

Crustacea Decapoda : Two new genera and species of deep water gall crabs from the Indo-west Pacific (Cryptochiridae)

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ABSTRACT

Two deep-water species of gall crabs from the Indo-west Pacific are described. *Zibrovia galea*, found on the coral *Phyllangia* sp. off Madagascar and the Philippines, has a rectangular carapace with the front deflected anteriorly and the pterygostomian region not fused to the carapace. *Luciades agana*, found on the coral *Leptoseris papyracea* off Guam, has a vase-shaped carapace with the front deflected anteriorly and the pterygostomian region fused to the carapace.

RÉSUMÉ

Crustacea Decapoda : Deux nouveaux genres et deux nouvelles espèces de crabes d'eau profonde formant des galles, provenant de l'Indo-Ouest Pacifique (Cryptochiridae).

Deux nouvelles espèces de crabes d'eau profonde formant des galles sont décrites. *Zibrovia galea*, trouvée sur un corail appartenant au genre *Phyllangia* au large de Madagascar et des Philippines, a une carapace rectangulaire, un front incurvé antérieurement et la région ptérygostomienne non fusionnée avec la carapace. *Luciades agana*, trouvée sur le corail *Leptoseris papyracea* au large de Guam, a une carapace en forme de vase, un front incurvé antérieurement et la région ptérygostomienne fusionnée avec la carapace.

INTRODUCTION

Most described cryptochirid species are known from relatively shallow tropical waters. A few deep-water species have been described. Among the deepest known cryptochirids are *Cecidocarcinus brychius* Kropp & Manning (512 m, KROPP & MANNING, 1987) and *Detocarcinus balssi* (Monod) (98 m, KROPP & MANNING, 1987) both from West Africa and *C. zibrowii* Manning (425-440 m, MANNING, 1991) from the Indo-west Pacific. Here we describe two new species collected on ahermatypic corals from relatively deep (81-137 m) waters in the Indo-west Pacific.

Abbreviations used in the text include : m, meters; Mxp3, third maxilliped; P1-5, first to fifth pereopods (P1 is the cheliped, P2-4 the walking legs). Measurements are given as carapace length x carapace width in mm. The material has been deposited in the collections of the Muséum national d'Histoire naturelle, Paris (MNHN) and the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

SYSTEMATIC ACCOUNT

Family CRYPTOCHIRIDAE Paulson, 1875

Genus *ZIBROVIA* gen. nov.

DIAGNOSIS. — Carapace longer than broad, deflected anteriorly, widest anterior to midlength. Pterygostomian region separated from carapace by suture. Antennule base with lateral projection extending beyond eyestalk; angled lateral lobe absent. Mxp3 with elliptical exopod, longer than half length of outer margin of ischium; anteromesial lobe of ischium extending slightly beyond level of merocarpal articulation; merus with low distolateral projection; carpus as long as propodus and dactylus combined. Sternite of P1 with anterior extension tuberculate, of P4 with complete medial suture. Merus of P2 lacking distomesial expansion.

TYPE SPECIES. — *Zibrowia galea* sp. nov. by present designation and monotypy.

ETYMOLOGY. — Named for Helmut ZIBROWIUS, who brought all of the known specimens to our attention. The gender is feminine.

REMARKS. — In his key to the genera of gall crabs, KROPP (1990 : 419) included nine genera within the group of genera characterized by having the carapace deflected anteriorly. *Zibrowia* can be distinguished from four of those genera, *Fizeserenia* Takeda & Tamura, 1980(a), *Lithoscaptus* Milne Edwards, 1862, *Pelycomaia* Kropp, 1990, and *Troglocarcinus* Verrill, 1908, by the presence of tubercles on the sternite of P1. *Zibrowia* differs from four other genera with the carapace deflected anteriorly, *Cryptochirus* Heller, 1861, *Dacryomaia* Kropp, 1990, *Opecarcinus* Kropp & Manning, 1987, and *Sphenomaia* Kropp, 1990 in having the pterygostomian region separated from the carapace by a suture rather than fused to it. *Zibrowia* differs from the ninth genus in which the carapace is deflected anteriorly, *Neotroglocarcinus* Takeda & Tamura, 1980(b), in having a medial suture on the sternite of P4 and in lacking a distal expansion on the merus of P2. *Zibrowia* can be distinguished from *Luciades*, new genus, described below, which also has the carapace deflected anteriorly, by having a rectangularly-shaped carapace and by having the pterygostomian region separated from the carapace. In *Luciades* the carapace is vase-shaped and the pterygostomian region is fused to the carapace.

Zibrowia contains only the type species, described below.

Zibrowia galea sp. nov.

Figs 1-3

MATERIAL EXAMINED. — **Philippines.** MUSORSTOM 2 : sta. 47, 13°33'N, 122°10.1'E, 81-84 m, on *Phyllangia*, 26 Nov 1980 : 1 ♀, 2.6 x 2.0 mm (holotype, MNHN-B 24921); 1 ovigerous ♀, 2.3 x 1.8 mm (paratype, MNHN-B 24923), 1 ♀, 3.5 x 2.7 mm (paratype, USNM 268889).

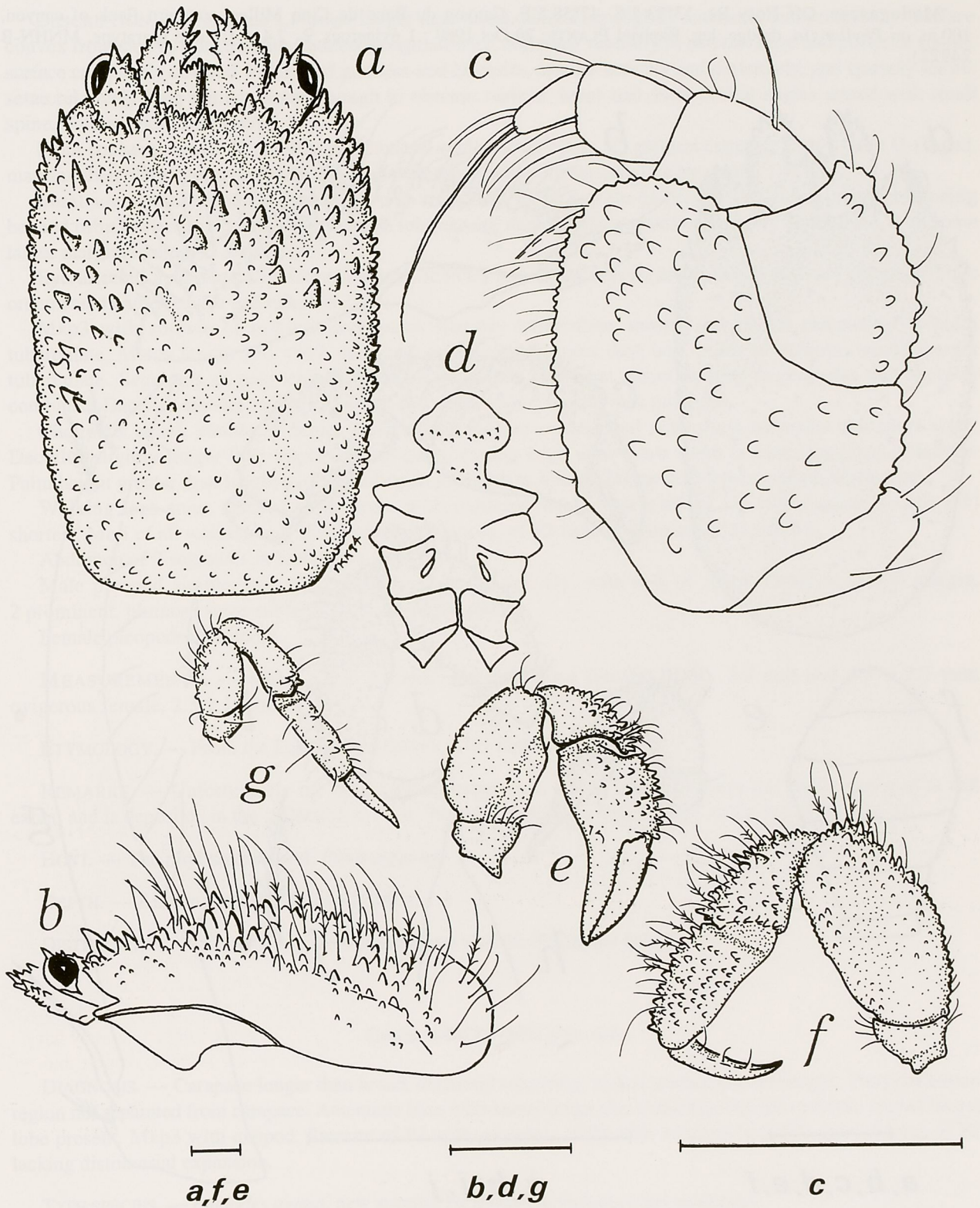


FIG. 1. — *Zibrovia galea* sp. nov., female holotype, 2.6 x 2.0 mm : **a**, carapace, dorsal view; **b**, carapace, lateral view; **c**, Mxp3; **d**, thoracic sternites; **e**, P1; **f**, P2; **g**, P5. Scale : 0.25 (a, f, e); 0.8 mm (b, d, g); 1 mm (c).

Madagascar. Off Nosy Be, 13°23.5'S, 47°58.5'E, Canyon du Banc de Cinq Milles, southern flank of canyon, 100 m, on *Phyllangia*, dredge, leg. Raphael PLANTE, 29 Oct 1969 : 1 ovigerous ♀, 2.4 x 1.7 mm (paratype, MNHN-B 24922).

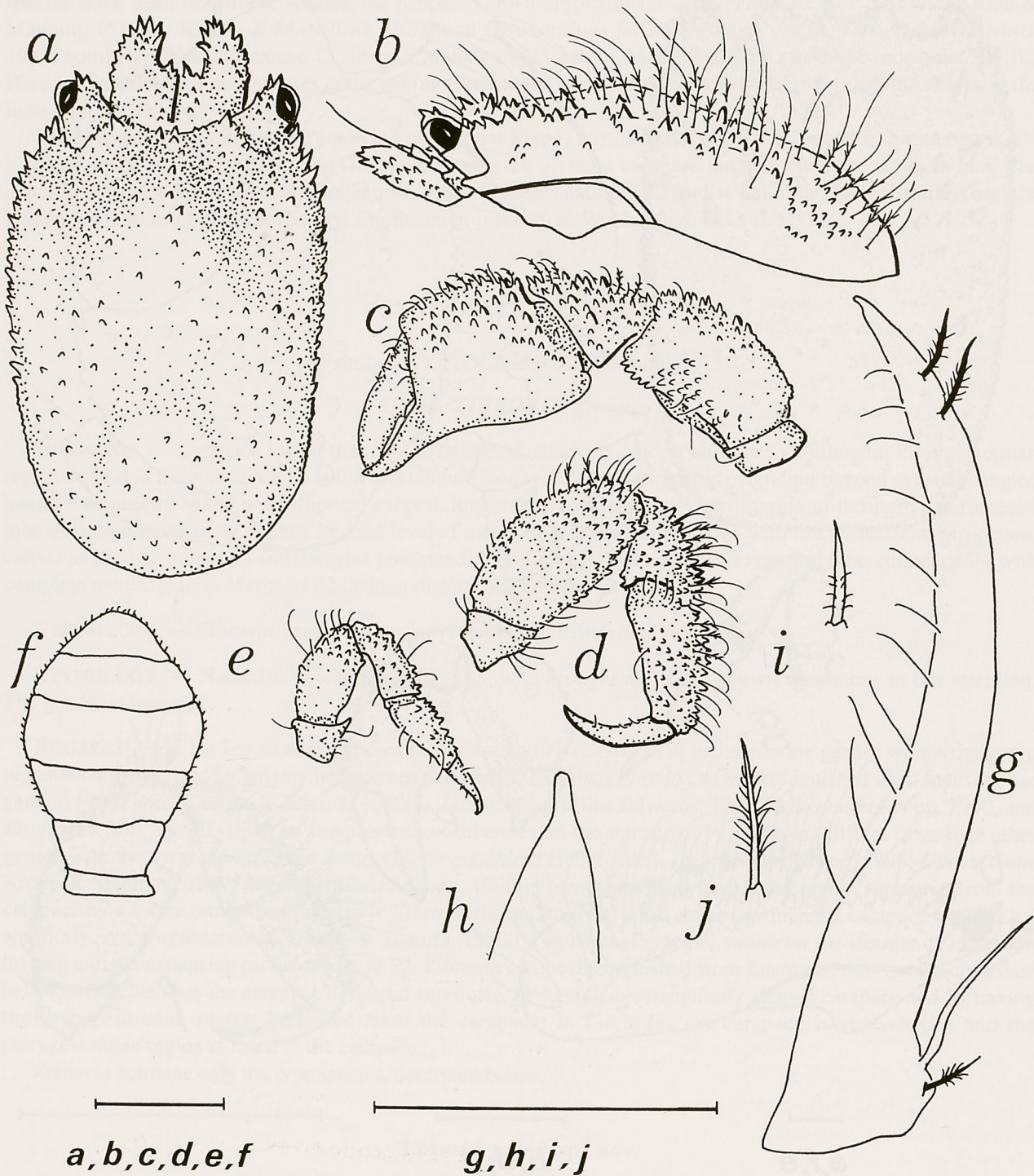


FIG. 2. — *Zibrovia galea* sp. nov., male paratype, 3.3 x 2.4 mm : **a**, carapace, dorsal view; **b**, carapace, lateral view; **c**, P1; **d**, P2; **e**, P5; **f**, abdomen; **g**, Pleopod 1; **h**, apex of pleopod 1; **i-j**, enlargements of gonopod setae. Scale : 1 mm (a-j).

DESCRIPTION. — Carapace 1.4 times longer than broad, narrowing slightly anteriorly and posteriorly. Surface convex from side to side, dorsum flattened longitudinally, deflected ventrally in anterior third and posterior fourth; surface completely covered with raised granules and tubercles, smaller laterally and posteriorly, and sparsely setose, setae relatively long but not dense enough to obscure surface. Inner and outer orbital angles armed with small spine, both at about same level.

Front concave, about 1/2 width at anterolateral angles, latter about 4/5 greatest carapace width. Orbit U-shaped, margin tuberculate. Pterygostomian region completely separated from carapace by suture.

Basal segment of antennular peduncle with transverse distal margin on projection, lateral margin extending beyond orbit but not to cornea, angled lateral lobe absent; dorsal surface concave, variably tuberculate, with some larger marginal tubercles anteriorly.

Eye directed anterolaterally. Cornea lateral, scarcely extending beyond anterolateral angle of carapace. Stalk ornamented with granules and tubercles.

Mxp3 with surface of ischium and merus sparsely tuberculate, mesial and lateral margins of ischium tuberculate. Merus length and width subequal, width slightly more than half width of ischium; lateral margin tuberculate. Segments of palp smooth, carpus longer than propodus, about as long as propodus and dactylus combined. Dactylus slender, width about half that of propodus, shorter than propodus.

Chelipeds equal, visible in dorsal view, dorsal surface ornamented with sharp tubercles and short setae. Dactylus slightly longer than upper edge of palm, cutting edge with 1 low tooth in male, unarmed in female. Palm height greater than length in male, subequal to length in female. Merus with lower surface tuberculate.

Walking legs stout, surface tuberculate, with scattered setae. First walking leg (P2) longest, fourth (P5) shortest. Meri of all walking legs longer than high, merus of P2 lacking distomesial expansion.

Abdomen of 7 segments in both sexes.

Male pleopod simple, curved laterally, constricted apically, with row of simple setae on lateral margin, 2 prominent, plumose setae subterminally on mesial margin.

Female pleopods uniramous.

MEASUREMENTS. — Male, 3.3 x 2.4 mm; non-ovigerous females, 2.6 x 2.0 mm and 3.5 x 2.7 mm; ovigerous female, 2.3 x 1.8 mm.

ETYMOLOGY. — From the Latin *galea*, helmet, after Helmut ZIBROWIUS.

REMARKS. — Unfortunately the only male specimen was lost in transit between us, but its gonopod is still extant and is deposited in the collection at Paris. We have included a figure based on the lost male (Fig. 2).

HOST. — The phyllangiid coral, *Phyllangia* sp.

DEPTH. — Known from depths of 81-100 m.

DISTRIBUTION. — Known only from Madagascar and the Philippine Islands.

Genus *LUCIADES* gen. nov.

DIAGNOSIS. — Carapace longer than broad, deflected anteriorly, widest posterior to midlength. Pterygostomian region not separated from carapace. Antennule base with lateral projection extending beyond eyestalk; angled lateral lobe present. Mxp3 with exopod. Sternite of P1 with granules, of P4 with complete medial suture. Merus of P2 lacking distomesial expansion.

TYPE SPECIES. — *Luciades agana*, new species, by present designation and monotypy.

ETYMOLOGY. — Named for one of the collectors, our colleague Lucius G. ELDREDGE. The gender is feminine.

REMARKS. — In addition to *Luciades*, ten gall crab genera have the carapace deflected anteriorly (see remarks under *Zibrovia*). Among these, *Luciades* can be distinguished from all except *Opecarcinus* and *Neotroglocarcinus* in having a vase-shaped rather than rectangular carapace. *Luciades* can be distinguished from *Neotroglocarcinus* in having a complete medial suture on the sternite of P4. *Luciades* is generally similar to *Opecarcinus*, but differs from that genus in lacking a distal expansion on the merus of P2.

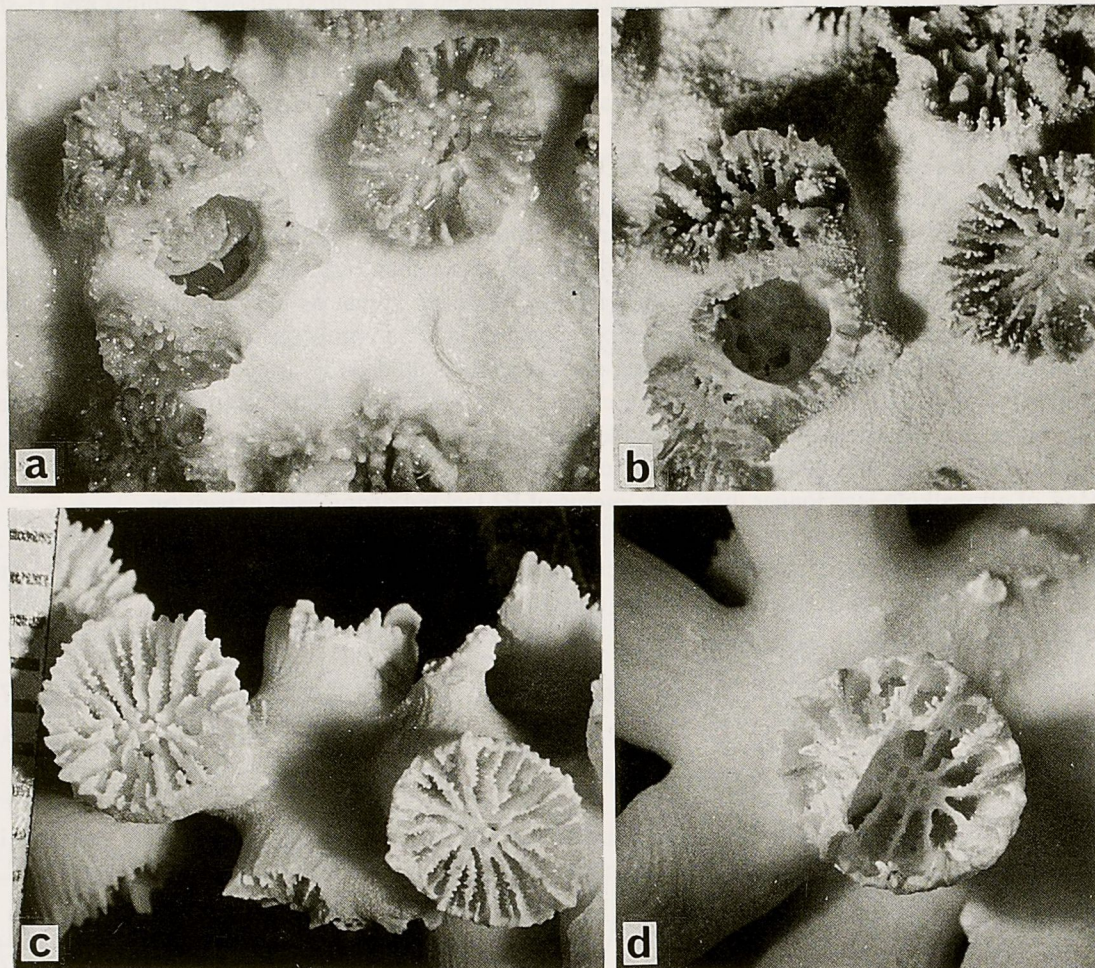


FIG. 3. — Dwellings and host of *Zibrovia galea*: a, crab in crypt within calice of *Phyllangia* sp. Calice measures 5.4 x 6.0 mm, x 4 mm deep, Madagascar; b, same crypt with crab removed; c, normal *Phyllangia* calice, Philippines; d, crab-modified *Phyllangia* calice. Crypt measures 2.8 mm wide, 4 mm deep, Philippines. Scale marks = 1.0 mm.

Luciades agana sp. nov.

Figs 4-5

MATERIAL EXAMINED. — **Guam**. East Agana Bay (Agana = 13°28'N, 144°45'E), 128-137 m, dredged, leg. B. D. SMITH and L. G. ELDRIDGE, 7 Aug. 1986: 1 ♀, 2.3 x 1.9 mm (holotype, USNM 268890).

DESCRIPTION. — Carapace 1.25 times longer than broad, narrowing anteriorly. Surface convex from side to side, unevenly flattened from front to back, deflected in anterior third; anterior surface sparsely covered with low granules; inner and outer orbital angles each with small tubercle, outer orbital angle posterior to inner.

Front concave, slightly less than half width at anterolateral angles, latter about 3/4 carapace width. Orbit V-shaped, margin with low tubercles. Pterygostomian region completely fused to carapace.

Basal segment of antennular peduncle with transverse distal margin on projection, lateral margin extending beyond orbit but not to cornea, with angled lateral lobe. Dorsal surface variably tuberculate, with some larger marginal tubercles laterally.

Eye directed anterolaterally. Cornea lateral, not extending beyond anterolateral angle of carapace. Stalk ornamented with granules and tubercles, largest anteriorly.

Mxp3 with exopod; latter oval, longer than half length of ischium; anteromesial lobe of ischium extending to merocarpal articulation; merus without distolateral projection; carpus longer than propodus or dactylus.

Chelipeds of female equal, visible in dorsal view, dorsal surface ornamented with sharp tubercles and short setae. Dactylus as long as upper edge of palm, cutting edge unarmed. Palm height about half length in female. Merus with lower surface lined with spines.

Walking legs stout, surface tuberculate and spinulose, with scattered setae. Second walking leg (P3) longest, fourth (P5) shortest. Meri of all walking legs longer than high, merus of P2 lacking distomesial expansion.

Abdomen of 7 segments in female.

Female pleopods uniramous.

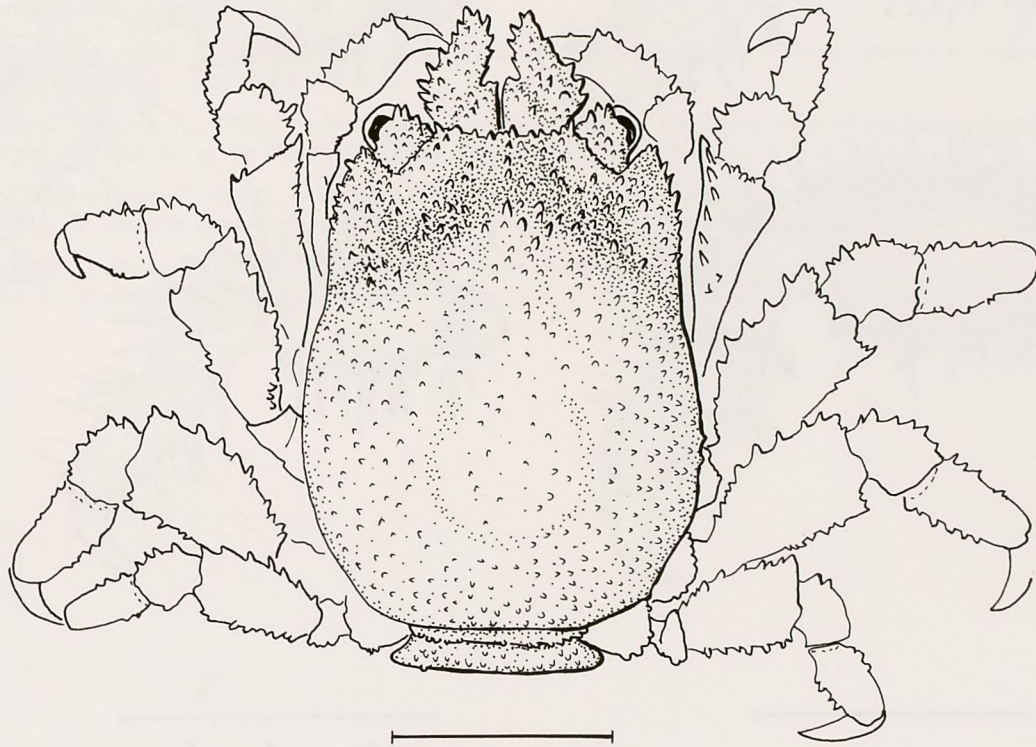


FIG. 4. — *Luciades agana* sp. nov., female holotype, 2.3 x 1.9 mm : dorsal view.

MEASUREMENTS. — Preovigerous female holotype, 2.3 x 1.9 mm.

ETYMOLOGY. — Named after the type locality, Agana Bay, Guam.

HOST. — The pavonid coral *Leptoseris papyracea* (Dana).

DEPTH. — 128-137 m.

DISTRIBUTION. — Known only from the type locality, Agana Bay, Guam.

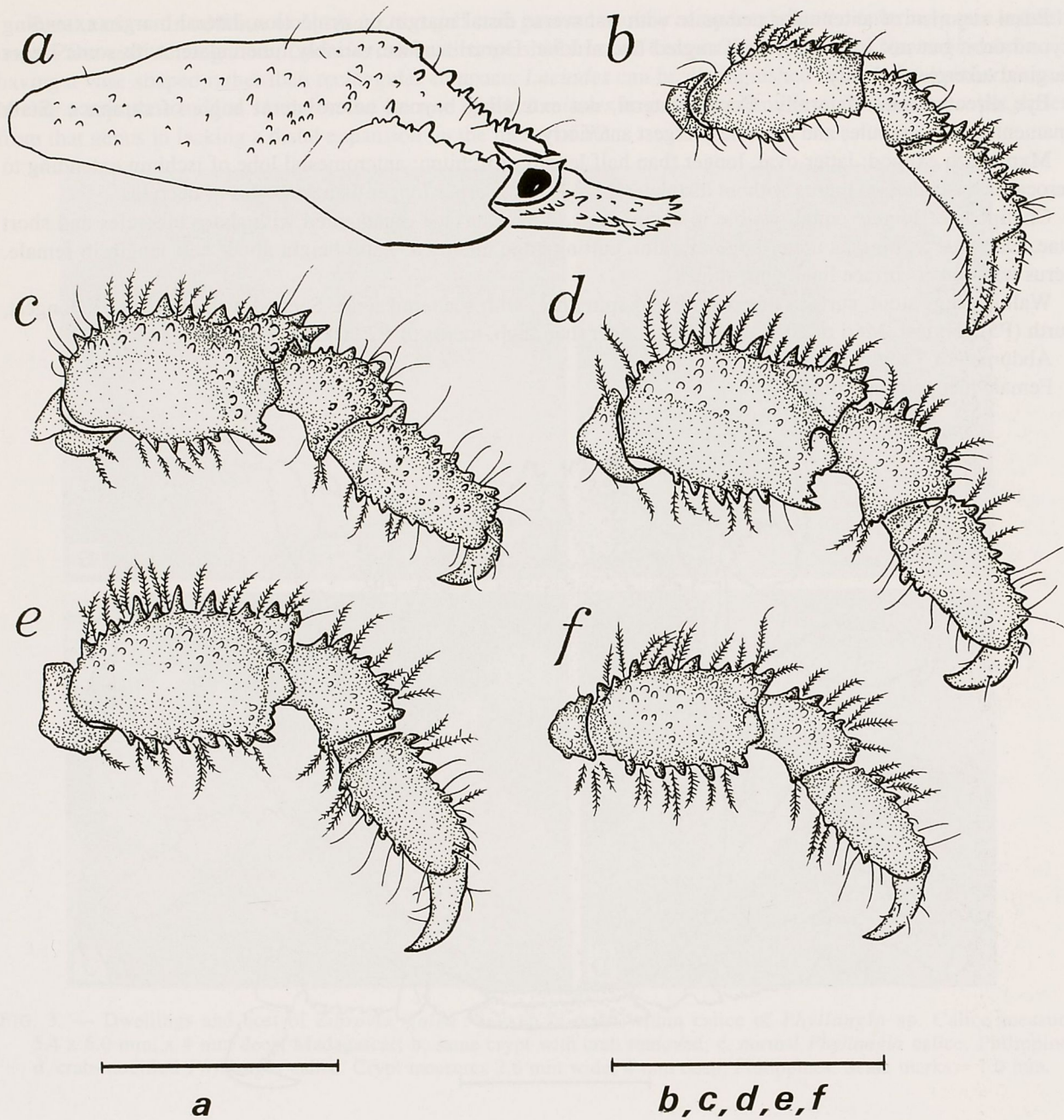


FIG. 5. — *Luciades agana* sp. nov., female holotype, 2.3 x 1.9 mm : **a**, carapace, lateral view; **b-f**, P1-P5. Scale : 1.0 mm (a, b); 0.8 mm (c-f).

ACKNOWLEDGMENTS

We are indebted to Helmut ZIBROWIUS, Station Marine d'Endoume, who found the material of *Zibrowia* and to Alain CROSNIER, ORSTOM and Muséum national d'Histoire naturelle, Paris, who allowed us to study it. We also thank L.G. ELDREDGE and B.D. SMITH, then of the University of Guam Marine Laboratory, who collected the holotype of *Luciades agana* and to R.H. RANDALL, also from the University of Guam Marine Laboratory, for

identifying its host coral. This is contribution number 366 from the University of Guam Marine Laboratory and contribution number 383 from the Smithsonian Marine Station at Link Port, where the original draft of this report was prepared, as an extension of our earlier work on the Atlantic cryptochirids.

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