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# THE CRUSTACEANS

OF

# SOUTH AUSTRALIA.

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By **HERBERT M. HALE,**  
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**Part I.**

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WITH ILLUSTRATIONS.

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Abdomen greenish-blue, with a white marking at antero-lateral parts of third to sixth segments (where the somites overlap); the larger spines white, tipped with brown; telson with two oblique white markings near base; uropods and telson bluish basally, brown on posterior half. Large chelipeds bone white, the inner face of merus faintly marked with blue; the other legs bluish, with white spines. Eggs maroon to dark tan. Length: 305 mm., or 12in. (S.A.M.)

The spines and tubercles vary in number and disposition in different individuals. This crayfish is found in other rivers than the Murray, and its

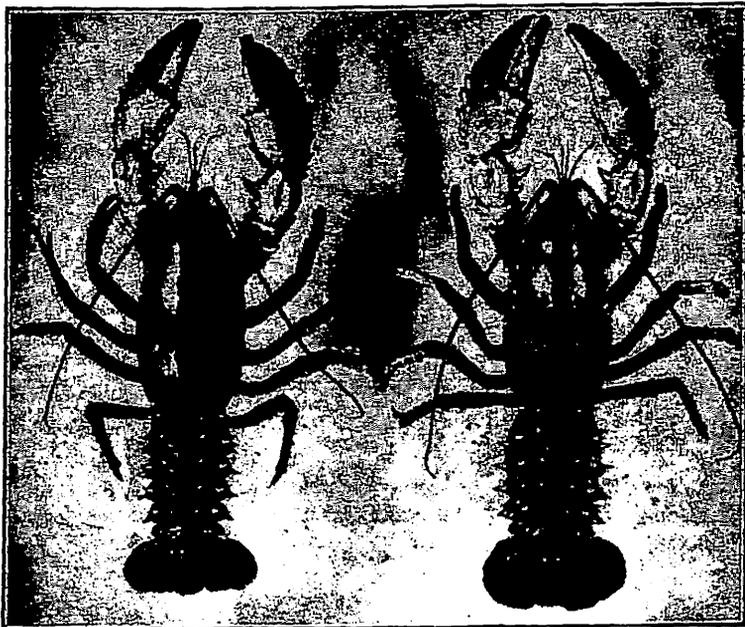


FIG. 73.—*Astacopsis serratus*, male and female ( $\frac{1}{2}$  nat. size).

varieties range from South Australia through Victoria and up the east coast to Sydney. The above description applies to typical South Australian specimens from the River Murray. A pinkish variety is said to have been taken in a deep creek in the extreme south-east of our State.

Settlers near the haunts of the Murray Crayfish sometimes use a baited hoop-net to secure examples for the table. From around the inside of the hoop hangs a fringe of hessian; a rabbit is thrown into the net, which is then lowered into the water and suspended with the bottom just resting on the river bed. The crayfish crawl up the sides and drop into the net to secure the bait, but when they attempt to crawl out, come up beneath the

curtain of hessian, and so cannot escape. The principle is the same as in the marine cray-trap. The flesh of the Murray Crayfish is esteemed as food, and there is little doubt that it would be profitable to breed it under control; such "farming" should be a comparatively easy matter owing to the simple life-cycle of the creature.

The late Prof. W. A. Haswell wrote on the inhabitants (parasites, etc.) of the gill-cavities of our fresh-water crayfish. He says: "An examination of the contents of the branchial chambers of Australasian fresh-water crayfishes has revealed an extensive and varied assemblage of animals that pass their entire lives in this sheltered position, and are never to be met with elsewhere." A mite (Acarid) described by this author occurs, sometimes abundantly, in the gill chambers of the Murray Crayfish.

*Reproduction and Development.*—The genital openings of the sexes are in the same positions as in the Yabbie. As shown in the illustration, the lateral margins of the abdomen, as seen in dorsal view, are more convex in the female than in the male. The remarks concerning the young of the Yabbie also apply here. In late summer a female has been observed with the young crawling freely all over her body, the little crayfish being then probably almost ready to abandon parental protection.

## Section ANOMURA.

The salient characters of the crustaceans now to be described are given in the sectional key at the beginning of the chapter: four tribes of heterogeneous families are recognized.

### KEY TO TRIBES.

- a. Last segment of second to fourth pairs of legs not flattened for shovelling.
  - b. Abdomen symmetrical; sixth abdominal appendages either styliform or modified for swimming.
    - c. Body depressed. Abdomen armoured and more or less bent under body . . . . . GALATHEIDEA.
    - cc. Body compressed. Abdomen soft, long, and extended . . . . . THALASSINIDEA.
  - bb. Abdomen almost always asymmetrical; sixth abdominal appendages neither styliform nor modified for swimming . . . . . PAGURIDEA.
- aa. Last segment of second to fourth pairs of legs flattened for shovelling. . . . . HIPPIDEA.

Tribe **GALATHEIDEA.**

The last pair of legs are small, slender, and inbent. Species of two families are found in South Australia.

- a. Abdomen not folded closely against underside of thorax . . . . . GALATHEIDAE.
- aa. Abdomen folded closely against underside of thorax . . . . . POCELLANDAE.

## Family GALATHEIDAE.

The carapace is elongate and is produced anteriorly into a prominent and sharply-pointed rostrum. The abdomen is bent, but is never adpressed to the body.

- a. Rostrum broad and flattened, toothed on lateral edges *Galathea*.
- aa. Rostrum slender and spine-like, without lateral teeth *Munida*.

## GALATHEA (Fabricius).

Three small species of the little "Plated Lobsters," or "Craylets," of this genus occur in South Australia.

- a. Rostrum with three teeth on each lateral margin.
  - b. Carapace with continuous striations across anterior part . . . . . *australiense*.
  - bb. Carapace with broken striations across anterior part *magnifica*.
- aa. Rostrum with one tooth on each lateral margin . . . . . *pusilla*.

**Striated Craylet.** *Galathea australiense* (Stimpson) (Australian).

Commonly dredged in shallow water off our coasts. The carapace has the lateral margins furnished with seven or eight teeth; the striations run right across the body, and are fringed with hairs. The fingers of the chelae are much shorter than the palm. In living examples the cornea of the eyes is ruby-red, with a central black dot; the rostrum is pale and the general colour of the rest of the body varies from pink, red, brown, bluish, and pale grey, to very dark grey. The legs are banded with white, and the dorsum of carapace and abdomen bears white markings which apparently remain unchanged, but which are naturally more apparent in the darker phases; of these markings, one behind the eyes, one on each side, and one near the hinder edge of the carapace are most conspicuous. The eggs are yellow. Examples were observed to rub the last pair of legs over the upper surface of the carapace as if to clean it. In the illustrations of this and the next species the animals are shown in a natural position, with the

abdomen flexed, and also with the abdomen extended. Length: 15 mm., or  $\frac{19}{16}$  in. (S.A.M.)

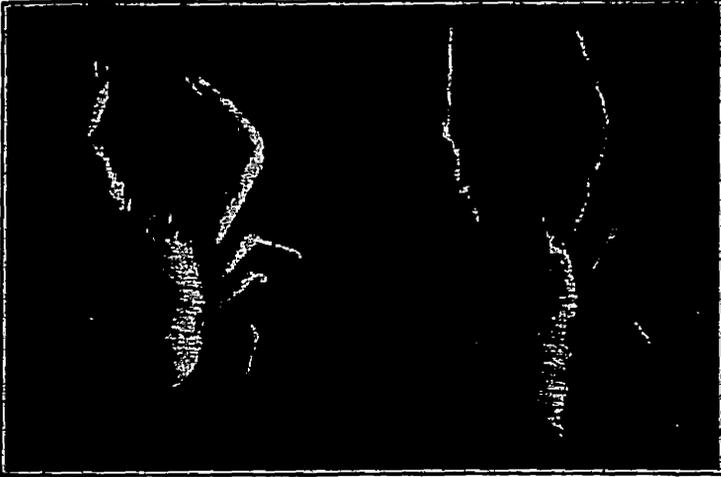


FIG. 74.—*Galathea australiensis* (x 2½).

**Scaled Craylet.** *Galathea magnifica* (Haswell). (magnificent).

This form is more rarely met with. The fingers of the chelae are almost as long as the palm. The striations of the anterior part of the carapace are broken up into short, rounded scales, fringed with hairs; the lateral margins

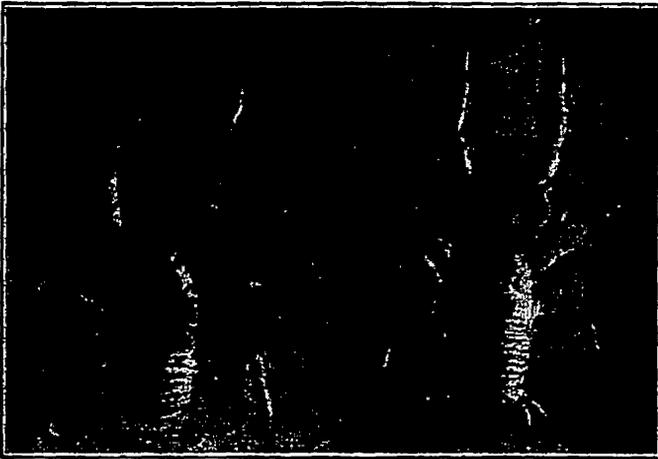


FIG. 75.—*Galathea magnifica* (x 2½.)

are armed with six to seven teeth. The difference in the sculpture of the two species is shown in the photographs.

The colour of typical examples is described as bright red, with a brilliant purple stripe down the middle of the carapace. The legs are marked with bands of red and purple, and the fingers are reddish-brown with yellow tips. Length: 15 mm., or  $19/32$  in. (S.A.M.)

**Little Craylet.** *Galathea pusilla* (Henderson). (very small).

Easily separated from our other two representatives by the form of the rostrum, which ends in a spine and has only one spine on each lateral margin, near the base. A single specimen was dredged in 75 fathoms between Beachport and the Althorps, apparently the only record of its occurrence in our waters. Length: 11 mm., or  $7/16$  in. (S.A.M.)

**MUNIDA (Leach).**

Differs from *Galathea* in having a styliform rostrum, with the spine on each side of its base long instead of short.

**Long-armed Craylet.** *Munida haswelli* (Henderson). (personal name).

A long-clawed form which has been taken off our southern coasts. The rostrum is about one-half the length of the carapace. The striae run across

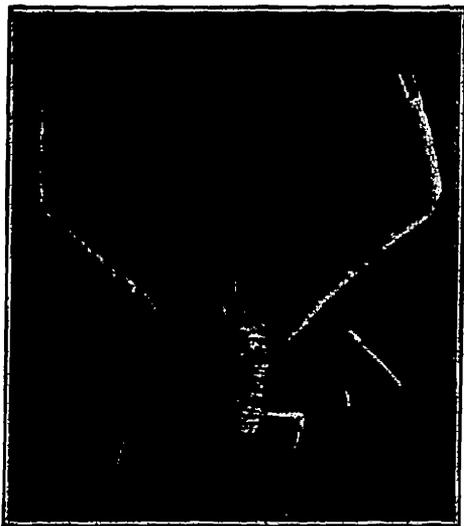


FIG. 76.—*Munida haswelli* (x 2).

the carapace, and are granulate and fringed with hairs. There are spinules on the upper surface of the carapace, and each lateral margin is armed with six or seven small spines; the anterior margin of the second abdominal segment bears six to eight spinules. Length: 25 mm., or 1 in. (S.A.M.)

Family PORCELLANIDAE.

The carapace is somewhat oval in shape, rather broad, with faintly-marked regions. The symmetrical abdomen is closely adpressed to the underside of the thorax, so that the animals look like little crabs; they have only three pairs of walking legs, however, and are thus readily separated from the true crabs. The "Porcelain Crabs" are usually found in shallow water, in sheltered situations, such as beneath stones on reefs, and, in accordance with their habit, are often much flattened. When alarmed some of the species exhibit a ferocious aspect which, considering their diminutive size, is ludicrous; they often part with their large claws when captured.

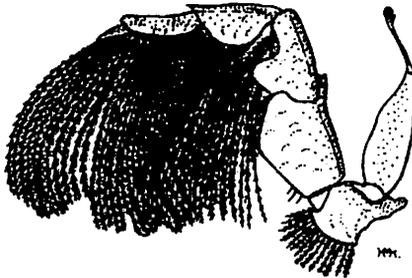


FIG. 77.—Third maxilliped of *Porcellana dispar* (x 15).

The manner in which the Porcellanids obtain their food is extremely interesting. The third maxillipeds are very long, and are densely fringed with long plumose hairs (fig. 77); these organs are thrown forward in the manner of a casting net to secure the tiny life which is eaten. In the illustrations of the species the feathery maxillipeds will be noticed, standing out from the front of the body. Our genera are separated as follows:—

- a. Walking legs terminating in one claw.
- b. First joint of second antennae extremely short .. *Petrocheles*.
- bb. First joint of second antennae long, and joined to the margin of carapace .. .. . *Porcellana*.
- aa. Walking legs terminating in two claws .. .. . *Polonyx*.

PETROCHELES (Miers).

**Spiny Porcelain Crab.** *Petrocheles australiensis* (Miers). (Australian).

This, the largest of our Porcelain Crabs, bears a rather strong resemblance to the members of the preceding family. The carapace is about as long as wide and, like the appendages, is covered with scale-like striae, fringed with short hairs. The front is produced into a prominent, flattened rostrum, which has three or four small spines on its lateral edges. There are only three distinct joints in the peduncle of the first antennae. The wrist of the