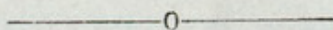


the largest black snake I ever saw, and on another day rode my horse over two snakes, a black and a brown, before I was able to pull up, luckily without mishap.

Of other birds, the Scrub Turkey (*Megapode*) is common in the scrubs, where it builds its huge mounds of leaves, &c., in which to deposit its eggs to incubate. The Turkey is very fond of the sugar-cane in neighbouring farms, to the disgust of the owners. The birds peck out the whole of a section between two joints in the cane, with the result that the rest of the stem dies. Many, of course, get shot for the table; but this Turkey is one of the wariest birds known, and unless the hunter has a good dog is hard to get.

The borders of scrubs and creeks abound in many other species of birds, Honey and Caterpillar-eaters, Kingfishers, Doves, &c. In about twenty minutes once on the Proserpine River, about 100 yards from the Hospital, I counted fully twenty species. The Shining or Metallic Starling is common on the Barron River. It is peculiar for living in colonies, and building quite a number of suspended domed nests in the one tree. It is a pretty bird with forked tail and glossy plumage, and usually flies to and fro in flocks with a flight somewhat similar to a Martin. I believe it migrates to New Guinea.

Crows are very common, and accompanying one flock at Proserpine was a *Corella* (cockatoo), gone wild from captivity. It could "caw" almost as well as any of the Crows, and was often teased by its companions, though it appeared well able to hold its own.



LAND SHELLS OF THE QUEENSLAND NATIONAL PARK.

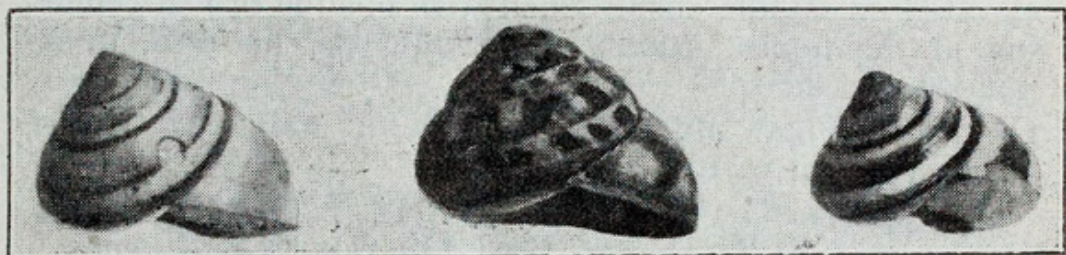
By JOHN SHIRLEY, D.Sc., F.M.S., Corresponding Member,
Royal Society of Tasmania.

The gradual opening up of our great National Park has led to visits by naturalists anxious to study the rich stores of plants and insects, and to observe the habits of the birds in localities where many of the smaller species can build and rear their young in security. Several of these collectors have incidentally obtained specimens of land shells, while seeking for other forms of life.

Mr. S. W. Jackson, R.A.O.U., visited Roberts Plateau in September, 1919, and again in the same month of 1920,

in the interests of ornithology, and most interesting accounts of his visits are recorded in the columns of "The Emu." He is also a conchological collector of note, and his shell collection contains many species from the dense scrub country of the higher parts of the Park, and from the ravines formed by streams along its northern slopes. In March last Dr. A. J. Turner also made a journey to Roberts Plateau, and donated a few land shells to the Queensland Museum, incidentally collected during his search for micro-Lepidoptera. The writer spent some thirteen weeks in the National Park—six weeks on Roberts Plateau in company with Mr. H. Tryon; four weeks at the eastern end, mainly in the upper valley of the Coomera, with Messrs. Hacker, Illidge, and Wedd; and three weeks in several short visits to the Lamington Plateau.

Land Shells from the National Park.



Centre: *Papuina turneri*.

Sides: *Papaina fucata*.

(Photo by H. Hacker.)

The following list shows the shells found on the several visits enumerated:—

PULMONATA.

A. RHYTIDIDÆ Tryon, Man. Mol., 2nd series, I, 112.

Shell umbilicated, thin, convexly depressed, undulately striate or rugose; spire slightly elevated, whorls 4 or 5, somewhat flattened obliquely; umbilicus rather wide and deep; aperture oblong-ovate, sometimes dentate within, lip simple, acute, its extremities approaching. Animal viviparous; the lingual teeth rather few, oblique, arcuated; no jaw.

I. RHYTIDA Albers. Characters as above.

1. *confusa* Pfr. Tryon, loc. cit. I, 125; Pl. 22, f. 21-2. Cox, loc. cit., p. 24, Pl. iv, f. 3; xviii, f. 4.

2. *strangei* Pfr. Tryon, loc. cit., Vol. I., p. 123; Pl. 22, f. 27; 28, f. 49. Cox, loc. cit., p. 26; Pl. 18, f. 17.

- ##### II. 3. ELÆA *splendidula* Pfr. Tryon, loc. cit., vol. I., p. 129; Pl. 26, f. 20-2. Cox, loc. cit., p. 10, Pl. 3, f. 3.

B. ZONITIDÆ Tryon, loc. cit., II, 3.

III. MICROCYSTIS Beck. Tryon, loc. cit., II, 8.

Shell small, subperforated, usually slightly keeled, glabrous; aperture large, subvertical. Mantle margin with shell lobe on right side only; left cervical lobe bipartite.

4. *subrugata* Pfr. Cox, loc. cit., p. 4, Pl. ix, f. 2, 2 (a), 2 (b). Tryon, loc. cit. II, 169.

5. *subrugata* var. *pudibunda* Cox, loc. cit. p. 4, Pl. II, f. 11. Tryon, loc. cit. II, 214; Pl. 62, f. 58-9. Hedley, Proc. Lin. Soc., N.S.W., vol. 37., p. 261.

IIIa. 6. *HELICARION robusta* Gld. Tryon, Man. Moll, I, 169, Pl. 38, f. 42-3.

7. *strangei* Pfr. Tryon, loc. cit. I, 169; Pl. 38, f. 44-5.

C. ENDODONTIDÆ.

Marginal teeth with wide, short and squarish basal-plates with one or several cusps, the outer cusp never elevated on middle cusp. Shell with opaque brown colouring or flammules, usually rib-striate, the lip thin, unexpanded and sharp.

IV. FLAMMULINA Martens, Tryon, Man. Moll., Sec. Series, vol. IX, p. 10.

8. *corticicola* Cox, Tryon, loc. cit., p. 34; III, 44, Pl. v, f. 71-2. Hedley, Proc. Lin. Soc., N.S.W., vol. 37, 1912, p. 264, Pl. 8, f. 46-8. Cox, Aust. Land Shells p. 19, Pl. vii., f. 7 and 7 (a).

9. *ziczac* Gould. Tryon, loc. cit. ix, 13 II, 210, Pl. 62, f. 35-7. Cox, loc. cit., p. 18, Pl. xix, f. 11 and 11 (a).

V. ENDODONTA Albers. Tryon, loc. cit., p. 20.

Shell small, varying from discoidal to trochiform, generally umbilicated; the surface striate or ribbed. Aperture varying from multidentate to toothless; peristome simple. Type, *E. lamellosa*, Fer.

10. *austera* Hedley. Proc. Lin. Soc., N.S.W., vol. 37, 1912, p. 266, Pl. ix, f. 52-4.

11. *cinnamea* Hedley, loc. cit., p. 267, Pl. ix, f. 55-6; x, f. 57.

12. *vinitincta* Cox. Tryon, loc. cit., p. 35; I, 115; Cox, loc. cit., p. 18, Pl. I, f. 6, 6a.

13. *iuloides* Forbes. Tryon, loc. cit., p. 34; II, 209, Pl. 62, f. 28-9.

D. HELICIDÆ Pilsbry. Tryon, loc. cit. ix, xxvi.

s. *Macroogona* Tryon, loc. cit. ix, xxxii.

VI. PEDINOGYRA Albers. Tryon, loc. cit. ix, 158.

Shell large and discoidal, with flattened spire and broadly open umbilicus, solid, opaque and coloured. Whorls 5-6, the last large, deeply deflexed in front. Aperture oblong-truncate, nearly horizontal, the lip slightly expanded, blunt. Type, *P. cunninghamii* Gray.

14. *cunninghamii* Gray. Tryon, loc. cit., vi, 14; Pl. 2, f. 28-31; ix, p. 159. Cox, loc. cit., p. 52, Pl. 1, f. 5. Hedley, Proc. Roy. Soc. Qd., 6, p. 63, Pl. 3.

15. *muhlfeldtiana* Pfr. Tryon, loc. cit., vi, 15; ix, 159. Cox, loc. cit., p. 53, Pl. vi, f. 2. Sometimes given as a variety of 14.

VII. *PANDA* Albers. Tryon, loc. cit., vol. ix, p. 163.

Shell bulimoid rather than helicoid, globose-oblong, higher than wide, umbilicate or perforate, thin but strong. Whorls $4\frac{1}{2}$, the first two from apex finely beaded; apex obtuse. Last whorl very large, hardly descending in front. Aperture large, subvertical, higher than wide; outer lip thin, not expanded; columellar lip reflexed towards its insertion. Type, *P. falconeri*, Reave.

16. *falconeri* Reeve. Tryon, loc. cit., vol. vi, p. 75, Pl. 19, f. 33; ix, p. 164. Cox, loc. cit., p. 5, Pl. vi, f. 6.

17. *maconelli* Reeve. Tryon, loc. cit., vol. vi, p. 76, Pl. 19, f. 26; ix, 164, as variety of 13. Cox, loc. cit., p. 6, Pl. iii, f. 5.

- s. *Epiphallogona* Tryon, loc. cit., vol. ix, p. xxx. and xxxv.

VIII. *CHLORITIS* Beck. Tryon, loc. cit., vol. ix, p. 117.

Shell varying from discoidal and biconcave to depressed subglobose with convex spire; the apical whorl flattened or sunken, and showing under the lens regularly arranged granules or hair-points, which often persist over the whole shell. Aperture lunate, the lip reflexed. Type, *C. unguina* L.

18. *aridorum* Cox. Tryon, loc. cit., vol. vi, 266, Pl. 58, f. 31-3; vol. ix, 122. Cox, loc. cit., p. 44, Pl. xi, f. 16, 16a.

19. *mansueta* Pfr. Tryon, loc. cit., vol. vi, 264, Pl. 33, f. 64-5; ix, 122. Cox, loc. cit., p. 59, Pl. ii, f. 4.

20. *porteri* Cox. Tryon, loc. cit., vol. vi, p. 263, Pl. 58, f. 23-4; ix, 122. Cox, loc. cit., p. 48, Pl. iii, f. 6a, 6b.

IX. *THERSITES* Pfeiffer. Tryon, loc. cit., ix, p. 125.

Shell narrowly umbilicate or imperforate, varying from globular to trochoidal or thick lens-shaped and keeled, usually solid. Whorls 5 or 6, the apex smooth, never granu-

lated or punctate in regular quincunx; last whorl varying from smooth to rudely wrinkled, generally densely granulated or roughened microscopically, but never bearing spaced hairs or hair-scars in regular oblique series. Aperture moderately oblique, the outer lip expanded, basal lip reflexed, dilated at the columellar insertion, the ends of the lip rather remote. Type, *T. richmondiana*, Pfr.

21. (THERSITES) *novæ-hollandiæ* Gray. Tryon, loc. cit., vol. VI, p. 91, Pl. 13, f. 51-2, Pl. 42, f. 24-5; vol. IX, p. 129. Cox, loc. cit., p. 68; and as *dupuyana*, Pl. II, f. 5. Pfr., p. 65.
22. *richmondiana* Pfr. Tryon, loc. cit., vol. VI, p. 90, Pl. 20, f. 34-6. Cox, loc. cit., p. 62, Pl. VIII, f. 5-6.
23. (SPHAEROSPIRA) *fraseri* Gray. Tryon, loc. cit., vol. VI, 150, Pl. 33, f. 58-60; IX, 133. Cox, loc. cit., p. 64, Pl. X, f. 6.

X. PAPUINA von Martens. Tryon, loc. cit., vol. IX, p. 136.

Shell turbinate, lens-shaped or trochiform, umbilicated or perforate, rather thin; periphery varying from round to acutely keeled. Surface smoothish, the colouring light or bright; aperture oblique, toothless or with a columellar nodule, the peristome thin and generally expanded, ends of the lip remote. Type, *P. lituus*, Less.

24. *conscendens* Cox. Tryon, loc. cit., VII, 14, Pl. 8, f. 50-1; IX, 141. Cox, loc. cit., p. 67, Pl. II, f. 6.
25. *bidwilli* Pfr. Tryon, loc. cit., vol. VII, p. 55, Pl. 3, f. 52-3; IX, 142. Cox, loc. cit., p. 63, Pl. II, f. 3.
26. *turneri*, sp. nov.

Shell turbiform of five convex, whorls, apex flattened; suture fine, distinct; base flattened, slightly convex; mouth ovate, outer lip sharp, white within, with a pink outer margin; columellar margin oblique, joined by a callus to the outer lip, separated by a shallow groove from the base. Surface marked by strong, oblique lines of growth, with occasional fine grooves like scratches between them. Ground colour yellowish, with three black bands on the body whorl, the lowest on the base narrow and complete, the central broader, divided into rhomboids, the third below the suture mainly in triangular fragments. On the penultimate whorl are two interrupted bands, resembling the two upper ones of the body whorl. On the brown ante-penultimate whorl is a broken white band. The two apical whorls are pale brown and concolorous. In the body whorl and penultimate is a central white stripe, bordered above by fulvous yellow. Height, 13.5; width, 15.5; mouth, 7.5 by 6.5 mm. in internal measurement.

Roberts Plateau, March, 1921, collected by Dr. A. J. Turner. Type in Queensland Museum. Two specimens are in the collection of Mr. S. W. Jackson.

A species near *P. fucata* Pfr., from which it is separated by the flattened apex, more convex whorls, and thickened peristome. The animal is unknown.

E. PUPILLIDÆ, Turton. Manual of the Land and Fresh-water Shells of the British Islands, 1831, p. 97.

XI. *PUPOIDES* Pfeiffer. Tryon, loc. cit., vol. 26, p. 108.

Shell small, 3-6 mm. long, rimate, long-ovate, turrited or rarely cylindrical, with obtuse apex and few, 5 to 6, rather long whorls. Aperture ovate, toothless except for a small, tuberculiform, angular lamella close to the insertion of the outer lip, or united with it, rarely wanting; peristome expanded, reflected and usually thickened within. Internal axis slender, perforate. Type, *P. nitidulus* Pfr.

27. *pacificus* Pfr. Proc. Zool. Soc., 1864, p. 31;
Pilsbry, Proc. Acad. N. Sci., Phil., 1900, p. 426,
f. 1; Smith, Zool. Ereb. and Ter., 1874, p. 3, Pl. 4,
f. 6; Hedley Index, Moll. W. Aust., p. 68.

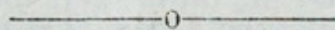
F. PUPINIDÆ.

XII. *PUPINA* Vignard.

Shell pupa-shaped, for the most part covered by a smooth callus, usually polished; aperture circular; peristome simple, thickened or reflected, columellar margin divided in the middle by a transverse channel; right margin forming a second channel at its insertion. Operculum thin, membranaceous, narrow-whorled, flattish.

28. *pineticola* Cox, loc. cit., p. 102, xvi, f. 8, 8a, 8b.
29. *strangei* Pfr. Cox, loc. cit., p. 103.
30. *wilcoxi* Cox, loc. cit., p. 101, Pl. xvi, f. 15, 15a, 15b.

Note.—Besides the species enumerated, Mr. S. W. Jackson collected a young shell which is probably an immature specimen of the rare *Chloritis blackmani* Cox, having five whorls, the first and second reddish, the third and fourth horny and transparent, the fifth pale reddish horny.



THREE INTERESTING FUNGI.

The accompanying photograph of fungi was taken by Mr. R. L. Higgins on the Club's excursion to Goodna and Woogaroo scrub on the 3rd June last. The central fungus, with lace-like veil, is evidently a fine specimen of *Phallus*



Shirley, J. 1921. "Land shells of the Queensland National Park." *The Queensland Naturalist* 3, 32–37.

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