

SUMMARY OF THE SHELLS OF THE GENUS *CONUS* FROM
THE PACIFIC COAST OF AMERICA IN THE U. S.
NATIONAL MUSEUM.

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The researches of Bergh have shown that the genus *Conus* is a very natural one, and that, while the anatomical characters show, like the shells, considerable variation, there is no evidence as yet of any distinctly characterized groups, anatomically speaking, which would enable us to divide the genus in harmony with the conchological characters or on the anatomy alone. The color pattern, the general form, and sculpture of the shell still remain the most constant, as they certainly are the most convenient, characters for separating the genus into sections.

A study of the coloration of the species leads one to believe the range of variation among the species to be greater than conchologists have usually been ready to admit. On the other hand, the identifications made from imperfect figures are responsible for much confusion among similar but not identical things.

Among cones of several groups, such as the *Proteus* group, the *Nebulosus* group, and the *Brunneus* group, the coloration, on careful study, is seen to consist of a mingling of several distinct elements, each of which has its distinct series of variations. The combinations resulting are therefore quite numerous and, without close study, give very different aspects to the shells, thus obscuring their relations to each other.

In most cases there are nebulous masses of color which contrast with the ground color of the shell and may be paler or darker, are usually disposed in a nebulous manner without any well-defined pattern, and sometimes are concentrated in axial streaks or flames.

There is a tendency for these masses of color to become less conspicuous near the shoulder, at the middle of the whorl, and near the base, giving rise to more or less distinct spiral bands or lighter areas in these areas of the surface. The axial streaks before mentioned are apt to be broken or angulated where they cross these areas, thus giving rise to distinct, spiral, usually lighter, color bands.

These nebulæ are frequently blotched with white or the ground color of the shell, and usually the nebulous color is intensified at the anterior border of the blotch, as if the color glands, while the surface of the white patch was being secreted by the usual process, had ceased functioning temporarily, and begun again, with special intensity when terminating the period of inaction.

The second set of coloration features is produced by fine axial lineation, the lines being usually dark in color. When they intersect at right angles to the spiral banding they form tessellation; when they develop zigzags and in the absence of distinct spiral bands we have the coloration of light tent-like triangles, imposed upon the ground color, as in the *Textile* group of cones.

In the complex of color pattern the last factor comprises spiral lines, often alternating light and dark, or their continuity may be so effectually interrupted that the dark parts are reduced to dots and their relation to the spiral lineation be obscured. There are also pale and dark individuals where the lineation is lost entirely and no nebulæ occur, so that the relation of the individual to the species must be deduced largely from the form and sculpture.

Most cones have, near the canal, more or less spiral sculpture, and in some species like *C. arcuatus* this sculpture may sometimes be confined to the anterior part of the whorl and at other times may invade the whole lateral surface, reaching nearly or even quite to the shoulder. Failure to realize this difference within the species is responsible for some unnecessary names.

The spire may be convex or concave, the fasciole between the shoulder and the suture may be swollen or excavated, smooth or spirally striate. The shoulder may be rounded, carinate or even coronated by a series of nodules. These characters are usually pretty constant and may be relied upon for specific diagnosis.

A recent attempt to revise the West American Cones in the National collection and correct the nomenclature led to the preparation of the following summary, which may be regarded as preliminary material toward a future monograph. Some new forms are added to the fauna and some species confused with others in the past have received distinctive names.

Family CONIDÆ.

Genus CONUS Linnæus.

CONUS FERGUSONI Sowerby, 1875.

Magdalena Bay, Lower California, to Ecuador and the Galapagos Islands.

This white and rather rude species is the largest of the genus on the west coast of America.

CONUS PURPURASCENS Broderip, 1833.

Magdalena Bay, Lower California, to Manta, Peru.

The color variations of this handsome species are dazzling, but the general habit of the shell is quite constant.

CONUS PURPURASCENS, var. REGALITATIS Sowerby, 1834.

Cape St. Lucas and southward to Peru, the Galapagos and Clipperton islands.

In this variety the nebulous brown obscures the brighter coloring and the spiral lineation, but the mesial light spiral band is unusually conspicuous.

CONUS PURPURASCENS, var. REJECTUS Dall, 1910.

Port Escondido, Gulf of California.

This variety has the nebulous brown very pale and scattered in very small patches over a pale purple or bluish ground color, the whole surface in front of the shoulder being rather closely painted with pale brown, thread-like, articulate, spiral lines. The pale lateral band is still notable. The spire is somewhat lower and the shoulder more angular than usual. The spire is ornamented with a few radiating brown flammules, the sutural fasciole is excavated, smooth, or with only one or two obsolete spiral striae.

CONUS TORNATUS Broderip, 1833.

Cerros Island, Lower California, the Gulf of California, and south to Ecuador.

The original figure in the Conchological Illustrations is quite different from some of the shells to which subsequent iconographers have applied the name. This species is the Pacific analogue of *C. pealii* of the Gulf coast of the United States.

CONUS MAHOGANI Reeve, 1843.

Magdalena Bay, Lower California, to Panama.

The particular mutation to which Reeve gave the name of *mahogani* is an undersized slender shell, in which the brown nebulosity obscures the spiral lineation. The young may be of this type while the adult assumes the coloration of the norm of the species, which has the nebulosity feeble and its conspicuous trait is the articulated spiral lineation on a pale yellowish or bluish ground. The full-grown shell rarely retains the melanitic hue of *mahogani* s. s., but there are all intermediate color gradations. This species is *C. interruptus* Broderip, 1829, and Reeve in the Iconica, but not the *C. interruptus* Mawe (in Wood's Index), 1828.

CONUS COMPTUS Gould, 1851.

Carmen Island, Gulf of California, to Costa Rica.

This species has much the coloration of the preceding with which it has been too hastily united by some indiscriminating writers. It is, however, a much shorter and stouter shell with less nebulation and with a tendency of the spiral coloration to become associated in an anterior and posterior obscure band.

This shell has been generally named *C. puncticulatus* Hwass, 1792, but Hwass distinctly assigns his shell to the West Indies, and there is little doubt but his account and name relate to a combination of *C. papillosus* Kiener, with some Oriental allied form. Our shell is also the *C. perplexus* Sowerby, 1857. It has both smooth and pustulose mutations.

CONUS XIMENES Gray, 1839.

Gulf of California to Sechura Bay, Peru.

This shell is of the same general type of coloration as the preceding, which was also called *C. ximenes* by Sowerby in the Thesaurus, and confounded with *C. mahogani* by him. The true *C. ximenes* is a much larger shell with sparser dotted lineation and pale olive periostracum, with but little brown nebulosity. It seems to be extremely rare.

CONUS CALIFORNICUS Hinds, 1844.

Farallones Islands off San Francisco, California, to Ballenas Lagoon, Lower California.

This very uninteresting little cone is the *C. ravus* Gould, 1851. The young have a faint brown reticulation of the *Textile* type, with a spiral lineation of faint brown continuous lines. The adult is bluish white under a dense brownish periostracum. The largest specimen I have seen is about 35 mm. in length.

CONUS BRUNNEUS Mawe, 1828.

Cape St. Lucas to the Galapagos and Clipperton islands, and on the mainland south to Manta, Ecuador.

This is an irregularly coronated species with a large area of dark brown nebulosity and continuous darker brown spiral lines. A variety of dwarf proportions with exaggerated coronation, deeply striated fasciole on the spire, and coarse prominent pustulation (the latter rarely occurring on the typical *brunneus*) may take the varietal name of *pemphigus*. It has a length of 26 and a maximum width of 17 mm., and was collected at the Tres Marias Islands, west of Mexico. (Cat. No. 37449a U.S.N.M.)

CONUS MILIARIS Hwass, 1792.

Galapagos and Clipperton islands, Ecuador and Peru.

This species is intimately related to *C. brunneus* with which intermediate varieties tend to connect it. It differs most conspicuously in its paler color, absence of the brown nebulosity, tendency of the color to arrange itself in spiral bands, and in the spiral lineation which is articulate and not continuous. In the variety *tiaratus* (Broderip, 1833) the color is more intense and darker, and in still another variety brown nebulosity appears, so that it is only by the broken spiral lineation that the form is assignable to *miliaris* rather than *brunneus*. Our specimens of *C. miliaris* from the Gulf of California are rather poor, but nothing about them seems to justify their specific separation from the Indo-Pacific specimens of which we have a large series.

CONUS GLADIATOR Broderip, 1833.

Gulf of California to the Galapagos Islands.

This is the analogue of the Atlantic *C. mus*. It is very uniform in its dull and unattractive coloration and in spite of Tryon's opinion seems in no way closely related to *C. brunneus*. We do not have it from the mainland south of Panama Bay.

CONUS VITTATUS Hwass, 1792.

Acapulco to Panama.

Specimens from the Tres Marias Islands are more vividly colored than those from the mainland. A question arises as to the relations of this species with *C. coffea* Linnaeus, or *fumigatus* Hwass, reported as West Indian, but of which no West Indian specimens have been noted by us.^a The *C. orion* Broderip seems to be a variety in which the spire is not convex; variations in this character can be noted in our series. *C. cumingii* Reeve,^b which is united with this species by Tryon, does not seem to me to be at all nearly related to our species; it is a Philippine shell. *C. henoquei* Bernardi, which Tryon unites with *C. orion*, is doubtless a synonym of *C. vittatus*.

CONUS GRADATUS Mawe, 1828.

Gulf of California.

This belongs to a group of cones of which *C. proteus*, *C. floridanus*, and similar species are members, and about which, owing to a wide range of color-pattern, much confusion has existed. The only way to determine the names of the different forms is to go back to the author's original descriptions and figures, those of subsequent authors almost invariably including a certain amount of confusion; and yet when the different forms are segregated there is little difficulty in discriminating between well preserved specimens. In every case here cited the species is believed to be that of the original author, and the attributions of later writers, unless otherwise stated, are ignored.

The norm of this species is a rather slender shell with a moderately exerted sharp spire with slightly concave walls, the coloration being squarish brown maculations on a white ground color. The following forms may be regarded as species or varieties; all that can be said is that for the most part they are easily separated.

CONUS SCALARIS Valenciennes, 1832.

Cerros Island, Lower California, and the Gulf of California.

This is a larger shell with turritid or scalar spire and generally with less brown color and more white ground exposed.

CONUS REGULARIS Sowerby, 1841.

Gulf of California to Panama.

This is a shorter and wider shell with a short conical spire, longitudinal brown nebulous streaks and spiral articulated lines, which

^a The only specimen so named in the collection is one identified by Dr. P. P. Carpenter which was collected at Aden, in the Red Sea.

^b Conch. Iconica, *Conus*, Suppl., fig. 282.

tend to be alternately darker and lighter. I have not found in our large series an exact duplicate in color pattern of Sowerby's original figure in the Conchological Illustrations, but the mass of specimens approach it. As a whole the color effect is darker than in the previously mentioned forms of the group, and there is a notable tendency of the color markings to form groups in the spiral sense.

Another form closely allied to this, which is listed as *C. dispar* Sowerby, in the Thesaurus, though not the original *C. dispar* of the Conchological Illustrations, is characterized by a bluish or livid ground color, which gives a very different aspect to a shell not otherwise separable from *C. regularis*.

This has been collected from Topolobampo, Mexico, to the Gulf of California.

CONUS MONILIFER Broderip, 1833.

Gulf of California. (Magdalena Bay, Lower California, south to Peru.)

This is a smaller and more slender shell than the members of the group just discussed. It has a relatively sharp, elevated, but not scalar spire; and the brown articulations of the spirals tend to be small, distant, and squarish, while the nebulous blotches are smaller and more widely separated.

CONUS INCURVUS Broderip, 1833.

Gulf of California to Ecuador.

This has been confused by Tryon with *recurvus* (Broderip) Kiener, 1839. It is a small shell, with a marked and sharp angle at the shoulder, the sides slightly incurved, the spire short, relatively to others of this group, and the ground color of a livid flesh color. It is easily separated from the others by its general appearance and size, which does not exceed 26 mm. in length in our specimens.

CONUS DISPAR Sowerby, 1833.

Gulf of California.

This is the original *C. dispar* of the Conchological Illustrations. It has the shortest and most disproportionate spire in the group. It is small, narrow, straight-sided, smooth, with a low pointed spire (about one-seventh the entire length) and a few sharp sulci near the canal. The coloration in all our specimens is white or pale, a few light-brown flammules on the spire and nebulous patches on the sides, the spiral painting being mainly of small, distant, sparse, squarish dots with an obscure indication of two paler non-nebulous bands on the sides of the shell.

Though belonging to the *Proteus* group, this seems, as far as our specimens indicate, specifically different from the others.

CONUS EMARGINATUS Reeve, 1843.

Acapulco, Mexico, to Ecuador.

This cone has been well figured on several occasions and is readily identifiable, but great is the confusion to which it has submitted. It

is the *C. arcuatus* of Gray, well figured on pl. 36, fig. 22, of the Zoology of Beechey's Voyage, 1839; but it is not the *arcuatus* of Sowerby in 1829. It is the *C. lorenzianus* of Kiener, Iconography of Conus, pl. 55, fig. 1; and of Reeve, Conchologia Iconica, pl. 27, fig. 152, 1843, but not of supplementary pl. 5, fig. 249, 1849; nor of Dillwyn, 1817. *C. flammeus* Lamarck, *C. zebra* Sowerby (Conch. Ill., fig. 4, 1833) and of Reeve, 1843; and *C. virgatus* Reeve (Conch. Icon., *Conus*, pl. 16, fig. 87, 1843); all of which have been associated with this species, are perfectly distinct from it, though perhaps not from each other. The purple-brown flames which longitudinally ornament this shell are angularly interrupted near the middle of the side, showing a tendency toward a spiral band in that place.

CONUS ARCHON Broderip, 1833.

Mazatlan, Acapulco, west coast Central America.

The shell figured by Sowerby in the Conchological Illustrations is apparently not that subsequently described and figured by Kiener and Reeve. Our shell agrees with Sowerby's original diagnosis and figure, which he pointedly states has "no articulate lines." The granulate shell, *C. granarius* Kiener, is quite distinct from the true *Archon* as well as from *Archon* of Kiener. The latter is probably the same as his *C. sanguineus*. Of the relations of his *C. castaneus* I am doubtful, but see no reason for approximating it to *C. archon*.

Our shell has irregularly distributed chestnut brown flammules on a white ground with a few brown spiral lines near the anterior end, more or less broken, but not "articulated." The surface is smooth; there is no trace of granulation. The spire is rather tumid and not much elevated.

CONUS ARCUATUS Sowerby, 1829.

Cerros Island, Lower California, south to Panama. In mud at a depth of 14 to 50 fathoms.

This is another species in which the original type seems to have been disregarded. In the Conchological Illustrations, soon after the species was described, it was figured by Sowerby in a very characteristic manner. The *arcuatus* of Gray, 1839, already alluded to, is a totally different species, *C. emarginatus* Reeve, which is founded on Gray's figure. Reeve figures a rather dark specimen of the present species in the Conchologia Iconica, *Conus*, pl. 15, fig. 77b. Numerous specimens were dredged by the fisheries steamer *Albatross*. In general the white part of the shell predominates over the brown flammules. The spiral sulcation found at the base frequently extends nearly to the shoulder, while other specimens are almost smooth.

CONUS EDAPHUS Dall, new species.

Off Clarion Island in 31 fathoms, sand; bottom temperature 68°.4 F.; U. S. Bureau of Fisheries steamer *Albatross*.

Shell small, short, stout, solid, with a short acute spire, rounded shoulder, and slightly convex sides; nucleus of two and a half trans-

lucent whitish rounded whorls with a dimple at the apex; of the remaining eight and a half whorls the earlier five have the shoulder irregularly, obscurely, minutely beaded; the slope from the nucleus to the shoulder of the last whorl is slightly concave; the fasciole between the shoulder and the suture behind it is depressed, with two strong spiral sulci running in it, the interspaces rather tumid. The coloration of the shell is peculiar; the pattern recalls *C. tæniatus* and *C. tessellatus*. The ground is a subtranslucent waxen white; between the shoulder and the canal there are about sixteen subequal, rectangularly articulated, spiral bands separated by narrower spaces of the ground color; the articulations are vermilion or orange red and opaque white alternately; on the spire are nearly a dozen radiating orange or vermilion flammules; the interior of the aperture is rosy white, the region about the canal deep rose color; the only sculpture on the sides of the shell consists of about six equidistant channeled sulci, growing wider anteriorly until the canal is reached, and a few smaller striæ on the siphonal fasciole; the aperture is narrow, parallel-sided, with a straight outer lip, the anterior and posterior sinuses moderately deep. Height of shell, 25; of shoulder, 22; maximum diameter of shell, 14; of canal, 3 mm.

Type.—Cat. No. 130385, U.S.N.M.

Although a small shell, it is one of the most lovely of the genus, and its pattern of coloration only paralleled by one or two others in the whole list of species.

CONUS NUX Broderip, 1833.

Ballenas Lagoon, Lower California, and south to Panama and the Galapagos Islands.

This pretty little cone seems sufficiently distinct from the Indo-Pacific species with which it has been consolidated by Tryon. In the large series extending the whole length of its range which is in the National Collection it is somewhat strange that the largest specimen should be that from the most northern locality, Ballenas Lagoon. It is the *C. pusillus* of Gould in 1851, but Lamarck's *C. pusillus* of 1810 was based on a West African shell.

CONUS PRINCEPS Linnæus, 1758.

Cape St. Lucas to Panama.

This well-known shell is very characteristic with its tufted periostracum. The *C. regius* of authors is an exact synonym, as both diagnoses refer to the variety with broad stripes. *C. lineolatus* Valenciennes, 1832, is the variety in which the stripes are reduced to brown hair lines, and which is the prevailing form from Panama to Peru.

For the variety with the lines entirely absent I propose the name *apogrammatum*. Our specimens of this type are from Panama.

CONUS SANGUINOLENTUS Reeve, 1849.

Guaymas, Mexico, to the coast of Ecuador.

Reeve named two cones after Cuming. The second one appears on the supplementary plate 8 of his monograph, figs. 277*a* and 277*b*, and, of course, the name can not be retained. But on the same plate, fig. 274, he represents a shell differing only from his invalid *C. cumingii* by having the pinkish color of the sides aggregated in a few vertical streaks. This shell of unknown origin he names *C. sanguinolentus*. From the figures it would seem that these two are only color variations of a single species, which will therefore take the name of *sanguinolentus*.

The specimen which best represents this species in the collection (Cat. No. 37399) is of the unicolorate type, and was obtained at Guaymas, Mexico.

CONUS XANTHICUS Dall, new species.

Off Guaymas, Mexico, at station 3011, in 71 fathoms, sand,
U. S. Bureau of Fisheries steamer *Albatross*.

Shell biconic, solid, with a low, slightly turreted spire, straight sides and about ten whorls; surface of the whorls on the spire evenly excavated, smooth, or with two or three faint spiral striæ in the channel; periostracum dense, brown, and velvety, except where cleaned off, when the substratum, which is very adherent, may appear polished; suture simple; sides of the shell straight, smooth, with very faint indications of obsolete spiral striation, the striæ rather distant; near the canal there are, as usual, a few spiral cords; outer lip straight, receding to the sinus at each extremity; ground color of the shell white with broad brownish yellow irregular areas so disposed as to indicate three irregular white spiral areas, one near the canal, one at about the middle of the side, and the third somewhat in front of the shoulder. In another specimen the yellow color is generally diffused and only the central band is obscurely indicated; there is no pattern on the spire. Height of shell, 42; of shoulder, 37; maximum diameter of shell, 22.5; of canal, 5 mm.

Two other specimens, probably of the same species, from 7 fathoms, Panama Bay, have the periostracum and coloration of a darker brown. This species appears to be the Pacific analogue of the Antillean *C. flavescens* Gray.

Type.—Cat. No. 111236, U.S.N.M.

CONUS SCARIPHUS Dall, new species.

Off Cocos Island, Gulf of Panama, at station 3368, in 66 fathoms, rocky bottom, one specimen with hermit crab, by the U. S. Bureau of Fisheries steamer *Albatross*.

Shell biconic, attenuated in front, slightly swelling in front of the shoulder, which is sharply carinate; spire low, of about eight whorls without the (lost) nucleus; the summit of the whorls between suture and carina is excavated and smooth; walls of the shell rather thin,

outer lips nearly straight; ground-color yellowish white covered with a thin smooth yellowish periostracum; pattern of fluctuating longitudinal streaks of yellowish brown, which by their zigzag direction and anastomosis leave roughly triangular patches of white of small size all over the shell, except in the middle, where a tendency to the usual paler girdle is manifest; near the canal there are about sixteen paired prominent spiral threads, the intervals between the pairs being more or less channeled; sutural sinus and canal rather deep. Height of shell 41; of shoulder 35; maximum diameter of shell 15; of canal 5 mm.

There are a few small brown spots along the shoulder keel. Though the pattern of coloration is different, the aspect of the shell recalls the Antillean *C. delessertianus*. If the white triangles were bounded by a definite dark line, this shell would approximate the pattern of the *Textile* group. As it is, it is somewhat unique in character.

Type.—Cat. No. 123085, U.S.N.M.

CONUS DALLI Stearns, 1873.

Cape St. Lucas to Panama.

This very handsome cone is the only representative of the typical *Textile* group on the coast of America, so far as known.

CONUS LUCIDUS Mawe, 1828.

Magdalena Bay, Lower California to the Galapagos Islands.

This seems to be a rare and very distinct species.

CONUS SIEBOLDII? Reeve, 1848.

Japan, according to Reeve. Off the Galapagos Islands in 300 fathoms, U. S. Bureau of Fisheries steamer *Albatross*.

The specimen dredged by the *Albatross* had lost its spire and part of the last whorl, but what was left seemed to agree very well with Reeve's figure of *sieboldii*.

CONUS PYRIFORMIS Reeve, 1843.

West coast of Nicaragua and south to Panama and the Galapagos Islands.

This snow-white or pinkish pear-shaped cone can not be confounded with any other. Hinds in 1843 named the young of this species *C. patricius*.

CONUS CONCOLOR Sowerby, 1834.

Acapulco, Stearns collection.

The specimen referred to agrees extremely well with Sowerby's original figure in the *Conchological Illustrations*, but not with the figure given by Reeve in the *Iconica*. Sowerby gives no description or locality, but refers in his list to the *Proceedings of the Zoological Society of London* for 1841. Nothing was published in the *Proceedings* for that year or any adjacent year in regard to this species. Reeve's shell, which does not agree with Sowerby's, is reported to have come from China. Another figured in the *Thesaurus* is alleged to be from India.

Our present shell has a dome-shaped spire with a small acute nucleus, irregular suture, the summit of the whorls behind the shoulder being closely and continuously striate. The body color is of a pale reddish brown, intensified at resting stages. The lines of growth on the sides are minutely wavy, crossed by a multitude of almost microscopic striæ, with indications over the surface of more extended but obsolete spiral sulci corresponding more or less closely to fine dark-brown spiral hair lines, and about nine spiral threads with wider interspaces near the canal. The shell is about 50 mm. in length and 25 in maximum diameter.

Whether this specimen is really Oriental and wrongly labeled from Acapulco, or whether it represents Sowerby's original and a distinct species from the Oriental shell I have no present means of deciding.

It will be noted that the geographical distribution given for the species of the preceding list, except when put in parentheses, is based on specimens actually in the collection, and not on the literature. There are several species referred to the Pacific coast in the literature, which are not represented in the list, because we have no autoptical information to that effect.

There are some species which have been associated with the Pacific coast fauna, but are not definitely admitted to our list. Notes on these follow.

Specimens of *Conus proteus* from Panama are in the collection. They doubtless were purchased and originated on the Atlantic side.

A fresh shell of *C. flavidus* Lamarck, was sent by a correspondent as picked up at San Diego, California. It is without doubt exotic.

Conus concinnus Broderip, not Sowerby, renamed by Crosse *C. concinnulus*, is a species of *Meta*, belonging to the Columbelloidæ, and a common Gulf shell.

Conus cinctus Valenciennes, 1832, not of Swainson, 1823, may be the same as *emarginatus* Reeve.

Conus tiaratus Broderip, is regarded by some authors as identical with *C. minimus* Linnæus, which is improbable.

Conus luzonicus Valenciennes, has been reported from the Galapagos Islands, but its real habitat seems to be the Philippines.

Conus diadema Sowerby, 1834, is a variety of *C. brunneus* Mawe.

Conus reticulatus Sowerby, 1833, from Magdalena Bay, is identical with *C. lucidus* Mawe, 1828.

Conus cælebs Hinds, may be the young of *C. fergusonii* Sowerby.

Conus trochulus Reeve, reported from California, is really from the Cape Verde Islands.

Conus perplexus Sowerby, in the Thesaurus, 1857, is identical with *C. comptus* Gould in 1851.

Conus largillierti Kiener, reported from Mexico, is from Yucatan, not the west coast of Mexico, and may prove identical with one of the varieties of *C. proteus*.

Conus hieroglyphus Duclos, is Indo-Pacific.

Conus arenatus and *abbreviatus* are exotic species.

Conus catenatus Sowerby, 1878, from Panama appears to be a variety of *C. interruptus* Broderip.

Conus inconstans E. A. Smith, 1877, from Panama, seems identical with *C. miliaris* Hwass.

Conus prytanis Sowerby, 1882, from the Galapagos, is a variety of *C. brunneus* Mawe.

Conus exquisitus Sowerby, 1887, stated to be from California, is certainly not from California, nor has anything like it been reported from the Gulf of California.



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