as regards proportionate measurements, but in the large series before me intermediate forms connecting the different types from the different localities are present, and I have found it impossible to detect any constant differences between them. A few notes on the form of the young shells may be included here. The young shells are nearly subtrigonal with the posterior margin regularly arched the truncate distal half being not distinctly marked as yet, the umbones are placed more symmetrically and the hinge is of a more normal type.

Distribution.—*C. galatheae* had hitherto been recorded from the Galatea River in the Nicobar Islands; in the collections of the Indian Museum it is represented by a large series of specimens from the Nicobars (Kar Nicobar, Kondal and Trinkat Islands in the Nicobar group) and Andaman Islands (John Lawrence and Havelock Islands in the Andaman group). The species, therefore, has a wide range in the Andaman and Nicobar Islands.

Remarks.—A few specimens of this species in the collection were found labelled *C. patima*, Benson, which is apparently a manuscript name only as I have been unable to find any reference to it in literature except in Theobald's catalogue.[1]

The shells of this species are of a very characteristic type and are easily distinguished by the greatly inequilateral, greatly vaulted shells with a highly truncate distal half of the posterior margin, anteriorly placed umbones and the curved and forwardly placed hinge with very compact but strong laterals.

5. INDIAN SPECIES OF THE GENUS *BATISSA.*

Up till recently the only known species of the genus *Batissa*, Gray, from within the limits of India, Burma and Ceylon were *B. similis* and *B. inflata* described by Prime from the Nicobar Islands in 1859[2] and 1860[3] respectively. In 1908[4] Preston described a unique specimen from the Andaman Islands, collected by the late Rev. J Warneford, under the name *B. capillata*. In the Indian Museum collection I found two boxes of specimens from the Andaman Islands provisionally labelled *B. violacea*, Brug., by the late Mr. G. Nevill; in addition there were a fair number of specimens from the Andaman Islands which had not been identified. Through the courtesy of Professor Max Weber I received a specimen of *B. violacea* var. *celebensis*, Martens,[5] collected by Prof. M. Weber in the Celebes and identified by the late Dr. E. von Martens. The specimen is preserved in spirit and is in an excellent state of preservation. With this material I have drawn up the following notes on the collection in the Indian Museum including a detailed description of the soft parts of the genus *Batissa*

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[1] Theobald, *Cat. Rec. Shells, Mus. As. Soc. Bengal*, p. 140 (Calcutta, 1860).
[2] Prime, *Ann. Lyceum Nat. Hist. Soc. New York* VII, p. 112 (1859).
[3] *Id.*, *Proc. Zool. Soc. London* XXVIII, p. 320 (1860).
[4] Preston, *Rec. Ind. Mus.* II, p. 207, pl. xvi, fig. 39 (1908).
[5] Von Martens, *Süss. und Brackw.-Moll.* in *Zool. Ergeb. Nieder. Ost. Ind.* IV p. 104 (1897).

On a careful comparison of Preston's unique type with the other specimens in the Indian Museum I find that it is only a half-grown shell of *B. similis*, Prime. It is not possible to be quite definite as to the validity of *B inflata*, Prime, as a species distinct from *B. similis*; it will probably, when larger series are available, have to be considered as only a variety of *B. similis*, but for the present I have not adopted this course. Both the species belong to the group Ellipticae of von Martens' classification. In this group the shell is elongated in an antero-posterior direction, the ventral border is only slightly arched and the shells have no radial sculpture.

Within the limits of British India, Burma and Ceylon, the genus *Batissa* is known to occur in the Andaman and Nicobar Islands only and has not so far been found on the mainland.

Soft parts.—The following description of the soft parts is based on the Celebes specimen sent to me by Prof. Max Weber and may be considered as a supplement to the short description of the animal in von Martens' paper cited above.

Corresponding to the shape of the shell the animal is trigonal-elliptical, and is not much swollen in the umbonal region. The specimen preserved in spirit is of a deep yellowish brown colour, the palps and the gills being somewhat greyish.

The mantle is comparatively thicker than in the genus *Corbicula* or in *Villorita*, but the free region below the pallial line is not definitely marked off as in those genera, owing to the radial muscle fibres being not very thick and distinct even though they are well developed. The margin of the mantle is entire and bears a continuous row of small conical papillae on the inner surface slightly internal to the edge as in *Villorita*, but the papillae all along are not of the same size as in *Villorita*. The condition is intermediate between that found in *Corbicula* in which they are absent in the pedal region and that in *Villorita* where they are approximately the same size all along.

The arrangement of the siphonal and pedal orifices is similar to that in the genera *Corbicula* and *Villorita*, but the limits of the two are different. The pedal orifice is limited anteriorly by the ventral margin of the thick anterior adductor muscle and is separated from the siphonal orifice by a long connection, about half an inch long, of the mantle flaps of the two sides with one another in line with the posterior side of the foot; in this region of union also the papillae of the mantle are present in two rows along the line of union. The siphonal orifice is rather extensive extending above to very nearly the upper margin of the posterior adductor muscle. The mantle is not externally notched to mark off the regions for the two siphonal apertures.

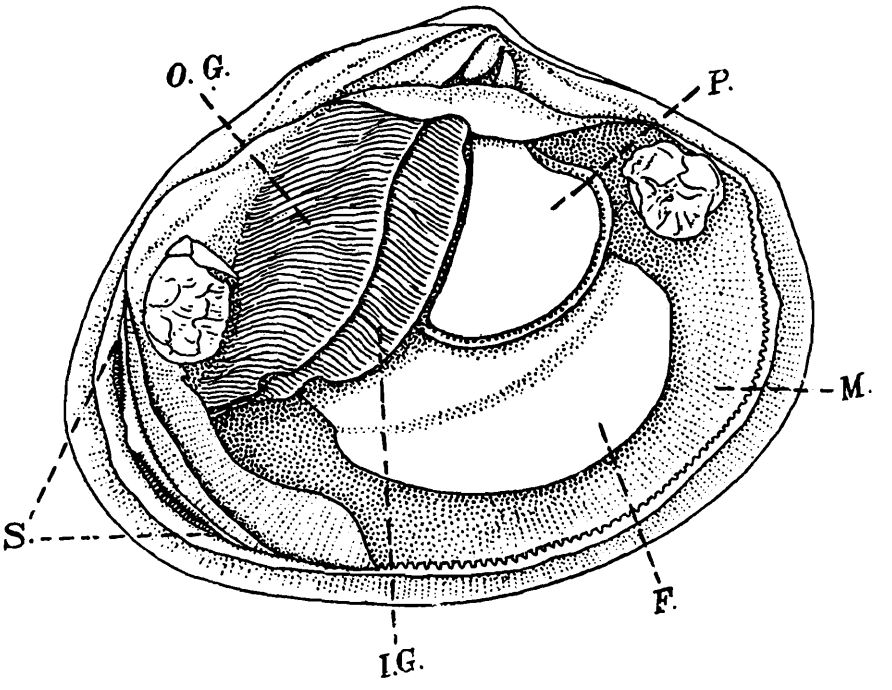
Of the adductor muscles, the posterior is much larger than the anterior and both are nearly subquadrate in outline. The pallial muscle-fibres have already been mentioned, in these the siphonal retractors are not distinctly indicated.

The two siphons are fully contracted, but appear capable of

sufficient extension. The two siphons are quite separate and are of an ashy-grey to violet colour. The aperture of the branchial siphon is about one and a half times as high as the anal; it bears two rows of elongate papillae along its margins while the anal has only a single row.

The attachments of the gills are similar to those in the genera *Corbicula* and *Villorita*, except that the attachments of the outer lamellae of the outer pair of gills with the mantle is very much curved and rather sinuous. Both pairs of gills are of the same length, but the outer pair is broader in its entire length than the inner.

The palps are very large, broad, very thin and somewhat leaf-shaped; the inner pair is somewhat larger than the outer one.



TEXT-FIG. 1.—Soft parts of *B. violacea* var. *celebensis*, Martens. *F.* foot, *I.G.* inner gill, *M.* mantle, *O.G.* outer gill, *P.* palp, *S.* siphons.

The foot is large and well developed with a sharp margin, but is not very thick.

Remarks.—The soft parts of *Batissa* resemble those of *Corbicula* and *Villorita* in general, but differ in the mantle being thicker, the pallial muscle-fibre region not distinctly separated, the larger gills, the shape, form and large size of the thin leafy palps, and the form of the foot.

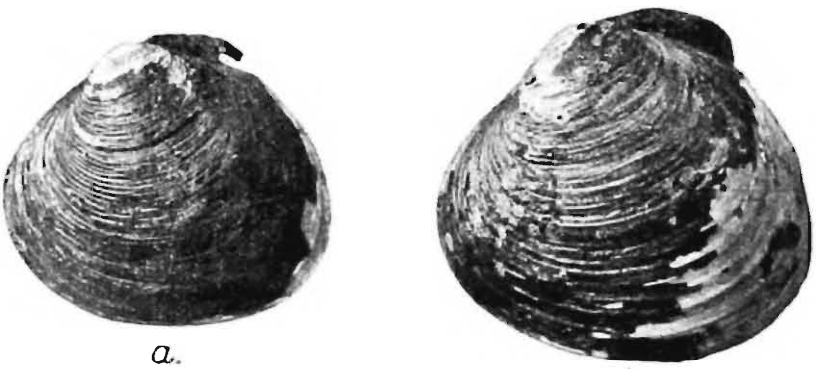
Batissa similis, Prime.

1859. *Batissa similis*, Prime, *Ann. Lyceum Nat. Hist. Soc. New York* VII, p. 112.
1866. *Batissa similis*, *id.*, *ib.*, VIII, p. 229, fig. 60.
1869. *Batissa similis*, Prime, *Cat. Corbiculidae* in *Amer. Journ. Conch.* V p. 140.

1879. *Batissa similis*, Clessin, *Cycladeen* in Martini-Chemn. *Conch.-Cab.*, p. 213, pl. xxxvi, fig. 3.
1908. *Batissa capillata*, Preston, *Rec. Ind. Mus.* II, p. 207, pl. xvi, fig. 39.
1915. *Batissa similis* and *B. capillata*, Preston, *Faun. Brit. Ind. Freshw. Moll.*, p. 208.

The specific identity of Preston's *B. capillata* with Prime's species has been remarked on in the introductory part. The following notes on the specimens in the Indian Museum may be of interest as supplementing Prime's description of the species.

The shell in this species varies from subtrigonal or obovate to ovate-orbicular; it is very inequilateral, with a short anterior side which regularly slopes down and is straight or only slightly concave; the posterior side is much longer and somewhat biangulate in its distal part. The umbones are very anteriorly placed, being recurved forwards and inwards but widely separated from one another; in most cases they are greatly eroded. *Hinge.*—There are only two laterals in each valve. The anterior lateral may be described as consisting of two parts, a distal curved part forming



TEXT-FIG. 2.—Photographs of the left valves (× ½) of (*a*) *B. similis*, Prime; (*b*) *B. inflata*, Prime.

the upper boundary of the impression for the anterior adductor muscle and the proximal thicker nearly straight part in the hinge region. The posterior lateral is blade-like, but slightly arched and rather longer than the anterior. Both the teeth are finely serrate along their upper inner margin. Of the three cardinals the anterior is most small and conical in the right valve, somewhat larger and knob-like in the left valve; the middle one of the right valve has the shape of the molar teeth of mammals but has only a single furrow along its free edge, in the left valve it is much thinner but larger; the posterior one is thinner than the other two but more elongate and somewhat curved and not so much compressed. The areas between the three teeth are deeply canaliculate.

Measurements (in millimetres).

Length	53	67	77	82	84	89
Height	48	59	66	72	73	74
Thickness	27	34	38	41	43	72

Distribution.—Prime's specimens were obtained in the Nicobars, while all those in the Indian Museum are from the Andamans. Some of these, as already noted, had provisionally been identified as *B. violacea*, Brug., but they do not belong to that species.

Batissa inflata, Prime.

1915. *Batissa inflata*, Preston, *Faun. Brit. Ind. Freshw. Moll.*, p. 208.

For previous references to this species Preston's volume, cited above, may be consulted.

In the Indian Museum there is a specimen from the Andaman Islands which I assign to this species. It differs from the shells of *B. similis* in the shell being more oblique and, as the name indicates, inflated, the umbones more anteriorly placed and greatly recurved forwards, the anterior margin shorter and more slanting, the posterior margin more curved and not biangulate, the podium more marked and the ventral border less arched. The hinge is much more arched but all the teeth are comparatively smaller, broader and coarser, the laterals are more serrate and the cardinals sharper.

The single specimen from the Andaman Islands measures 76 mm. × 68 mm. × 45 mm.; it is smaller than Prime's type-specimen which was collected in the Nicobar group.