

SMITHSONIAN MISCELLANEOUS COLLECTIONS

VOLUME 99 NUMBER 9

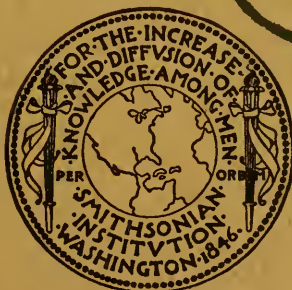
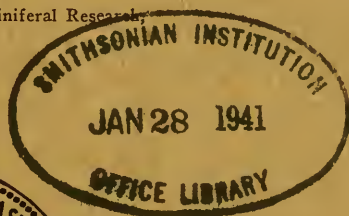
RECENT FORAMINIFERA FROM OLD
PROVIDENCE ISLAND COLLECTED ON
THE PRESIDENTIAL CRUISE
OF 1938

(WITH TWO PLATES)

BY

JOSEPH A. GUSHMAN

Cushman Laboratory for Foraminiferal Research,
Sharon, Mass.



(PUBLICATION 3594)

CITY OF WASHINGTON
PUBLISHED BY THE SMITHSONIAN INSTITUTION
JANUARY 24, 1941

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RECENT FORAMINIFERA FROM OLD PROVIDENCE
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(WITH TWO PLATES)

During the Presidential Cruise of 1938 collections were made at Old Providence Island in the Caribbean Sea. As no Foraminifera have been recorded from that particular area, it is interesting to note the occurrence of numerous species. The series of specimens of *Articulina cassis* (d'Orbigny) was noteworthy in showing the great variation that occurs in that species, a representative series of which is shown on our plate. Only a few of the species are figured. References to published figures, including the original reference, are given for each species. A few other species are represented by material too meager for definite specific determination. Nearly all the species were described by d'Orbigny in 1839 in his work on the Foraminifera of the shore sands of Cuba.

The figured specimens and a collection representing all the species are to be deposited in the United States National Museum.

Family TEXTULARIIDAE

Genus TEXTULARIA Defrance, 1824

TEXTULARIA AGGLUTINANS d'Orbigny

Textularia agglutinans d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 136, pl. 1, figs. 17, 18, 32-34, 1839.

This is a common species of the general West Indian region.

Family VALVULINIDAE

Genus VALVULINA d'Orbigny, 1826

VALVULINA OVIEDOIANA d'Orbigny

Plate 1, fig. 24

Valvulina oviedoiana d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 103, pl. 2, figs. 21, 22, 1839.

This is a characteristic species of shallow water in the West Indies. The figure given shows the aperture with the large valvular tooth.

Genus **CLAVULINA** d'Orbigny, 1826**CLAVULINA TRICARINATA** d'Orbigny

Plate 1, fig. 1

Clavulina tricarinata D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 111, pl. 2, figs. 16-18, 1839.

Typical specimens of this common West Indian species occurred in the collections from Old Providence Island.

CLAVULINA NODOSARIA d'Orbigny

Plate 1, fig. 2

Clavulina nodosaria D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 110, pl. 2, figs. 19, 20, 1839.

This is a much smaller, more delicate species than the preceding, with thin walls.

Family MILIOLIDAE

Genus **QUINQUELOCULINA** d'Orbigny, 1826**QUINQUELOCULINA AGGLUTINANS** d'Orbigny

Plate 1, fig. 3

Quinqueloculina agglutinans D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 195, pl. 12, figs. 11-13, 1839.

This is a common species in the collections and common in the West Indian region.

QUINQUELOCULINA LAMARCKIANA d'Orbigny

Quinqueloculina lamarckiana D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 189, pl. 11, figs. 14, 15, 1839.

This species has a wide distribution in the general West Indian region.

QUINQUELOCULINA COLLUMNOSA Cushman

Quinqueloculina collumosa CUSHMAN, Carnegie Inst. Washington, Publ. No. 311, p. 65, pl. 10, fig. 10, 1922.

This species was described from the Tortugas region. Typical specimens occurred in our material.

QUINQUELOCULINA BRADYANA Cushman

Plate 1, figs. 5, 6

Miliolina undosa H. B. BRADY (not *Quinqueloculina undosa* Karrer), Rep. Voy. Challenger, Zoology, vol. 9, p. 176, pl. 6, figs. 6-8, 1884.

Quinqueloculina bradyana CUSHMAN, U. S. Nat. Mus. Bull. 71, pt. 6, p. 52, pl. 18, fig. 2, 1917.

Specimens occur in our material that seem to belong to this species, which has been recorded from both the tropical Pacific and Atlantic.

QUINQUELOCULINA cf. **Q. KERIMBATICA** Heron-Allen and Earland,
var. **PHILIPPINENSIS** Cushman

Plate 2, figs. 2, 3

The figured specimens show a large form that has the periphery on each chamber strongly reticulate but the sides smooth and unornamented. The variety was described from the Philippines, but a form similar to the one here figured was recorded from the Dry Tortugas.

QUINQUELOCULINA POLYGONA d'Orbigny

Quinqueloculina polygona d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 198, pl. 12, figs. 21-23, 1839.

This species has a wide distribution in the West Indian region.

Genus **SPIROLOCULINA** d'Orbigny, 1826**SPIROLOCULINA GRATELOUPI** d'Orbigny

Spiroloculina grateloupi d'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 298, 1826.—
TERQUEM, Mém. Soc. Géol. France, ser. 3, vol. 1, p. 52, pl. 5, figs. 5, 6, 1878.

This species is abundant in the tropical Pacific but has also been recorded from the West Indian region.

SPIROLOCULINA ORNATA d'Orbigny

Spiroloculina ornata d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 150, pl. 12, figs. 7, 7a, 1839.

This is a rather rare species described by d'Orbigny from shore sands of Cuba and recorded as rare at several localities in the general West Indian region.

SPIROLOCULINA ANTILLARUM d'Orbigny

Plate 1, figs. 12-15

Spiroloculina antillarum D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 166, pl. 9, figs. 3, 4, 1839.

This is a widely distributed species characteristic of shallow tropical waters.

SPIROLOCULINA ARENATA Cushman

Spiroloculina arenata CUSHMAN, Proc. U. S. Nat. Mus., vol. 59, p. 63, pl. 14, fig. 17, 1921.

This species was originally described from the coast of Jamaica but has since been found to be widely distributed in the general region of the West Indies.

Genus ARTICULINA d'Orbigny, 1826**ARTICULINA SAGRA** d'Orbigny

Plate 1, fig. 16

Articulina sagra D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 160, pl. 9, figs. 23-26, 1839.

This is a fairly common species in the material from off Old Providence Island.

ARTICULINA CASSIS (d'Orbigny)

Plate 1, figs. 17-23

Vertebralina cassis D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 51, pl. 7, figs. 14, 15, 1839.

Articulina cassis CUSHMAN and HANZAWA, Contr. Cushman Lab. Foram. Res., vol. 13, p. 44, 1937.

This species shows a remarkable amount of variation. The usual form has a much broader test, increasing in width even in the completely coiled stage, figure 17. The first uniserial chamber has a flaring lip and a somewhat swollen base, figures 18, 19. Later uniserial chambers may continue of this same type, figures 20, 21, or may become very much broader as in figures 22 and 23. The broad form may be the same as the form named var. *mucronata* by d'Orbigny, but our series seems to show all gradations. The range of variation is even greater than the few figured specimens show. D'Orbigny's records for the species include Cuba, Jamaica, and Martinique, and I have had it also from Puerto Rico and from the Dry Tortugas. The material from Old Providence Island, however, shows a much greater range of variation than from other localities.

Genus **TUBINELLA** Rhumbler, 1906**TUBINELLA FUNALIS** (H. B. Brady)

Articulina funalis H. B. BRADY, Rep. Voy. *Challenger*, Zoology, vol. 9, p. 185, pl. 13, figs. 6-11, 1884.

Tubinella funalis RHUMBLER, Zool. Jahrb., Abt. Syst., vol. 24, p. 26, pl. 2, fig. 3, 1906.—CUSHMAN, Carnegie Inst. Washington, Publ. No. 342, p. 54, pl. 19, figs. 7, 8, 1924.

This is not a common species, and its occurrence at Old Providence Island extends its range in the tropical Atlantic.

Genus **HAUERINA** d'Orbigny, 1839**HAUERINA BRADYI** Cushman

Plate I, figs. 25-27

Hauerina compressa H. B. BRADY (not *H. compressa* d'Orbigny), Rep. Voy. *Challenger*, Zoology, vol. 9, p. 190, pl. 11, figs. 12, 13, 1884.

Hauerina bradyi CUSHMAN, U. S. Nat. Mus. Bull. 71, pt. 6, p. 62, pl. 23, fig. 2, 1917.

This species was originally described from the Indo-Pacific but has been recorded from numerous localities in the tropical Atlantic.

HAUERINA ORNATISSIMA (Karrer)

Quinqueloculina ornatissima KARRER, Sitz. Akad. Wiss. Wien, vol. 58, p. 151, pl. 3, fig. 2, 1868.

Hauerina ornatissima H. B. BRADY, Rep. Voy. *Challenger*, Zoology, vol. 9, p. 192, pl. 7, figs. 15-22, 1884.

Although a typically Indo-Pacific species, it occurs also in the tropical Atlantic but usually in few numbers.

Genus **TRILOCULINA** d'Orbigny, 1826**TRILOCULINA TRIGONULA** (Lamarck)

Miliolites trigonula LAMARCK, Ann. du Mus., vol. 5, p. 351, No. 3, 1804.

Triloculina trigonula D'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 299, No. 1, pl. 16, fig. 5-9, 1826; Modèles, No. 93, 1826.—CUSHMAN, U. S. Nat. Mus. Bull. 71, pt. 6, p. 65, pl. 25, fig. 3, 1917.

This is not a common species in the western Atlantic but is recorded as single specimens from Jamaica and the Dry Tortugas. It may not be the same as Lamarck's species from the Eocene of the Paris Basin.

TRILOCULINA TRICARINATA d'Orbigny

Triloculina tricarinata d'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 299, No. 7, 1826; Modèles, No. 94, 1826.—H. B. BRADY, Trans. Linn. Soc. London, vol. 24, p. 446, pl. 48, fig. 3, 1864.

The form from Old Providence Island may be included under this name.

TRILOCULINA OBLONGA (Montagu)

Vermiculum oblongum MONTAGU, Test Brit., p. 522, pl. 14, fig. 9, 1803.

Triloculina oblonga d'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 300, No. 16, 1826; Modèles, No. 95, 1826; in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 175, pl. 10, figs. 3-5, 1839.—CUSHMAN, Proc. U. S. Nat. Mus., vol. 59, p. 69, pl. 17, figs. 5, 6, 1921.

This is a fairly common species in this material and is widely distributed in the West Indian region.

TRILOCULINA PLANCIANA d'Orbigny

Triloculina planciana d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 173, pl. 9, figs. 17-19, 1839.—CUSHMAN, Proc. U. S. Nat. Mus., vol. 59, p. 70, pl. 17, figs. 7, 8, 1921.

This is a common species in the general West Indian region.

TRILOCULINA FICHTELIANA d'Orbigny

Plate 1, figs. 7-9

Triloculina fichteliana d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 171, pl. 9, figs. 8-10, 1839.—CUSHMAN, Proc. U. S. Nat. Mus., vol. 59, p. 70, pl. 17, figs. 1, 2, 1921.

A widely distributed species in the tropical Atlantic.

TRILOCULINA CARINATA d'Orbigny

Plate 1, figs. 10, 11

Triloculina carinata d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 179, pl. 10, figs. 15-17, 1839.—CUSHMAN, Proc. U. S. Nat. Mus., vol. 59, p. 71, pl. 17, figs. 9, 10, 1921.

The reticulate ornamentation is very highly developed in this species, which is common in the general West Indian region.

TRILOCULINA LINNEIANA d'Orbigny

Triloculina linneiana d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 172, pl. 9, figs. 11-13, 1839.

This is a large species widely distributed in tropical waters of both the Atlantic and Pacific.

Genus **PYRGO** DeFrance, 1924**PYRGO SUBSPHAERICA** (d'Orbigny)

Biloculina subspheerica D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 162, pl. 8, figs. 25-27, 1839.

Pyrgo subspheerica CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 6, p. 68, pl. 18, figs. 1, 2, 1929.

The most common species of the genus in the West Indian region but never attains a large size.

PYRGO DENTICULATA (H. B. Brady)

Biloculina ringens (LAMARCK) var. *denticulata* H. B. BRADY, Rep. Voy. Challenger, Zoology, vol. 9, p. 143, pl. 3, figs. 4, 5, 1884.

Biloculina denticulata CUSHMAN, U. S. Nat. Mus. Bull. 71, pt. 6, p. 180, pl. 33, fig. 1, 1917; Proc. U. S. Nat. Mus., vol. 59, p. 74, 1921.

Pyrgo denticulata CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 6, p. 69, pl. 18, figs. 3, 4, 1929.

Although typically an Indo-Pacific species it occurs at numerous localities in the tropical Atlantic.

Family **OPHTHALMIDIIDAE**Genus **CORNUSPIRA** Schultze, 1854**CORNUSPIRA INVOLVENS** (Reuss)

Operculina involvens REUSS, Denkschr. Akad. Wiss. Wien, vol. 1, p. 370, pl. 45, fig. 20, 1849.

Cornuspira involvens REUSS, Sitz. Akad. Wiss. Wien, vol. 48, 1863, p. 39, pl. 1, fig. 2, 1864.

All the specimens are of small size as is usual in the West Indies.

Family **NONIONIDAE**Genus **NONION** Montfort, 1808**NONION GRATELOUPI** (d'Orbigny)

Nonionina grateloupi D'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 294, No. 19, 1826; in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 46, pl. 6, figs. 6, 7, 1839.

Nonion grateloupi CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 7, p. 10, pl. 3, figs. 9-11; pl. 4, figs. 1-4, 1930.

Specimens of this common West Indian species occurred in our material.

Genus ELPHIDIUM Montfort, 1808**ELPHIDIUM POEYANUM (d'Orbigny)**

Polystomella poeyana d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 55, pl. 6, figs. 25, 26, 1839.

Elphidium poeyanum CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 7, p. 25, pl. 10, figs. 4, 5, 1930.

A common species in the West Indian region in warm shallow water, and occurs in our collections.

ELPHIDIUM SAGRUM (d'Orbigny)

Polystomella sagra d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 55, pl. 6, figs. 19, 20, 1839.

Elphidium sagram CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 7, p. 24, pl. 9, figs. 5, 6, 1930.

Although usually more rare than the preceding, this species has a wide distribution in the West Indian region both as a living species and in the late Tertiary also.

Family PENEROPLIDAE**Genus PENEROPLIS Montfort, 1808****PENEROPLIS PROTEUS d'Orbigny**

Peneroplis protea d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 60, pl. 7, figs. 7-11, 1839.

This is a common species throughout the West Indian region.

PENEROPLIS BRADYI Cushman

Plate 1, fig. 28

Peneroplis planatus CUSHMAN (not Fichtel and Moll), Proc. U. S. Nat. Mus., vol. 59, p. 75, pl. 18, fig. 9, 1921.

Peneroplis bradyi CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 7, p. 40, pl. 14, figs. 8-10, 1930.

Widely distributed in the West Indian region, this species is only slightly less abundant than the preceding.

Genus MONALYSIDIUM Chapman, 1900**MONALYSIDIUM POLITA Chapman?**

This is a rare form in the Atlantic, and its reference to Chapman's Pacific species is open to some question. The same form has been recorded from Puerto Rico and the Dry Tortugas.

Genus **ARCHAIAS** Montfort, 1808**ARCHAIAS ANGULATUS** (Fichtel and Moll)

Nautilus angulatus FICHEL and MOLL, Test. Micr., p. 112, pl. 21, 1803.

Archaias angulatus CUSHMAN, Cushman Lab. Foram. Res., Special Publ.

No. 1, p. 218, pl. 31, fig. 9, 1928; U. S. Nat. Mus. Bull. 104, pt. 7, p. 46, pl. 16, figs. 1-3; pl. 17, figs. 3-5, 1930.

This is a very abundant species in the shallow water of the western tropical Atlantic.

Genus **AMPHISORUS** Ehrenberg, 1838**AMPHISORUS HEMPRICHII** Ehrenberg

Plate 2, fig. 1

Amphisorus hemprichii EHRENBURG, Abhandl. k. Akad. Wiss. Berlin, 1838, p. 134, pl. 3, fig. 3.—CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 7, p. 51, pl. 18, figs. 5-7, 1930.

Orbitolites duplex W. B. CARPENTER, Rep. Voy. *Challenger*, Zoology, pt. 21, p. 25, pl. 3, figs. 8-14; pl. 4, figs. 6-10; pl. 5, figs. 1-13, 1883.

In the general West Indian region this is a very abundant species of shallow water, frequently attached to the short eel grass, *Posidonia*.

Family **ALVEOLINELLIDAE**Genus **BORELIS** Montfort, 1808**BORELIS PULCHRA** (d'Orbigny)

Alveolina pulchra d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 70, pl. 8, figs. 18, 19, 1839.

Borelis pulchra CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 7, p. 55, pl. 15, figs. 9, 10, 1930.

Although rare in the West Indian region, it is recorded from several localities.

Family **BULIMINIDAE**Genus **VIRGULINA** d'Orbigny, 1826**VIRGULINA PUNCTATA** d'Orbigny

Virgulina punctata d'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 139, pl. 1, figs. 35, 36, 1839.

D'Orbigny described this species from the shore sands of the West Indies. It extends out into deeper water and ranges back to the Oligocene of this same region.

Genus **BOLIVINA** d'Orbigny, 1839**BOLIVINA COMPACTA** Sidebottom

Bolivina robusta H. B. BRADY, var. *compacta* SIDEBOTTOM, Mem. Proc. Manchester Lit. Philos. Soc., vol. 49, No. 5, p. 15, pl. 3, fig. 7, 1905.

Bolivina compacta CUSHMAN, U. S. Nat. Mus. Bull. 71, pt. 2, p. 36, text fig. 58, 1911.

Originally described from the Mediterranean, this species is known from the Pacific at many localities but in the tropical Atlantic has been previously recorded only from the Dry Tortugas.

BOLIVINA PULCHELLA (d'Orbigny)

Sagrina pulchella D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 150, pl. 1, figs. 23, 24, 1839.

Bolivina pulchella CUSHMAN, Carnegie Inst. Washington, Publ. No. 311, p. 25, pl. 1, figs. 8, 9, 1922.

Widely ranging from Bermuda to Rio de Janeiro, Brazil, this is typically a species of the western tropical Atlantic.

BOLIVINA STRIATULA Cushman

Bolivina striatula CUSHMAN, Carnegie Inst. Washington, Publ. No. 311, p. 27, pl. 3, fig. 10, 1922.

Originally described from the Dry Tortugas, this species ranges southward to Brazil and probably occurs in the eastern Atlantic also.

BOLIVINA RHOMBOIDALIS (Millett)

Textularia rhomboidalis MILLETT, Journ. Roy. Micr. Soc., 1899, p. 559, pl. 7, fig. 4.

Bolivina rhomboidalis CUSHMAN, Carnegie Inst. Washington, Publ. No. 311, p. 28, 1922; Cushman Lab. Foram. Res., Special Publ. No. 9, p. 138, pl. 18, fig. 7, 1937.

Millett described this species from the Malay region, and there are numerous records from the tropical Pacific. It has been recorded from the Dry Tortugas and the coast of Cuba. Our specimens seem to be typical.

BOLIVINA TORTUOSA H. B. Brady

Bolivina tortuosa H. B. BRADY, Quart. Journ. Micr. Soc., vol. 21, p. 57, 1881; Rep. Voy. *Challenger*, Zoology, vol. 9, p. 420, pl. 52, figs. 31, 32 (not 33, 34), 1884.

This is a very widely distributed species but seems to hold its characters remarkably well.

Genus LOXOSTOMA Ehrenberg, 1854**LOXOSTOMA MAYORI (Cushman)**

Bolivina mayori CUSHMAN, Carnegie Inst. Washington, Publ. No. 311, p. 27, pl. 3, figs. 5, 6, 1922.

Loxostomum mayori BERMUDEZ, Mem. Soc. Cubana Hist. Nat., vol. 9, p. 197, 1935.

Although originally described from the Dry Tortugas, the species is widely distributed also in the tropical Pacific.

Family ROTALIIDAE

Genus SPIRILLINA Ehrenberg, 1843**SPIRILLINA VIVIPARA Ehrenberg**

Spirillina vivipara EHRENBURG, Abhandl. k. Akad. Wiss. Berlin, 1841, p. 442, pl. 3, fig. 41.

A single specimen was found in the collection from 7 to 8 fathoms inside the reef at Old Providence Island.

Genus PATELLINA Williamson, 1858**PATELLINA CORRUGATA Williamson**

Patellina corrugata WILLIAMSON, Rec. Foram. Gt. Britain, p. 46, pl. 3, figs. 86-89, 1858.

Rare specimens occur in our material.

Genus DISCORBIS Lamarck, 1804**DISCORBIS MIRA Cushman**

Plate 2, figs. 4-6

Discorbis turbo H. B. BRADY (and subsequent authors; not d'Orbigny), Rep. Voy. Challenger, Zoology, vol. 9, p. 642, pl. 87, figs. 8a-c, 1884.

Discorbis mira CUSHMAN, Carnegie Inst. Washington, Publ. No. 311, p. 39, pl. 6, figs. 10, 11, 1922.

Numerous specimens of this well-characterized species occur in the Old Providence Island material.

DISCORBIS ORBICULARIS (Terquem)

Rosalina orbicularis TERQUEM, Anim. sur la Plage de Dunkerque, p. 75, pl. 9, figs. 4, a, b, 1876.

Discorbis orbicularis BERTHELIN, Foram. de Borgneuf et Pornichet, p. 39, No. 63, 1878.—CUSHMAN, U. S. Nat. Mus. Bull. 71, pt. 5, p. 16, pl. 11, fig. 1, 1915.

This species is much less common in our material than the preceding.

DISCORBIS CANDEIANA (d'Orbigny)

Rosalina candeiana D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 97, pl. 4, figs. 2-4, 1839.

Discorbis candeiana CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 8, p. 19, pl. 7, figs. 4a-c, 1931.

This is a common and characteristic species of shallow water in the West Indian region.

Genus ROTALIA Lamarck, 1804**ROTALIA ROSEA d'Orbigny**

Rotalia rosca D'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 272, No. 7, 1826; Modèles, No. 35, 1826.—CUSHMAN, U. S. Nat. Mus. Bull. 104, pt. 8, p. 62, pl. 13, figs. 5a-c, 1931.

A characteristic West Indian species notable for its deep reddish color.

Family AMPHISTEGINIDAE**Genus AMPHISTEGINA d'Orbigny, 1826****AMPHISTEGINA LESSONII d'Orbigny**

Amphistegina lessonii D'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 304, No. 3, pl. 17, figs. 1-4 (*Quoii* in description of plate), 1826; Modèles, No. 98, 1826.

One of the common species of coral-reef conditions in the West Indian region.

Family CYMBALOPORIDAE**Genus TRETOMPHALUS Moebius, 1880****TRETOMPHALUS BULLOIDES (d'Orbigny)**

Rosalina bulloides D'ORBIGNY, in De la Sagra, Hist. Fis. Pol. Nat. Cuba, "Foraminifères," p. 104, pl. 3, figs. 2-5, 1839.

Tretomphalus bulloides MOEBIUS, Beitr. Meeresfauna Insel Mauritius Scyhellén, p. 98, pl. 10, figs. 6-9, 1880.

Although widely distributed in its pelagic stage, this species is evidently attached in the early stages and is characteristic of coral-reef conditions.

Family PLANORBULINIDAE

Genus PLANORBULINA d'Orbigny, 1826

PLANORBULINA MEDITERRANENSIS d'Orbigny

Plate 2, fig. 9

Planorbulina mediterraneensis D'ORBIGNY, Ann. Sci. Nat., vol. 7, p. 280, No. 2, pl. 14, figs. 4-6, 1826; Modèles, No. 79, 1826.

One of the widely distributed species in shallow water, occurring in great numbers attached to the short eel grass, *Posidonia*, in tropical waters.

PLANORBULINA ACERVALIS H. B. Brady

Plate 2, figs. 7, 8

Planorbulina acervalis H. B. BRADY, Rep. Voy. Challenger, Zoology, vol. 9, p. 657, pl. 92, fig. 4, 1884.

Specimens with the periphery distinctly lobed, typical of this species, occur in some numbers in our material.

Genus ACERVULINA Schultze, 1854

ACERVULINA INHAERENS Schultze

Plate 2, fig. 10

Acerkulina inhaerens SCHULTZE, Organ. Polythal., p. 68, pl. 6, figs. 13, 14, 1854.

Very large specimens occur in these collections. They have the characteristically coarse porous surface of this species.

EXPLANATION OF PLATES

PLATE I

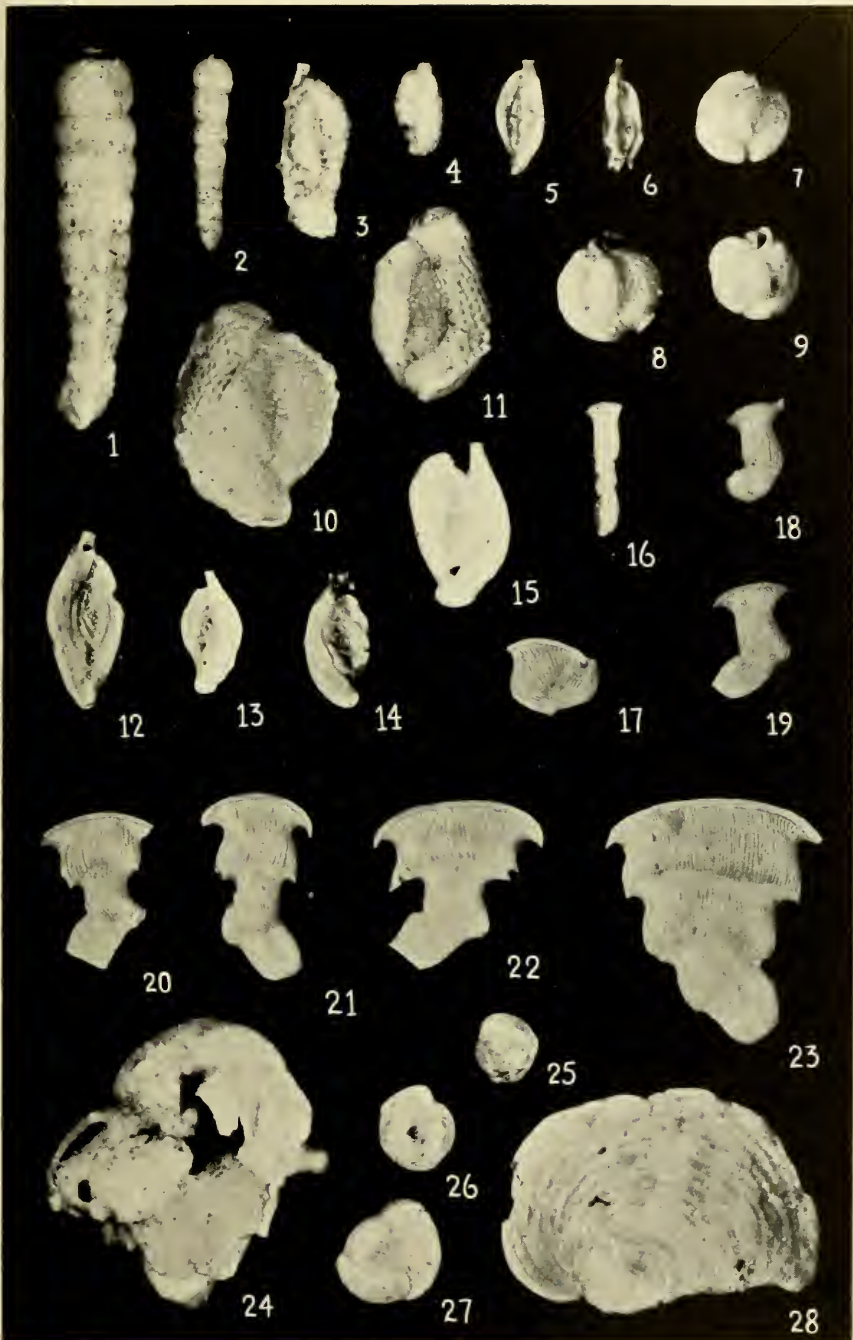
All figures $\times 27$

- FIG. 1. *Clavulina tricarinata* d'Orbigny.
 2. *Clavulina nodosaria* d'Orbigny.
 3. *Quinqueloculina agglutinans* d'Orbigny.
 4. *Quinqueloculina* sp.
 5, 6. *Quinqueloculina bradyana* Cushman.
 7-9. *Triloculina fichteliana* d'Orbigny.
 10, 11. *Triloculina carinata* d'Orbigny.
 12-15. *Spiroloculina antillarum* d'Orbigny.
 16. *Articulina sagra* d'Orbigny.
 17-23. *Articulina cassis* (d'Orbigny). Series showing the developmental stages.
 24. *Valvulina ovidioiana* d'Orbigny.
 25-27. *Hauerina bradyi* Cushman.
 28. *Pencroplis bradyi* Cushman.

PLATE 2

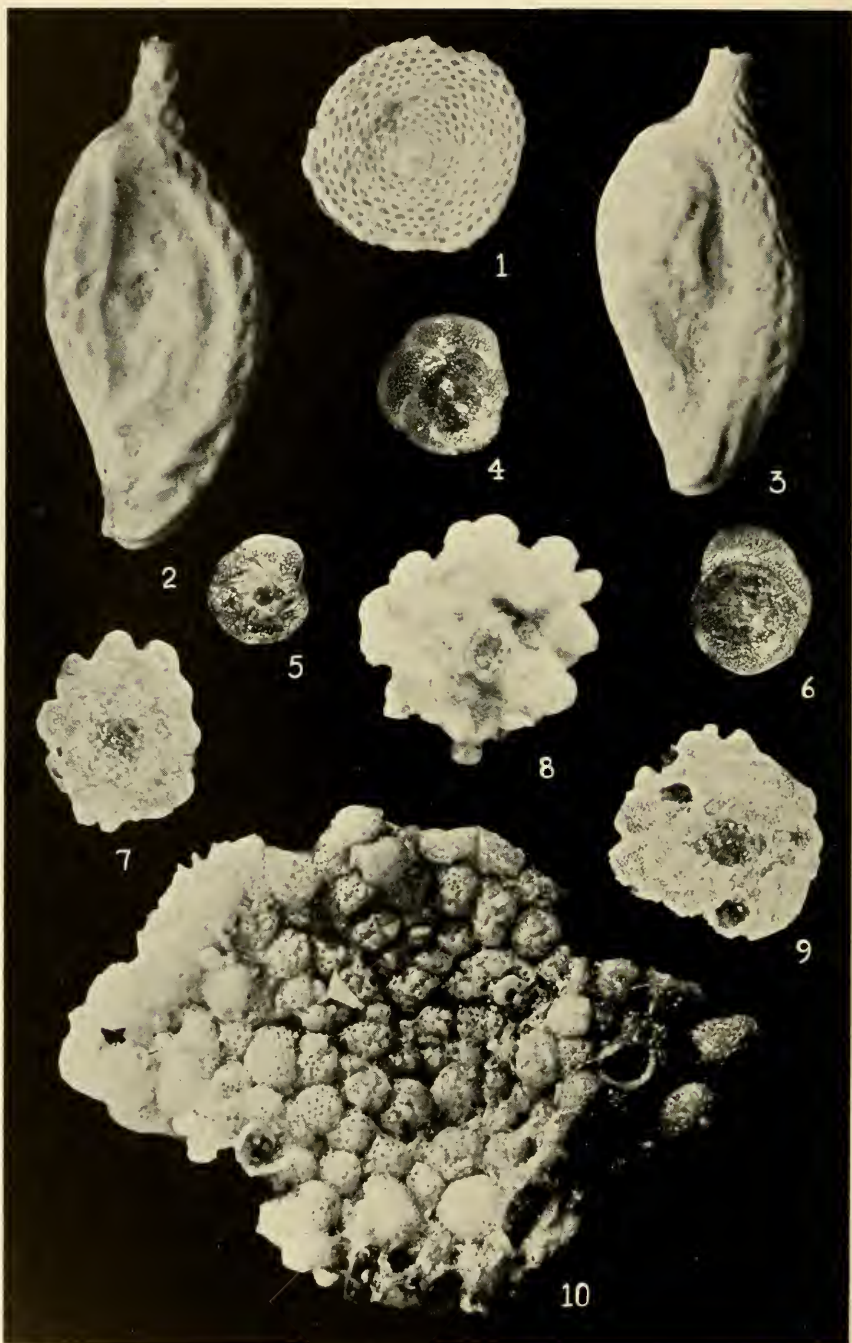
All figures $\times 27$

- FIG. 1. *Amphisorus hemprichii* Ehrenberg.
2, 3. *Quinqueloculina* cf. *Q. kerimbatica* Heron-Allen and Earland, var. *philippinensis* Cushman.
4-6. *Discorbis mira* Cushman. 4, 6, dorsal views; 5, ventral view.
7, 8. *Planorbulina acervalis* H. B. Brady.
9. *Planorbulina mediterraneensis* d'Orbigny.
10. *Acerulina inhaerens* Schultze.



RECENT FORAMINIFERA FROM OLD PROVIDENCE ISLAND

(For explanation see page 13)



RECENT FORAMINIFERA FROM OLD PROVIDENCE ISLAND
(For explanation see page 14)