibrook, 1952: 185; Vella, 1957: 11; Parker, 1962b: 221, pl. 1, figs. 1–8; Kustanowich, 1963: 543, 551, pl. 3, figs. 33–34; Hulme, 1964: 335; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 23.

Globigerina calida Parker, 1962

Parker, 1962b: 221, pl. 1, figs. 9–13, 15.

Globigerina cretacea d'Orbigny var. *eggeri* Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 188, pl. 7, figs. 6–8.

Globigerina dubia Egger, 1857

Egger, 1857: 281, pl. 9, figs. 7–9; Murray, 1906: 120; Mestayer, 1916: 129; Cushman, 1919: 621; Heron-Allen and Earland, 1922: 188.

Globigerina dutertrei d'Orbigny, 1839

d'Orbigny, 1839a: 84, pl. 4, figs. 19–21; Chapman, 1909: 350; Heron-Allen and Earland, 1922: 36, 37, 189; Hornibrook, 1952: 185 (as *Globigerina dubia*); Vella, 1957: 11; Parker, 1962b: 242, pl. 7, figs. 1–13, pl. 8, figs. 1–4 (as *Globoquadrina dutertrei*); Kustanowich, 1963: 543, 552, pl. 3, Nos. 37, 38 (as *Globigerina eggeri*); 543, 556, pl. 3, No. 35 (as *Globigerina subcretacea*); Kustanowich, 1965: 53.

Kustanowich (1963: 552) includes *G. dubia* of Hornibrook (1952) and of Vella (1957) in the synonymy of *G. eggeri*. Parker (1962b) places *G. eggeri* and *G. subcretacea* in the synonymy of *G. dutertrei*.

Globigerina falconensis Blow, 1959

Blow, 1959: 177, pl. 9, figs. 40, 41; Parker, 1962b: 224, pl. 1, figs. 14, 16–19.

Globigerina helicina d'Orbigny, 1826

d'Orbigny, 1826: 277, No. 5; Heron-Allen and Earland, 1922: 192.

Globigerina megastoma Earland, 1934

Earland, 1934: 177, pl. 8, fig. 9; Kustanowich, 1963: 543, 554, pl. 3, Nos. 40, 41.

Globigerina pachyderma (Ehrenberg, 1861)

Ehrenberg, 1861: 303 (as *Aristospira*); Mestayer, 1916: 129 (as *Globigerina*); Heron-Allen and Earland, 1922: 190; Hornibrook, 1952: 185; Parker, 1962b: 224, pl. 1, figs. 26–35, pl. 2, figs. 1–6; Kustanowich, 1963: 543, 554, pl. 3, Nos. 44, 45; Kustanowich, 1965: 53.

Globigerina quinqueloba Natland, 1938

Natland, 1938: 149, pl. 6, fig. 7; Parker, 1962b: 225, pl. 2, figs. 7–16; Kustanowich, 1963: 543, 556, pl. 3, Nos. 42, 43; Hulme, 1964: 335, figs. 5, 6; Kustanowich, 1965: 53.

Genus **BEELLA** Banner and Blow, 1960

Beella digitata (Brady, 1879)

Brady, 1879: 286 (as *Globigerina*); Parker, 1962b: 222, pl. 1, figs. 20–25; Kustanowich, 1963: 543, 552.

Genus **GLOBIGERINOIDES** Cushman, 1927

Globigerinoides conglobatus (Brady, 1879)

Brady, 1879: 286 (as *Globigerina*); Mestayer, 1916: 129; Cushman, 1919: 622; Heron-Allen and Earland, 1922: 192; Parker, 1962b: 229, pl. 3, figs. 1–5 (as *Globigerinoides*); Kustanowich, 1963: 543, 558, pl. 1, Nos. 1–3.

Globigerinoides ruber (d'Orbigny, 1839)

d'Orbigny, 1839a: 82, pl. 4, figs. 12–14 (as *Globigerina*); Brady, 1884: 91, 602, pl. 79, figs. 11–16; Cushman, 1919: 621; Heron-Allen and Earland, 1922: 191; Hornibrook, 1952: 185 (as *Globigerinoides*); Vella, 1957: 11; Parker, 1962b: 230, pl. 3, figs. 11–14; pl. 4, figs. 1–10; Kustanowich, 1963: 543, 559, pl. 1, Nos. 7–9; Hulme, 1964: 337; Kustanowich, 1965: 53.

Globigerinoides sacculifer (Brady, 1877)

Brady, 1877: 535 (as *Globigerina*); Mestayer, 1916: 129; Cushman, 1919: 622; Heron-Allen and Earland, 1922: 36, 192; Parker, 1962b: 229, pl. 3, figs. 6–10 (as *Globigerinoides quadrilobatus sacculifer*); Kustanowich, 1963: 543, 559, pl. 1, figs. 4–6 (as *Globigerinoides sacculifer*).

Globigerinoides triloba (Reuss, 1850)

Reuss, 1850: 374, pl. 47, fig. 11; Chapman, 1906: 100 (as *Globigerina*); Chapman, 1909: 350; Mestayer, 1916: 129 (as *Globigerina bulloides* var.); Heron-Allen and Earland, 1922: 187 (as *Globigerina*).

Genus **GLOBOQUADRINA** Finlay, 1947

Globoquadrina conglomerata (Schwager, 1866)

Schwager, 1866: 255, pl. 7, fig. 113 (as *Globigerina*); Parker, 1962b: 240, pl. 6, figs. 11–18 (as *Globoquadrina*); Kustanowich, 1963: 543, 552 (as *Globigerina*).

Genus **GLOBOROTALOIDES** Bolli, 1957

Globorotaloides hexagona (Natland, 1938)

Natland, 1938: 149, pl. 7, fig. 1 (as *Globigerina*); Parker, 1962b: 244, pl. 8, figs. 5–13 (as *Globoquadrina*).

Genus **HASTIGERINELLA** Cushman, 1927

Hastigerinella digitata (Rhumbler, 1911)

Rhumbler, 1911: 202, pl. 37, fig. 9 (as *Hastigerina*); Kustanowich, 1963: 543, 563 (as *Hastigerinella rhumbleri*).

H. rhumbleri Galloway is a junior synonym of *H. digitata* (Rhumbler) (see Parker, 1962b: 228).

Genus **PULLENIATINA** Cushman, 1927

Pulleniatina obliquiloculata (Parker and Jones, 1865)

Parker and Jones, 1865: 368, pl. 19, fig. 4 (as *Pullenia*); Murray, 1895: 605; Mestayer, 1916: 129; Cushman, 1919: 623; Heron-Allen and Earland, 1922: 193; Parker, 1962b: 234, pl. 4, figs. 13–16, 19, 22 (as *Pulleniatina*); Kustanowich, 1963: 543, 563.

Subfamily SPHAEROIDINELLINAE

Genus **SPHAEROIDINELLA** Cushman, 1927

Sphaeroidinella dehiscens (Parker and Jones, 1865)

Parker and Jones, 1865: 369, pl. 19, fig. 5 (as *Sphaeroidina*); Cushman, 1919: 623; Heron-Allen and Earland, 1922: 194; Parker, 1962b: 234, pl. 5, figs. 1, 2 (as *Sphaeroidinella*).

Subfamily ORBULININAE

Genus **ORBULINA** d'Orbigny, 1839

Orbulina universa d'Orbigny, 1839

d'Orbigny, 1839b: 3, pl. 1, fig. 1; Murray, 1895: 605, 610; Murray, 1906: 120; Chapman, 1906: 101; Chapman, 1909: 351; Mestayer, 1916: 129; Cushman, 1919: 622; Heron-Allen and Earland, 1922: 36, 37, 193; Hornibrook, 1952: 185; Vella, 1957: 11; Barker, 1960: 170, pl. 82, figs. 1–3; Parker, 1962b: 232; Kustanowich, 1963: 543, 563; Hulme, 1964: 337; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 23.

Genus **CANDEINA** d'Orbigny, 1839

Candeina nitida d'Orbigny, 1839

d'Orbigny, 1839a: 108, pl. 2, figs. 27, 28; Chapman, 1909a: 352.

Subfamily CATAPSYDRACINAE

Genus **GLOBIGERINITA** Bronnimann, 1951

Globigerinita elevata (d'Orbigny, 1840)

d'Orbigny, 1840: 34, pl. 3, figs. 15, 16 (as *Globigerina*); Heron-Allen and Earland, 1922: 191 (as *Globigerina rubra* var.).

Globigerinita glutinata (Egger, 1893)

Egger, 1893: 371, pl. 13, figs. 19–21 (as *Globigerina*); Parker, 1962b: 246, pl. 9, figs. 1–16 (as *Globigerinita*); Kustanowich, 1963: 543, 558.

Globigerinita iota Parker, 1962

Parker, 1962b: 250, pl. 10, figs. 26–30.

Globigerinita uvula (Ehrenberg, 1861)

Ehrenberg, 1861: 276, 277, 308 (as *Pylodexia*); Parker, 1962b: 252, pl. 8, figs. 14–26 (as *Globigerinita*).

Superfamily ORBITOIDACEA

Family EPONIDIDAE

Genus **EPONIDES** Montfort, 1808

Eponides berthelotianus (d'Orbigny, 1839)

d'Orbigny, 1839b: 130, pl. 1, figs. 31–33 (as *Rotalina*); Heron-Allen and Earland, 1922: 218 (as *Pulvinulina*).

Eponides bradyi Earland, 1934

Earland, 1934: 187, pl. 8, figs. 36–38; Chapman, 1906: 103 (as *Truncatulina pygmaea*); Heron-Allen and Earland, 1922: 211.

Recent forms ascribed to the fossil species *T. pygmaea* are named *E. bradyi* by Earland (1934).

Eponides patagonica (d'Orbigny, 1839)

d'Orbigny, 1839c: 36, pl. 2, figs. 6–8 (as *Rotalina*); Heron-Allen and Earland, 1922: 215 (as *Pulvinulina*).

Eponides cf. patagonica (d'Orbigny, 1839)

Cushman, 1919: 630 (as *Pulvinulina* cf.).

Eponides punctulatus (d'Orbigny, 1826)

d'Orbigny, 1826: 273, No. 25, Modeles, No. 12 (as *Rotalia*); Heron-Allen and Earland, 1922: 214 (as *Pulvinulina*).

Eponides repandus (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 35, pl. 3, figs. a–d (as *Nautilus*); Haeusler, 1887: 200 (as *Pulvinulina*); Chapman, 1909: 360; Heron-Allen and Earland, 1922: 213; Vella, 1957: 10 (as *Eponides*).

Eponides repandus var. concamerata (Montagu, 1808)

Montagu, 1808: 160 (as *Serpula*); Chapman, 1909: 360 (as *Pulvinulina repanda* var.); Heron-Allen and Earland, 1922: 213.

Eponides tumidulus (Brady, 1884)

Brady, 1884: 666, pl. 95, fig. 8 (as *Truncatulina*); Heron-Allen and Earland, 1922: 211.

Genus **NEOEPONIDES** Reiss, 1960

Neoponides procerus (Brady, 1881)

Brady, 1881: 66 (as *Pulvinulina*); Heron-Allen and Earland, 1922: 217; Hornibrook in Fleming, 1952: 82 (as *Discorbis*).

Neoponides schreibersii (d'Orbigny, 1846)

d'Orbigny, 1846: 154, pl. 8, figs. 4–6 (as *Rotalina*); Chapman, 1906: 106 (as *Pulvinulina*); Chapman, 1909: 361; Mestayer, 1916: 130; Cushman, 1919: 630; Heron-Allen and Earland, 1922: 217.

Family **CIBICIDIDAE**

Subfamily **PLANULININAE**

Genus **PLANULINA** d'Orbigny, 1826

Planulina ariminensis d'Orbigny, 1826

d'Orbigny, 1826: 280, No. 1, pl. 14, figs. 1–3; Heron-Allen and Earland, 1922: 212 (as *Anomalina*).

Planulina wuellerstorfi (Schwager, 1866)

Schwager, 1866: 258, pl. 7, figs. 105, 107 (as *Anomalina*); Murray, 1895: 605 (as *Truncatulina*); Chapman, 1906: 102; Chapman, 1909: 358; Heron-Allen and Earland, 1922: 210; Hornibrook, 1952: 185 (as *Planulina*); Vella, 1957: 11; Barker, 1960: 192, pl. 93, fig. 9.

Planulina cf. wuellerstorfi (Schwager, 1866)

Hornibrook in Fleming, 1952: 82.

Subfamily **CIBICIDINAE**

Genus **CIBICIDES** Montfort, 1808

Cibicides aknerianus (d'Orbigny, 1846)

d'Orbigny, 1846: 156, pl. 8, figs. 13–15 (as *Rotalina*); Chapman, 1906: 103 (as *Truncatulina*); Heron-Allen and Earland, 1922: 210.

Cibicides cf. cicatricosus (Schwager, 1866)

cf. Schwager, 1866: 260, pl. 7, figs. 108, 4 (as *Anomalina*); Hornibrook, 1952: 185.

Cibicides corticatus Earland, 1934

Earland, 1934: 183, pl. 8, figs. 46–48 (as *Cibicides refulgens* var.); Vella, 1957: 11, 41, pl. 9, figs. 195–197 (as *Cibicides (Cibicoides)*).

Cibicides culter (Parker and Jones, 1865)

Parker and Jones, 1865: 421, pl. 19, fig. 1 (as *Planorbulina*); Heron-Allen and Earland, 1922: 211 (as *Truncatulina*).

Cibicides n.sp. aff. deliquatus Finlay, 1940

aff. Finlay, 1940: 465; Vella, 1957: 11, 40.

Cibicides haidingerii (d'Orbigny, 1846)

d'Orbigny, 1846: 154, pl. 8, figs. 7–9 (as *Rotalina*); Chapman, 1906: 104 (as *Truncatulina*); Chapman, 1909: 359; Cushman, 1919: 627; Heron-Allen and Earland, 1922: 210.

Cibicides lobatulus (Walker and Jacob, 1798)

Walker and Jacob, 1798: 642, pl. 14, fig. 36 (as *Nautilus*); Haeusler, 1886: 200 (as *Truncatulina*); Murray, 1895: 605, 610; Chapman, 1906: 103; Chapman, 1909: 358; Mestayer, 1916: 130; Cushman, 1919: 627; Heron-Allen and Earland, 1922: 208; Hornibrook in Knox, 1951: 43 (as *Cibicides*); Hornibrook in Fleming, 1952: 82; Hulme, 1964: 339; Hedley, Hurdle, and Burdett, 1965: 25.

Cibicides marlboroughensis Vella, 1957

Vella, 1957: 11, 12, 40, pl. 9, figs. 189–191; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 25.

Cibicides praecinctus (Karrer, 1868)

Karrer, 1868: 189, pl. 5, fig. 7 (as *Rotalia*); Chapman, 1906: 104 (as *Truncatulina*?); Mestayer, 1916: 130; Heron-Allen and Earland, 1922: 211.

Cibicides cf. pseudoungerianus (Cushman, 1922)

cf. Cushman, 1922d: 97, pl. 20, fig. 9 (as *Truncatulina*); Vella, 1957: 11 (as *Cibicides* cf.).

Cibicides refulgens Montfort, 1808

Montfort, 1808: 123, 31st genre. Chapman, 1909: 357 (as *Truncatulina*); Heron-Allen and Earland, 1922: 207, pl. 7, figs. 23, 28; Hornibrook, 1952: 185 (as *Cibicides*).

Cibicides robertsonianus (Brady, 1881)

Brady, 1881: 65 (as *Truncatulina*); Heron-Allen and Earland, 1922: 210; Vella, 1957: 11 (as *Cibicides*).

Cibicides temperata Vella, 1957

Vella, 1957: 11, 13, 40, pl. 9, figs. 201–203; Hulme, 1964: 338.

Cibicides tenuimargo (Brady, 1884)

Brady, 1884: 662, pl. 93, fig. 3 (as *Truncatulina*); Mestayer, 1916: 130; Heron-Allen and Earland, 1922: 209.

Cibicides ungerianus (d'Orbigny, 1846)

d'Orbigny, 1846: 157, pl. 8, figs. 16–18 (as *Rotalina*); Chapman, 1906: 103 (as *Truncatulina*); Chapman, 1909: 359; Cushman, 1919: 628; Heron-Allen and Earland, 1922: 210.

Genus **CIBICIDELLA** Cushman, 1927
Cibicidella variabilis (d'Orbigny, 1826)
d'Orbigny, 1826: 279, No. 8 (as *Truncatulina*); Chapman, 1906: 103; Chapman, 1909: 358; Mestayer, 1916: 130; Cushman, 1919: 627.

Genus **DYOCIBICIDES** Cushman and Valentine, 1930

Dyocibicides biserialis Cushman and Valentine, 1930
Cushman and Valentine, 1930: 31, pl. 10, figs. 1, 2; Heron-Allen and Earland, 1922: 208 (as *Truncatulina variabilis*, part); Hornibrook in Knox, 1951: 43 (as *D. biserialis*); Hornibrook in Fleming, 1952: 82; Hornibrook, 1952: 185; Vella, 1957: 11, 13, 41; Barker, 1960: 192, pl. 93, fig. 6; Hedley, Hurdle, and Burdett, 1965: 25.

Hedley *et al.* (1965) place *T. variabilis* of Heron-Allen and Earland (1922, part) in the synonymy of *D. biserialis*.

Dyocibicides primitiva Vella, 1957
Vella, 1957: 11, 41, pl. 9, figs. 198–200.

Dyocibicides uniserialis Thalmann, 1953
Thalmann, 1933: 254; ?Vella, 1957: 11 (as *D. sp.* (uniserial)).

Family PLANORBULINIDAE

Genus **PLANORBULINA** d'Orbigny, 1826

Planorbulina acervalis Brady, 1884
Brady, 1884: 657, pl. 93, fig. 4; Cushman, 1919: 627; Heron-Allen and Earland, 1922: 207; Vella, 1957: 11.

Planorbulina mediterraneensis d'Orbigny, 1826
d'Orbigny, 1826: 280, No. 2, pl. 14 (5 in text, by error), figs. 4–6; Heron-Allen and Earland, 1922: 207.

Family ACERVULINIDAE

Genus **ACERVULINA** Schulze, 1854

Acervulina inhaerens Schulze, 1854
Schulze, 1854: 68, pl. 6, fig. 12; Chapman, 1909: 363 (as *Gypsina*); Cushman, 1919: 631; Heron-Allen and Earland, 1922: 221; Hedley, Hurdle, and Burdett, 1967: pl. 1, fig. 2.

Genus **GYPSINA** Carter, 1877

Gypsina vesicularis (Parker and Jones, 1860)
Parker and Jones, 1860: 31, No. 5 (as *Orbitolina*); Chapman, 1909: 362 (as *Gypsina*); Cushman, 1919: 632; Heron-Allen and Earland, 1922: 221.

Genus **SPHAEROGYPSINA** Galloway, 1933

Sphaerogypsina globulus (Reuss, 1848)
Reuss, 1848: 33, pl. 5, fig. 7 (as *Cerriopora*); Heron-Allen and Earland, 1922: 221 (as *Gypsina*).

Family CYMBALOPORIDAE

Genus **CYMBALOPORETTA** Cushman, 1928

Cymbaloporetta squamosa (d'Orbigny, 1826)
d'Orbigny, 1826: 272, No. 8 (as *Rotalia*); Heron-Allen and Earland, 1922: 198 (as *Cymbalopora*).

Family HOMOTREMATIDAE

Subfamily HOMOTREMATINAE

Genus **MINIACINA** Galloway, 1933

Miniacina alba (Carter, 1877)

Carter, 1877: 213, pl. 13, fig. 14 (as *Polytrema miniaceum* var.); Heron-Allen and Earland, 1922: 226.

Miniacina miniacea (Pallas, 1766)

Pallas, 1766: 251 (as *Millepora*); Mestayer, 1916: 130 (as *Polytrema*); Cushman, 1919: 632; Heron-Allen and Earland, 1922: 221, pl. 8, figs. 1–31.

Superfamily CASSIDULINACEA

Family ANNULOPATELLINIDAE

Genus **ANNULOPATELLINA** Parr and Collins, 1930

AnnulopateLLina annularis (Parker and Jones, 1860)

Parker and Jones, 1860: 31 (as *Orbitolina*); Heron-Allen and Earland, 1922: 198 (as *Patellina corrugata* var.).

Family CAUCASINIDAE

Subfamily FURSENKOININAE

Genus **FURSENKOINA** Loeblich and Tappan, 1961

Fursenkoina bradyi (Cushman, 1922)

Cushman, 1922b: 115, pl. 24, fig. 1 (as *Virgulina*); Cushman, 1919: 606.

Fursenkoina davisii (Chapman and Parr, 1937)

Chapman and Parr, 1937: 88, pl. 8, fig. 15 (as *Virgulina*); Hulme, 1964: 329.

Fursenkoina fusiformis (Williamson, 1858)

Williamson, 1858: 63, pl. 5, figs. 129, 130 (as *Bulimina pupoides* var.); Heron-Allen and Earland, 1922: 127 (as *Bulimina*).

Fursenkoina pauciloculata (Brady, 1884)

Brady, 1884: 414, pl. 52, figs. 4, 5 (as *Virgulina*); Heron-Allen and Earland, 1922: 132.

Fursenkoina rotundata (Parr, 1950)

Parr, 1950: 337, pl. 12, fig. 14 (as *Virgulina*); Kustanowich, 1965: 52.

Fursenkoina schreibersiana (Czjzek, 1848)

Czjzek, 1848: 147, pl. 13, figs. 18–21 (as *Virgulina*); Heron-Allen and Earland, 1922: 131.

Fursenkoina spinosa (Heron-Allen and Earland, 1932)

Heron-Allen and Earland, 1932: 352, pl. 9, figs. 3–4 (as *Virgulina schreibersiana* var.); Kustanowich, 1965: 52 (as *V. spinosa*).

Fursenkoina subdepressa (Brady, 1884)

Brady, 1884: 416, pl. 52, figs. 14–17 (as *Virgulina*); Heron-Allen and Earland, 1922: 131.

Fursenkoina subsquamosa Egger, 1857

Egger, 1857: 295, pl. 12, figs. 19–21 (as *Virgulina*); Chapman, 1906: 89; Heron-Allen and Earland, 1922: 131.

Family LOXOSTOMIDAE

Genus LOXOSTOMUM Ehrenberg, 1854

Loxostomum karrerianum (Brady, 1881)

Brady, 1881: 58 (as *Bolivina*); Chapman, 1906: 90; Mestayer, 1916: 129; Cushman, 1919: 603; Heron-Allen and Earland, 1922: 136; Cushman, 1937a, 185, pl. 21, fig. 17 (as *Loxostoma*); Vella, 1957: 10, 13; Hulme, 1964: 331; Kustanowich, 1965: 52; Hedley, Hurdle, and Burdett, 1965: 22; Hedley, Hurdle, and Burdett, 1967.

Loxostomum limbatum (Brady, 1881)

Brady, 1881: 57 (as *Bolivina*); Heron-Allen and Earland, 1922: 137.

Loxostomum lobatum (Brady, 1881)

Brady, 1881: 58 (as *Bolivina*); Heron-Allen and Earland, 1922: 134; Hedley, Hurdle, and Burdett, 1965: 22, pl. 6, fig. 24 (as *Loxostomum*).

Loxostomum porrectum (Brady, 1881)

Brady, 1881: 57 (as *Bolivina*); Mestayer, 1916: 129.

Family CASSIDULINIDAE

Genus CASSIDULINA d'Orbigny, 1826

Cassidulina laevigata d'Orbigny, 1826

d'Orbigny, 1826: 282, No. 1, pl. 15 (6 by error in text), figs. 4, 5; Chapman, 1906: 90; Chapman, 1909: 332, pl. 15, fig. 1; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 137; Hornibrook *in* Fleming, 1952: 82.

Cassidulina aff. *laevigata* d'Orbigny, 1826

Kustanowich, 1965: 53.

Cassidulina laevigata var. *tumida* Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 137, pl. 5, figs. 8–10.

Cassidulina neocarinata Thalmann, 1950

Thalmann, 1950: 44; Heron-Allen and Earland, 1922: 137 (as *Cassidulina laevigata*, part); Vella, 1957: 10 (as *Cassidulina carinata* Cushman); Barker, 1960: 110, pl. 54, figs. 2, 3, (as *C. carinata* Silvestri?); Hulme, 1964: 33 (as *C. neocarinata*); Hedley, Hurdle, and Burdett, 1967: pl. 12, fig. 6.

C. carinata Cushman, 1922 (not Silvestri 1896), is renamed *C. neocarinata* by Thalmann (1950). Hedley *et al.* (1967) include *C. laevigata* of Heron-Allen and Earland (1922, part) in the synonymy of *C. neocarinata*.

Genus EHRENBERGINA Reuss, 1850

Ehrenbergina glabra Heron-Allen and Earland, 1922

Heron-Allen and Earland, 1922: 140, pl. 5, figs. 1–6, 11 (as *Ehrenbergina hystrix* var.).

Ehrenbergina mestayeri Cushman, 1922

Cushman, 1922b: 135; Chapman, 1909: 332, pl. 15, fig. 2 (as *Ehrenbergina serrata*); Mestayer, 1916: 129; Cushman, 1919: 607 (as *E. serrata* var.); Cushman, 1927c: 4, pl. 1, fig. 9 (as *E. mestayeri*).

Cushman (1927c) includes *E. serrata* of Chapman (1909), Mestayer (1916), and Cushman (1919) in the synonymy of *E. mestayeri*.

Ehrenbergina serrata Reuss, 1850

Reuss, 1850: 377, pl. 48, fig. 7; Heron-Allen and Earland, 1922: 140.

Ehrenbergina trigona Goes, 1896

Goes, 1896: 49 (as *Ehrenbergina serrata* var.); Brady, 1884: 91, 434, pl. 55, figs. 2–5 (as *E. serrata*).

Goes (1896) places *E. serrata* of Brady (1884) in the synonymy of *E. serrata* var. *trigona*.

Genus FAVOCASSIDULINA Loeblich and Tappan, 1957

Favocassidulina favus (Brady, 1877)

Brady, 1877: 535 (as *Pulvinulina*); Heron-Allen and Earland, 1922: 219.

Genus GLOBOCASSIDULINA Voloshinova, 1960

Globocassidulina crassa (d'Orbigny, 1839)

d'Orbigny, 1839c: 56, pl. 7, figs. 18–20 (as *Cassidulina*); Chapman, 1909: 332 (as *Cassidulina oblonga*); Heron-Allen and Earland, 1922: 138 (as *C. oblonga* and *C. crassa*).

Marks (1951: 68) places *C. oblonga* in the synonymy of *C. crassa*.

Globocassidulina pacifica (Cushman, 1925)

Cushman, 1925b: 53, pl. 9, figs. 14–16 (as *Cassidulina*); Heron-Allen and Earland, 1922: 139 (as *Cassidulina calabra*).

Recent Pacific forms ascribed to *C. calabra* are referred to *C. pacifica* new name, by Cushman (1925b).

Globocassidulina subglobosa (Brady, 1881)

Brady, 1881: 60 (as *Cassidulina*); Chapman, 1906: 90; Chapman, 1909: 332; Mestayer, 1916: 129; Cushman, 1919: 606; Heron-Allen and Earland, 1922: 138; Hornibrook *in* Knox, 1951: 43; Vella, 1957: 10.

Family NONIONIDAE

Subfamily CHILOSTOMELLINAE

Genus CHILOSTOMELLA Reuss, 1849

Chilostomella cushmani Chapman, 1941

Chapman, 1941: 177, pl. 8, fig. 9; pl. 9, fig. 6; Cushman, 1919: 621 (as *Chilostomella ovoidea*); Cushman, 1926a: 75, pl. 11, fig. 12 (as *Chilostomella grandis*).

Cushman (1926a) places *C. ovoidea* of Cushman (1919) in the synonymy of *C. grandis* but later Chapman (1941) places *C. ovoidea* of Cushman (1919) in the synonymy of *C. cushmani*.

Chilostomella ovoidea Reuss, 1850

Reuss, 1850: 380, pl. 48, fig. 12; Brady, 1884: 91, 436, pl. 55, figs. 12–23; Murray, 1895: 610; Mestayer, 1916: 129; Heron-Allen and Earland, 1922: 142; Kustanowich, 1965: 52.

Genus **QUADRIMORPHINA** Finlay, 1939

Quadrिमorphina allomorphinoides (Reuss, 1860)

Reuss, 1860: 223, pl. 11, fig. 6 (as *Valvulina*); Chapman, 1909: 357 (as *Discorbina*).

Subfamily **NONIONINAE**

Genus **NONION** Montfort, 1808

Nonion commune (d'Orbigny, 1826)

d'Orbigny, 1826: 294, No. 20 (as *Nonionina*); Heron-Allen and Earland, 1922: 228.

Nonion depressulum (Walker and Jacob, 1798)

Walker and Jacob, 1798: 641, pl. 14, fig. 33 (as *Nautilus*); Haeusler, 1887: 200 (as *Nonionina*); Chapman, 1909: 363; Mestayer, 1916: 130; Heron-Allen and Earland, 1922: 226.

Nonion pacificum (Cushman, 1924)

Cushman, 1924: 48, pl. 16, fig. 3 (as *Nonionina umbilicatula* var.); Vella, 1957: 11, 14 (as *Nonion pacificum*).

Nonion pauperatum (Balkwill and Wright, 1885)

Balkwill and Wright, 1885: 353, pl. 13, figs. 25, 26 (as *Nonionina*); Heron-Allen and Earland, 1922: 228.

Nonion scaphum (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 105, pl. 19, figs. d-f (as *Nautilus*); Haeusler, 1887: 200 (as *Nonionina*); Chapman, 1909: 364; Mestayer, 1916: 130; Heron-Allen and Earland, 1922: 228.

Nonion subturgidum (Cushman, 1924)

Cushman, 1924: 47, pl. 16, fig. 2; Kustanowich, 1965: 53.

Nonion umbilicatum (Walker and Jacob, 1798)

Walker and Jacob, 1798: 641, pl. 14, fig. 33 (as *Nautilus*); Murray, 1895: 605 (as *Nonionina*); Chapman, 1906: 107; Chapman, 1909: 363; Mestayer, 1916: 130; Cushman, 1919: 632; Heron-Allen and Earland, 1922: 227.

Genus **ASTRONONION** Cushman and Edwards, 1937

Astrononion novozealandicum Cushman and Edwards, 1937

Cushman and Edwards, 1937: 35, pl. 3, fig. 18; Heron-Allen and Earland, 1922: 227 (as *Nonion umbilicatum*, part); Hornibrook in Knox, 1951: 43 (as *A. novozealandicum*); Hornibrook, 1952: 185; Vella, 1957: 11, 13; Hulme, 1964: 332; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1965: 24, pl. 7, fig. 28; Hedley, Hurdle, and Burdett, 1967.

Hedley *et al.* (1965) places *N. umbilicatum* of Heron-Allen and Earland (1922, part) in the synonymy of *A. novozealandicum*.

Astrononion stelligerum (d'Orbigny, 1939)

d'Orbigny, 1839b: 128, pl. 3, figs. 1, 2 (as *Nonionina*); Heron-Allen and Earland, 1922: 227.

Genus **FLORILUS** Montfort, 1808

Florilus asterizans (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 37, pl. 3, figs. e-h (as *Nautilus*); Haeusler, 1887: 200 (as *Nonionina*); Hulme, 1964: 331 (as *Nonion*).

Florilus auricula (Heron-Allen and Earland, 1930)

Heron-Allen and Earland, 1930: 192, pl. 5, figs. 68-70 (as *Nonionella*); Hulme, 1964: 332.

Florilus boueanus (d'Orbigny, 1846)

d'Orbigny, 1846: 108, pl. 5, figs. 11, 12 (as *Nonionina*); Chapman, 1909: 364; Mestayer, 1916: 130; Heron-Allen and Earland, 1922: 227.

Florilus flemingi (Vella, 1957)

Vella, 1957: 11, 13, 37, pl. 9, figs. 183, 184 (as *Nonion*); Hulme, 1964: 331; Kustanowich, 1965: 53; Hedley, Hurdle, and Burdett, 1967: (as *Florilus*).

Florilus cf. grateloupi (d'Orbigny, 1826)

cf. d'Orbigny, 1826: 294, No. 19 (as *Nonionina*); Hulme, 1964: 332 (as *Nonion*).

Genus **NONIONELLA** Cushman, 1926

Nonionella magnalingua Finlay, 1940

Finlay, 1940: 456, pl. 65, figs. 144, 146; Vella, 1957: 11.

Nonionella turgida (Williamson, 1858)

Williamson, 1858: 50, pl. 4, figs. 95-97 (as *Rotalina*); Mestayer, 1916: 130 (as *Nonionina*); Heron-Allen and Earland, 1922: 228; Barker, 1960: 224, pl. 109, figs. 17-19 (as *Nonionella*); Kustanowich, 1965: 53.

Nonionella cf. turgida (Williamson, 1858)

Vella, 1957: 11.

Nonionella cf. turgida (Williamson, 1858)

Hulme, 1964: 332.

Genus **PULLENIA** Parker and Jones, 1862

Pullenia bulloides (d'Orbigny, 1826)

d'Orbigny, 1826: 293, No. 2 (as *Nonionina*); Murray, 1895: 605 (as *Pullenia sphaeroides*); Chapman, 1906: 101; Heron-Allen and Earland, 1922: 194; Vella, 1957: 10 (as *P. bulloides*); Kustanowich, 1965: 52.

Cushman and Todd (1943:13) suggest that d'Orbigny's name *Pullenia sphaeroides* be allowed to lapse.

Pullenia quinqueloba (Reuss, 1851)

Reuss, 1851b: 71, pl. 5, fig. 31 (as *Nonionina*); Murray, 1895: 610 (as *Pullenia*); Chapman, 1906: 101; Mestayer, 1916: 129; Cushman, 1919: 623; Heron-Allen and Earland, 1922: 193; Vella, 1957: 10; Kustanowich, 1965: 53.

Genus **ZEAFLOLILUS** Vella, 1962

Zeafloflilus parri (Cushman, 1936)

Cushman, 1936b: 89, pl. 13, fig. 17 (as *Nonionella*); Vella, 1957: 11 (as *Pseudononion*); Hulme, 1964: 332 (as *Nonionella*); Hedley, Hurdle, and Burdett, 1967: (as *Zeafloflilus*).

Family ALABAMINIDAE

Genus **GYROIDINA** d'Orbigny, 1826

Gyroidina orbicularis d'Orbigny, 1826

d'Orbigny, 1826: 278, No. 1; Murray, 1895: 605 (as *Rotalia*); Heron-Allen and Earland, 1922: 219.

Genus **ORIDORSALIS** Anderson, 1961

Oridorsalis tenera (Brady, 1884)

Brady, 1884: 665, pl. 95, fig. 11 (as *Truncatulina*); Murray, 1895: 605; Heron-Allen and Earland, 1922: 211; Hornibrook, 1952: 185 (as *Eponides*); Vella, 1957: 10; Barker, 1960: 196, pl. 95, fig. 11; Hedley, Hurdle, and Burdett, 1965: 24.

Oridorsalis umbonatus (Reuss, 1851)

Reuss, 1851b: 75, pl. 5, fig. 35 (as *Rotalia*); Heron-Allen and Earland, 1922: 216 (as *Pulvinulina*); Kustanowich, 1965: 53 (as *Eponides*).

Family OSANGULARIIDAE

Genus **GYROIDINOIDES** Brotzen, 1942

Gyroidinoides neosoldanii (Brotzen, 1936)

Brotzen, 1936: 158 (as *Gyroidina*); Murray, 1895: 605 (as *Rotalia soldanii*); Vella, 1957: 10 (as *Gyroidina neosoldanii*).

Brotzen (1936) places *R. soldanii* of Brady (1884), listed by Murray (1895), in the synonymy of *G. neosoldanii*.

Gyroidinoides soldanii (d'Orbigny, 1826)

d'Orbigny, 1826: 278, No. 5 (as *Gyroidina*); Chapman, 1906: 106 (as *Rotalia*); Chapman, 1909: 362; Mestayer, 1916: 130; Cushman, 1919: 631; Heron-Allen and Earland, 1922: 219.

Family ANOMALINIDAE

Subfamily ANOMALININAE

Genus **ANOMALINA** d'Orbigny, 1826

Anomalina colligera Chapman and Parr, 1937

Chapman and Parr, 1937: 117, pl. 9, fig. 26; Brady, 1884: 672, pl. 94, figs. 2, 3 (as *Anomalina ammonoides*).

Chapman and Parr (1937) place *A. ammonoides* of Brady (1884) in the synonymy of *A. colligera*.

Anomalina grosserugosa (Gumbel, 1868)

Gumbel, 1868: 660, pl. 2, fig. 104 (as *Truncatulina*); Chapman, 1909: 359, pl. 17, fig. 9 (as *Anomalina*); Cushman, 1919: 628.

Anomalina sinuosa Sidebottom, 1918

Sidebottom, 1918: 258, pl. 6, figs. 22–25; Heron-Allen and Earland, 1922: 213.

Genus **ANOMALINOIDES** Brotzen, 1942

Anomalinoides spherica (Finlay, 1940)

Finlay, 1940: 460, pl. 66, figs. 166–171 (as *Anomalina*); Hornibrook in Knox, 1951: 43 (as *Anomalinoides*); Hornibrook in Fleming, 1952: 82.

Anomalinoides spherica (Finlay) **frigindex** Vella, 1957

Vella, 1957: 11, 13, 39, pl. 9, figs. 192–194; Hulme, 1964: 338; Kustanowich, 1965: 53.

Genus **DISCANOMALINA** Asano, 1951

Discanomalina semipunctata (Bailey, 1851)

Bailey, 1851: 11, pl. 17–19 (as *Rotalina*); Brady, 1884: 676, pl. 97, figs. 3–7 (as *Anomalina polymorpha*); Chapman, 1906: 104; Heron-Allen and Earland, 1922: 212.

Cushman (1931a: 106) places *A. polymorpha* in the synonymy of *Anomalina semipunctata*.

Genus **KARRERIA** Rzehak, 1891

Karrerria maoria (Finlay, 1939)

Finlay, 1939c: 326, pl. 29, figs. 148–151, 158 (as *Vagocibicides*); Vella, 1957: 11.

Genus **MELONIS** Montfort, 1808

Melonis pompilioides (Fichtel and Moll, 1798)

Fichtel and Moll, 1798: 31, pl. 2, figs. a–c (as *Nautilus*); Heron-Allen and Earland, 1922: 227 (as *Nonionina*).

Genus **PAROMALINA** Loeblich and Tappan, 1957

Paromalina coronata (Parker and Jones, 1857)

Parker and Jones, 1857: 294, pl. 10, figs. 15, 16 (as *Anomalina*); Brady, 1884: 91, 675, pl. 97, figs. 1–2; Chapman, 1909: 360, pl. 17, fig. 10; Mestayer, 1916: 130; Heron-Allen and Earland, 1922: 212; Hornibrook, 1952: 185.

Superfamily ROBERTINACEA

Family CERATOBULIMINIDAE

Subfamily CERATOBULIMININAE

Genus **CERATOBULIMINA** Toula, 1915

Ceratobulimina contraria (Reuss, 1851)

Reuss, 1851b: 76, pl. 5, fig. 37 (as *Rotalina*); Chapman, 1909: 331 (as *Bulimina*).

Genus **LAMARCKINA** Berthelin, 1881

Lamarckina haliotidea (Heron-Allen and Earland, 1911)

Heron-Allen and Earland, 1911: 338, pl. 11, figs. 6–11 (as *Pulvinulina*); Heron-Allen and Earland, 1922: 215.

Lamarckina cf. **tuberculata** (Balkwill and Wright)

cf. Balkwill and Wright, 1885: 350, pl. 13, figs. 28–30 (as *Discorbina*); Vella, 1957: 11 (as *Lamarckina* cf.).

Subfamily EPISTOMININAE

Genus **HOEGLUNDINA** Brotzen, 1948

Hoeglundina elegans (d'Orbigny, 1826)

d'Orbigny, 1826: 272, No. 6 (as *Rotalia*); Brady, 1884: 91–92, 699, pl. 105, figs. 4–6 (as *Pulvinulina*); Haeusler, 1887: 200; Murray, 1895: 605, 610; Chapman, 1909: 362; Mestayer, 1916: 130; Cushman, 1919: 631; Heron-Allen and Earland, 1922: 218; Vella, 1957: 11 (as *Hoglundina*); Kustanowich, 1965: 53.

Genus **MISSISSIPPINA** Howe, 1930

Mississippina concentrica (Parker and Jones, 1864)

Parker and Jones (MS) in Brady, 1864: 470, pl. 48, fig. 14 (as *Pulvinulina*); Chapman, 1909: 360; Cushman, 1919: 629; Heron-Allen and Earland, 1922: 214.

Mississippina cf. pacifica Parr, 1950

cf. Parr, 1950: 361, pl. 14, fig. 17; Hulme, 1964: 334.

Family **ROBERTINIDAE**

Genus **ROBERTINA** d'Orbigny, 1846

Robertina declivis (Reuss, 1863)

Reuss, 1863a: 55, pl. 6, fig. 70; pl. 7, fig. 71 (as *Bulimina*); Heron-Allen and Earland, 1922: 130.

Robertina subteres (Brady, 1881)

Brady, 1881: 55 (as *Bulimina*); Chapman, 1909: 330, pl. 14, fig. 10; Heron-Allen and Earland, 1922: 130.

Genus **CEROBERTINA** Finlay, 1939

Cerobertina tenuis (Chapman and Parr, 1937)

Chapman and Parr, 1937: 80, pl. 7, fig. 11 (as *Ceratobulimina*); Finlay, 1939b: 119, pl. 11, figs. 4, 5 (as *Cerobertina*); Hornibrook in Fleming, 1952: 82.

Genus **PSEUDOBULIMINA** Earland, 1934

Pseudobulimina convoluta (Williamson, 1858)

Williamson, 1858: 63, pl. 5, figs. 132, 133 (as *Bulimina pupoides* var.); Heron-Allen and Earland, 1922: 130 (as *Bulimina*).

Genus **ROBERTINOIDES** Hoglund, 1947

Robertinoides cf. pumilum Hoglund, 1947

cf. Hoglund, 1947: 227, pl. 18, fig. 5; Kustanowich, 1965: 52.

Robertinoides subcylindricus (Brady, 1881)

Brady, 1881: 56 (as *Bulimina*); Cushman and Parker 1947: 75, pl. 18, fig. 13 (as *Robertina*).

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INDEX TO GENERA AND SPECIES

- abbreviata* (*Textularia*) 19
abyssorum (*Rhabdammina*) 14
acanthia (*Bulimina*) 40
acervalis (*Planorbulina*) 51
Acervulina 51
aculeata (*Bulimina*) 40
aculeata (*Euuvigerina*) 41
acuta (*Fissurina*) 35
acuta (*Jaculella*) 15
acutauricularis (*Saracenaria*) 33
acuticosta (*Lagena*) 30
adaperta (*Trochammina*) 20
Adercotryma 18
adolphina (*Stilostomella*) 40
aduncus (*Reophax*) 17
advena (*Dentalina*) 29
advena (*Patellina*) 45
advena (*Proxifrons*) 32
advena (*Reophax*) 17
advenum (*Elphidium*) 46
aenariensis (*Brizalina*) 38
affinis (*Bulimina*) 40
agglutinans (*Ammobaculites*) 18
agglutinans (*Siphonaperta*) 27
agglutinans (*Textularia*) 19
akneriana (*Quinqueloculina*) 24
aknerianus (*Cibicides*) 50
alata (*Brizalina*) 38
alba (*Miniacina*) 51
alba (*Saccammina*) 15
albicans (*Thurammina*) 15
albida (*Storithosphaera*) 15
algaeformis (*Rhizammina*) 14
allomorphinoides (*Quadriformina*) 53
altocamerata (*Laticarinina*) 43
alveolata (*Fissurina*) 35
Alveolophragmium 18
americanus (*Ammobaculites*) 18
Ammobaculites 18
Ammobaculoides 18
Ammodiscoides 16
Ammodiscus 16
Ammolagena 17
Ammomarginulina 18
Ammonia 46
ammonoides (*Nummulites*) 47
Ammoscalaria 18
Ammosphaeroidina 21
Ammotium 19
Amphicoryna 29
ampullacea (*Neouuvigerina*) 41
ampulla-distoma (*Oolina*) 35
anceps (*Globotextularia*) 22
angulata (*Quinqueloculina*) 24
angulosa (*Trifarina*) 41
angusta (*Pyrulina*) 34
annectens (*Fissurina*) 35
annularis (*Annulopatellina*) 51
annularis (*Fronicularia*) 30
Annulopatellina 51
anomala (*Pyrgo*) 26
Anomalina 54
Anomalinoides 54
antarctica (*Fischerina*) 23
antarcticus (*Robulus*) 32
aoteanus (*Ammonia*) 46
aperturalis (*Siphotextularia*) 20
apicularis (*Karrerella*) 22
apiculata (*Oolina*) 35
araucana (*Rosalina*) 43
arborescens (*Dendronina*) 15
arenacea (*Parvigenerina*) 20
arenaria (*Astrorhiza*) 14
arenaria (*Massilina*) 25
argenteum (*Criboelphidium*) 47
argenteus (*Bathysiphon*) 14
ariminensis (*Planulina*) 50
ariminensis (*Quinqueloculina*) 24
articulata (*Lenticulina*) 31
aspera (*Lagena*) 30
aspera (*Textularia*) 19
asperula (*Massilina*) 25
asperula (*Neouuvigerina*) 41
Astacolus 29
asterizans (*Florilus*) 53
astrifica (*Trochammina*) 20
Astrononion 53
Astrorhiza 14
auberiana (*Quinqueloculina*) 24
auberiana (*Uvigerina*) 41
aucklandia (*Notorotalia*) 47
auricula (*Florilus*) 53
auriculata (*Fissurina*) 36
auriculus (*Cancris*) 44
australensis (*Glabratella*) 44
australis (*Bulimina*) 40
australis (*Guttulina*) 33
australis (*Miliolinella*) 27
australis (*Robulus*) 32
austriaca (*Guttulina*) 33

baccata (*Discorbis*) 42
baconica (*Planodiscorbis*) 43
Baculogypsina 46
barrettii (*Textulariella*) 22
bartrami (*Trochammina*) 20
bartschi (*Guttulina*) 33
Bathysiphon 14
Beella 49
bertheloti (*Discorbinella*) 42
berthelotianus (*Eponides*) 49
beyrichi (*Brizalina*) 38
biancae (*Fissurina*) 36
Biarritzina 46
bicarinata (*Fissurina*) 36
biconcavus (*Planulinoides*) 43
bicornis (*Quinqueloculina*) 24
bicostata (*Quinqueloculina*) 24
bicostoides (*Quinqueloculina*) 24
biformis (*Spiroplectammina*) 19
bifrons (*Rectobolivina*) 39
Bigenerina 20
biloculi (*Lingulina*) 33
Biloculinella 28
biserialis (*Dyocibicides*) 51
blacki (*Siphotextularia*) 20
Bolivina 38
Bolivinita 38
borealis (*Oolina*) 35
bosciana (*Quinqueloculina*) 24
bosoense (*Elphidium*) 46
Botellina 15
botelliformis (*Oolina*) 35
boueanus (*Florilus*) 53

bowmanni (*Psammosphaera*) 15
Brachysiphon 15
bradyana (*Quinqueloculina*) 24
bradyi (*Cassidulinoides*) 39
bradyi (*Cylindroclavulina*) 22
bradyi (*Eggerella*) 22
bradyi (*Eponides*) 49
bradyi (*Frondicularia*) 30
bradyi (*Fursenkoina*) 51
bradyi (*Hemisphaerammina*) 16
bradyi (*Karrieriella*) 22
bradyi (*Marginulinopsis*) 32
bradyi (*Parrina*) 28
bradyi (*Rosalina*) 43
bradyi (*Techinitella*) 15
bradyi (*Trifarina*) 42
brevidentata (*Triloculina*) 27
Brizalina 38
brodiei (*Massilina*) 25
brongiartii (*Triloculina*) 27
Bronnimannia 42
bruckenthali (*Vaginulina*) 33
brunnensis (*Uvigerina*) 41
Buccella 42
bucculentus (*Planispirinoides*) 24
buchiana (*Bulimina*) 40
Bulimina 40
Buliminella 37
Buliminoides 38
bullae (*Tholosina*) 16
bulloides (*Globigerina*) 48
bulloides (*Pullenia*) 53
bulloides (*Pyrgo*) 26
bulloides (*Sphaeroidina*) 38

cacozela (*Brizalina*) 38
calcar (*Robulus*) 32
calcareus (*Ammobaculites*) 18
calcarata (*Glabratella*) 44
Calcituba 23
calida (*Globigerina*) 48
californica (*Frondicularia*) 30
calomorpha (*Nodosaria*) 28
canariensis (*Globorotalia*) 47
canariensis (*Haplophragmoides*) 17
canariensis (*Uvigerina*) 41
cancellata (*Cyclammina*) 18
Cancris 44
candeiana (*Quinqueloculina*) 24
candeiana (*Textularia*) 19
Candeina 49
carinata (*Cyclogyra*) 22
carinata (*Lingulina*) 33
carinata (*Trifarina*) 42
Cassidulina 52
Cassidulinoides 39
cassis (*Ammotium*) 19
castrensis (*Fissurina*) 36
catenulata (*Nodosaria*) 28
caudata (*Dentalina*) 29
celata (*Sigmoilopsis*) 26
cenomana (*Placopsilina*) 19
Ceratobulimina 54
Cerobertina 55
challengeriana (*Orthomorphina*) 32
chapmani (*Marsipella*) 14
chapmani (*Tubinella*) 28
charlottensis (*Criboelphidium*) 47
charoides (*Glomospira*) 16
Chilostomella 52
chrysostoma (*Triloculina*) 27
Cibicidella 51
Cibicides 50
cicatricosus (*Cibicides*) 50
circularis (*Miliolinella*) 27
circularis (*Spiroloculina*) 23
clathrata (*Fissurina*) 36

clathrata (*Notorotalia*) 47
clavata (*Ammolagena*) 17
cliarensis (*Fischerina*) 23
clypeato-marginata var. *crassa* (*Fissurina*) 36
colleenae (*Quinqueloculina*) 24
colligera (*Anomalina*) 54
collumellaris (*Rectobolivina*) 39
comata (*Nodosaria*) 28
comata (*Pyrgo*) 26
commune (*Nonion*) 53
communis (*Dentalina*) 29
communis (*Martinottiella*) 22
communis (*Spiroloculina*) 23
compacta (*Brizalina*) 38
complanata (*Discorbinella*) 42
compressa (*Discammina*) 18
compressa (*Planularia*) 32
compressa (*Sphaeroidina*) 38
compta (*Frondicularia*) 30
concava (*Siphotextularia*) 20
concentrica (*Mississippina*) 55
concinna (*Rosalina*) 43
conglobatus (*Globigerinoides*) 49
conglomerata (*Globoquadrina*) 49
conica (*Textularia*) 19
conica (*Tritaxis*) 21
consobrina (*Stilostomella*) 40
contortus (*Recurvoides*) 18
contraria (*Ceratobulimina*) 54
contraria (*Nummoloculina*) 28
convergens (*Lenticulina*) 31
convexa (*Gaudryina*) 21
convoluta (*Pseudobulimina*) 55
cooki (*Quinqueloculina*) 24
cora (*Rosalina*) 43
corbuliniformis (*Brachysiphon*) 15
Cornuloculina 23
Cornuspirella 23
Cornuspiroides 23
cornuta (*Rhabdammina*) 14
coronata (*Paromalina*) 54
corrugata (*Patellina*) 45
corticatus (*Cibicides*) 50
costata (*Marginulina*) 31
costatus (*Robulus*) 32
crassa (*Globocassidulina*) 52
crassa (*Globorotalia*) 48
crassa (*Siphonaperta*) 27
crassaformis (*Globorotalia*) 48
crassimargo (*Cribrostomoides*) 18
craticulata (*Rotalia*) 46
crenata (*Lagena*) 30
crepidulus (*Astacolus*) 29
cretacea (*Globigerina*) 48
Criboelphidium 47
Cribrostomoides 18
crispum (*Elphidium*) 46
Crithionina 16
culter (*Cibicides*) 50
cultrata (*Quinqueloculina*) 24
cultratus (*Robulus*) 32
cushmani (*Chilostomella*) 52
Cyclammina 18
Cyclogyra 22
cylindrica (*Marsipella*) 14
cylindrica (*Pelosina*) 15
Cylindroclavulina 22
cylindroides (*Pyralina*) 34
Cymbaloporetta 51
cymboides (*Astacolus*) 29
Cystammina 21

Daitrona 16
danica (*Fissurina*) 36
davisi (*Fursenkoina*) 51
decipiens (*Elphidium*) 46
declivis (*Robertina*) 55
decorata (*Nubecularia*) 23

decorata (*Spirillina*) 45
dehiscens (*Sphaeroidinella*) 49
delicatula (*Quinqueloculina*) 24
deliquatus (*Cibicides*) 50
Dendronina 15
Dentalina 29
dentaliniformis (*Lagena*) 30
dentaliniformis (*Reophax*) 17
denticulata (*Planispirillina*) 45
denticulata (*Pyrgo*) 26
denticulifera (*Lenticulina*) 31
denudata (*Bulimina*) 40
depressa (*Biloculinella*) 28
depressa (*Buccella*) 42
depressa (*Hemisphaerammina*) 16
depressa (*Notorotalia*) 47
depressa (*Spiroloculina*) 23
depressulum (*Nonion*) 53
desmophora (*Oolina*) 35
diaphana (*Iridia*) 14
diffugiiformis (*Saccammina*) 15
diffusa (*Cornuspirella*) 23
digitata (*Beella*) 49
digitata (*Hastigerinella*) 49
dilatata (*Brizalina*) 39
dimidiatus (*Discorbis*) 42
dimorpha (*Rectobolivina*) 39
Discammina 18
Discanomalina 54
Discorbinella 42
Discorbis 42
discreta (*Bathysiphon*) 14
disparilis (*Bronnimannia*) 42
disparilis (*Quinqueloculina*) 24
disparilis (*Spiroloculina*) 23
distans (*Reophax*) 17
distoma (*Lagena*) 30
distoma-margaritifera (*Lagena*) 30
Dorothia 22
dubia (*Globigerina*) 48
duertrei (*Globigerina*) 48
Dyocibicides 51

earlandi (*Ammobaculoides*) 18
earlandi (*Fissurina*) 36
earlandi (*Seabrookia*) 35
earlandi (*Textularia*) 19
echinata (*Bulimina*) 40
edwardsi (*Sigmoilina*) 26
Eggerella 22
Ehrenbergina 52
elegans (*Buliminella*) 37
elegans (*Hoeglundina*) 55
elegantissima (*Buliminella*) 38
elegantissima (*Sigmoidella*) 34
elevata (*Globigerinita*) 49
elongata (*Bulimina*) 40
elongata (*Hyperammina*) 14
elongata (*Lagena*) 30
elongata (*Marsipella*) 14
elongata (*Pyrgo*) 26
Elphidium 46
emaciata (*Dentalina*) 29
enderbiensis (*Fissurina*) 36
ensis (*Textularia*) 19
Epistominella 42
Eponides 49
euneta (*Reophax*) 17
Euvigerina 41
excavata (*Spiroloculina*) 23
exigua (*Epistominella*) 42
exigua (*Planispirinella*) 23
exiguus (*Ammobaculites*) 18
exilis (*Bulimina*) 40
expansus (*Cornuspiroides*) 23
exsculpta (*Fissurina*) 36
exsertus (*Ammodiscus*) 16
ezo (*Pyrgo*) 26

falconensis (*Globigerina*) 48
farcimen (*Dentalina*) 29
fasciata (*Fissurina*) 36
Favocassidulina 52
favus (*Favocassidulina*) 52
ferruginea (*Gaudryina*) 21
ferussacii (*Quinqueloculina*) 24
filiformis (*Bathysiphon*) 14
filiformis (*Dentalina*) 29
filiformis (*Dorothia*) 22
fimbriata (*Fissurina*) 36
finlayi (*Notorotalia*) 47
finlayi (*Sigmoilopsis*) 26
Fischerina 23
Fischerinella 23
Fissurina 35
fistula (*Textularia*) 19
flautenta (*Lagena*) 30
flemingi (*Florilus*) 53
flexuosa (*Quinqueloculina*) 24
flintii (*Nodosaria*) 28
Florilus 53
foliaceus (*Ammomarginulina*) 18
foliaceus (*Cornuspiroides*) 23
formosa (*Fissurina*) 36
fornasini (*Pyrgo*) 26
foveolata (*Lagena*) 30
foveolata (*Spiroloculina*) 24
fragilissima (*Hauerina*) 28
fretensis (*Siphotextularia*) 20
friabilis (*Hyperammina*) 14
frigida (*Buccella*) 42
Fronicularia 30
funalis (*Tubinella*) 28
fungiformis (*Textularia*) 19
Fursenkoina 51
fusca (*Psammosphaera*) 15
fusca (*Quinqueloculina*) 25
fusca (*Tritaxis*) 21
fusiiformis (*Fursenkoina*) 51
fusiiformis (*Reophax*) 17

gaimardii (*Ammonia*) 46
Gaudryina 21
Gavelinopsis 42
gibba (*Bulimina*) 40
gibba (*Globulina*) 33
gibba (*Lenticulina*) 31
glabra (*Ehrenbergina*) 52
glabra (*Marginulina*) 31
Glabrata 44
Glandulina 34
Globigerina 48
globigeriniformis (*Trochammina*) 20
Globigerinita 49
Globigerinoides 49
Globobulimina 40
Globocassidulina 52
Globoquadrina 49
Globorotalia 47
Globorotaloides 49
globosa (*Oolina*) 35
Globotextularia 22
globularis (*Rosalina*) 43
globulifera (*Hormosina*) 17
globulifera (*Ramulina*) 34
Globulina 33
globulus (*Pyrgo*) 26
globulus (*Sphaerogypsina*) 51
glomeratum (*Adercotryma*) 18
Glomospira 16
glutinata (*Globigerinita*) 49
Goesella 22
goesii (*Textularia*) 19
gracilis (*Lagena*) 30
gracilis (*Nodosaria*) 28
gracilis (*Trifarina*) 42

gracilis (*Triloculina*) 27
gracillima (*Lagena*) 30
gramen (*Textularia*) 19
grandiformis (*Haplophragmoides*) 17
grandis (*Lingulina*) 33
grant-taylori (*Bolivinita*) 38
granum (*Crithionina*) 16
grosserugosa (*Anomalina*) 54
grateloupi (*Florilus*) 53
gualtieriana (*Quinqueloculina*) 25
guerreri (*Pyrgo*) 26
gunteri (*Elphidium*) 46
guttifer (*Reophax*) 17
Guttulina 33
Gypsina 51
Gyroidina 54
Gyroidinoides 54

haidingerii (*Cibicides*) 50
haliotidea (*Lamarckina*) 54
hamatus (*Gavelinopsis*) 42
Haplophragmoides 17
harmeri (*Glabratella*) 44
harrisii (*Nouria*) 17
Hastigerina 47
Hastigerinella 49
hauerii (*Cancris*) 44
Hauerina 28
hauerinoides (*Pateoris*) 25
helicina (*Globigerina*) 48
helix (*Fischerinella*) 23
Hemisphaerammina 16
henbesti (*Spiroloculina*) 24
heronalleni (*Parvigerina*) 20
Heronallenia 45
hertwigiana (*Lagena*) 30
heterostoma (*Siphotextularia*) 20
hexagona (*Globorotaloides*) 49
hexagona (*Oolina*) 35
hirsuta (*Amphicoryna*) 29
hirsuta (*Globorotalia*) 48
hispida (*Crithionina*) 16
hispida (*Lagena*) 30
Hoeglundina 55
hollicki (*Euvigerina*) 41
Hopkinsina 41
Hormosina 17
hornibrooki (*Scutularis*) 28
horrida (*Textularia*) 19
horrida (*Tolypammina*) 16
humboldti (*Eggerella*) 22
Hyperammina 14

idae (*Triloculina*) 27
inaequalis (*Fronidularia*) 30
inaequalis (*Globulina*) 33
inaequalis (*Spirillina*) 45
inaequalilateralis (*Parafissurina*) 37
incertus (*Ammodiscus*) 16
incisa (*Quinqueloculina*) 25
inconspicua (*Patellinella*) 43
inconstans (*Cornuloculina*) 23
indivisa (*Rhizammina*) 14
inflata (*Bulimina*) 40
inflata (*Globorotalia*) 48
inflata (*Parvigerina*) 20
inflata (*Trochammina*) 20
inflata (*Vaginulina*) 33
inhaerens (*Acervulina*) 51
inornata (*Notorotalia*) 47
inornata (*Tubinella*) 28
insignis (*Triloculina*) 27
interrupta (*Neouvigerina*) 41
invovens (*Cyclogyra*) 22
iota (*Globigerinita*) 49
iota (*Lenticulina*) 31
Iridia 14
irregularis (*Ammolagena*) 17

irregularis (*Guttulina*) 33
irregularis (*Nummoloculina*) 28
irregularis (*Rosalina*) 43
isabelleana (*Gavelinopsis*) 42
islandica (*Islandiella*) 39
Islandiella 39
italica (*Saracenaria*) 33

Jaculella 15
jeffreysi (*Cribrostomoides*) 18

kagaensis (*Sigmoidella*) 34
kapitiensis (*Quinqueloculina*) 25
Karrerria 54
karrerrianum (*Loxostomum*) 52
Karrerriella 22
kiensis (*Fronidularia*) 30

labyrinthica (*Botellina*) 15
labiosa (*Miliolinella*) 27
lacrimosa (*Sigmomorphina*) 34
lactea (*Guttulina*) 34
lacunata (*Fissurina*) 36
lacunosa (*Cyclogyra*) 23
laevigata (*Cassidulina*) 52
laevigata (*Fissurina*) 36
laevigata (*Glandulina*) 34
laevigata (*Hyperammina*) 14
laevigata (*Quinqueloculina*) 25
laevis (*Lagena*) 30
laevis (*Pyrgo*) 26
laevis (*Ramulina*) 34
Lagena 30
lagenoides (*Fissurina*) 36
lamarckiana (*Quinqueloculina*) 25
Lamarckina 54
Laryngosigma 35
lata (*Quinqueloculina*) 25
Laticarinina 43
latifrons (*Saracenaria*) 33
latus (*Astaculus*) 29
legumen (*Vaginulina*) 33
lens (*Daitrona*) 16
Lenticulina 31
lidoense (*Elphidium*) 46
Liebusella 22
ligua (*Pseudopolymorphina*) 34
limbata (*Spirillina*) 45
limbatum (*Loxostomum*) 52
limbosus (*Robulus*) 32
limosa (*Dendronina*) 15
linearis (*Rhabdammina*) 14
lineata (*Oolina*) 35
lingulata (*Heronallenia*) 45
Lingulina 33
linneiana (*Triloculina*) 27
lobatulus (*Cibicides*) 50
lobatulus (*Gavelinopsis*) 42
lobatum (*Loxostomum*) 52
lowmani (*Brizalina*) 39
Loxostomum 52
lucernula (*Pyrgo*) 26
lucida (*Fissurina*) 36
lucida (*Spirillina*) 45
lucifuga (*Nubecularia*) 23
lyelii (*Lagena*) 30
lythostrota (*Textularia*) 19

macellum (*Elphidium*) 46
madagascariensis (*Buliminella*) 38
magnalingua (*Nonionella*) 53
magnifica (*Planularia*) 32
malcomsonii (*Fissurina*) 36
malovensensis (*Brizalina*) 39
mamilla (*Crithionina*) 16
mamilligera (*Lenticulina*) 31
maoria (*Karrerria*) 54

maoricus (*Canceris*) 44
margaritaceus (*Glabratella*) 44
margaritifera (*Spirillina*) 45
margaritifera (*Ophthalmidium*) 23
marginata (*Bulimina*) 40
marginata (*Fissurina*) 36
marginato-perforata (*Fissurina*) 37
Marginulina 31
Marginulinopsis 32
marlboroughensis (*Cibicides*) 50
Marsipella 14
Martinottiella 22
Massilina 25
mediterraneensis (*Planorbulina*) 51
mediterraneensis (*Rosalina*) 43
megastoma (*Globigerina*) 48
melo (*Oolina*) 35
Melonis 54
mestayerae (*Siphotextularia*) 20
mestayeri (*Ammodiscoides*) 16
mestayeri (*Ehrenbergina*) 52
mestayeri (*Hyperammina*) 14
miles (*Quinqueloculina*) 25
Miliammina 17
Miliolinella 27
milletti (*Elphidium*) 46
millettii (*Glabratella*) 44
milletti (*Massilina*) 25
miniacea (*Miniacina*) 51
Miniacina 51
minuta (*Globulina*) 33
Mississippina 55
monile (*Hormosina*) 17
moniliformis (*Trochammina*) 21
mucronata (*Dentalina*) 29
murrhyna (*Pyrgo*) 26

nana (*Reophax*) 17
nana (*Trochammina*) 21
neocarinata (*Cassidulina*) 52
Neoconorbina 43
neolatus (*Astacolus*) 29
Neoeponides 50
neosigmoilinooides (*Quinqueloculina*) 25
neosoldanii (*Gyroidinoides*) 54
Neouvigerina 41
nitida (*Candeina*) 49
nitida (*Spiroloculina*) 24
nitida (*Trochammina*) 21
nobilis (*Brizalina*) 39
Nodobacularia 24
Nodosaria 28
nodosaria (*Bigenerina*) 20
nodulosus (*Reophax*) 17
Nonion 53
Nonionella 53
norcotti (*Planulinoides*) 43
normani (*Hormosina*) 17
Notorotalia 47
notovata (*Globobulimina*) 40
Nouria 17
novae-zealandiae (*Hyperammina*) 14
novae-zealandiae (*Spirillina*) 45
novozealandica (*Sigmoidella*) 34
novozealandicum (*Astrononion*) 53
novo-zealandicum (*Elphidium*) 46
Nubecularia 23
Nummoloculina 28
Nummulites 47

obconica (*Spirillina*) 45
obliqua (*Nodosaria*) 28
obliquiloculata (*Pulleniatina*) 49
oblonga (*Triloculina*) 27
oblongus (*Canceris*) 44
obscura (*Goesella*) 22
obtusa (*Jaculella*) 15

obtusa (*Rosalina*) 43
oceanicum (*Elphidium*) 46
ochracea (*Trochammina*) 21
olsoni (*Notorotalia*) 47
Oolina 35
opercularis (*Glabratella*) 44
Ophthalmidium 23
orbicularis (*Cyclammina*) 18
orbicularis (*Gyroidina*) 54
orbicularis (*Robulus*) 32
orbignyana (*Fissurina*) 37
Orbulina 49
Oridorsalis 54
orientalis (*Cassidulinoides*) 39
ornata (*Fissurina*) 37
ornata (*Planispirillina*) 45
Orthomorphina 32
ovalis (*Pseudopolymorphina*) 34
ovata (*Sigmoilina*) 26
ovoidea (*Chilostomella*) 52

pachyderma (*Globigerina*) 48
pacifica (*Globobulimina*) 40
pacifica (*Globocassidulina*) 52
pacifica (*Hopkinsina*) 41
pacifica (*Mississippina*) 55
pacifica (*Sigmoidella*) 34
pacificum (*Nonion*) 53
papillata (*Thurammina*) 15
paradoxa (*Lagena*) 30
Parafissurina 37
parisiensis (*Planodiscorbis*) 43
parkerianus (*Cassidulinoides*) 40
Paromalina 54
parri (*Brizalina*) 39
parri (*Zeaflorilus*) 53
Parrina 28
parva (*Psammosphaera*) 15
parvagggluta (*Siphonaperta*) 27
Parvigerina 20
patagonica (*Bulimina*) 40
patagonica (*Eponides*) 50
patagonica (*Quinqueloculina*) 25
patelliformis (*Glabratella*) 44
Patellina 45
Patellinella 43
Pateoris 25
pauciloculata (*Cystammina*) 21
pauciloculata (*Fursenkoina*) 51
pauperata (*Laticarinina*) 43
pauperata (*Stilostomella*) 40
paupereques (*Rosalina*) 44
pauperatum (*Nonion*) 53
pelagica (*Hastigerina*) 47
pelita (*Miliammina*) 17
pellita (*Nodosaria*) 28
pellucida (*Fischerinella*) 23
pellucida (*Seabrookia*) 35
Pelosina 15
peregrina (*Euvigerina*) 41
peregrina (*Lenticulina*) 31
perlucida (*Rosalina*) 44
peruviana (*Rosalina*) 44
pilulifer (*Reophax*) 17
pisum (*Crithionina*) 16
pisum (*Pyrgo*) 26
Placopsilina 19
Planispirillina 45
Planispirinella 23
Planispirinoides 24
planoconcava (*Laticarinina*) 43
Planodiscorbis 43
Planorbulina 51
Planularia 32
Planulina 50
Planulinoides 43
plicata (*Remaneica*) 21

Pliozea (Bolivinita) 38
plumigera (Lagena) 30
poeyana (Quinqueloculina) 25
pohana (Bolivinita) 38
polygona (Quinqueloculina) 25
polymorpha (Calcutuba) 23
polymorphinoides (Nouria) 17
polyrraphes (Discorbis) 42
polystropha (Verneuilina) 21
pompilioides (Melonis) 54
porrecta (Textularia) 19
porrectum (Loxostomum) 52
praecinctus (Cibicides) 50
praegeri (Gavelinopsis) 43
Praeglobobulimina 41
primitiva (Dyocibicides) 51
problema (Guttulina) 34
procerus (Neoeponides) 50
profunda (Notorotalia) 47
propinqua (Eggerella) 22
protea (Lagena) 30
protea (Tholosina) 16
proteiformis (Biarritzina) 46
Proxifrons 32
proxima (Amphicoryna) 29
proxispira (Textularia) 19
Psammosphaera 15
Pseudobulimina 55
pseudodistans (Reophax) 17
Pseudonodosaria 32
pseudo-plicata (Bolivina) 38
Pseudopolymorphina 34
pseudospiralis (Ammoscalaria) 18
pseudoungerianus (Cibicides) 50
pulchella (Fissurina) 37
Pullenia 53
Pulleniatina 49
pulvinulinoides (Heronallenia) 45
pumilio (Globorotalia) 48
pumilum (Robertinoides) 55
punctata (Brizalina) 39
punctulatus (Eponides) 50
pupoides (Praeglobobulimina) 41
pustulata (Planodiscorbis) 43
pygmaea (Brizalina) 39
pygmaea (Quinqueloculina) 25
pygmaea (Uvigerina) 41
Pyrgo 26
Pyrgoella 26
pyrula (Bulimina) 40
pyrula (Nodosaria) 28
Pyrulina 34

quadrangularis (Gaudryina) 21
quadrata (Fissurina) 37
quadrilatera (Bolivinita) 38
Quadriformina 53
quinqueloba (Globigerina) 49
quinqueloba (Pullenia) 53
Quinqueloculina 24

radiata (Glabratella) 44
radicula (Nodosaria) 28
ramosa (Saccorhiza) 15
Ramulina 34
raphanistum (Nodosaria) 29
raphanus (Rectobolivina) 39
raphanus (Technitella) 15
rarescens (Planodiscorbis) 43
rebecca (Quinqueloculina) 25
recta (Vaginulina) 33
Rectobolivina 39
Recurvodes 18
refulgens (Cibicides) 50
regina (Guttulina) 34
Remaneica 21

reniformis (Astacolus) 29
reniformis (Fissurina) 37
Reophax 17
repandus (Eponides) 50
reticulata (Siphonina) 45
Reussella 41
reussi (Fronicularia) 30
Rhabdammina 14
Rhizammina 14
rhomboidalis (Sigmomorphina) 34
ringens (Cribrostomoides) 18
ringens (Pyrgo) 26
rizzae (Fissurina) 37
Robertina 55
Robertinoides 55
robertsonianus (Cibicides) 50
Robulus 32
robusta (Bolivina) 38
rosacea (Discorbis) 42
Rosalina 43
rostrata (Bulimina) 40
Rotalia 46
rotaliformis (Trochammina) 21
rotulatum (Haplophragmoides) 17
rotulatus (Robulus) 32
rotunda (Triloculina) 27
rotundata (Fursenkoina) 51
rotundata (Globulina) 33
rotundata (Pelosina) 15
rotundata (Pseudonodosaria) 32
ruber (Globigerinoides) 49
rugosa (Crithionina) 16
rugulosa (Gaudryina) 21
rustica (Psammosphaera) 15

Saccammina 15
Saccorhiza 15
sacculifer (Globigerinoides) 49
sadonica (Valvulinaria) 44
sagittula (Textularia) 20
salsa (Trochamminita) 18
Saracenaria 33
sarsii (Pyrgo) 26
saucii (Valvulinaria) 44
scalari (Amphicoryna) 29
scaphum (Nonion) 53
scarabaeus (Fissurina) 37
schlichti (Parafissurina) 37
schloenbachi (Marginulina) 31
schlumbergeri (Sigmoilopsis) 27
schreiberiana (Fursenkoina) 51
schreibersii (Neoeponides) 50
scitula (Globorotalia) 48
scitulum (Haplophragmoides) 18
sclerotica (Quinqueloculina) 25
scorpiurus (Reophax) 17
scottii (Fronicularia) 30
Scutularis 28
Seabrookia 35
secans (Massilina) 25
selseyense (Elphidium) 46
selseyensis (Cyclogyra) 23
selseyensis (Spirillina) 45
semimarginata (Fissurina) 37
semiformis (Fissurina) 37
seminuda (Brizalina) 39
semi-nuda (Buliminella) 38
seminulum (Quinqueloculina) 25
semipunctata (Discanomalina) 54
semistriata (Lagena) 31
separans (Amphicoryna) 29
serrata (Ehrenbergina) 52
serrata (Pyrgo) 26
Shepherdella 14
shoneana (Turritella) 16

sigmoidea (*Sigmoilina*) 26
Sigmoidella 34
Sigmoilina 26
Sigmoilopsis 26
Sigmomorphina 34
silvestrii (*Sigmoidella*) 34
simplex (*Cribroelphidium*) 47
simplex (*Nodosaria*) 29
simplex (*Textulariella*) 22
sinuosa (*Anomalina*) 54
Siphogenerina 41
Siphonaperta 27
siphonifera (*Hastigerina*) 47
Siphonina 45
Siphotextularia 20
soldanii (*Gyroidinoides*) 54
soldanii (*Liebusella*) 22
soluta (*Dentalina*) 29
sorosa (*Trochammina*) 21
spathulata (*Brizalina*) 39
sphaera (*Pyrgoella*) 26
sphaerica (*Saccamina*) 15
sphaeriloculus (*Haplophragmoides*) 18
Sphaerogypsina 51
Sphaeroidina 38
Sphaeroidinella 49
sphaeroidiniformis (*Ammosphaeroidina*) 21
sphaerula (*Lagena*) 31
sphaerulata (*Baculogypsina*) 46
spherica (*Anomalinoidea*) 54
spicaeformis (*Guttulina*) 34
spiculifera (*Reophax*) 17
spinescens (*Brizalina*) 39
spinescens (*Praeglobobulimina*) 41
spinigera (*Spirillina*) 45
spinigera (*Vaginulina*) 33
spinosa (*Fursenkoina*) 51
spinulosa (*Reussella*) 41
Spirillina 45
Spiroloculina 23
Spiroplectammina 19
spumosa (*Lagena*) 31
squamata (*Trochammina*) 21
squammigera (*Bulimina*) 40
squammosa (*Cymbaloporetta*) 37
squamosa (*Oolina*) 35
squamoso-alata (*Fissurina*) 37
squamoso-marginata (*Fissurina*) 37
staphyllearia (*Fissurina*) 37
stelligera (*Lagena*) 31
stelligerum (*Astrononion*) 53
Stilostomella 40
Storthosphaera 15
striata (*Lagena*) 31
striata (*Siphogenerina*) 41
striatopunctata (*Oolina*) 35
striatopunctatum (*Elphidium*) 46
striatula (*Brizalina*) 39
striatula (*Rectobolivina*) 39
stricta (*Textularia*) 20
subantarctica (*Textularia*) 20
subcarinata (*Robulus*) 32
subcomplanatus (*Discorbis*) 42
subcylindricus (*Robertinoidea*) 55
subdepressa (*Fursenkoina*) 51
subfusiformis (*Reophax*) 17
subgibba (*Lenticulina*) 31
subglobosa (*Globocassidulina*) 52
sublata (*Parafissurina*) 37
sublineata (*Miliolinella*) 28
submarginata (*Bulimina*) 40
subnodosa (*Elphidium*) 46
subnodosa (*Hyperammina*) 14
suborbicularis (*Quinqueloculina*) 25
suborbicularis (*Robulus*) 32
subradicula (*Nodosaria*) 29
subreticulata (*Brizalina*) 39
subrotunda (*Miliolinella*) 28
subrotundata (*Dorothia*) 22
subsoluta (*Dentalina*) 30
subspinescens (*Brizalina*) 39
subsquamosa (*Fursenkoina*) 52
substriata (*Lagena*) 31
subteres (*Robertina*) 55
subtertenuata (*Nodosaria*) 29
subturgidum (*Nonion*) 53
subvalvularis (*Triloculina*) 27
sulcata (*Lagena*) 31
Syringammina 15

tabernacularis (*Glaboratella*) 45
taeniformis (*Shepherdella*) 14
tasmanensis (*Pyrgo*) 26
tasmanensis (*Syringammina*) 15
tasmanica (*Cyclogyra*) 23
tasmanica (*Robulus*) 33
tasmanica (*Trochammina*) 21
tasmanica (*Vagulinopsis*) 33
Techmitella 15
temperata (*Cibicides*) 50
tenagos (*Quinqueloculina*) 25
tenera (*Oridorsalis*) 54
tenuimargo (*Ammoscalaria*) 19
tenuimargo (*Cibicides*) 50
tenuis (*Ammodiscus*) 16
tenuis (*Cerobertina*) 55
tenuis (*Marginulina*) 32
tenuis (*Sigmoilina*) 26
tenuiseptata (*Spiroloculina*) 24
tenuistriata (*Euvigerina*) 41
terquemi (*Neoconorbina*) 43
testacea (*Psammosphaera*) 15
textilaroides (*Brizalina*) 39
Textularia 19
Textulariella 22
thalmanni (*Robulus*) 33
Tholosina 16
Thurammina 15
tibia (*Nodobacularia*) 24
Tolypammina 16
torquata (*Textularia*) 20
tortuosa (*Pseudopolymorphina*) 34
Tretomphalus 44
triangularis (*Gaudryina*) 21
tricarinata (*Triloculina*) 27
tricarinella (*Planularia*) 32
Trifarina 41
trigona (*Ehrenbergina*) 52
trigonula (*Triloculina*) 27
triloba (*Globigerinoides*) 49
Triloculina 27
triquetra (*Verneuilina*) 21
Tritaxis 21
Trochammina 20
Trochamminita 18
trullissata (*Cyclammina*) 18
truncatulinoides (*Globorotalia*) 48
tuberculata (*Lamarckina*) 54
tuberculata (*Spirillina*) 45
tuberculato-limbata (*Spirillina*) 45
Tubinella 28
tubulata (*Lagena*) 31
tubulosa (*Nubecularia*) 23
tubulosa (*Siphonina*) 45
tumida (*Globorotalia*) 48
tumidulus (*Eponides*) 50
turbo (*Discorbis*) 42
turgida (*Globobulimina*) 41
turgida (*Nonionella*) 53
turris (*Textularia*) 20
turris (*Virgulopsis*) 41
Turritella 16

umbilicatum (*Nonion*) 53
umbonatus (*Oridorsalis*) 54
umbonifer (*Gavelinopsis*) 43
ungerianus (*Cibicides*) 50
unguiculata (*Heronallenia*) 45
unguis (*Parafissurina*) 37
uniserialis (*Dyocibicides*) 51
universa (*Orbulina*) 49
uviformis (*Trochammina*) 21
Uvigerina 41
uvula (*Globigerinita*) 49

vadescens (*Neouvigerina*) 41
vagans (*Tolypammina*) 16
Vaginulina 33
Vaginulinopsis 33
valvularis (*Triloculina*) 27
valvulata (*Rosalina*) 44
Valvulineria 44
variabilis (*Brizalina*) 39
variabilis (*Cibicidella*) 51
variabilis (*Pelosina*) 15
variata (*Oolina*) 35
ventricosa (*Parafissurina*) 37
venusta (*Quinqueloculina*) 25
Verneulina 21
vertebralis (*Nodosaria*) 29
vertebralis (*Vaginulina*) 33

vesicularis (*Gypsina*) 51
vesicularis (*Tholosina*) 16
vespertilio (*Pyrgo*) 26
vigilax (*Miliolinella*) 28
vilardeboana (*Rosalina*) 44
Virgulopsis 41
vitrea (*Epistominella*) 42
vitrirea (*Rosalina*) 44
vivipara (*Spirillina*) 45
vortex (*Robulus*) 33
vulgaris (*Quinqueloculina*) 25

wanganuiensis (*Sigmoilopsis*) 27
wiesneri (*Fissurina*) 37
wiesneri (*Trochammina*) 21
williamsoni (*Laryngosigma*) 35
williamsoni (*Oolina*) 35
williamsoni (*Rosalina*) 44
williamsoniana (*Buliminoides*) 38
wuellerstorfi (*Planulina*) 50

yabei (*Guttulina*) 34
yokoyamae (*Fissurina*) 37

Zeaflorilus 53
zealandica (*Glabratella*) 45
zealandicum (*Alveolophragmium*) 18
zealandica (*Notorotalia*) 47

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