

the centre of the mass, which now assumes a spherical shape, and becomes connected with a solid string of mesodermal cells, the genital cord, running parallel to the intestine and extending all the way to the posterior wall of the cloaca.

As the Belgian authors have shown, from this simple sphere and single cord of cells, testis, ovary, vas deferens, and oviduct are all differentiated later.

XX.—*On a Collection of Land-Shells from the Islands of Selayar, Jampea, and Kalao.* By EDGAR A. SMITH, F.Z.S., Assistant-Keeper of Zoology, British Museum.

[Plate X.]

THE collection about to be described was made by Mr. A. Everett at the end of last year. It contains several new and interesting species. Already nine species of land Mollusca have been quoted from Selayar, but none appear to have been recorded from either Jampea or Kalao. These islands are situated to the south of the large island of Celebes, Selayar being nearest to it and the others nearly midway between it and Flores.

Some of the species occur on all three of the islands, some on two only, and a few are common to Celebes and Selayar.

Four have as yet been met with only on Selayar, three on Jampea, and five on Kalao. Further investigation may show that some of these are not so restricted in their distribution.

The species recorded from Selayar by E. von Martens* which are not in the present collection are *Macrochlamys minuta*, *Amphidromus sultanus* (= *perversa*, var.), *Stenogyra achatinacea*, and *Vaginulus viviparus*.

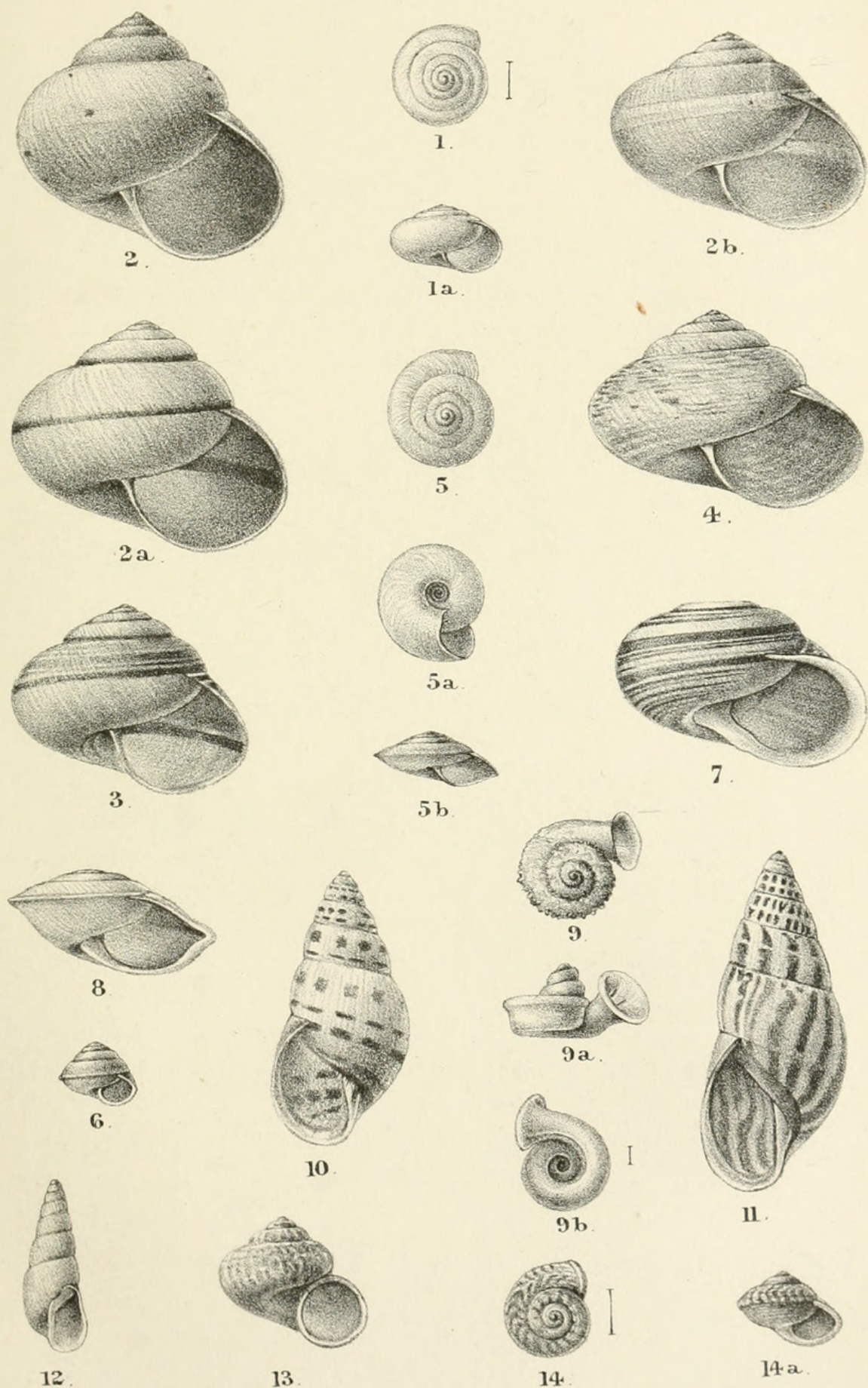
Microcystina consueta. (Pl. X. figs. 1, 1 a.)

Testa orbicularis, depressa, perforata, pellucida, polita; spira brevissime conica; anfractus 5-6, convexiusculi, lente accrescentes, infra suturam anguste marginati, ultimus antice haud descendens, ad peripheriam rotundatus; apertura oblique lunata; peristoma tenue, ad insertionem leviter reflexum, supra umbilicum linguatim subproductum.

Diam. maj. $4\frac{1}{4}$ millim., min. fere 4, alt. 2.

Hab. Selayar, Jampea, and Kalao Islands.

* Max Weber's Zool. Ergeb. vol. ii. pp. 231, 240, 243, 246.



J. Green del et lith.

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LAND SHELLS FROM SELAVAR, JAMPEA & KALAO IS.

Smaller than *Macrochlamys indifferens*, Smith, from South Celebes, but consisting of an additional whorl, and of a paler colour.

Macrochlamys minuta, Martens, from Selayar is a closely allied form.

Kaliella indifferens, Boettger.

Kaliella indifferens, Boettger, Bericht Senck. nat. Gesell. 1891, p. 256, pl. iii. figs. 4-4 b.

Hab. Amboina and Saparua (*Boettger*); Java (*in Brit. Mus., fide G. B. Sowerby*); Kalao (*Everett*).

The specimens from Java were obtained from Mr. Sowerby, who doubtless received them with this locality and the above name. They agree precisely with the examples from Kalao.

Xesta fulvizona, Martens. (Pl. X. figs. 2-2 b.)

Nanina fulvizona, Mousson, MSS., Martens, Preuss. Exped. Ost-Asien, Zool. vol. ii. p. 201; Pfeiffer, Novitat. Conch. vol. iv. p. 28, pl. cxv. figs. 6-10; Martens, in Max Weber's Zool. Ergeb. vol. ii. p. 228, pl. xiii. fig. 16.

Hab. South Celebes (*Martens and Wallace*); Saleyer Island (*Martens and Everett*).

This species is excessively variable not only in colour, as pointed out by Martens, but also with regard to the texture of the shell. Some of the specimens collected by Mr. Everett are quite thin and transparent (var. *tenuis*, mihi, fig. 2 b), and one could hardly believe that they belonged to the same species as the strong solid shells found along with them on the same island if there were no connecting-links or intermediate forms to judge by. The series at hand, however, seems to point to the conclusion that they really are nothing more than a variety, which probably was found either at a different elevation or living under somewhat different conditions to the stouter forms. I could add several colour-varieties to those already described, but without the aid of coloured figures it is difficult to convey to others the differences of the various shades of colour.

Xesta selayarensis. (Pl. X. fig. 3.)

Testa perforata, depresso turbinata, albida, ad peripheriam et suturam saturate fusco zonata, supra medium anfractus ultimi pallide fusco spiraliter lineata, infra lineis paucis concentricis interdum ornata; anfractus 6, convexiusculi, regulariter et lente crescentes striis incrementi obliquis tenuibus aliisque spiralibus tenuioribus sculpti, ultimus in medio rotundatus vix descendens; apertura

late lunata, concolor, in medio zonata et supra lineata; peristoma tenue, margine columellari breviter expanso et reflexo.
Diam. maj. 28 millim., min. $24\frac{1}{2}$, alt. 21.

Hab. Bauluan Islet, Selayar group.

Allied to *X. nemorensis*, but spire less elevated, lines of growth finer, and colour different. The fine spiral brown lineation is peculiar and the suture is bordered beneath with a fine blackish line. The coloration is not unlike that of *Xesta Stuartiæ*, but the form is more depressed and the sculpture finer.

Xesta kalaoensis. (Pl. X. fig. 4.)

Testa perforata, depresse turbinata, mediocriter tenuis, cinereo-fusca, punctis pellucidis irregulariter picta, inferne lineis concentricis albidis plus minus distinctis ornata, vix nitida; anfractus 6, convexiusculi, sublente accrescentes, lineis incrementi tenuibus obliquis arcuatis sculpti, sutura simplice sejuncti, ultimus ad peripheriam rotundatus, antice vix descendens; apertura late et oblique lunata, intus concolor albo lineata; peristoma tenue, margine columellari ad insertionem breviter dilatato et reflexo.
Diam. maj. 33 millim., min. $28\frac{1}{2}$, alt. $22\frac{1}{2}$.

Hab. Kalao Island.

Allied to *X. inquinata* from Java in colour and general appearance, but quite distinct. The whorls are more convex, the last not subcarinate, and the surface is not spirally sculptured.

Trochomorpha jampeana. (Pl. X. figs. 5-5 b.)

Testa orbicularis, carinata, late umbilicata, fusca, haud nitida, lineis incrementi tenuibus sculpta; spira depresse conoidalis, ad apicem obtusa; anfract. 6, lente accrescentes, leviter convexiusculi, supra suturam anguste castaneo carino-marginati, ultimus cæteris minus convexus, acute compresse carinatus, haud descendens; apertura securiformis; peristoma tenue, margine inferiore levissime incrassato.
Diam. maj. 15 millim., min. 14, alt. 5.

Hab. Jampea Island.

Rather like *T. Lamonti*, Brazier, from New Guinea, but less acutely keeled, more narrowly margined at the suture, browner, more opaque, and with slightly more convex whorls. The umbilicus also is deeper and less open. *T. gorontalensis*, Martens, has the periomphalium more angulated and a whorl less in shells of the same size; it is also smoother and rather glossy.

Eulota textoria, Martens.

Helix (*Eulotella*) *textoria*, Martens, in Max Weber's Zool. Ergeb. vol. ii. p. 236, pl. xiv. figs. 9-12.

Hab. Selayar, Jampea, and Kalao Islands (*Everett*) ; South Celebes and Saleyer (*Martens*).

The specimens collected by Mr. Everett at Selayar were mostly smaller than those from the other two islands. The largest example from Kalao is nearly 16 millim. in its greatest diameter. The umbilicus in the Selayar specimens is slightly wider than in those from Jampea and Kalao.

Plectotropis crassiuscula. (Pl. X. fig. 6.)

Testa obtuse conica, carinata, umbilicata, fuscescens ; lineis incrementi tenuibus aliisque spiralibus (præcipue supra et infra medium anfr. ultimi) sculpta ; spira convexa, obtusa, elata ; anfractus 6, convexiusculi, lente crescentes, ultimus in medio carinatus, supra et infra carinam concave impressus, subtus convexiusculus, vix descendens ; umbilicus profundus, circiter $\frac{1}{5}$ diam. adæquans ; apertura obliqua, sublunata, parva ; peristoma pallidum, valde incrassatum, vix expansum, marginibus leviter conniventibus, callo tenui junctis.

Diam. maj. 9 millim., min. 8, alt. $7\frac{1}{2}$.

Hab. Kalao Island.

Probably belonging to *Plectotropis*, having the shell-characters as exhibited in *P. Winteriana*, Pfr., from Java &c., only modified, the spire being higher, the umbilicus narrower, and the peristome thicker.

Planispira admirabilis. (Pl. X. fig. 7.)

Testa depresse subglobosa, mediocriter tenuis, albo- et rufo-fusco spiraliter zonata, zona alba paulo supra medium anfractus ultimi præcipue conspicua, semiobtectè umbilicata, epidermide tenuissima plus minus induta, lineis incrementi tenuibus striata ; spira planiuscula, pallida, ad suturam linea nigro-fusca cincta, ad apicem leviter impressa ; anfractus $4\frac{1}{2}$, convexiusculi, celeriter accrescentes, ultimus ad peripheriam rotundatus, antice deflexus ; apertura leviter obliqua, late lunata, coloribus externis translucetibus picta ; peristoma tenue, dilute lilaceum, undique expansum, margine columellari reflexo, ad insertionem paulo dilatato, umbilicum fere obtegente.

Diam. maj. 31 millim., min. 24, alt. 18.

Hab. Jampea Island.

Helicostyla (Corasia) subtenuis. (Pl. X. fig. 8.)

Testa depressa, orbicularis, carinata, anguste umbilicata, alba, infra zonis paucis subpellucidis indistinctis ornata, lineis incrementi sculpta, supra paulo malleata; spira subplana; anfractus $4\frac{1}{2}$, vix convexiusculi, penult. punctatus, ult. ad peripheriam acute carinatus, supra et infra carinam impressus, infra convexus, antice ad labrum vix descendens; apertura securiformis, alba, ad carinam linea opaca alba ornata; peristoma tenue, marginibus distantibus, superiore anguste expanso, inferiore latius reflexo, ad insertionem dilatato, umbilicum semiobtegente.

Diam. maj. 15 millim., min. 20, alt. 12.

Hab. Selayar Island.

A flattened depressed form like *C. reginæ* &c., and peculiar on account of a slight umbilicus.

Hypselostoma Everetti. (Pl. X. figs. 9-9 b.)

Testa minuta, aperte perspective umbilicata, fusca, striis incrementi et spiralibus minute decussata; spira parva, elata; anfractus 4, convexi, sutura profunda discreti, apicales magni, ultimus circa medium concavus, supra et circa umbilicum obtuse angulatus, antice solutus ascendens, aperturam versus scrobiculatus; apertura tubæformis, dentibus pluribus intus armata; peristoma dilute rufescens, tenue, expansum, triangulari-rotundatum.

Diam. maj. 3 millim., min. 2, alt. $1\frac{1}{2}$; apertura 1 lata.

Hab. Kalao Island.

In a natural condition all the shells are covered more or less with agglutinated earth, which produces a rough irregular appearance. There are five principal converging teeth within the aperture, and a few smaller intermediate ones, none reaching to the edge of the labrum.

A species from Java in the British Museum, labelled "*H. Fruhstorferi*, Bttgr.," somewhat resembles the present form; it is, however, larger, has the last whorl less freely produced, is keeled at the middle, and the spire is more elevated.

Amphidromus kalaoensis, Fulton. (Pl. X. fig. 10.)

Amphidromus kalaoensis, Fulton, Ann. & Mag. Nat. Hist. 1896, vol. xviii. p. 102.

Hab. Kalao Island.

The type described by Mr. Fulton is here figured and is in the National Collection.

Amphidromus Annæ, Martens. (Pl. X. fig. 11.)

Amphidromus Annæ, Martens, in Max Weber's Zool. Ergeb. vol. ii. p. 240, pl. xiv. figs. 19-22; Fulton, Ann. & Mag. Nat. Hist. 1896, vol. xvii. p. 87.

Hab. Selayar Island.

Variable in colour; plain yellow, with flesh-coloured apex and rose columellar callus, or obliquely striped with black, the stripes being more or less interrupted. Some specimens are stronger and heavier than the type.

Buliminus selayarensis. (Pl. X. fig. 12.)

Testa elongata, rimata, dilute fuscescens, spiraliter et oblique striata, minute granulata; spira producta, ad apicem obtusa, mammillata; anfractus $7\frac{1}{2}$, leviter convexi, lente accrescentes, sutura paulo obliqua sejuncti, ultimus ad labrum leviter ascendens, infra medium saccatus; apertura oblonga, intus fuscescens, longit. totius $\frac{1}{3}$ adæquans; peristoma albidum, tenue, marginibus conniventibus, fere junctis, dextro vix dilatato, anteriore et columellari latius expansis.

Longit. 20 millim., diam. $6\frac{1}{2}$; apertura 7 longa, 4 lata.

Hab. Selayar Island.

Buliminus (Rhachis) zonulatus, Pfr.

Hab. Kalao Island (*Everett*); Celebes (*Martens*).

Four pale yellowish specimens from Kalao differ from the typical form in being without bands, but all have the characteristic blackish nucleus. One example exhibits a trace of a colour-zone upon the middle of the body-whorl; they are similarly minutely spirally striated.

Clausilia simillima, Smith.

Clausilia simillima, Smith, Proc. Malac. Soc. 1896, vol. ii. p. 99, pl. vii. fig. 25.

Var. nov. *lævior*.

Hab. Selayar Island.

This variety differs from the type from South Celebes in being perhaps a trifle less slender, with slightly finer striæ, and with the puckerings at the suture much less pronounced. The aperture also is perhaps a trifle broader.

Leptopoma vitreum, Lesson.

Hab. Selayar, Jampea, and Kalao Islands.

The specimens of this widely distributed species found by Mr. Everett are all pure white, without bands or other colour-markings.

Cyclotus celebensis, Smith.

Cyclotus celebensis, Smith, Proc. Malac. Soc. 1896, vol. ii. pl. vii. figs. 4-6.

Hab. South Celebes and Selayar Island (*Everett*).

Cyclotus vicinus. (Pl. X. fig. 13.)

Testa turbinata, mediocriter umbilicata, lutescens, castaneo flammulata spiraliterque lineata, lineis incrementi obliquis striata, liris obtusis spiralibus paucis subobsoletis in anfr. ultimi instructa; spira elata, ad apicem obtusa; anfractus 5, perconvexi, ultimus antice subdescendens, prope labrum vix expansus; apertura fere circularis; peristoma leviter incrassatum, albidum, subduplex. Diam. maj. 18 millim., min. 15, alt. 15; apertura 7 lata.

Hab. Jampea Island.

Var. Testa paulo latius umbilicata, anfr. ultimo minore, ad aperturam magis expanso.

Hab. Kalao Island.

This species is allied to *C. politus*, Sow., but may be separated on account of the feeble spiral ridges upon the body-whorl, different colour-markings, more convex whorls, deeper suture, and broader umbilicus.

From the variety *C. amboinensis* it differs in colour-markings, spiral ridging, and more elevated spire.

Cyclotus biangulatus, Martens.

Cyclotus biangulatus, Martens, in Max Weber's Zool. Ergeb. vol. ii. p. 214, pl. xii. figs. 5-9.

Hab. Selayar and Kalao Islands.

Some specimens are paler than others, one from Selayar being pale corneous and entirely devoid of brown markings.

Helicina parva, Sowerby.

Hab. Selayar Island (*Everett*); N. Celebes, Batchian, and Halmahera (*Martens*); Batchian (*Bættger*); Zebu, Philippines (*Sowerby*).

With the exception of being a trifle smaller than Philippine examples I cannot discern any differences in the shells from Selayar.



Smith, E. A. 1896. "On a collection of land-shells from the islands of Selayar, Jampea and Kalao." *The Annals and magazine of natural history; zoology, botany, and geology* 18, 144–152.

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