

2833 *Conus (L.) scalaris* Valenciennes, 1832. Both sides of Baja California to Acapulco, Mexico. Not uncommon. Offshore.

2834 *Conus (L.) virgatus* Reeve, 1849. Baja California to Ecuador. Uncommon. (Synonym: *signae* Bartsch, 1937.) Color Plate 15.

Family TEREBRIDAE H. and A. Adams, 1854

Genus *Terebra* Bruguière, 1789

I am indebted to Twila Bratcher and R. D. Burch for supplying the information on the Pacific coast species. Type of the genus *Terebra* is *subulata* (Linné, 1758), from the Indo-Pacific. We have not attempted to assign all of the species to the numerous subgenera available.

*Terebra taurinus* Lightfoot, 1786 2835  
Flame Auger Color Plate 10

Southeast Florida, to south Texas and the West Indies to Brazil.

4 to 6 inches in length, heavy, rather slender. Characterized by a cream color with 2 spiral rows of axial, red-brown bars, the upper series being twice as long as the lower one. Upper whorls faintly and axially ribbed. Upper  $\frac{1}{2}$  of each whorl swollen and with a single incised line. *T. flammea* Lamarck, 1822, and *T. feldmanni* Röding, 1798, are this species. Formerly considered quite rare, but now not infrequently dredged in the Gulf of Mexico and Lake Worth, east Florida, 2 to 40 fathoms.

*Terebra dislocata* (Say, 1822) 2836  
Common American Auger

Maryland to Florida, Texas and the West Indies. Brazil. Redondo Beach, California, to Panama.

$\frac{1}{2}$  to 2 inches in length, slender. Whorls with about 25 axial ribs per whorl which are divided  $\frac{1}{3}$  to  $\frac{1}{2}$  their length by a deep, impressed, spiral line. Many specimens show prominent, squarish, raised spiral cords between the ribs. Columella with 2 fused spiral folds near the base. Color a dirty, pinkish gray, but sometimes orangish. A common shallow-water species. *T. rudis* Gray, 1834, and *petiti* Kiener, 1939, are synonyms. Fossil specimens are found occasionally on New Jersey beaches.

Subgenus *Myurella* Hinds, 1845

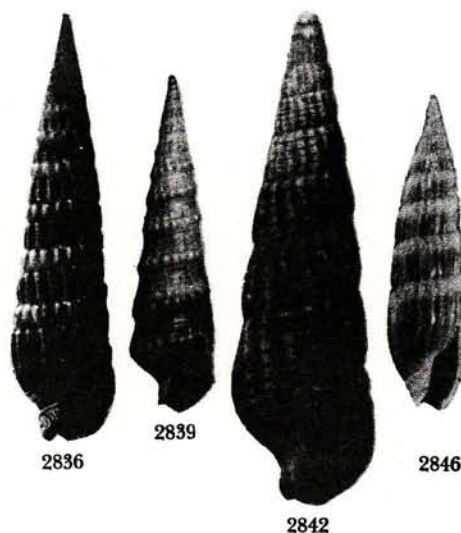
Type of this subgenus is *myuros* Lamarck, 1822, from the Indo-Pacific.

*Terebra floridana* Dall, 1889 2837  
Florida Auger

Off South Carolina to south Florida. Brazil.

2 to 3 inches in length, very long and slender. Color light-yellow to yellowish white. Each whorl has just below the suture a row of about 17 to 23 oblong, slightly slanting, smooth axial ribs. Below this, and separated from it by an impressed line, is a similar row of much shorter, axial ribs. The lower  $\frac{1}{3}$  of the whorl is marked by 3 or 4 raised, spiral threads only. Columella with a single, strong fold near the bottom. Operculum horny, translucent brown, quadrate unguulate. A fairly rare species; 5 to 118 fathoms.

The Central American subspecies *stegeri* Abbott, 1954 (2838) from off the Yucatan Peninsula, differs in being stouter (68 × 13 mm.), bright-orange, lemon-yellow to waxy white, in having the siphonal canal considerably more twisted to the left, in having weaker and more numerous axial riblets (28 to 39)



which increase in number in later whorls, and in lacking the upper fold on the columella. Uncommon; 12 fathoms.

Subgenus *Strioterebrum* Sacco, 1891

Type of this subgenus is *basteroti* Nyst, 1845, from the Miocene of Europe.

*Terebra concava* Say, 1827 2839  
Concave Auger

North Carolina to Florida and Texas to Brazil.

$\frac{3}{4}$  inch in length, slender, about 12 whorls, semiglossy, and with slightly concave whorls. Whorls in spire with a large, heavily nodulated or beaded, swollen spiral cord just below the suture. Above the suture there is a spiral series of 20 very small beads per whorl. The concave middle of the whorl bears about 5 microscopic, incised spiral lines. Color yellowish gray. Uncommon; offshore in shallow water. Fossil specimens are occasionally found on New Jersey beaches. Do not confuse with the larger yellow *T. floridana* which has 2 spiral rows of elongate beads just below the suture. *T. vinosa* Dall, 1889, is a synonym.

*Terebra arcas* Abbott, 1954 2840  
Arcas Cays Auger

West coast of Florida to Mexico.

15 to 27 mm., its width  $\frac{1}{4}$  of its length, semiglossy white with yellowish orange early whorls; rarely with a wide band

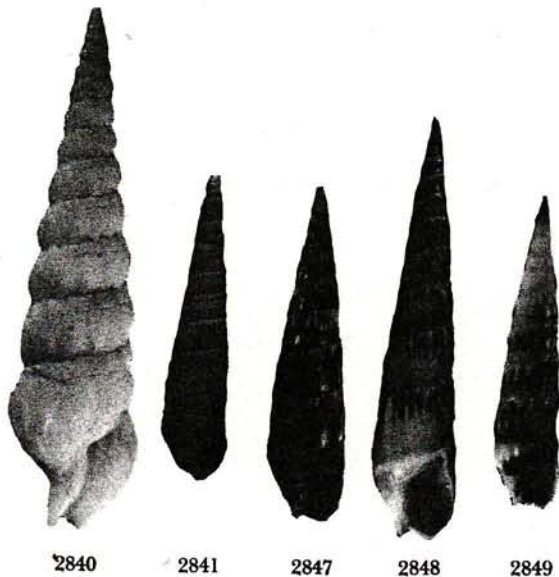


of orange. With 12 to 16 axial ribs per whorl with the interstices concave. Spiral sculpture of 5 to 7 incised lines, with the topmost one cutting across the ribs. Siphonal fasciole bordered above by a small, sharp thread. Columella with 1 weak, spiral fold at the base. Uncommon; 2 to 50 fathoms. Differs from *glossema* Schwengel which has 27 arching ribs on the last whorl.

***Terebra glossema* Schwengel, 1940** 2841

Southeast Florida and Cuba; Bahamas.

1 inch,  $\frac{1}{4}$  as wide and long.  $1\frac{1}{2}$  nuclear whorls, smooth, pinkish. 14 adult whorls white, with small, retractively curved ribs (27 on the last whorl). Spiral cut grooves 5 or 6 between ribs. Spiral lines present between the grooves on the last 3 whorls. Siphonal fasciole convex. Columella smooth and recurved. Sometimes buff-colored with a paler band on the base. Not uncommon; 1 to 8 fathoms. *The Nautilus*, vol. 53 (1940), pl. 12, and vol. 56 (1942), p. 65, pl. 6.



***Terebra protexta* Conrad, 1845** 2842  
Fine-ribbed Auger

North Carolina to Florida and Texas to Brazil.

20 to 25 mm. in length, about 13 whorls, dull-white in color and with a well-indented suture. Whorls in spire slightly concave with about 22 fine axial ribs running from suture to suture, but which are broken weakly by 7 to 9 incised spiral lines. The upper line is about  $\frac{1}{4}$  the way down the whorl.

Several forms exist which have been given names: form *lutescens* Dall, 1889 (2843) has about 30 to 32 finer axial riblets per whorl which are made slightly beaded by the spiral lines; in the form *limatula* Dall, 1889 (2844) the ribs and the spiral threads are about equal in size and give a reticulated pattern. All occur together in fairly deep water and are common.

***Terebra rushii* Dall, 1889** 2845  
Rush's Auger

Off south Florida.

15 mm., brilliant, polished white, columella not keeled, sides of whorls flat and with 4 strong, flat spiral cords. Base with fine spiral threads. Growth lines on the earlier whorls. Uncommon; 8 fathoms.

Subgenus *Hastula* H. and A. Adams, 1853

Type of this subgenus is *strigilata* (Linné, 1758) from the Indo-Pacific.

***Terebra hastata* (Gmelin, 1791)** 2846  
Shiny Atlantic Auger

Southeast Florida and the West Indies to Brazil. Bermuda.

$1\frac{1}{4}$  to  $1\frac{1}{2}$  inches in length. Characterized by its smooth, highly glossy finish, its numerous axial ribs which extend from suture to suture, and by its bright yellowish color and white band below the suture. Columella smoothish and white. This is the "fattest" species in the Western Atlantic, and is fairly common in the West Indies.

***Terebra cinerea* (Born, 1778)** 2847  
Gray Atlantic Auger

East Florida and the West Indies and Brazil. Sonora, Mexico, to Ecuador.

1 to 2 inches in length, slender, with flat-sided whorls and a sharp apex. Numerous small riblets extend halfway down the whorls (about 45 to 50 per whorl). Color all-cream or bluish brown; sometimes with darker spots below the suture. Surface with exceedingly fine, numerous rows of pinpricks which give the shell a silky appearance under the lens. Moderately common in the intertidal zone of beaches. Compare with *salleana* Deshayes. Synonyms include: *livida* Dillwyn, 1817; *aciculina* Lamarck, 1822; *castanea* Kiener, 1839; *jamaicensis* C. B. Adams; and *acuminata* Reeve, 1860. Animal paralyzes with its poison radula and swallows whole small polychaete worms (see Marcus and Marcus, 1960, *Bol. Fac. Fil. Cien. Letr. Univ. Sao Paulo*, no. 260, *Zool.* no. 23).

***Terebra salleana* Deshayes, 1859** 2848  
Salle's Auger

Northwest Florida to Texas and Vera Cruz, Mexico. Brazil.

1 to  $1\frac{1}{3}$  inches in length, similar to *cinerea*, but always a dark bluish gray or brownish, with fewer, larger punctations, with about 30 ribs per whorl, and with a purple, not white, nucleus. The spiral rows of pinpoint pits are more widely spaced than those of *cinerea*. Common in shallow water.

***Terebra maryleeae* R. D. Burch, 1965** 2849  
Marylee's Auger

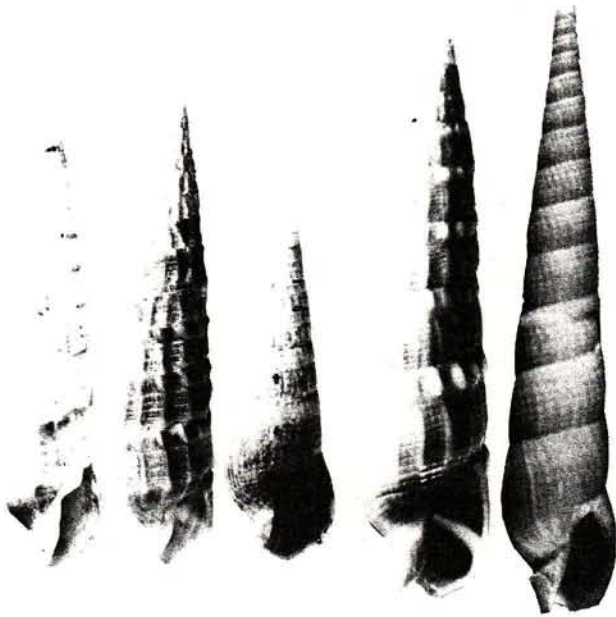
Texas to British Honduras.

1 inch, with flat to slightly concave whorls; color dark-brown with an obscure white band at the periphery of the body whorl; sculpture of low, thin axial ribs on the posterior  $\frac{1}{3}$  of each whorl. Body whorl with a series of low, thin, weak nodules at the periphery. No pinpoint pits. Rarely all-white in color. Moderately common on intertidal sand flats. *The Veliger*, vol. 7, p. 242. See *Texas Conchologist*, vol. 4, no. 9, May 1968, for radulae.

***Terebra pedroana* Dall, 1908** 2850  
San Pedro Auger

Redondo Beach, California, to Baja California.

1 to  $1\frac{1}{4}$  inches in length, strong, slender, with about 12 whorls and colored grayish to whitish yellow or brownish. Sculpture between sutures of first a fairly broad row of well to poorly developed nodules (about 15 to 18 per whorl), followed below by a flat area which is weakly and axially wrinkled or ribbed and with numerous, fine, spiral, incised lines. Siphonal canal bounded by a sharp spiral line on the outer shell. Fairly common in shallow water from sandy shores to 30 fathoms.



2850            2851            2852            2853            2854

***Terebra crenifera* Deshayes, 1859** 2851  
Western Crenate Auger

California to Ecuador.

1 to 1½ inches in length, with about 15 whorls. Color varies from white to tan. There are sharp, widely spaced, straight axial ribs, usually starting from node on the sub-sutural band. The interspaces are filled with fine spiral lines. The aperture is quadrate and the columella straight with no plication. Uncommon; in shallow water to 60 fathoms. Synonym: *ligyrus* Pilsbry and Lowe, 1932.

***Terebra danai* Berry, 1958** 2852  
Dana Auger

Southern California to the West Coast of Baja California.

1 to 1¼ inches in length, about 10 slightly convex whorls, usually of a dull brownish color with whitish subsutural band. Early whorls have axial ribs, narrower than interspaces, which often fade in later whorls. Sub-sutural band, which is set off by inconspicuous groove, is weakly noded though occasional specimens have strong nodes. Spiral sculpture of shallow, unevenly spaced spiral grooves. Aperture quadrate; columella curved with 1 weak plication at anterior end, laminated. Formerly fairly common in shallow water, uncommon in recent years. Synonyms: *simplex* Carpenter, 1856 (non Conrad, 1830); *philippiana* Dall, 1921 (non Deshayes, 1859).

***Terebra hemphilli* Vanatta, 1924** 2853  
Hemphill's Auger

West coast of Baja California.

½ to ¾ inch, about 10 whorls. This species, although smaller and more slender, resembles *T. danai* in color and sculpture. The columella is straighter and the aperture semi-elongate. Fairly common in the Scammon's Lagoon area.

**Other Atlantic species:**

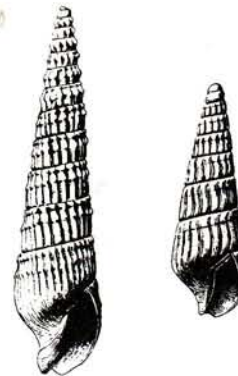
2854 *Terebra nassula* Dall, 1889. Yucatan, Mexico, to the Lesser Antilles, 95 to 640 fms.

2855 *Terebra texana* Dall, 1898. Matagorda Island, Texas.

2856 *Terebra* (*Fusoterebra* Sacco, 1891) *benthalis* Dall, 1899. Florida Strait, 100 to 400 fms.

2857 *Terebra evelynae* Clench and Aguayo, 1939. Northern Cuba, 145 to 230 fms. *Mem. Soc. Cubana Hist. Nat.*, vol. 13 p. 196.

2858 *Terebra juanica* Dall and Simpson, 1901. Puerto Rico 5 mm.



2856            2858

**Other Gulf of California species:**

2859 *Terebra adairensis* Campbell, 1964. Sonora, Mexico to Sinaloa, Mexico.

2860 *Terebra affinis* Gray, 1834. San Luis Gonzaga Bay, Baja California.

2861 *Terebra allyni* Bratcher and Burch, 1970. Baja California to Jalisco, Mexico.

2862 *Terebra armillata* Hinds, 1844. West coast of Baja California to Peru. (Synonyms: *albicostata* Adams and Reeve, 1850; *marginata* Deshayes, 1857.)

2863 *Terebra balaenorum* Dall, 1908. West coast of Baja California to Jalisco, Mexico. (Synonym: *pulchella* Deshayes, 1857 (not Röding, 1798).)

2864 *Terebra berryi* Campbell, 1961. Baja California to Costa Rica.

2865 *Terebra brandi* Bratcher and Burch, 1970. Gulf of California to Peru.

2866 *Terebra bridgesi* Dall, 1908. Gulf of California to Panama. (Synonym: *dushanae* Campbell, 1964.)

2867 *Terebra churea* Campbell, 1964. Sonora, Mexico.

2868 *Terebra corintoensis* Pilsbry and Lowe, 1932. Baja California to Ecuador.

2869 *Terebra dorotheae* Bratcher and Burch, 1970. Gulf of California to the Galapagos.

2870 *Terebra elata* Hinds, 1844. Baja California to Ecuador. (Synonyms: *aspera* Hinds, 1844 (not Bosc, 1801); *radula* Hinds, 1844 (not Gravenhorst, 1807); *petiveriana* Deshayes, 1857.)

2871 *Terebra grayi* E. A. Smith, 1877. Sonora, Mexico, to Guatemala. (Synonym: *gracilis* Gray, 1834 (not I. Lea, 1833).)

2872 *Terebra hindsii* Carpenter, 1857. Baja California to Colombia.

2873 *Terebra intertincta* Hinds, 1844. Baja California to Ecuador.

2874 *Terebra iola* Pilsbry and Lowe, 1932. Outer coast of Baja California to Mazatlan, Mexico.

2875 *Terebra larvaeformis* Hinds, 1844. West coast of Baja California to Ecuador. (Synonym: *isopleura* Pilsbry and Lowe, 1932.)

- 2876 *Terebra ornata* Gray, 1834. Baja California to Ecuador.
- 2877 *Terebra panamensis* Dall, 1908. Baja California to Panama.
- 2878 *Terebra puncturosa* Berry, 1959. Baja California to Panama. *Leaflets in Malacology*, no. 18. p. 112.
- 2879 *Terebra robusta* Hinds, 1844. West coast of Baja California to the Galapagos. (Synonyms: *lingualis* Hinds, 1844; *loroisi* Guerin, 1854; *insignis* Deshayes, 1857; *macrospira* Li, 1930; *dumbauldi* Hanna and Hertlein, 1961.)
- 2880 *Terebra roperi* Pilsbry and Lowe, 1932. Conception Bay, Baja California to Ecuador.
- 2881 *Terebra rufocinerea* Carpenter, 1857. West coast of Baja California to Tartar Shoals.
- 2882 *Terebra shyana* Bratcher and Burch, 1970. West coast of Baja California to Manzanillo, Mexico.
- 2883 *Terebra specillata* Hinds, 1844. West coast of Baja California to Ecuador.
- 2884 *Terebra stohleri* Bratcher and Burch, 1970. Baja California to Socorro Island, Mexico.
- 2885 *Terebra tiarella* Deshayes, 1857. West coast of Baja California.
- 2886 *Terebra tuberculosa* Hinds, 1844. West coast of Baja California to Guatamala.
- 2887 *Terebra variegata* Gray, 1834. West coast of Baja California to Ecuador. (Synonyms: *africana* Griffith and Pidgeon, 1834 (ex-Gray ms); *hupei* Lorois, 1857.)

(Above list supplied by Twila Bratcher and R. D. Burch.)

#### Family TURRIDAE Swainson, 1840

The family Turridae is a very large and diverse group of toxoglossate gastropods which are very difficult to classify. Most of them have a slit, notch or U-shaped canal at the top of the outer lip, known as the "turrid notch." A book of this size cannot do justice to the many interesting species found in our waters. The family probably contains no less than 500 genera and subgenera and several thousand species. A valuable review of the family is given by A. W. Powell in the *Bulletin of the Auckland Institute and Museum*, no. 5, pp. 1-184, 1966. Those interested should consult the works of Grant and Gale, Bartsch, Dall, Rehder and Woodring. The family will continue to undergo many major changes for several years. Mrs. Virginia Maes kindly suggested many improvements in the manuscript.

The tropical west American species are treated in detail by James McLean in Keen's 1971 second edition of "Sea Shells of Tropical West America," Stanford University Press.

#### Subfamily PSEUDOMELATOMINAE J. H. McLean, 1971

Posterior sinus on the shoulder; operculum leaf-shaped, with a terminal nucleus. Rachidian tooth of radula rectangular in shape, with a large projecting cusp; marginal tooth massive, tapered to a sharp point; poison gland present.

#### Genus *Hormospira* Berry, 1958

Shells 1½ inches, elongate-fusiform, with oblique nodules on the shouldered periphery of the whorls. Periostracum

thin. Operculum leaf-shaped with a terminal nucleus. Radula is unusual for a turrid (see Powell, 1966, p. 33). Type: *maculosa* (Sowerby, 1834).

#### *Hormospira maculosa* (Sowerby 1834) 2888 Western Maculated Turrid

Gulf of California to Ecuador.

1 to 1½ inches, high-spined, narrowly fusiform, with nodes midway between sutures. Color cream to bluish with the nodes white and with dots, flecks and axial flames of brown. Moderately common; intertidal to 16 fathoms.



2888

#### Other species:

- 2889 *Hormospira* (*Tiariturris* S. S. Berry, 1958) *libya* (Dall, 1919). Baja California to Mazatlan, Mexico. 20 to 66 fms. Uncommon.
- 2890 *Hormospira* (*Tiariturris*) *spectabilis* Berry, 1958. Isla Angel de la Guarda, Baja California, 67 fms. Off Cape Tepopa, Baja California, 6 fms.

#### Genus *Pseudomelatoma* Dall, 1918

Shells about 1½ inches, solid, compact, dark, fusiform, with slanting axial ribs above which is a subsutural spiral row of beads. Periostracum brownish, opaque. Operculum leaf-shaped, with a terminal nucleus. Pacific coast only. *Laevitectum* Dall, 1919, is probably a synonym. Type: *penicillata* (Carpenter, 1865).

#### *Pseudomelatoma moesta* (Carpenter, 1865) 2891 Doleful Turrid

Southern California to Baja California.

1 to 1½ inches, dark-brown, with a beaded band just below the suture, with 9 or 10 slightly curved ribs per whorl, and with faint incised lines. In some specimens the axial ribs are very weak or obsolete. Moderately common; under rocks intertidally.

#### Other species:

- 2892 *Pseudomelatoma torosa* (Carpenter, 1865). Oregon to Scammon Lagoon, Baja California. (Synonym: *aurantia* Carpenter, 1865.) Scarce in shallow water; common at 35 fms.
- 2893 *Pseudomelatoma penicillata* (Carpenter, 1865). Magdalena Bay to Gulf of California. May be form of *moesta* (Carpenter, 1864).