Pacific Insects Monograph 7: 601–606 July 15, 1964

INSECTS OF CAMPBELL ISLAND. APPENDIX. CAMPBELLOBATES ACANTHUS N. GEN., N. SP. (Acari: Cryptostigmata)

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Abstract: A description is provided of *Campbellobates acanthus* n. gen., n. sp. from Campbell Island. The genus possesses an unusual combination of characters reminiscent in some respects of the Scheloribatidae, in others of the Ceratozetidae. A discussion of the possible affinities is given and it is concluded that the genus belongs in the superfamily Oribatuloidea; the familial status is uncertain.

This second paper in the series devoted to taxonomic descriptions of the Oribatei from Campbell Island contains an account of a new form present in collections from the Beeman Hill area. The collections examined in this study were made by Dr. J. L. Gressitt and I am indebted to him for the opportunity to examine them. Type material will be deposited in the Dominion Museum, with paratypes in Bishop Museum.

Genus **Campbellobates** Wallwork, n. gen.

This new genus bears certain superficial resemblances to members of the Scheloribatidae, but differs in so many fundamental respects from other genera within this family that it is proposed to leave open, for the present time, the question of its familial status. It is represented by 5 specimens, all evidently belonging to the same species, from the Beeman Hill locality. A tentative list of generic characters is given below.

Sexual dimorphism present; pseudostigma completely hidden beneath base of pteromorph; integument covering notogaster, venter and anal region with markedly porose microsculpture; 10 pairs of notogastral setae of which 2 pairs are inserted on the pteromorphs; no sub-lamellar ridge; tutorium present; 4 pairs of genital setae; aggenital setae lacking; 1 pair of anal setae; coxisternal and sternal ridges well developed; all tarsi monodactyle, tarsal chaetotaxy shows deficience.

A discussion of the possible affinities of the genus will be given after the description of the type species, *C. acanthus* n. sp.

Campbellobates acanthus Wallwork, n. sp. Figs. 1–5.

Material examined: 5 adults (3♀♀, 2♂♂), Beeman Hill, Campbell I., XI.1961, J. L. Gressitt.

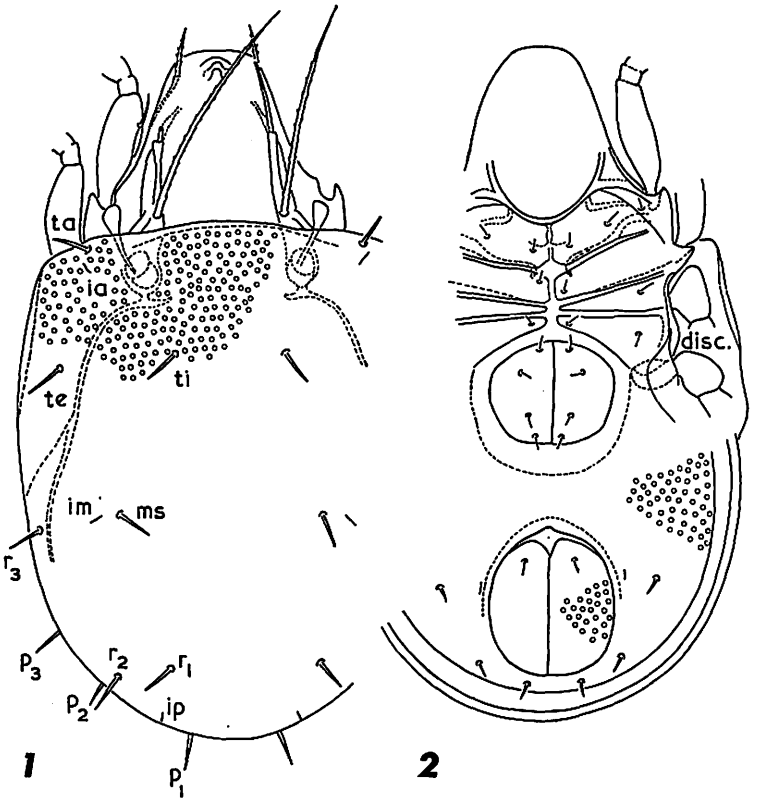
Measurements. ♂♂: Average length of body: 265.9μ (range: 263.2μ–268.6μ); average

width of body (measured at widest part): 160.2 μ (range: 152.4 μ–168.0 μ). ♀♀: Average length of body: 296.8 μ (range: 291.2 μ–308.0 μ); average width of body (measured at widest part): 180.8 μ (range: 173.0 μ–190.4 μ).

Sexual dimorphism is present; ♂♂ differ from ♀♀ in being smaller in body size, having longer and thicker notogastral setae, and in having a relatively smaller genital aperture. The following description applies to the ♀ unless stated otherwise.

Integument: Color of body and legs pale brown. No cerotegument. Notogaster, ventral and anal plates covered with a regular porose microsculpture consisting of ovoid areas, pale in color, 3–5 μ in diameter, arranged in a uniform pattern (fig. 1). This microsculpture is lacking on prodorsum, genital plates, coxisternal region, ventral surface of gnathosoma and legs; the integument is smooth in these regions.

Prodorsum: Rostrum broad, almost truncate in contour when viewed from dorsal aspect (fig. 1); mid-dorsally rostral tectum bears a shallow excavation into which projects a rounded chitinized lobe. Rostral setae inserted laterally on rostral tectum, each on a distinct apophysis which marks the anterior extremity of a lateral prodorsal ridge; setae shorter than their mutual distance and markedly barbed. Lamellae relatively short, extending



Figs. 1-2. *Campbellobates acanthus* n. gen., n. sp., ♀. 1, dorsal view; 2, ventral view. *ta, te, ti, ms,* r_{1-3}, p_{1-3}=notogastral setae; *ia, im, ip*=notogastral fissures; *disc.*=discidium.

from pseudostigma for about 1/2 the length of prodorsum; each ridge is broadly attached to prodorsum and extends above as a vertical blade; anterior extremity of each lamella is produced into a short heavy cusp carrying insertion of lamellar seta; in front of the cusp a short lamellar extension (prolamella ?) is directed antero-medially towards rostrum; this extension does not attain the insertion of rostral seta. Lamellar seta strongly thickened, baculiform, without barbs, curving ventrad following contour of rostral tectum; seta extends anteriorly as far as anterior margin of rostrum. Interlamellar setae inserted on or near posterior part of lamellae; these setae are much longer than the other prodorsal setae and are weakly barbed. Pseudostigma completely hidden beneath base of pteromorph on each side. Sensillus has a slender stalk and a flattened, expanded, glabrous head; most of sensillus hidden beneath base of pteromorph, with only distal part of head projecting.

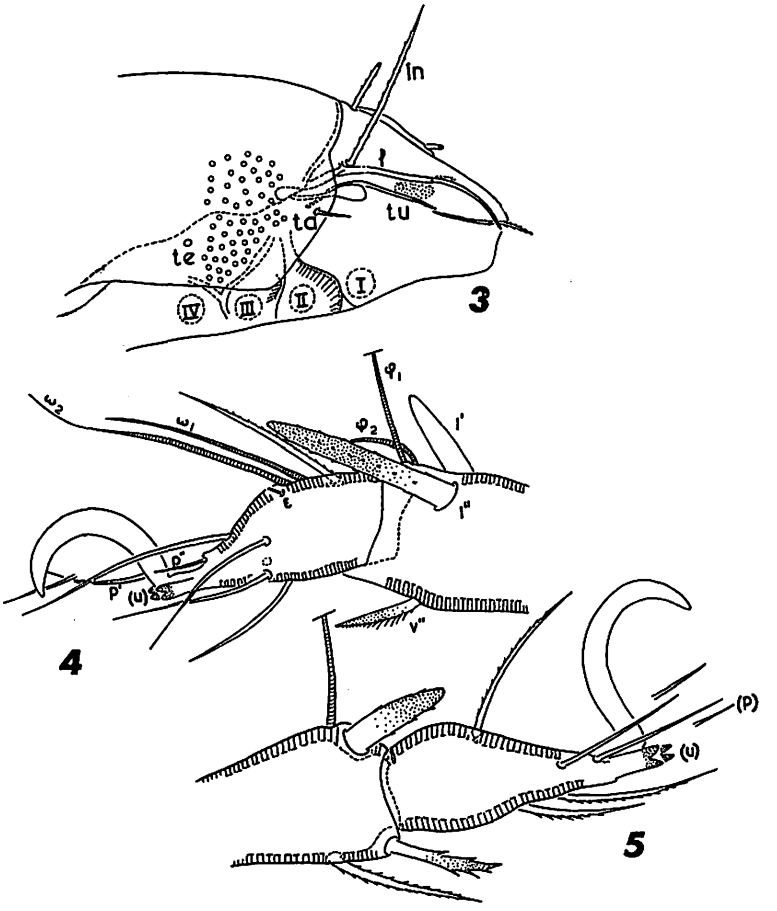
Notogaster: The characteristic ornamentation of this region has been described above. Anterior margin almost straight; pteromorph broadly triangular in lateral view (fig. 3), generally curving postero-ventrad more sharply than indicated in fig. 1. Dorsal shield broadly rounded posteriorly. Ten pairs of thickened, spine-like, weakly barbed, notogastral setae; setae moderately long (*ta*=20 μ in ♀♀) and straight; setae in ♂♂ more strongly developed than in ♀♀. Seta *ta* is inserted near anterior margin of pteromorph; seta *te* is also inserted on pteromorph; the remainder are inserted on the notogaster proper. Fissures *ia*, *im*, and *ip* were noted; *im* is particularly conspicuous. No sacculi or areae porosae were observed. Pteromorphs are without hinges.

Lateral region of podosoma: Details of this region are given in fig. 3. There is no typical sub-lamellar ridge; at level of insertion of interlamellar seta the lamellar ridge is produced into a latero-posterior flange, ornamented with striae, which is directed towards the exopseudostigmatic region; this development does not correspond in appearance to the sub-lamellar ridge found in, for example, the genus *Scheloribates*. A lateral prodorsal ridge, possibly corresponding to the tutorium, is present; this extends, with a slight interruption, from pseudostigma to rostrum where it carries the insertion of rostral seta at its apex. No discrete idiosomal areae porosae were observed, although an irregular area of porose or punctate microsculpture is present between tutorium and lamella. Exopseudostigmatic setae were not observed.

Ventral region: Anal aperture ovoid in shape; anal plates narrower anteriorly than posteriorly; each plate with only a single thickened seta inserted on anterior 1/2. Typically 3 pairs of adanal setae, similar in form to anals; ad_3 inserted lateral to anal field, ad_2 postero-lateral and ad_1 post-anal. Some variation in adanal chaetotaxy; seta ad_2 is lacking on one side in 1♀, seta ad_1 is lacking on one side in 1♂. Adanal fissure (*iad*) located lateral to anal field and aligned more or less parallel to long axis of body. There are no aggenital setae. Genital aperture relatively large, trapezoidal in shape, being broader anteriorly than posteriorly (♂♂ have a relatively smaller genital aperture than ♀♀). Each genital plate has 4 short, slender setae distributed as shown in fig. 2. The development of coxisternal ridges and apodemes is well marked on the ventral region of the podosoma; ridges I continuous with posterior border of camerostome and are U-shaped; apodemes I unite in mid-line in a short sternal apodeme; ridges II, sejugal and III are clearly defined, extending to mid-line where they join a conspicuous sternal ridge; apodemes lie just below the corresponding ridges and are denoted by broken lines in fig. 2. Posteriorly the sternal ridge gives rise to a pair of divergent ridges which run parallel to anterior and an-

tero-lateral rim of genital aperture and include the anterior part of the genital field; these ridges, which may represent coxisternal ridges IV extend laterally to the deeply-set insertion of leg IV; this insertion is large and extends medially to the genital field. Coxisternal setae fine and slender; 7 pairs were identified, corresponding to the formula: (3–1–1–2). Pedotecta I and II well developed; a rounded discidial ridge present, and also a weakly developed circum-pedal ridge.

Legs: Ventral crest lacking on femur I, but present on femora II, III and IV. A conspicuous feature of the legs is the strong development of several setae into thick spines which may be barbed or smooth; such setae are present on genual and tibial segments (figs. 4–5). Tarsal chaetotaxy, expressed by the formula (12–11–9–9) for legs I–IV, is unusual and may represent a deficient condition; iteral setae (*it*) lacking on all tarsi; seta *p''*



Figs. 3–5. *Campbellobates acanthus* n. gen., n. sp., ♀. 3, lateral region of podosoma; 4, tarsus and distal part of tibia of leg I, antiaxial; 5, tarsus and distal part of tibia of IV, antiaxial. *in*=interlamellar seta; *l*=lamella; *tu*=tutorium; *ta, te*=notogastral setae; I, II, III, IV, =insertions of legs. Notations of leg setae follow Grandjean's scheme.

is appreciably shorter than *p'* on tarsus I (fig. 4), but there is no size difference between these 2 setae on the other tarsi (fig. 5); setae (*u*) are dark-colored, thickened and terminally bifid on all tarsi (figs. 4–5). All tarsi furnished with a single strong claw.

Gnathosoma: The structure of this region is normal; the infracapitulum is diarthral; rutellum is pantelebasic.

This new genus shows an unusual combination of characters and it is difficult to ascertain its correct systematic position. In some respects it resembles members of the Scheloribatidae and its closest relationship probably lies with this family. Characters indicating this relationship include: (a) 4 pairs of genital setae, (b) ventrally-curving, unhinged pteromorphs, (c) 10 pairs of notogastral setae, (d) no genal incision on lateral border of camerostome, and (e) a well developed sternal ridge on ventral region of podosoma. The conspicuous porose integumental microsculpture on notogaster and venter is reminiscent of some members of the Scheloribatidae e. g. *Scheloribates ornatus* Bal. and Haplozetidae e. g. *Rostrozetes foveolatus* Selln.

In other respects however, this new genus does not conform with the general character of a scheloribatid mite. The rostral architecture, presence of tutorium and absence of sublamella, the apparent absence of areae porosae and sacculi and the position of adanal seta ad_3 lateral, instead of anterior or antero-lateral, to the anal field are all characters which are not usually associated with the Scheloribatidae. Other distinguishing features include the weak but distinct development of a discidial ridge, the completely covered pseudostigmata, relatively short lamellae, sexual dimorphism, absence of aggenital setae, a single anal seta on each plate, and the deficience shown in coxisternal and tarsal chaetotaxy. The configuration of coxisternal ridges is rather different from that usually found in the Scheloribatidae; typically in this family the ventro-sejugal ridge and ridge III are directed postero-medially and abut on the antero-lateral margin of the genital field.

The presence of a tutorium suggests a comparison with the Ceratozetidae; in this family the tutorium is frequently strongly developed with a free projecting cusp, a condition which is not shown by *Campbellobates*. The Ceratozetidae are further characterized by long lamellae, frequently with freely projecting cusps and a translamella, six pairs of genital setae, a strongly pointed discidium and a distinct genal incision on the lateral border of the camerostome; these characters are not present in *Campbellobates*. On the basis of these differences it is concluded that this new genus shows little relationship to the Ceratozetidae. Some members of the Haplozetidae possess 4 pairs of genital setae. This family is characterized by the possession of hinged pteromorphs and a very strongly developed discidium; *Campbellobates* is distinguished by a lack of these characters.

The above comparisons emphasize the unique combination of morphological characters shown by *Campbellobates*. The genus undoubtedly belongs in the superfamily Oribatuloidea and has more in common with the Scheloribatidae than with other families in this group. However in view of its unusual characters it is proposed to leave open the question of its exact familial status.

NOTE

The genus *Macquariella* Wallwork 1963

In a recent paper on the Oribatei of Macquarie Island (Wallwork 1963) I described as

new the genus *Macquariella* (family Metrioppiidae). This genus name is pre-occupied by *Macquariella* Finlay 1927 and must be rejected as a junior homonym. It is proposed that *Macquariella* Wallwork 1963 be replaced by the name **Macquarioppia** nom. nov. I am indebted to Dr. C. A. Fleming of the New Zealand Geological Survey for bringing the original reference to my attention.

REFERENCE

Wallwork, J. A. 1963. The Oribatei (Acari) of Macquarie Island. Pacific Ins. **5** (4): 721–69.