

much worn and none are pectinate, the inner ramus has four curved pectinate spines. The 2nd maxilla is trilobed, the lobes short and reaching the same level, they bear some simple and pectinate spines. The maxilliped has the 2nd joint and its distal plate rather narrow, the palp has the 2nd, 3rd, and 4th joints with rather short lobes strongly setose, the terminal joint is just a little longer than the preceding one; there is a strong setum on the outer end of the 2nd joint of palp. The legs are robust. In the 1st the merus, carpus, and propodus have stout spines, the rest of the legs are sparsely spined but provided with furry pads on the usual joints. The filaments on the 8th thoracic sternite are slender. The 1st pleopod has a broad short peduncle with dense fur on the outer side and four coupling spines on the inner, the endopod is slightly longer than broad, the exopod, which lies obliquely, has a dense fringe and a proximal spine turned upwards. In the 2nd pleopod the appendix is short, reaching only to end of the endopod. The exopod of the 4th pleopod has a fringe of short setae on the whole of its external border, these become longer and plumose at the end, the endopod is very strongly marked with rugae and has an insinuation at the distal end. The exopod of the 5th pleopod is rather narrow, with a very oblique division, the distal part bearing three prominent squamose lobes, the proximal part with one lobe and a small one below it. The inner ramus of the uropod is very small, the outer is very long, curved inwards, and excavate on the inner side.

Length, without the uropods, 19 mm.; breadth, 9 mm.; uropods, 9 mm.

The non-ovigerous female of this species differs from the male in the following characters:—It is smaller, glabrous. The posterior division of abdomen is obscurely divided into two lobes or domes and the notch is not so deeply cut. The uropods are of ordinary shape and size and the rami subequal.

The specimens are from Cottesloe, Western Australia; collected by L. G. Glauret.

Type in Western Australian Museum, Nos. 10608/10617.

Dynoides barnardii, n. sp.

Pl. vi., figs. 5-7.

The surface of the head is rather rough and an interorbital ridge is well marked. The segments of thorax bear minute granules disposed transversely. The margins of epimera have hairs so closely compacted as to appear membrane-like, resembling conditions found in many of the flat forms of Sphaeromidae. The epimeron of the 6th thoracic segment over-reaches that of the 7th. The anterior division of abdomen is very short with sutures not visible, and the process behind extends as far as the inner end of the notch of the following division, the margin of this process has some spiniform granules. The posterior division of the abdomen is domed and minutely granulate, and shelves away to the margin gradually. The posterior notch is an elongate sinus with converging and denticulate sides meeting behind, at its inner end is a small lobe. The epistome is obtuse, apically curved forwards, with rough surface. The eyes are large. The 1st and 2nd peduncular joints of the antennule are large and rough as the epistome, the flagellum carries 12 joints, the 1st joint of which is much shorter than the 3rd peduncular joint. The antenna is robust with flagellum of 17 joints. The mandibles are weak. The left mandible has the incisory plate 4-dentate, there is a secondary plate and spine row with the molar quite close to these, its margin is finely denticulate. The palp has two strong spines terminating the 2nd joint. 1st maxilla has the inner branch bearing four long curved plumose setae. The outer branch with four or five strong teeth and three curved and serrate spines. The maxillipeds are slender, the 2nd joint has some small teeth on its outer margin, the distal plate is narrow, and its distal fringe has some large blunt teeth

among the setae. The 2nd joint of palp is largest, the 3rd less than half its length, the 5th joint is shorter than the 4th. The legs are robust, becoming longer posteriorly, most of the joints are densely and finely furred, with very few spines. The 1st pleopod has rather narrow rami, the exopod has an unusually long outstanding proximal spine arising from a small prominence, the peduncle carries two coupling spines on its inner angle, the endopod has a thickened inner margin, the fringes of rami are very long. The appendix of the 2nd pleopod is like that of *D. serratisinus*, its distal portion apparently lies in a half sheath formed by the inner margin of endopod. The filaments of the 8th thoracic sternum are united at their bases as in the above-mentioned species. The exopod of the 3rd pleopod is without division. The 4th and 5th pleopods are also as in Dr. Barnard's species. The uropods are large and lamellar, rough and covered with fine setules, and are minutely serrate on distal margins. Colour whitish with median and lateral brown areas on thorax, the anterior division of abdomen is brown, the domed portion of the posterior division is blackish with light spots, the pleopods are tinged with brown, as also are the uropods.

The genus *Dynoides* was established by Dr. Barnard for a South African species in 1914; the present species is from the coast of New South Wales, associated with *Sphaeroma quoyana*, Ml. Edw., *S. walkeri*, Stebbing. I have pleasure in dedicating this species to the author of the genus.

Dynamenella parva, n. sp.

Pl. iii., figs. 8-11.

The body is smooth and almost glabrous. The head is rounded and short. The eyes are large. The 1st segment of thorax longest, the 7th is longer than the 6th and longer than the anterior division of abdomen. The epimera are closely compacted together, those of the 6th and 7th segments are broader and rounded, the 7th reaching near to the level of 6th. The anterior division of abdomen is very short; the posterior is dome-shaped with a very faint median depression. The posterior notch is small and simple, almost cut in the vertical direction, so that it can only be seen when the animal is fully extended. The epistome is long, rather large, truncate anteriorly, and curved forward. The antennules are large; the 1st joint of peduncle not produced at its inner distal angle; the 2nd joint is large, the 3rd nearly equal to it in length, the flagellum of seven joints, five of which are long and subequal. The antenna also is robust, its flagellum carries 10 joints. The incisory plate of right mandible is slender, 4-dentate, row of spines and molar well developed and joint of palp subequal in length. Inner ramus of 1st maxilla with four curved setae, the outer ramus with the usual simple and branched spines. The 4th joint of the palp of the maxilliped has its lobe very short, the 5th joint is shorter than the 4th. The legs are strong, sparsely spined, but much clothed with soft woolly hair, the dactyles are short with secondary claws subequal to primary. The 1st pleopod has the endopod triangular, about as long as broad, with a small areolate area towards the inner proximal angle, bounded by a ledge on which the exopod rests. The exopod is larger, ovate, with small curved external proximal spine, the fringes are long, the peduncle is short with three coupling spines rather long, the outer side is bent towards the body. In the 2nd pleopod the peduncle is longer, the endopod is large with a thick appendix, which expands distally and considerably outreaches its end, the ovate exopod is a little smaller than the endopod and lies obliquely. The peduncle of the 3rd pleopod has straight sides, the endopod is larger than the exopod, which does not lie obliquely, and is without division. The exopod of the 5th pleopod carries a division and three outstanding squamose lobes; branchial folds on 4th and 5th pleopods are well developed on all rami. The

uropods are laminar, the rami are distally rounded, the outer much smaller than the inner.

Length of male, 3 mm.

Collected by H. M. Hale, Willunga reef, Gulf St. Vincent, South Australia. Type in South Australian Museum.

MORULOIDEA LACERTOSA, Baker.

Pl. i., figs. 9-11.

Moruloidea lacertosa, Baker, Trans. Roy. Soc. S. Austr., vol. xxxii., 1908, p. 150, pl. vii., figs. 1-10.

The female of this species differs from the male in not having such strongly developed antennae, and in having a median lobe in the posterior notch of the abdomen, the channel being deep. The mouth parts are normal, but the young are developed within the body. The head is very rugose and tuberculate.

In this species the method of folding the body—that is as a hinge about the middle—is similar to that of *cassidinopsis*.

A female specimen is in the South Australian Museum, which also holds the type.

HASWELLIA JUXTACARNEA.

Pl. iv., figs. 5-8.

Haswellia juxtacarneae, Baker, Trans. Roy. Soc. S. Austr., vol. 1., 1926, p. 274, pl. xlix., figs. 6, 7.

In 1926 I established this species on a dry specimen from Lord Howe Island on account of its differences from the closely allied species *H. carneae*, Haswell. I am now able to add to that very short description the following notes with figures taken from one specimen from the coast of New South Wales, which has recently come to hand.

The greater part of the body is smooth and glabrous. The process of the 7th segment of thorax is minutely serrate on the lateral margins, it reaches slightly beyond the end of abdomen, with a small turned-down hooked process; dorsally there is a median keel, and below there is a shelf similar to that of *H. carneae*. The anterior division of abdomen is quite obscured; the posterior is very obscurely trilobed, and descends at first very abruptly, then with a gradual declivity to the terminal notch, which is very narrow, and filled by a narrow median process, which is slightly raised, and exceeds the sides of the notch. The basal joint of antennule is rough on the surface, the flagellum bears 17 joints. The flagellum of the antenna has also 17 joints. The mandibles are weak; the cutting plates are 4-dentate, and there is a small secondary plate on the left mandible. The legs are moderately robust, sparingly spined, except the first, which has a few thorn-like spines on the 4th, 5th, and 6th joints. The dactyles of all are short, 2-clawed, the secondary claw minute. The filaments on the 8th sternite are very short. The 1st pleopod has a broad and short peduncle, there are three coupling spines, and the outer margin has rather scanty furry hairs, the endopod is small, much broader than long, the exopod is scaly, on the surface the outer margin has six or seven thorns. The 2nd pleopod has a longer peduncle, its exopod is abruptly articulated at the outer angle; it is also scaly on the surface with 13 thorns on the margin; the short appendix originates from about the middle of the endopod, as in *cerceis*, etc. The uropods are granulate to spiniform and densely ciliate towards the margins of the rami, the inner ramus is broad, embracing the end of abdomen on its inner margin; the outer is about the same length, and is distally a little emarginate.

The single specimen was collected by Mr. M. Ward near Manly, ocean side, Port Jackson, New South Wales, and as co-type is placed in the Australian Museum, Sydney.

Haswellia glauerti, n. sp.

Pl. v., figs. 1-5.

The head is short, the segments of thorax do not differ much in length. Eyes are moderate in size. Process of 7th thoracic segment in the male covering the whole of the abdomen and closely applied to it, and also covers much of the uropods when they are retracted; it is moderately convex above but shelves away towards the end, which is obtusely pointed, the point turned down, and bears spiniform granules on the margin; there is a small lateral notch on each side at the proximal end. The epimera of the other segments are uniform, except those of the 1st segment. The posterior notch of abdomen is very large, triangular, with small median process. The epistome is sculptured, with the labrum rather large. The 1st and 2nd antennular joints are sculptured, the 2nd joints are rather large, and are embraced by the inner distal angles of the 1st by about half their length, the 3rd joints are a little longer than the 2nd, the flagella carry 15 joints. The antennal flagellum has 19 joints. The left mandible has a slender, entire incisory plate with a trifid secondary plate, a spine row and large molar. The maxilliped has a long palp, the lobes of joints well developed with long setae. The terminal joint is long. The 1st pair of legs is shorter but more robust than the two following pairs, there are large thorn-like spines on the merus, carpus, and propodus of the 1st. The rest of the legs are sparsely spined and become longer and more robust posteriorly, they carry very short fur on the usual joints. The filaments of the 8th sternum are small. The pleopods are of the *cerceis* type. The 1st pair has a short peduncle and three stumpy coupling spines; the exopod has about eight small teeth at base of fringe, the endopod is much broader than long. In the 2nd pair the appendix is short, arising from the middle of its lamina, the exopod has 15 teeth on the margin, and from the surface of the endopod there arise three or four longish plumose hairs. In the 3rd pair the endopod is broad and the exopod with a division, the peduncle is longer than in the two preceding pairs. The exopod of the 5th pair is narrow, the distal division carries two lobes, both outstanding; there is also a small lobe on the inner margin of the proximal division. The uropods are sublaminar, the external ramus ovate and somewhat truncate, convex below, excavate above, bearing coarse granules and scanty hairs capable of a lateral setting towards the sides of the body; the inner ramus has an inner ridge below and is rather excavate externally from this.

In the same tube is a female specimen which evidently belongs to this species; it is about half the size of the male, and resembles the female of *H. emarginata*. The mouth parts are modified and the brood is probably internal. There is no process on the 7th thoracic segment. The anterior division of abdomen is rather tumid with the usual segments indicated, the posterior division is also tumid with a prominent knob which terminates a faint median ridge behind; the posterior notch is simple, deep in the vertical direction and semicircular. The epistome and antennular joints are not so sculptured as in the male. The body is covered with many black dots and is almost glabrous.

Length of male, 12 mm.

The specimens were collected from a sponge cavity, Cottesloe, Western Australia, by L. G. Glauert.

The type is in Western Australian Museum, 11795-11759.

Group PLATYBRANCHIATAE.

Section CASSIDININI.

Syncassidina, n. gen.

Body expanded, moderately convex dorsally, epimera spreading out obliquely. The only part not partaking in the outline being the anterior angles of the posterior division of abdomen. Margin fringed with small setules.

Antennules partially separated from each other by process of epistome, which shows wedge-shaped above, 1st and 2nd joints expanded, and upper surfaces in full view from above.

Epistome with pyramidal prolongation.

Mandibles normal.

Maxillipeds resembling *chitonopsis*, the 3rd joint of palp with small lobe occupying all the front.

Endopod of 1st pleopod narrow, about four times longer than broad.

Exopod of 3rd pleopod without division, both rami without long fringe.

No exopods to uropods.

Syncassidina aestuaria, n. sp.

Pl. v., figs. 6-10.

Body oblong-ovate, all segments reaching the margin except the anterior angles of the posterior division of abdomen. Margin strongly fringed, moderately convex. The anterior division of abdomen very short, not showing the lines of coalesced segments. The posterior division is convex, its anterior angles acute; there are two obscure median tubercles above, and the end is obtuse without notch or channel. Epistome with subpyramidal process; it is hirsute, and bears a large labrum, which rather obscures the lateral limbs and projects at nearly a right angle from the mandibles. Basal joint of antennule large, expanded, 2nd joint also expanded but much smaller, 3rd joint narrow and short; flagellum with five or six rather long joints, the antepenultimate one with small appendage which reaches to end of flagellum. Peduncle of antenna with 1st two basal joints rather broad, the following three subequal in length but becoming narrower, flagellum with 7 joints. Left mandible rather weak with small incisory plate 2-dentate consisting of a long and short tooth, secondary plate trifold, one curved spine and a moderate size molar and small palp. Right mandible with small incisory tooth and row of spines. The 1st maxilla has the outer ramus short with strong distal spines, one or two of which are finely pectinate, inner ramus slender with four curved plumose setae. 2nd maxilla trilobed. Maxillipeds with the plate of 2nd joint distally oblique, bearing several long pectinate setae, the 2nd palpal joint expanded without lobe, the 3rd with a small lobe occupying nearly all the front of the joint, 4th scarcely lobed, about the same length as the 5th, fringes scanty. Legs similar but becoming longer posteriorly, very sparsely spined, the 7th joints with primary and secondary unguis, giving chelate appearance. Peduncles of pleopods narrow. The 1st pleopod has the exopod ovate, the endopod narrow-oblong and about four times as long as broad; there are three coupling spines on the peduncle. The exopod of the 2nd pleopod is very convex on the outer margin and nearly straight on the inner, its endopod is wider than that of the 1st. The exopod of the 3rd pleopod is without division and has only a fringe of fine setules; on the inner margin there is a small insinuation. The exopod of the 4th pleopod is without division, the endopod is rather thick but without branchial rugae. The exopod of the 5th pleopod is much longer than the endopod, it has a division and is obtusely pointed at the end, there are two

squamiform lobes on the proximal portion, and the distal portion is squamose all over. The uropods are large, all trace of an exopod has disappeared.

Length, 5 mm.

The specimens, which appear to be all females, are from Rocky Bay, Swan River, Western Australia. Collected by L. G. Glauert.

The type is in Western Australian Museum, No. 11180.

DESCRIPTION OF PLATES I. TO VI.

PLATE I.

Fig. 1: *Exosphaeroma serventi*, n. sp. Fig. 2: *id.*, anterior region from below. Fig. 3: *Isocladus excavata*, Baker. Fig. 4: *Cymodoce multidentis*, Richardson, var. *australis*, n. var., anterior region from below. Fig. 5: *id.*, posterior region from above. Fig. 6: *id.*, posterior region from below. Fig. 7: *Cymodoce aculeata*, var. *grandis*, n. var., posterior region from above. Fig. 8: *id.*, posterior region from below. Fig. 9: *Moruloidea lacertosa*, Baker, anterior region from below, female. Fig. 10: *id.*, posterior region from below, male. Fig. 11: *id.*, posterior region from below, female.

PLATE II.

Fig. 1: *Cymodoce bidentata*, Haswell, var. *tasmanica*, n. var., posterior region from above. Fig. 2: *Cymodoce coronata*, Haswell, var. *fusiformis*, n. var., anterior region from below. Fig. 3: *Cymodoce coronata*, Haswell, posterior region from above. Fig. 4: *id.*, posterior region from below, female. Fig. 5: *Cymodoce coronata*, var. *fusiformis*, n. var., female. Fig. 6: *id.*, male. Fig. 7: *id.*, posterior region from below. Fig. 8: *id.*, posterior region from above. Fig. 9: *Cymodoce coronata*, var. *intermedia*, n. var., posterior region from above.

PLATE III.

Fig. 1: *Paracilicaca gigas*, n. sp., posterior region from above. Fig. 2: *id.*, posterior region from below. Fig. 3: *id.*, anterior region from below. Fig. 4: *id.*, posterior region of young male. Fig. 5: *Cilicacopsis sculpta*, n. sp. Fig. 6: *id.*, anterior region from below. Fig. 7: *id.*, posterior region from below. Fig. 8: *Dynamenella parva*, n. sp., posterior region from below. Fig. 9: *id.*, male. Fig. 10: *id.*, epistome. Fig. 11: *id.*, 2nd pleopod.

PLATE IV.

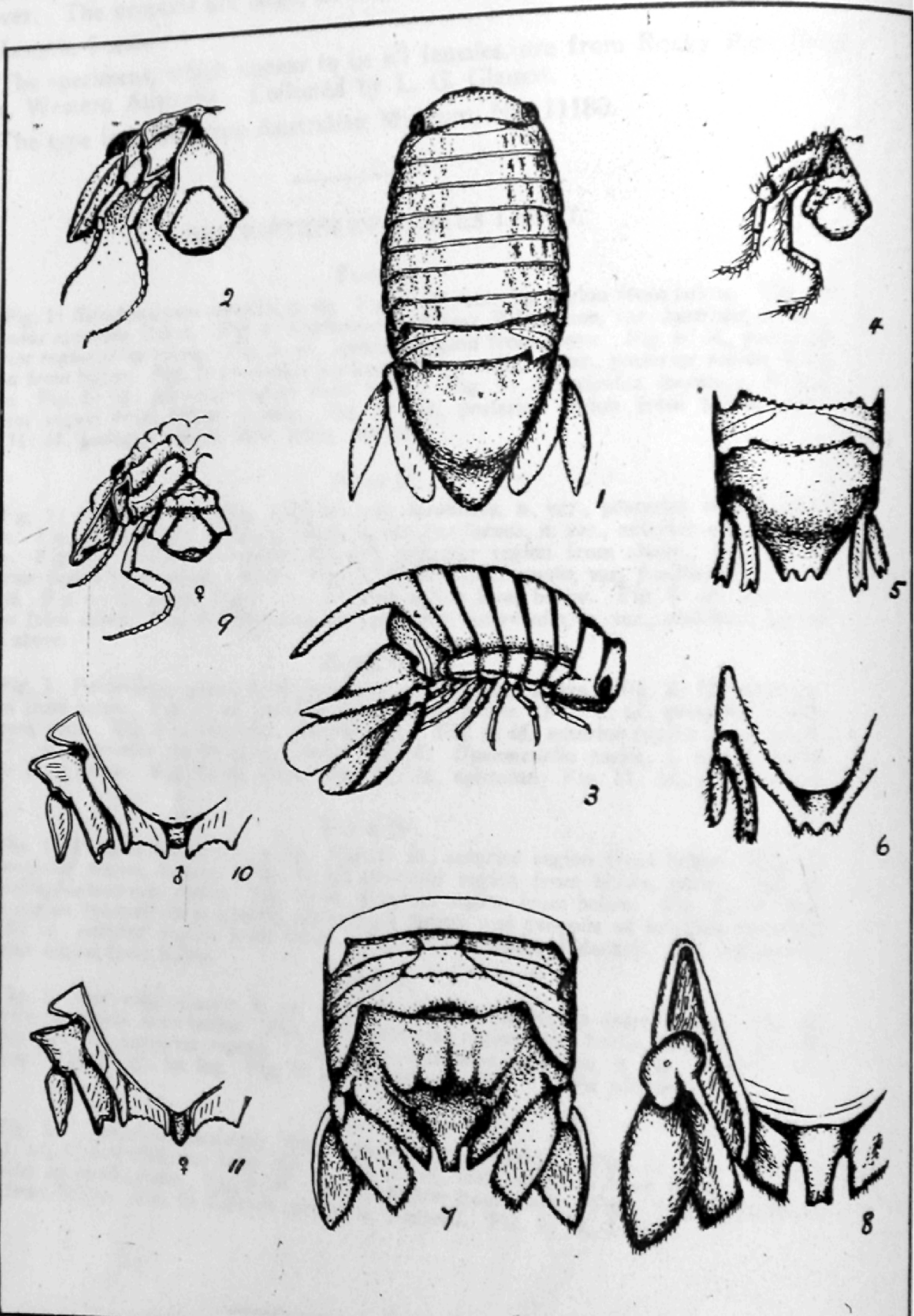
Fig. 1: *Paracilicaca flexilis*, n. sp. Fig. 2: *id.*, anterior region from below. Fig. 3: *id.*, posterior region, female. Fig. 4: *id.*, posterior region from below, male. Fig. 5: *Haswellia juxtacarnea*, Baker. Fig. 6: *id.*, posterior region from below. Fig. 7: *id.*, posterior region from above projecting segment of thorax and exopods of uropods removed. Fig. 8: *id.*, anterior region from below. Fig. 9: *Cymodoce bidentata*, var. *tasmanica*, posterior region from below.

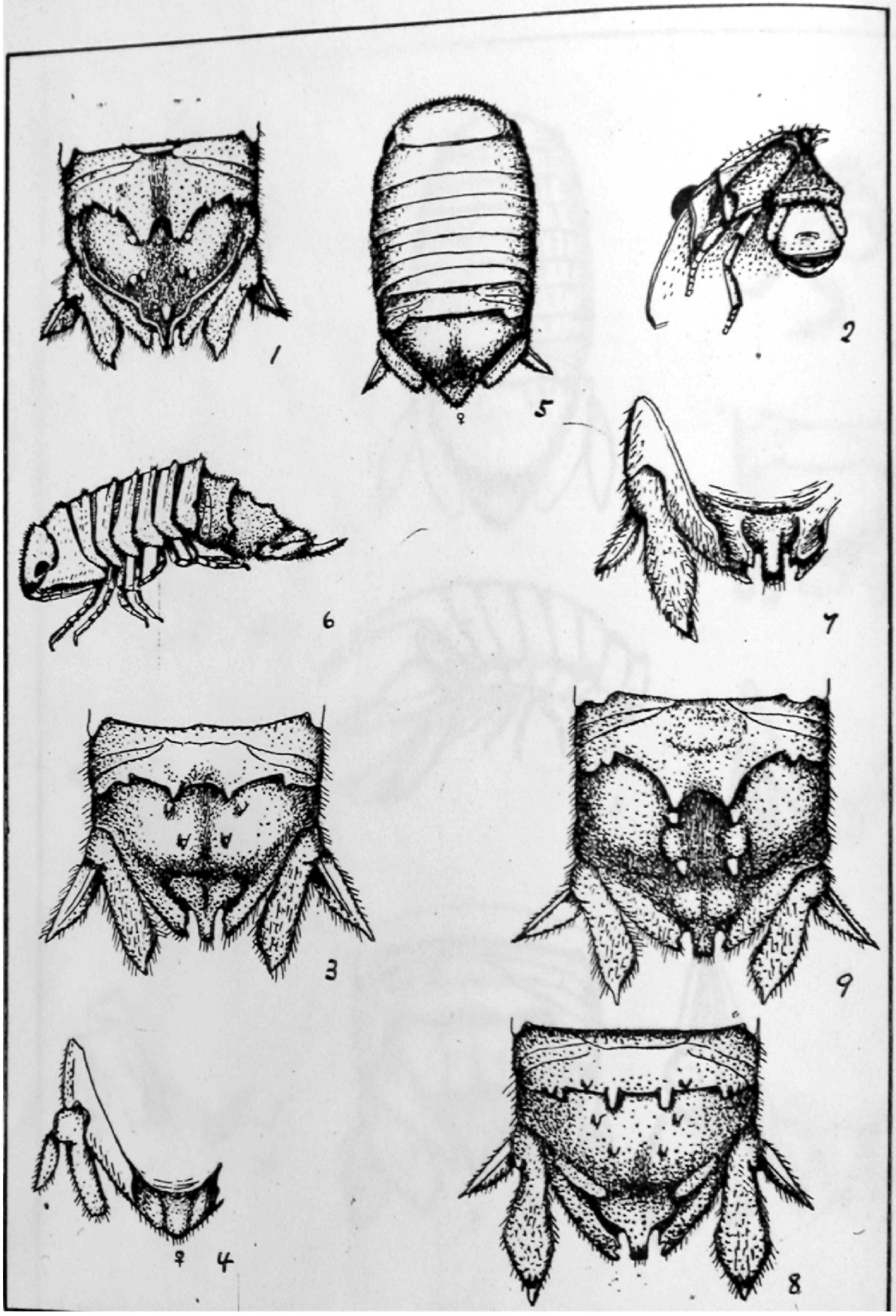
PLATE V.

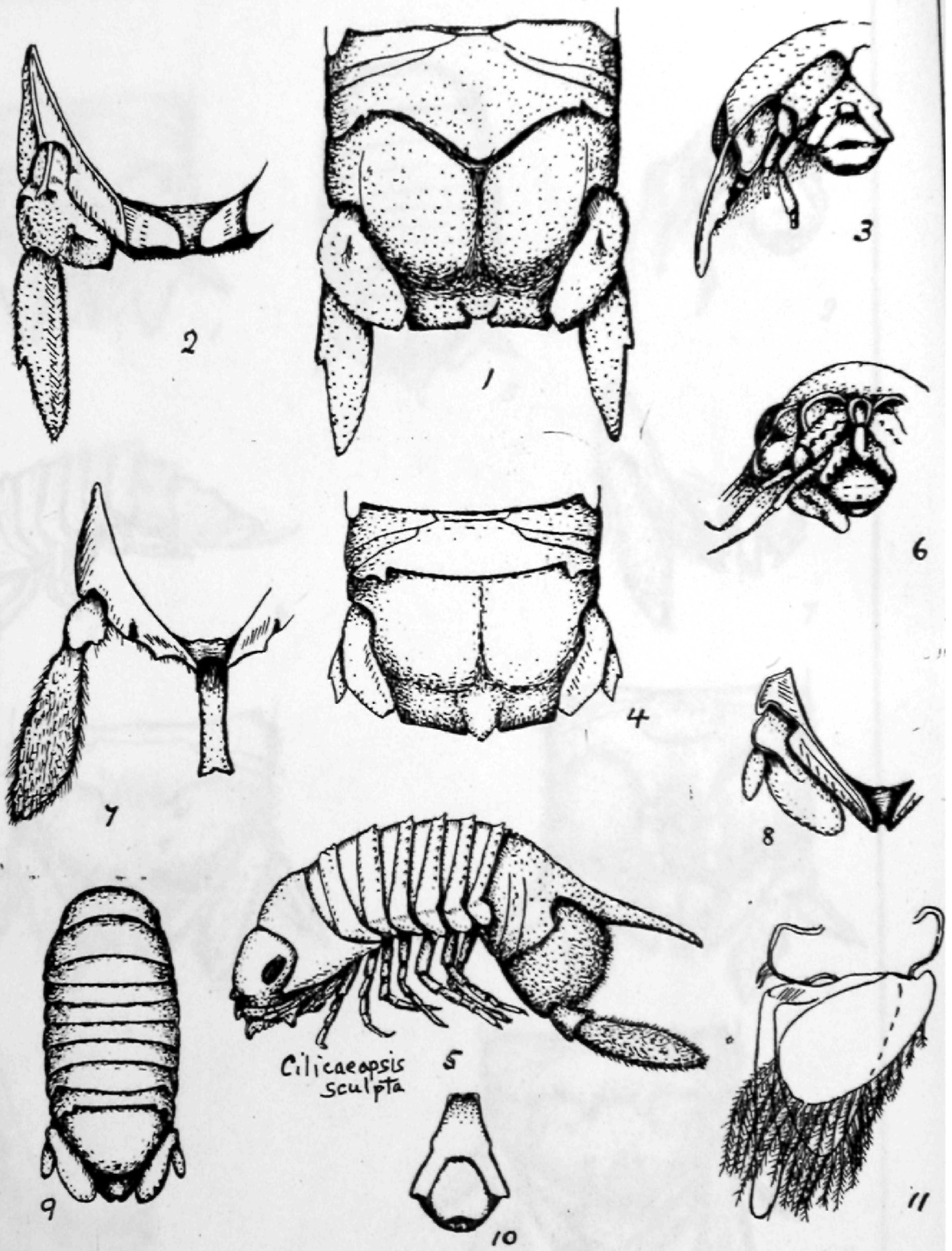
Fig. 1: *Haswellia glauerti*, n. sp. Fig. 2: *id.*, anterior region from below. Fig. 3: *id.*, posterior region from below. Fig. 4: *id.*, posterior region from below, female. Fig. 5: *id.*, side view of posterior region. Fig. 6: *Syncassidina aestuaria*, n. sp. Fig. 7: *id.*, epistome. Fig. 8: *id.*, 1st leg. Fig. 9: *id.*, maxilliped. Fig. 10: 1st pleopod.

PLATE VI.

Fig. 1: *Cymodoce longistylis*, Miers, abdomen from above. Fig. 2: *id.*, epistome. Fig. 3: *id.*, female abdomen from above. Fig. 4: *id.*, male abdomen from below. Fig. 5: *Dynoides barnardii*, male. Fig. 6: *id.*, anterior region from below. Fig. 7: *id.*, abdomen of male from below. Fig. 8: *Cilicaca curtispina*, Haswell. Fig. 9: *id.*, female.







Cilicæopsis sculpta