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The Taxonomic Position of Idiogarypus Hansenii (With)

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PLATE IV

The original description of *Garypus hansenii* was based on a single male specimen which had been collected in Tasmania by Mr. Peckham. The exact part of the island from which it was obtained is not mentioned. It was deposited in the British Museum, and from here it was eventually sent with several other pseudoscorpions to be studied by C. J. With. His description of it was published in 1908. Chamberlin in 1930 made a note on the possible generic position of this pseudoscorpion, which he at that time placed in the genus *Garypus* of the sub-family Garypinae. The next mention of this form is to be found in Beier's work on the Pseudoscorpionidea in Das Tierreich (1932) where it was placed in the genus *Maorigarypus*. However, in 1943 *Maorigarypus* was reduced by Chamberlin to sub-generic rank in the genus *Synsphyronus*. In the same paper (1943), a new genus *Idiogarypus* was erected for the pseudoscorpion under consideration. Chamberlin noted that it was closely related to *Synsphyronus*, but based the establishment of the new genus on three main points, viz.:—

(1) There are only seven tactile setae on the fixed finger of the chela.
(2) The position of the galeal seta is much caudad of the terminal attachment of the serrula exterior.
(3) The small eyes (eight ocular diameters from the anterior end of the carapace).

Efforts to obtain specimens of *Idiogarypus hansenii* were unsuccessful, but it was found that the most commonly occurring pseudoscorpion near Hobart resembled it very closely—even to the proportions of the parts—except in the three points mentioned above which mark off *Idiogarypus* from *Synsphyronus*. Two male specimens of this local type were sent to the British Museum where they were compared by Dr. E. Browning with the orthotype of *Idiogarypus*, and found to be the same species. It appears that the original description by With was not accurate in the three points enumerated above. As the differences between *Synsphyronus* and *Idiogarypus* mentioned by Chamberlin are therefore non-existent, the true systematic position of this pseudoscorpion is in the sub-genus *Maorigarypus* Chamberlin of the genus *Synsphyronus* Chamberlin.

A redescription of this species follows, and is based on a female and a male (homeotypes) which were collected at Risdon, near Hobart, in June, 1947. The specimens were boiled in 10 per cent KOH solution, and after clearing, mounted in Canada Balsam.

Synsphyronus (Maorigarypus) hansenii (With)

All the following measurements are in millimetres, and have been made in the way Chamberlin describes (1931, p. 24). Length always precedes breadth, and measurements of the segments of the palpi and legs are given in the order, trochanter, basifemur, telofemur, both femoral segments together, tibia and tarsus (both tarsal segments are measured together as a miotarsus). The length of the trochanter of the palpus is measured from the proximal edge of the pedicle to the anterior distal edge which articulates with the femur. All measurements exclude the pseudoderm.

Female

Length 4·351. *Breadth of abdomen (6th tergite)* 2·052.

Carapace 1·090-1·292, *Cucullus* 0·300, *Ocular breadth* 0·627.

Palpus—(0·475-0·355), (1·349-0·304), (0·950-0·332), *chela* (1·881), *hand* (0·912-0·446-*depth* 0·380), *fingers* 0·941.

Leg I—(0·290-0·190), (0·361-0·172), (0·304-0·190), (0·645-0·190), (0·380-0·123), (0·390-0·088).

Leg IV—(0·418-0·200), (0·304-0·180), (0·684-0·218), (0·931-0·218), (0·627-0·133), (0·473-0·105).

Chelicera—0·263-0·174, *mov. finger length* 0·230.

Maxilla—0·580, al. 0·513, b. 0·361, ab. 0·456.

Male

Length 3·857. *Breadth of abdomen (6th tergite)* 1·957.

Carapace 1·017-1·197, *Cucullus* 0·285, *Ocular breadth* 0·608.

Palpus—(0·446-0·323), (1·216-0·275), (0·893-0·306), *chela* (1·710), *hand* (0·836-0·410-*depth* 0·342), *fingers* 0·893.

Leg I—(0·266-0·189), (0·310-0·160), (0·293-0·187), (0·580-0·187), (0·361-0·114), (0·370-0·085).

Leg IV—(0·342-0·205), (0·247-0·171), (0·665-0·209), (0·874-0·209), (0·587-0·150), (0·470-0·100).

Chelicera—0·224-0·159, *mov. finger length* 0·202.

Maxilla—0·500, al. 0·475, b. 0·323, ab. 0·418.

The colour of the living animal is slate-grey, but on preservation in alcohol it becomes a yellowish brown. The whole surface of the chitinised parts is reticulately rugose. The reticulation occurs in a hyaline pseudoderm (which is found in all members of this genus). This may be easily removed from the true derm (e.g., by boiling in KOH solution). If this is done, the reticulate pattern is still retained by the true derm.

The carapace (Plate IV, fig. 2) has the usual garypoid, sub-triangular form, and is broader posteriorly than long. There are no transverse furrows and no longitudinal groove. The anterior margin of the carapace is a little indented in the middle. There are two pairs of eyes, the anterior pairs being elliptical in shape (Plate IV, fig. 2*a*) and situated from 5·3-6·8 ocular diameters from the anterior end of the carapace (these figures are based on measurements of 25 specimens, including three living). There is a short clavate seta between the anterior and posterior eyes of each side. The chaetotaxy and lyrifissures of the carapace are shown in fig. 2. The number of setae on the central disc varies quite considerably. On examining 10 males and 11 females, it was found that the number

of setae varied in the males from 12-17 (average 14), and in the females from 13-22 (average 17). Owing to this variation, care should be taken in using the number of setae on the central disc in taxomony.

The coxal area is of the garypoid type, and has been adequately figured by With (1908, pl. II, fig. 2).

The abdomen is oval, longer than broad. It is broadest at the 6th and 7th segments, which are almost equally broad. The 1st tergite is entire; the 2nd-10th are divided and the 11th is partially so. The setae along the posterior border of the tergites are clavate, but the number on each particular tergum varies from one individual to another. However, a few generalisations based on the examination of 13 females and 11 males may be given. On the average, the adult female has more broader setae than the male. The minimum number for one tergite seems to be four, and the maximum 11. The number on the 1st two tergites, however, ranges from 4-6 in both sexes, on the 3rd tergite from 4-9, and on the 4th-9th from 6-10 (one female had 11 setae on the 6th tergite). The tergites also possess a row of lyrifissures, ranging from 7-21 per tergite. On the ventral surface, the 4th-10th sternites in the male, and the 5th-10th in the female, are divided, and in both sexes the 11th is partially divided anteriorly. The border setae are fewer than on the tergites, and are acute to slenderly clavate. The former kind are found mostly on the anterior segments. The number per sternite varies from 4-8 in males and from 4-10 in females. There is also a row of lyrifissures on each sternite; the number of lyrifissures per sternite varies from 6-18. In the male, the 4th sternite is rather narrower than the other sternites. The anterior genital plate is very much larger than the posterior one. The posterior border of the large plate has a number of acute setae about the genital opening. The anterior portion of the smaller plate has a large number of small lyrifissures in a corresponding position. Both plates are reticulated, although the posterior one is only slightly so. The female genital area (Plate IV, fig. 4) is very pale in contrast to the rest of the sclerotised parts, and is only very slightly reticulated. This pale area takes in the genital plates, and the median part of sternite four (Plate IV, fig. 4). The setae on this area are all acute. The arrangement of these and the lyrifissures is shown in the figure.

The pleural membrane is strongly wrinkled like that of most of the Garypidae.

Chelicerae. These are similar to those of other members of this genus (1943, pl. I, fig. 11). Plate IV, fig. 5, shows the galea and chaetotaxy. The position of the galeal seta (Plate IV, figs 3 and 5, g.s.) is on a level with the terminal attachment of the serrula exterior, and *not* halfway along the movable finger as in With's figure (1908, p. 13, fig. 2). The flagellum consists of one long and two smaller blades (Plate IV, fig. 5*a*). The large blade has two fine 'teeth' about halfway along it, which may easily be overlooked unless the chelicera is lying in the right position. The serrula exterior has about 18 teeth (Plate IV, fig. 3). The lamina exterior is present. The lamina interior possesses a series of about 10 rounded, rather broad teeth. The galeal (g.s.), sub-basal (s.b.) and basal (b.) setae are all much shorter than the laminal (l.s.), interior (i.s.) and exterior (e.s.) setae. The fixed finger has three large sub-median, and two small sub-apical teeth.

Pedipalpus. This has also been figured by With (1908, pl. I, fig. 11 and pl. II, fig. 3). The chela is shown (Plate IV, fig. 1) with the positions of the tactile setae, which are similarly arranged to those of *S. (M.) mimulus* (1943, pl. II, fig. 23). There are eight of these setae on the fixed finger—not seven, as reported by With—and three on the movable finger. There is no sense-spot near the sub-basal (s.b.) seta on the movable finger. Both fingers possess poison

ducts. Each finger possesses a dense row of marginal teeth—there are 56 on the fixed finger, and 43 on the movable finger of the male used in this description. The trochanter (excluding the pedicel) is only a trifle longer than wide; (the rest of the description of the palp is taken from With's paper, 1908, pp. 13-14), 'posteriorly (i.e., on the trochanter) there are two somewhat conical eminences separated by a deep cleft. The femur, which is about four times as long as broad, has a well marked stalk; the anterior outline has, just beyond the stalk, a low elevation, and is then a little concave, while the posterior is slightly convex. The tibia, which has a rather short, but well marked stalk, is distinctly shorter, but somewhat wider, than the femur, and 2·9 (With's figure is 2·7) times as long as wide; anteriorly it is, just beyond the stalk, slightly convex and then a trifle concave, while the posterior outline is, beyond the well marked basal elevation, straight and then slightly convex. The chela, which is about four times as long as wide, is about 1·3 times as wide as the tibia; the hand is shorter than the tibia, and is a little shorter than the fingers'.

The Legs. These have been figured by With (1908, pl. I, figs 12 and 13). Quoting With once again (1908, p. 14)—'Rather short and clavate hairs are found dorsally, pointed and more or less simple ones ventrally. The arolium extends distinctly beyond the claws. The articulation between the two femoral joints is of the usual structure, with the tooth best developed posteriorly (1908, pl. I, figs 14-15); the basal femoral part is longer but lower than the distal, and almost twice as long as deep. The two tarsal joints of the 1st pair, of which the basal is the longer', are together somewhat longer than the tibia. The femur (taken as a whole) of the fourth pair 'is almost four times as long as deep, as deep as the second tarsal joint is long; the combined tarsi are much shorter than the tibia'. Measuring both tarsal segments as a miotarsus, tarsus I is 4·1-4·4 times, and tarsus IV 4·4-4·7 times as long as deep.

Synsphyronus hansenii has been collected at Hobart and the surrounding parts, and also in the north of the island near Launceston, and in the north-west at the Forth Falls near Sheffield. It may be found under stones, especially between the flakes of broken stones, in grass tussocks and under the bark of gum trees towards the base. Occasionally it is brought in with firewood, and may be found on the walls of sheds or even in the house.

Synsphyronus (M.) hansenii very closely resembles the South Australian form, *S. (M.) mimulus* Chamberlin (1943, p. 496). The Tasmanian form is larger, and, judging from Chamberlin's description, possesses more setae on the average on the central disc and on the abdomen. In *S. mimulus* the chela of the male is 4·2-4·4, of the female 3·5-3·8 times as long as broad. In *S. hansenii* the proportions are similar (about 4·2) in both sexes. The main difference, however, between these two forms is their size (*S. hansenii* varies from about 3·8-4·4 mm. when adult, and *S. mimulus* varies from about 2·2-2·8 mm.).

The homeotypes (one male and one female) on which this re-description is based are to be deposited in the British Museum. Other specimens are to be sent to the Australian Museum, American Museum of Natural History and the Muséum d'Histoire Naturelle, Paris.

I wish to thank Mr. Clarke, Librarian at the University of Tasmania, for obtaining papers for me, and also the various people who have brought specimens to me. I wish to especially thank Professor Hickman for his kind and helpful interest and guidance, and Dr. E. Browning of the Arachnological Section of the British Museum (Natural History), who kindly examined the specimens I sent, and compared them with the orthotype.

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WITH, C., 1908.—*Vidensk. Meddel. Naturk. Foren.* (6) 10 : 12; pls 1 and 2, pp. 12-15.

PLATE IV

FIG. 1.—Right chela of male. *t*, terminal; *st*. sub-terminal; *sb*, sub-basal; *et*, exterior terminal; *est*, exterior sub-terminal; *esb*, exterior sub-basal; *eb*, exterior basal; *it*, interior terminal; *ist*, interior sub-terminal; *isb*, interior sub-basal; *ib*, interior basal.

FIG. 2.—Carapace of female, showing chaetotaxy and lyrifissures.

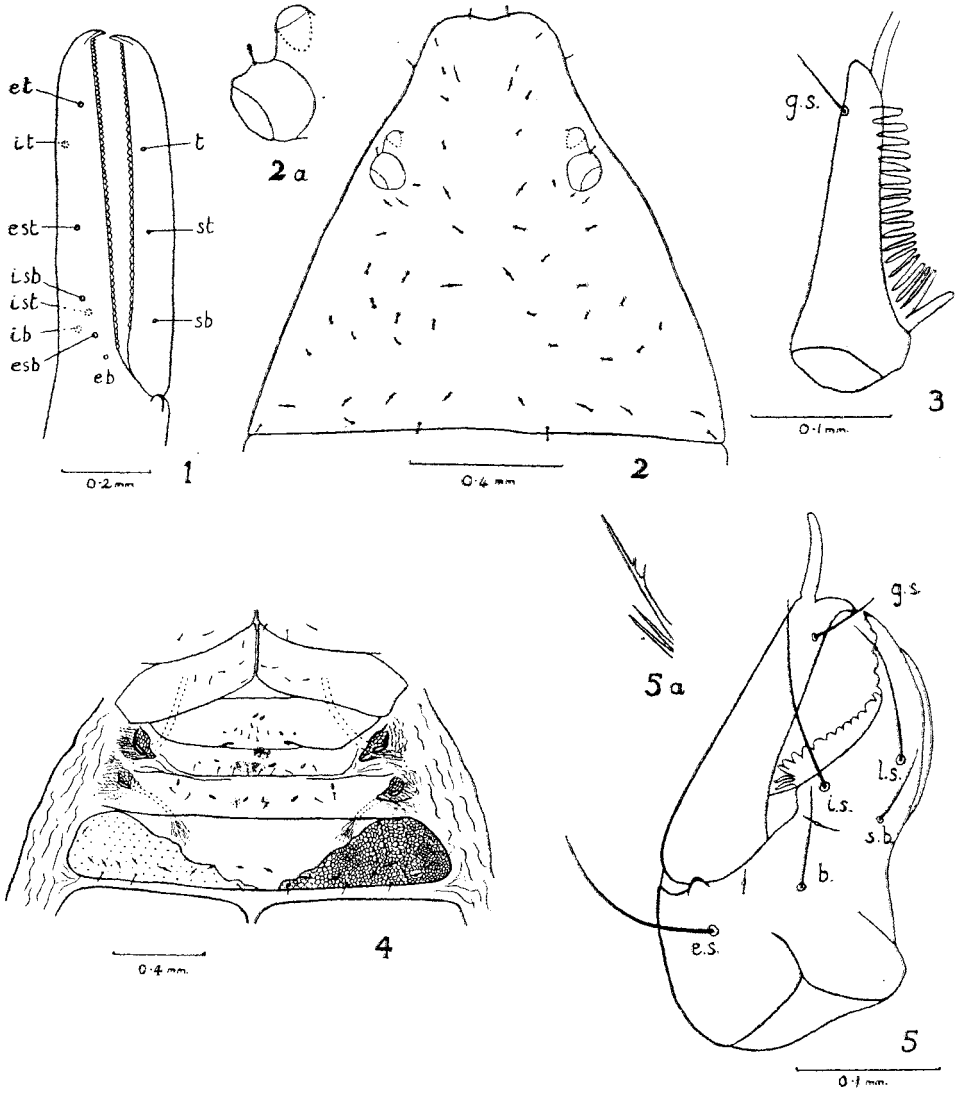
FIG. 2*a*.—Left eyes greatly enlarged.

FIG. 3.—Movable finger of chelicera, showing serrula exterior and the galeal seta (g.s.).

FIG. 4.—Female genital area.

FIG. 5.—Exterior view of chelicera of female. *g.s.* galeal seta; *i.s.* interior seta; *l.s.* laminal seta; *s.b.* sub-basal seta; *e.s.* exterior seta; *b.* basal seta.

FIG. 5*a*.—Flagellum.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