A NEW SPECIES AND A NEW RECORD OF *HEPATOPORUS* FROM NORTH-WESTERN AUSTRALIA (CRUSTACEA: DECAPODA: XANTHIDAE)

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Hepatoporus asper sp.nov., is described from the North-West Shelf, Western Australia. It is separated from other *Hepatoporus* by its carapace regions being separated by deep channels lined with mushroom shaped tubercles. *H. guinotae* (Zarenkov, 1971) is recorded for the first time from Australian waters, greatly extending its range from west Africa and the Red Sea. It is suggested that *H. distinctus* (Takeda & Nagai, 1986) is of uncertain validity and may prove to be a junior synonym of *H. guinotae*. ☐ *Crustacea, Decapoda, Brachyura, Xanthidae, Euxanthinae, Hepatoporus, Australia, new species, distribution.*

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Two species of the xanthid *Hepatoporus* were identified in dredged material from the North-West Shelf, collected by the CSIRO aboard the R.V. 'Soela'. One, *H. guinotae* (Zarenkov, 1971) marks a considerable range extension and is a new record for Australia; the other is a new species, *H. asper.*

Hepatoporus was established by Serène (1984) to include *Carpoporus orientalis* Sakai, 1935, from Japan, and *C. guinotae* Zarenkov, 1971, from the Red Sea and the western Indian Ocean. Sakai (1935) and Zarenkov (1971) had both noted that the closest relative to their species was *Carpoporus papulosus* Stimpson, 1871, a West Atlantic species. Takeda & Nagai (1986) independently recognised the generic differences between *C. papulosus* and the two Indo-West Pacific species, and described the new genus *Carpoporoides* for them, as they did not know of the work of Serène (1984). Takeda & Nagai (1986) also described a new species, *Carpoporoides distinctus*, from Koza, Japan. Later, Takeda (1986) recognised *Carpoporoides* as a junior synonym of *Hepatoporus.*

Hepatoporus now contains four species: *H. orientalis* (Sakai, 1935), *H. guinotae* (Zarenkov, 1971), *H. distinctus* (Takeda & Nagai, 1986) and *H. asper* sp. nov.

Measurements given in the text are of the carapace breadth (measured at the widest point) followed by length.

ABBREVIATIONS: G1, gonopod 1; QM, Queensland Museum, Brisbane; P1-P5, pereiopods 1-5.

SYSTEMATICS

Family XANTHIDAE MacLeay, 1838
Sub-family EUXANTHINAE Alcock, 1898

Hepatoporus guinotae (Zarenkov, 1971)
(Fig. 1A, B)

Carpoporus guinotae Zarenkov, 1971: 191, fig. 86.
Hepatoporus guinotae: Serène, 1984: 74, 75, fig. 40, pl. 10, d-f; Takeda, 1986: 51.

MATERIAL EXAMINED

QMW15071, ♀ (8.3 x 6.3mm), R.V. 'Soela', Stn 01B18NT, 22.2.1983, 52m, 20°01.4'S, 116°57.3'E, North-West Shelf, Western Australia; QMW14778, ♂(3.1 x 2.6mm), R.V. 'Soela', Stn 02B02S, 22.4.1983, 43m, 19°56.9'S, 117°53.7'E, North-West Shelf, Western Australia.

REMARKS

The hepatic cavities of the two specimens show different states of development which may be age rather than sex related. The small male has only weakly developed cavities that make only slight impressions on the anterolateral margins, whereas those of the larger female are close to the state seen in Serène's illustration of a male from Kenya (Serène 1984: pl. 10d,e,f). The posterior part of the hepatic cavity is not as deeply excavated posteriorly as in Serène's specimen, but is much more deeply excavated than on the holotype of *H. distinctus*. Since the depth and shape of the hepatic cavity is the only significant character separating *H. guinotae* and *H.*

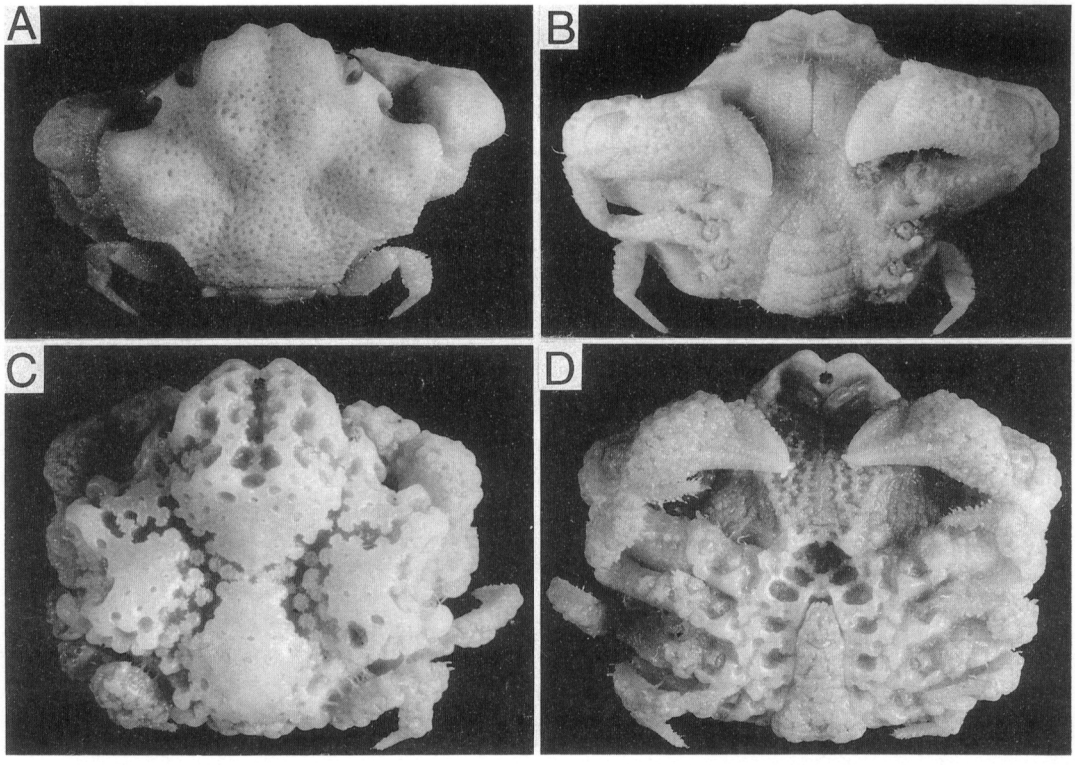

FIG. 1. A, B, *Hepatoporus guinotae* (Zarenkov), QMW15071, ♀(8.3 x 6.3mm); C, D, *Hepatoporus asper* sp. nov., QMW19896, ♂ holotype (9.1 x 8.7mm).

distinctus Takeda & Nagai, 1986, we would be surprised if this later species proves to be validly separable; a greater range of material is needed to decide the matter.

DISTRIBUTION

Red Sea (type locality, Zarenkov, 1971); Madagascar, Kenyan Coast (Serène, 1984); and northwestern Australia. Bathymetric range: 108m (Serène, 1984) and 42-52m (this paper).

Hepatoporus asper sp. nov.
(Figs 1C, D; 2A, B)

MATERIAL EXAMINED

HOLOTYPE: QMW19896, ♂ (9.1 x 8.7 mm), R.V. 'Soela', Stn 05B03BT, 26.10.1983, 40m, 19°55'S, 117°56.0'E, North-West Shelf, Western Australia.

DESCRIPTION

Carapace. Carapace heptagonal in outline, length 0.97 × width. Dorsal surface formed by a pavement of abutting mushroom-shaped tubercles, eroded in appearance, with prominent raised pair of sub-conical, sub-median gastric prominences and moderately inflated branchial regions. Cardiac region uniformly convex, smoother but less raised than branchials. Lateral margins with 2 marked concavities, anterior hepatic and lateral branchial; dorsal surface broadly excavated obliquely behind posterior cavity. Gastro-cardiac regions separated from branchials by deep sulci; sulci forked anteriorly around hepatic regions; sulci with marginal mushroom shaped tubercles. Deep median sulcus separating frontal lobes, extending posteriorly to between gastric prominences. Deep, often interconnecting, pits on most regions. Intestinal region bears 7 small, obtuse teeth at its edge. Frontal width 0.37 × width of carapace; deflexed, pitted; bilobed, with inner projections forming basal circular hole. Postero-lateral margins concave.

Antennular fossae broad, oblique; basal segment of antennae deeply pitted; epistome and anterior pterogostomial region pitted; posterior

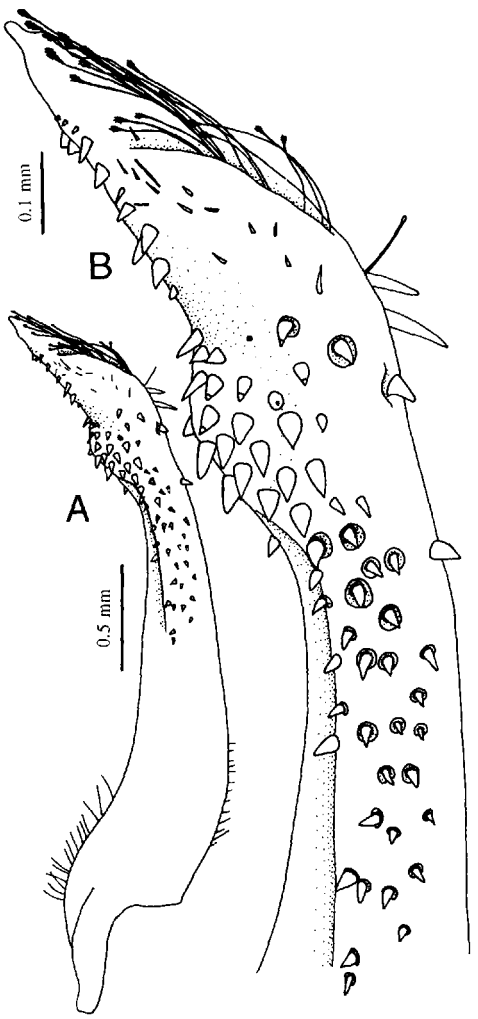

FIG. 2. First male gonopod of *Hepatoporus asper* sp. nov., holotype, QMW19896. A, abdominal view; B, enlarged view of apex.

half of pterogostomial and sub-hepatic regions coarsely granular.

Outer edge of orbit with several short, simple setae on inside edge; orbital margin relatively smooth, with few sparse, low, obtuse lobes.

Third maxillipeds. Surface coarsely pitted, some joining to form irregular longitudinal channels. Ischium c. 2 × length of merus. Proximal half of exopod smooth, separated from pitted distal portion by smooth oblique ridge.

Thorax and abdomen. Thoracic sternites deeply eroded. Abdominal segments 3 - 5 fused, surface formed by pavement of abutting mushroom-shaped tubercles.

Chelipeds. Equal, short, length subequal carapace length. Fingers with tips crossing when closed. Upper surface of dactyl tuberculate proximally, becoming smooth distally. Outer surface of prodopus appearing coarsely granular, with more or less coalesced low, mushroom-like tubercles; ventral surface with small, smooth tubercles grading into smaller more sparsely dispersed granules on inner surface. Upper and outer surface of carpus similar to palm; inner and dorsal surface granular. Ventral surface of merus smooth; inner surface sparsely granular; row of c. 4 large tubercles along the inner disto-ventral angle of merus; laterally projecting oval concave lamella present disto-medially. Inner-dorsal angle of carpus and merus bearing long plumose setae. Ischium and coxa with less dense setae.

Ambulatory legs. Short, P2 0.8 × length of cheliped. Meri of P2 and P3 completely hidden below lateral extensions of carapace, trigonal in cross-section; carpi and prodopi sub-trigonal; dactyli cylindrical, sparsely granular, with plumose setae and acute chitinous tips. Outer surface of carpi and prodopi similar to outer surface of chelae. Outer surfaces of meri smooth except for P5. Three to five tubercles on the ventro-proximal margins of meri, reducing in size from P2-P5. Legs with marginal plumose setae, longest on dorso-proximal margins of meri.

G1(Fig. 2A, B). Stout; curved distally, slowly tapering. c. 18 sub-terminal fine, plumose, setae not extending beyond apex; small sub-distal lobe present on inner face; numerous stout, proximally directed, conical setae present on inner and upper faces, several with distinct sockets.

REMARKS

For the purpose of this comparison, *Hepatoporus distinctus* is treated as indistinguishable from *H. guinotae* for reasons given under that species. *H. asper* differs most conspicuously from other species of the genus by the following characters: 1, *H. asper* possesses a concave lateral branchial cavity posterior to the hepatic cavity; 2, the dorsal surface of the carapace in *H. asper* has the regions well separated by deep channels lined with mushroom-shaped tubercles whereas both *H. guinotae* and *H. orientalis* have a much smoother, punctate, or minutely granular surface, with only shallow depressions separating the regions; 3, *H.*

asper bears only two gastric prominences whereas *H. guinotae* bears large tubercles on the supraorbital, gastric, and branchial regions, and the gastric, epibranchial, and cardiac regions of *H. orientalis* are 'protuberant' (Sakai, 1935); 4, the chelipeds and walking legs in *H. asper* bear flattened, often coalesced, fungiform tubercles, giving a coarsely tuberculate appearance whereas on *H. guinotae* and *H. orientalis*, they are merely granular; 5, the third maxillipeds of *H. asper* are covered by small, densely packed, often interconnecting pits whereas those of *H. guinotae* and *H. orientalis* are only granular; 6, the thoracic sternum of *H. asper* has deep erosions that occupy a large portion of each sternite; 7, the abdomen of *H. asper* bears low, fungiform tubercles, that of *H. guinotae* is only granular. Sakai (1935) gives no indication of the nature of the sternum and abdomen in *H. orientalis*; 8, the G1 of *H. asper* (Fig. 2A, B) is distinctly different from that illustrated by Serène (1984: fig. 40) for *H. guinotae*. The new species bears c. 18 subterminal setae that barely reach past the tip. In contrast, the pleopod of *H. guinotae* bears seven setae that extend well beyond the tip. Also the inner face of the G1 of *H. asper* bears a broad, subterminal lobe, which is absent in *H. guinotae*. The G1 is not known for *H. orientalis*.

ETYMOLOGY

From the Latin *asper* = rough or uneven, referring to the deeply pitted and channelled dorsal surface of the carapace.

DISTRIBUTION & HABITAT

Only known from northwestern Australia. Dredged from 40m.

ACKNOWLEDGEMENTS

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