

Crustacea Decapoda : *Cecidocarcinus zibrowii*, a new deep-water gall crab (Cryptochiridae) from New Caledonia

Raymond B. MANNING

Smithsonian Institution
National Museum of Natural History
Department of Invertebrate Zoology
Washington, D.C. 20560, U.S.A.

ABSTRACT

Cecidocarcinus zibrowii sp. nov., the first Indo-West Pacific representative of a genus erected for a species from the Walvis Ridge, southwestern Atlantic Ocean, is described from a specimen collected at a depth of 425 to 440 meters during the MUSORSTOM 4 Cruise to New Caledonia in 1985.

RÉSUMÉ

Crustacea Brachyura: *Cecidocarcinus zibrowii* sp. nov. (Cryptochiridae), crabe gallicole nouveau des eaux profondes de la Nouvelle-Calédonie.

Cecidocarcinus zibrowii, premier représentant indo-ouest-pacifique d'un genre établi pour une espèce de la ride de Walvis dans le sud-ouest Atlantique, est décrit d'après un spécimen récolté à 425-440 mètres de profondeur lors de la campagne MUSORSTOM 4, faite au large de la Nouvelle-Calédonie, en 1985.

INTRODUCTION

The crab described below was found clinging to a branch of a colonial dendrophyllid coral taken in more than 400 meters southeast of New Caledonia. It proved to belong to an undescribed species, the second species of *Cecidocarcinus* Kropp & Manning, 1987. This genus was erected for one species taken in deep water on the Walvis Ridge, southeastern Atlantic Ocean. Members of *Cecidocarcinus* have not been recorded previously from the Pacific Ocean (KROPP, 1990).

The unique holotype of *E. zibrowii* has been deposited in the Muséum national d'Histoire naturelle, Paris.

SYSTEMATIC ACCOUNT

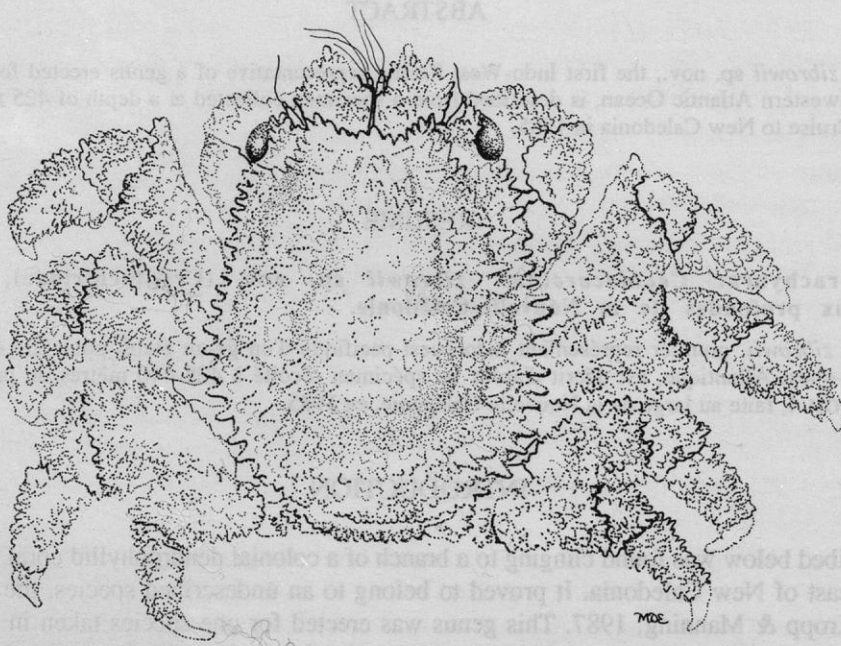
Family CRYPTOCHIRIDAE Paulson, 1875

Cryptochirinae Paulson, 1875 : 72.

Genus *CECIDOCARCINUS* Kropp & Manning, 1987*Cecidocarcinus* Kropp & Manning, 1987 : 3.Type species : *Cecidocarcinus brychius* Kropp & Manning, 1987, by original designation and monotypy. Gender masculine.*Cecidocarcinus zibrowii* sp. nov.

Figs 1, 2

MATERIAL EXAMINED. — New Caledonia. MUSORSTOM 4 : stn CP 214, 22°53.8'S, 167°13.9'E, 425-440 m, 28.9.1985 : 1 ♂ holotype (MNHN-B 22194).

DIAGNOSIS. — Carapace not deflected anteriorly. Pterygostomian region separated from carapace by suture. Third maxilliped with exopod. Anterior extension of sternite of first pereopod smooth. Gonopods *in situ* crossing twice, broadened, blunt apices directed anterolaterally.FIG. 1. — *Cecidocarcinus zibrowii* sp. nov., ♂ holotype, carapace length 3.1 mm, dorsal view.

DESCRIPTION. — Adult male : Carapace not deflected anteriorly, 1.1 times longer than broad, slightly inflated laterally at branchial regions, narrowing towards front, with shallow, convex postfrontal depression. Surface convex from side to side and from front to back, completely covered with raised granules and tubercles of various sizes, some tubercles on margins forming distinct lateral border; few scattered setae present, not obscuring surface sculpture. Inner orbital angle with spine. Anterolateral angle with spine, apex well behind inner orbital angle.

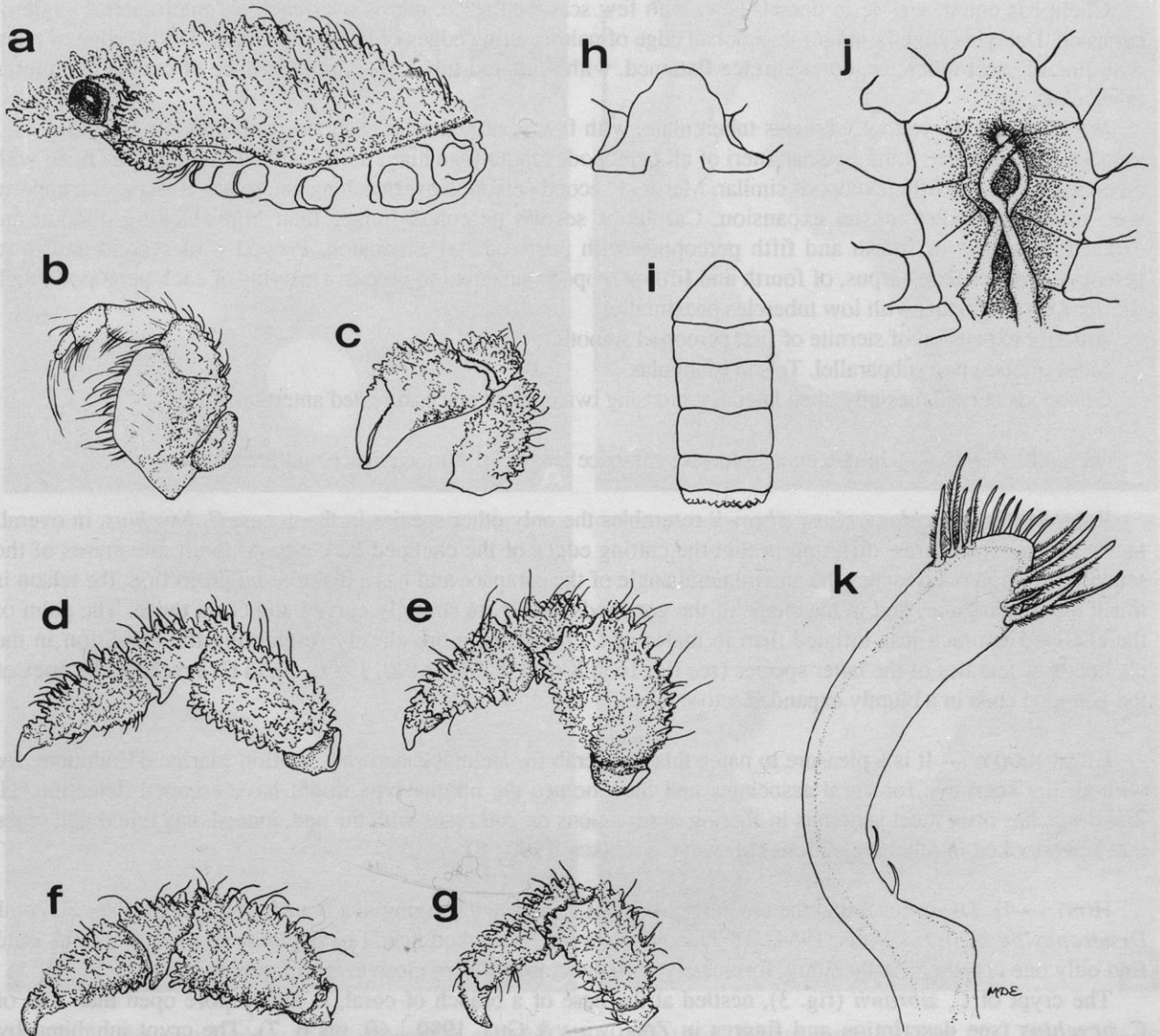


FIG. 2. — *Cecidocarcinus zibrowii* sp. nov., ♂ holotype, carapace length 3.1 mm : a, carapace, lateral view; b, third maxilliped; c, cheliped; d, second pereopod; e, third pereopod; f, fourth pereopod; g, fifth pereopod; h, sternite anterior to first pereopods; i, abdomen; j, gonopods in situ; k, gonopod, enlarged.

Front concave, tuberculate, with median tubercle, about half width at anterolateral angles, latter about 2/3 greatest carapace width. Orbit U-shaped, margin tuberculate. Pterygostomial region separated from carapace by distinct suture.

Basal antennular peduncle with transverse distal margin on projection, angled lateral lobe extending about to cornea; dorsal surface concave, variably armed with tubercles, innermost and distalmost largest. In ventral view, basal segment broadening anteriorly, surface with scattered low granules, largest distally. Second segment of antenna with few low granules.

Eye directed anterolaterally, not extending beyond anterolateral angle of carapace. Cornea lateral. Stalk granular and tuberculate.

Third maxilliped with mesial margin of ischium smooth, convex; surface with few granules distally. Merus longer than broad, width less than half that of ischium. Following segments slender, carpus longer than propodus

and dactylus combined. Setae not obscuring surface details, longer on margins. Lobe-like exopod present.

Chelipeds equal, visible in dorsal view, with few scattered setae, merus overreaching anterolateral angle of carapace. Dactylus slightly longer than dorsal edge of palm, cutting edges of fingers unarmed. Dorsal edge of palm with line of erect tubercles, outer surface flattened, with scattered tubercles. Upper surface of carpus and merus tuberculate.

Walking legs very stout, surfaces tuberculate, with few scattered setae. Second pereopod (first walking leg) longest, fifth shortest, third stoutest; meri of all pereopods longer than high, dorsal and ventral margins lined with tubercles; second to fifth pereopods similar. Merus of second pereopod overreaching anterolateral angle of carapace, with pronounced distomesial expansion. Carpus of second pereopod longer than high, lacking distomesial expansion; carpus of fourth and fifth pereopods with posterodistal expansion. Propodus of second and third pereopods longer than carpus, of fourth and fifth pereopods subequal to carpus. Dactylus of each pereopod much shorter than propodus, with low tubercles proximally.

Anterior expansion of sternite of first pereopod smooth.

Sides of abdomen subparallel. Telson triangular.

Gonopods curved mesially, then laterally, crossing twice, blunt apices directed anterolaterally.

MEASUREMENTS. — Unique male holotype, carapace length 3.1 mm, carapace width 2.8 mm.

REMARKS. — *Cecidocarcinus zibrowii* resembles the only other species in the genus, *C. brychius*, in overall facies and most features, differing in that the cutting edges of the cheliped lack a basal tooth, the merus of the second pereopod overreaches the anterolateral angle of the carapace and has a distomesial projection, the telson is much more triangular, and in the shape of the gonopods which are strongly curved and cross twice. The palm of the cheliped is much less inflated than in males of *C. brychius*, more closely resembling the condition in the chelipeds of females of the latter species (see fig. 1e in KROPP & MANNING, 1987). As in *C. brychius*, the apex of the gonopod ends in a bluntly expanded setose lobe.

ETYMOLOGY. — It is a pleasure to name this little crab for Helmut ZIBROWIUS, Station Marine d'Endoume, for without his keen eye for coral associates and their homes the unique type might have escaped detection. H. ZIBROWIUS has been most generous in sharing observations on gall crabs with me and, indeed, has found gall crabs that I overlooked in other collections (MANNING & CHACE, 1990 : 8).

HOST. — H. ZIBROWIUS found the unique holotype of *C. zibrowii* clinging to a branch of the dendrophyllid coral *Dendrophyllia alcocki* (Wells, 1954). H. ZIBROWIUS (*in litt.*) remarked that "I have plenty of this coral, but could find only one cryptochirid dwelling, fortunately with the crab still very close to it, clinging to a branch."

The crypt of *C. zibrowii* (fig. 3), nestled at the base of a branch of coral, is much more open than that of *C. brychius* (see description and figures in ZIBROWIUS & GILI, 1990 : 40, pls 6, 7). The crypt inhabited by *C. zibrowii* is 2.5 mm high, 6.0 mm deep, and 7.0 mm wide.

Both species of *Cecidocarcinus* have been taken in association with dendrophyllid corals taken at continental slope depths, in 425-440 meters off New Caledonia and in 512 meters on the Walvis Ridge.

ZIBROWIUS & GILI (1990 : 42) pointed out that crab dwellings similar to those of *C. brychius* were found on a species of the coral genus *Enallopsammia* taken in the southwestern Indian Ocean; no crabs were found associated with those dwellings.

ACKNOWLEDGMENTS

I thank Alain CROSNIER, ORSTOM and Muséum national d'Histoire naturelle, Paris, for allowing me to study this cryptochirid from New Caledonia; H. ZIBROWIUS, Station Marine d'Endoume, Marseille, for his comments on the biology of the crab described here as well as that of *Cecidocarcinus brychius* from the Walvis Ridge; and R. K. KROPP, Battelle Ocean Sciences, for reviewing a draft of this manuscript. Marion D. ERWIN prepared all of the illustrations, used here with gratitude.

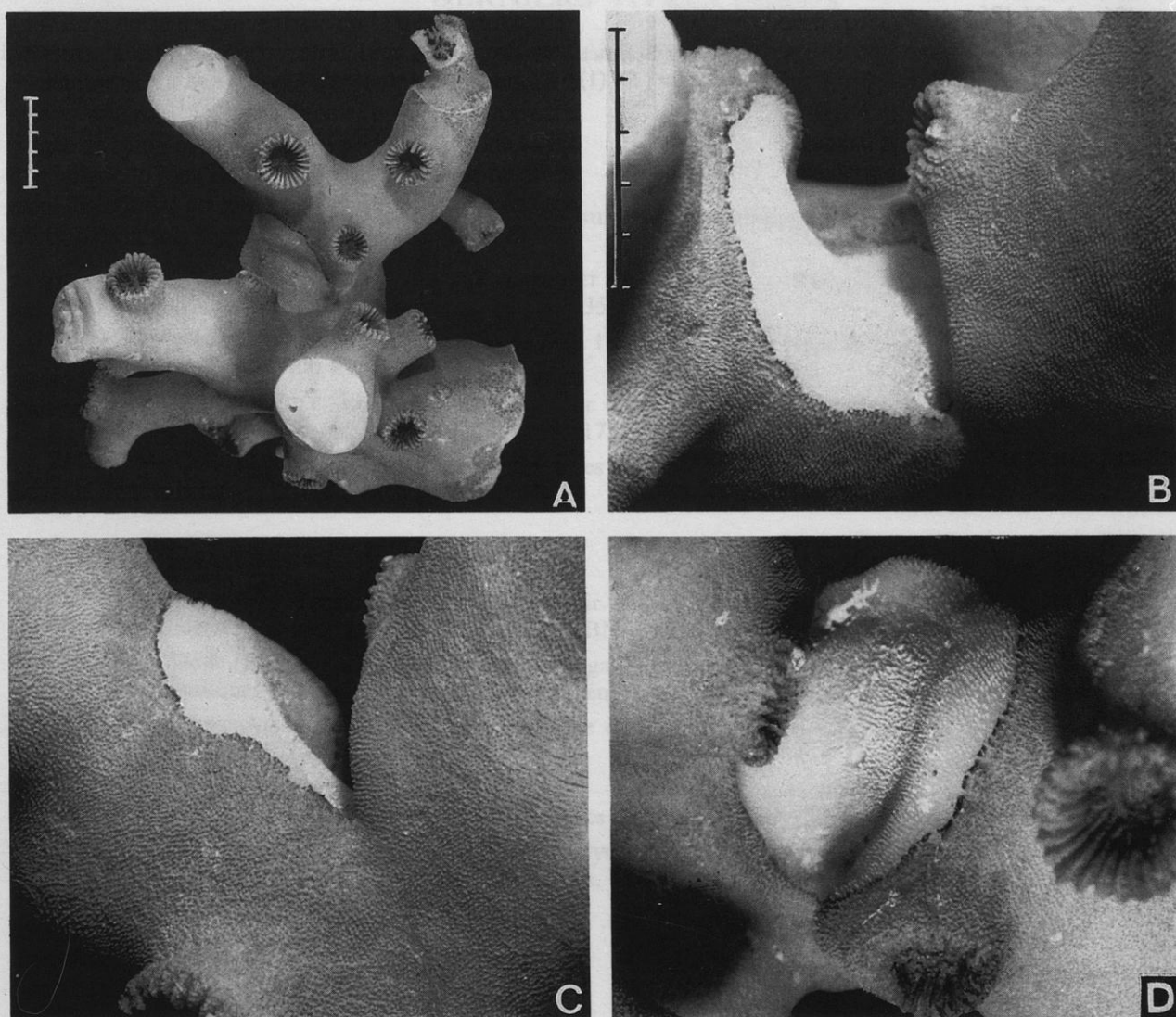


FIG. 3. — Portion of colony of *Dendrophyllia alcocki* (Wells, 1954) with shallow, open dwelling of *C. zibrowii* at the base of a coral branch. Scales in millimeters; B, C and D at the same scale. Photographs H. ZIBROWIUS.

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