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*Genus Ctenomorpha, Gray.**C. nigro-varia*, Stal, Recensio Orthopterorum, p. 83.*Hab.* Cape York, Queensland.*Genus Vetilia, Stal.**V. eurymedon*, Stal, C.R. Ent. Belg., xx., p. lxiii.*Hab.* Cape York, Rockhampton, Queensland.

DESCRIPTIONS OF NEW LAND SHELLS.

By C. HEDLEY, Conchologist.

(Plate xi.)

PUPISOMA CIRCUMLITUM, n. sp.

(Plate xi., figs. 1, 2, 3.)

Shell globose conical, perforate, thin, translucent. Colour an uniform pale tawny olive. Whorls three and a-half, well rounded; suture impressed. Sculpture,—everywhere the whorls are crossed by fine, close, raised hair lines; at irregular intervals these tend to rise into lamellæ, which latter can scarcely be detected in profile on the periphery; the embryonic shell is similarly sculptured, no trace of spiral sculpture can be seen; a break at the completion of the second whorl suggests that here ends the nepionic shell. Umbilicus minute, funnel shaped, showing only the preceding whorl. Aperture very oblique, ovate lunate, lip simple, columellar margin broadly reflexed over the umbilicus; callus thin, transparent. Height, 1.9; breadth, 2 mm.

Type.—Australian Museum C. 3459.*Hab.*—Received through Mr. C. E. Beddome from Dr. May, who gathered it on trees at Bundaberg, Queensland; also collected on orange trees near Grafton, N.S.W., by myself.

This snail conceals itself by plastering the shell over with grains of earth, etc., entangled in mucus. The device reminded me of the European *Balea perversa*, which adopts the same habit in similar situations. Occasional abrasions seem to show that the colour resides in a very thin epidermis.

I have not the advantage of being autoptically acquainted with any of the known *Pupisoma*, but the novelty corresponds so closely

to the drawings of several that I have some confidence in introducing it under that genus. If this classification be correct, the range of the genus is now by a leap of three thousand miles extended from Borneo and the Philippines to New South Wales; thus introducing into Australia a fresh component of that faunal element which Prof. Spencer has termed "Torresian."*

ENDODONTA WATERHOUSLÆ, *n. sp.*

(Pl. xi., figs. 7, 8, 9, 13, 14.)

Shell sub-discoidal, spire sunk, widely umbilicated, opaque, dull. Colour, on a ground of pale buff above irregularly splashed with madder brown which beneath tends to flow in irregular, oblique and zig-zag lines, apex pale straw. Whorls four and a half, rounded except for a flattening between the suture and the periphery, the first three whorls slightly and gradually ascending above the apex, the last half whorl broadening slightly and gradually and slightly descending. Sculpture consisting of sharp lamellate ribs, slightly flexed at their origin at the suture, then crossing the whorl at right angles, curving backwards and downwards to the periphery, thence taking a straight course to the lip of the umbilical crater, over the edge of which they curve forwards; on the last whorl these ribs number ninety-five, on the penultimate fifty-three, and on the antipenultimate thirty-two; they crowd closer as the whorls proceed, but the spacing is not always uniform; on the last whorl the interstices are as broad or twice as broad as the ribs, on the final sixth, however, the ribs tend to obsolescence; most minute hair lines, parallel to the major sculpture, occupy these interstices; the ribs cease entirely and suddenly at the initial whorl and a-half, which by transmitted light are shown to possess radial hair-lines decussated by equally fine spiral striæ. Umbilicus a third of the base of the shell in diameter, cup-shaped, exposing every preceding whorl, coloured and sculptured like the spire. Aperture slightly oblique, subrhomboidal, peristome sharp, straight, even at the columellar margin; viewed from above the peristome describes a wide convex, then a sharper concave curve on approaching the insertion. Projecting callus on body whorl steel purple, burying the costæ in its advance. Major diameter 7, minor 6, height $3\frac{1}{2}$ mm.

Type.—Australian Museum C. 3458.

Hab.—Mount Gower, Lord Howe Island.

A specimen dissected was not in a satisfactory state for examination, and I was only able to unravel the basal portion of the genitalia (Fig. 13). This showed a greatly dilated reniform penis sac on a long stalk surmounted by an equally long epiphallus;

* Rep. Horn Expl. Exp. i., 1896, p. 197.

through the coil of the penis the tentacle is retracted. Between the lower end of the uterus and the entrance of the spermatheca duct a bulb occurs like the swelling in a similar situation of certain *Trochomorpha*. The jaw (Fig. 14) is crescentic, with a median projection, and is closely transversely striated. The radula is formed like that of *E. coma*, Gray, as figured by Pilsbry,* it consists of one hundred and thirty rows of 13:8:1:8:13.

A near ally of this very distinct species is *E. coma*, Gray, of New Zealand, from which the Lord Howe Island form is separable by its concave spire, closer ribbing, and larger size. *E. pinicola*, Pfeiffer, from New Caledonia is also allied, but that has an elevated spire, weaker ribs, and is larger. This trio of kindred *Endodonta* supports a trio of equally related *Placostyli*,† viz., *P. bovinus*, *P. bivaricosus*, and *P. caledonicus*, in linking together the faunas of these islands.

This species is that recorded in my article on "The Land and Fresh-water Shells of Lord Howe Island,"‡ as *Charopa textrix*, Pfr., this being the identification of Mr. J. Brazier in the Memoir on Lord Howe Island. My suspicion of this determination was aroused by comparing the shell with the excellent figures of Pfeiffer,§ but I was over-ruled by the weight of Mr. Brazier's authority.

Under the name of *C. textrix* this shell has been widely distributed. One of the recipients, Mr. John Ponsonby, of London, on comparing this with authentic *C. textrix* in the British Museum found it to be a different species. Not only am I indebted to him for this information, but he has also generously waived in my favour his right of describing it.

Now arises naturally the question what *C. textrix* really is. I am tempted to believe it identical with the small form of *Endodonta costulifera*, Pfr. My reasons are, that a shell from Noumea which I identify as such closely corresponds with Pfeiffer's account of *textrix*, that Macgillivray collected *costulifera* as well as *textrix*, and finally that *textrix* is unknown from Lord Howe Island which has been thoroughly searched for it. If this be so, then the name *Endodonta textrix* must pass into synonymy.

The novelty is dedicated to Mrs. J. G. Waterhouse, an enthusiastic and accomplished conchologist of Sydney, whose assistance in studying this and other forms I gratefully acknowledge.

* Tryon & Pilsbry—Manual Conchology (2) ix., pl. ix., f. 23.

† Etheridge: "A much thickened variety of *Bulimus bivaricosus* from Lord Howe Island."—Rec. Aust. Mus. i., 1891, p. 130.

‡ Rec. Aust. Mus., i., 1891, p. 137.

§ Conchylien Cabinet (2) Helicea, pl. clxii., ff. 14-17.

FLAMMULINA ABDITA, *n. sp.*

(Pl. xi., figs. 10, 11, 12.)

Shell very small, thin, translucent, moderately umbilicated, and depressed. Colour raw umber, paler on the earlier whorls and purplish on the apex. Whorls three and a half, rather rapidly increasing, rounded, channelled at the suture and slightly descending at the aperture. Sculpture,—the whorls are crossed at irregular intervals by numerous lamellate ribs, rising on the periphery into thin recurved plates but obsolete on the last quarter whorl; between and parallel to these ribs are fine raised hair-lines, which are cut by close, fine, faint, irregular spiral incised lines. At a whorl and a half the limit of the embryonic shell is sharply indicated by the commencement of the above described sculpture, the earliest whorls being smooth except for close, fine, incised, spiral lines; on the apex is a small pit. Umbilicus about a quarter of the shell's diameter, exposing the earlier whorls. Aperture ovate lunate, slightly oblique; peristome sharp, straight, except where reflected on the columella margin, no visible callus on the inner side. Major diameter, 1·5; minor, 1·3; height ·8 mm.

Type.—Queensland Museum.

Hab.—Collected by Mr. A. Giulianetti, in October, 1896, at a height of 12,200 feet on Mount Scratchley, British New Guinea.

This species possesses close affinities to the wide-spread Australian (*H.*) *paradoxa*, Cox, from which the novelty differs by its less developed ribs, less elevated spire, wider umbilicus, and smaller size. Pilsbry's figure of *Endodonta acanthinula*, Crosse, suggests to me that that New Caledonian species should be grouped herewith. The few whorls and the aspect of the embryonic shell induce me to place this Papuan atom in *Flammulina* rather than in *Endodonta*, but with our present imperfect knowledge of these groups such classification can only be considered provisional.

SITALA ? SUBLIMIS, *n. sp.*

(Plate xi., fig. 4, 5, 6.)

Shell small, thin, translucent, depressedly turbinate, narrowly perforate. Colour tawny olive. Whorls three and a half, gradually increasing in diameter, rounded. Suture impressed. Sculpture,—the otherwise smooth shell is everywhere crossed by extremely fine, close, transverse hair-lines, more prominent above, almost effaced beneath. Umbilicus extremely narrow, elliptical, exposing only the previous whorl. Aperture roundly lunate, not descending, oblique; lip sharp, straight, except a slight reflection at the columella; callus on body whorl thin, deposited in transverse streaks. Major diameter, 2·4; minor, 2; height, 1·5 mm.

Type.—Queensland Museum.

Hab.—Collected by Mr. A. Guillianetti, on Mt. Scratchley with the preceding and with *Rhytida globosa*, which latter has been only previously recorded from Mt. Victoria.

This shell, of which my single example may not be adult, appears allied to (*Zonites*) *subfulvus*, Gassies, from New Caledonia, and to *Conulus paramattensis*, Cox, from N.S.W., but is more depressed than either, smaller, and with a whorl less. A nearly ally is *C. starkei*, Brazier, which however has much coarser sculpture, and has also more whorls and larger size, two differences which perhaps balance one another. It belongs to a group which Tryon and others rank under *Conulus*. Thinking it improbable that this Palæartic genus extends so far, I prefer to temporarily locate it in *Sitala*, to some species of which it bears a likeness, and which has in another form been shown to reach New Guinea. Attention to kindred small forms and to the literature devoted to their elucidation (!) shows how much definitions are required for *Conulus*, *Microcystis*, *Trochonanina*, and other groups.

While on the subject of land shells from British New Guinea, it may be mentioned that the unfigured *Succinea strubelli*, Kobelt, and *S. papuana*, Strubell,* from Cloudy Mountains and Lorne Range, North of Orangerie Bay, B.N.G., are most probably synonymous with *Succinea simplex*, Pfeiffer. In stating that his is the first record of the genus in Papua, Herr Strubell shows that he has failed to compare his supposed new species with one already illustrated and identified from New Guinea.†

Another addition to the known fauna of British New Guinea has lately come to light in specimens of *Atopos prismatica*, Tapparone, Canefri, now in the Australian Museum, collected on the Fly River, by W. W. Froggatt, during the Expedition of the Geographical Society of Australasia in 1885. It was first recorded from Sorong I., Dutch New Guinea, and then from an island of Torres Straits, Q., and the Huon Gulf, German New Guinea.‡

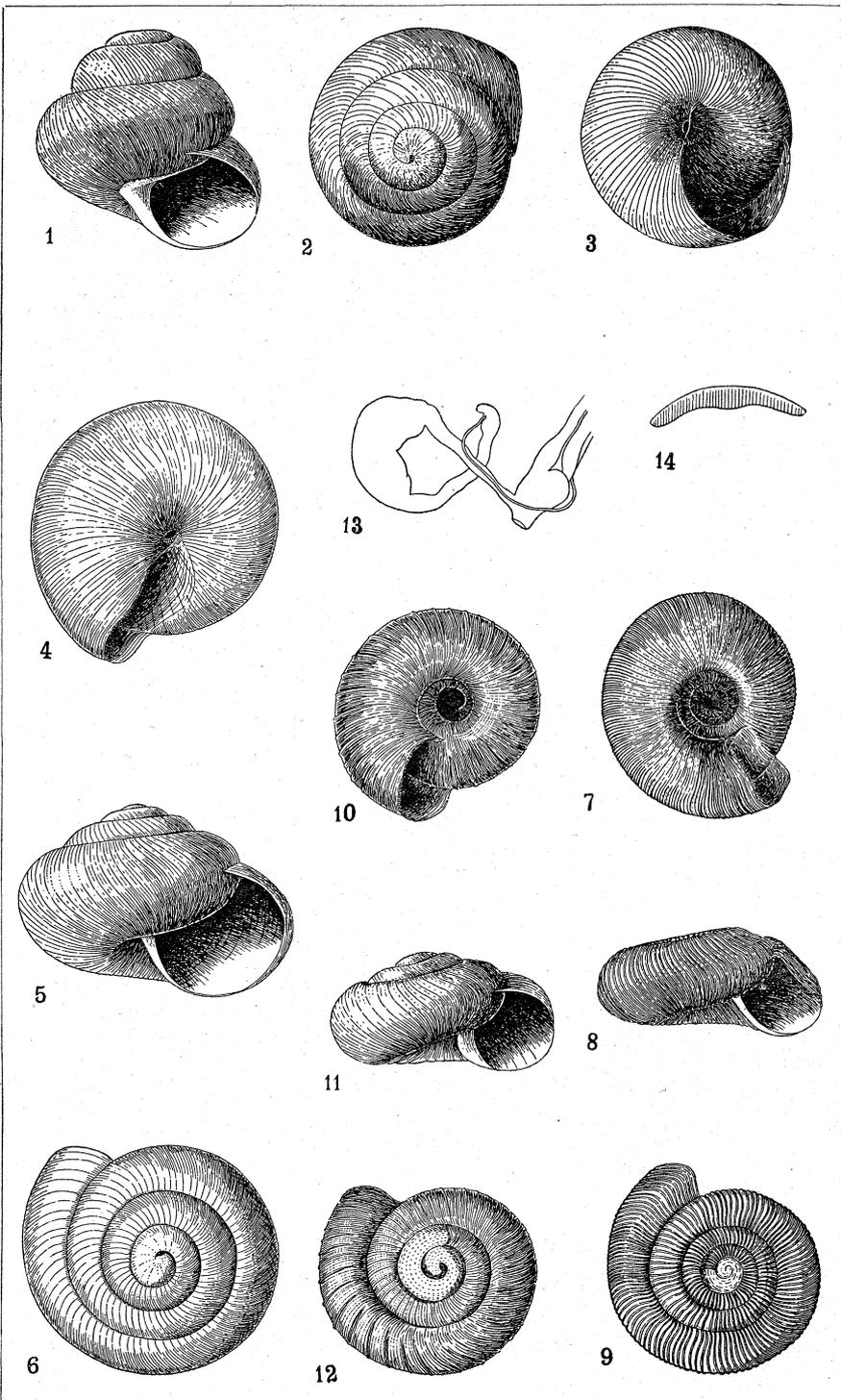
* Nachr. dent. Malak. Gesell, Oct. 1895, p. 152.

† Proc. Linn. Soc. N.S.W. (2), vii., 1892, pp. 100, 691-2, pls. xii., f. 32; xlii., ff. 34-37.

‡ Simroth, Zeits. Wiss. Zool., lii., 1891, p. 594.

EXPLANATION OF PLATE XI.

- Figs. 1, 2, 3. Different aspects of *Pupisoma circumlitum*.
,, 4, 5, 6. Different aspects of *Sitala ? sublimais*.
,, 7, 8, 9. Different aspects of *Endodonta waterhousiæ*.
,, 10, 11, 12. Different aspects of *Flammulina abdita*.
,, 13, 14. Jaw and part of reproductive system of *E. waterhousiæ*.
All much magnified, drawn from nature and to various scales by
C. Hedley.



C. HEDLEY, del.

ERRATA.

Page 28, line 25, for "*leuoscopelus*" read "*leucoscopelus*."

„ 29, line 5, for „ read „

„ 29, line 16, for „ read „

Plate XI, Explanation, line 2, for "*sublimais*" read "*sublimis*."