

BRIEF COMMUNICATION

RANGE EXTENSION AND NEW HOST RECORDS OF THE ECTOPARASITE *PSEUDOSTEGIAS SETOENSIS* SHIINO, 1933 (CRUSTACEA: ISOPODA: BOPYRIDAE)

The bopyrid ectoparasite, *Pseudostegias setoensis* Shiino, 1933 is here reported as occurring on *Clibanarius taeniatus* (H. Milne Edwards, 1848) and *Clibanarius virescens* (Krauss, 1843) collected from South Cooe Bay (23° 08.5' S, 150° 45.7' E) on the east coast of Central Queensland, Australia. This represents the most southern and eastern locality reported thus far for this parasite. *Clibanarius taeniatus* and *C. virescens* are new host records for this parasite.

Pseudostegias setoensis has been recorded as being parasitic on hermit crabs of the genus *Clibanarius*, only. Previously, *P. setoensis* has been reported from Seto, Japan where the parasite was reported on *C. bimaculatus*¹ (de Haan, 1849), Taiwan where it parasitised *C. striolatus*² Dana, 1852, Hong Kong, on *C. bimaculatus* and *C. ransonii*³ Forest, 1953 and Phuket, Thailand, infesting *C. padavensis*⁴ de Man, 1888.

Two species of *Clibanarius* are common in rocky intertidal areas of Central Queensland, where tide-pool temperatures may exceed 38° C during summer months. Shallow tide-pools at the collection sites of both *C. taeniatus* and *C. virescens* are mostly of coral rubble and/or sand substrate, lined with

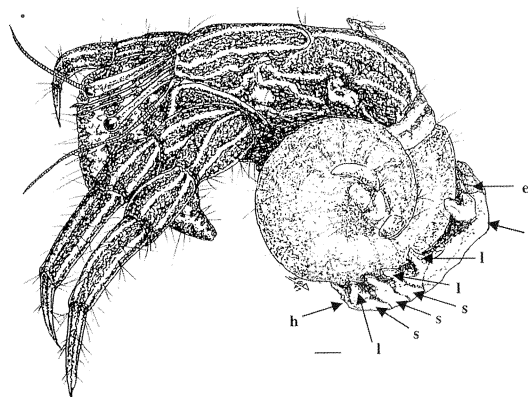


Fig. 1. View of the bopyrid parasite *Pseudostegias setoensis* ♀, showing shape and size on the dorsal abdominal aspect of the hermit crab *Clibanarius taeniatus*. Note head region (h), thoracic legs (l), thoracic segments (s) and ventral surface (v) of parasite. The male is characteristically found beneath the lamellated endopodites (e) of the pleopoda. Pleopoda are not distinct in this view. (Scale bar = 1 mm).

micro- and macroalgae and surrounded by unstable rocks. *Pseudostegias setoensis* was found to parasitise both *C. taeniatus* and *C. virescens* collected from South Cooe Bay.

The first specimen (Queensland Museum QM W23187) was collected on 15 January, 1998 from the abdomen of *C. taeniatus* and was later identified by J. Markham as an adult female and male *P. setoensis* pair. The small, worm-like male was observed on the ventral, abdominal surface of the larger female in what Shiino¹ describes as a "marsupial-like cavity produced by lamellated endopodites of pleopoda", while the female was clinging with its dorsal side closest to the dorsal aspect of the hermit crab's abdomen (Fig. 1).

Collections of male/female *P. setoensis* pairs from *C. virescens* were also made on, 14 October, 1998 (QM W25093), 5 November, 1998 (QM W25095), 18 November, 1998 (QM W25096), 8 October, 1999 (gravid females) (QM W25100 and QM W25101), 22 November, 1999 (gravid female) (Central Queensland University Museum CQUM 221199 and personal collection), 14 December, 1999 (QM W25103 and Smithsonian USMN 290248) and 31 January, 2000 (gravid female) (QM W25104). On 2 November, 1998 a solitary male *P. setoensis* (QM W25094) was collected slightly posterior to the carapace of the branchial region on a *C. virescens* specimen. Collections of *P. setoensis* pairs from *C. taeniatus* were also made on 11 March, 1999 (QM W25097), 15 March, 1999 (QM W25098), 18 August, 1999 (QM W25099 and personal collection), 1 November, 1999 (QM W25102) and 27 January, 2000 (Australian Museum P58345). A single *P. setoensis* male/female pair, collected 15 September, 1998, was used for SEM work. The incidence rate of *P. setoensis* in a sample of 387 hermit crabs collected between 16 September, 1999 and 25 October, 1999 was 1.6%. On deshelled hermit crabs the opaque, cream-coloured parasite was easily seen, covering up to one half the total length of the abdominal segment of the crab and measuring as much as 9 mm in length. Parasitised hermit crabs did not display obviously different behaviour from non-parasitised ones, nor did they show visible signs of abdominal puncture nor physical deterioration before or after the parasites were removed.

With the exception of the report from the north-eastern Indian Ocean (Phuket)⁴, the previous and current records of *P. setoensis* indicate a Western Pacific distribution from Japan to east Australia for this species.

Sincerest thanks are extended to J. Markham of the Arch Cape Marine Laboratory, Arch Cape Oregon USA for his identification of the parasite.

¹Shiino, S. M. (1933) Mem. College Sci., Kyoto Imper. Univ. (B) 8, 249-300.

²Shiino, S. M. (1958) Rept. Fish. Mie University 3, 27-73.

³Markham, J. C. (1982) Bopyrid Isopods Parasitic on Decapod Crustaceans in Hong Kong and Southern China

pp. 325-391 In Morton, B. S. & Tseng, C. K. (Eds) "Proc. First Internat. Mar. Biol. Workshop: The Marine Flora and Fauna of Hong Kong and Southern China, Hong Kong" (Hong Kong University Press, Hong Kong).

⁴Markham, J. C. (1985) Zool. Verh. (Leiden) 224, 51-63.

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