

SOUTH AUSTRALIAN SHELLS.

(Including description of New Genera and Species).

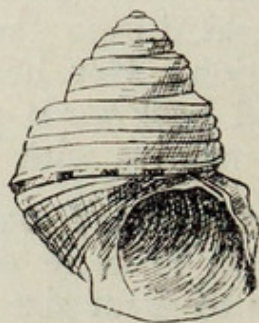
(By BERNARD C. COTTON & F. K. GODFREY).

PART XV.

TROCHIDAE (contd.)

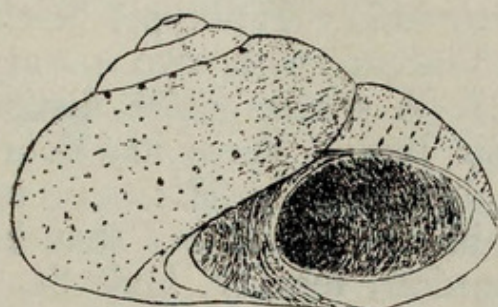
Gibbula Risso 1826. Shell conoidal, umbilicate, rather solid; spire moderately elevated; whorls frequently tuberculate above and with channeled suture; smooth or spirally ribbed; last whorl generally angular at the periphery; aperture subrhomboidal; columella oblique, dentate or subsinuous at the base; outer lip acute. Type—*G. magus* Linné. Many species which are nearly all littoral or laminarian in station. All seas, except upon the coasts of America, which have not a single species.

Gibbula ocellina Hedley 1911 (*Gibbula*). "The Eye-like *Gibbula*." Solid, imperforate, conical, with gradate spire, prominently keeled at the periphery and again at the shoulder; below the periphery, uniform buff colour, above it, broad, radial stripes of buff pink, alternate with white; along the periphery

*Gibbula ocellina* Hedley x 9.

are pairs of dashes of madder-brown, sometimes these enclose a tinted space and have a background of opaque white, thus assuming an ocellated aspect; protoconch pink; whorls five; base with seven flat evenly spaced concentric riblets; a strong revolving cord defines the periphery and ascends the spire; the last and penultimate whorls have four spiral riblets above the periphery, the uppermost stronger and forming the angle of a subsutural shelf; upper whorls smooth; aperture round, outer lip simple, dentate by the spirals; columella perpendicular. Height 3 diam. 3 mm. (Type locality—Several specimens from 100 fathoms, forty miles south of Cape Wiles, South Australia).

Gibbula reedi Verco 1907 (not *Gibbula fessera* Tenison-Woods, an immature *Chlorodiloma adelaidae* Philippi). Solid, depressed conoid; chestnut-brown, with dark brown spiral hair-lines of varying width, dotted with tiny white spots, which, below the suture, are aggregated into small pyramidal blotches with the apex upward, six in the body whorl; a white band encircles the periphery; an articulated white-and-brown spiral borders the umbilicus, a second lies just outside this and another with more distant double white spots beyond; the rest of the base which is of a lighter tint than the dorsum, has scattered

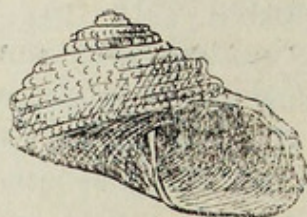


Gibbula reedi Verco x 6 (after Pulleine)

tiny white dots; umbilicus white, over all is a transparent glaze, with a bronze reflex; dorsum smooth except for very fine accretional scratchings; base with about a dozen fine spiral incisions, with radial scratch-marks which are stouter and wrinkling within and near the umbilicus; and an inconspicuous lira borders the umbilicus, which has a shallow groove just above it; whorls four, smooth, flatly convex, slightly hollowed just below the suture which is impressed; periphery round, barely angulate; base convex; umbilicus moderate; aperture oblique, roundly elliptical; outer lip simple, bevelled inside; columella arcuate, everted posteriorly, with a tiny notch where it joins the round basal lip at the end of the bordering lira of the umbilicus; throat smooth and iridescent. Height 3 diam. 6.2 mm. Beach, Holdfast Bay (Type locality), also Corny Point, Levens' Beach, Edithburgh. Not common. (Holotype Reg. No. D 9543 S.A. Mus.). A littoral species. Verco did not dredge it. There may be a faint gutter where the labrum joins the body whorl; the colour may be dark brown; the peripheral white band may fade out toward the aperture; the white blotches beneath the suture and the articulated bands around the perforation seem the most constant ornament. Named after Mr. Walter Reed, a keen South Australian collector who dredged in S.A. as far back as 1896.

Gibbula corallina sp. nov. "The Coral-red Gibbula." Shell turbinata, depressed, umbilicate; coral-red above, base creamy white; whorls rounded, periphery angulated; sculptured

with seven spiral lirae including the peripheral, alternate ones larger, granulated; sublenticular very slightly oblique radial striae; eight basal equal cords; sutures open canaliculate; colu-

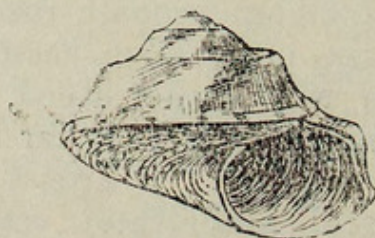


Gibbula corallina sp. nov. x 8.

mella only slightly curved; umbilicus narrow and like that of *G. coxi* Angas (Verco MS). Holotype, height 3 diam. 3.3 mm. Locality, Gulf St. Vincent, with two paratypes. (Reg. No. D 11435 S.A. Mus.) A species quite distinct from any other Australian form. Sir Joseph Verco had four examples (now in the S.A. Museum) labelled "*corallina* sp. nov.," together with his description as above; also noting that he had received the shells from Dr. Basedow, locality, Gulf St. Vincent. It is not stated whether they were beach gathered or dredged. We have no other records and would like to hear from collectors who have taken it.

Notogibbula Iredale 1924 (Subgenus). Moderately umbilicated; whorls angular, with two prominent keels; finely spirally ridged and decussated with exceedingly fine and close oblique longitudinal lines; base finely concentrically ridged. Type—*Gibbula coxi* Angas.

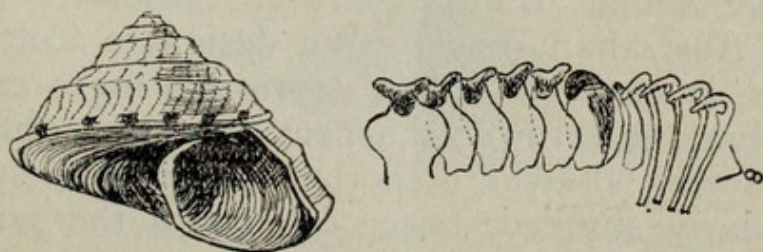
Gibbula coxi Angas 1867 (*Gibbula*). Orbicularly conical, moderately umbilicated, rather solid; whitish, marbled with olive and pink, and with a few broad pure white flames descending from the sutures and interrupted on the keels with brownish red; base reticulated with gray and minutely spotted with red; spire conical; whorls five, angular, with two prominent keels, one next the suture; concave between the suture and upper keel, and a little concave between the keels; finely spirally ridged and decussated with exceedingly fine and close oblique longitudinal lines; base convex, finely concentrically ridged and decussated like the whorls, the ridges increasing in size towards the umbilicus. Height 8 diam. 10 mm. Not common, beach—St.



Gibbula coxi Angas x 3.

Francis Island. Dredged alive—Yankalilla Bay; off Troubridge Island; Investigator Straits; Backstairs Passage; 13 to 22 fathoms. Also Western Australia—Beach, Albany, Yallingup. Dredged—King George Sound, 35 fathoms, one example. (Type locality—Port Jackson). Varies much in colouring. The foot of the animal is nearly as long as the diameter of the base of the shell, about one third as wide, and rather pointed posteriorly. It is opalescent white in colour with an opaque white dotted margin. Two obscure purple blotches are seen through it on either side. The tentacles are as long as the foot is wide, white, with black eyes on the outer edge of their bases. Two long cilia are visible.

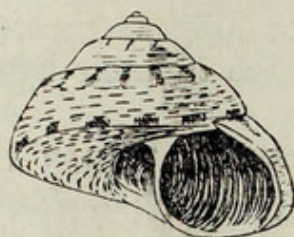
Gibbula preissiana Philippi 1848 (*Trochus*) (= *Gibbula porcellana* A. Adams 1851: = *G. weldii* Tenison-Woods 1877). Orbicular-depressed, rather thick, deeply umbilicated; whitish with conspicuous flexuous rosy-brownish lines and remote spots at the suture and periphery; first whorls smooth, the following spirally, delicately sulcate, with an elevated ridge in the middle; last whorl bicingulate, the cinguli elevated, distant; whorls five to five-and-a-half, separated by profound sutures; base convex, concentrically lirate, the lirae larger around the umbilicus; umbilical area sulcate and funiculate within; aperture subrotund; columella arcuate, not dentate. Height 6 diam 7 mm. Not



Gibbula preissiana Philippi x $3\frac{1}{2}$. Radula on right.

common. Beach, Grange, Port Willunga, Kangaroo Island, and westward to Pondalowie Bay, Venus Bay, St. Francis Island. Also Western Australia—Beach, Albany to Bunbury. (Type locality—Gulf St. Vincent). Radula formula $\propto 1. (5.1.5) 1. \propto$. Very fine and threadlike. Of the central teeth the middle one is broad and has a flange on each side of its base, the rest have each one cusp with a fine serrated edge and a single flange on its outer side; the outermost differs slightly from its fellows. The single lateral is small and simple. The marginals have long narrow bases and two cusps, of which the larger has a serrated edge.

Gibbula lehmanni Menke 1843 (*Turbo*) (= *Gibbula pulchra* A. Adams 1851: not *Trochus lehmanni* Kiener). Umbilicate, roundly conical; white and reddish tessellated; whorls five to six, the first eroded, the following angular, flattened above, gradate, strikingly painted, spirally lirate, lirae delicate, about twelve on the penultimate whorl; last whorl dilated, biangular, with transverse white and reddish-violet interrupted lines, like flexuous rays; at the impressed suture and periphery there are



Gibbula lehmanni Menke x 3.

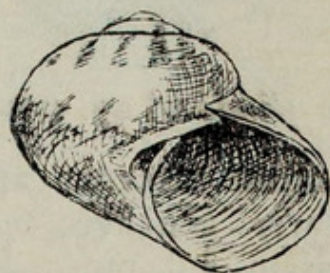
zones of violet-brown spots alternating with white or yellowish ones; base convex, with fifteen to sixteen concentric lirae; aperture subovate, margins thin; columella arcuate, subnodose inside below; umbilical tract white, funnel shaped. Height 7.5 diam. 9 mm. Specimen figured 7 x 9 mm. Dredged—Wallaroo, Investigator Straits, Thorny Passage, south of Tunk Head, 14-25 fathoms. Also Western Australia—Cottesloe beach; and dredged—King George Sound, Bunbury, 12-22 fathoms. (Type locality—Western Australian coasts. We designate Cottesloe W.A.) *G. coxi* Angas, is more solid, less depressed, more excavated between the carinae, spiral lirae sharper; coloration different, radial flames much fewer, elsewhere spotted rather than spirally articulated, irregularly stippled, fewer colours in the same shell.

Fossarina Adams & Angas 1863. Shell auriform, depressed, narrowly umbilicate; spire short; aperture oval, large, oblique; interior porcellanous, somewhat iridescent; peristome continuous. Operculum horny, multispiral, closing the aperture completely. Type—*F. patula* Adams & Angas. Dentition resembles that of *Cantharidus*. Distribution—Australasia.

Minopa Iredale 1924 (Subgenus). Depressedly globose, thin, smooth, shining, spire minute, suture much impressed, aperture lunate. Type—*F. legrandi* Petterd.

Fossarina legrandi Petterd 1879 (*Fossarina*). Depressedly globose, polished, translucent, rich brown; spire minute, very little elevated; whorls three-and-a-half, suture much impressed; aperture inflately lunate, tinged white and faintly dilate at the inner portion. Height 2 diam. 2.5 mm. South-east of South

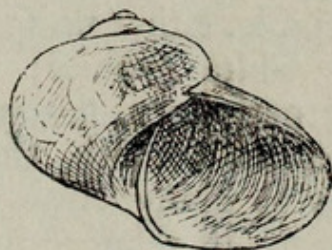
Australia in shell sand, also St. Francis Island. Lives amongst seaweed on rocks. (Type locality—Circular Head, Tasmania, and King Island). Resembles *F. petterdi* Crosse, but the coloration and extreme polish are different. This species presents considerable resemblance to immature *Austrocochlea odontis* Wood, but the latter has spiral incisions, balances itself on its umbilicus (*G. legrandi* rests firm on its aperture), has a larger



Fossarina legrandi Petterd x 30.

umbilicus and the columella is not so expanded and does not cover it so much. As the shell lies on its dorsum, one does not look so fully into the mouth of *A. odontis*.

Fossarina petterdi Crosse 1870 (= *F. simsoni* Tenison-Woods 1876). Obliquely depressedly globose, umbilicus somewhat covered, thin, white, smooth, shining, undulately reddish-brown spotted; spire plano-convex, scarcely elevated; whorls four, very finely and closely striate lengthwise; last whorl much



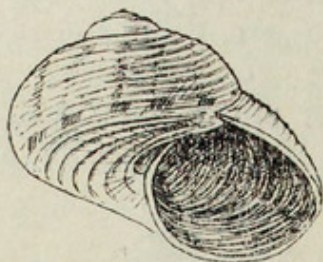
Fossarina petterdi Crosse x 20.

expanded; aperture rounded; outer lip simple; inner lip arcuate, dilated posteriorly and produced into a kind of channeled triangular elevation. Height 6 diam. 9 mm. S.A. specimen illustrated, height 3 diam. 4.5 mm. Uncommon, beach, Glenelg, Henley, St. Francis Island. (Type locality—Long Bay, Bruny Island, Tasmania).

Nanula Thiele. Small, thin, globose-turbinate, umbilicate; whorls convex, rounded; spiral lirulae, regular, fine; last whorl large; aperture oblique; outer lip simple, thin. Genotype—*Gibbula tasmanica* Petterd.

Nanula flindersi sp. nov. Shell small, narrowly umbilicate, turbinate, rather thin, dull; yellowish, flecked with light brown maculations which tend to form indefinite radial stripes, and

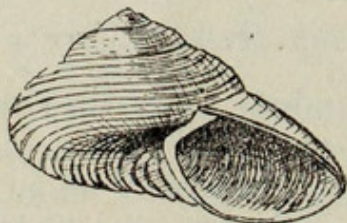
are more pronounced on the periphery; spire very short, sutures impressed; whorls four-and-a-half, rounded, sculptured with spiral lirae which are close and weak; last whorl rounded at the



Nanula flindersi sp. nov. x 6.

periphery; basal lirae more distant; aperture oval, outer lip simple, columella regularly concave; umbilicus very narrow. Holotype, height 3.75 diam 3.8 mm. Locality—Gulf St. Vincent, dredged 6 fathoms. (Reg. No. D 11433 S.A. Mus.) Also dredged, Beachport, 40 and 150 fathoms; Cape Borda, 62 fathoms; St. Francis Island, beach and dredged from 6 fathoms. West Australia—Bunbury, 10 fathoms. The South Australian shell differs from *G. tasmanica* Petterd, (type locality, Brown River, Tasmania) in being smaller and more depressed; the spire is much smaller and shorter in comparison with the body whorl.

Nanula galbina Hedley & May 1908. *Galbina* signifies greenish-yellow. Depressed-turbinate, broadly umbilicate, translucent, glossy; colour variable, either uniform, buff, uniform white, or brown spirals on a white ground; whorls four-and-a-half, rounded base, subangled periphery, flattened above and impressed at the suture; protoconch smooth, then two spiral keels increasing by intercalation to many close fine spirals on the last whorl, though they decrease in relative importance; growth lines



Nanula galbina Hedley & May x 5.

faint; aperture oblique, angled above, rounded below; outer lip simple; columella expanded; umbilicus deep, narrow, spiral, externally funicular. Height 5.5 diam. 7 mm. Several specimens, dredged—Beachport 110 fathoms, Cape Jaffa 130 fathoms. (Type locality—Port Kembla, N.S.W., 63-75 fathoms). The species is nearest to *G. flindersi* Cotton & Godfrey of which it may be regarded as the deep water representative. *G. galbina* is thinner,

larger, proportionately lower and broader, and more widely umbilicate. A specimen of *G. galbina* was taken by the "Thetis" in 63-75 fathoms of Port Kembla, N.S.W., but was catalogued by Hedley (Aust. Mus. Mem. 10, 1903, p. 334) as *G. tasmanica* Petterd.

WILD FLOWER SHOW and Natural History Exhibition.

STOW HALL, FLINDERS STREET, ADELAIDE.

Friday and Saturday, October 12 and 13, 1934.

As the Town Hall was not available, the Show was held in the Stow Hall. The visit of the Duke of Gloucester proved a great counter-attraction, and the attendance was consequently much below that of former years and the financial results were correspondingly low. For the first time in the history of our Society there was a small debit balance.

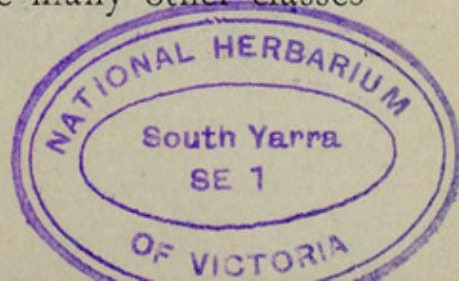
The exhibits were quite on a par with those of former years and the many branches of natural history were fully represented. In particular, collections of native flowers from all the other States but Tasmania were on exhibition.

The band of faithful workers who toiled so hard to make the exhibition a success included so many of our number that it is impossible to thank them individually. Each of the 30 sections of the Show had enthusiastic members working willingly and it is most regrettable that visitors were attracted elsewhere.

The decoration of the Hall and general display was a great credit to the ladies who undertook the task. The exhibits of native flowers from the schools were equal to those of former years, the prize-winners being:—1: Basket Range; 2: Yeelanna; 3: Kuitpo; 4: Aldgate; 5: Nadda; and 6 Myponga. To these schools books have been sent as prizes.

Mr. Black, with Mr. Colquhoun, kindly judged the exhibits. Other Sections that may be mentioned were the Cultivated Native Flowers in which Messrs. Burdett and Ashby showed collections of immense variety; the Agricultural Exhibits by the Agricultural College and Wait Institute; the Insect Collections, shown by Mr. Womersley, of the Museum and the Aboriginal exhibits by Mr. Tindale, from the Museum; collections of Shells shown by the Malacological Society, and explained by various members, including Messrs. Kimber, Godfrey and Cotton. Mr. Kimber, Prof. Harvey Johnston and Dr. Woods gave interesting lectures.

Space will not permit of even noting the many other classes of exhibits.





Cotton, Bernard C. and Godfrey, Frank K. 1935. "SOUTH AUSTRALIAN SHELLS. (Including description of New Genera and Species). PART XV. TROCHIDAE (contd.)." *The South Australian Naturalist* 16, 34–41.

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