

A NEW SPECIES OF THE GENUS CANACOPHILUS CARL,  
1926, FROM NEW CALEDONIA  
(DIPLOPODA, POLYDESMIDA, SPHAEROTRICHOPODIDAE)

by

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**Canacophilus chordeumopygus** nov. spec.

New Caledonia, Mt. Mou, 2000 ft., under stones, 8-14 March 1914 (coll. P. D. Montague, New Caledonia Expedition), 1 ♂ (holotype), 2 ♀♀.

Colour. — Head rather dark brownish gray. Antennae of the same colour, though slightly paler. Body segments similarly coloured as the head, but the metatergites, including the posterior portion of the lateral keels and except a zone near the waist, paler, more yellowish brown. Legs and anal segment rather dark brownish gray.

Width. — Holotype ♂: 3.1 mm; paratype ♀♀: 3.5 mm.

Head and antennae. — Labrum moderately narrow, moderately emarginate, tridentate. Clypeus rather weakly impressed towards the labrum, weakly convex, the lateral borders emarginate. Headplate smooth, with weak cellular structure. Clypeal and frontal parts moderately to rather weakly setiferous, the setae varying from short to rather long. Antennal sockets separated by about one and a half times the diameter of one socket or by about two thirds the length of the second antennal segment. Postantennal groove and the wall in front of it rather weakly developed. Vertex not demarcated from the frontal area, moderately convex, with a few setae. Vertigial sulcus weakly impressed, not reaching the upper level of the sockets. Antennae rather long and slender, moderately to, distally, rather densely setiferous. Length of the segments:  $2 = 3 > 4 = 5 = 6$ ; the sixth segment about two thirds the second. The fifth and sixth segments distinctly thicker than the proximal segments.

Collum. — About as wide as the head. Dorsal outline subsemicircular, very slightly transversely elongate. Anterior border widely and evenly rounded. Posterior border weakly emarginate in the middle, laterally widely convex. Lateral edge moderately widely and almost evenly rounded. Surface smooth, moderately convex, with a few rather long hairs along the anterior

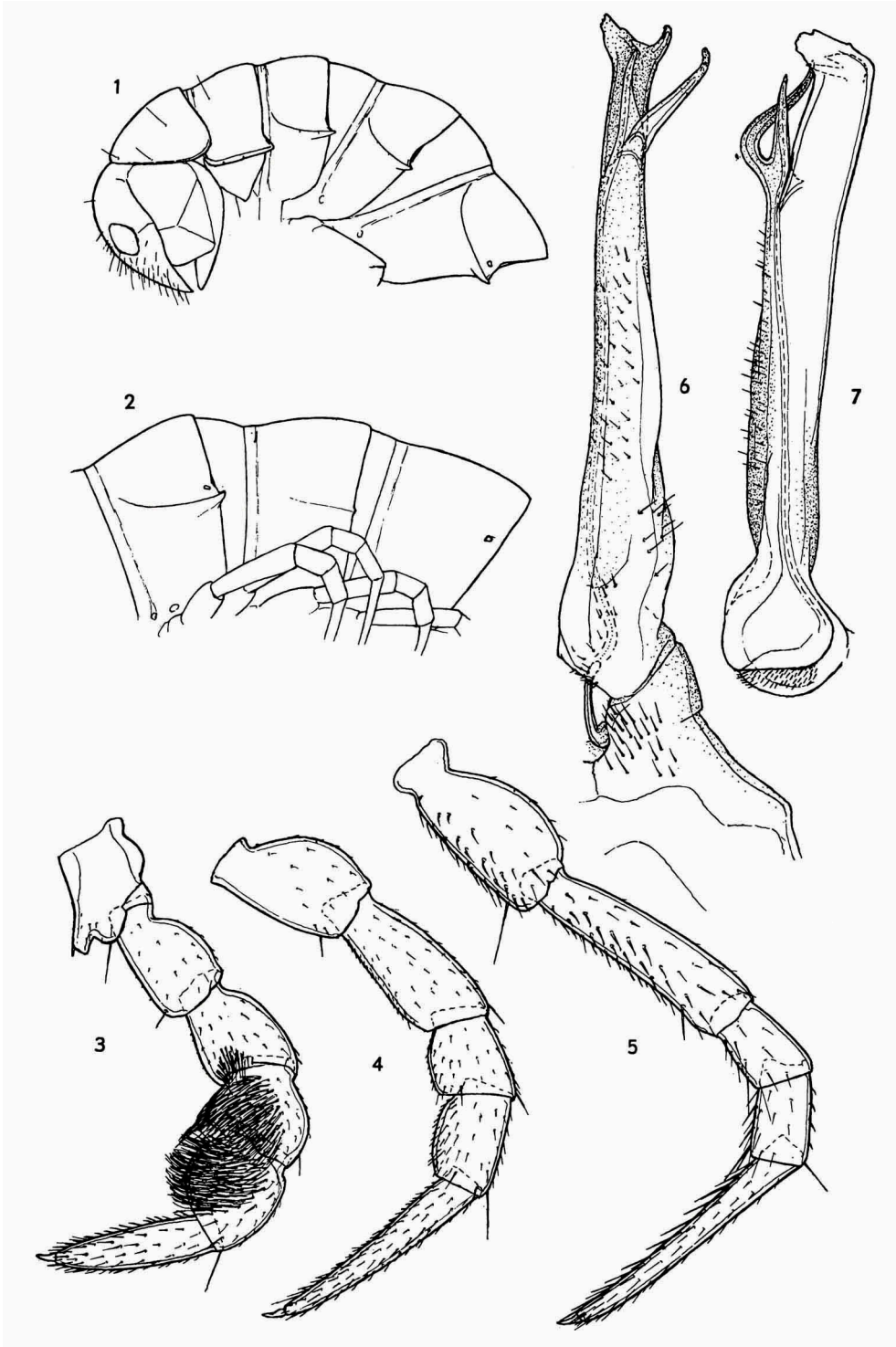
border and in the middle. Anterior and latero-anterior margin with a fine rim, almost obsolete in the middle.

Body segments. — Moderately, from about the 15th segment hardly, constricted in the waist area. Waist rather broad, anteriorly sharply demarcated from the prosomite, without sculpture but with a fine cellular structure. Prosomites somewhat dulled by the fine cellular structure. Metatergites more shining, smooth, without transverse furrow. Some sparse, rather long setae present in a few anterior and posterior segments. Surface of metatergites evenly transversely convex, mesad of the marginal rim of the keels a little more convex. Lateral sides smooth or irregularly longitudinally wrinkled. No pleural keels, but a weak ridge runs from the base of the posterior leg obliquely upwards to the posterior margin of the segment.

Lateral keels (figs. 1, 2). — Moderately developed to absent. Second segment slightly wider than the collum, the keels distinctly below the level of those of the following segment. Anterior border straight. No distinct latero-anterior edge, but the latero-anterior border moderately widely rounded. Lateral border practically straight with anteriorly two weak notches. Posterior border somewhat concave. Posterior edge slightly acutely angular, projecting a little behind the margin of the segment. Anterior, lateral and posterior margins with a fine marginal rim. Third segment about as wide as the second. Keels anteriorly and latero-anteriorly widely rounded, laterally almost straight. Posterior border concave. Posterior edge acutely angular, a little more produced than in the second segment. Marginal rim present anteriorly, laterally and, weakly, posteriorly, narrow but sharply demarcated. Lateral border anteriorly and in the middle with two weak notches. Fourth segment about as wide as the third. Keels subsimilar, but latero-anteriorly more widely rounded and the two notches almost obsolete. Posterior border straight, its marginal rim almost obsolete. Fifth segment distinctly wider than the fourth. Latero-anterior border very widely rounded, without notches. Posterior edge pointed. Posterior border straight, abruptly emarginate at the base of the keel. Pore rather large, on the upper surface of the keel near the posterior border. Premarginal furrow beginning near the waist, sharply impressed. Marginal rim along the posterior border very weak or obsolete. Keels of subsequent segments up to the 13th largely similar to those of the fifth segment. Posterior borders in some poriferous segments a little convex behind the pore. Latero-anterior margin in poreless segments more widely rounded than

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Figs. 1-7. *Canacophilus chordeumopygus* nov. spec., ♂ holotype. 1, head and first five body segments, lateral view; 2, body segments 13 to 15, lateral view; 3, right leg of second pair; 4, right leg of third pair; 5, right leg of seventh segment; 6, left gonopod, caudal view; 7, right gonopod, mesal view.



in poriferous segments. Keels of the 14th segment almost obsolete: represented only by a weak premarginal furrow extending from the posterior border of the segment to about halfway the waist, and a small prominence at the posterior margin of the segment. Keels from the 15th to the 18th segment completely absent. The premarginal furrow also absent. Pores near the posterior margin of the segments.

Sternites and legs. — Sternites of middle segments about one and a half times longer than wide, with a well impressed transverse furrow and a wider, slightly less impressed longitudinal impression, sparsely set with rather long hairs. Sternite of fifth segment without particulars. Sternite of sixth segment rather strongly excavated longitudinally, but the middle remains a little raised above the level of the ventral side of the metasomite. At the base of the posterior legs a blunt cone directed ventrad. Sternite of seventh segment without particulars. From the eighth segment onwards at the base of each leg a broad cone directed caudad, which in the posterior segments becomes more pointed. The longitudinal impression nearly disappears in the posterior segments and in the 17th segment the sternites are two times longer than broad. Cones at the base of the last pair of legs small and scarcely separated medially. Legs (figs. 3, 4 and 5) rather long, rather slender. Length of the segments:  $6 = 3 > 2 > 5 > 4 > 1$ . Prefemur of all legs thickest, especially in the anterior half of the body, except in the second pair, becoming somewhat thinner and longer in the posterior half of the body. Legs moderately setiferous, in particular ventrally, with short hairs. First pair of legs comparatively short and thick. Legs of the second pair subsimilar, though somewhat longer, and with the postfemur and tibia strongly incrassate. Caudal side of the distal end of the femur, the postfemur and the tibia densely set with rather long hairs. Legs of the third and fourth pairs somewhat more elongate; the ventral side of the postfemur and tibia still somewhat convex, but without dense brushes of hairs.

Anal segment. — Tail of moderate length, the sides straight and moderately converging, the end moderately narrowly truncate. Tail ventrally not concave. Surface of anal segment a little rugulose, normally setiferous, the setae not on tubercles. Valves with rather narrow but well developed marginal rims. Surface of valves with dispersed setae, the two normal ones on each valve rather long, the others shorter. Marginal rims also with some setae. Scale similarly dispersedly setiferous; about as long as broad at the base, the sides concave at the base, then straight moderately converging, the end rounded. The normal pair of setae longer than the others, on scarcely prominent tubercles.

Gonopods (figs. 6, 7). — Coxae short, medially coalesced, with a posterior

setiferous area. Prefemur strongly elongate, rather dispersedly setiferous. Acropodite about two fifths of the length of the prefemur, composed of an anterior femoral process and a posterior tibiotarsus, between which arises the solenomerite. Femoral process lamellate; the end curving caudad, split into a medial serrulate lamella and two more spiniform lamellae on the lateral side. Tibiotarsus a slender style curving distad, then cephalad and finally distad again. Course of the spermal channel almost straight along the medial side of the telopodite. Solenomerite rather short, not projecting distad of the femoral process and the tibiotarsus, gradually acuminate towards the end.

Female. — Comparatively a little more robust than the male. Antennae relatively shorter, the sockets separated by about the length of the second antennal segment. Third body segment a little wider than the second, the fourth a little wider than the third. Sternites with the sternal cones weakly developed in the anterior part of the body, to obsolete in the posterior part. Legs without the particular modifications of the male. The anterior legs somewhat less incrassate than in the male. Relative width of the prefemur scarcely different from that of the male.

Location of type material. — British Museum (Natural History), London. One female paratype in the Zoölogisch Museum, Amsterdam.

The genus *Canacophilus* and all its known species were described by Carl (1926, in Sarasin & Roux, *Nova Caledonia, Zool.*, vol. 4, pp. 389-401). Attems (1940, *Tierreich*, vol. 70, p. 438) gave a key to the species, which are comparatively easily distinguished by the characters of the gonopods and the anterior ambulatory legs of the males.

As regards the configuration of the gonopods the new species comes nearest to *C. fastidiosus*, in which, however, the solenomerite (marked *c* in Carl's drawing) projects distad of the femoral process (marked *a* by Carl). Moreover, *C. fastidiosus* is quite distinct from *C. chordeumopygus* by its greater size, by the presence of a transverse furrow on the metatergites of the 5th to the 15th segment, by the aberrant pore-formula, the distinctly notched lateral keels, and the presence of lateral keels in the posterior segments also.

The new species must be closely related to a species which Carl, because of the absence of males, described as *Canacophilus?* spec. In this unnamed species, as in *C. chordeumopygus*, lateral keels were absent from the 14th segment onwards. But as the size of Carl's species was apparently smaller (female 3.0 mm wide instead of 3.5 mm) and lacked a lateral furrow on the 14th segment, his material may have belonged to still another species yet.

For one of the species of *Canacophilus*, *C. acutangulus*, Carl erected the subgenus *Anthogonopus*, which was characterized by the absence of a meta-

tergal transverse furrow and the strongly developed lateral keels in which the posterior edges are strongly produced and pointed. On account of the lack of a transverse furrow the new species belongs to *Anthogonopus*, although the development of the lateral keels is totally different. It seems, therefore, that *Anthogonopus* is better withdrawn. As a result of an evolutionary tendency not uncommon in richly developed genera endemic on long isolated islands, the species of *Canacophilus* have strongly differentiated in many directions. The seven species now known on morphological grounds would fully justify the creation of two or three subgenera more. But, as probably many species of *Canacophilus* remain to be discovered, the time for a subgeneric division has not yet come.

The known species of *Canacophilus* may be distinguished with the aid of the following key.

1. Width of body segments 0.8 to 1.0 mm . . . . . 2
- Width of body-segments 1.6 mm or more . . . . . 4
2. Five basal segments of the legs of the third to about the 15th pair of the male ventrally densely set with very short, thick setae. Acropodite of gonopods deeply split: femoral process, solenomerite and tibiotarsus each about half as long as the entire telopodite . . . . . *C. lifouensis* Carl, 1926
- Femora, postfemora and tibiae of the legs of the fifth to the ninth pair of the male ventrally with some sphaerotrichs. Branches of the gonopod-acropodite at most as long as one third of the entire telopodite . . . . . 3
3. Tibiae of the legs of the second pair of the male ventrally with a brush of long hairs. Femoral process of the gonopods covered with numerous scale-like processes . . . . . *C. sarasini* Carl, 1926
- Tibiae of the legs of the second pair of the male without a brush of long hairs. Femoral process of gonopods without scale-like processes . . . . . *C. humboldti* Carl, 1926
4. Lateral keels strongly developed, the posterior edges strongly produced and pointed, the points directed obliquely downward. Width of male 1.6 mm, of female 1.8 mm . . . . . *C. acutangulus* Carl, 1926
- Lateral keels rather weakly developed to absent . . . . . 5
5. Postfemora and tibiae of the legs of the fourth to the tenth pair of the male ventrally with sphaerotrichs. Width of male about 2 mm, of female about 2.8 mm . . . . . *C. rouxi* Carl, 1926
- Legs of the male without sphaerotrichs . . . . . 6
6. Metatergites of the middle part of the body with a transverse furrow. Lateral keels also present in the posterior part of the body. Poreformula of the male: 5, 7, 9-18, of the female: 5, 7, 9, 10, 12-18. Width of male 4.0 mm, of female 5.25 mm . . . . . *C. fastidiosus* Carl, 1926
- Metatergites without a transverse furrow. Lateral keels absent from the 14th segment onwards. Poreformula normal. Width of male 3.0 mm, of female 3.5 mm . . . . . *C. chordcumopygus* nov. spec.