

**THE IDENTITY OF *Dentoxanthus komodoensis*  
SERÈNE, 1971 (CRUSTACEA : DECAPODA :  
BRACHYURA : PILUMNIDAE)  
WITH DESCRIPTION OF A NEW GENUS**

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### ABSTRACT

The type and only known specimen of *Dentoxanthus komodoensis* Serène, 1971, from Komodo Island, Indonesia, is re-examined. Studies confirm a previous report (Stevcic and Ng, 1988) that the species does not belong to the genus *Dentoxanthus* Stephensen, 1945, as understood at present, differing in the form of the carapace as well as in cheliped and third maxilliped characters. A new genus, *Otognathon*, is therefore established for *Dentoxanthus komodoensis*. The classification of the new genus in the Pilumnidae, and its affinities with *Dentoxanthus* and *Gonatonotus* Adams and White, 1848, are discussed.

**Key words:** Decapoda, *Dentoxanthus komodoensis*, *Otognathon*, Komodo Island, Indonesia.

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### INTRODUCTION

The genus *Dentoxanthus* Stephensen, 1945 (*Dentoxanthus iranicus* Stephensen, 1945, by monotypy) has had a rather unstable taxonomic history. While the validity of the taxon has never been in question, its affinities have been less than clear. Even with the description of a second species, *D. komodoensis* by Serene (1971) and the discovery of males and more female specimens of *D. iranicus* by Tirmizi and Sèrene (1971) and Tirmizi and Kazmi (1982), the higher classification of the genus was still uncertain. Stevcic and Ng (1988) reviewed and reappraised the taxonomic position of *Dentoxanthus* and concluded that the genus belonged to the family Pilumnidae Samouelle, 1819. They also noted that *Dentoxanthus* should revert back to its monotypic state as Serene's (1971) species, *D. komodoensis*, did not belong to the genus *Dentoxanthus*. Stevcic and Ng (1988), however, did not resolve the generic placement of *D. komodoensis*.

The present paper is intended to resolve the taxonomic uncertainties concerning *D. komodoensis*. As a result, a new genus, *Otognathon*, is established for this unusual species. In this note, the new genus is described and its type species redescribed. The affinities of *Otognathon* are also discussed.

Measurements are of the carapace width and length, respectively. All measurements are in millimeters. The type specimen is deposited in the Zoological Reference Collection (ZRC) of the Department of Zoology, National University of Singapore.

### Taxonomy

Pilumnidae Samouelle, 1819

*Otognathon* gen. nov.

Type species. -*Dentoxanthus komodoensis* Serène, 1971, by present designation.

Diagnosis. -Carapace hexagon-shaped, regions visible but not very distinct. Anterolateral margin almost entire, without teeth or distinct lobes. Junction of anterolateral and posterolateral margins with large triangular tooth. Orbital hiatus completely filled by large basal antennal segment. Antennular fossae large, basal antennular segment large, antennules folding obliquely. Lateral endostomial palatial ridges defining efferent branchial channels weak but distinct. Third maxilliped with anterolateral angle distinctly auriculiform.

Etymology. -The generic name is derived from the Greek for ear, alluding to the auriculiform expansion of the anterolateral angle of the third maxilliped merus. The gender of the word is neuter.

Remarks. -The genus *Otognathon* gen. nov. differs significantly from *Dentoxanthus* Stephensen, 1945, especially in several important carapace and third maxilliped features. The differences are summarised in Table 1. Although no males of *Otognathon* are known, the genus is probably a member of the family Pilumnidae. The most closely related genus to *Otognathon* appears to be *Dentoxanthus*, which was referred to the Pilumnidae by Stevcic and Ng (1988). Most of the arguments pertaining to the classification of *Dentoxanthus* in the Pilumnidae also apply for *Otognathon*.

The external morphology of *Otognathon* is also very similar to that of eumedonid crabs of the genus *Gonatonotus* Adams and White, 1848, which are known to be symbionts of echinoids (Echinodermata). In *Gonatonotus*, however, the carapace surface is not squamose, the front is much more strongly produced and elongate, and the anterolateral angle of the third maxilliped merus is not strongly expanded into an auriculiform structure. Stevcic et al. (1988) redefined the family Eumedonidae, recognising it as a distinct family, separate from the Parthenopidae (see Balss, 1957) with

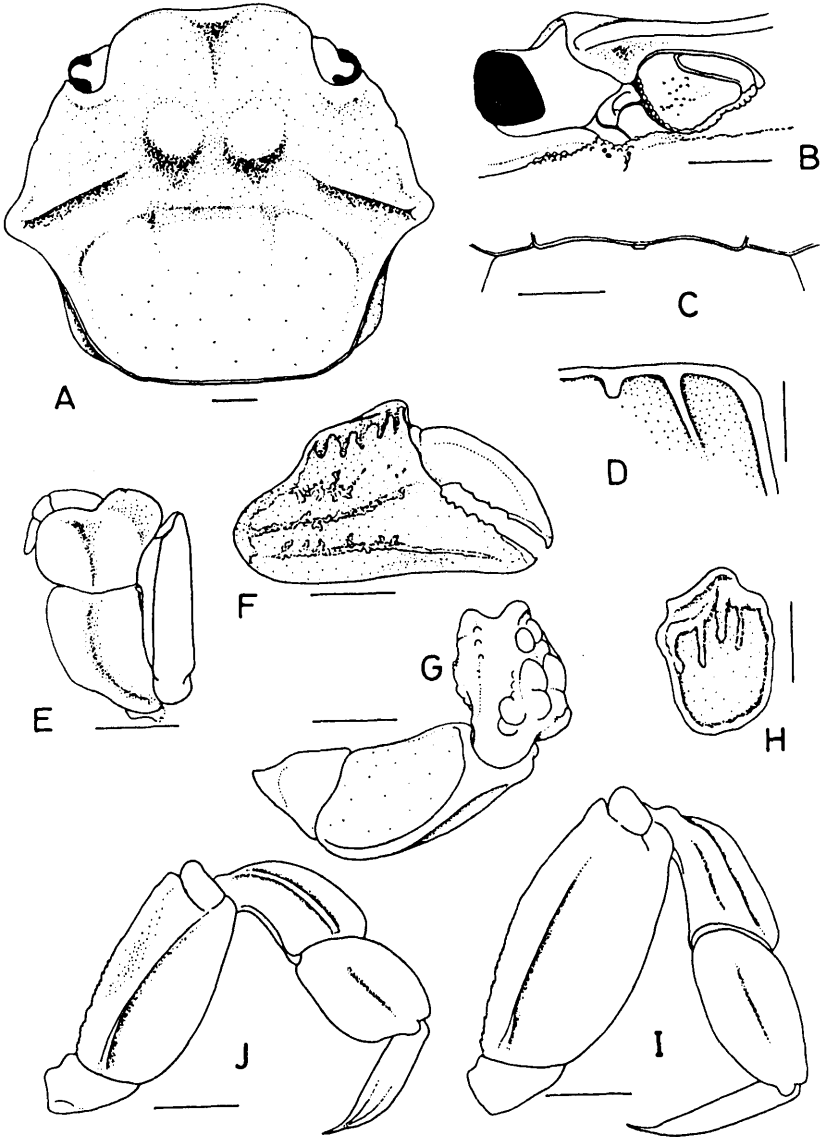


Fig. 1. *Otnagnathon komodoense* (Serène, 1971). Holotype female (ZRC 1969.12.25.1), 8.2 by 7.6 mm. A, dorsal view of carapace; B, orbit, antennae and antennules; C, posterior margin of epistome; D, branchial chamber showing left palatal ridge; E, left third maxilliped (hairs denuded); F, right chela; G, ventral view of cheliped basis-ischium, merus and carpus; H, dorsal view of cheliped carpus; I, left second ambulatory leg; J, left fourth ambulatory leg. Scales: 0,5 mm.

Tabel 1. Differences between *Otognathon* gen. nov. and *Dentoxanthus* Stephensen, 1945.

	<i>Otognathon</i>	<i>Dentoxanthus</i>
Carapace surface	Appears uniformly squamose	Almost smooth, sometimes granular in parts
Carapace regions	Not well defined	Very well defined
Carapace ridges	Short, distinct transverse ridge near junction of antero- and postero lateral margins	Regions near junction of antero- and poster-lateral margins without ridges
Lateral palatial ridges	Ridges defining efferent branchial channels weak	No ridges defining efferent branchial channels
Third maxilliped merus	Anterolateral angle strongly produced, very distinctly auriculiform	Anterolateral angle slightly expanded, angulate, not auriculiform
Cutting edges of cheliped fingers	Distal third without teeth or denticles, blade-like	Entire edge lined with teeth and denticles

which it had been traditionally classified, and allied the Eumedonidae with the Pilumnidae instead. One of the main characters used was the fact that all the members (with the possible exception of one genus) were symbionts on echinoderms. From what is known of the single specimen of *O. komodoense*, however, it does not appear to be associated with any organism.

### ***Otognathon komodoense* (Serène, 1971)**

(Fig. 1)

Material examined. -Holotype female (ZRC 1969.12.25.1), 8.2 by 7.6 mm, on coral substrate, Komodo Island, Indonesia, coll. Kasijan Romimohtarto, "Operation Baruna I", 27.V.1964.

Description of female holotype. -Carapace distinctly hexagon-shaped, broader than long, dorsal surface appears squamose, covered with numerous flattened, scale-like granules, without trace of hairs, regions clearly defined, with grooves very broad and shallow. Frontal margin gently sinuous, gently deflexed downwards, the two lobes not obvious, lateral edges confluent with smooth and entire supraorbital margin. Inner part of infraorbital margin granulose, outer part smooth. Anterolateral margin very

gently convex, appears almost entire, without obvious denticulation or clefts, although three very low, indistinct lobes can be discerned; junction of anterolateral and posterolateral margins demarcated by a prominent broadly triangular blunt tooth. Posterolateral margins cristate, gently concave, converging. Orbits small, eyes completely filling orbits, cornea well developed. Orbital hiatus completely filled by large basal antennal segment; segment very tightly adjoined to carapace, possibly fused; flagellum not discernible. Antennular fossae large, basal antennular segment very large, antennular folding obliquely. Pterygostomial, suborbital and sub-branchial regions subgranular. Posterior margin of epistome gently sinuous, subcristate. Lateral endostomial palatal ridges defining efferent branchial channels visible but very weak, median ridge not developed.

Third maxillipeds with broad, foliaceous merus, anterolateral angle very strongly produced, auriculiform, projecting well above palp; segment separated into two halves by deep and broad longitudinal sulcus. Ischium short, with deep and broad sulcus. Exopod with low, obtuse inner subdistal angle, flagellum longer than width of merus.

Chelipeds small, subequal, outer surfaces rugose to smooth, glabrous. Outer surface of carpus covered with large, low, rounded tubercles and striae, without distinct inner distal angle; dorsal surface rugose. Outer surface of chelae faintly rugose and covered with numerous very small granules; two patches of granules joining to form two subparallel longitudinal ridges along lower half, lower ridge reaching into pollex. Fingers shorter than palm; proximal two-thirds of cutting edges with teeth and denticles, distal third with blade-like edge, tip recurved, sharp.

Second ambulatory leg longest. All segments smooth, without spines. Dorsal margin of merus subcristate, gently serrated, with blunt subdistal tooth. Outer surface of merus with distinct and well developed median longitudinal ridge, continuing to carpus. Propodus with shallow median longitudinal sulcus. Dactylus tapering to sharp tip.

Abdomen subcircular, covering most of sternum, seven-segmented, all segments freely articulating. Pleopods well developed, highly setose.

Remarks. -The only known female specimen of *O. komodoense* is not a juvenile despite its small size (8.2 by 7.6 mm). The abdomen is round and covers most of the sternum, the pleopods being highly setose. The type specimen of *D. iranicus* was also a female (10.5 by 7.0 mm.) (fide Stephensen, 1945), and only slightly larger than *O. komodoense*, but it was not fully mature, with the abdomen still oval-shaped. *O. komodoense* thus appears to be a much smaller taxon compared to *D. iranicus*.

The ecology of *Otognathon* is not known. According to the label in the bottle, the type specimen was hand-collected from among coral reefs, but no other information was available.

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