

Reprinted from the
AUSTRALIAN JOURNAL OF ZOOLOGY

**TWO NEW GENERA AND THREE NEW SPECIES OF CRABS
(DECAPODA: ANOMURA: ALBUNEIDAE) FROM AUSTRALIA***

By I. E. EFFORD† and JANET HAIG‡

[Manuscript received February 26, 1968]

Summary

Austrolepidopa, gen. nov., and *Stemonopa*, gen. nov., are described. *Austrolepidopa* contains two species: *A. schmitti*, sp. nov., from Queensland and *A. trigonops*, sp. nov., from Western Australia. *Stemonopa* is represented by a single species: *S. insignis*, sp. nov., from Western Australia. A key to the genera of Albuneidae is given and the relationships of the new genera are discussed. *Austrolepidopa* is most closely allied to *Lepidopa* and *Stemonopa* to *Albunea*.

INTRODUCTION

This paper is a result of two originally separate studies. In 1964 one of us (I.E.E.) received a small collection of albuneid crabs from Australia, sent by Mr. D. Landenberger. Two specimens from Queensland (P.6369), which had come from the collection of the Australian Museum in Sydney, proved to belong to an undescribed species apparently in *Lepidopa*, a genus only known from the Americas and associated islands. Detailed studies on these specimens and additional material (P.6370) from the Australian Museum showed that the species should be placed in a new genus.

In the meantime the second author (J.H.) found material of another undescribed species among Albuneidae collected in Western Australia and on loan from the Western Australian Museum. This species proved to be allied to the one from Queensland and to be referable to the same new genus, and we decided to report on both of them jointly and to include the description of another new genus and species of Western Australian albuneids.

During a visit to Australia in 1968 the second author searched through the anomuran Crustacea at the Australian Museum and Western Australian Museum without finding any additional material of the three new species. We have determined that there is none in the collections of the Macleay Museum of Natural History (University of Sydney), National Museum of Victoria (Melbourne), South Australian Museum (Adelaide), Queensland Museum (Brisbane), Tasmanian Museum (Hobart), and Queen Victoria Museum (Launceston); nor are any of these species represented in the collections of about two dozen North American, European, and Asian institutions.

* Contribution No. 323 from the Allan Hancock Foundation.

† Department of Zoology, University of British Columbia, Vancouver 8, Canada.

‡ Allan Hancock Foundation, University of Southern California, Los Angeles, California 90007, U.S.A.

This report is the first to deal in any detail with the family Albuneidae in Australia. The literature to date consists solely of two references to the occurrence of *Albunea symnista* (L.) in Western Australia (Rathbun 1924, p. 29; Gordon 1938, p. 187). Western Australian members of the family will be treated by one of us (J.H.) in a further publication.

Measurements used in this paper refer to carapace length and were taken in each case from the median anterior point of the carapace to the level of the postero-lateral angles, and also to the forward edge of the posterior concavity. The second of these measurements is enclosed in brackets.

DESCRIPTION OF GENERA AND SPECIES

AUSTROLEPIDOPA, gen. nov.

Type species *Austrolepidopa schmitti*, sp. nov.

Anterior margin of carapace with a truncate median lobe and 2 triangular lateral lobes. A single lateral spine, situated on the shield above the linea anomurica. Eyes lamellate, longer than broad, and widely separated, with an eyespot but no well-defined cornea. Abdominal somites 2-5 with pleura. Antennular flagellum much longer than carapace, composed of 60 or more articles. Scaphocerite of antenna short; flagellum of 7 or 8 articles. Mandible strong, with 3-segmented palp. Maxillula with upper lacinia broader than lower; palp very broad. Maxilla typical for the family. Endopod of first maxilliped with distinctly separated endites; epipod well developed; palp well developed and long. Exopod of second maxilliped with 2 segments, the terminal one narrow and elongate. Basi-ischium of third maxilliped shorter than merus and unarmed on inner margin; carpus strongly produced anterodorsally over articulation with propodus; exopod with a small basal and 1 or 2 narrow, elongate segments.

The name refers to the close relationship this new genus has with the American genus *Lepidopa*, and to its occurrence in Australia.

AUSTROLEPIDOPA SCHMITTI, sp. nov.

(Figs. 1-4)

Material

Holotype.—Female, 8·8 (7·5) mm, Australian Museum P.15341; ocean beach at Noosa Head, mouth of the Tewantin R., Qld.; 8.viii.1922; collected by A. A. Livingstone.

Paratypes.—22 females, 5·8 (5·1) mm to 10·5 (8·9) mm, collected with the holotype. These are distributed as follows: 13 females, Australian Museum (12, P.6369-70 and 1, P.15342); 2 females, United States National Museum (122072); 2 females, Allan Hancock Foundation (221); 2 females, British Museum (Natural History) (1967.9.2.1-2); and 2 females, Rijksmuseum van Natuurlijke Historie, Leiden (D.23281). One specimen has been retained by the first author (I.E.E.).

Description

Carapace squarish in appearance, only slightly longer than its greatest width; from its widest point it gradually narrows posteriorly. Median lobe of anterior margin low and not greatly projecting; its transverse edge straight or very slightly concave, finely crenulate, and equal to about one-fifth the distance between the tips of the lateral spines. Emargination separating median lobe from each anterior lateral lobe wide, shallow, and obtusely angular. Anterior lateral lobes broadly triangular,

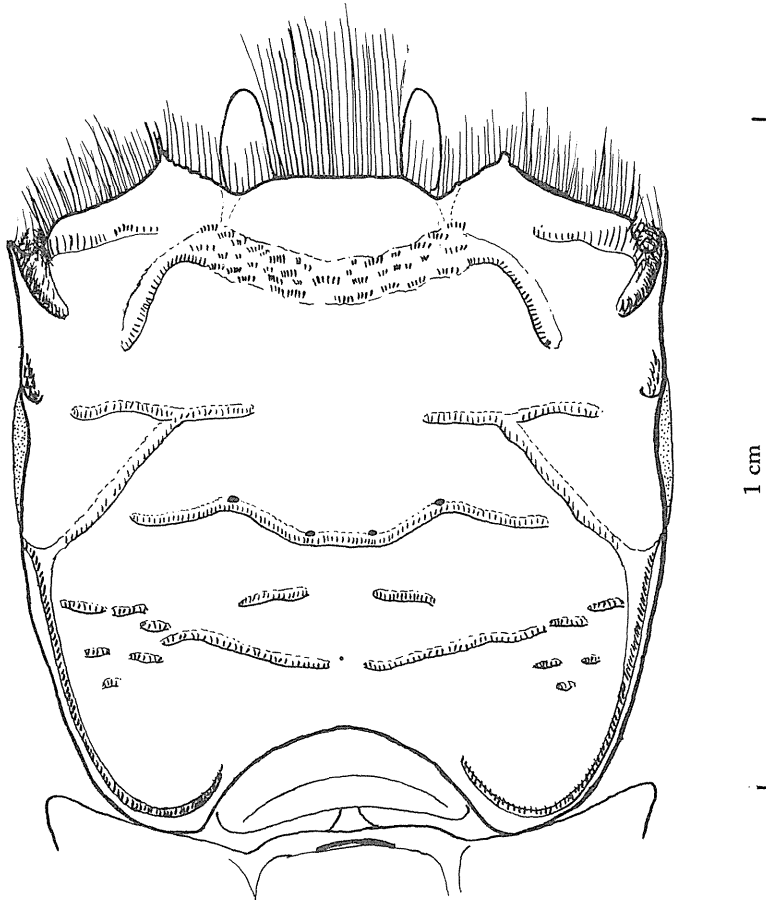


Fig. 1.—*Austrolepidopa schmitti*, holotype. Dorsal view of carapace.

extending well beyond median lobe. Inner side of each anterior lateral lobe straight and finely crenulate, terminating in a blunt or spiniform tooth at tip; this tooth situated half-way between midpoint of anterior margin and tip of lateral spine. From this apical tooth the slightly concave anterior margin (including the rather poorly defined outer side of anterior lateral lobe) runs obliquely backward and outward to the lateral angle. Lateral angle obtuse or somewhat rounded, and separated from lateral spine by a deep, crescent-shaped concavity. Entire anterior

edge of carapace fringed with long, fine, plumose setae; the longest of these found along transverse portion of median lobe where they extend beyond the eyes.

Upper surface of carapace conspicuously marked with shallow, rough depressions. Each of the narrower depressions contains a row of short setules; the most anterior depression broader than the others and the setules arranged in a number of scattered groups, usually about 5 to a group, rather than in a single row.

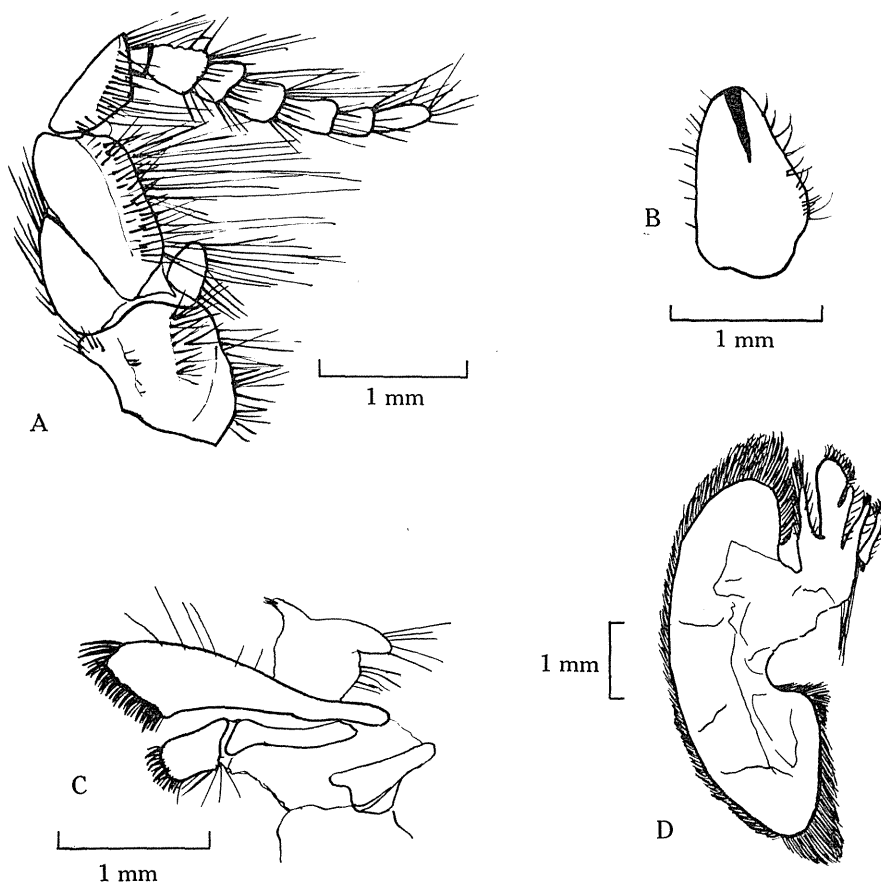


Fig. 2.—*Austrolepidopa schmitti*, paratype. A, right antenna, mesial view, showing small scaphocerite; B, right eye; C, maxillula; D, maxilla.

Posterior margin of carapace with a large central semicircular concavity; smoothly rounded on either side of this emargination. Anterior part of lateral wall of carapace, below linea anomurica, composed of a large, nearly smooth plate; posterior part membranous with numerous small, close-set calcified plates. Lateral wall clothed with long, fine, plumose hairs. In preserved specimens, carapace dull white with a distinct iridescence.

Eye peduncles roughly conical or like a triangle with rounded corners; some intraspecific variation occurs in length/width ratio. Inner margin slightly convex and

tip rounded; proximal third of outer margin somewhat produced laterally, distal two-thirds straight. Outer margin appears convex when crab viewed in dorsal aspect. Distal end of eye with a dark pigment streak; in some specimens this pigment retracted to centre of, or even close to base of, the peduncle; in other specimens no pigment visible.

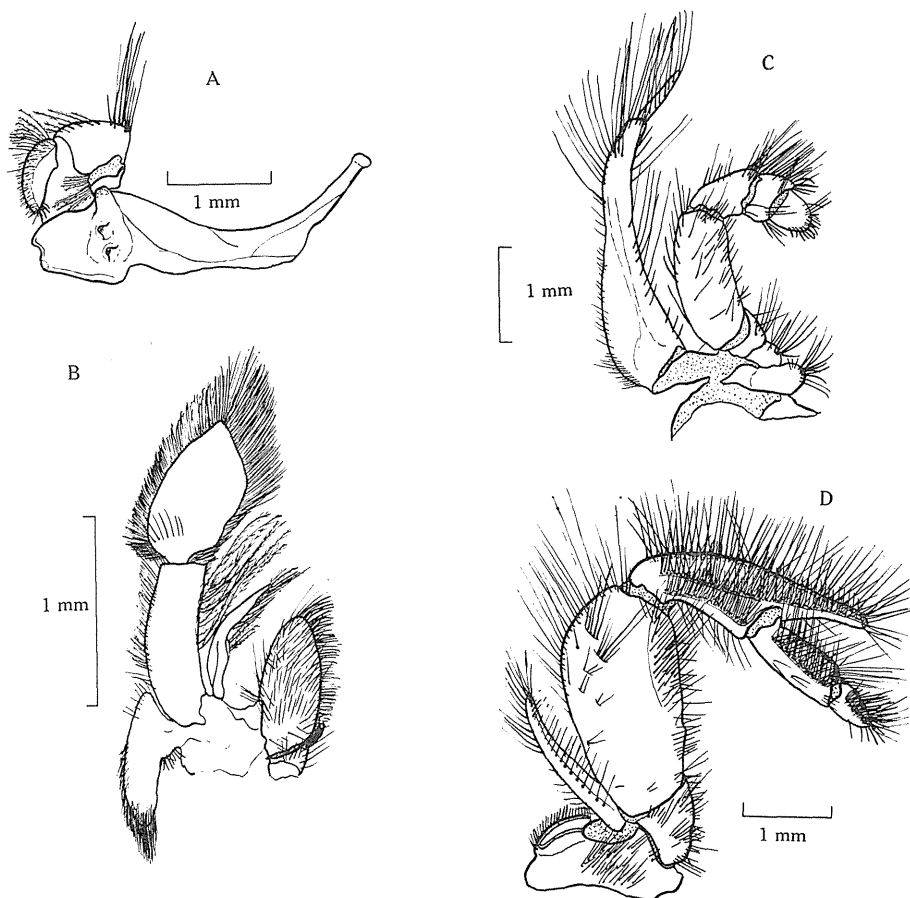


Fig. 3.—*Austrolepidopa schmitti*, paratype. A, right mandible, dorsal view; B, right first maxilliped, ventral view; C, right second maxilliped, ventral view; D, right third maxilliped, ventral view.

First abdominal somite partially covered by carapace; a well-marked, convex, transverse carina near its distal margin. Second with large pleura, faintly sinuous along their proximal edge. Pleura of third, fourth, and fifth somites well developed but considerably narrower than those of somite 2. Sixth somite without pleura; almost square in general form but lateral margins with a slight expansion at distal end and a slight restriction near proximal end. Form of male telson unknown. Female telson about six-sevenths as broad as long, its widest part slightly less than half-way from proximal end; lateral edges evenly convex and tip broadly rounded.

Antennular peduncle rather heavy. Third segment slightly shorter than second, laterally compressed and constricted near proximal end; in dorsal view appearing straight and a little less robust than second. Flagellum very long and delicate with approximately 60–85 articles. Short, accessory flagellum of 2 articles, not extending beyond end of first article of longer flagellum.

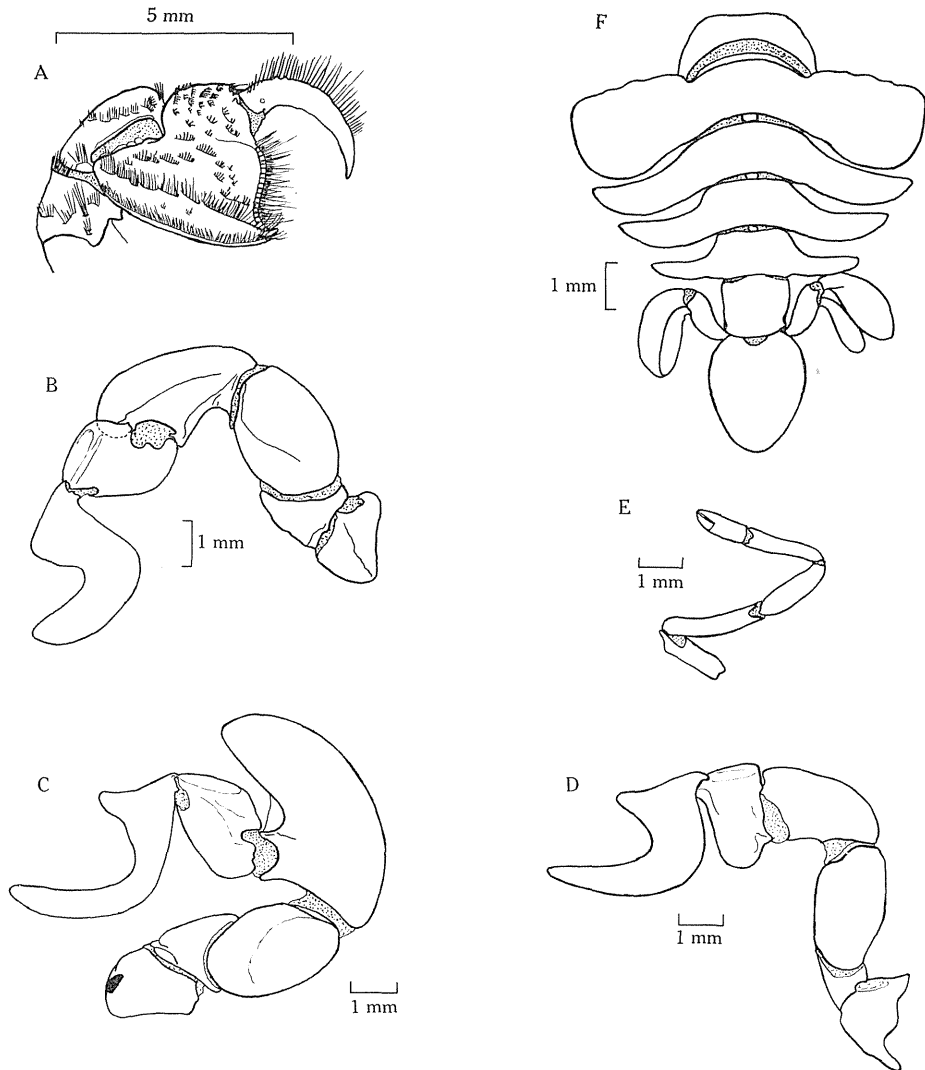


Fig. 4.—*Austrolepidopa schmitti*, paratype. *A*, right pereiopod 1; *B*, left pereiopod 2; *C*, left pereiopod 3; *D*, left pereiopod 4; *E*, left pereiopod 5; *F*, abdomen, dorsal view.

Basal segment of antenna robust, extending medially as a flattened plate. Scaphocerite rounded at tip and short, reaching only one-quarter of length of fourth segment of peduncle. Antennal flagellum composed of 7 articles, the second, third, and fourth stouter than the others.

Long cutting edge of mandible, ventral to grinding surface, terminates at either end in a small tooth; grinding surface with larger blunt tooth at distal end and 2 distinct blunt teeth at proximal end.

Coxal endite of first maxilliped with 3 distinct, terminal, stout setules on dorsal side, hidden amongst the fine plumose hairs. Exopod of 2 distinct segments; distal one broader for most of its length but narrowing to a pointed tip.

Terminal segment of exopod of second maxilliped extending beyond endopod.

Dactylus of third maxilliped about half length of propodus. Anterodistal extension of carpus reaches distal end of propodus. Exopod with a long, narrow segment extending more than half length of merus.

First pereopods subchelate. Dactylus sickle-shaped, with a row of long setae along proximal 80% of outer margin; lateral surfaces smooth; cutting edge smooth and without teeth. Fixed finger with a row of short, stout setules on cutting edge, closely packed but in occasional specimens interrupted by 3–7 distinct, widely spaced small teeth or tubercles; outer and inner surfaces each with a row of long setae, arising proximal to cutting edge and filling gape of fingers; tip narrow and acute. Outer surface of palm covered by series of short ridges, each lined by setae. A long, uninterrupted ridge, close to and parallel with the lower edge, extends from fixed finger almost to lower proximal angle of the segment; above and subparallel with it a similar but broken ridge. Inner surface of palm much smoother, with only a few short ridges except along lower edge; latter paralleled by a ridge similar to that along outer lower edge, but interrupted in its proximal half.

Dactylus of second pereopod relatively broad and sickle-shaped; on both inner and outer margins the basal portion meets the distal portion at almost a right angle. Basal part of outer margin nearly straight; distal part forms an even curve. Basal part of inner margin straight; indented portion convex in its proximal and concave in its distal half. Carpus produced dorsally, extending over proximal part of propodus.

Dactylus of third pereopod clearly sickle-shaped and much narrower than that of second. Outer margin and indented portion of inner margin smoothly rounded. Basal part of inner margin extended into a distinct projection or spur. Carpus with a very large lobe, produced anteriorly over propodus and extending to distal end of that segment.

Dactylus of fourth pereopod sickle-shaped, tapering towards distal end. Outer margin and indented part of inner margin smoothly rounded. Basal part of inner margin forms a distinct triangular projection.

Fifth pereopod slender and chelate.

Pereopods 2–5 decorated with long, fine, plumose hairs.

Remarks

Five specimens in the type series have buds on abdominal somites 2–5 instead of the long, 3-segmented pleopods typical of female albuneids; in the same five individuals the genital openings on the coxae of pereopods 3 are somewhat smaller than normal. These appear to be juveniles in which the female characteristics are just

beginning to develop, a supposition that is strengthened by the fact that four of the five are among the smallest specimens in the series. The fifth specimen is 7.9 (6.7) mm long, larger than several individuals with large genital openings and fully developed pleopods.

The specific name *schmitti* has been given in recognition of the contributions of Dr. W. L. Schmitt of America has made in the field of carcinology.

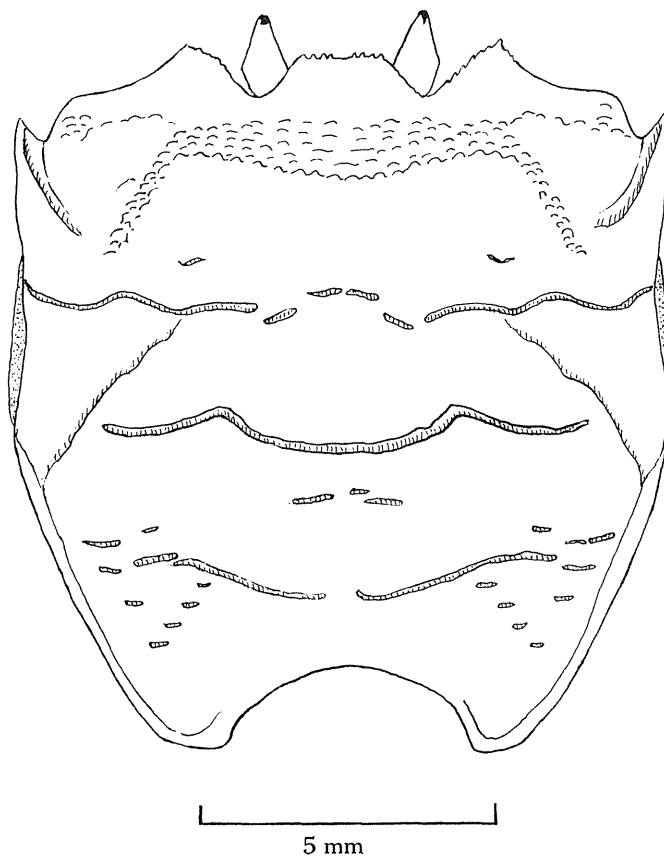


Fig. 5.—*Austrolepidopa trigonops*, holotype. Dorsal view of carapace. Most setae are omitted.

AUSTROLEPIDOPA TRIGONOPS, sp. nov.

(Figs. 5–7)

Material

Holotype.—Female, 11.9 (10.4) mm, Western Australian Museum 62–62; 5 miles N. of E. end Rottnest I., W.A.; 19½ fm, sand; 7.v.1960; collected by R. W. George on “Davena”.

Paratypes.—Female, 16.7 (13.9) mm, W.A.M. 72–62; near bar of South Passage, Shark Bay, W.A.; 6 fm, sand and silt; 14.v.1960; coll. R. W. George on “Davena”. Female, 12.3 (10.7) mm, W.A.M. 316–62; Beagle I., W.A.; dredged; 1.v.1962; coll. Poole Brothers.

Description

Carapace squarish in appearance, only slightly longer than its greatest width; from its widest point it gradually narrows posteriorly. Median lobe of anterior margin low but well defined; its transverse edge straight with a few distinct crenulations, and equal to less than one-sixth the distance between tips of lateral spines. Emargination

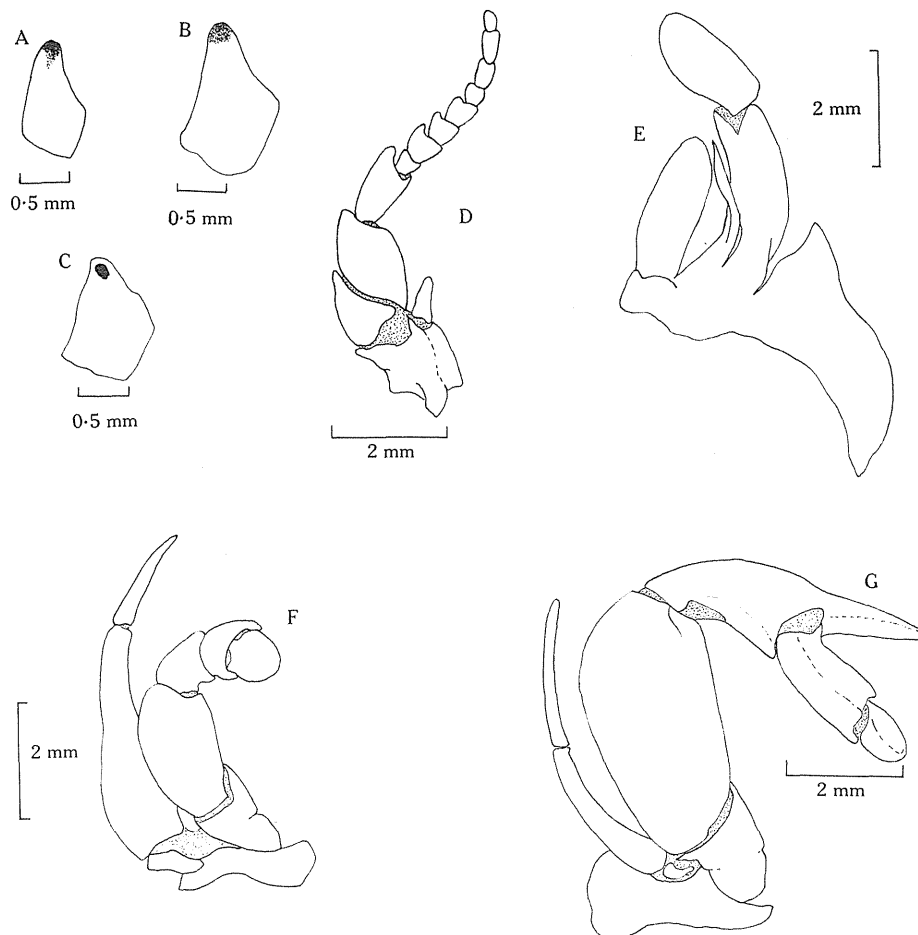


Fig. 6.—*Austrolepidopa trigonops*. A, right eye, holotype; B, same, paratype, W.A.M. 72-62; C, same, paratype, W.A.M. 316-62; D, paratype, right antenna, mesial view; E, paratype, right first maxilliped, dorsal view; F, paratype, right second maxilliped, ventral view; G, paratype, right third maxilliped, ventral view. Setae are omitted.

separating median lobe from each anterior lateral lobe deep and subrectangular (shallow and obtuse in largest specimen). Anterior lateral lobes broadly triangular, extending beyond median lobe. Inner side of each anterior lateral lobe straight or slightly convex and finely crenulate, terminating in a blunt or spiniform tooth at tip; distance between this tooth and midpoint of anterior margin less than distance between the tooth and tip of lateral spine. From this apical tooth the slightly concave

anterior margin (including the rather poorly defined outer side of anterior lateral lobe) runs obliquely backward and outward to lateral angle. Lateral angle obtuse or somewhat rounded, and separated from lateral spine by a deep, V-shaped concavity. Entire anterior edge of carapace fringed with long, fine, plumose setae; the longest of these found along transverse portion of median lobe where they extend beyond the eyes.

Upper surface of carapace conspicuously marked with shallow, rough depressions, these decorated with setules as described for *A. schmitti*. Posterior margin of carapace with a large central semicircular concavity; rather evenly rounded

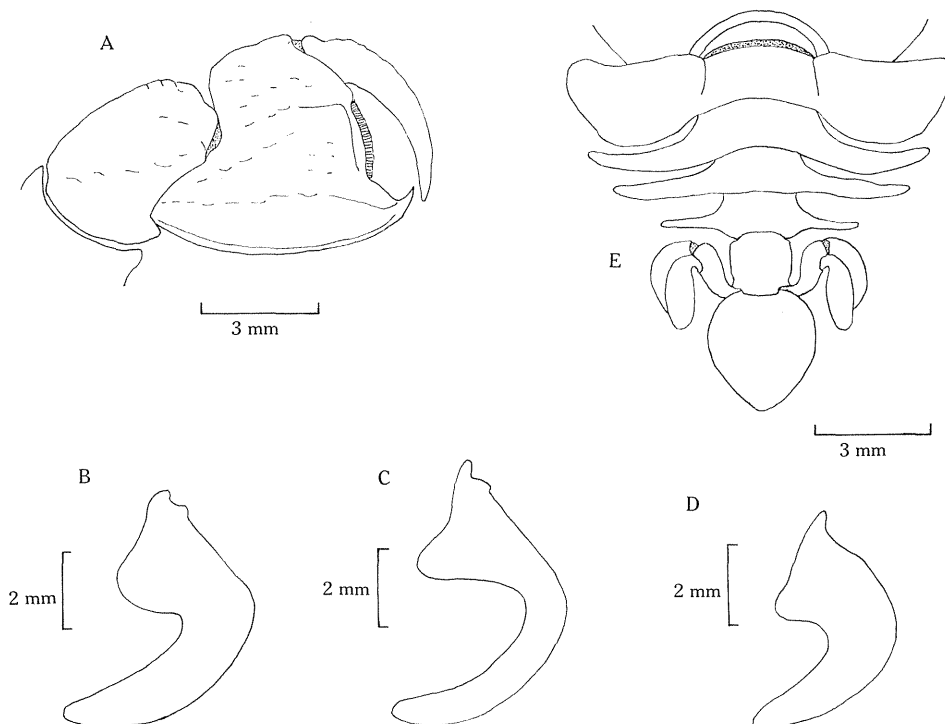


Fig. 7.—*Austrolepidopa trigonops*. A, paratype, right pereiopod 1; B, C, D, paratype, dactyl of left pereiopods 1, 2, and 3, respectively; E, holotype, abdomen, dorsal view. Setae are omitted.

on either side of this emargination. Anterior part of lateral wall of carapace, below linea anomurica, composed of a large, nearly smooth plate; posterior part membranous with numerous small, close-set calcified plates. Lateral wall clothed with long, fine, plumose hairs. In preserved specimens, carapace dull white and only very faintly iridescent.

Eye peduncles distinctly angular; some intraspecific variation occurs in length/width ratio (Figs. 6A–6C). Inner margin slightly convex to concave; proximal third to half of outer margin strongly produced laterally and forming an angle with distal portion, latter straight to concave and narrowing sharply to a rounded tip. Angulation of outer margin plainly visible and tip pointed when crab viewed in dorsal aspect. In our specimens the eye pigment confined to the narrow tip.

Abdominal somites 1–6 much as in *A. schmitti*. Form of male telson unknown. Female telson only slightly longer than broad, its widest part about midway along lateral edges; lateral edges evenly convex and tip rounded.

Antennular peduncle similar to that of *A. schmitti*. Flagellum very long and delicate, with about 65 segments. Short, accessory flagellum of 3 articles, distal one extending beyond end of first article of longer flagellum. (In the larger paratype it has 4 articles and extends beyond end of second article of longer flagellum.)

Basal segment of antenna robust, extending medially as a flattened plate. Scaphocerite conical with rounded tip, somewhat more elongate than in *A. schmitti*. Antennal flagellum composed of 8 articles, the second, third, and fourth stouter than the others.

Mandible toothed as in *A. schmitti*.

Exopod of first maxilliped of 2 distinct segments, subequal in breadth for most of their length; inner edge of terminal segment forms an even curve and tip rounded.

Second maxilliped like that of *A. schmitti*.

Dactylus of third maxilliped about half length of propodus. Anterodistal extension of carpus reaches distal end of propodus. Exopod with 2 long, narrow segments; proximal one extends more than half length of merus, distal one reaches end of that segment.

Pereiopods very similar to those of *A. schmitti*; the projection or spur on dactyli of pereiopods 3 and 4 less distinct than in that species.

Remarks

In the holotype, which is the smallest but best preserved of the three specimens, the pleopods are only partly developed and the genital openings rather small. This suggests that it may not be fully mature. Nevertheless, it is larger than the largest individual in the type series of *A. schmitti*, and a consistently smaller size may be characteristic of the latter species.

Other important distinguishing characters are the following: (1) The relative width of the median lobe and the position of the anterior lateral lobes are different in the two species. (2) In *A. schmitti* the most anterior narrow transverse depression of the carapace is broadly interrupted medially and laterally; in *A. trigonops* this depression extends from one side of the shield to the other and is only interrupted near the midline, where it is broken up into a few short pieces. (3) In *A. schmitti* the outer margin of the eyes is convex and the tip rounded when the crab is viewed in dorsal aspect; in *A. trigonops* the outer margin is distinctly angular and the tip pointed. (4) In *A. schmitti* the female telson is about six-sevenths as broad as long, the widest part slightly less than half-way from the proximal end; in *A. trigonops* it is almost as broad as long, with the widest part about midway along the lateral margins. (5) In *A. schmitti* the exopod of the third maxilliped has a single, long, narrow segment; in *A. trigonops* there are 2 such segments.

The species name is from the Greek *trigonos*, triangular, and *ops*, eye.

STEMONOPA, gen. nov.

Type species *Stemonopa insignis*, sp. nov.

Anterior margin of carapace with a semicircular median sinus, flanked on either side by a row of spines. A single lateral spine, situated on the lateral plate below the linea anomurica. Eyes contiguous, laterally broadened, and dorsoventrally flattened in their basal portion; otherwise subcylindrical, very slender, flexible, and enormously elongate, their length exceeding that of carapace; apices with a well-defined cornea. Abdominal segments 2–4 with pleura. Antennular flagellum composed of about 45 articles. Scaphocerite of antenna elongate; flagellum of 7 articles. Endopod of first maxilliped with distinctly separated endites; epipod well developed; palp well developed and long. Exopod of second maxilliped with 2 segments, the terminal one narrow and elongate. Basi-ischium of third maxilliped shorter than merus and unarmed on inner margin; carpus strongly produced anterodorsally over articulation with propodus; exopod with a small basal and a narrow, elongate, terminal segment.*

The generic name is derived from the Greek *stemon*, thread, and *ops*, eye; the latter is spelled *opa* by analogy with *Lepidopa* and *Zygopa*, names already in use in the family Albuneidae.

STEMONOPA INSIGNIS, sp. nov.

(Figs. 8–10)

Material

Holotype.—Female, 12.1 (10.4) mm, Western Australian Museum 61–62; N. of Maud's Landing, Point Maud, W.A., 5 miles offshore; 31 fm, coral rubble; 2.v.1960; collected by R. D. Royce on "Davena".

Description

Carapace a little longer than broad; from its broadest point it narrows rather abruptly toward the posterior end. Anterior margin deeply concave medially behind bases of eyes; each outer margin of this concavity defined by a strong spine, the concavity itself unarmed. Anterior margin shallowly concave at either side of median sinus, becoming convex more laterally; armed with 7 large spines on either side, largest of which are the one defining outer margin of median sinus, and 3 situated on the outer, convex portion of armed area. Spaces between the large spines occupied by very small ones; in general the spines alternate one large and one small. From the outermost spine, anterior margin slopes obliquely backward and outward to lateral corner; latter poorly defined, meeting lateral margin in a shallow curve. Entire anterior edge of carapace fringed with long, fine, plumose setae; longest and most close-set of these line the median sinus.

Upper surface of carapace conspicuously sculptured with flattened granules anteriorly and with shallow transverse grooves; each groove and anterior side of each granule with a row of short setules. Posterior margin of carapace deeply concave,

* Since only one specimen was available, the rest of the mouthparts were not dissected out for detailed examination.

and smoothly rounded on either side of this emargination. Anterior part of lateral wall of carapace covered with large, imbricate squamae, their forward edges raised so that, in dorsal aspect, visible portion of lateral wall appears to have a sharply crenulate margin. Forward portion of this area with a distinct spine, directed forward and outward, its tip reaching about to level of lateral corner. Posterior part of lateral wall membranous with numerous small, close-set calcified plates. Entire lateral wall clothed with long, fine, plumose hairs. Carapace chalky white, without iridescence.

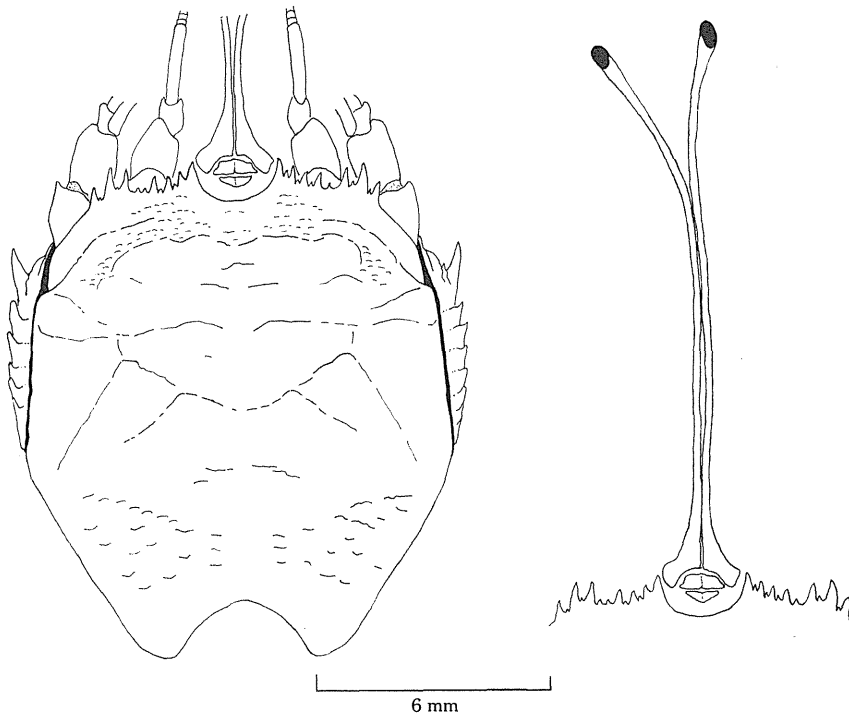


Fig. 8.—*Stemonopa insignis*, holotype. Dorsal view of carapace and eyes. Setae are omitted.

Proximal tenth of eyestalks contiguous, laterally broadened, and dorsoventrally flattened. Beyond this broad basal portion eyes subcylindrical, very slender, and flexible; in the type specimen their length one-fifth again that of carapace. Toward apex they again broaden slightly; tip provided with a well-defined, faceted cornea. Behind bases of eyes and within median sinus of carapace lies a laterally elongate, calcified plate, its posterior edge longer than anterior; behind this plate a smaller one, its anterior edge transverse and its posterior edge convex. Both these calcified plates longitudinally grooved along the midline.

First abdominal somite partially covered by carapace; a well-marked, convex, transverse carina near its distal margin. Second, third, and fourth somites with well-developed pleura; those of second somite largest and broadest, those of third and fourth relatively narrow. Lateral margins of fifth somite distinctly convex and angular. Sixth somite broader than long; subrectangular in general form but lateral

margins with a slight expansion at distal end and a slight restriction near proximal end. Form of male telson unknown. Female telson about four-fifths as broad as long, its widest part about midway along lateral edges; lateral edges convex and tip rounded.

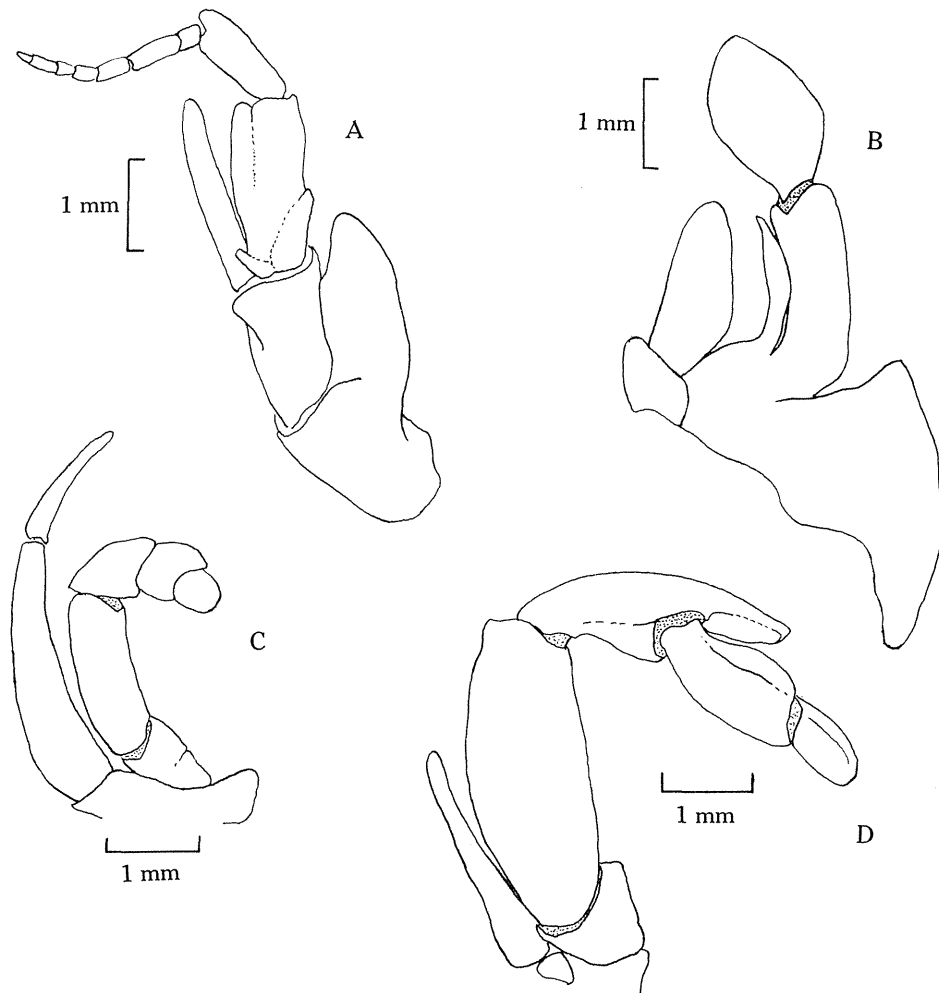


Fig. 9.—*Stemonopa insignis*, holotype. A, right antenna, outer lateral view; B, right first maxilliped, dorsal view; C, right second maxilliped, ventral view; D, right third maxilliped, ventral view. Setae are omitted.

First 2 segments of antennular peduncle rather heavy; third narrower than, but about the same length as, second. Flagellum with about 45 articles, about as long as eyestalks and extending beyond them by nearly half its length; for most of its length it is thicker than the eyestalks. Short accessory flagellum composed of 4 articles; it does not reach beyond second article of longer flagellum.

Basal antennal segment broad, extending medially as a flattened plate. Scaphocerite large and elongate, reaching distal end of fourth segment of peduncle. Flagellum composed of 7 articles, the second longest.

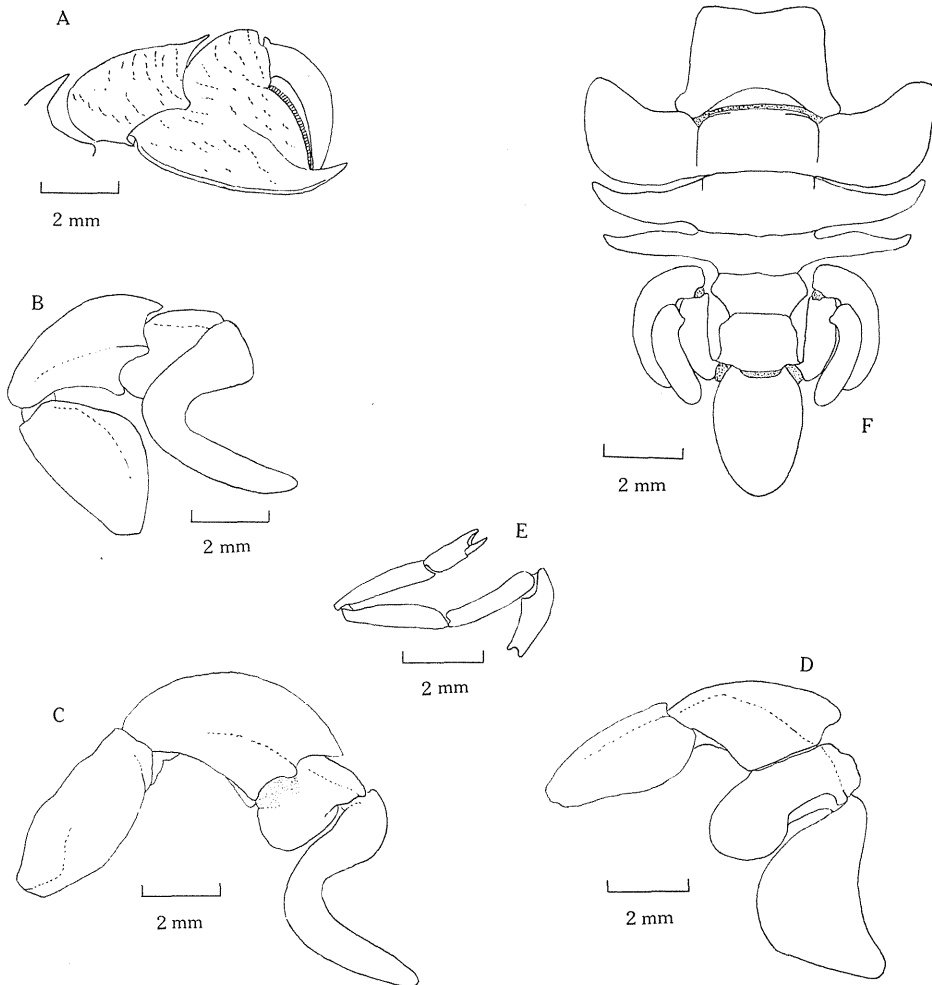


Fig. 10.—*Stemonopa insignis*, holotype. A, right pereopod 1; B, right pereopod 2; C, right pereopod 3; D, right pereopod 4; E, right pereopod 5; F, abdomen, dorsal view. Setae are omitted.

Exopod of first maxilliped composed of 2 segments, the distal one broader for most of its length.

Terminal segment of exopod of second maxilliped extending beyond endopod.

Dactylus of third maxilliped a little over half length of propodus. Anterodistal extension of carpus reaches onto distal third of propodus. Terminal segment of exopod long and stout, extending more than half length of merus.

First pereopods subchelate. Dactylus sickle-shaped, with a row of long setae along outer margin, these only absent near tip; lateral surfaces smooth; cutting edge smooth, without teeth. Fixed finger with a row of short, stout, closely packed setules on cutting edge; outer and inner surfaces each with a row of long setae, arising proximal to cutting edge and filling gape of fingers; tip narrow, acute. Outer surface of palm covered by numerous short ridges, each lined by setae. A long, uninterrupted ridge, close to and parallel with the lower edge, extends from fixed finger almost to lower proximal angle of the segment. Inner surface of palm with a similar ridge; surface otherwise smoother and with fewer ridges than outer surface. A strong, distally directed spine at anterodistal angle of carpus.

Dactylus of second pereopod sickle-shaped. Basal part of outer margin nearly straight, distal part evenly curved. Basal part of inner margin straight and forming nearly a right-angle with indented portion; indented portion concave in its proximal and nearly straight in its distal half. Carpus somewhat produced dorsally, over-reaching articulation with propodus.

Dactylus of third pereopod approximately same breadth as second; similar to second in shape, except that basal part of inner margin is evenly convex without an angle where it joins indented portion. Anterodistal angle of carpus projects over articulation with propodus.

Dactylus of fourth pereopod stout and roughly semicircular; tip bluntly narrowed and rounded. Outer margin forms a more or less even curve in proximal two-thirds; distal third straight. Basal part of inner margin rounded and convex, indented portion very shallowly concave.

Fifth pereopod slender and chelate.

Pereopods 2-5 decorated with long, fine, plumose hairs.

Remarks

The species name is from the Latin *insignis*, extraordinary, in reference to the eystalks.

DISCUSSION

Gordon (1938) redefined and discussed the differences between the albuneid genera *Lepidopa* Stimpson and *Albunea* Fabricius. Shen (1949) did the same for the other two genera known at that time, *Blepharipoda* Randall and *Lophomastix* Benedict, and provided a key to all four genera. A fifth genus, *Zygopa*, was described by Holthuis (1960), and all five were differentiated in a key by Serène and Umali (1965). With the addition of two more genera to the family, it now becomes necessary to present a new key and to consider the positions of *Austrolepidopa* and *Stemonopa* within the Albuneidae.

KEY TO GENERA OF THE FAMILY ALBUNEIDAE

1. Carapace with 3 or 4 lateral spines; basi-ischium of third maxillipeds with a row of teeth on inner margin2
- Carapace with a single lateral spine; basi-ischium of third maxillipeds unarmed3
- 2 (1). Carapace with 4 lateral spines; eyes divided into 2 segments by a median articulation*Blepharipoda*
- Carapace with 3 lateral spines; eyes not articulated*Lophomastix*

- 3 (1). Lateral spine of carapace above linea anomurica 4
 Lateral spine of carapace below linea anomurica 6
- 4 (3). Anterior margin of carapace with a median concavity; eyes fused together into a yoke-shaped structure *Zygopa*
 Anterior margin of carapace without a median concavity; eyes separated, lamelliform ... 5
- 5 (4). Anterior margin of carapace with a median triangular or rounded lobe; eyes nearly or quite as broad as long, less than an eye-width apart *Lepidopa*
 Anterior margin of carapace with a median truncate lobe; eyes narrow, separated by at least a distance equal to the width of the eye plate *Austrolepidopa*
- 6 (3). Eyes lamelliform *Albunea*
 Eyes broad and flattened at base, otherwise cylindrical, slender, and extremely elongate. . . . *Stemonopa*

In several respects *Blepharipoda* and *Lophomastix* stand apart from all other genera in the family. Among the characters that distinguish them the most notable are the following: (1) the carapace has 3 prominent anterior teeth and 3 or 4 lateral spines; (2) the antennal flagellum is composed of 9 or more segments; and (3) the basi-ischium of the third maxillipeds has a row of strong teeth along the inner margin. The following characters separate *Zygopa* from all other genera: (1) the eyes are reduced and fused together into a yoke-shaped structure; (2) the antennal flagellum is composed of only 1 segment; and (3) the exopod of the third maxillipeds is lamelliform. The remaining genera fall into two natural groups, one containing *Lepidopa* and *Austrolepidopa*, the other *Albunea* and *Stemonopa*; *Zygopa* shares some characters with each of these. Certain characters of these five genera are compared in Table 1.

TABLE 1
 SOME DISTINGUISHING CHARACTERS OF FIVE GENERA OF ALBUNEIDAE

Character	<i>Zygopa</i>	<i>Lepidopa, Austrolepidopa</i>	<i>Albunea, Stemonopa</i>
Anterior carapace margin	Median concavity Two submedian and 2 intermediate teeth	Median lobe Two anterolateral lobes	Median concavity Row of spines*
Lateral spine	Above linea anomurica	Above linea anomurica	Below linea anomurica
Pleura on fifth abdominal somite	Absent	Present	Absent†
Scaphocerite of antenna	Long	Short	Long

* Absent or greatly reduced in a few species of *Albunea*.

† Probably in all species of *Albunea*.

Austrolepidopa is very closely allied to *Lepidopa*. Aside from the characters listed in Table 1, they agree in the following: (1) eyes lamellate, usually with pigment but without a well-defined cornea; (2) antennal flagellum of 7 or 8 articles; (3) carpus of third maxilliped strongly produced anterodorsally, reaching nearly or quite to distal end of propodus.

The differences which separate the two genera are relatively slight. In *Austrolepidopa* the median lobe on the anterior margin of the carapace is truncate, while in most *Lepidopa* it is in the form of a triangle with pointed tip; however, in a few species, e.g. *Lepidopa myops* and some undescribed forms, this rostral region is only

slightly convex and in this closely resembles *Austrolepidopa*. The eyes are farther apart in *Austrolepidopa* and, in general, longer in proportion to the width, although some species of *Lepidopa* have eyes approaching them in shape (Gordon 1938, text-figs. 2a-2f). In *Austrolepidopa* the posterior margin of the carapace is rounded on either side of the median concavity, not distinctly truncate as in most *Lepidopa*.

Stemonopa and *Albunea* share a few characters besides those listed in Table 1, but there is some variation in these characters among the more than a dozen species currently recognized in the latter genus. *Stemonopa* resembles some, but not all, *Albunea* spp. in that the eyes have a terminal, well-defined cornea. The antennal flagellum has a similar number of articles (7 in *Stemonopa*, 6-8 in *Albunea*). In *Stemonopa* the structure of the dactylus of the fourth pereopod is similar to that of most species of *Albunea* (Gordon 1938, text-fig. 4; Serène and Umali 1965, text-figs. 3, 7A-7B, 8).

The most striking difference between the two genera is in the form of the eye peduncles. In *Albunea* these are flattened and rigid and, while they are elongate in some species, they never approach the very long, flexible, subcylindrical stalks which characterize *Stemonopa*. In *Blepharipoda* and *Lophomastix* the eystalks are also flexible and elongate, though relatively much shorter than in *Stemonopa*; but the latter genus has no other important character in common with them.

In *Stemonopa* the carpus of the third maxilliped is much more strongly produced anterodorsally than in most species of *Albunea*. The exopod of the third maxilliped is also more elongate than in most species of *Albunea*. The armature of the anterior margin of the carapace of *Stemonopa*, with alternately long and short spines, differs from that of any species of *Albunea*. All these might better be considered specific rather than generic characters, however, for they are subject to considerable variation within genus *Albunea*.

ACKNOWLEDGMENTS

We wish to thank Mr. D. Landenberger for the original loan of specimens of *Austrolepidopa schmitti*, and Drs. J. C. Yaldwyn and D. J. G. Griffin, both of the Australian Museum, Sydney, for providing more material of that species. Thanks are also due to Dr. R. W. George of the Western Australian Museum for the loan of a collection of albuneid crabs among which were *Austrolepidopa trigonops* and *Stemonopa insignis*.

REFERENCES

- GORDON, ISABELLA (1938).—A comparison of the two genera *Albunea* and *Lepidopa* (Crustacea, Anomura), with description of a new species from Singapore. *Bull. Raffles Mus.* **14**, 186-97.
- HOLTHUIS, L. B. (1960).—Notes on American Albuneidae (Crustacea, Decapoda, Anomura) with the description of a new genus and species. *Proc. K. Ned. Akad. Wet.* **C 64**, 21-36.
- RATHBUN, MARY J. (1924).—Results of Dr. E. Mjöberg's Swedish scientific expeditions to Australia 1910-1913. 37. Brachyura, Albuneidae and Porcellanidae. *Ark. Zool.* **16**(23), 1-33.
- SERÈNE, R., and UMALI, A. F. (1965).—A review of Philippine Albuneidae, with descriptions of two new species. *Philipp. J. Sci.* **94**, 87-116.
- SHEN, C. J. (1949).—Notes on the genera *Blepharipoda* and *Lophomastix* of the family Albuneidae (Crustacea Anomura) with description of a new species, *B. liberata*, from China. *Contr. Inst. Zool. natn. Acad. Peiping* **5**, 153-70.