

DESCRIPTIONS OF NEW SPECIES OF SOUTH
AUSTRALIAN CRUSTACEANS.

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PLATE XIV.

Gryllopagurus lithodomus, *gen. et sp. nov.*

The hermit crab about to be described differs so much from any known species that I have found it necessary to form a new genus for its reception. The essential features may be defined as follows:—Front, acute in the middle; ophthalmic segment exposed, with a mobile scale; eye-peduncles of moderate length, rounded; chelipedes of equal size; fingers, on the tip, spoon-excavated and black coloured; first and second pair of ambulatory limbs longest, with the end joint spiniform and black; third pair short, with the end-joint roundish, and with a roundish rugosity; fourth pair somewhat longer, with a similar rugosity, and a shovel-like prolongation on the basal joint or coxopodite; abdomen soft, roundish, with indistinct calcareous square plates and, only in the female, with four bifid appendages on the left side of the abdomen; the tail-fins narrow and symmetrical.

The only known species lives in self-made burrows in loose stones.

Gryllopagurus lithodomus is a short, robust animal found near tide-mark in shallow water of St. Vincent Gulf. When attacked, the animal retires into its burrow, closing the same perfectly with its chelipedes and first pair of ambulatory limbs, which form when laid together a circular flat operculum when viewed from above. The anterior portion of the crurapace, which is marked by a deep cervical groove from the other regions, shows the form of a heart, but its width is greater than its length. The pericardial cavity is marked by the branchio-cardiæ groove as a red shield. The branchial regions are of a pale horny colour. The abdomen is soft, roundish, not spirally coiled, with four indistinct broad transverse plates in both sexes, and, in the female, only on the left side, with four bifid appendages. The tail-fins consist of the telson, of which the first part is divided by a cross groove into two parts, of which the posterior one is again divided by a longitudinal groove; the hind portion of the telson is bilobed. It possesses two pair of tail-fins, of which the first is narrow, with its external part directed backwards, and provided with a patch of small papillæ. The colour in spirit specimens is reddish, and especially the limbs, are marked with large dark-red spots, some of them encircling the limbs, forming bands.

The stones in which this crustacean burrows vary in size, but not always in proportion to the size of the animal. In texture these stones are generally coarsely granular, somewhat loose, and of a calcareous character, often covered with minute algæ. As Mr. J. G. McDougall, of Edithburgh, to whom I am indebted for the specimens, observed, it does not drag the stone about with it. Length of the largest specimen from front to end of tail-fin, 45 mm. Length of its burrow, 65 mm.; width of the same, 15 mm.

Dromia bicavernosa, *sp. nov.* Plate xiv., figs. 5 and 6.

This well-marked species may be described as follows:—

The cephalothorax is broader than long, its anterior border being divided into three wide lobes, of which the middle lobe is formed by the protogastric region. The outer lobes are formed by the hepatic regions. On each side, between the middle and outer lobes, in front of the carapace, and somewhat more deeply situated, are two reniform red marginal cavities, the bottoms of which are covered with short adherent hairs. The whole carapace, as well as other parts of the animal, are covered with chocolate-brown coloured short hairs, which gives a velvet-like appearance to the animal, from which the cavities are strongly marked off by their bright red borders. Viewed from above, these cavities are only partially visible. The anterior part of the margin of each cavity shows in the middle a short inwardly-directed ridge, which is thickest at its termination, where it is somewhat deeper situated, and provided with a tuft of hairs, surrounded by a row of minute impressions semicircularly arranged. On the right-side cavity I numbered 12 impressions, on the left side only 11. The function of these curious cavities is not known, as, unfortunately, the specimen received was in such a bad state of preservation, and internally all the soft parts were so destroyed, that a more careful examination was quite impossible. The specimen examined was a male, and is, as far as known, unique, and I am indebted to Mr. H. Bates, of Hog Bay, Kangaroo Island, for kindly forwarding it.

Fig. DESCRIPTION OF PLATE XIV.

1. *Gryllopagurus lithodomus*; male.
2. " " female.
3. " " position when in its burrow.
4. " " front view of burrow when closed.

Figures 1 and 4 natural size.

5. *Dromia bicavernosa*; dorsal view.
- 5a. " " inner view of fifth right ambulatory[leg.].
6. " " front view.

Figures 5 and 6 half natural size.

