



Figure 6. *Zebrida longispina* Haswell, 1880. Holotype male, cl 14.5 mm (AM P40839); A, dorsal view. (Photograph courtesy of AM)

The larval development of *Z. adamsii* has been described by Mori et al. (1991) from Japanese specimens.

Ecology.—*Zebrida adamsii* has been well studied and has been reported from some 10 species of echinoids, viz. Toxopneustidae: *Toxopneustes pileolus* (Leske), *Toxopneustes elegans* (Döderlein), *Tripneustes gratilla* (Linnaeus); Temnopleuridae: *Salmacis bicolor* (Agassiz), *Salmacis virgulata* (Agassiz); Echinometridae: *Heliocidaris* (= *Acanthocidaris*) *crassispina* (Agassiz), *Acanthocidaris* sp.; Diadematidae: *Diadema setosum* (Leske); Echinothuriidae: *Asthenosoma ijimai* Yoshiwara; Strongylocentrotidae: *Pseudocentrotus depressus* (Agassiz) (Rathbun, 1910; Urita, 1926a; Balss, 1956; Doki, 1972; Yamamoto, 1973; Suzuki and Takeda, 1974; Daniel and Krishnan, 1979). The crabs live on the test of the urchin, between the spines, and Suzuki and Takeda (1974) provided a detailed discussion on their interactions. They found evidence that urchin tissue was being ingested by *Z. adamsii* and argued that the relationship between crab and urchin is essentially a parasitic one.

Zebrida brevicarinata new species

(Figs. 4–5)

Material Examined.—HOLOTYPE: male (7.5 by 8.0 mm) (WAM 182-67), Garden Island, Perth, Western Australia, coll. R.W. George, 18 November 1959.

OTHERS: **Australia:** 1 male (WAM 184-67), Cockburn Sound, Perth, Western Australia, 30 November 1959. — 1 female (WAM 101-93), Carnac Island, Western Australia, coll. S. Slack-Smith and B.R. Wilson, December 1974. — 1 male (WAM 102-93), Dunsborough, Western Australia, coll. B.R. Wilson, 14 April 1963. — 1 male (WAM 100-93), Wyddup Rocks, Yallingup, Western Australia, coll. B.R. Wilson, 1 January 1972.

Diagnosis.—No lamelliform expansion present on anterior margin of eyestalk; rostrum relatively short, tip rounded; lateral carapace tooth relatively short, flat, directed

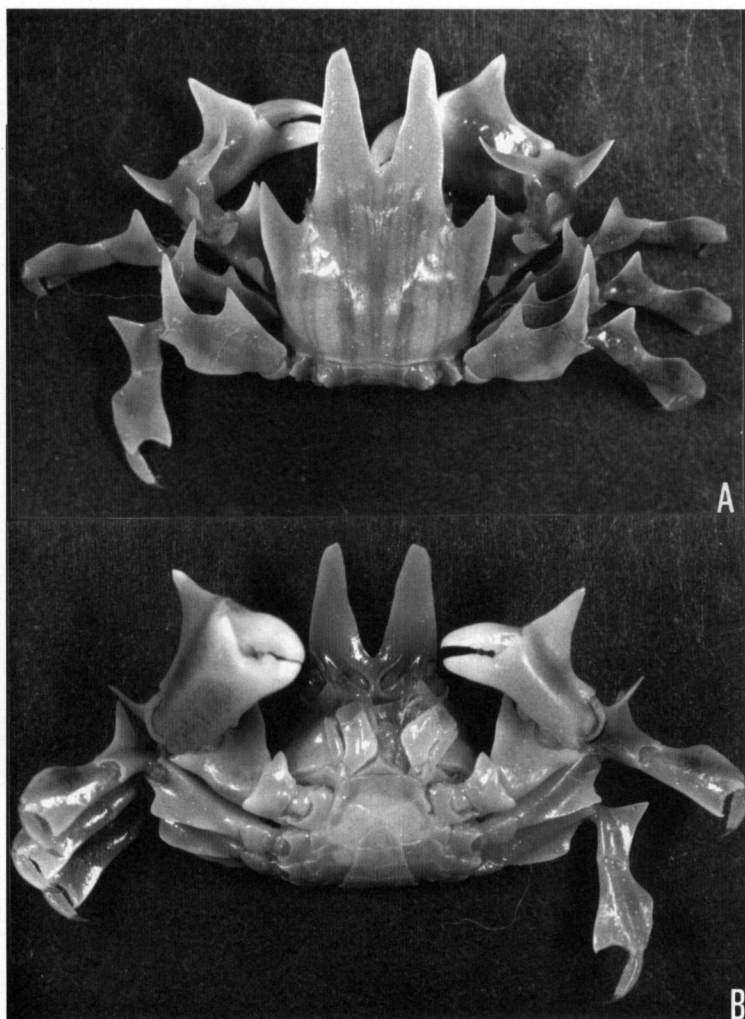


Figure 7. *Zebrida longispina* Haswell, 1880. Male, 11.2 by 8.2 mm (QM W18668): A, dorsal view; B, ventral view.

horizontally outwards, never bent upwards, tip rounded; anterior margins of first to third ambulatory carpi and meri, as well as posterior margin of merus of last ambulatory leg unarmed; posterior margin of merus of all ambulatory legs never expanded medially into flap-like structure.

Remarks.—The differences between *Z. brevicarinata*, *Z. adamsii* and *Z. longispina*, have been discussed under *Z. adamsii*. The species is known only from southwestern Australia thus far.

Ecology.—Not known.

Zebrida longispina Haswell, 1880

(Figs. 6–8)

Zebrida longispina Haswell, 1880: 454, pl. 27: fig. 3 (Australia); Haswell, 1882: 38 (Australia); Alcock, 1895: 287 (part); Suzuki and Takeda, 1974: 288 (as synonym of *Z. adamsii* White, 1847).

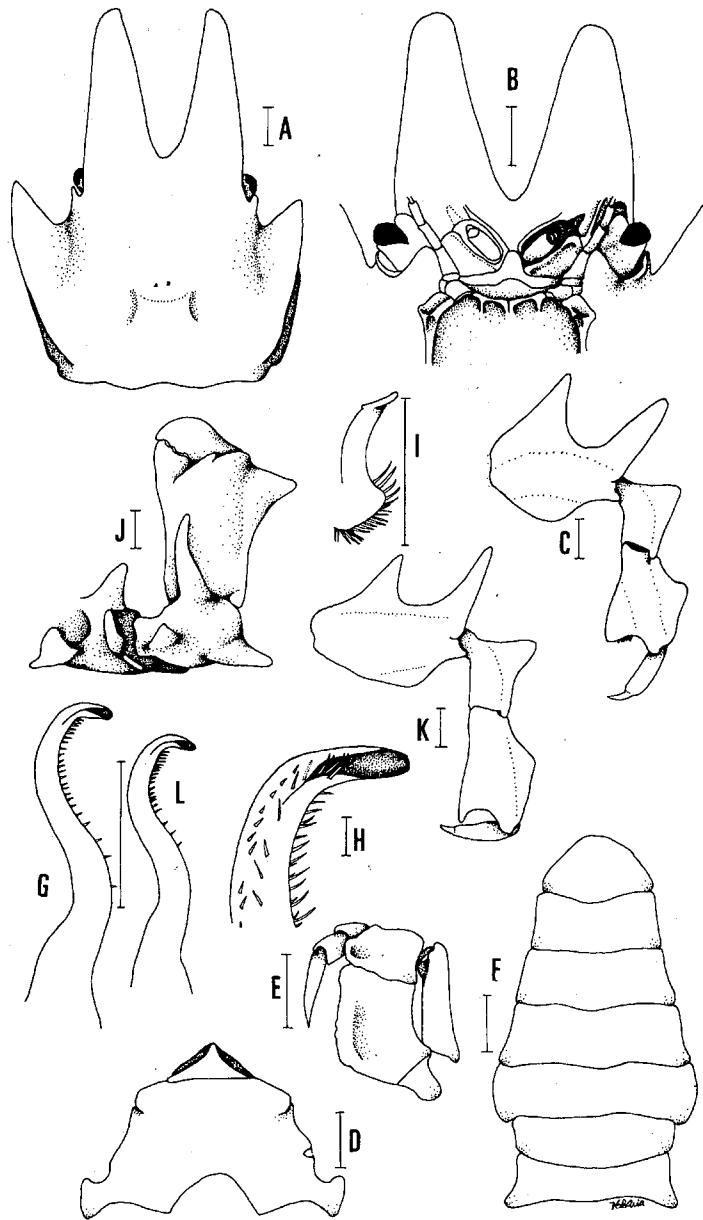


Figure 8. *Zebrida longispina* Haswell, 1880. Male, 11.2 by 8.2 mm (QM W18668): A, dorsal view of carapace; B, face of carapace; C, fourth right ambulatory leg; D, sternum; E, left third maxilliped; F, abdomen; G, left G1; H, distal tip of left G1; I, left G2; J, postero-dorsal view of left cheliped; K, third right ambulatory leg. L, male, 8.4 by 7.3 mm (QM W18667), left G1. Scales for A-G, I-L = 1.0 mm; for H = 0.1 mm.

Material Examined.—HOLOTYPE: male (badly damaged) (cl 14.5 mm) (AMP40839), Darnley Island, Queensland, Australia, 09°35'S, 143°17'E, coll. W. MacLeay.

OTHERS: **Australia:** 1 male (11.2 by 8.2 mm), 1 female (QM W18668), northwest shelf, Western Australia, coll. CSIRO (Commonwealth Scientific and Industrial Research Organisation), R. V. SOELA. — 1 male (AM P16540), Low Isles, Queensland, 16°23'S, 145°34'E, coll. J. Bryan, 24 August 1963. — 1 male (8.4 by 7.3 mm) (QM W18667), northwest shelf, Western Australia, 19°54.8'S, 117°55.6'E, coll. CSIRO, R. V. SOELA 18 February 1983. — 1 female (NMV J23794), northwest shelf, between Port Hedland and Dampier, 19°12.00'S, 118°41.00'E, coll. G.C.B. Poore and Lew Ton, 4 June 1983. — 1 male (QM W18660), northwest shelf, Western Australia, 19°59.2'S, 117°03.6'E, coll. CSIRO, R. V. SOELA, 5 September 1983.

Diagnosis.—Large lamelliform expansion present on anterior margin of eyestalk; rostrum very long, tip sharp; lateral carapace tooth very long, tip directed upwards; anterior margins of merus and carpus of first to third ambulatory legs with distinct spines; anterior margin of propodus of ambulatory legs with distinct spine; posterior margin of merus of all ambulatory legs expanded medially into a flap-like structure.

Remarks.—The differences between *Z. longispina*, *Z. adamsii* and *Z. brevicarinata* have been discussed under *Z. adamsii*. Most of the diagnostic characters for *Z. longispina* are evident even on the dried holotype, although it is very badly damaged (Fig. 6). The long and sharp spines present on the carapace and ambulatory legs are nevertheless still apparent.

Compared to males, the females are relatively less spinose, but even then, their spines are distinctly longer proportionately than equivalent sized *Z. adamsii*. This is interesting as sexual dimorphism in this respect is not known for either *Z. adamsii* or *Z. brevicarinata*.

Ecology.—Not known.

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