

IV REPORT ON A COLLECTION OF
MOLLUSCA FROM THE COCHIN AND
ENNUR BACKWATERS

By H. B. PRESTON, F.Z.S.

Class GASTROPODA.

Order OPISTHOBRANCHIATA.

Suborder TECTIBRANCHIATA.

Family TORNATINIDAE.

Retusa estriata (Preston).

Rec. Ind. Mus. X, 1914, p. 303 (as *Tornatina*).

Cochin backwater, near Ernakulam (*F. H. Gravely*).

Mr. T. Iredale having pointed out to the author that the name "*Tornatina*" is antedated by *Retusa*, the latter must take precedence.

Retusa ennurensis, sp. n.

Shell cylindrical, whitish in the median part, painted with a broad pale red band above, and having the base also painted red, but of a deeper hue than that on the upper part of the shell, sculptured throughout with fine, closely set, revolving striae which the microscope reveals to be also of a reddish colour, transversely marked with microscopic growth striae; apex deeply sunken; columella margin white, polished, calloused, sloping, scarcely curved; labrum acute, slightly inwardly bent over the aperture in the lower median part; aperture narrow, straightish, broadening above and especially below; interior of shell tinged with lilac.

Alt. 5.5, diam. 2.25 mm.

Hab.—Ennur backwater, Madras.

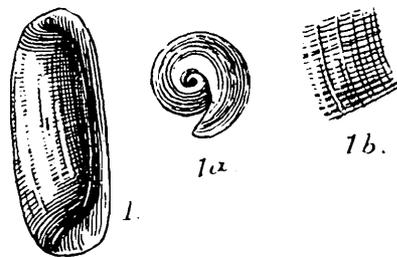


FIG. 1, 1a. — *Retusa ennurensis*,
sp. n. × 4.

FIG. 1b.— do., sculpture,
× 8.

Order *PROSOBRANCHIATA*.Suborder *PECTINIBRANCHIATA*.Family *NASSIDAE*.*Nassa denegabilis*, Preston.*Rec. Ind. Mus.* X, 1914, pp. 297-298.

Ennur backwater, Madras; Cochin backwater, near Ernakulam.

Nassa kieneri, Desh.*Moll. Ile Bourbon*, 1863, p. 129.Cochin backwater, near Ernakulam; a single young specimen (*F. H. Gravely*).*Nassa orissaënsis*,¹ Preston var. *ennurensis*, var. n.

Shell differing from the type in its much larger size, it having 6 whorls, and in its more exaggeratedly fusiform shape, moreover both the canal and aperture are narrower.

Alt. 10·25, diam. maj. 4·5, diam. min. 4 mm.

Aperture: alt. 4·25, diam. 2 mm.

Hab. — Ennur backwater, Madras (*Type*); Canal near Chingrighatta, outskirts of Calcutta (a single specimen only).

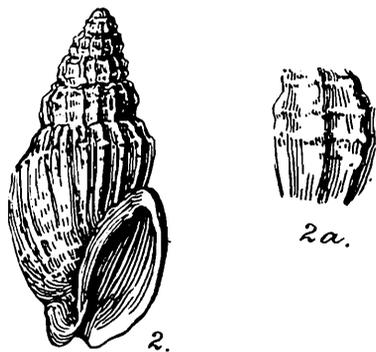


FIG. 2.—*Nassa orissaënsis* var. *ennurensis*, var. n. × 3.
FIG. 2a.— do., sculpture, × 6.

Alectrion unicolorata, Kiener.*Monog. Buccinum*, p. 60, pl. xix, fig. 69.Cochin backwater, near Ernakulam; a single young specimen (*F. H. Gravely*).*Nassodonta insignis*, H. Ad.*Proc. Zool. Soc. London*, 1866, p. 445.Cochin backwater, near Ernakulam (*F. H. Gravely*).

In the *Proc. Malac. Soc. London*, vol. I, 1895, pp. 257-258, Mr Edgar A. Smith doubted the validity of the genus *Nassodonta*, this view however the author is unable to accept, hence its reinstatement in the present paper.

¹ *Rec. Ind. Mus.* X, p. 299.

Nassodonta gravelyi, sp. n.

Shell allied to *N. insignis*, H. Ad., with which it occurs, but differing from that species in its narrower form, external dark blackish brown colour and internal dark livid violet tinge.

Alt. 7.5, diam. maj. 4.25, diam. min. 3.5 mm.

Aperture: alt. 3.5, diam. 1.5 mm.

Hab.—Cochin backwater, near Ernakulam; *Type* (F. H. Gravely); Ennur backwater, Madras.

At first sight this might be taken for a variety of *N. insignis*, the author has, however, been able to examine a fairly large series of both forms, and as they never seem to blend he is of opinion that the one above described is quite worthy of specific rank.



3.

FIG. 3.—*Nassodonta gravelyi*, sp. n. × 4.

Family MURICIDAE.

Thais carinifera, Lamark.

Anim. sans Vertébres, VII, 1822, p. 241.

Cochin backwater, near Ernakulam; a single very immature specimen (F. H. Gravely).

Family CERITHIIDAE.

Bittium gravelyi, sp. n.

Shell minute, fusiform, purplish-brown, encircled by a spiral band of a darker colour; whorls 6, spirally lirate, not convex; suture impressed; columella margin curved; labrum acute, yellowish; aperture sub-circular.

Alt. 2.25, diam. maj. 1.25 (nearly) mm.

Hab.—Cochin backwater, near Ernakulam (F. H. Gravely).



4.



4a.

FIG. 4.—*Bittium gravelyi*, sp. n. × 8.
FIG. 4a.—do., sculpture, × 16.

Potamides (Tympanotonos) fluviatilis, Pot. and Mich.

Cat. Moll. de Douai, p. 363, pl. xxi, figs. 19-20.

Cochin backwater, near Ernakulam (F. H. Gravely).

Family TIARIDAE.

Tiara (Platia) scabra (Müller).

Hist. Verm. II, p. 136 (as *Buccinum*).

Ennur backwater, Madras.

Family LITTORINIDAE.

Littorina arboricola, Reeve.*Conch. Icon.* pl. vi, figs. 27, a and b.

Ennur backwater, Madras.

Family FOSSARIDAE.

Conradia cancellata, sp. n.

Shell perforate, small, turbinate, in dead condition whitish; whorls 4, the first two smooth, the remainder cancellately sculptured with spiral lirae crossed by slightly oblique, transverse riblets, the last whorl convex; suture impressed; perforation narrow, smooth within; columella margin descending in a curve, labrum continuous; aperture rather oblique, ovate.



FIG. 5.—*Conradia cancellata*,
sp. n. × 6.
FIG. 5a.— do., sculpture,
× 12.

Alt. 3, diam. maj. 2.5, diam. min.
1.75 mm.

Aperture: alt. 1.25, diam. 1 mm.

Hab.—Ennur backwater, Madras.

Family LITIOPIDAE.

Alaba rectangulata, Craven.*Ann. Soc. Mal. Belg.* XCVI, 1880.

Ennur backwater, Madras.

Family RISSOIDAE.

Iravadia funerea, sp. n.

Shell small, ovately fusiform, covered with a grayish-black periostracum; remaining whorls 3, sculptured with coarse, spiral lirae and showing traces of transverse striation; suture impressed; columella margin vertically descending, diffused above into a very restricted, well defined, parietal callus which joins it with the upper margin of the labrum; labrum acute, angled by the terminations of the spiral lirae; aperture slightly oblique, elliptical.



FIG. 6.—*Iravadia funerea*, sp.
n. × 8.
FIG. 6a.— do., sculpture,
× 16.

Alt. 2.75, diam. maj. 2, diam. min.
1.25 mm.

Hab.—Cochin backwater, near Ernakulam.

Iravadia ennurensis, sp. n.

Shell imperforate, small, cylindrically fusiform, in dead condition yellowish-white; whorls 5, sculptured with regular, revolving lirae crossed by fine, transverse striae; suture impressed, finely lirate above; columella margin slightly oblique, diffused above into a thick, restricted and well defined, parietal callus which unites it with the upper margin of the labrum; labrum varicosely thickened behind, outwardly bevelled, angled at each point of termination of the revolving lirae; aperture rather oblique, ovate.

Alt. 4, diam. maj. 1.75, diam. min. 1.5 mm.

Aperture: alt. 1, diam. .75 mm.

Hab.—Ennur backwater, Madras.

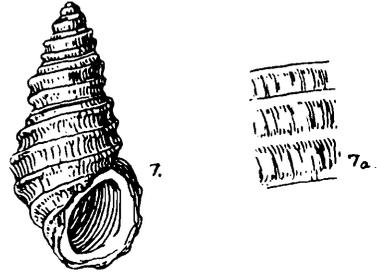


FIG. 7.—*Iravadia ennurensis*,
sp. n. × 6.
FIG. 7a.— do., sculpture,
× 18.

Iravadia annandalei, sp. n.

Shell allied to *T. ennurensis*, but differing from that species in its more slender form, more acute lirations and obsolete, transverse striae, these latter being only indistinctly visible with the aid of the microscope; the aperture moreover is much smaller than in that species and the labrum is quite continuous, while it is possessed of an extra whorl, making 6 in all.

Alt. 3.75, diam. maj. 1.5, diam. min. 1.5 mm.

Aperture: alt. 1, diam. .5 mm.

Hab.—Ennur backwater, Madras (*Type*); Cochin backwater, near Ernakulam (*F. H. Gravely*).

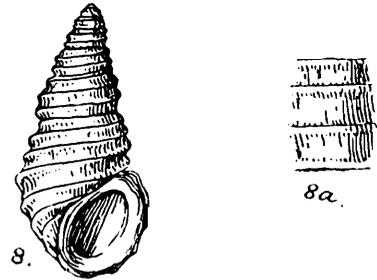


FIG. 8.—*Iravadia annandalei*,
sp. n. × 6.
FIG. 8a.— do., sculpture,
× 18.

Family HYDROBIIDAE.

Stenothyra perpumila, sp. n.

Shell perforate, minute, shortly fusiform, semi-transparent, polished, shining, milky white; whorls 4, the last convex; suture well impressed; umbilicus narrow; labrum continuous, opaque white, a little projecting in front; aperture almost circular.

Alt. 1.5, diam. .75 mm.

Hab.—Cochin backwater, near Ernakulam (*F. H. Gravely*).



FIG. 9.—*Stenothyra perpumila*,
sp. n. × 16.

Family NATICIDÆ.

Natica marochiensis, Gmelin.

Syst. Nat. p. 3675, No. 15.

Cochin backwater, near Ernakulam (*F. H. Gravely*); Ennur backwater, Madras (a single young and dead specimen from each locality).

Family TURRITELLIDÆ.

Vanesia rambhaensis (Preston).

Rec. Ind. Mus. X, 1914, p. 297 (as *Terebra*).

Cochin backwater, near Ernakulam; a single specimen only (*F. H. Gravely*).

The author is again indebted to Mr. T. Iredale for the above generic rectification; the genus *Vanesia* was described by A. Adams in the Annals and Magazine of Natural History, ser. 3, vol. VIII, 1851, p. 242, in whose opinion it might be allied to *Mesalia* and here the present writer is inclined to leave it; it certainly is far removed from the Opisthobranch genera among which it has found a resting place in the British Museum collection.

Syrnola attenuata (A. Ad.).

Sowerby, *Thes. Conch.*, II, p. 811, pl. clxxi, fig. 22, 1855 (as *Obeliscus*).

Cochin backwater, near Ernakulam; a single dead and worn specimen (*F. H. Gravely*).

Pyrgulina humilis (Preston).

Journ. Malac. XII, 1905, p. 6, pl. ii, fig. 27 (as *Pyramidella* (*Mormula*)),
Rec. Ind. Mus. XI, 1915, pp. 294-295 (as *Mormula*).

Cochin backwater, near Ernakulam (*F. H. Gravely*).

Mr. T. Iredale has again kindly assisted the author to a correction of former errors, he having very rightly pointed out that the present species should not remain in the genus *Mormula* but should be removed to *Pyrgulina*.

var. **chilkaensis** (Preston).

Rec. Ind. Mus. XI, 1915, p. 295 (as *Mormula*).

Cochin backwater, near Ernakulam; found with the type from (*F. H. Gravely*).

Family NERITIDÆ.

Theodoxus sowerbyana (Recluz).

Proc. Zool. Soc. London, 1842, p. 174.

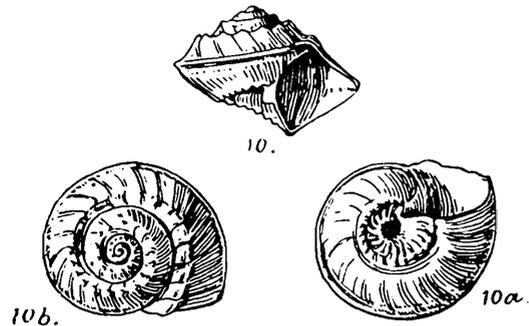
Ennur backwater, Madras.

Septaria crepidularia*, Lamarck.Anim. s. Vert.*, VI, 2, 1822.Cochin backwater, near Ernakulam (*F. H. Gravely*).

Family TROCHIDAE.

***Solariella deliciosa*, sp. n.**

Shell small, rather depressedly conic, pale brownish-green, somewhat iridescent above, highly so on the base; whorls 4, carinately angled above the last volution also strongly carinate at the periphery, the upper carination being tubercled throughout, sculptured with very minute and closely-set microscopic, oblique, transverse striae; suture impressed; umbilicus ornamented round its margin with a broad ridge crossed by regular transverse costulae, moderately wide; columella margin rather sharply curved, outwardly expanded above into a white wing-like projection; labrum acute, sharply angled at the base and at the point of termination of the peripheral carina; aperture depressedly diamond shaped.

FIGS. 10, 10a, 10b.—*Solariella deliciosa*, sp. n. $\times 6$.

Alt 1.5, diam. maj 3.25, diam. min. 2.75 mm.

Aperture: alt. 1.25, diam. 1 mm.

Hab.—Ennur backwater, Madras.

Family CYCLOSTREMATIDAE.

Cyclostrema micans*, A. Ad.Proc. Zool. Soc. London*, 1850, p. 44.

Ennur backwater, Madras.

Class LAMELLIBRANCHIATA.

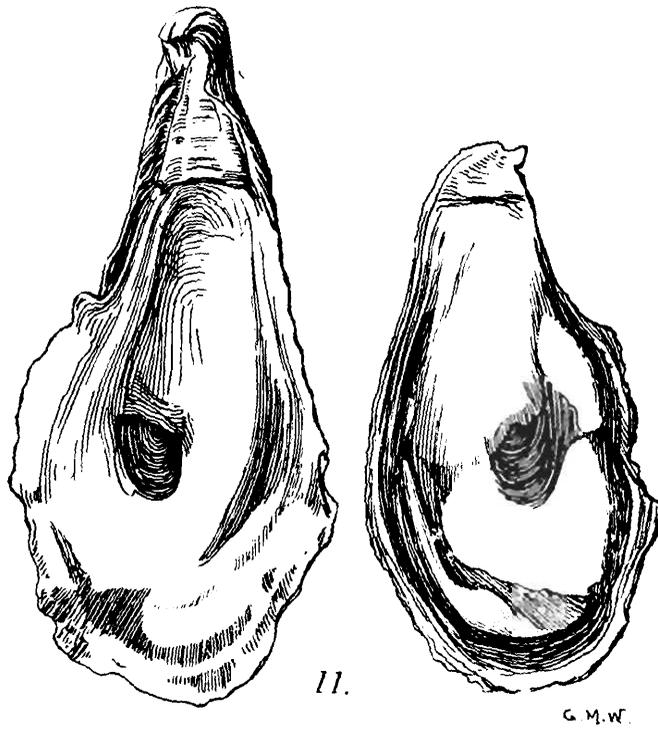
Order TETRABRANCHIATA.

Suborder OSTRACEA.

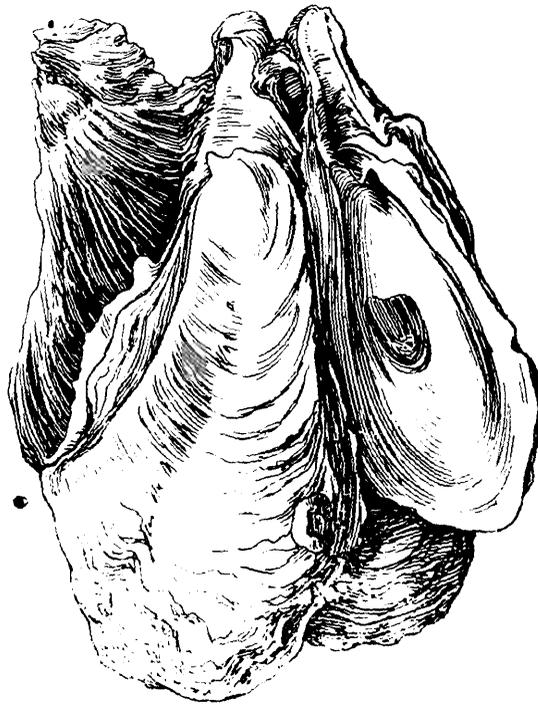
Family OSTREIDAE.

***Ostrea madrasensis*, sp. n.**

This species may be compared to *O. virginica*, Gmel. (= *O. canadensis*, Lk.) from the E Coast of N. America, it is however of a straighter form and thinner texture and is much more foliaceous externally, the left valve is more concave and the



G. M. W.



IIa

FIGS. II, IIa.—*Ostrea madrasensis*, sp. n. $\frac{1}{2}$ nat. size.

inner margins of both valves, as well as the muscular scars, are of a deep purplish-black colour.

Long. 140, lat. 56.5 mm.

Hab.—Ennur backwater, Madras.

Placuna placenta, Linnaeus.

Syst. Nat. ed. 12, p. 1154 (as *Anomia*).

Ennur backwater, Madras (a single very juvenile specimen).

Suborder *MYTILACEA*.

Family *MYTILIDAE*.

Modiola taprobanensis, Preston.

Ann. Mag. Nat. Hist. ser. 8, XVI, p. 84.

Ennur backwater, Madras.

Suborder *ARCACEA*.

Family *ARCIDAE*.

Arca granosa, Lin.

Syst. Nat. ed. 12, p. 1142.

Ennur backwater, Madras.

Arca (Fossularca) lactea, Lin.

Syst. Nat. ed. 12, p. 1141.

Ennur backwater, Madras.

Suborder *CONCHACEA*.

Family *VENERIDAE*.

Meretrix casta, Chem.

Conch. Cab. VI, p. 349, pl. xxxiii, fig. 346 (as *Venus*).

Ennur backwater, Madras; Cochin backwater, near Ernakulam; juvenile specimens (*F. H. Gravely*).

Meretrix ovum, Hanley.

Proc. Zool. Soc. London, 1845, p. 21.

Cochin backwater, near Ernakulam.

Meretrix zonaria, Lamk.

Anim. s. Vert. VI, p. 299.

Ennur backwater, Madras; Cochin backwater, near Ernakulam (young specimens only from both localities).

Chione imbricata, Sow.*Thes. Conch.* II, 1855, p. 715, pl. clvi, figs. 81, 82.

Ennur backwater, Madras.

Chione marmorata, Lamarck.*Anim. s. Vert.* VI, p. 261 (as *Venus*).

Cochin backwater, near Ernakulam.

Anomalocardia squamosa, Lin.*Syst. Nat.* ed. 12, p. 1133.

Ennur backwater, Madras (young specimens only).

Tapes turgida, Lamk.*Anim. s. Vert.* VI, p. 353 (as *Venus*).

Cochin backwater, near Ernakulam.

Family CYRENIDAE.

Corbicula cochinensis, sp. n.

Shell small, trigonal, covered generally and in type specimen

with a dark olive periostracum and showing traces of radiate painting; umbones not very prominent; both valves somewhat contracted in the posterior median part and coarsely and somewhat distantly, concentrically ridged towards the umbonal region, the ridges becoming suddenly finer and more closely-set and continuing thus to the margin; dorsal margin narrowly and strongly arched; ventral margin gently anteriorly rounded, elongated and very slightly contracted posteriorly; posterior side steeply sloping

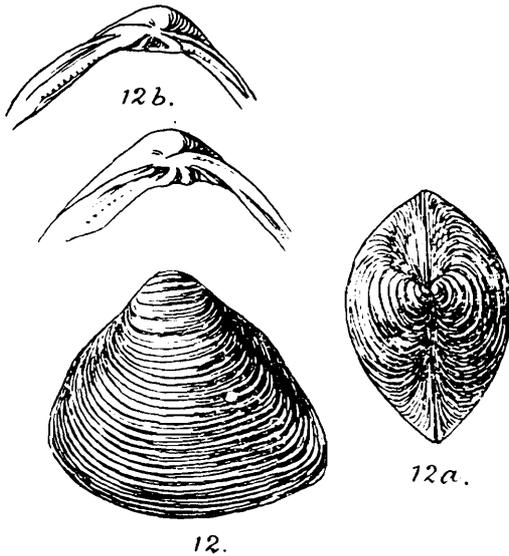
FIG. 12, 12a.—*Corbicula cochinensis* sp. n.
× 6.

FIG. 12b.— do., hinge, × 9.

above, rounded below; anterior side also sloping above, rostrate below; interior of shell dark livid brownish-violet.

Long. 4, lat. 4.5 mm.

Hab.—Cochin backwater, near Ernakulam.

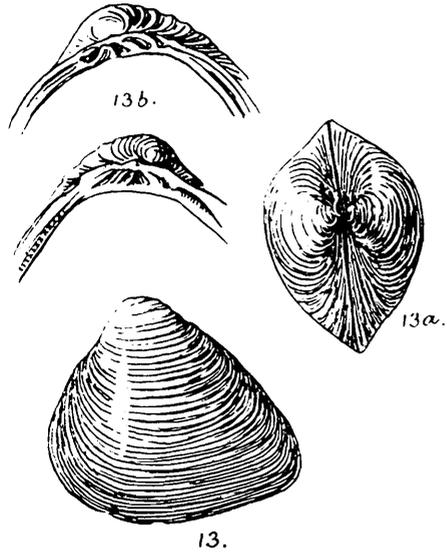
The colour of the shell varies from pale yellowish-green in certain specimens to the dark olive of the type, the paler specimens showing a number of narrow, transverse, radiate, reddish or purple bands.

***Velorita delicatula*, sp. n.**

Shell small, trigonal, dark olive gray; both valves sculptured in the umbonal region with fine, distant, concentric ridges which suddenly become much more serried and numerous, continuing thus throughout the remainder of the shell; umbones small, inwardly bent; dorsal margin sharply arched; ventral margin slightly rounded, a little contracted posteriorly; anterior side rather sharply rounded; posterior side sloping above, angularly rounded and a little rostrate below.

Long. 5, lat. 6 mm.

Hab. — Cochin backwater, near Ernakulam (F. H. Gravely).



FIGS. 13, 13a. — *Velorita delicatula*, sp. n. × 4.
FIG. 13b. — *do.*, hinge, × 8.

Family SOLENIDAE.

***Cultellus subellipticus*, Dunk.**

Proc. Zool. Soc. London, 1861, p. 421.

Ennur backwater, Madras (two young specimens).

***Solen fonesi*, Dunk.**

Proc. Zool. Soc. London, 1861, p. 419.

Cochin backwater, near Ernakulam (F. H. Gravely).

Order DIBRANCHIA.

Suborder LUCINACEA.

Family LUCINIDAE.

***Codokia fischeriana*, Issel.**

Mal. del Mar. Rosso, 1869, p. 83.

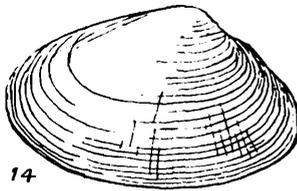
Ennur backwater, Madras.

Suborder TELLINACEA.

Family TELLINIDAE.

Tellina ennurensis, sp. n.

Shell small, ovate, whitish, faintly tinged with pink, iridescent, polished, shining, marked with fine, concentric growth lines and indistinct, closely-set, transverse striae, these latter being only visible with the aid of the microscope; umbones small, not prominent; dorsal margin gently sloping anteriorly, rather steeply sloping posteriorly; ventral margin anteriorly, and in the median part, gently rounded, a little contracted posteriorly; anterior side rounded, somewhat produced;



FIGS. 14, 14a.—*Tellina ennurensis*,
sp. n. $\times 4$.

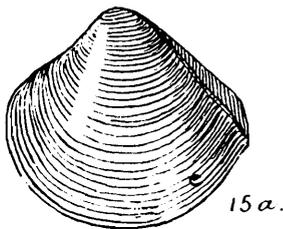
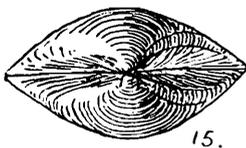
posterior side shortly and bluntly rostrate.

Long. 4.75, lat. 7.25 mm.

Hab.—Ennur backwater, Madras.

Tellina brunneo-flavida, sp. n.

Shell convex, rather small, thin, roundly trigonal, pale yellowish-brown; both valves sculptured with slightly distant, concentric striae; umbones small, not very prominent; dorsal margin strongly arched, steeply descending on both sides; ventral margin rounded, posteriorly excavated; anterior side rounded; posterior side bluntly and abruptly rostrate, angled from the umbone downward.



FIGS. 15, 15a.—*Tellina brunneo-*
flavida, sp. n. $\times 3$.

Long. 7, lat. 7.5 mm.

Hab. — Ennur backwater,
Madras.

Family SCROBICULARIIDAE.

Theora opalina (Hinds).

Proc. Zool. Soc. London, 1843, p. 78 (as *Neaera*).

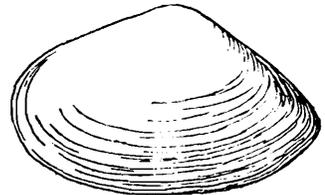
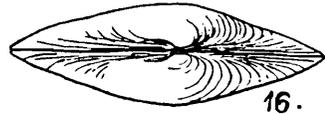
Ennur backwater, Madras; Cochin backwater, near Ernakulam (F. H. Gravely).

***Theora translucens*, sp. n.**

Shell allied to *T. iridescens* (Hinds)¹ from the Philippines, but much smaller and of a transparent yellowish-white colour, it having none of the milky semi-opaque appearance of that species; it also differs in the somewhat more prominent concentric lines and in being of a generally more regularly oval form, lacking as it does, the posterior ventral excavation and both the anterior and posterior dorsal curves of *T. iridescens*.

Long. 5, Lat. 8.25 mm.

Hab.—Ennur backwater, Madras.



FIGS. 16, 16a.—*Theora translucens* sp. n. × 4.

Suborder *ANATINACEA*.Family *CUSPIDARIIDAE*.***Cuspidaria annandalei*, Preston.**

Rec. Ind. Mus. XI, 1915, p. 308.

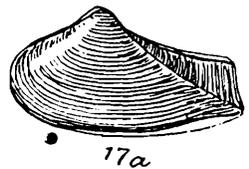
Ennur backwater, Madras; Cochin backwater, near Ernakulam (*F. H. Gravely*).

***Cuspidaria cochinensis*, sp. n.**

Shell small, thin, oblong, grayish-white, inequivalve, the left valve being slightly the smaller, both valves finely concentrically striate; umbones small, rather prominent; dorsal margin sloping anteriorly in a very slight curve and rather strongly curved and elongate posteriorly; ventral margin very gently and elongately rounded; anterior side sharply rounded; posterior side produced, strongly angled from the umbone downwards, very abruptly and squarely truncate.

Long. 1.5, lat. 3 mm.

Hab.—Cochin backwater, near Ernakulam (*F. H. Gravely*).



FIGS. 17, 17a.—*Cuspidaria cochinensis*, sp. n. × 8.

¹ *Proc. Zool. Soc. London*, 1843, p. 78 (as *Neaera*).