REVISION OF CYPRAEACEA IN THE COLLECTION OF THE ZOOLOGICAL SURVEY OF INDIA. PART I. THE FAMILIES TRIVIIDAE, ERATOIDAE AND PEDICULARIIDAE.

By HARISH CHANDRA RAY, *M.Sc., Research Scholar, Zoological Survey of India, Calcutta.*

INTRODUCTION.

Studies on the living Cypraeacea of the Indo-Pacific Region have made rapid strides within recent years. The monographs published by Schilder and Schilder provide valuable information concerning the nomenclature, synonymy, distribution and evolution of the various members of the different groups. Their scheme of classification, based on both anatomical and conchological characters, is a marked improvement on the earlier classifications suggested almost exclusively on the characters of the shells by Gray, Adams, Weinkauff, Jousseaume, Rochebrune, Roberts, Melvill and Paetel. Troschel first introduced a natural system of classification based on the radula, but his work was very limited. Vayssiere's work is also interesting, but it is confined to one section only, *i.e.*, the Triviidae. The well-illustrated works of Kiener, Reeve, Sowerby and Roberts are also valuable for the identification of the species. In so far as the list of references and distribution is concerned, Hidalgo's monograph is quite helpful.

At the instance of Dr. B. N. Chopra, Director, Zoological Survey of India, I took up a study of the Cypraeacea, with special reference to the Indo-Pacific forms available in the collection of the Zoological Survey of India. This work has not only resulted in a material improvement of the collection, but has afforded me sufficient scope and facilities to gain some knowledge and experience about the group.

In 1920, the late Mr. E. Vredenburg, Superintendent, Geological Survey of India, Indian Museum, Calcutta, attempted a classification of the recent and fossil Cypraeidae in the Indian Museum, Calcutta. He, no doubt, made an elaborate study of the subject, but while strongly criticizing Melvill's method, which he designated as the 'Circular System', as a 'Stop-gap', wrongly included the genera, such as, *Cypraea, Trivia, Erato*, etc., in the single family Cypraeidae. Moreover, his observations, in most cases, are not critical. while the distribution and relationship of the species have not been fully discussed.

The specimens in the collection represent the families Triviidae, Eratoidae, Amphiperatidae, Pediculariidae and Cypraeidae. For convenience of study I have split up my work into two parts, the first deals with Triviidae, Eratoidae and Pediculariidae, while the second is devoted mainly to the study of the family Cypraeidae. The species of the family Amphiperatidae available in the collection have already been treated in my paper on the unnamed shells of Cypraeacea published in the *Journ. Roy. As. Soc. Bengal*, Science, IX, p. 40 (1945).

So far as the classification of the Cypraeacea is concerned, I fail to give my full support to the view expressed by Schilder. The retention of the families Triviidae and Eratoidae and the consequent adjustment of the subfamilies Triviinae and Eratoinae appears to me more reasonable than completely dropping the former family and placing both the subfamilies under the latter. A detailed discussion on this important point will be made later in connection with the genus *Trivia*. Again, the erection of Tryon's family Pediculariidae (1885) for the accommodation of Swainson's genus *Pedicularia* (1840) appears to have been first accepted by Schilder with the inclusion of his new subfamily Pediculariinae into it for Swainson's species *P. sicula* from the Coast of Sicily. But afterwards he changed his decision and as a result the family Pediculariidae was totally dropped and the subfamily Pediculariinae placed under the family Amphiperatidae. Thiele, no doubt, partly supports Schilder's conclusion regarding the dropping of the family Pediculariidae, but differs from him in relegating the subfamily Pediculariinae together with Triviinae, Amphiperatinae, etc., to the single family Cypraeidae. Neither of the schemes, however, appears satisfactory. So, I think that the family Pediculariidae should be retained, as the characters displayed by the shells seem to be quite peculiar and interesting and may claim a separate family rank.

Jousseaume's genera *Pusula, Niveria, Triviella* and *Trivirostra* appear to have been deliberately merged by Cossmann (1903, p. 170) with the synonymy of *Trivia* with a view to reduce the number of groups. But this curtailed policy has not at all been supported by the subsequent workers in the field, as it causes a great deal of confusion. Thiele may be justified in his attempt to treat them as subgenera or sections of *Trivia*, but his recognition of only one family Cypraeidae even at this advanced state comprising all the groups, namely, *Trivia, Erato, Pedicularia, Amphiperas*, etc., is quite undesirable. Iredale's genera *Cleotrivia, Ellatrivia, Dolichupis* and *Fossatrivia*, which Schilder also ranks as distinct, cannot be said to have been erected on sufficient morphological grounds. So, I think it better to subordinate all these groups together with those of Jousseaume to *Trivia* unless more detailed facts (both anatomical and conchological) are forthcoming. This view finds somewhat in agreement with that of Adam and Leloup and Thiele.

The collection before me is too poor to represent the families satisfactorily. In Triviidae there are only nine species, in Eratoidae only five and in Pediculariidae only one. However, a careful study of the collections has enabled me to bring the list of species and subspecies up-to-date as regards nomenclature, synonymy and classification. The distribution of the species has been discussed in detail and the range has been extended further in a few cases. The relationship among the species is also clearly indicated.

Lastly, I offer my cordial thanks to Dr. B. N. Chopra, for his kind suggestion of the problem and also for his unfailing help and advice throughout the work, to Dr. Baini Prashad, Fisheries Development Adviser, Government of India, for his trouble in correcting the manuscript as well as for useful criticisms.

Class GASTROPODA.

Subclass *PROSOBRANCHIA.*

Order MESOGASTROPODA.

Superfamily CYPRAEACEA.

Family TRIVIIDAE.

Subfamily *TRIVIINAE.*

Genus **Trivia** (Gray, 1832) Broderip, 1837.

Type *Cypraea europea* Montagu.

1837. *Trivia*, Broderip, *Penny Cyclopaedia*, VIII, pp. 254-259.
1840. *Trivea*, *Swainson*, *A Treatise on Malacology*, p. 325.
1842. *Trivia*, Reeve, *Conch. Syst.* II, p. 262.
1846. *Trivia*, Reeve, *Conch. Icon.* III.
1846. *Trivia*, Sowerby, *Man. Conch.* ed. III, p. 279.
1847. *Trivia*, Gray, *Proc. Zool. Soc. London*, Part XV, p. 142.
1850. *Trivia*, Gray, *Figures of Moll. Anim.* IV, p. 75.
1852. *Trivia*, Mörch, *Cat. Yoldi*, p. 118.
1854. *Trivia*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 268.
1857. *Trivia*, Gray, *Guide to Syst. Descr. Moll. Brit. Mus.* 1, p. 72.
1863. *Trivia*, Troschel, *Das Gebiss der Schnecken*, 1, p. 214.
1867. *Trivia*, Marrat, *Ann. & Mag. Nat. Hist.* (3) XX, p. 215.
1868. *Trivia*, Stoliczka, *Cretaceous Fauna of Southern India*, II, pp. 49, 50, 55, 56, 499.
1870. *Trivia*, Sowerby, *Thes. Conch.* IV, pp. 2, 4, 42.
1870. *Trivia*, Roberts, *Amer. Journ. Conch.* V, p. 204.
1872. *Trivia*, Brazier, *Proc. Zool. Soc. London*, p. 86.
1878. *Trivia*, Sars, *Moll. Reg. Arcticae Norvegiae*, 1, p. 154.
1882. *Trivia*, Tryon, *An Introduction to the Study of Moll.*, 1, p. 198.
1883. *Trivia*, Dautzenberg, *Les Moll. Mar. du Roussillon*, 1 (3), p. 127.
1883. *Trivia*, Daniel, *Journ. de Conchyliol.* XXXI, p. 355.
1884. *Trivia*, Jousseaume, *Bull. Soc. Zool. France*, IX, pp. 99, 100.
1885. *Trivia*, Roberts, *in Tryon's Man. Conch.* VII, pp. 161, 163, 198.
1888. *Trivia*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 322.
1888. *Trivia*, Melvill, *Mem. and Proc. Manchest. Lit. & Phil. Soc.* (4) I, pp. 185, 193, 245.
1900. *Trivia*, Pritchard and Gatliff, *Proc. Roy. Soc. Victoria*, (N.S.), XII p. 187.
1903. *Trivia*, Cossmann, *Ess. de Paleoconch. Comp.* V, pp. 170, 171.
1909. *Trivia*, Shaw, *Proc. Malac. Soc. London*, VIII, pp. 288-292.
1915. *Trivia*, Bartsch, *Bull. Smiths. Inst. U. S. Nat. Mus.* XCI, p. 98.
1915. *Trivia*, Iredale, *Proc. Malac. Soc. London*, XI, p. 133.
1916. *Trivia*, Iredale, *Proc. Malac. Soc. London*, XII, pp. 34, 35.
1920. *Trivia*, Vredenburg, *Rec. Geol. Surv. Ind.* LI (2), pp. 71, 73, 74, 84, 129-135.
1922. *Trivia*, Schilder, *Proc. Malac. Soc. London*, XV, p. 98.
1923. *Trivia*, Vayssiere, *Ann. Mus. Hist. Nat. Marseille-Zool.* XVIII, p. 82.
1925. *Trivia*, Oostingh, *Rept. on a Collection of Rec. Shells from Obi and Halmahera (Moluccas)*, p. 112.
1926. *Trivia*, Schilder, *Rec. Geol. Surv. Ind.* LVIII (4), pp. 360, 373, 374, 376.
1927. *Trivia*, Schilder, *Archiv f. Naturges.* XCIA, p. 62.
1928. *Trivia*, Faustino, *Summary of Philippine Marine and Freshwater Moll.*, p. 220.
1929. *Trivia*, Dautzenberg, *Faune de Col. Franc.* III, p. 465.
1929. *Trivia*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 268.
1930. *Trivia*, Iredale, *Mem. Queensl. Mus.* X, p. 83.
1931. *Trivia*, Schilder, *Zool. Anz.* XCVI, p. 69.

1932. *Trivia*, Dautzenberg, *Journ. de Conchyliol.* LXXVI, p. 53.
1933. *Trivia*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 244, 274.
1934. *Trivia*, Tomlin and Schilder, *Ann. S. Afric. Mus.* XXX (3), p. 478.
1935. *Trivia*, Schilder, *Proc. Malac. Soc. London*, XXI, p. 232.
1936. *Trivia*, Schilder, *Proc. Malac. Soc. London*, XXII, p. 79.
1937. *Trivia*, Viader, *Maur. Inst. Bull.* 1 (2), p. 39.
1946. *Trivia*, Fretter, *Journ. Mar. Biol. Ass. U. K.* XXVI (3), pp. 326, 348.

Genus *Trivia* was proposed by Gray, in 1832, in his " Descr. Cat. of Shells " to separate the smaller sulcated shells, the nuns, from the real cowries designated by the generic name *Cypraea* Linn. But as his manuscript remains unpublished the genus is ascribed to Broderip who in his monograph on Cypraeidae discussed Gray's account in detail. Some workers, namely, Pritchard and Gatliff, Watson, Melvill, Sowerby, Dautzenberg, Weinkauff, Roberts, Jones and Preston and Gould, seem to consider *Trivia* as a subgenus of *Cypraea* and place it under the family Cypraeidae Fleming (1828). Troschel's valuable study of the radula, on the other hand, led to the creation of a new family Triviacea for *Trivia* and *Erato* Risso (1826) which, as stated by Schilder, may be a synonym of Triviinae Vredenburg (1920). Jousseaume follows Troschel's new method of arrangement, and Shaw's researches on the nervous system of *Trivia* and *Erato* also uphold the same conclusion. Dall, on the other hand, erected a separate family Triviidae for them. His conclusion has been accepted by Bartsch, Iredale, Ludbrook, Schilder and Tomlin and Schilder. The latter again proceeds a step further to suggest a division of the group into two subfamilies, Triviinae and Eratoinae for *Trivia* and *Erato* respectively. But it is quite surprising that he later dropped the family Triviidae in favour of his newly proposed family Eratoidae and relegated the above subfamilies to the latter. This change, however, is in no way an improvement in the further study of the subject, but, on the contrary, may cause a great deal of confusion. So, I am strongly in favour of the retention of both the families which may ensure better understanding and arrangements, *i.e.*, all the Triviids should be included into Triviinae of the family Triviidae, while the Eratoids into Eratoinae of the family Eratoidae. The differences in shape, size, form, colouration and sculpture of the shells between *Trivia* and *Erato* also warrant such a distinction.

Trivia comprises small marine shells of globular or subglobular form and of a whitish, pinkish or pinkish-brown colour. They are finely transversely sulcated on the surface, the ribs generally being interrupted in the middle by a narrow longitudinal groove which may be long or short, deep or shallow or entirely obsolete, in which case the ribs run smoothly from side to side. The latter in some cases become nodulous while terminating at the sulcus. The ribs are nothing but mere prolongations of the apertural denticulations, and this character at once distinguishes this group from the real cowries placed in the family Cypraeidae. The extremities of the shells may be short or produced, while the front part of the columella is internally concave and ribbed.

The genus is widely distributed in Europe, Africa, America and Asia. It is also known in the fossil state in Eocene, Miocene, Oligocene, Pliocene, Pleistocene and Cretaceous times.

Subgenus **Ellatrivia** Iredale, 1931.

Type *Triviella merces* Iredale, 1924.

1931. *Ellatrivia*, Iredale, *Rec. Austr. Mus.* XVIII (4), p. 221.
1932. *Ellatrivia*, Iredale, *Zool. Anz.* C, p. 166.
1933. *Ellatrivia*, Schilder, *Sitzungs. der Gesell. Naturf. Fr. Berlin*, pp. V and 256.
1935. *Ellatrivia*, Schilder, *Proc. Malac. Soc. London*, XXI, pp. 332, 334, 335.
1936. *Ellatrivia*, Schilder, *Proc. Malac. Soc. London*, XXII, pp. 80, 109.
1941. *Ellatrivia*, Ludbrook, *Trans. Roy. Soc. South Australia*, LXV (1), p. 94.

In 1931 Iredale introduced the name *Ellatrivia* as a genus for the deep-water *merces*-series having large and peculiarly sculptured shells, with *Triviella merces* as its genotype. But Schilder at first subordinated it to *Triviella*, secondly to *Pusula* and finally considered it as distinct.

Trivia merces (Iredale, 1924).

1822. *Cypraea australis*, Lamarck, *Hist. Nat. Anim. Sans Vertèb.* VII, p. 401.
1828. *Cypraea australis*, Gray, *Zool. Journ.* III, pp. 570, 571, No. 108.
1828. *Cypraea rosea*, Wood, *Index Test. Suppl.*, p. 9.
1832. *Trivia australis*, Gray, *Descr. Cat. of Shells*, p. 13, No. 110.
1832. *Cypraea australis*, Sowerby, *Conch. Illustr.*, sp. 112, fig. 29.
1834. *Cypraea australis*, Quoy et Gaimard, *Voy. de 'Astrolabe', Zool.* III, p. 48, pl. xlviii, figs. 19-26.
1838. *Cypraea rosea*, Pot. and Mich., *Gal. des Moll. Douai*, 1, p. 477, No. 9.
1839. *Cypraea australis*, Anton, *Verz. Conchyl.*, p. 98, No. 3133.
1843. *Cypraea australis*, Menke, *Spec. Moll. Novae Hollandiae*, p. 30, No. 162.
1843. *Cypraea australis* and *C. rosea*, Kiener, *Icon. Coq. Viv.*, pp. 136-139, pl. xlviii, fig. 2, pl. xlvii, fig. 4.
1844. *Cypraea australis*, Lamarck, *Hist. Nat. Anim. Sans Vertèb.* (ed. Deshayes) X, p. 545.
1845. *Cypraea australis*, *Catlow*, *Conchologist's Nomenclator*, p. 308.
1846. *Cypraa australis*, Reeve, *Conch. Icon.* III, pl. xxiv, fig. 38.
1850. *Trivia australis*, Gray, *Figures of Moll. Anim.* IV, p. 75.
1850. *Cypraea australis*, Jay, *Cat. of the Shells*, p. 387, No. 10091.
1854. *Trivia australis*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 268.
1857. *Trivia australis*, Gray, *Guide to Syst. Descr. Moll. Brit. Mus.* 1, p. 72, pl. xxxiv, fig. 7.
1867. *Trivia australis*, MacCoy, *Ann. & Mag. Nat. Hist.* (3) XX, p. 437.
1867. *Trivia australis*, *Angas*, *Proc. Zool. Soc. London*, pp. 206, 207, No. 127.
1870. *Cypraea (Trivia) australis*, Sowerby, *Thes. Conch.* IV, p. 45, No. 159, pl. cccxxv, figs, 439, 440.
1870. *Trivia australis*, Roberts, *Amer. Journ. Conch.* V, p. 205.
1872. *Trivia australis*, Brazier, *Proc. Zool. Soc. London*, p. 86.
1878. *Trivia australis*, Hutton, *Journ. de Conchyliol.* XXVI, p. 25.
1878. *Trivia australis*, Angas, *Proc. Zool. Soc. London*, p. 867.
1880. *Cypraea australis*, von Martens, *in Möbius's Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 274.
1880. *Trivia australis*, Hutton, *Man. New Zealand Moll. Wellington*, p. 67.
1881. *Cypraea australis*, Weinkauff, *in Martini and Chemnitz's Syst. Conch-Cab.* V, Abth. 3, p. 142, No. 158, pl. xxxix, figs. 14, 15.
1883. *Cypraea (Trivia) australis*, Dautzenberg, *Les Moll. Mar. du Roussillon*, 1, p. 127.
1884. *Triviella australis*, Jousseaume, *Bull. Soc. Zool. France*, IX, pp. 82, 99.
1885. *Cypraea (Trivia) australis*, Roberts, *in Tryon's Man. Conch.* VII, p. 206, pl. xxiii, figs. 53, 54.
1885. *Cypraea (Trivia) australis*, Watson, *Zool. Chall. Exped.* XV, Part XLI pp. 421, 427, 704.
1888. *Trivia (Trivia) australis*, Paetel, *Cat. der Conchyl.-Samml.* 1, p. 332.
1888. *Cypraea (Trivia) australis*, *Melvill*, *Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4) 1, p. 246, No. 116.
1890. *Trivia australis*, Tate, *Trans. Roy. Soc. South Austr.* XII (2), p. 213.
1896. *Trivia australis*, Kenyon, *Proc. Linn. Soc. New S. Wales*, XXI, p. 27
1898. *Trivia australis*, Beddome, *Proc. Linn. Soc. New S. Wales*, XXII (3), p. 576, pl. xxi, fig. 19.

1900. *Cypraea (Trivia) australis,* Pritchard and Gatliff, *Proc. Roy. Soc. Victoria, (N.S.),* XII, pp. 187, 188.
1901. *Trivia australis,* Tate, *Revised Census of the Mar. Moll. Tasmania, Sydney,* p. 374.
1906-1907. *Cypraea australis,* Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid,* XXV, pp. 136, 188, 276, 277.
1917. *Trivia australis,* Odhner, *K. Svenska Vetenskap. Handl.* II, No. 16, p. 53.
1920. *Trivia (Trivia) australis,* Vredenburg, *Rec. Geol. Surv. Ind.* LI (2), p. 133.
1923. *Trivia australis,* Vayssiere, *Ann. Mus. Hist. Nat. Marseille-Zool.* XVIII, pp. 83, 84, pl. ix, figs. 122-126 (anatomy).
1924. *Triviella merces,* Iredale, *Proc. Linn. Soc. New S. Wales,* XLIX, Part III, pp. 183, 257, pl. xxxv, figs. 16, 17.
1924. *Trivia australis,* Fulton, *Shells of Rec. Moll.,* p. 37.
1927. *Triviella (Semitrivia) merces,* Schilder, *Archiv f. Naturges.* XCIA, p. 60.
1929. *Trivia (Semitrivia) merces,* Thiele, *Handb. der Syst. Weichtierk.* 1, p. 268.
1930. *Triviella merces,* Schilder, *Zool. Anz.* CXII, p. 71.
1931. *Ellatrivia merces,* Schilder, *Rec. Austr. Mus.* XVIII (4), p. 221.
1932. *Pusula (Ellatrivia) merces,* Schilder, *Zool. Anz.* C, p. 166.
1935. *Ellatrivia merces,* Schilder, *Proc. Malac. Soc. London,* XXI, p. 332.
1936. *Ellatrivia merces,* Schilder, *Proc. Malac. Soc. London,* XXII, p. 80.
1937. *Trivia australis,* Viader, *Maur. Inst. Bull.* 1 (2), p. 39.
1941. *Ellatrivia merces,* Ludbrook, *Trans. Roy. Soc. South Austr.* LXV (1), p. 94.

Lamarck's *Cypraea australis* was originally described from New Holland and is commonly known as the 'New Holland Cowry' But as this appellation appears to have been anticipated by Schroeter (1804)[1] and Duclos's *rosea* also being cited by Pot. and Mich. as a synonym of *australis* Iredale has suggested the new name *merces* for the species. Wood's *C. rosea,* as stated by the latter, is also a synonym. In 1931 Iredale selected *merces* as the type of his new genus *Ellatrivia.* Viader, on the other hand, ignores all these important changes in nomenclature and maintains Lamarck's name *australis* for the species.

Characters :—A good description of this pretty species is given by Gray, to which I have very little to add. It can easily be distinguished from all other Triviids by its large, thin, white, oblong-ovate shell (though not so large as that of *Trivellona excelsa* Iredale, 1931) variegated with irregular squarish liver-coloured blotches on its surface (the middle one on the right side of the sulcus is the largest of all) and rose-tinted extremities. *T merces* is closely allied to *T excelsa* from off Montagu Island, Australia, and Kiener's *C. formosa* (nec Gaskoin). Ludbrook indicates the close affinities of this form with his new species *Ellatrivia virrata* from Adelaide, S. Australia, while MacCoy points out that his *Trivia avellanoides* from the Eocene of Australasia, which is the largest representative of the genus and is still found living, is also allied to *T. merces* ; it is, however, much more globose and has fewer but more distant ribs. An account of the anatomy of the soft parts of this species is given by Vayssiére in the paper cited.

There is a series of specimens of *T merces* in the collection from Port Jackson and Victoria, which are labelled as *T australis* (Lam.). In the young shells where the sulcus is not formed the blotches of either side (especially the middle ones) unite with one another in the middle forming a single large blotch. The largest shell is from Philippi's Bay, Victoria, which is 16 mm. in length and 11 mm. in breadth.

[1] Schroeter, J. S. *Archiv Zool.* (Wiedemann) IV, Part I, p. 10 (1804).

Distribution :– Trivia (Ellatrivia) merces (Iredale) is known to be very common on the shores of Tasmania and Australia as also in Victoria, Queensland and New South Wales (shark and Clark Islands, Watson's Bay ; Bottle and Glass Rocks, Port Jackson ; Port Stephens ; Port Macquarie ; Macleay, Nambucera, Bellinger, Redbank, and Clarence Rivers). But records are also known from Cargados, Sandwich Islands, Mauritius, New Zealand and Malacca.

Type-locality. East Coast of New Holland.

Type. Brit. Mus. (Nat. Hist.).

Subgenus **Pusula** Jousseaume, 1884.

Type *Cypraea radians* Linnaeus.

1884. *Pusula*, Jousseaume, *Bull. Soc. Zool. France*, IX, p. 99.
1903. *Pusula*, Cossmann, *Ess. de Paleoconch. Comp.* V, p. 170.
1927. *Pusula*, Schilder, *Archiv f. Naturges.* XCIA, p. 61.
1929. *Pusula*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 268.
1931. *Pusula*, Schilder, *Zool. Anz.* XCVI, p. 69.
1932. *Pusula*, Schilder, *Zool. Anz.* C, p. 166.
1936. *Pusula*, Schilder, *Proc. Malac. Soc. London*, XXII, pp. 80, 109.

Jousseaume erected *Pusula* as a genus, with *Cypraea radians* Linnaeus as its type-species. Cossmann, on the other hand, included it into the synonymy of *Trivia*. Schilder seems to follow Jousseaume, but Thiele subordinates it to *Trivia*. I follow the latter.

Trivia quadripunctata (Gray, 1827).

1827. *Cypraea quadripunctata*, Gray, *Zool. Journ.* III, pp. 368, 369.
1832. *Trivia quadripunctata*, Gray, *Descr. Cat. of Shells*, p. 14.
1832. *Cypraea quadripunctata*, Sowerby, *Conch. Illustr.*, sp. 116, fig. 33.
1839. *Cypraea quadripunctata*, Anton, *Verz. Conchyl.*, p. 98, No. 3130.
1840. *Cypraea quadripunctata*, Pfeiffer, *in Weigmann's Archiv f. Naturges.* VI, p. 259.
1843. *Cypraea rotunda*, Kiener, *Icon. Coq. Viv.*, p. 141, pl. III, fig. 2.
1844. *Cypraea quadripunctata*, Lamarck, *Hist. Nat. Anim. Sans Verteb.* (ed. Deshayes) X, p. 569, No. 101.
1845. *Cypraea quadripunctata*, Catlow, *Conchologist's Nomenclator*, p. 312.
1846. *Cypraea quadripunctata*, Reeve, *Conch. Icon.* III, pl. xxv, fig. 146.
1847. *Cypraea quadripunctata*, Chenu, *Hist. Nat. des Anim.*, pl. x, fig. 8.
1850. *Cypraea quadripunctata*, Jay, *Cat. of the Shells*, p. 392.
1851. *Cypraea quadripunctata*, Beau, *Journ. de Conchyliol.* II, p. 430.
1860. *Trivia quadripunctata*, Tristram, *Proc Zool. Soc. London*, p. 404.
1867. *Cypraea rotunda*, Krebs, *Ann. Lyceum Nat. Hist. New York*, VIII, p. 429.
1869. *Cypraea quadripunctata*, Schramm, *Cat. Coq. et Crust. Guadeloupe Basse-Terre*, p. 40.
1870. *Cypraea (Trivia) quadripunctata*, Sowerby, *Thes. Conch.* IV, p. 45, No. 157, pl. cccxxvi, figs. 460-463.
1870. *Trivia quadripunctata*, Roberts, *Amer. Journ. Conch.* V, p. 207, No. 30.
1873. *Trivia quadripunctata*, Tryon, *Amer. Mar. Conch. Philadelphia*, p. 55.
1877. *Trivia quadripunctata*, Mörch, *Malakozool. Blätt.* XXIV, p. 49, No. 402.
1880. *Cypraea quadripunctata*, von Martens, *in Möbius's Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 274.
1881. *Cypraea quadripunctata*, Weinkauff, *in Martini and Chemnitz's Syst. Conch-Cab.* V, Abth. 3, p. 151, pl. xli, figs. 6, 7.
1882. *Trivia quadripunctata*, Tryon, *An Introduction to the study of Moll.* 1, p. 198, pl. lxi, figs. 6, 7.
1883. *Cypraea (Trivia) quadripunctata*, Dautzenberg, *Les Moll. Mar. du Roussillon*, I, Fasc. 3, p. 128.

1884. *Pusula quadripunctata*, Jousseaume, *Bull. Soc. Zool. France*, IX, p. 99.
1885. *Cypraea (Trivia) quadripunctata*, Roberts, *in Tryon's Man. Conch.* VII, pp. 201, 202, pl. xxii, figs. 5, 6.
1888. *Trivia (Trivia) quadripunctata*, Paetel, *Cat. der Conchyl.-Samml.* 1, p. 324.
1888. *Cypraea (Trivia) quadripunctata*, Melvill, *Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4) I, p. 245.
1889. *Trivia quadripunctata*, Dall, *Preliminary Cat. of Shell-bearing Mar. Moll. S. E. Coast of U. States, Washington*, p. 138.
1889. *Trivia quadripunctata* var. *rotunda*, Dall, *Rept. On the Results of Dredging in the Gulf of Mexico*, Part II, p. 241.
1897. *Trivia quadripunctata*, Sowerby, *Marine Shells of South Africa*, p. 16.
1900. *Trivia quadripunctata*, Dautzenberg, *Crois du yacht chaz dans l'Atlantique Moll.*, p. 50.
1903. *Trivia quadripunctata*, Baker, *Nautilus*, XIII, p. 57.
1905. *Cypraea quadripunctata*, Hidalgo, *Cat. Moll. Test. Filipinas*, P. 150.
1906-1907. *Cypraea quadripunctata*, Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 219, 495, 496.
1920. *Trivia (Trivia) quadripunctata*, Vredenburg, *Rec. Geol. Surv. Ind.* LI (2), p. 133.
1924. *Trivia quadripunctata*, Peile, *Proc. Malac. Soc. London*, XVI, p. 197.
1924. *Trivia quadripunctata*, Fulton, *shells of Rec. Moll.*, p. 38.
1927. *Pusula (Niveria) quadripunctata*, Schilder, *Archiv f. Naturges.* XCIA, p. 62.
1928. *Trivia quadripunctata*, Faustino, *Summary of Philippine Mar. and Freshw. Moll.*, p. 220.
1930. *Niveria quadripunctata*, Schilder, *Zool. Anz.* CXII, p. 68.
1937. *Trivia quadripunctata*, Viader, *Maur. Inst. Bull.* 1 (2), p. 39.

Gray's *Cypraea quadripunctata* or the ' Four-dotted Cowry ', as it is usually called, was described from an unknown habitat. Kiener's *Cypraea rotunda* from Antillas, which is the young shell of this species with purplish red colour, appears to have been wrongly treated by Dall as its variety. MacCoy is wrong in stating " Duclos's *tremeza* is a synonym of this species " Vredenburg includes this species into his sub-Group Trivia quadripunctata of the Group Trivia europaea, because of its oval shell and distinct dorsal groove.

Characters :— Shell rotundately-ovate, ventricose, rose-coloured (young shells more brightly coloured than the adult ones), ornamented with four conspicuous reddish-brown dots on the back and, hence, the name ' Four-dotted Cowry ', two of which are placed in the middle line (one being slightly anterior to the other on either side of the dorsal sulcus) and of the other two—one at each end of the sulcus, the latter appearing deep and narrow, finally transversely ribbed throughout, ribs becoming smooth and close-set ; extremities blunt, but slightly thickened ; right side thickened and well-margined ; base convex ; aperture wide, linear, and much curved posteriorly ; teeth small. The four dots, so characteristic of the species, may be pale or entirely obsolete in some cases.

As stated by Peile, this pink species, like *Cyphoma gibbosum* (Linn.) and *Ovula acicularis* (Lamk.), has the remarkable habit of harmonizing itself with the colour of the organism on which it lives.

This species is represented in the collection by twenty-seven specimens obtained from West Indies and Ceylon, of which the largest one from West Indies measures 13 mm. in length and 5·5 mm. in breadth.

Distribution :—*Trivia* (*Pusula*) *quadripunctata* (Gray) is quite common in West Indies, but also occurs in North Caroline, Mauritius,

[1] Schroeter, J. S. *Archiv Zool.* (Wiedemann) IV, Part I, p. 10 (1804).

Pondoland (S. Africa), Australia and the Philippines. I have found one typical shell of this species in the collection associated with the shells of *T. rubinicolor* (Gaskoin) from Ceylon. This appears to be rather a new record.

Subgenus **Cleotrivia** Iredale, 1930.

Type *Cypraea pilula* Kiener, 1845.

1930. *Cleotrivia*, Iredale, *Mém. Queensl. Mus.* X, p. 83.
1931. *Cleotrivia*, Iredale, *Rec. Austr. Mus.* XVIII, p. 221.
1931. *Cleotrivia*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 739.
1931. *Cleotrivia*, Schilder, *Zool. Anz.* XCVI, p. 69.
1932. *Cleotrivia*, Schilder, *Zool. Anz. C*, p. 166.
1933. *Cleotrivia*, Schilder, *Occ. Pap. B. P. Bishop Mus. Honolulu*, X(3), p. 5.
1935. *Cleotrivia*, Schilder, *Proc. Malac. Soc. London*, XXI, pp. 332, 333.
1936. *Cleotrivia*, Schilder, *Proc. Malac. Soc. London*, XXII, p. 109.
1937. *Cleotrivia*, Schilder, *De Mijnengenieur*, IV(11), p. 4.
1940. *Cleotrivia*, Winckworth, *Proc. Malac. Soc. London*, XXIV, p. 21.

Iredale established *Cleotrivia* as a genus for the small globular Trivias and selected *Cypraea pilula* Kiener as its genotype. Schilder seems to be quite inconsistent in his treatment of *Cleotrivia*, as he at first subordinates it to *Pusula* (1931, p. 69), later to *Trivia* (1932, p. 166) and finally ranks it as distinct (1933, p. 5 ; 1935, p. 332). I have already given reasons to treat this as a subgenus. I think Thiele's '*Cleovitrea*' is a misprint for *Cleotrivia*.

Trivia pilula (Kiener, 1843).

1767. *Cypraea globosa*, Adanson, *Hist. Nat. du Senegal Cog., p.* 74.
1832. *Trivia globosa*, Gray, *Descr. Cat. of Shells*, p. 14.
1832. *Cypraea globosa*, Sowerby, *Conch. Illustr.*, sp. 117, fig. 34.
1839. *Cypraea globosa*, Anton, *Verz. Conchyl.*, p. 98, no. 3131.
1843. *Cypraea pilula*, Kiener, *Icon. Coq. Viv.*, pp. 151, 152, pl. liv. figs. 2, 2*a*.
1845. *Cypraea sphaerula*, Mighels, *Proc. Bost. Soc. Nat. Hist.* II, pp. 24, 25.
1845. *Cypraea globosa*, Catlow, *Conchologist's Nomenclator*, p. 310, no. 56.
1846. *Cypraea globosa*, Reeve, *Conch. Icon.* III, pl. XXVI, fig. 152.
1850. *Cypraea globosa*, Jay, *Cat. of the Shells*, pp. 389, 391.
1852. *Trivia globosa* and *T. pilula*, Mörch, *Cat. Yoldi*, p. 118.
1854. *Trivia globosa* and *T. pilula*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 269.
1867. *Cypraea pilula*, Krebs, *Cat. Mar. Moll. Collected in Bahama Islands*, p. 41.
1868. *Trivia globosa*, Pease, *Amer. Journ. Conch.* IV, pp. 126, 127.
1869. *Cypraea globosa*, Schramm, *Cat. Cog. et Crust. Guadeloupe Basse-Terre*, p. 40.
1870. *Trivia globosa*, Roberts, *Amer. Journ. Conch.* V, p. 206, no. 16.
1871. *Trivia globosa*, Angas, *Proc. Zool. Soc. London*, p. 94, no. 59.
1872. *Cypraea globosa*, Brazier, *Proc. Zool. Soc. London*, p. 86.
1874. *Cypraea* (*Trivia*) *globosa*, Langdon, *Journ. Conch.* 1, p. 75.
1879. *Trivia sphaerula*, Garrett, *Journ. Conch.* II, pp. 107, 126, no. 74.
1881. *Cypraea globosa* and *C. pilula*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.-Cat.* V, Abth. 3, pp. 151, 152, pl. xli, figs. 9, 12, pp. 159, 160, pl. xlii, figs. 13, 16.
1882. *Cypraea globosa*, Dunker, *Index Moll. Maris Japonici*, p. 101.
1884. *Niveria globosa* and *N. brevissima*, Jousseaume, *Bull. Soc. Zool. France*, IX, p. 100.
1885. *Cypraea* (*Trivia*) *globosa* and *C.* (*T.*) *brevissima*, Roberts, *in Tryon's Man. Conch.* VII, pp. 200, 201, pl. xxi, figs. 90-93.
1888. *Trivia globosa, T. brevissima, T. pilula* and *T. sphaerula*, Paetel, *Cat. der Conchyl.—Samml.* 1, pp. 322-324.
1888. *Cypraea* (*Trivia*) *globosa*, and *C.* (*T.*) *brevissima*, Melvill, *Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4)I, p. 247, Nos. 125 and 127.
1889. *Trivia globosa*, Dall, *Preliminary Cat. of the Shell-bearing Mar. Moll. S. E. Coast of U. States, Washington*, p. 136.
1891. *Cypraea globosa*, Fischer, *Cat. Moll. Indo-China*, p. 158.

1897. *Trivia globosa*, Melvill and Standen. *Journ. Conch.* VIII, p. 408.
1898. *Trivia sphaerula*, Baldwin, *Nautilus*, XI, p. 123.
1901. *Trivia globosa*, Melvill and Standen, *Proc. Zool. Soc. London*, II, p. 384.
1902. *Cypraea (Trivia) globosa* and C. (*T.*) *pilula*, Dautzenberg, *Journ. de Conchyliol.* L, pp. 382, 383.
1904. *Trivia globosa*, Melvill and Standen, *Journ. Conch.* XI(4), p. 122.
1905. *Trivia globosa*, Hidalgo, *Cat. Moll. Test. Filipinas*, p. 143.
1906—1907. *Cypraea globosa*, *C. brevissima* and *C. pilula*, *Hidalgo, Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 136, 139, 141, 188, 201, 216, 282, 369, 469.
1909. *Trivia globosa*, Shaw, *Proc. Malac. Soc. London*, VIII, pp. 308, 310.
1909. *Trivia globosa* and *T. brevissima*, Schepman, *Prosobr. Siboga Exped. Monogr.* XLIX[1]*b*, p. 138.
1920. *Trivia globosa*, *T. pilula* and *T. brevissima*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 133.
1922. *Trivia globosa*, Schilder, *Proc. Malac. Soc. London*, XV, p. 105.
1923. *Trivia globosa*, Vayssiere, *Ann. Mus. Hist. Nat. Marseille-Zool.* XVIII, p. 36.
1924. *Trivia globosa*, Fulton, *Shells of Rec. Moll.*, p. 37.
1927. *Trivia (Trivirostra) pilula* and *T.* (*Trivia*) *brevissima*, Schilder, *Archiv f. Naturges.* XCIA, pp. 63, 64.
1928. *Trivia globosa*, Faustino, *Summary of Philippine Mar.* and *Freshw. Moll.*, p. 220.
1930. *Cleotrivia pilula*, Iredale, *Mem. Queensl. Mus.* X, p. 83.
1931. *Cleotrivia pilula*, Iredale, *Rec. Austr. Mus.* XVIII(4), p. 221.
1931. *Trivia globosa*, Schilder, *Zool. Anz.* XCVI, p. 71.
1931. *Cleovitrea pilula*, Thiele, *Handb. der Syst. Weichtierk.* 1, 739.
1932. *Trivia pilula*, Dautzenberg, *Journ. de Conchyliol.* LXXVI, p. 53.
1933. *Cleotrivia pilula*, Schilder, *Occ. Pap. B. P. Bishop Mus. Honolulu*, X(3), pp. 5, 7, 8.
1935. *Cleotrivia globosa*, Schilder, *Proc. Malac. Soc. London*, XXI (6), p. 333.
1936. *Cleotrivia pilula*, Schilder, *Proc. Malac. Soc. London*, XXII, pp. 80, 95, 96 and 97 (foot note).
1937. *Trivia globosa* and *T. brevissima*, Viader, *Maur. Inst. Bull.* 1(2), p. 39.

Kiener's *Cypraea pilula* was described from an unknown habitat. Gray in his *Descr. Cat.* mentions China as the type-locality of his new species *T globosa*. Dujardin (1837) unknowingly proposed this very name to a fossil species, the type of which was obtained in some parts of France. Shaw has, however, substituted a new name *hoernesiana* for Dujardin's species.

Gray's *globosa* has, no doubt, priority over Kiener's *pilula*, but as Iredale has selected the latter as the type of his new genus *Cleotrivia*, this name, therefore, must stand. The resemblances between *T pilula*, Sowerby's *C. brevissima* and Mighels's *T. sphaerula* appear to be so close as regards shape, size and sculpture of the shells that they can safely be considered as identical. Pease was right so long as he treated *globosa* as inseparable from the above species, but a mistake was made in his concluding remark, " It will probably prove to be a variety of Oryza, Lam." Weinkauff appears to have made vain attempts to separate *pilula* from *globosa* mainly on geographical ground, *i.e.*, he restricted the name *pilula* to the shells occupying the Pacific Region, and retained *globosa* for the West Indian forms, but he rightly combined Kenyon's *Trivia acutisulcata* (fig. 2)[1] with *globosa*. Shaw's remark on Weinkauff's statement appears to be quite satisfactory, " With regard to geographical distribution, *T globosa* is supposed to be a West Indian form, though Gray in his " *Descriptive Catalogue* " gave China as the locality of his type. T. pilula is reported from the Persian Gulf, Siam,

[1] Kenyon, A. F. *Proc. Malac. Soc. London*, IV, pp. 68, 69 (1900).

Japan, Philippines, New Caledonia, Sandwich Islands, and New South Wales. Even if globosa was incorrectly cited from China and is strictly a West Indian shell (which I think very improbable) there is not the slightest conchological reason for separation " He has also rightly criticized the view expressed by Hidalgo as follows, " After having carefully compared the description, figure, and specimens of *T globosa* with those of *T pilula*, Kiener, I fail to see why Hidalgo has separated them. *T pilula* has generally been accepted as a synonym of *T globosa*, and I cannot see the slightest ground for Keeping them apart " Vredenberg unfortunately follows Dautzenberg, Paetel and Sowerby in the separation of *pilula* from *globosa*, while Schepman retains *globosa* apart from *brevissima* simply on the character of the dorsal sulcus, which is deep in one case and shallow in the other. Jousseaume, no doubt, supports Weinkauff and Hidalgo, but he relegates both the species to his new genus *Niveria*. Mörch and Roberts unite Krebs's *Cypraea subrostrata* var. *alba*. with *pilula*.

Characters.—The most remarkable feature of this species is the globular pea-like form of its shell by which it can readily be separated from all other species of *Trivia*. The shell is snow-white in colour and the dorsal sulcus is deeply impressed and extremely long (recalling that of *T pisum*) extending between the extremities which are only slightly beaked. The aperture is wide, but slightly curved posteriorly, while the teeth are small, equal and snow-white in colour. Schilder says that the teeth in the Hawaiian specimens are smaller and less numerous on both the lips than in those from the South Pacific.

There are about eighteen shells of different size and growth in the collection bearing the locality-label 'Ceylon ' (Reg. No. 2871). Vredenburg has identified them as *T globosa* Gr. They appear to be quite typical of the species. Another specimen named *Cypraea globosa* Duj. has recently been received (Reg. No. M15446/2) as exchange from Rev. W R. Stedman with a locality-label ' Fiji Islands' But a careful examination reveals it to be identical with *T oryza* (Lam.).

Distribution.—The range of *Trivia* (*Cleotrivia*) *pilula* (Kiener) is very wide, having been recorded from Guadeloupe, Antigua, Antillas, Jamaica, Cuba, St. Bartheloma, St. Cruz, St. Martin, St. Johns, Anquilla, Persian Gulf, Gulf of Oman, Malcolm Inlet, Coast of Continental India from east of River Hab. abutting on Karachi to Panjim, Mauritius, Madagascar, Chagos, Cargados, Rodriguez, Seychelles, Ceylon, Gulf of Siam, Lombok, New Caledonia, Australia, New South Wales (Cook's Landing Place, Botany Bay ; Little Bay between Port Jackson Heads and Botany), the Philippines, Japan, Lifu, Sandwich, Paumotus, Loyalty, Society and Hawaii. Melvill and Standen (1897, p. 408) state " It may almost be deemed cosmopolitan within the tropics "

Trivia pisum (Gaskoin, 1846).

1846. *Cypraea pisum*, Gaskoin, *Proc. Zool. Soc. London*, p. 24.
1846. *Cypraea pisum*, Reeve, *Conch. Icon.* III, pl. xxvi, fig. 154.
1850. *Cypraea pisum*, Jay, *Cat. of the Shells*, p. 391.
1870. *Cypraea (Trivia) pisum*, Sowerby, *Thes. Conch.* IV, p. 44, no. 152. pl. cccxxvi, figs. 448, 449.

1870. *Cypraea pisum*, Roberts, *Amer. Journ. Conch.* V, p. 207.
1881. *Cypraea pisum*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* V, Abth. 3, pp. 146, 147, pl. xl, figs. 9, 12.
1885. *Cypraea (Trivia) pisum*, Roberts, in *Tryon's Man. Conch.* VII, p. 207, pl. xxii, figs. 29, 30.
1888. *Trivia (Trivia) pisum*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 324.
1888. *Cypraea (Trivia) pisum*, Melvill, *Mém. and Proc. Manchest. Lit. and Phil. Soc.* (4)I, p. 245, no. 99.
1904. *Trivia pisum*, Smith, *Ann. & Mag. Nat. Hist.* (7)XIII, p. 471.
1906—1907. *Cypraea pisum*, Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 141, 216, 471, 472.
1920. *Trivia pisum*, Vredenburg, *Rec. Geol. Surv. Ind.* LI (2), p. 133.
1927. *Trivia (Trivirostra) pisum*, Schilder, *Archiv f. Naturges.* XCI, p. 63.
1931. *Trivia pisum*, Schilder, *Zool. Anz.* XCVI, p. 71.
1940. *Cleotrivia pisum*, Winckworth, *Proc. Malac. Soc. London*, XXIV, p. 21.

Gaskoin's *Cypraea pisum* or the " Pea-Cowry ", as it is generally known, appears to be based on an immature specimen. The author in his description says that each of the ribs tapers gradually before it terminates dorsally into the longitudinal sulcus. But this condition appears to exist only in the juvenile shells ; in the adult shells the ribs are more or less equal throughout.

Characters.—This unique species is characterized by its sphaeroidal shell having a long and deeply impressed sulcus reaching the extremities (as in *T pilula*) which are obtuse and thick. The colour is light fawn and the ribs are quite large and prominent. The aperture is more or less like that of *pilula.*

Out of twenty-three shells in the collection, twenty-two are from Ceylon (Reg. No. 2856) and agree with the description of the typical form, while the other (a juvenile shell—Reg. No. 2948) is from off the coast of Ceylon. It is sky-blue in colour and lacking entirely in dorsal sulcus. The ribs are seen gradually tapering as they pass on to the dorsal side and terminating abruptly in the middle. The largest shell from Ceylon measures 8·5 mm. in length and 6·5 mm. in breadth.

Distribution.—Trivia (Cleotrivia) pisum (Gaskoin) was originally recorded from East Indies, but subsequently its range has been extended to India (Coromandel) and Ceylon.

Type-locality. East Indies.

Subgenus **Dolichupis** Iredale, 1930.

Type *Cypraea producta* Gaskoin, 1836.

1930. *Dolichupis*, Iredale, *Mém. Queensl. Mus.* X, p. 83.
1931. *Dolichupis*, Iredale, *Rec. Austr. Mus.* XVIII(4), p. 221.
1931. *Dolichupis*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 739.
1931. *Dolichupis*, Schilder, *Zool. Anz.* XCVI, p. 69.
1932. *Dolichupis*, Schilder, *Zool. Anz.* C, p. 116.
1936. *Dolichupis*, Schilder, *Proc. Malac. Soc. London*, XXII, pp. 80, 109.
1940. *Dolichupis*, Winckworth, *Proc. Malac. Soc. London*, XXIV, p. 21.

Iredale established *Dolichupis* as a genus to include certain forms of *Trivia* with produced extremities and selected Gaskoin's *Cypraea producta* as its genotype. Schilder first treated it as a subgenus of *Pusula* Jousseaume, but afterwards ranked it as distinct. Winckworth, on the other hand, in his systematic list of Investigator Mollusca has subordinated *Dolichupis* to *Cleotrivia.*

Trivia producta (Gaskoin, 1836).

1836. *Cypraea producta*, Gaskoin, *Proc. Zool. Soc. London*, p. 200.
1843. *Cypraea producta*, Kiener, *Icon. Cog.* Viv., p. 153, pl. liii, fig. 5.
1845. *Cypraea producta*, Catlow, *Conchologist's Nomenclator*, p. 212.
1846. *Cypraea producta*, Reeve, *Conch. Icon.* III, pl. xxiv, figs. 37*a*, 37*b*.
1848. *Cypraea producta*, Gaskoin, *Proc. Zool. Soc. London*, p. 98.
1850. *Cypraea producta*, Jay, *Cat. of the Shells*, p. 391.
1854. *Trivia producta*, H. & A. Adams, *Gen. Rec. Moll.* I, p. 269.
1858. *Cypraea producta*, Drouet, *Mém. Soc. d'Agric. des Sc. et Bells—lettres du dép. de l'Aube*, IX, p. 37.
1861. *Cypraea producta*, Petit, *Journ. de Conchyliol.* IX, p. 39.
1870. *Trivia producta*, Roberts, *Amer. Journ. Conch.* V, p. 207, no. 27.
1870. *Cypraea* (*Trivia*) *producta*, Sowerby, *Thes. Conch.* IV, p. 49, pl. cccxxlii, figs. 495, 496.
1871. *Cypraea producta*, von Martens and Langkavel, *Donum Bismarck.*, p. 35.
1881. *Cypraea producta*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* V, Abth. 3, pp. 158, 161, 162, 166, pl. xliii, figs. 2, 3.
1884. *Cypraea producta*, Jickeli, *Jahrb. Deutsch. Malakozool. Ges.* XI, p. 212.
1885. *Cypraea* (*Trivia*) *producta*, Roberts, *in Tryon's Man. Conch.* VII, p. 207, pl. xxii, figs. 25, 26.
1888. *Cypraea* (*Trivia*) *producta*, Melvill, *Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4)I, p. 246, no. 108.
1888. *Trivia* (*Trivia*) *producta*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 324.
1889. *Trivia producta*; Dautzenberg, *Albert Ier Prince de Monaco, Camp. Scient.*, p. 40.
1897. *Trivia producta*, Sowerby, *Marine Shells of South Africa*, p. 16.
1904. *Trivia producta*, Smith, *Ann. & Mag. Nat. Hist.* (7)XIII, p. 471.
1905. *Cypraea producta*, Hidalgo, *Cat. Moll. Test. Filipinas*, p. 150.
1906—1907. *Cypraea producta*, Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 217, 475, 476, 504.
1920. *Trivia* (*Trivia*) *producta*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 135.
1923. *Trivia producta*, Vayssiere, *Ann. Mus. Hist. Nat. Marseille-Zool.* XVIII, pp. 88, 89, pl. ix, figs. 115—120 (anatomy), 121 (shell).
1925. *Trivia producta*, Thiele, *Wiss. Ergeb. der Deuts. Tiefsee-Exped. Gastropoda*, Part II, pp. 73, 107.
1927. *Trivia* (*Trivia*) *producta*, Schilder, *Archiv f. Naturges.* XCIA, pp. 62, 64.
1930. *Dolichupis producta*, Iredale, *Mem. Queensl. Mus.* X, p. 83.
1931. *Dolichupis producta*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 739.
1936. *Dolichupis producta*, Schilder, *Proc. Malac. Soc. London*, XXII, p. 80.
1940. *Cleotrivia* (*Dolichupis*) *producta*, Winckworth, *Proc. Malac. Soc. London*, XXIV, p. 21.

Gaskoin's *Cypraea producta* is a peculiar form of dull-white colour, the type-shell of which is well-illustrated in Sowerby's *Conchological Illustrations*, fig. 155. The exact locality of the species is not given by Gaskoin in his paper. But it is said by Adams and Reeve to have been described from a single worn specimen obtained from Unsang, east coast of Borneo, from coral reefs.

Characters.—Shell ovate, ventricose, slightly humped, emarginate, finely transversely ribbed throughout, ribs large, prominent, smooth, distant and less in number, but their arrangement appearing quite peculiar— a few terminating on the side of the shell at various distances from the middle of the back, a few passing over the middle of the back to the opposite side, while the rest terminating in the centre of the dorsum between each other ; extremities peculiarly produced and flattened ; dorsal groove entirely absent ; teeth prominent, strong, even, distant, but their number is not so constant as mentioned by Gaskoin.

This white-shelled species approximates more nearly to the blood-stained *sauguinea* of Gray than to *scabriuscula* in the converging character of the dorsal ribs and the entire absence of the longitudinal groove. For a detailed account of the anatomy of its soft parts (including the

radula and genitalia) reference may be made to Vayssiére's paper cited above.

A typical shell of dirty-white colour from off the Coromandel Coast, 41 fathoms (Reg. No. 2957), represents the species in the collection. It is 9 mm. in length and 6·5 mm. in breadth.

Distribution.—Trivia (Dolichupis) producta (Gaskoin) has so far been known to occur in the Red Sea, Gulf of Suez, Agulhas Bank in South Africa, Tuticorin, off the Coromandel Coast, Australia, the Philippines, Society and Paumotus Islands.

Trivia insecta (Mighels, 1945).

1843. *Cypraea hordacea*, Kiener, *Icon. Cog. Viv.* III, p. 149, pl. iv, figs. 5, 5*a*.
1845. *Cypraea insecta*, Mighels. *Proc. Bost. Soc. Nat. Hist.* II, p. 24.
1850. *Cypraea insecta* and *C. hordacea*, Jay, *Cat. of the Shells*, p. 389.
1854. *Trivia hordacea*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 269.
1863. *Cypraea hordacea*, Deshayes, *Cat. Moll. Reunion*, p. 138, no. 548.
1867. *Trivia insecta*, Marrat, *Ann. & Mag. Nat. Hist.* (3)XX, p. 215.
1868. *Trivia insecta*, Pease, *Amer. Journ. Conch.* IV, p. 127.
1870. *Cypraea (Trivia) insecta*, Sowerby, *Thes. Conch.* IV, p. 46, pl. XXXV, figs. 477-479.
1870. *Trivia insecta*, Roberts, *Amer. Journ. Conch.* V, p. 206, No. 18.
1871. *Cypraea (Trivia) insecta*, von Martens and Langkavel, *Donum Bismarck.*, p. 34.
1872. *Trivia insecta*, Brazier, *Proc. Zool. Soc. London*, p. 86.
1879. *Trivia insecta*, Garrett, *Journ. Conch.* II, pp. 123, 127, No. 67.
1880. *Cypraea (Trivia) hordacea*, von Martens, *in Möbius's Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 274.
1881. *Trivia insecta*, Angas, *Proc. Zool. Soc. London*, p. 94, No. 60.
1881. *Cypraea hordacea*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* V, Abth. 3, pp. 162, 163, pl. xliii, figs. 5, 8.
1884. *Trivirostra insecta*, Jousseaume, *Bull. Soc. Zool. France*, IX, p. 100.
1588. *Cypraea (Trivia) hordacea*, Watson, *Zool. Chall. Exped.* XV, Part. XLII, p. 428.
1888. *Trivia (Trivia) insecta*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 323.
1888. *Cypraea (Trivia) insecta*, Melvill, *Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4)1, p. 247, No. 132.
1895. *Trivia insecta*, Melvill and Standen, *Journ. Conch.* XIII, p. 113.
1897. *Trivia insecta*, Sowerby, *Marine Shells of South Africa*, p. 16.
1898. *Trivia insecta*, Baldwin, *Nautilus*, XI, p. 123.
1902. *Cypraea (Trivia) insecta*, Dautzenberg, *Journ. de Conchyliol.* L, p. 381.
1906. *Trivia hordacea*, Vayssiere, *Bull. Mus. Nat. Hist. Paris*, XII, p. 118.
1906—1907. *Cypraea insecta*, Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 139, 154, 203, 204, 385, 386.
1909. *Trivia insecta*, Schepman, *Prosobr. Siboga Exped. Monogr.* XLIX[1]*b*, p. 138.
1909. *Trivia insecta*, Shaw, *Proc. Malac. Soc. London*, VIII, p. 308.
1909. *Cypraea (Trivia) insecta*, Melvill, *Trans. Linn. Soc.* (Zool.) (2)XIII, p. 135.
1920. *Trivia (Trivia) insecta*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 135.
1922. *Trivia insecta*, Schilder, *Proc. Malac. Soc. London*, XV, p. 100.
1923. *Trivia insecta*, Dautzenberg, *Journ. de Conchyliol.* LXVIII, p. 44.
1924. *Trivia insecta*, Fulton, *Shells of Rec. Moll.* p. 38.
1927. *Trivia (Trivirostra) insecta*, Schilder, *Archiv f. Naturges.* XCIA, p. 63.
1928. *Trivia insecta*, Faustino, *Summary of the Philippine Mar. and Freshw. Moll.*, p. 220.
1929. *Trivia insecta*, Dautzenberg, *Faune des Col. Franc. III*, p. 259.
1931. *Dolichupis insecta*, Iredale, *Rec. Austr. Mus.* XVIII(4), p. 221.
1932. *Trivia insecta*, Dautzenberg, *Journ. de Conchyliol.* LXXVI, p. 53.
1932. *Trivirostra hordacea*, Schilder, *Zool. Anz.* C, pp. 166, 169, fig. 2 (radular teeth).
1933. *Trivirostra hordacea*, Schilder, *Occ. Pap. B. P. Bishop Mus. Honolulu*, X(3), pp. 5, 7, 8.
1933. *Trivirostra hordacea* and *T. insecta*, Schilder, *Zool. Anz.* CII, pp. 290-294, 297, fig. 14.
1937. *Trivia insecta*, Viader, *Maur. Inst. Bull.* 1(2), p. 39.

Mighels gives only the description, though not the figure, of his new species *Cypraea insecta* which he recorded from Oahu. Kiener's well-illustrated *C. hordacea* from an unknown habitat cannot claim priority over Mighels's *insecta* and, as such, should be treated as its synonym. But some authors give preference to *hordacea* and some even do not hesitate to rank both as distinct species. Reeve wrongly includes this species into the synonymy of *Cypraea oryza* and Paetel also perpetuates the same mistake. Jay's contention that *Cypraea hordacea* " is C. oryza Lam." is also incorrect.

Characters.—The shell of *insecta* is very small, white, slender, looking more or less like an insect and, hence, the name *insecta* possibly given to it by the author. The ribs are fine, equal, numerous, and are interrupted, in most cases, in the middle by the long narrow impressed sulcus or in some cases they pass freely from side to side when the latter becomes obsolete (only rarely). The extremities, in some cases, appear to be blunt with the hind top of the inner lip abruptly cut out, so that the posterior outlet becomes more pronounced, while in others subrostrate with the inner lip acuminately produced posteriorly in a way recalling that of *Trivia edgari*. The aperture is narrow, slightly dilated in front, but curved posteriorly, while the teeth are very small white and even.

Marrat in his description of *T affinis* writes, " It resembles a large *T insecta* Mighels, but may at once be known by its coarse ribs and obsolete dorsal groove "

There is a fairly good series of specimens of *T insecta* in the collection with the locality labels Indian Seas (Reg. No. 2839—20 sp.), South Sea Islands (Reg. No. 2836—22 sp.), Singapore (Reg. No. 2838—3sp.), Ceylon (Reg. No. 2837—31 sp.). There is only one specimen from an unknown locality. The largest specimen in the lot is from Singapore which measures 5·5 mm. in length and 4 mm. in breadth.

Distribution.—Trivia (*Dolichupis*) *insecta* (Mighels) is a widely distributed species and occurs in Mauritius, Madagascar, Seychelles, Reunion, Cargados, Chagos, Persian Gulf, India, Ceylon, Singapore, Australia, Pasir Pandjang on the west coast of Binongka, New Caledonia, Loyalty, Cook, Society, Samoa, Paumotus, Sandwich, Kingsmill and Caroline. Although the range of the species extends from Mauritius to the Pacific, no record of its existence has hitherto been known from Andamans. One typical example of this species is found in the collection associated with the shells of *T. oryza* from Andamans which may serve as a missing link in the chain of distribution.

Type-locality. Oahu in the Hawaii Islands, North Pacific.

Trivia rubinicolor (Gaskoin, 1836).

1836. *Cypraea rubinicolor*, Gaskoin, *Proc. Zool. Soc. London*, pp. 199, 200.
1841. *Cypraea rubinicolor*, Sowerby, *Conch. Illustr.*, fig. 150.
1845. *Cypraea rubinicolor*, Catlow, *Conchologist's Nomenclator*, p. 312.
1846. *Cypraea rubinicolor*, Reeve, *Conch. Icon.* III, pl. XXV, figs. 145*a*, 145*b*.
1850. *Cypraea rubinicolor*, Adams and Reeve, *Voy. H. M. S. 'Samarang', Moll.*, p. 24.

1854. *Trivia rubinicolor*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 269.
1870. *Trivia rubinicolor*, Roberts, *Amer. Journ. Conch.* V, p. 207, no. 33.
1870. *Cypraea (Trivia) rubinicolor*, Sowerby, *Thes. Conch*, IV, pp. 48, 79, no. 173, pl. cccxxviii, figs. 500, 501.
1881. *Cypraea rubinicolor*, Weinkauff, *in Martini and Cheminitz's Syst. Conch.—Cab.* V, Abth. 3, p. 164, pl. xliii, figs. 10, 11.
1885. *Cypraea (Trivia) rubinicolor*, Roberts, *in Tryon's Man. Conch.* VII, p. 204, pl. xxii, figs. 27, 28.
1888. *Cypraea (Trivia) rubinicolor*, Melvill, *Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4)I, p. 246, no. 110.
1888. *Trivia (Trivia) rubinicolor*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 324.
1906—1907. *Cypraea rubinicolor*, Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 220, 504.
1920. *Trivia (Trivia) rubinicolor*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 135.
1924. *Trivia rubinicolor*, Fulton, *Shells of Rec. Moll.* p. 28.
1927. *Trivia (Trivia) rubinicolor*, Schilder, *Archiv f. Naturges.* XCIA, p. 64.

Gaskoin's *Cypraea rubinicolor* is said to have been first described from specimens obtained at Unsang, east coast of Borneo, on coral reefs in association with the specimen of *Cypraea producta* Gask. Vredenburg placed this species into his Group of *Trivia producta* characterized by the produced extremities of the shells, which essentially corresponds to Iredale's genus *Dolichupis*.

Characters.—Shell ovato-globose, ventricose, emarginate, light red or pinkish in colour ; transversely ribbed, ribs fine, prominent, smooth, passing uninterruptedly over the back in the total absence of the longitudinal groove and terminating on both the sides in teeth at the edge of the aperture (very rarely one or two such ribs are found ending either at the sides or in the middle line) ; extremities bluntly produced, but tinged with rose ; aperture narrow but slightly curved only posteriorly, sides thickened and well-margined (the right side more than the left) ; teeth numerous and equal.

T rubinicolor resembles *T sanguinea*, but differs from it in colouration and in the greater number of teeth which are more even. It also approaches *T producta* in the character of its produced extremities.

There are twenty-six specimens in the collection bearing the locality-labels Ceylon (Reg. No. 2867-25 sp.) and Port Jackson —1 sp. All of them seem to agree with the description of the typical form. The largest shell is from Ceylon which measures 13 mm. in length and 6 mm. breadth.

Distribution.—This pretty species appears to have a very limited range extending to Borneo and Ceylon. But the existence of a typical example in the collection associated with the shells of *Trivia merces* (Iredale) from Port Jackson in Australia certainly extends its range further eastwards.

Subgenus **Trivirostra** Jousseaume, 1884.

Type. *Cypraea Oryza* Lamarck, 1810.

1884. *Trivirostra*, Jousseaume, *Bull. Soc. Zool. France*, IX, p. 100.
1903. *Trivirostra*, Cossmann, *Ess. de Paleoconch. Comp.* V, p. 171.
1920. *Trivirostra*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 134.
1926. *Trivirostra*, Schilder, *Rec. Geol. Surv. Ind.* LVIII(4), p. 376.
1927. *Trivirostra*, Schilder, *Archiv f. Naturges.* XCIA, p. 62.

1929. *Trivirostra*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 268.
1930. *Trivirostra*, Iredale, *Mém. Queensl. Mus.* X, p. 83.
1931. *Trivirostra*, Iredale, *Rec. Austr. Mus.* XVIII (4), p. 221.
1931. *Trivirostra*, Schilder, *Zool. Anz.* XCVI, p. 69.
1932. *Trivirostra*, Schilder, *Zool. Anz.* C, p. 166.
1933. *Trivirostra*, Schilder, *Zool. Anz.* CII, p. 288.
1933. *Trivirostra*, Schilder, *Occ. Pap. B. P. Bishop Mus. Honolulu*, X(3), p. 5.
1934. *Trivirostra*, Tomlin and Schilder, *Ann. S. Afric. Mus.* XXX (3), p. 478.
1935. *Trivirostra*, Schilder, *Proc. Malac. Soc. London*, XXI, p. 332.
1936. *Trivirostra*, Schilder, *Proc. Malac. Soc. London*, XXII, p. 80.
1938. *Trivirostra*, Adam et Leloup, *Mém. Mus. Roy. Hist. Nat. Belg. II*, Fasc. 19, p. 122.
1942. *Trivirostra*, Yen, *Proc. Malac. Soc. London*, XXIV, p. 212.

The name *Trivirostra* was employed by Jousseaume in a generic sense, with *Cypraea scabriuscula* Gray (1827) as its genotype. Cossmann, on the other hand, merged it with *Trivia*. Schilder at first included *Trivirostra* in the synonymy of the subgenus *Trivia* S. S., later subordinated it to *Trivia*, and finally ranked it as distinct. His last view seems to have been upheld by Iredale and Yen, while the second one by Thiele and Adam and Leloup, which I also follow in this paper. Vredenburg states that his Group of *Trivia europaea* corresponds essentially to this group. Regarding the selection of the type-species, Schilder first followed Jousseaume, but later preferred Lamarck's *Cypraea oryza* (1810) not only on the ground of its priority over Gray's *scabriuscula* from Madagascar, but because it has essentially the same colouration, shape and structure as the latter.

Trivia oryza (Lamarck, 1810).

1810. *Cypraea oryza*, Lamarck, *Ann. du Mus.* XVI, p. 104.
1817. *Cypraea nivea* (Solander MSS.), Dillwyn, *Descr. Cat. Rec. Shells*, 1, p. 466.
1822. *Cypraea oryza*, Lamarck, *Hist. Nat. Anim. Sans Verteb.* VII, p. 403.
1827. *Cypraea scabriuscula* and *C. oryza*, Gray, *Zool. Journ.* III, p. 364, no. 93, pp. 369, 370, no. 99.
1828. *Cypraea oryza*, Menke, *Synop. Method. Molluscor.*, p. 49.
1832. *Trivia oryza*, Gray, *Descr. Cat. of Shells*, p. 15, no. 126.
1832. *Cypraea oryza*, Sowerby, *Conch. Illustr.*, fig. 38.
1836. *Cypraea scabriuscula*, Gaskoin, *Proc. Zool. Soc. London*, p. 200.
1838. *Cypraea oryza*, Pot. and Mich., *Gal. de Moll. Douai*, I, p. 480 no. 21.
1839. *Cypraea oryza*, Anton, *Verz. Conchyl.*, p. 98, no. 3132.
1843. *Cypraea scabriuscula*, *C. oryza* and *C. intermedia*, Kiener, *Icon. Coq. Viv.*, p. 133, pl. xliii, fig. 3, p. 143, pl. lii, figs. 2, 2*a*, p. 145, pl. liv, fig, 1.
1844. *Cypraea oryza*, Lamarck, *Hist. Nat. Anim. Sans Verteb.* (ed. Deshayes) X, pp. 543, 544.
1845. *Cypraea oryza* and *C. scabriuscula*, Catlow, *Conchologist's Nomenclator*, p. 311, no. 96, p. 312, no. 124.
1845. *Cypraea oryza*, Reeve, *Conch. Icon.* III, pl. xxiv, fig. 140.
1850. *Cypraea oryza* and *C. scabriuscula*, Jay, *Cat. of the shells*, pp. 391, 392.
1854. *Trivia oryza*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 269.
1863. *Cypraea oryza*, Deshayes, *Cat. Moll. Reunion*, p. 138.
1868. *Trivia oryza*, Pease, *Amer. Journ. Conch.* IV(3), p. 127.
1869. *Cypraea (Coccinelliformes) oriza*, Crosse, *Journ. de Conchyliol.* XVII, p. 49.
1870. *Trivia oryza*, MacAndrew, *Ann. & Mag. Nat. Hist.* (4)VI, p. 441.
1870. *Cypraea (Trivia) oryza* and *C. (T.) scabriuscula*, Sowerby, *Thes. Conch.* IV, p. 46, No. 162, pl. cccxxvi, figs. 474-476, No. 163, pl. cccxxvi, figs. 472, 473.
1870. *Trivia scabriuscula*, Roberts, *Amer. Journ. Conch.* V(3), p. 207.
1871. *Cypraea (Trivia) oryza*, von Martens and Langkavel, *Donum Bismarck.*, p. 34.
1877. *Trivia oryza*, Pagenstecher, *Ueber die von Dr. Kossmann am rothen meere gesammelten Moll.* Leipzig, p. 48.

1877. *Cypraea oryza*, Man, *Faune de Madagascar*, Part 5, Liv. 3, p. 41.
1879. *Trivia oryza*, Garrett, *Journ. Conch.* II, pp. 107, 126, 127.
1880. *Cypraea (Trivia) oryza*, von Martens, *in Möbius's Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 274.
1881. *Cypraea scabriuscula* and *C. oryza*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* V, Abth. 3, p. 152, pl. xli. figs, 10, 11, p. 153, pl. V, figs. 12, 13 ; pl. xli, figs. 13-16.
1882. *Trivia oryza*, Rossiter, *Proc. Linn. Soc. N. S. Wales*, p. 831.
1884. *Trivirostra scabriuscula* and *T. oryza*, *Jousseaume, Bull. Soc. Zool. France*, IX, p. 100.
1884. *Trivia scabriuscula*, Smith, *Zool. Coll. Voy. H. M. S. 'Alert', Moll.*, p. 500.
1884. *Cypraea oryza*, Jickeli, *Jahrb. Deuts. Malakozool. Ges.* XI, p. 212.
1885. *Trivia oryza*, Roberts, *in Tryon's Man. Conch.* VII, p. 200, pl. xxi, figé. 79, 82, 83, 86, 87.
1886. *Trivia oryza*, Cooke, *Ann. & Mag. Nat. Hist.* (5)XVIII, p. 384.
1888. *Trivia (Trivia) oryza* vars. *intermedia* and *scabriuscula*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 324.
1888. *Cypraea (Trivia) oryza* and *C. (T.) scabriuscula, Melvill, Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4) 1, p. 247, Nos. 130 and 134.
1892. *Trivia oryza*, Baker, *Proc. Rockester Acad. Sci.*, p. 31.
1892. *Cypraea scabriuscula*, Smith, *Ann. & Mag. Nat. Hist.* (4) IX, p. 129.
1895. *Trivia oryza*, Melvill and Standen, *Journ. Conch.* VIII, p. 113.
1895. *Cypraea (Trivia) oryza*, Thurston, *Bull. Mad. Govt. Mus.* III, p. 125.
1897. *Trivia oryza*, Sowerby, *Marine Shells of S. Africa*, p. 16.
1898. *Trivia oryza*, Baldwin, *Nautilus*, XI, p. 123.
1899. *Trivia oryza*, Hedley, *Moll. of Funafuti*, p. 455.
1900. *Trivia oryza*, Pritchard and Gatliff, *Proc. Roy. Soc. Victoria, (N. S.)* XII, p. 188.
1901. *Trivia scabriuscula*, Melvill and Standen, *Proc. Zool. Soc. London*, II, p. 284.
1902. *Cypraea (Trivia) oryza*, Dautzenberg, *Journ. de Conchyliol. L*, pp. 380, 381.
1904. *Cypraea (Trivia) scabriuscula*, Jones and Preston, *Proc. Malac. Soc. London*, VI, p. 144.
1904. *Trivia cryza* and *T. scabriuscula*, Melvill and Standen, *Journ. Conch.* XI (4), p. 122.
1905. *Cypraea oryza* and *C. scabriuscula*, Hidalgo, *Cat. Moll. Test. Filipinas*, pp. 146, 147.
1906-1907. *Cypraea oryza, C. intermedia* and *C. scabriuscula*, Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 140, 142, 213, 214, 454, 455, pp. 204, 386, pp. 221, 508, 509.
1908. *Trivia oryza*, Bergh, *in Semper's Reise Archipel der Philippinen*, IX, p. 144, pl. xi, figs. 27-37 (anatomy).
1909. *Trivia oryza*, Shaw, *Proc. Malac. Soc. London*, VIII, p. 308.
1909. *Trivia oryza* f. *minor* and var. *scabriuscula*, Schepman, *Prosobr. 'Siboga Exped.' Monogr.* XLIX[1]b, pp. 137, 138.
1909. *Cypraea (Trivia) oryza*, Melvill, *Trans. Linn. Soc. Zool.* (2)XIII, p. 98, No. 158.
1917. *Trivia oryza*, Odhner, *K. Svenska Vetenskap. Handl.* LII(16), p. 53, pl. ii, figs. 52, 53 (shell), Text-fig. 12 (radular teeth).
1920. *Trivia (Trivirostra) oryza, T. (T.) scabriuscula* and *T. (T.) intermedia*, Vredenburg, *Rec. Geol. Surv. Ind. LI*(2), pp. 134, 135.
1922. *Trivia scabriuscula*, Schilder, *Proc. Malac. Soc. London.*, XV, p. 111.
1923. *Trivia oryza*, Dautzenberg, *Journ. de Conchyliol.* LXVIII, p. 44.
1924. *Trivia oryza*, Fulton, *Shells of Rec. Moll.*, p. 38.
1925. *Trivia oryza, Oostingh, Rept. on a Coll. of Rec. Shells from Obi and Halmahera (Moluccas)*, p. 112, No. 114.
1926. *Trivia (Trivia) scabriuscula*, Schilder, *Rec. Geol. Surv. Ind.* LVIII(4), p. 376.
1927. *Trivia (Trivirostra) oryza, T. (T.) intermedia* and *T. (T.) scabriuscula*, Schilder, *Archiv f. Naturges.* XCIA, p. 63.
1928. *Trivia oryza* and *T. scabriuscula*, Faustino, *Summary of Philippine Marine and Freshwater Moll. p.* 220.
1928. *Trivia scabriuscula*, Melvill, *Proc. Malac. Soc. London.* XVIII, p. 103.
1929. *Trivia oryza*, Dautzenberg, *Faune des Col. Franc.* III, p. 260.
1929. *Trivia (Trivirostra) scabriuscula*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 268.
1930. *Trivirostra scabriuscula*, Iredale, *Mém. Queensl. Mus.* X, p. 83.
1931. *Trivirostra scabriuscula*, Iredale, *Rec. Austr. Mus.* XVIII (4), p. 221.

1932. *Trivia oryza*, Dautzenberg, *Journ. de Conchyliol.* LXXVI, p. 53.
1932. *Trivirostra oryza*, Schilder, *Zool. Anz.* C, p. 166.
1933. *Trivirostra oryza oryza* and *T. oryza scabriuscula*, Schilder, *Zool. Anz.* CII, pp. 290, 291, 294.
1936. *Trivirostra oryza*, Schilder, *Proc. Malac. Soc. London*, XXII, p. 80.
1937. *Trivia oryza* and *T. scabriuscula*, Viader, *Maur. Inst. Bull.* 1(2), p. 39.
1938. *Trivia* (*Trivirostra*) *oryza*, Adam et Leloup, *Mém. Mus. Roy. Hist. Nat. Belg.* II, Fasc. 19, p. 122.

Lamarck's *Cypraea oryza* or the 'Rice-Cowry', as the species is commonly known, is remarkable for the great variability of its shell characters. Koenen[1] unknowingly applied Gray's name *scabriuscula* to a small shell of *Trivia* from the German Oligocene, which appears to approach the living *Cypraea childreni*, Gray. Schilder (1922, p. 111) has, however, substituted a new name *litiputana* for Koenen's species *T scabriuscula*, while Vredenburg (p. 114) has established the new genus *Cypraeogemmula* for its inclusion.

T oryza is a very common species and much confusions seem to prevail over its synonymy. Roberts's attempt in removing the confusion is not at all satisfactory as would be evident from his statement "The shell *C. nivea*, figured by Reeve, *C. Ic.* pl. 24, sp. 136, is the *C. oryza*, Lam., which is *T pediculus*, Rumph. The *C. oryza*, figured by Reeve, *C. Ic.* pl. 24, sp. 140, is the *T scabriuscula*, Gray. The same error occurs in Sowerby's *Conch. Illustr.* M. Kiener has confounded the two species *T scabriuscula*, Gray (*Cog. Viv.* pl. 43, fig. 3), and *T oryza*, Lam. (*Cog. Viv.* pl. 52, fig. 2); the figures should be reversed. The true *C. nivea*, Gray (*Zool. Journ.* 1, p. 511), is a white variety of *C. turdus*, Lam., and has been placed into the synonymy of the latter species" Sowerby maintains that Gray's *nivea* may possibly be allied to *oryza*, but it is rough ribbed. The opinion expressed by Shaw (p. 308) appears to be more reasonable, "With regard to *T oryza*, Lam., and *T scabriuscula*, Gray, they agree in size, sculpture, shape, colour, and in the extremities being produced, and in fact *scabriuscula* is only a synonym of *T oryza*, Lam., to which it has been united by Mr. E. A. Smith in the British Museum" He also unites Kiener's *intermedia* and Sowerby's *sandwichensis* with *oryza*. His conclusion has been upheld by Oostingh. Hidalgo, on the other hand, seems to have cared very little about the synonymy and treated all these species as distinct. This view finds somewhat in agreement with that of Weinkauff and Faustino. Schepman erroneously separates *scabriuscula* from *oryza* as a variety mainly on the basis of the dorsal sulcus becoming deep in one case or shallow in the other. He also creates a new form of *oryza* named '*minor*' resting on quite an uncertain fact. Vredenburg followed Hidalgo with the exception of the species *intermedia* which he united with *oryza*. Schilder at first followed this arrangement, but later distinguished two races or subspecies of *oryza*, namely, *T oryza oryza* and *T. oryza scabriuscula*; I fail to agree with him in this respect.

Cypraea pediculus figured by Petiver (1713—*Ag. Anim. Amboina*) in pl. xvi, no. 22, by Gualtieri (1742—*Index Test. Conchyl.*) in pl. xiv, nos. O. & P. and by Adanson (1757—*Hist. Nat. du Senegal Coq.*) in pl. v,

[1] von Koenen, A. *Abhandl. z. geol. Spezialk. v. Prussen*, X, Part II, p. 565(1890).

no. 3, appears to be quite identical with *T oryza*. Odhner's *T bipunctata* from Australia comes very near to this species, though it differs slightly in being narrower in form and reddish in colour. Juvenile shells of *oryza* appear to be much more globular in form with less produced extremities and somewhat resemble Gaskoin's *grando* from Manila. Bergh and Odhner in their paper cited above have dealt in detail with the anatomy of the soft parts of *T oryza*.

Characters.—This well-known species can readily be distinguished by its globular form, pure snow-white colour and peculiar roughish interstices of its ribs. The extremities may be more produced in some or less produced in others and the dorsal sulcus may be either long or short, deep or shallow, or entirely obsolete (in rare case only). Teese characters are not at all constant and seem to vary even amongst individuals of the same size and locality. Garrett remarks, "The Polynesian shells, which are not uncommon, are smaller than the East Indian examples "

This species has the largest number of specimens in the collection having the locality labels Andamans (Reg. No. 2880—16 sp.), Nicobars (Reg. No. 2881—2 sp.), Ceylon—2 sp., Indian Seas (Reg. No. 2848—12 sp., Reg. No. 2879 25 sp.), Roweiah (Reg. No. 2882—1 sp.), Massana (Red Sea—2 sp.), Provenance unknown—2 sp. They are labelled as *Trivia oryza* Lam., *T oryza* var. *intermedia* Kiener and *T scabriuscula* Gray. Besides these, there are eight more specimens, of which seven are from the Sandwich Islands (Reg. No. 2872) and labelled as *T globosa*, while the last is from the Indian Seas and labelled as *T pellucidula*. The largest shell in the collection measures 13 mm. in length and 9 mm. in breadth.

Distribution.—*Trivia* (*Trivirostra*) *oryza* (Lamarck) was originally described from the coast of Timor in the Malay Archipelago. But later on its range has been extended into the Persian Gulf, Gulf of Oman, Malcolm Inlet, Natal, Madagascar, Mauritius, Seychelles, Reunion, Durban Amirantes, West India, Ceylon, Andamans, Nicobars, Java, North Borneo, Celebes, Moluccas, Flores, Aru, Labuan, Banda Neira, Halmahera, Sorong, Port Jackson, Sydney, Victoria, Torres Straits, China Sea, the Philippines Manila, Luzon, Ticao, Moron, Balauan and Saguisi, Bolinao, Zambales, Luban, Mindoro and Marinduque, Mindanao, Samar, Cebu Cap Surigao and Zamboanga, Calamianes Is. and Ulugan), Samoa, Viti, Funafuti Lagoon, Cook, Paumotus, Lifu, Society, Sandwich, Loyalty, Tonga, Hawaii, New Caledonia, New Carolines, New Hebrides and Kingsmill. It is also recorded from the Red Sea and Suez.

Trivia exigua exigua (Gray, 1832).

1832. *Trivia exigua*, Gray, *Descr. Cat. of Shells*, p. 15, no. 123.
1833. *Cypraea tremeza*, Duclos, *in Guerin's Mag. de Zool.*, pl. xxv.
1836. *Cypraea exigua*, Gaskoin, *Proc. Zool. Soc. London*, p. 202.
1841. *Cypraea exigua*, Sowerby, *Conch. Illustr.*, fig. 35.
1843. *Cypraea tremeza*, Kiener, *Icon. Cog. Viv.*, p. 154, pl. liii, fig. 4.
1845. *Cypraea gemmula*, Gould, *Proc. Bost. Soc. Nat. Hist.* II, p. 27.
1845. *Cypraea tremeza* and *C. exigua*, Catlow, *Conchologist's Nomenclator*, pp. 310, 313.
1846. *Cypraea exigua*, Gaskoin, *Proc. Zool. Soc. London*, p. 24.
1846. *Cypraea tremeza*, Reeve, *Conch. Icon.* III, pl. xxvi, fig. 148.

1850. *Cypraea tremeza*, Jay, *Cat. of the Shells*, p. 394.
1854. *Trivia tremeza*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 269.
1862. *Cypraea (Trivia) gemmula* and *C. tremeza*, Gould,-*Otia Conch.*, p. 195.
1863. *Cypraea tremeza*, Deshayes, *Cat. Moll. Reunion*, p. 139.
1868. *Trivia gemmula*, Pease, *Amer. Journ. Conch.* IV, p. 96.
1869. *Cypraea (Coccinelliformes) tremeza*, Crosse, *Journ. de Conchyliol.* XVII, p. 49.
1870. *Trivia exigua*, Roberts, *Amer. Journ. Conch.* V, p. 205.
1870. *Cypraea (Trivia) tremeza*, Sowerby, *Thes. Conch.* IV, p. 49, no. 176 pl. cccxxvii, figs. 510, 511.
1870. *Trivia tremeza*, MacAndrew, *Ann. & Mag. Nat. Hist.* (4)VI, p. 441.
1871. *Cypraea (Trivia) tremeza*, von Martens and Langkavel, *Donum Bismarck.*, p. 35.
1879. *Trivia exigua*, Garrett, *Journ. Conch.* II, pp. 123, 127, no. 65.
1880. *Cypraea (Trivia) tremeza*, von Martens, *in Möbius's Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 274.
1881. *Cyprea tremeza*, Weinkauff, *in Martini and Chemintz's Syst. Conch.—Cab.* V, Abth. 3, pp. 163, 164. 166, pl. xliii, figs. 9, 12.
1882. *Cypraea exigua*, Rossitor, *Proc. Linn. Soc. New South Wales*, p. 831.
1884. *Cypraea tremeza*, Jickeli, *Jahrb. Deuts. Malakozool. Ges.* XI, p. 212.
1884. *Trivirostra tremeza*, Jousseaume, *Bull. Soc. Zool. France*, IX, p. 100.
1885. *Trivia exigua*, Roberts, *in Tryon's Man. Conch.* VII, p. 202, pl. xxii, figs. 9, 10, 17.
1886. *Trivia tremeza*, Cooke, *Ann. & Mag. Nat. Hist.* (5) XVIII, p. 384.
1888. *Trivia (Trivia) exigua*, Paetel, *Cat. der Conchyl.-Samml.* 1, p. 323.
1888. *Cypraea (Trivia) exigua*, Melvill, *Mém. and Proc. Manchest. Lit & Phil. Soc.* (4)I, p. 245, no. 105.
1892. *Trivia tremeza*, Baker, *Proc. Rockester Acad. Sci.*, p. 31.
1897. *Trivia exigua*, Melvill and *Standen*, *Journ. Conch.* VIII, p. 408.
1898. *Trivia exigua*, Baldwin, *Nautilus*, XI, p. 123.
1902. *Cypraea (Trivia) exigua*, Dautzenberg, *Journ. de Conchyliol.* L, pp. 383, 384.
1906. *Trivia tremeza*, Vayssiére, *Bull. Mus. Hist. Nat. Paris*, XII, p. 118.
1906—1907. *Cypraea exigua*, Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid*, XXV, pp. 138, 198, 348, 349.
1920. *Trivia exigua*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 135.
1922. *Trivia exigua*, Schilder, *Proc. Malac. Soc. London*, XV, p. 105.
1923. *Trivia exigua*, Vayssiére, *Ann. Mus. Hist. Nat. Marseille-Zool.* XVIII, pp. 86, 87, pl. xiv, figs. 209-212 (anatomy).
1924. *Trivia exigua*, Fulton, *Shells of Rec. Moll.*, p. 37.
1927. *Trivia (Trivirostra) exigua*, Schilder, *Archiv f. Naturges.* XCIA, p. 63
1932. *Trivirostra exigua*, Schilder, *Zool. Anz.* C. p. 166.
1932. *Trivirostra exigua*, Schilder, *Occ. Pap. B.P. Bishop Mus. Honolulu*, X(3), pp. 5, 7, 8.
1933. *Trivirostra exigua exigua*, Schilder and Schilder, *Zool. Anz.* CII, pp. 289, 290, 292, figs. 13, 292, figs. 13, 16.
1937. *Trivia exigua*, Viader, *Maur. Inst. Bull.* 1(2), p. 39.

Authorities differ regarding the use of the name *exigua* Gray (1832) for the species in preference to *tremeza* Duclos (1833) or vice versa. Some even treat both as distinct species. But as the former antedates the latter, there seems no reason for violating the rules of priority. Gould's *Cypraea gemmula* also has to be treated as a synonym. Weinkauff through oversight had applied the same name to another species closely resembling the West American *Cypraea arabicula*. Schilder has, however, suggested the new name *massauensis* for that species inhabiting the Red Sea and the Western part of the Indian Ocean. I also agree with schilder in his recognition of two distinct races or subspecies of *T. exigua*, namely, *T. ex. exigua* and *T. ex. corrugata*.

Characters.—This race is remarkable for its shell being stained and variegated with irregular blotches of pink on the dorsum. The extremities are somewhat attenuated and beaked. The longitudinal groove, though not very prominent, appears to vary considerably, *i.e.*, in some it is nearly crossed by all the ribs, while in others it is the point at which

they cease terminating in tubercles. In rare cases the groove may also be absent. The right side is hardly margined and the teeth are minute. The shells recorded by Schilder from the French Fregates Shoal are said to be more humped than those from the Pearl and Hermes Reef, but the differences in the number of their teeth are considered as " probably only accidental "

T exigua exigua approaches *C. acutidentata* Gaskoin in its shape as also in the number of ribs terminating on the back. Vayssiére in his paper cited above has worked out its detailed anatomy.

There are twelve specimens of this race in the collection bearing the locality—label Indian Sea (Reg. No. 2859) and identified as *T tremeza* Duclos.

Distribution.—This elegant race was first described from West Indies, but subsequently known from the Red Sea, Gulf of Suez, Mauritius, Reunion, Ceylon, New South Wales, the Philippines, Noumea, Lifu, New Caledonia, Cook, Society, Sandwich, Paumotus, Loyalty, Viti, Samoa, New Carolines, New Hebrides and Hawaii.

Type-locality. West Indies.

Trivia exigua corrugata (Pease, 1868).

1868. *Trivia corrugata,* Pease, *Amer. Journ. Conch.* IV, pp. 94, 95, pl. xi, figs. 14, 15.
1870. *Trivia corrugata,* Roberts, *Amer. Journ. Conch.* V, p. 205.
1871. *Cypraea (Trivia) corrugata,* von Martens and Langkavel, *Donum Bismarck.*, pp. 34, 35.
1879. *Trivia corrugata,* Garrett, *Journ. Conch.* II, pp. 107, 122, 127.
1881. *Cypraea (Trivia) corrugata,* Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* V, Abth. 3, p. 166.
1885. *Trivia corrugata,* Roberts, *in Tryon's Man. Conch.* VII, p. 202, pl. xxii, fig. 17.
1888. *Trivia (Trivia) corrugata,* Paetèl, *Cat. der Conchyl.—Samml.* 1, p. 323.
1888. *Cypraea (Trivia) exigua* var. *corrugata,* Melvill, *Mém. and Proc. Manchest. Lit. & Phil. Soc.* (4)I, p. 245, no. 105.
1906—1907. *Cypraea corrugata,* Hidalgo, *Mém. de la Real Acad. de Cienc. Madrid, XXV,* pp. 137, 194, 318, 319.
1927. *Trivia (Trivirostra) corrugata,* Schilder, *Archiv f. Naturges.* XCIA, p. 63.
1933. *Trivia exigua corrugata,* Schilder, *Zool. Anz.* CII, pp. 290-292.
1937. *Trivia corrugata,* Viader, *Maur. Inst. Bull.* 1(2), p. 39.

Corrugata was first described by Pease from Paumotus in Eastern Polynesia as a distinct species, but Roberts included it in the synonymy of *T. exigua* Gray. Viader in his *Catalogue of Mauritius Mollusca* also treats it as distinct, while Schilder combines it with *exigua* as a race or subspecies. In general appearance the shell is like that of *exigua,* but differs from it in having strong and flexuous ribs and also in having a pinkish colour.

Characters.—Shell ovately-globose, shining, whitish or variegated with blotches of pink ; ribs short, strong and flexuous, less in number, sometimes end abruptly on the sides or bifurcate, slightly nodulous at the dorsal sulcus which is not much impressed ; columella angulate at its edge ; aperture somewhat flexuous and widened at the extremities which are only slightly produced.

The race *corrugata* is represented in the collection by only three specimens from Paumotus (Reg. No. 2858) which are labelled as *T corrugata*. They appear to be quite typical. The largest shell is 5 mm. in length and 3·5 mm. in breadth.

Distribution.—The range of this race was so long confined to the Pacific only, occurring in Paumotus and Society Islands. But recently Viader has reported this from Mauritius, a record which needs confirmation.

Family ERATOIDAE.

Subfamily *ERATOINAE.*

Genus **Proterato** Schilder, 1927.

Type. *Erato neozelanica* Suter.

1927. *Proterato*, Schilder, *Archiv f. Naturges.* XCIA, p. 57.
1929. *Proterato*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 268.
1933. *Proterato*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 246, 248, 253, 255, 257, 260, 262, 265, 275.
1935. *Proterato*, Schilder, *Proc. Malac. Soc. London*, XXI, p. 329.

Schilder first established *Proterato* as a subgenus of *Erato* Risso (1826)[1], but later on he gave it a generic rank. Thiele, however, follows the original view of Schilder. The distinctive features and the phylogeny of this genus are discussed by Schilder in his paper cited above.

Subgenus **Proterato** S. S.

Proterato callosa (Adams and Reeve, 1850).

1850. *Erato callosa*, Adams and Reeve, *Zool. Voy. H. M. S.* '*Samarang*', *Moll.*, p. 25, p. 25, pl. X, figs. 32*a*, 32*b*.
1853. *Erato callosa*, H. & A. Adams, *Gen. Rec. Moll.* 1, p. 190.
1859. *Erato lachryma* and *E. callosa*, Sowerby, *Thes. Conch.* III, p. 82, no. 5, pl. ccixx, figs. 4-6 and 35-37.
1863. *Erato callosa*, Troschel, *Das Gebiss der Schnecken*, 1, p. 216, pl. xviii, fig. 5 (radular teeth).
1865. *Erato callosa*, Reeve, *Conch. Icon.* XV, pl. i, fig. 2*a-b*.
1871. *Erato callosa*, Lischke, *Jap. Meeres-Conchyl.* II, p. 68.
1871. *Erato callosa*, Redfield, *Amer, Journ. Conch.* VI, p. 216, no. 3.
1879. *Erato callosa*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* IV, pp. 146, 147, pl. XXV, figs. 2, 3.
1882. *Erato callosa*, Dunker, *Index Moll. Maris Japonici*, II, p. 56.
1883. *Erato callosa*, Tryon, *Man. Conch.* V, p. 9, pl. iv, figs. 38, 39, pl. ii, fig. 7 (radular teeth).
1888. *Erato* (*Eratopsis*) *callosa*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 198.
1910. *Erato lachryma* var. *callosa*, Smith, *Proc. Malac. Soc. London*, IX, pp. 17, 18.
1920. *Erato* (*Erato*) *callosa*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 137, no. 3.
1924. *Erato callosa*, Fulton, *Shells of Rec. Moll.*, p. 38.
1927. *Erato* (*Erato*) *callosa*, Schilder, *Archiv f. Naturges.* XCIA, p. 58.
1932. *Erato* (*Proterato*) *callosa*, Schilder, *Zool. Anz.* C, p. 166.
1933. *Proterato* (*Proterato*) *callosa*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 248, 257, 261, 266, figs. 15-17.

[1] Risso, A. *Hist. Nat. Eur. Merid.* IV, p. 240 (1826).

A great deal of confusion seems to exist in literature regarding the nomenclature of Adams and Reeve's *Erato callosa* owing to its close similarity with *E. lachryma* sowerby (1832). Smith, no doubt, erroneously combines *callosa* with *lachryma* as a variety and treats Sowerby's *sulcifera* (figs. 1-3) as *callosa* and a cotype of *panamensis*, but his interpretation of Reeve's *sulcifera* (fig. 14*a-b*) and Tryon's *lachryma* (fig. 37) as *callosa* appears agreeable to me, though Schilder regards them as real *lachryma*. I believe that *sulcifera* of Weinkauff (pl. xxvi, figs. 11, 12) is also identical with *sulcifera* of Reeve and, as such, should be treated as synonymous with *callosa*. Recently Schilder has united Weinkauff's *lachryma* (pl. xxvi, figs. 9, 10) with *callosa*, but I fail to support him. Smith also harboured some doubt about it as is evident from his remark, " the figures given by Weinkauff (pl. xxvi, figs. 9, 10) are very unsatisfactory, both as regards colour and denticulation of the outer lip" Schilder seems to have rightly followed Smith in accepting Sowerby's *lachryma* as *callosa*. Dunker mentions the closeness of *lachryma* to *callosa*.

Characters.—Shell conically pyriform, more or less callous (and, hence the name ' *callosa* ' possibly given to this species by the authors), livid-white, tinged with rose or in some ornamented with conspicuous flesh colour bands (one in each whorl, excepting the last one where there are two, the terminal one of which appears to be the largest of all) ; whorls swollen round the upper part ; spire short, obtuse, rather exserted ; extremities tinged with pinkish-brown (excepting rare cases); outer lip thickened, prominently angled at the upper part and denticulated throughout, inner lip crenated excepting the anteriormost part where only a few denticulations occur ; aperture linear, slightly wide but curved in the middle.

Callosa differs from *lachryma* in having its base slightly more constricted, the angulation at the upper part of the outer lip distinctly more prominent, the outer lip less curved and its denticulations less stronger and less extended and the inner lip crenated throughout. The radular teeth of this species have been studied by Troschel and Tryon.

Out of eight specimens of this species in the collection, only six are in good condition (though four of them are young) and the other two partly broken. They bear the locality labels ' China ' (Reg. No. 2817—2 sp., Reg. No. 2826—1 sp.) and ' Galle ' (1+4=5 sp.). But unfortunately six of them are labelled as *Erato lachryma* and two as *E. guttula*. Moreover, three shells from the Sandwich Islands (which should be referred to the species *sandwichensis* Pease) also appear to have been wrongly determined as *lachryma*.

In two of the young shells the colour is perfectly white, while in the other two pale fleshy. The callousness at the upper part of the outer lip is not properly developed in any case, but the extremities appear to be slightly tinged with pinkish-brown. The adult ones seem to agree in their characters with the figures given by Schilder, but the crenations on the inner lip are only developed in one or two cases. The largest specimen in the collection is 7 mm. in length and 4·5 mm. in breadth, but its apex is slightly broken.

Distribution.—The range of *Proterato (Proterato) callosa* (Adams and Reeve), according to Schilder, extends from " China Sea to Japan " But the occurrence of specimens in the collection from Galle in Ceylon extends the distribution of the species to the Indian Ocean.

Type-locality. China Sea.

Proterato sulcifera sulcifera (Sowerby, 1832).

1832. *Erato sulcifera*, Gray, *Descr. Cat. of Shells*, p. 16.
1832. *Erato sulcifera*, Sowerby, *Conch. Illustr.*, p. 97, fig. 46.
1841. *Erato sulcifera*, Sowerby, *Conch. Illustr.*, p. 15, fig. 46.
1845. *Erato sulcifera*, Catlow, *Conchologist's Nomenclator*, p. 308.
1859. *Erato sulcifera*, Sowerby, *Thes. Conch.* III, p. 81, no. 3, pl. ccxix, figs. 1-3.
1871. *Erato sulcifera*, Redfield, *Amer. Journ. Conch.* VI, p. 219, no. 19.
1883. *Erato (Eratopsis) sulcifera*, Tryon, *Man. Conch.* V, p. 11, pl. iv, fig. 51.
1888. *Erato sulcifera*, Paetel, *Cat. der Conchyl.—Samml.* I, p. 198.
1910. *Erato sulcifera*, Smith, *Proc. Malac. Soc. London*, IX, pp. 19, 20.
1920. *Erato (Eratopsis) sulcifera*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2) p. 138.
1927. *Erato (Erato) sulcifera*, Schilder, *Archiv f. Naturges.* XCIA, p. 58.
1932. *Erato sulcifera*, Schilder, *Zool. Anz.* C, p. 166.
1933. *Erato sulcifera*, Schilder, *Zool. Anz.* CII, p. 294.
1933. *Proterato (Proterato) sulcifera sulcifera*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 248, 253, 257, 262, 263, figs. 20, 21.
1937. *Erato sulcifera*, Viader, *Maur. Inst. Bull.* 1(2), p. 40.

Like *P. callosa*, the synonymy of *sulcifera* also lies in a state of confusion. The extremely variable nature of its shell perhaps led Smith to think that Duclos's *Erato nana* and Hinds's *E. corrugatum* are synonymous with *sulcifera*. But as has been rightly pointed out by Schilder, *nana* and *corrugatum* are quite identical (the former being a synonym of the latter) and differ markedly from *sulcifera* and, as such, should not be included in the synonymy of the latter. I have already mentioned above that *sulcifera* of Weinkauff and *sulcifera* of Reeve are not the true *sulcifera* of Sowerby, but mere synonyms of *callosa* Ad. and Rv. Crosse's *E. schmeltziana*[1] from Viti is a synonym of *sulcifera*. Sowerby's *sulcifera* which Smith regards as *callosa* and a co-type of *panamensis* is, as stated by Schilder, also a real *sulcifera*.

Schilder distinguishes five races or subspecies of *sulcifera*, namely, *P. sulcifera sulcifera*, *P. s. corrugatum*, *P. s. capensis*, *P. s. schneideri* and *P. s. smithi*, only the first and last are represented in the present collection.

There is a fairly good series of specimens in the collection with the locality labels yenoshima, Japan (Reg. No. 4249—3 sp.), Singapore (Reg. No. 2832—13 sp.), Natal (2 sp.), Andamans (Reg. No. 2830—8 sp.), Ceylon (Reg. No. 2831—8 sp.) and Mauritius (Reg. No. 2829—many sp.). But unfortunately all of them appear to have been identified by Vredenburg as *Erato corrugatus*, excepting those from Japan as *E. callosa*.

Characters.—Shell ovately or triangularly pyriform, dull-white or pale greenish, obscurely banded in some cases, finely granulated throughout; spire conical, but not so much as in *smithi*; dorsal sulcus deep and long or may be absent in rare cases; extremities tinged with pink,

[1] Crosse, H. *Journ. de Conchyliol.* XV, p. 301, pl. xi, fig. 5 (1867).

but in rare cases only one or none ; aperture narrow ; inner lip distinctly crenated throughout, but denticulations are also present only at the base, outer lip swollen and denticulated at its whole length.

Distribution.—Proterato (*P.*) *sulcifera sulcifera* (Sowb.), which was stated by Gray to have been first described from the Cape of Good Hope, appears to be widely distributed from South Africa to Hawaii, having been recorded from Durban, Port Shepstone, Zanzibar, Natal, Mauritius, Madagascar, Seychelles, Amirantes, Ceylon, Andamans, Singapore, New Guinea, Port Jackson, New Caledonia, Kermadec, Sunday Island, Mindoro and Fiji in the Philippines, Japan, Samoa, Viti, Loyalty and Paumotus. But its range also extends as far as New Britain, Guadalcanar and the Red Sea.

Proterato sulcifera smithi Schilder, 1933.

1859. *Erato guttata*, Sowerby, *Thes. Conch.* III, p. 82, pl. ccxix, figs. 29, 30.
1865. *Erato guttata*, Reeve, *Conch. Icon.* XV, figs. 15.
1883. *Erato guttula*, Tryon, *Man. Conch.* V, p. 9, pl. iv, figs. 33, 34.
1920. *Erato* (*Eratopsis*) *guttula*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 138.
1933. *Proterato* (*Proterato*) *sulcifera smithi*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 248, 253, 255, 257, 265, 271, 273, fig. 24.
1937. *Erato guttula*, Viader, *Maur. Inst. Bull.* 1(2), p. 40.

Erato guttata is, as stated by Schilder, a misprint for *guttula*. But in view of Sowerby's *guttula* (1832—*Conch. Illustr.*) from Mauritius having been proved to be a *Marginella* by Smith (1910) he has proposed the new name *smithi* for Sowerby's species *guttata* (1859). Tryon's figure of *guttula* (copied from Sowerby) and Vredenburg's species are also regarded by Schilder as *smithi*.

The race *smithi* differs from the race *sulcifera* in having the granules slightly smaller and confined to the posterior extremity and the spire, the angulation at the posterior extremity of the outer lip more pronounced, the anterior extremity unspotted and the dorsal sulcus entirely absent.

There is a series of specimens in the collection bearing the locality labels Omar and Tumb Is. (Reg. No. 2814—3 sp., of which one is broken), Ceylon (Reg. No. 2813—7 sp.) and Mauritius (Reg. No. 2812—13 sp.). But all of them appear to have been identified as *Erato guttata* Sowerby. On a careful examination of the shells I find that they represent the race *smithi*, but present certain interesting features which are not mentioned by Schilder. These are : faint trace of a dorsal sulcus (in one), presence of a few granules in between the posterior extremity and the spire (in one), presence of purplish-brown spots on both the extremities and colouration pale greenish (in some). Besides, some of the shells are found to be obscurely fasciated with dark-brown appearing more or less like that of *P. sandwichensis* (Sowb.) from the Sandwich Islands. The largest specimen in the collection is 5 mm. in length and 3mm. in breadth.

Distribution.—This race, which is very common in Mauritius, also occurs at Bombay. Its existence in Ceylon, Omar and Tumb Is. is really interesting.

Proterato sandwichensis (Sowerby, 1859).

1859. *Erato sandwichensis*, Sowerby, *Thes. Conch.* III, p. 82, pl. ccxix, figs. 21, 22.
1860. *Erato sandwicensis*, Pease, *Proc. Zool. Soc. London*, pp. 146, 147.
1865. *Erato sandwicensis*, Reeve, *Conch. Icon.* XV, pl. iii, fig. 17 *a-b*.
1871. *Erato sandwicensis*, Redfield, *Amer. Journ. Conch.* VI, p. 218, no. 16.
1871. *Erato sandwichensis*, von Martens and Langkavel, *Donum Bismarck.*, p. 20.
1879. *Erato sandwichensis*, Weinkauff, *in Martini and Chemnitz's Syst. Conch. Cab.* V, Abth. 4, pp. 154, 155, pl. xxvi, figs. 14, 15.
1883. *Erato sandwichensis*, Tryon, *Man. Conch.* V, p. 9, pl. iv, fig. 35.
1888. *Erato (Eratopsis) sandwichiensis*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 198.
1910. *Erato sandwichensis*, Smith, *Proc. Malac. Soc. London*, IX, pp. 18, 19.
1927. *Erato (Erato) sandwicensis*, Schilder, *Archiv f. Naturges.* XCIA, p. 58
1933. *Proterato (Proterato) sandwichensis*, Schilder; *Proc. Malac. Soc. London*, XX, pp. 248, 257, 271, fig. 26.

Although all workers are more or less unanimous in regarding *Erato sandwichensis* Sowerby as identical with *E. sandwicensis* Pease from the same locality, still most of them are inclined to prefer Pease's name *sandwicensis* for the species. Sowerby's description is quite accurate and his spelling is also more accurate than that of Pease. I, therefore, follow Schilder in using the name *sandwichensis* for the species. Tryon erroneously combines *E. pellucida* Reeve (which is a synonym of *E. angistoma* Sowerby) with *sandwichensis*.

Characters.—Shell somewhat elongately pyriform, pale rosy white, ornamented with three distinct broad dark-brown bands ; whorls obtusely angled round the upper part ; spire conically exserted ; extremities spotted with pinkish brown ; outer lip slightly narrow, less elevated and denticulated along its whole length, inner lip provided with a few denticulations only at the base, while the rest is crenated, though crenations may tend to disappear gradually towards the posterior part ; aparture narrow and linear.

There are six specimens of *sandwichensis* in the collection from the Sandwich Islands which are kept separately under the Reg. Nos. 2823—3 sp. and 4253—3 sp. respectively. The first three were determined by Vredenburg as *Erato lachryma* Gray. The shells, though mostly worn, appear to agree with the description of the typical form. In one case only I found a faint trace of the longitudinal groove which is entirely absent in this species. The largest shell in the collection is 5 mm. in length and 3 mm. in breadth.

Distribution.—Proterato (Proterato) sandwichensis (Sowb.) has not been known to occur anywhere beyond the sandwich Islands and Hawaii.

Type-locality. Sandwich Is.

Subgenus **Cypraeerato** Schilder, 1932.

1932. *Cypraeerato*, Schilder, *Foss. Cat.* 1/55, p. 86.
1933. *Cypraeerato*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 246, 248, 257, 275.
1925. *Cypraeerato*, Schilder, *Proc. Malac. Soc. London*, XXI, p. 329.

This subgenus, as stated by Schilder, is the most specialized of Eratoinae which originated in Australia.

Proterato angistoma angistoma (Sowerby, 1832).

1832. *Erato angistoma*, Sowerby, *Conch. Illustr.*, fig. 51.
1842. *Erato angistoma*, Reeve, *Conch. Syst.* II, p. 260, pl. cclxxxv, fig. 1.
1845. *Erato angistoma*, Catlow, *Conchologist's Nomenclator*, p. 308.
1859. *Erato angyostoma*, Sowerby, *Thes. Conch.* III, p. 83, no. 13, pl. ccxix, figs. 19, 20, 23, 24.
1865. *Erato angistoma* and *E. pellucida*, Reeve, *Conch. Icon.* XV, pl. iii, figs. 13, 16.
1871. *Erato angistoma*, Redfield, *Amer. Journ. Conch.* VI, p. 216.
1879. *Erato angistoma* and *E. pellucida*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* V, Abth. 4, pp. 151, 152, 154, pl. xxvi, figs. 3, 4, 13.
1880. *Erato angistoma* and *E. pellucida*, Weinkauff, *Jahrb. Deutsch. Malakozool. Ges.* VII, p. 108, nos. 10 and 15.
1883. *Erato angistoma*, Tryon, *Man. Conch.* V, p. 10, pl. iv, fig. 44.
1888. *Erato (Eratopsis) angiostoma*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 198.
1893. *Erato pellucida*, Melvill and Abercrombie, *Mém. Manchest. Lit. & Phil. Soc.* (4)VIII, p. 32.
1895. *Erato angistoma*, Thurston, *Bull. Mad. Govt. Mus.* III, p. 123.
1898. *Erato pellucida*, Melvill and Standen, *Journ. Conch.* IX, p. 45.
1901. *Erato pellucida*, Melvill and Standen, *Proc. Zool. Soc. London*, II, p. 385.
1910. *Erato angistoma*, Smith, *Proc. Malac. Soc. London*, IX, p. 21.
1920. *Erato (Erato) angystoma*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 137.
1927. *Erato (Erato) angystoma*, Schilder, *Archiv f. Naturges.* XCIA, p. 58.
1933. *Proterato (Cypraeerato) angistoma angistoma*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 248, 257, 260, 278, fig. 36.

Sowerby first used the name *angistoma* for a species described by him from East Indies (exact locality not mentioned), but later he changed it to *angyostoma* without giving any reasons. Paetel, on the other hand, has wrongly quoted the name as '*angiostoma*', while Vredenburg as '*angystoma*' Schilder has restored Sowerby's original name *angistoma* which most of the workers have used. He has distinguished two races of *angistoma*, namely, *P. a. angistoma* and *P. a. angulifera.*

Characters.—Shell globosely pyriform, livid-white, semi-pellucid, shining, finely granulated; whorls rounded; spire short; the posterior elevation of the outer lip forming a prominent angle at its extremity nearly as high as the spire and the great constriction at the base of the shell are the chief diagnostic features of this race; outer lip thickened, wide and denticulated throughout, inner lip crenated except at the base where a few folds occur; aperture narrow, as long as the shell; extremities tipped with brown.

There are sixteen specimens in the collection, of which seven are from Hong Kong and labelled as *Erato angystoma*, two from Natal and labelled as *E. angystoma*, while the rest from the Persian Gulf, Gulf of Oman, Ceylon and Mauritius and labelled as *E. angulifera.* The shells are worn, smooth and dull-white, but three of them only appear slightly creamy and shining with the anterior extremity only spotted with brown. Moreover, the crenations on the columella appear, in most cases, to be restricted to the lower part only, though not continued over its entire length as stated by Schilder. The largest specimen in the collection is from Hong Kong which measures 4·5 mm. in length and 3 mm. in breadth.

The race *angistoma* can easily be distinguished from *angulifera* by the less produced posterior angle of its outer lip, extremely fine granula-

tions on the spire, the labial teeth less numerous, but slightly more prominent and extensive, and the apex distinctly less obtuse.

Distribution.—Schilder gives the range of *P. (C.) angistoma angistoma* (Sowerby) as " Omar to Ceylon " But it probably extends from Mauritius to the Philippines.

Type-locality. East Indies (exact locality not stated).

Proterato gallinacea (Hinds, 1844).

1844. *Ovulum gallinaceum*, Hinds, *Zool. Voy. H. M. S.* '*Sulphur*', *Moll.* II, p. 47, no. 193, pl. xvi, figs. 1, 2.
1859. *Erato gallinaceum*, Sowerby, *Thes. Conch.* III, p. 83, no. 14, pl. ccxix, figs. 33, 34.
1865. *Erato gallinacea*, Reeve, *Conch. Icon.* XV, pl. ii, fig. 7*a-b*.
1871. *Erato gallinacea*, Redfield, *Amer. Journ. Conch.* VI, p. 216.
1879. *Erato gallinacea*, Weinkauff, *in Martini and Chemnitz's Syst. Conch.—Cab.* V, Abth. 4, p. 150, pl. XXV, figs. 14, 15,
1880. *Erato gallinacea*, Weinkauff, *Jahrb. Deutsch. Malakozool. Ges.* VII, p. 107, no. 7.
1883. *Erato gallinacea*, Tryon, *Man. Conch.* V, p. 10, pl. IV, fig. 46.
1888. *Erato (Eratopsis) gallinacea*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 198.
1909. *Erato gallinacea*, Schepman, *Proc. Siboga Exped. Monogr.* XLIX[1]*b*, p. 140.
1910. *Erato gallinacea*, Smith, *Proc. Malac. Soc. London*, IX, p. 20.
1920. *Erato (Erato) gallinacea*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 13.
1927. *Erato (Erato) gallinacea*, Schilder, *Archiv f. Naturges.* XCIA, p. 58.
1928. *Erato gallinacea*, Melvill, *Proc. Malac. Soc. London*, XVIII, p. 103.
1933. *Proterato (Cypraeerato) gallinacea*, Schilder, *Proc. Malac. Soc. London*, XX, pp. 248, 254, 255, 257, 260, 264, 265, 269, figs. 38-40.

Hinds placed his species *gallinaceum* from New Guinea in the genus *Ovulum* Bruguiére, while Sowerby and others relegated it to *Erato* Risso. But its true systematic position was not known until 1932, when Schilder carefully studied the species and correctly assigned it to his new genus *Proterato.* All workers seem to agree that *P. gallinacea* is distinct from *E. angulifera* Sowerby, but Smith treats the two as synonymous. The name of the species, says Tryon, is perhaps derived from " its fancied resemblances to a trussed hen "

Characters.—Shell triangularly pyriform, dull-white, pellucid, shining, greatly callous when fully formed, ornamented with one prominent reddish-brown transverse band on the dorsum about the angle of the last whorl ; whorls angled round the upper part, constricted and beaked at the lower ; spire conical, minutely granulated ; apex obtuse ; labrum thick, broad, swollen, comspicuously angled posteriorly and elevated above the apex, the lirae extend almost across it and similar lirae also occur at the anterior part of the inner lip which is crenated ; aperture narrow and linear ; extremities and the tip of the angle of the outer lip spotted with brown. This very character was first observed by Smith in this species.

Gallinacea seems to differ markedly from *angulifera* in having a triangularly pyriform shell adorned with two transverse colour bands, the lirae on the thickened labrum as well as on the lower part of the columella more prominent and extensive, the angle of the outer lip more elevated and the apex distinctly less obtuse.

There are three specimens of *gallinacea* in the collection which appear to represent three very interesting stages of development. Of these, two are from Andamans and Ceylon (Reg. No. 2827) and in a perfectly good condition, but labelled as *Erato angulifera* Sowerby, while the third one is from Galle (Reg. No. 4250). It is worn and callous with the apex greatly blunt and labelled as *Erato sulcifera* var. *minor*. Among the first two shells, one (5 mm. in length and 3·5 mm. in breadth) appears quite typical of the species as regards form, shape and structure and agrees with Hinds's figs. 1 and 2, Tryon's fig. 46, Reeve's figs. 7a and 7b and Sowerby's figs. 33 and 34, the only difference being that it has an additional colour band on the penultimate whorl—a feature hitherto unknown in this species. The large band in this case appears to extend across the inner lip as far as the aperture. In the second specimen (nearly 5 mm. in length and 3·5 mm. in breadth), however, a callous layer appears to develop on the outer side of either lip, gradually extend over the back of the shell and more or less conceal the spire and the base. The more the shell grows the more the layers develop, with the result that the entire spire, the base and the angular process of the outer lip all become burried and a small space is only left in the middle of the back where only the prominent colour band is partially visible. Consequently, the shell looks more or less short with the apex very blunt, the outer lip much thickened and swollen and the aperture much narrowed. This last stage is represented by the worn and callous shell in the collection (4·5 mm. in length and 3 mm. in breadth) from Galle which more or less agrees with Schilder's fig. 40.

Distribution.—Schilder gives the range of *P.* (*C.*) *gallinacea* (Hinds) as " Malaysia to Zanzibar and Oman ", and adds that the specimens from Oman are mostly of a dwarf form.

Type-locality. New Guinea.

Family *PEDICULARIINAE.*

Subfamily *PEDICULARIINAE.*

Genus **Pediculariella** Thiele, 1925.

Type. *Pedicularia californica* Newcomb, 1864.

1925. *Pediculariella*, Thiele, *in Kükenthal Handb. d. Zool.* V(1), p. 88.
1927. *Pediculariella*, Schilder, *Archiv f. Naturges.* XCIA, p. 66.
1929. *Pediculariella*, Thiele, *Handb. der Syst. Weichtierk.* 1, p. 270.
1931. *Pediculariella*, Schilder, *Journ. Conch.* XIX(6), p. 167.
1936. *Pediculariella*, Schilder, *Proc. Malac. Soc. London*, XXII, p. 81.

Thiele erected *Pediculariella* as a genus, with *Pedicularia californica* Newcomb as it type-species, and included it in the subfamily Jenneriinae of the family Cypraeidae. Schilder (1927) while subordinating *Pediculariella* to *Pedicularia* Swainson (1840) placed it under Pediculariinae of the family Pediculariidae Tryon. But subsequently he (1931) ranked it as distinct and relegated it to the family Amphiperatidae on the basis of the radular character, which view I am not inclined to accept. Radula,

no doubt, plays an important rôle in the identification of some molluscs but there are other characters too, such as, shape, size, form and sculpture of the shells, which are none the less important. The specimens of the genera *Pedicularia* and *Pediculariella* which are limpet-like in form and found parasitic on corals differ so markedly in their shell characters from those of the family Amphiperatidae that they can claim a separate family rank.

Pediculariella pacifica (Pease, 1868).

1868. *Pedicularia pacifica*, Pease, *Amer. Journ. Conch.* IV, p. 96, pl. xi, figs. 17, 18.
1872. *Pedicularia pacifica*, Dall, *Amer. Journ. Conch.* VII, p. 121.
1885. *Pedicularia pacifica*, Tryon, *Man. Conch.* VII, p. 242, pl. 1, figs. 6, 7.
1888. *Pedicularia pacifica*, Paetel, *Cat. der Conchyl.—Samml.* 1, p. 328.
1920. *Pedicularia pacifica*, Vredenburg, *Rec. Geol. Surv. Ind.* LI(2), p. 140.
1924. *Pedicularia pacifica*, Fulton, *Shells of Rec. Moll.*, p. 36.
1927. *Pedicularia (Pediculariella) pacifica*, Schilder, *Archiv f. Naturges.* XCIA, p. 66.
1931. *Pediculariella pacifica*, Schilder, *Journ. Conch.* XIX(6), p. 167.
1937. *Pedicularia pacifica*, Viader, *Maur. Inst. Bull.* 1(2), p. 36.

Characters.—This species can easily be recognized by its small, irregular, pinkish, oblong-ovate shell which is limpet-like in form, but much constricted in the middle. It is ornamented with fine conspicuous radial striae which are decussated with regular concentric striae. The apex is involute, lateral and prominent, while the aperture is wide and subcanaliculate in front.

It is closely allied to *Pedicularia elegantissima* Deshayes (1863) from the isle of Reunion.

There are three shells in the collection from the Viti Islands which agree with the description of the typical form. The largest shell (Reg. No. 2946) is 8 mm. in length and 4 mm. in breadth, while the smallest one is 5·5 mm. in length and 3·5 mm. in breadth.

Distribution.—P. pacifica (Pease) was originally known from the Ins. Apaian in Polynesia. But its occurrence in Mauritius as recorded by Viader extends its range westwards.

Type-locality. Insl. Apaian in Polynesia.

MGIPC—M—III-5-1—23-3-50—400.