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The pseudoscorpions of New Zealand, Norfolk, and Lord Howe

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Nearly 20 000 specimens of pseudoscorpions from a full range of habitats have been examined. For New Zealand, 70 species and subspecies in 28 genera are recognised, and for Norfolk and Lord Howe Islands, 11 species in 9 genera. Endemism is very high in this area: in New Zealand, 13 out of 25 indigenous genera are endemic; 2 others (*Apatochernes*, *Nesochernes*) are shared with Norfolk Island; and 4 (*Sathrochthonius*, *Austrochthonius*, *Synsphyronus*, *Protochelifer*) extend their distribution to Australia (*Austrochthonius* is known also from South America and South Africa). The rest of the native genera have a wider distribution in the Pacific. Three species (*Lamprochernes savignyi*, *Withius subruber*, *Chelifer cancrooides*) have a wide and disjunct distribution induced by human traffic, and are considered to be an introduced element.

A collection of nearly 20 000 specimens of pseudoscorpions is the subject of this study. The material has come from all over New Zealand, Norfolk Island, and Lord Howe Island, from sea level to the tops of mountains and from under the ground to the forest canopy, and should therefore be representative of the composition and diversity of the pseudoscorpion fauna of this geographical area.

The first species to be described from the area was *Chelifer pallipes* A. White, 1849 (here transferred to *Philomaoria*). During the following 100 years only a few species were added, by C. J. With, E. Ellingsen, J. C. Chamberlin, M. Beier, and C. C. Hoff. Since 1961 I have worked on a few small collections, increasing the number of species considerably.

In the present paper 70 species and subspecies in 28 genera are recognised for New Zealand, and 11 species in 9 genera for Norfolk and Lord Howe Islands combined. The endemism of genera and species is very high in this area. In New Zealand, for instance, 13 out of 25 indigenous genera are endemic, 2 others (*Apatochernes*, *Nesochernes*) are shared with Norfolk Island, and 4 (*Sathrochthonius*, *Austrochthonius*, *Synsphyronus*, *Protochelifer*) extend their distribution to Australia (*Austrochthonius* is known also from South America and South Africa). The rest of the native genera have a wider distribution in the Pacific. Three species (*Lamprochernes savignyi*, *Withius subruber*, *Chelifer cancrooides*) have a wide and disjunct distribution induced by human traffic, and are considered to be an introduced element.

The material was supplied by Entomology Division, Department of Scientific and Industrial Research, Auckland (ED); Auckland Institute and Museum (AM); National Museum of New Zealand,

Wellington (NM); Canterbury Museum, Christchurch (CM); Otago Museum, Dunedin (OM); Australian Museum, Sydney (S); and Bernice P. Bishop Museum, Honolulu (H).

Key to pseudoscorpion genera of New Zealand, Norfolk, and Lord Howe

1. Tarsi I and II 1-segmented, tarsi III and IV 2-segmented.....2
—Tarsi all 1-segmented or all 2-segmented.....8
2. Carapace with 22 or fewer bristles (usually 16 or 18). Spiracles transverse; stigmatic helix bordered anteriorly only (Chthoniidae).....3
—Carapace plurisetose (with about 60 bristles). Spiracles oblique; stigmatic helix bordered anteriorly and laterally by distinct guard sclerite (Dithidae) .
.....*Anaulacodithella*
3. Intercoxal tubercle absent. Coxae II with seriate spines or row of microchaetae.....4
—Intercoxal tubercle present, bisetose. Coxae II without seriate spines or row of microchaetae (smooth or granulate).....*Sathrochthonius*
4. Carapace widest anteriorly, with 16 or 18 bristles. Eyes usually present.....5
—Carapace widest near middle, with 22 bristles. Eyes absent.....*Sathrochthoniella*
5. Palpal hand with tactile setae *ib* and *isb* sub-basal on dorsum.....6
—Palpal hand with tactile setae *ib* and *isb* near middle on dorsum.....*Austrochthonius*
6. Carapace with 2 anteromedian marginal bristles approximate. Coxae I with anteromedian area bearing conical or digitate process. Palpal hand with 1 or 2 spike-bristles medio-apically.....7
—Carapace with 2 anteromedian marginal bristles distant. Coxae I with anteromedian area rounded. Palpal hand without spike-bristles.....
.....*Tyrannochthoniella*

7. Tergites paucisetose, with 6 or fewer bristles
Paraliochthonius
 —Tergites plurisetose, middle tergites with 16–20
 bristles *Maorichthonius*
8. Tarsi 2-segmented 9
 —Tarsi 1-segmented 12
9. Movable cheliceral finger smooth, with subapical
 lobe. Carapace with narrowing cucullus 10
 —Movable cheliceral finger denticulate, without apical
 lobe. Carapace without cucullus, square (Neobisi-
 idae) *Ideobisium*
10. Carapace ovate, with short, non-sulcate cucullus.
 Eyes, if present, not on ocular tubercles. Integument
 without epicuticle (Olpidae) 11
 —Carapace triangular, with long, sulcate cucullus.
 Eyes on ocular tubercles. Integument with vitreous
 epicuticle (Garypidae) *Synsphyronus*
11. Arolia undivided. Fixed palpal finger with 8 tactile
 setae, movable finger with 4 *Xenopium*
 —Arolia divided. Fixed palpal finger with 7 tactile
 setae, movable finger with 2 *Nelsoninus*
12. Femora divided into basifemur and telofemur.
 Movable palpal finger with 3 or 4 tactile setae.
 Body length 2 mm or more 13
 —Femora undivided. Movable palpal finger with 1
 tactile seta. Body length 1.6 mm or less (Cheiridi-
 idae) *Apocheiridium*
13. Only 1 palpal finger with well developed venom
 apparatus and long venom tooth. True eyes usually
 absent 14
 —Both palpal fingers with well developed venom
 apparatus and long venom tooth. True eyes present
 (Cheliferidae) 29
14. Venom apparatus on movable finger. Palpal fingers
 with accessory teeth (exception: *Reischekia*) (Cherne-
 tidae) 15
 —Venom apparatus on fixed finger. Palpal fingers
 without accessory teeth (Atemnidae) *Oratennus*
15. Tarsi IV with long, acute tactile bristle 16
 —Tarsi IV without bristle or with short bristle
 distally 19
16. Integument granulate. Tactile bristle of tarsi IV
 not sub-basal 17
 —Integument smooth, polished. Tactile bristle of
 tarsi IV sub-basal *Lamprochernes*
17. Fixed palpal finger with tactile setae dispersed, *it*
 removed from *ist* 18
 —Fixed palpal finger with tactile setae (except *et*)
 clustered basally. *it* close to *ist* *Haplochernes*
18. Vestitural bristles long, dentate. Flagellum with 3
 blades *Thalassochnes*
 —Vestitural bristles short, clavate. Flagellum with 4
 blades *Heterochernes*
19. Eyes absent. Vestitural bristles blunt, dentate, more
 or less clavate 20
 —Eyes present. Vestitural bristles thin, acute, with
 1 subapical denticle *Opsochernes*
20. Last tergite with lateral bristles long and acute 21
 —Last tergite with lateral bristles short or long, if long
 then thick and dentate or slightly clavate (exception:
 acute in *Apatochnes antarcticus knoxi*) 22
21. Movable palpal finger with 4 tactile setae
 *Maorichernes*
- Movable palpal finger with 3 tactile setae
 *Systellochernes*
22. Fixed palpal finger with seta *it* about halfway
 between *ist* and apex or closer to *ist* 23
 —Fixed palpal finger with seta *it* usually much closer
 to apex than to *ist* 25
23. Fixed palpal finger with seta *ist* about halfway
 between *it* and *isb* or closer to *it* 24
 —Fixed palpal finger with seta *ist* much closer to *isb*
 than to *it* *Nesiotochernes*
24. Metazone of carapace with deep longitudinal groove
 *Phaulochernes*
 —Metazone of carapace without groove, occasionally
 with shallow circular depression medially
 *Nesidiochernes*
25. Palpal hand with median bristles more or less equal
 in length. Last tarsal pair without a longer bristle
 26
 —Palpal hand with median bristles unequal in length,
 some very long and almost pennate. Last tarsal pair
 with a longer, erect bristle subdistally
 *Smeringochernes*
26. Palpal fingers with accessory teeth 27
 —Palpal fingers without accessory teeth *Reischekia*
27. Pedipalps with vestitural bristles of moderate length
 28
 —Pedipalps with vestitural bristles very short, sparse,
 inconspicuous *Sundochernes*
28. Palpal femur distinctly pedicellate, abruptly clavate
 *Apatochnes*
 —Palpal femur less pedicellate, gradually clavate
 *Nesochernes*
29. Flagellum with 3 blades. ♂: coxae IV with coxal
 sacs; last sternite without sensory granules 30
 —Flagellum with 4 blades. ♂: coxae IV without coxal
 sacs; last sternite with sensory granules
 *Philomaoria*
30. Coxal sacs without atrium. ♂: rams-horn organ very
 small, inconspicuous *Protochelififer*
 —Coxal sacs with atrium. ♂: rams-horn organ well
 developed *Chelififer*

Family DITHIDAE

Anaulacodithella Beier, 1944

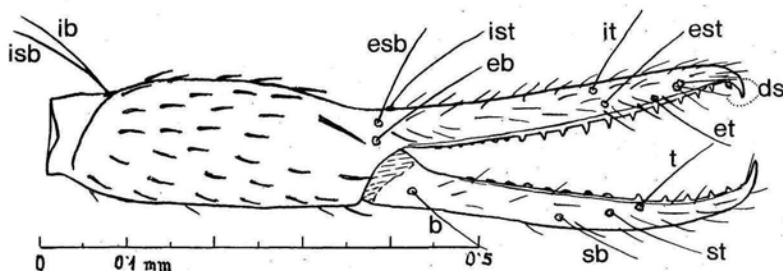
Palpal fingers with well spaced, acute teeth. Without
 intercoxal tubercle.

Confined to south-east Australia, New Caledonia,
 and Lord Howe I.

Anaulacodithella plurisetosa n.sp. (Fig. 1)

Carapace slightly longer than broad, not narrowed
 caudally, uniformly and prominently reticulate, with
 about 60 short, strong, nearly spindle-like bristles;
 anterior margin crenulate throughout, deeply de-
 pressed and excavated medially, with epistome quite
 small, denticulate, not projecting; posterior margin
 with 6–8 bristles. Eyes well developed, strongly
 convex, separated by their own diameter. Tergites
 as reticulate as carapace; chaetotaxy 10–12–12–14–

Fig. 1. *Anaulacodithella plurisetosa* ♀, chela, lateral.



16–16 etc., segments I–V or VI with some shorter bristles in subdiscal position; all bristles relatively short and as strong as those of carapace; last segment without tactile bristles. Cheliceral palm granulate distally; fixed finger with 6 teeth, last tooth enlarged; movable finger with row of 3–4 small denticles followed by 1 large tooth, apex of finger unarmed. Palpal femur longer than carapace, granulate medially; hand very narrow, 2.5× longer than wide, chela 5.6× longer than wide; fingers 1.3× longer than hand; fixed finger with about 10 acute, well spaced teeth, with 6–7 granules proximally, and with tactile seta *et* close to *ds*; movable finger with similar teeth distally, with row of rudimentary teeth proximally, and with tactile seta *sb* slightly distant from *st*. Coxae I with rather long, conical process anteriorly; coxae I and II with 3 coxal spines each, III and IV with 3 bristles mediolaterally; coxae IV with posterior angle humped. Intercoxal tubercle absent.

Body length 1.3–1.5 mm; carapace length 0.50–0.53 mm, width 0.45–0.46 mm; pedipalps: femur length 0.60–0.65 mm; hand length 0.35 mm, width 0.14 mm; finger length 0.45 mm.

TYPE DATA. **Holotype** ♀: LORD HOWE I., Cedar-howe, grass on track to Boat Harbour, 58–61 m (190–200'), STN 36, H. Gray (S). **Paratypes**: 1♀, type loc. (Mus. Vienna); 1♀, mixed litter, STN 37, ii.1971; 1♀, nr Goat House, 400 m (1300'), "Cedar" litter, sieved, ii.1971, Gray (S).

REMARKS. *A. plurisetosa* differs from the closely related *A. australica* Beier of Queensland and New South Wales and from *A. reticulata* Beier of New Caledonia in the plurisetose carapace and tergites, in lacking tactile bristles on the last segment, and in the position of the trichobothria of the palpal fingers.

Family CHTHONIIDAE

Sathrochthonius Chamberlin, 1962

Carapace nearly square, with dentate epistome and with 18 bristles. Tergites usually with 8 or 10 bristles. Pedipalps rather robust, hand thick, with dorsal tactile setae *ib* and *isb* basal. Coxal spines absent. Intercoxal tubercle present, bisetose.

Previously known only from Australia and New Caledonia.

Key to species of *Sathrochthonius*

- Palpal fingers with teeth uniformly small. Coxae II with row of granules *maoricus*
- Palpal fingers with proximal teeth larger than distal teeth. Coxae II smooth *insulanus*

Sathrochthonius maoricus n.sp. (Fig. 2)

Hard integument mostly dark brown. Vestitural bristles long.

Carapace nearly square (slightly longer than broad in male, slightly broader than long in female), with squamose sculpturing anteriorly and transverse reticulations posteriorly, otherwise smooth; with many small pore-dots, especially on posterior half, and with irregular, desclerotised patches forming transverse row sub-basally; lateral margin straight, scarcely convergent caudally, rather constricted sub-basally; anterior margin straight, finely crenulate, depressed on middle, with epistome prominent, broad, semicircular, densely dentate; disc with 18 bristles of nearly equal length, 6 on anterior margin and 2 on posterior margin. One pair of small, convex eyes situated 1 diameter from anterior margin. Tergites smooth, tergite 1 weakly sclerotised, I and II with 6 bristles (occasionally 4 in male), others with 8 bristles each, median pair of bristles gradually more removed; last tergite with 1 pair of long tactile bristles. Sternites usually with 8 bristles, last 5 segments more strongly sclerotised than others. Cheliceral palm with 5–6 long, strong bristles; fixed finger with 7 teeth, distal 2 enlarged; movable finger with 2 isolated teeth distally, without spinneret hump in adults, but with small, blunt spinneret in nymphs; galeal bristle sub-basal. Pedipalps stout; femur about 1.1× longer than carapace, smooth; hand sparsely granulate dorsodistally and at base of fixed finger, very thick, 1.4(♀)–1.6(♂)× longer than wide; chela 2.9(♀)–3.5(♂)× longer than wide; fingers about 1.1× longer than hand, each very densely armed with about 60 small, blunt teeth, basal teeth not enlarged; movable finger with tactile seta *sb* as far from *b* as from *t*. Coxae I with tubercle anteriorly; coxae II without spines but bearing short transverse ridge with double row of areolate and conical granules,

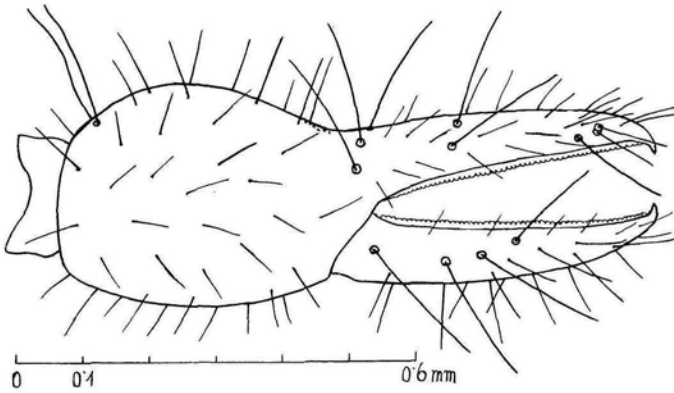


Fig. 2. *Sathrochthonius maoricus* ♀, chela, lateral.

posterior to this ridge with 1 low, sparsely and finely granulate tubercle. Intercostal tubercle with 2 small bristles. Male: genital operculum with 26 rather strong bristles, 10 of these on median margin.

Body length (♂) 1.7–1.8 mm, (♀) 1.8–2.2 mm; carapace length (♂♀) 0.55 mm, width (♂) 0.53 mm, (♀) 0.58 mm; pedipalps: femur length (♂♀) 0.60 mm; hand length (♂) 0.44 mm, (♀) 0.49 mm, width (♂) 0.27 mm, (♀) 0.34 mm; finger length (♂) 0.50 mm, (♀) 0.53 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, Marlborough, Pelorus Bridge, dense mixed forest, sifted litter from under fungi-infested logs and stems, ground very cold and fairly damp, 25.vii.1967, G. Kuschel (ED). **Paratypes:** 1♂, 1♀, 1 tritonymph, type loc. (ED); 1♂, 1♀, North I., Rodney Co., "forest Rem. Tomaralia Area", 11.viii.1966, Wise; 2♀, 1 nymph, Mangonui Co., forest N side Mangamuka hills, dry *Astelia* bases on tree, and debris beaten from *Freyinetia*, 19.xi.1966, Wise (AM); L. Waikaremoana—1♂, 1♀, Maruiana Arm [=Maraunui Bay?], 2♂, 2♀, Patekaha I., 1♀, 3 nymphs, Panekiri Bluff, 1100 m (3600'), 11.xii.1946, Forster; 1♂, 1♀, Mt. Ngamoko, 760 m (2500'), 13.xii.1946, Salmon (NM).

REMARKS. This is the first record of *Sathrochthonius* from New Zealand. *S. maoricus* differs from *crassidens* Beier of New South Wales, which is also oculate, in having the carapace smooth for the most part, the tergites with not more than 8 bristles, the movable cheliceral finger with 2 isolated teeth only, a sub-basal galeal bristle, the palpal femur smooth, the palpal fingers with more teeth, tactile bristle *b* farther from *sb*, coxae II with a granulate transverse ridge, and the male genital operculum more setose.

Sathrochthonius insulanus n.sp. (Fig. 3)

Relatively small. Pale yellowish-brown, tergites with broad, darker brown stripe on anterior margin, segments I–VI slightly broadened posteromedially.

Carapace slightly longer than broad in male, nearly square in female, smooth except for reticulate posterior angles, with 18 bristles, 6 on anterior margin and 2 on posterior margin, pre- and post-ocular bristles as long as these on anterior margin;

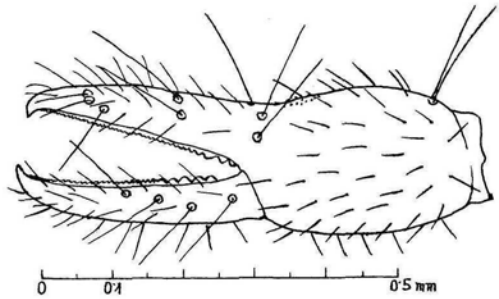


Fig. 3. *Sathrochthonius insulanus* ♀, chela, lateral.

anterior margin bluntly dentate throughout, depressed in middle, dentate epistome very short, not projecting. One pair of vestigial eyes with flat, indistinct lens. Tergites smooth; chaetotaxy 8–8–8 (♀10)–10–10–10–10–6–6–6, bristles of segment IX (except lateral ones) very long; last tergite and sternite with 1 pair of tactile bristles submedially; bristles of sternites (mostly 12 on each) slightly shorter and finer than those of tergites. Cheliceral palm with 6 bristles; fixed finger with 1 large median tooth and with 6 small teeth proximally, unarmed distally; movable finger with 4 denticles near middle and 1 isolated tooth subdistally, spinneret hump weak. Pedipalps stout, scarcely longer than body; femur scarcely as long as carapace, granulate medio-distally and with 4 median bristles on tubercles; hand short and broad, granulate dorsodistally, 1.5× longer than wide; chela 3.1× longer than wide; fingers scarcely longer than hand, each with 45–50 blunt teeth, proximal teeth enlarged, basal teeth (especially of movable finger) very large; movable finger with tactile setae in usual position, *t*, *st*, and *sb* equidistant, *sb* slightly farther from *b*. Coxae I with conical process anterolaterally; coxae II without spines or granules. Intercostal tubercle with 2 bristles. Tarsae IV with both tarsomeres bearing 1 tactile bristle sub-basally.

Body length 1.0–1.2 mm; carapace length 0.38–0.42 mm, width 0.37–0.40 mm; pedipalps: femur length 0.36 mm; hand length 0.32 mm, width 0.21 mm; finger length 0.35 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: LORD HOWE I., "Ced. Palm" litter, STN 45, M. R. Gray (S). **Paratype** ♀: type loc. (Mus. Vienna).

REMARKS. *S. insulanus* is closely related to *crassidens* Beier of New South Wales, but is smaller, with the carapace and coxae II smooth, eyes vestigial, and palpal femur only mediobasally granulate. It is easily distinguished from *kaltenbachi* Beier of New Caledonia and *mauricus* by the enlarged basal teeth of the palpal fingers and by the smooth coxae II.

Sathrochthoniella Beier, 1967

Carapace broadest in middle, with 22 bristles. Lacking eyes. Palpal hand with tactile setae *ib* and *isb* sub-basal on dorsum. Coxae I with short cone; coxae II with pectinate row of 6 short, broad, distally fringed spines. Lacking intercoxal tubercle. Monotypic genus endemic to New Zealand.

Sathrochthoniella zealandica Beier

Beier, 1967, Records of the Dominion Museum 5: 277, fig. 1 (*pectinata* Beier in litt.).

Chaetotaxy of tergites variable from 6–6–8–8–10–10–10–10–6–6 to 6–8–10–10–12–14–14–12–12–6–6, and generally richer in females than in males. Length of bristles also variable. Anterior angles of carapace often more or less glassy.

Body length (♂) 1.0–1.25 mm, (♀) 1.15–1.6 mm; carapace length (♂) 0.38–0.39 mm, (♀) 0.39–0.49 mm, width (♂) 0.37–0.39 mm, (♀) 0.44–0.55 mm; pedipalps: femur length (♂) 0.34–0.35 mm, (♀) 0.47–0.49 mm; hand length (♂) 0.25–0.27 mm, (♀) 0.27–0.37 mm, width (♂) 0.16–0.19 mm, (♀) 0.19–0.23 mm; finger length (♂) 0.35–0.37 mm, (♀) 0.37–0.48 mm.

Widely distributed in New Zealand from Northland to Southland. Specimens: 109 (AM, CM, ED, NM, OM).

Austrochthonius Chamberlin, 1929

Carapace broadest across eyes, with 18 bristles. Epistome broad, dentate or spined, projecting. At least anterior eyes well developed, posterior eyes often vestigial. Palpal hand with tactile setae *ib* and *isb* in middle of its dorsum. Palpal fingers densely dentate, seldom some teeth of fixed finger more or less well spaced and movable finger unarmed. Coxae I with median anterior angle rounded, with 2 short bristles; coxae II with row of pennate spines. Intercoxal tubercle absent.

Circumantarctic: South America (Bolivia, Chile, southern Argentina), New Zealand, Australia (incl. Tasmania), Crozet Is, South Africa (under the

synonymous name *Paraustrochthonius*).

Although I have examined hundreds of specimens of this genus, I have some reservations as to the number of species involved.

Key to species of *Austrochthonius*

- Fixed palpal finger with all teeth densely spaced and retroclinate. 2
—Fixed palpal finger with middle teeth more spaced and erect. 3
- Carapace as long as wide, yellowish-brown; posterior eyes flat. *zealandicus zealandicus*
—Carapace transverse, dark brown to blackish; both pairs of eyes well developed and convex. *zealandicus obscurus*
- Both palpal fingers with retroclinate teeth apically; movable palpal finger with crenate lamina. *mordax*
—Movable palpal finger and apex of fixed palpal finger without teeth; movable palpal finger with almost smooth lamina. *rapax*

Austrochthonius zealandicus zealandicus Beier

Beier, 1966, Pacific Insects 8: 363, fig. 1.
inversus Beier, 1967, Records of the Dominion Museum 5: 280, fig. 3; 1969, Records of the Auckland Institute & Museum 6: 413. New synonymy.
luxtoni Beier, 1967, Records of the Dominion Museum 5: 279, fig. 2. New synonymy.

New material (some 1800 specimens) shows a remarkable range of variation in several features, and leads me to regard 2 previously described species as variants of this nominate subspecies.

North I., northern half of South I., Chatham Is (AM, CM, ED, NM, OM).

Austrochthonius zealandicus obscurus Beier, new status

Beier, 1966, Pacific Insects 8: 364, fig. 2; 1967, Records of the Dominion Museum 5: 279.

The highly pigmented dark brown to blackish-brown body, the transverse carapace having numerous pore-dots, and the well developed eyes clearly separate this from the nominate subspecies.

Southern half of South I., from Banks Peninsula to Stewart I. and The Snares. Specimens: 670 (CM, ED, NM, OM, H).

Austrochthonius mordax Beier, new status

Beier, 1967, Records of the Dominion Museum 5: 282, fig. 4 (as ssp. of *inversus* Beier)

Closely resembling *zealandicus zealandicus* (*inversus*-form). Movable palpal finger with tactile seta *sb* closer to *b* than to *st*. Fixed finger with middle teeth erect and slightly spaced; movable finger denticulate only apically, elsewhere crenate, crenation occasionally obsolete towards base.

Body length (♂) 1.25–1.5 mm, (♀) 1.5–1.8 mm; carapace length (♂) 0.41–0.45 mm, (♀) 0.50 mm, width (♂) 0.40–0.44 mm, (♀) 0.50–0.54 mm; pedipalps:

ligulifera Beier, 1967, Records of the Dominion Museum 5: 284, fig. 5. **New synonymy.**

A variable and sexually dimorphic species. Vestitural bristles thin or thickened, shortly pointed, particularly in male.

Carapace with anterior margin medially arcuate and coarsely dentate in female, straight and finely denticulate in male; posterior margin of carapace with 2 bristles. Palpal chela often much more slender in male than in female, fingers of male slightly to strongly elongate; tactile setae *sb*, *st*, and *t* equidistant or *sb* slightly farther from *st*.

Body length (♂) 1.05–1.35 mm, (♀) 1.4–1.7 mm; carapace length (♂) 0.39–0.48 mm, (♀) 0.45–0.49 mm, width (♂) 0.35–0.45 mm, (♀) 0.43–0.47 mm; pedipalps: femur length (♂) 0.39–0.72 mm, (♀) 0.48–0.49 mm; hand length (♂) 0.25–0.40 mm, (♀) 0.32–0.35 mm, width (♂) 0.13–0.15 mm, (♀) 0.18–0.20 mm; finger length (♂) 0.31–0.58 mm, (♀) 0.30–0.46 mm.

Throughout North and South Is. In moss litter and debris, and under bark, often together with *Austrochthonius zealandicus*. Specimens: about 1900 (AM, CM, ED, NM, OM, H).

***Tyrannochthoniella zealandica foveauxana* Beier, new status**

Beier, 1967, Records of the Dominion Museum 5: 285, fig. 6 (as species).

Vestitural bristles thin.

Carapace with 4 posterior marginal bristles (the lateral ones shorter), its anterior margin straight. Movable palpal finger crenate proximally, tactile seta *sb* slightly more removed from *st* than *st* from *t*.

Foveaux Strait: Ruapuke, Ulva and Bird Is. Specimens: few (CM, ED, NM, OM).

***Paraliochthonius* Beier, 1956**

Morikawia Chamberlin, 1962 (syn. by Muchmore, 1972).

Closely related to *Tyrannochthonius* Chamberlin. Carapace narrowed posteriorly, mostly with long, acute epistome, with 16 long bristles, 2 median bristles (epistomal bristles) close together. Palpal hand with trichobothria *ib* and *isb* on dorsum proximad of middle, with 1–4 (mostly 2–3) very long, more or less spike-like bristles medially, 1 bristle on or near base of fixed finger. Only coxae II with row of pennate spines, arising from moderately prominent common base. Intercostal tubercle absent.

Widely distributed.

Key to species of *Paraliochthonius*

1. Palpal tibia of usual length (subg. *Paraliochthonius*) 2
 —Palpal tibia lengthened (subg. *Pholeochthonius*)
 *cavernicola*
2. Teeth of palpal fingers rather close together 3
 —Teeth of palpal fingers distinctly spaced 4

3. Epistome long, projecting. Palpal hand with 3–4 very long bristles medially; fingers about 1.8 × longer than hand *densedentatus*
 —Epistome very small, reduced. Palpal hand with 1 spike-like bristle mediolaterally; fingers 1.3 × longer than hand *kermadecensis*
4. Fixed palpal finger with teeth alternating in length 5
 —Fixed palpal finger with teeth equal in length
 *grimmeti*
5. Anterior eyes well developed 6
 —All eyes absent. (Anterior 2 tergites with 4 bristles each) *caecatus*
6. First 2 tergites with 2 bristles each. Palpal hand with 2 very long, spike-like bristles mediolaterally 7
 —First 2 tergites with 4 bristles each. Palpal hand with 1 relatively short, strong, spike-like bristle mediolaterally *norfolkensis*
7. Movable palpal finger with dentations confined to distal third, intercalary teeth sharp. *luxtoni luxtoni*
 —Movable palpal finger with dentations extended over distal two-thirds, intercalary teeth very low and blunt *luxtoni horridus*

***Paraliochthonius densedentatus* (Beier) (Fig. 5)**

Beier, 1967, Records of the Dominion Museum 5: 287, fig. 7 (*Morikawia*).

Among smallest species of genus. Epistome long, projecting. Palpal hand with 3–4 very long bristles medially; fingers about 1.8 × longer than hand, fixed finger with about 40–60 small teeth of alternate length, close together; movable finger with tactile setae *st* and *t* in middle third.

North and South Is. In forest litter. Specimens: 175 (AM, ED, NM, OM).

***Paraliochthonius kermadecensis* n.sp. (Fig. 6)**

Carapace greenish, chela and chelicerae amber, abdomen pale brownish or orange.

Carapace as long as broad, weakly narrowed caudally, with epistome small and short, triangular or vestigial; 16 bristles (2 on posterior margin) and 1 small preocular bristle. Anterior eyes large but flat; posterior eyes reduced, transversely oval. Tergites I–III with 4 bristles each, others with 6. Cheliceral palm with 4 bristles; flagellum with 7 blades, 5 median blades unilaterally pennate; fixed finger with 12–13 teeth, these lengthening distad; movable finger with 10–11 denticles of equal length; spinneret very flat. Palpal femur scarcely longer than carapace, smooth; hand with 1 strong spike-bristle of variable length mediolaterally, 1.9 × longer than wide; chela 4.4 × longer than wide; fingers 1.3 × longer than hand; fixed finger with about 40 teeth alternating in length, proximal teeth blunt; movable finger with only 6–9 teeth and small intercalary teeth distally, otherwise with undulate lamina; movable finger with tactile seta *sb* scarcely closer to *b* than to *st*, which is close to *t*. Coxae II with row of 7 blunt, distally bipennate spines. Tarsi IV with both tarsomeres bearing 1 tactile bristle sub-basally.

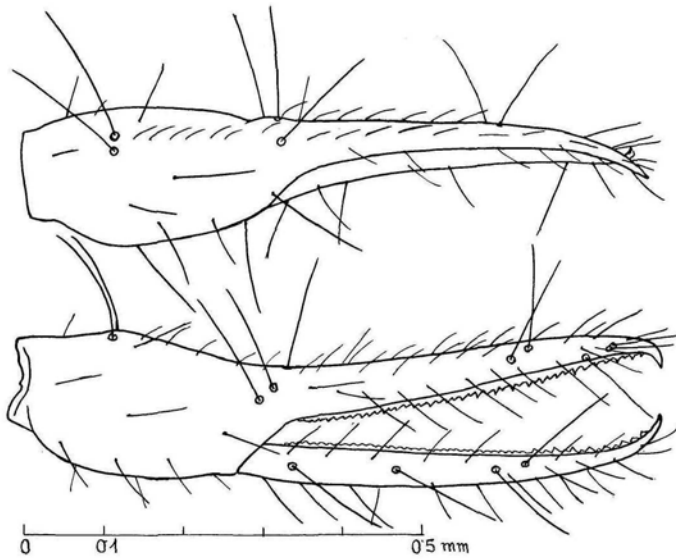
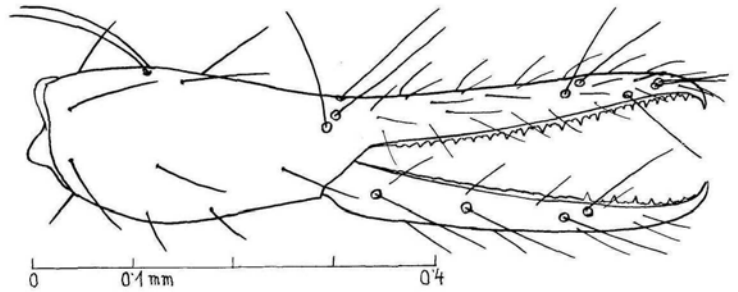


Fig. 5. *Paraliichthonius densedentatus* ♂, chela, dorsal and lateral.

Fig. 6. *Paraliichthonius kermadecensis* ♀, chela, lateral.



Body length (♀) 1.05–1.3 mm; carapace length and width 0.38–0.39 mm; pedipalps: femur length 0.36–0.40 mm; hand length 0.27–0.29 mm, width 0.15 mm; finger length 0.37–0.38 mm.

TYPE DATA. **Holotype** ♀: NEW ZEALAND, Kermadec Is, Meyers I., from deserted nest of *Turdus merula*, 25.i.1967, D. V. Merton (ED). **Paratype** ♀: Lord Howe I., on foliage, STN 20, Gray (S; labelled as *queenslandicus*).

REMARKS. *P. kermadecensis* differs from *P. densedentatus* in having a small or vestigial epistome, much shorter palpal fingers, and a single spike-bristle on the hand. It is distinguishable from *P. queenslandicus* (Beier) of Australia and *P. zonatus* (Beier) of New Caledonia by the shape of the epistome, the shorter palpal fingers, and tergite IV having 6 bristles.

Paraliichthonius grimmeti (Chamberlin)

Chamberlin, 1929, *Annals & Magazine of Natural History* (10)4: 76 (*Tyrannochthonius*). –Beier, 1966, *Pacific Insects* 8: 365, fig. 3 (*Morikawia*); 1967, *Records of the Dominion Museum* 5: 288 (*Morikawia*).

Palpal fingers with teeth spaced and of equal length.

Carapace slightly shorter than broad, strongly narrowed caudally, with epistome relatively small,

bent ventrally, posterior margin with 2 bristles. Tergites I and II with 4 bristles each. Eyes well developed. Palpal hand 2× longer than wide, with 2 relatively short spike-bristles, chela about 5× longer than wide; fingers 1.6× longer than hand.

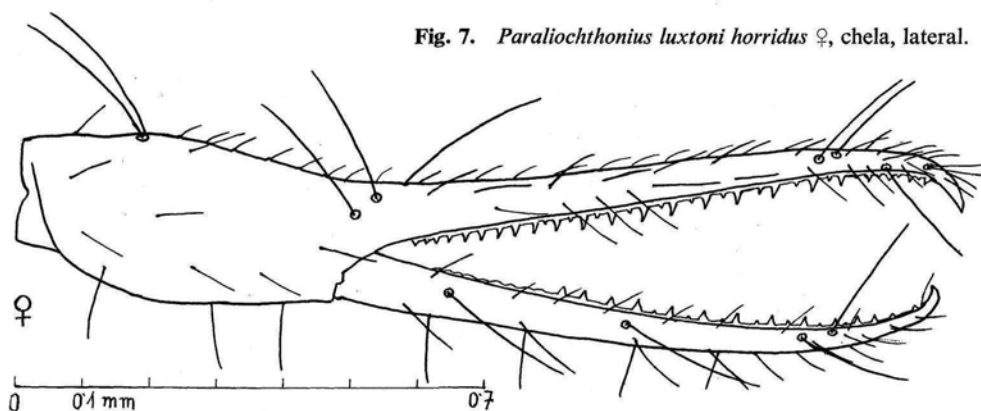
Body length 1.8 mm; carapace length 0.55 mm, width 0.52–0.60 mm; pedipalps: femur length 0.85–0.86 mm; hand length 0.43–0.48 mm, width 0.18–0.24 mm; finger length 0.70–0.78 mm.

North and South Is, from Taranaki and Wellington districts to Westland, including Stephens I. and Chetwode I. In moss and leaf litter (CM, ED, NM, OM).

Paraliichthonius luxtoni luxtoni (Beier)

Beier, 1967, *Records of the Dominion Museum* 5: 289, fig. 8 (*Morikawia*).

Palpal fingers with spaced teeth of unequal length. Posterior margin of carapace and tergites I and II with 2 bristles each; epistome small, inclined ventrally, usually with 3 denticles terminally. Both pairs of eyes with lenses. Palpal hand with 2 very long spike-bristles mediolaterally, 1.8–2.0× longer than

Fig. 7. *Paraliocthonius luxtoni horridus* ♀, chela, lateral.

wide; chela $5.1\text{--}5.8\times$ longer than wide; fingers $1.8\times$ longer than hand.

Body length 1.5–1.9 mm; carapace length 0.52–0.65 mm, width 0.45–0.52 mm; pedipalps: femur length 0.68–0.79 mm; hand length 0.36–0.41 mm, width 0.18–0.23 mm; finger length 0.66–0.72 mm.

North I. to Stewart I., more abundant in the south. In leaf litter. Specimens: 82 (AM, CM, ED, NM, OM).

***Paraliocthonius luxtoni horridus* n.sp. (Fig. 7)**

Agreeing in essential characters with nominate form, but larger, palpal femur more elongate in relation to carapace, hand and chela more slender, movable palpal finger with about 21 teeth of very uneven length, intercalary teeth reduced to granules at distal part of finger, and dentate area extended to about halfway between tactile setae *sb* and *b*.

Body length (♂) 1.8 mm, (♀) 2.0 mm; carapace length (♂) 0.55 mm, (♀) 0.61 mm, width (♂) 0.48 mm, (♀) 0.55 mm; palpal femur length (♂) 0.80 mm, (♀) 0.86 mm; hand length (♂) 0.40 mm, (♀) 0.48 mm, width (♂) 0.18 mm, (♀) 0.24 mm; finger length (♂) 0.82 mm, (♀) 0.90 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, North I., Waipoua State Forest, litter, 20.x.1967, J. C. Watt (ED).

***Paraliocthonius norfolkensis* n.sp. (Fig. 8)**

Hard integument brown, carapace somewhat darker, pedipalps not darkened.

Carapace slightly broader than long, with 16 bristles (2 on posterior margin). Epistome small, broadly triangular, finely denticulate. Anterior eyes with convex lenses; posterior eyes flat in male, vestigial in female. Tergites I–III entirely desclerotised, others only on posterior margin; chaetotaxy of tergites 4–4–4–4–6–6 etc., tergite X with median pair of bristles longer. Sternites without tactile bristles. Cheliceral palm with 5 bristles, finely denti-

culate; fixed finger with 7–8 teeth, increasing in length distally, last tooth scarcely enlarged; movable finger finely denticulate, spinneret absent in both sexes. Palpal femur smooth, only slightly longer than carapace; hand $1.8\times$ longer than wide, with 1 short ($0.2\times$ finger length) but very strong spike-bristle mediolaterally, chela $5.2\times$ longer than wide; fingers $1.8\times$ longer than hand; fixed finger with about 35 spaced teeth, distinctly alternating in length at middle, with tactile setae *eb*, *esb*, and *ist* situated transversely at base; movable finger distally with about 11 erect teeth of equal or slightly uneven length, with vestigial teeth proximally. Coxae I with blunt oral cone; coxae II with row of 6–7 finely pennate coxal spines, middle spines longest; coxae III and IV with row of 4 discal bristles and 1 apical bristle each. Both tarsomeres with 1 longer bristle at end of basal third. Male: genital bristles fine.

Body length (♂) 1.2 mm, (♀) 1.3–1.55 mm; carapace length (♂♀) 0.42 mm, width (♂) 0.44 mm, (♀) 0.48 mm; pedipalps: femur length (♂) 0.45 mm, (♀) 0.47–0.49 mm; hand length 0.27–0.28 mm, width 0.15–0.16 mm; finger length 0.48–0.50 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NORFOLK I., Mt. Pitt, 275 m (900'), from litter of broad leaves of *Pennantia*, *Melodinus*, and *Meryta* loosely scattered on very dry ground (sample 67/292), 30.x.1967, G. Kuschel (Division of Entomology, CSIRO, Canberra). **Paratypes**: 12♂, 6♀, 3 nymphs, type loc., some with same data as holotype, others from 300 m (1000'), from litter under *Rhopalostylis baueri* and *Cyathea brownii* on very dry bush floor (sample 67/291), 20.x.1967, Kuschel (ED); 2♂, 3♀, 1 nymph, Norfolk I., Mt. Bates, 275 m (900'), from litter under cluster of *Araucaria* flanked by *Rhopalostylis*, *Cordyline*, *Meryta*, and *Myrsine* on very dry ground (sample 67/296), 6.xi.1967, Kuschel (ED); 7♂, 13♀, North I., Whangarei Co., x–xii.1967, Wise; 2♂, 3♀, Whangaroa Co., Tauranga Bay, Butterfly Valley, 30.iii.1968, Wise; 1♂, 1♀, Whangaruru, North Headland, 10.x.1968, Wise; 2♂, 1♀, Waitemata Co., ii–iii.1968, Wise; 1♂, 2♀, Mangonui Co., Mangamuka Hills and Mt. Orowhana, x.1966 & v.1969, Wise; 1♀, Kaingawa area, 8.vii.1967, Wise; 4♂, 5♀, Bay of Islands Co., xii.1966, xii.1967, & x.1968, Wise (AM); 3♂, Mt. Mangamuka, 7.i.1967 (OM).

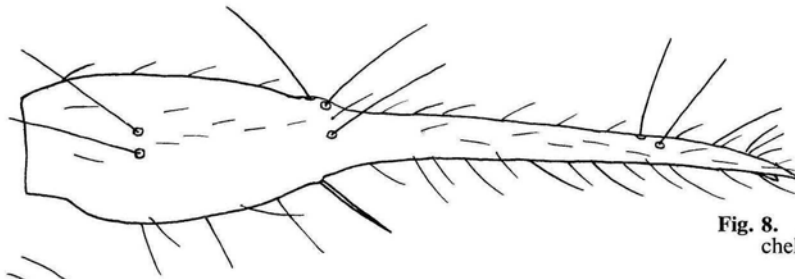


Fig. 8. *Paraliochthonius norfolkensis* ♂, chela, dorsal and lateral.

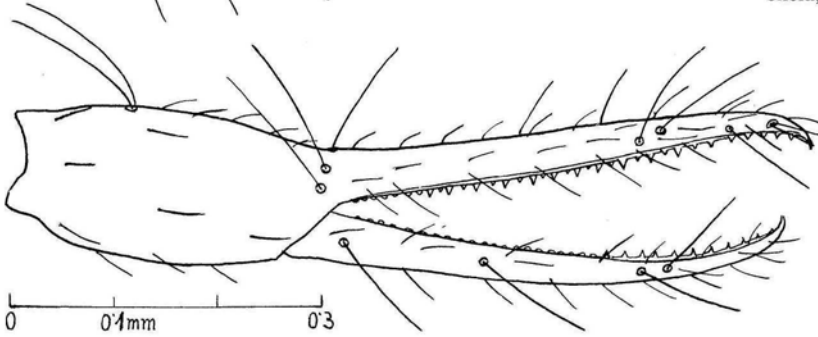
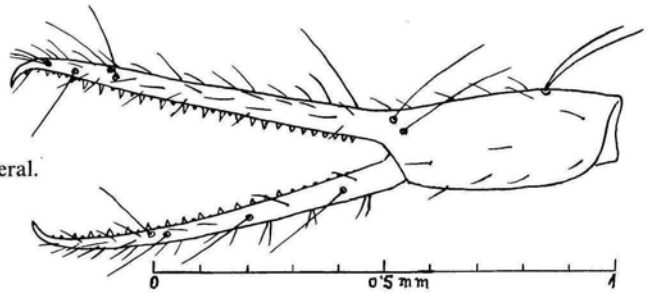


Fig. 9. *Paraliochthonius caecatus* ♀, chela, lateral.



REMARKS. *P. norfolkensis* differs from the closely related *luxtoni* in its smaller size, broader carapace, first 4 tergites with 4 bristles, palpal hand with a single strong but shorter spike-bristle mediolaterally, shorter palpal femur, transversely situated tactile setae *eb*, *esb*, and *ist*, and fewer coxal spines.

***Paraliochthonius caecatus* n.sp. (Fig. 9)**

Integument depigmented, pale yellowish-brown, only chelicerae somewhat more reddish.

Carapace as long as broad, rather strongly narrowed caudally, constricted basally, with 16 relatively slender bristles (2 on posterior margin) and 1 small pre-ocular bristle; posterior angles reticulate; epistome long, narrow, acute. Eyes or eye pigment entirely absent. Tergites I-IV with 4 bristles each, others with 6 bristles, posterior 2 tergites with 7. Chelicera with fixed finger bearing about 10 teeth, distal tooth moderately enlarged; movable finger very finely denticulate, unarmed distally, without spinneret; flagellum with 8 bristles, these deeply pinnate on 1 side. Palpal femur about 1.5× longer

than carapace; tibia not elongate; hand slender, 2.2× longer than wide, chela 6.3× longer than wide; fingers 1.8× longer than hand, fixed finger with more than 20 spaced, erect, acute teeth and small intercalary teeth; movable finger similarly armed distally (about 16 well developed teeth and small intercalary teeth), with vestigial teeth proximally. Coxae I with long oral cone; coxae II with row of 7-8 coxal spines arising from common ridge, these spines shallowly pinnate on both sides.

Body length (♀) 2.0-2.3 mm; carapace length and width 0.57-0.60 mm; pedipalps: femur length 0.90 mm; hand length 0.46 mm, width 0.21 mm; finger length 0.82 mm.

TYPE DATA. **Holotype** ♀: NEW ZEALAND, South I., Brightwater (nr Nelson), pumped from 4 m depth in Livingston's well during drought, 21.ii.1973, G. Kuschel (ED). **Paratypes**: 1♀ (torso), same data as holotype; 1♀, Auckland City, Lynfield, Wairaki Stm, in 60-cm-deep pitfall trap in a gully of native bush, 25.v.1975, Kuschel (ED; length of carapace 0.50 mm, of palpal fingers 0.75 mm, fixed palpal finger with 20 teeth, movable finger with 11 teeth).

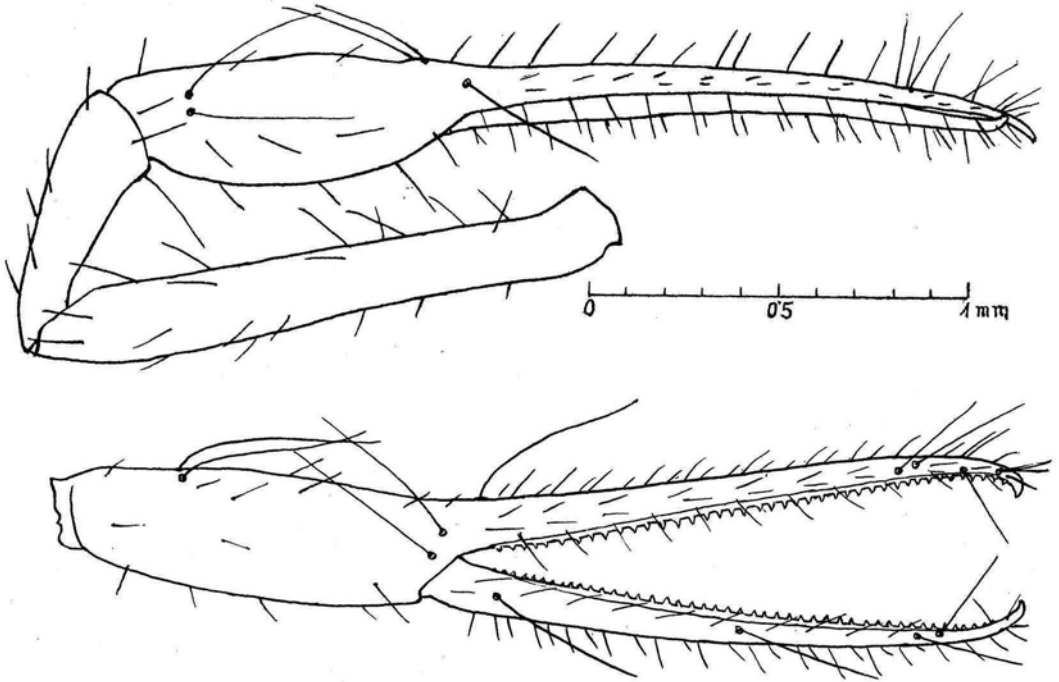


Fig. 10. *Paraliochthonius (Pholeochthonius) cavernicola* ♂, left pedipalp and chela.

REMARKS. *P. caecatus* shows definite features of terricole habits, and is thus distinct from all other species of *Paraliochthonius*.

***Paraliochthonius (Pholeochthonius) n.subg.) cavernicola* n.sp. (Fig. 10)**

Weakly sclerotised, hard integument pale reddish-brown, only chelicerae slightly more pigmented.

Carapace slightly wider than long, moderately narrowed caudally, with 16 long, strong bristles (2 on posterior margin) and 1 very stout preocular bristle; anterior margin smooth, epistome broad, denticulate, projecting. Eyes and eye-pigment completely lacking. Tergites I–III with 4 bristles, IX with 7, others with 6; last tergite with 2 long tactile bristles. Sternal bristles shorter than tergal bristles. Cheliceral palm with 6 bristles; fingers with weak, vestigial dentation, only fixed finger with 1 blunt tooth subdistally; spinneret absent; flagellum with 6–7 shallowly pinnate blades in 2 rows on 1 side. Palpal femur twice as long as carapace; tibia strongly elongate, nearly half length of femur; hand very narrow, $2.9\times$ longer than wide, with 1 relatively short and slender spike-bristle mediodistally; chela $7.8\times$ longer than wide; fingers $1.7\times$ longer than hand, each with about 45 acute, spaced teeth of equal length. Position of trichobothria as

usual for genus. Maxillary lobes with 2 bristles apically. Legs very slender and long; coxae I with 1 long, blunt oral cone; coxae II with row of 9 relatively broad, shallowly pinnate coxal spines arising from common base without sclerotised ridge, first and last spine of row short; tibia IV with 1 tactile bristle subdistally, tarsus IV with 1 near middle. Male: margins of genital operculum sparsely garnished with bristles.

Body length (♂) 2.5 mm; carapace length 0.79 mm, width 0.83 mm; pedipalps: femur length 1.56 mm, tibia length 0.72 mm; hand length 0.96 mm, width 0.33 mm; finger length 1.60 mm. Female unknown.

TYPE DATA. **Holotype** ♂: LORD HOWE I., in cave, total dark zone, STN. 3, 23.viii.1972, L. S. Hall & G. A. Holloway (S).

REMARKS. This large species has characteristics generally associated with cavernicolous habits, such as depigmentation, blindness, and extremely long pedipalps (including tibia) and legs. It is similar to the European cavernicolous *Troglochthonius* Beier (which also may be regarded as a subgenus of *Paraliochthonius*) in the palpal tibiae, which are unusually long for Chthoniidae. The new subgenus *Pholeochthonius*, here proposed for *Paraliochthonius cavernicola*, is characterised by a long palpal tibia and a vestigial spike-bristle on the palpal hand.

Maorichthonius Chamberlin, 1925

Tergites plurisetose. Coxae II with several rows of very fine microchaetae instead of coxal spines. Intercoxal tubercle absent.

Monotypic genus endemic to New Zealand.

Maorichthonius mortenseni Chamberlin

Chamberlin, 1925, Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening Kbhbenhavn **81**: 335, fig. 1. —Beier, 1932, Das Tierreich **57**: 36; 1969, Records of the Auckland Institute & Museum **6**: 414, fig. 1.

Carapace slightly narrowed basally, smooth, with 18 bristles (4 on posterior margin). Epistomal process large and prominent, triangular. Four eyes, posterior eyes flat. Tergites with row of 6–20 bristles each. Chelicerae with low spinneret tubercle in both sexes. Pedipalps relatively short, femur slightly longer than carapace. Palpal hand with tactile bristle *lb* and *isb* sub-basally on dorsum. Fingers densely serrate-dentate, teeth small.

Body length 1.6–1.8 mm; carapace length 0.50–0.51 mm, width 0.55–0.56 mm; pedipalps: femur length 0.52–0.56 mm; hand length 0.33 mm, width 0.16–0.18 mm; finger length 0.50–0.52 mm.

North I. (Leigh, Hauraki Gulf) and Chatham I. (Kaingaroa). A halophilous species of the intertidal zone. Specimens: 8 (AM, CM, ED).

Family NEOBISIIDAE

Ideobisium Balzen, 1891

Small species with nearly square carapace. Chelicerae with bristle-like galea. Maxillae with 2 apical bristles. Pedipalps stout, intense reddish-brown. Palpal fingers short; movable finger with tactile setae *sb*, *st*, and *t* close together.

One species of this widely distributed genus occurs in New Zealand.

Ideobisium peregrinum Chamberlin

Chamberlin, 1930, Annals & Magazine of Natural History **(10)5**: 37. —Beier, 1932, Das Tierreich **57**: 159; 1948, Eos **24**: 537; 1967, Records of the Dominion Museum **5**: 290.

Carapace with 22 or 24 bristles. Four vestigial eyes. Pedipalps smooth; femur 2.5–2.7× longer than wide, widest in middle, abruptly pedicellate; chela 2.5–2.8× longer than wide; fingers shorter than hand, densely dentate, each with 30–40 blunt teeth. Tarsus bearing subterminal bristle with some short branches.

Body length 2.2–2.8 mm.

North I. and northern South I. In forest litter. Specimens: 1600+ (AM, CM, ED, NM, OM).

Family OLPIIDAE

Xenolpium Chamberlin, 1930

Carapace slightly longer than broad, without transverse furrows, cucullus short. Four eyes. Tergites I and II with 4 bristles each, others with 6 each. Cheliceral flagellum with 3 blades; movable finger with subapical tooth weakly bidentate; galea long, with 3 terminal rami. Pedipalps smooth except for weakly granulate trochanteral protuberances, medial surface of femur, and mediobasal part of hand; fingers with 12 trichobothria. Forelegs with telofemur shorter than basifemur and freely movable. Arolia not divided, much longer than claws.

REMARKS. The genus *Xenolpium* was proposed by Chamberlin for *Olpium pacificum* With, the only true olpiine species of New Zealand. Unfortunately the holotype of this species is a nymph, which led to my misinterpretation of the genus *Xenolpium* from 1932 until the present. *Euryolpium* Redikorzev and *Antiolpium* Beier are synonymous with *Xenolpium*. Another species referred to *Xenolpium* by me, but not represented in New Zealand, belongs to the genus *Calocheiridium*.

Key to subspecies of *Xenolpium*

- Fixed palpal finger with tactile seta *est* far from *ist* and closer to *it*. Palpal femur coarsely granulate medially *pacificum pacificum*
- Fixed palpal finger with tactile seta *est* close to *ist* and far from *it*. Palpal femur very finely granulate medially *pacificum norfolkense*

Xenolpium pacificum pacificum (With)

With, 1907, Journal of the Linnean Society of London, Zoology **30**: 75, pl. 9 (34–38) & pl. 10 (39) (*Olpium*). —Chamberlin, 1930, Annals & Magazine of Natural History **(10)5**: 600.

zealandiense Hoff, 1947, Psyche **54**: 36, fig. 1–3 (*Olpium*).

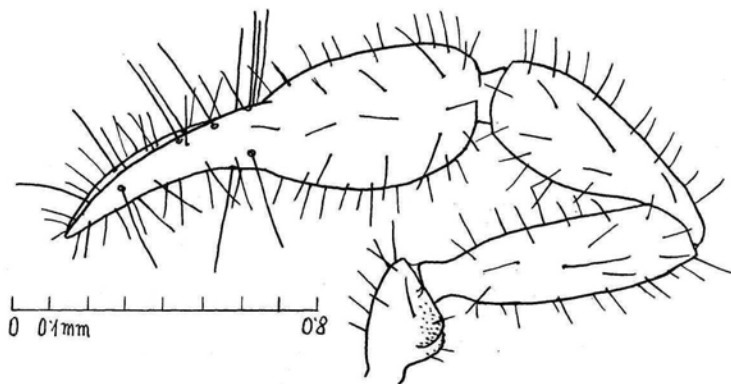
—Beier, 1962, Records of the Canterbury Museum **7**: 400, fig. 1 (*Antiolpium*); 1966, Pacific Insects **8**: 367 (*Antiolpium*); 1967, Records of the Dominion Museum **5**: 290 (*Euryolpium*); 1969, Records of the Auckland Institute & Museum **6**: 413 (*Euryolpium*).
New synonymy.

Trochanteral humps and medial surface of palpal femur always distinctly and usually coarsely granulate. Fixed palpal finger with tactile seta *est* far from *ist* and closer to *it*.

Body length (♂) 2.0–2.5 mm, (♀) 2.5–3.5(–4) mm; carapace length (♂) 0.65–0.69 mm, (♀) 0.70–0.79 mm; pedipalps: femur length (♂) 0.66–0.73 mm, (♀) 0.70–0.85 mm; tibia length (♂) 0.65–0.69 mm, (♀) 0.70–0.82 mm; chela length (♂) 1.00–1.20 mm, (♀) 1.20–1.40 mm.

North I. to Stewart I.; Lord Howe I. On beaches in the splash zone and under stones, in forest leaf litter, and in bird nests. Specimens: 470 (AM, CM, ED, NM, OM).

Fig. 11. *Xenolpium pacificum norfolkense* ♂, right pedipalp.



Xenolpium pacificum norfolkense n.ssp. (Fig. 11)

Fixed palpal finger with tactile seta *est* close to *ist* and far from *it*. Palpal femur very finely granulate medially.

Body length (♂) 2.0 mm; carapace length 0.67 mm, width 0.55 mm; pedipalps: femur length 0.73 mm, width 0.21 mm; tibia length 0.69 mm, width 0.26 mm; hand length 0.74 mm, width 0.36 mm; finger length 0.74 mm. Female unknown.

TYPE DATA. **Holotype** ♂: NORFOLK I., Bumbora Reserve, in cow dung, 2.xi.1967, G. Kuschel (Division of Entomology, CSIRO, Canberra).

Nelsoninus Beier, 1967

Integument weakly sclerotised and smooth. Vestitural bristles long. Carapace much longer than broad, without transverse furrows. Four eyes. Abdomen long, tergites with 6–8 bristles. Sternites VI–VIII with 2 small submedian discal bristles in addition to longer posterior marginal bristles. Cheliceral palm with 5 bristles. Palpal femur with dorsal tactile bristle; hand narrow; fixed finger with 7 tactile setae, 4 median setae in basal cluster; movable finger with only 2 tactile setae. Telfemur of forelegs much longer than basifemur and not movable. Arolia long and divided.

Monotypic genus endemic to New Zealand.

Nelsoninus maoricus Beier

Beier, 1967, Records of the Dominion Museum 5: 291, fig. 9.

Small, slender species.

Body length 1.4–2.2 mm; carapace length 0.41–0.43 mm, width 0.30 mm; pedipalps: femur length 0.33–0.36 mm, width 0.09–0.10 mm; tibia length 0.29–0.31 mm, width 0.125–0.13 mm; chela length 0.57–0.58 mm.

South I. (Canaan, Abel Tasman National Park, Nelson; Hidden Falls area, Lower Hollyford Valley), Chatham I. Mosses and litter. Specimens: 18 (CM, ED, NM, OM).

Family GARYPIDAE

Synsphyronus Chamberlin, 1930
(*Maorigarypus* Chamberlin, 1930)

Integument with an alveolar, vitreous epicuticle. Carapace triangular, narrowed anteriorly. Four eyes. Trichobothria of palpal chela often reduced in number.

Australia (incl. Tasmania), New Zealand.

Key to species of *Synsphyronus*

Movable palpal finger with 1 tactile seta. *melanocheilus*
Movable palpal finger with 2 tactile setae. *lineatus*

Synsphyronus melanocheilus (Chamberlin)

Chamberlin, 1930, Annals & Magazine of Natural History (10)5: 617 (*Maorigarypus*). –Beier, 1969, Records of the Auckland Institute & Museum 6: 413.

Pedipalps stouter than in *S. lineatus*, tibia 2.6–2.8× longer than wide, chela about 3.4× longer than wide.

North I. and northern half of South I. Under stones. Specimens: 36 (CM, ED, NM).

Synsphyronus lineatus Beier

Beier, 1966, Pacific Insects 8: 368, fig. 5.

Pedipalps more slender than in *S. melanocheilus*, tibia 3.3× longer than wide, chela at least 4× longer than wide. Tarsi 2-segmented, as in *melanocheilus*, but 1-segmented in nymph.

South I., from sea level to 1600 m. Under stones and in mosses. Specimens: 62 (CM, ED, NM, OM).

Family CHEIRIDIIDAE

Apocheiridium Chamberlin, 1924

Very small, monosphyronid, corticolous species with 2 eyes. Integument very coarsely granulate. Carapace triangular, without shoulder swelling. Palpal femur abruptly pedicellate. Femora of legs undivided.

Key to species of *Apocheiridium*

1. Palpal fingers much shorter than hand without pedicel. Eyes well developed, but weakly prominent. Central segments with half-tergites bearing 10–12 bristles on posterior margin 2
—Palpal fingers slightly shorter than hand without pedicel. Eyes very prominent. Central segments with half-tergites bearing 13–14 bristles on posterior margin *zealandicum*
2. Carapace as long as its basal width, metazone moderately broadened caudally. Body length 1.35–1.50 mm, palpal femur length 0.40–0.41 mm. *validum*
—Carapace slightly shorter than its basal width, metazone strongly broadened caudally. Body length 1.60–1.65 mm, palpal femur length 0.49 mm. *validissimum*

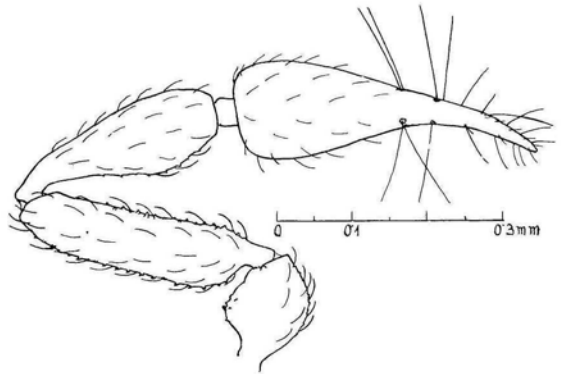


Fig. 12. *Apocheiridium zealandicum* ♀, left pedipalp.

Apocheiridium zealandicum n.sp. (Fig. 12)

Carapace reddish-brown anteriorly up to transverse furrow, posteriorly pale yellowish-brown as on tergites, uniformly granulate, granules separated by at least 1 diameter; tergites with granulation more dense, less prominent; pedipalps with very dense granulation, granules of uneven size, some sharply conical, nearly contiguous. Vestitural bristles strongly curved, with external denticle near middle.

Carapace somewhat shorter than its basal width, with deep, sharply incised, submedian transverse furrow, without shoulder swelling, posterior margin with 14–16 bristles. Eyes strongly convex. Tergite I slightly wider than II and slightly more sclerotised, other tergites increasing in width, divided except for IX and X; half-tergites of anterior segments with 10–11 marginal bristles, those of central segments with 13–14; last tergite with total of 16 posterior bristles. Sternites, except posterior 2, with 1 pair of brown spots, bristles slender, finely dentate on posterior segments. Galea small and short, sharply conical in male, consisting of 3 spikes of equal length in female. Pedipalps reddish-brown; trochanter nearly spherical; femur 4.1× longer than wide, weakly thickened proximad, without distinct swelling; tibia 2.9× longer than wide, club extremely narrowed basally; hand nearly triangular in dorsal aspect, 1.9× longer than wide, chela with pedicel 3.3× (without pedicel 3.1×) longer than wide; fingers slightly shorter than hand without pedicel; fixed finger with 7 tactile setae, movable finger with 1 tactile seta.

Body length 1.2–1.3 mm; carapace length 0.38–0.40 mm, width 0.47 mm; pedipalps: femur length 0.33 mm, width 0.08 mm; tibia length 0.29 mm, width 0.10 mm; hand length 0.24 mm, width 0.13 mm; finger length 0.20 mm.

TYPE DATA. 3♂, 5♀ (no holotype designated), NEW ZEALAND, North I., Stokes Valley, under manuka [*Leptospermum scoparium*] bark, 17.viii.1952, B. A. Holloway (NM; labelled "Types").

REMARKS. *A. zealandicum* is much smaller than

validum, and differs from it in having a broader carapace, more prominent eyes, more bristles on the hind margin of the carapace and tergites, the tibial club more narrowed basally, a triangular palpal hand, and longer fingers.

Apocheiridium validum Beier

Beier, 1967, Records of the Dominion Museum 5: 292, fig. 10.

Vestitural bristles very finely dentate.

Body length 1.35–1.50 mm; carapace length 0.45–0.50 mm, width 0.45–0.52 mm; pedipalps: femur length 0.40–0.41 mm, width 0.09–0.10 mm; tibia length 0.34 mm, width 0.11–0.12 mm; hand length 0.30 mm, width 0.16–0.17 mm; finger length 0.22–0.23 mm.

Northland (Cape Reinga) to Stewart I. Specimens: 20 (CM, ED, NM, OM).

REMARKS. The specimens from Otago southwards differ from those of the northern range of the species in having stouter vestitural bristles with a more distinct and more distal denticle, and in having tergite IX divided in the male.

Apocheiridium validissimum n.sp. (Fig. 13)

Anterior half of carapace and pedipalps reddish-brown, posterior half of carapace and tergites brownish-yellow, sternite IV with pair of narrow brown transverse spots, sternites V and VI with 1 pair of eye-spots, VII–IX with 1 pair of large brown spots. Vestitural bristles thin, curved, with small denticle near middle.

Carapace slightly shorter than broad at posterior margin, very densely granulate, granules irregular in shape, conical to dentiform, those of metazone more widely spaced and interconnected by indistinct bridges; single submedian transverse furrow deep; metazone strongly widened caudad. Eyes well developed, moderately large. Tergites I–IX divided, densely granulate, some granules more pointed,

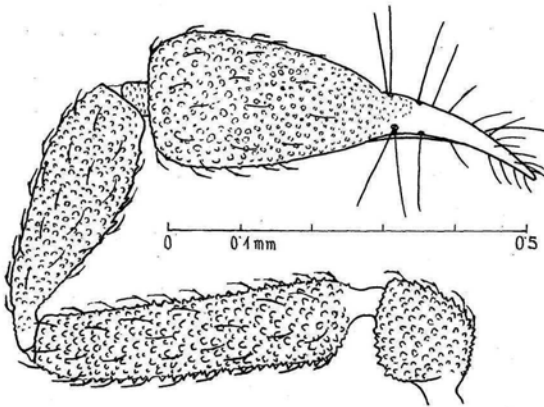


Fig. 13. *Apocheiridium validissimum* ♀, left pedipalp.

particularly on last segments; half-tergites with 10–12 bristles on posterior margin, 1–2 on lateral margin, and 2–3 discal bristles laterally; tergite III as wide as IV or V; tergite X and XI with rasp-like granulation. Posterior sternites distinctly granulate. Galea simple and conical in male, with 3 isolated spikes in female, middle spike longest. Pedipalps (particularly trochanters and femora) coarsely and sharply granulate, granules of uneven size; hand more finely and evenly granulate; trochanteral humps round; femur abruptly pedicellate, $4.4\times$ longer than wide; tibia $3.1\times$ and hand $1.9\times$ longer than wide, chela with pedicel $3.2\times$ (without pedicel $3.0\times$) longer than wide; hand ovate; fingers much shorter than hand without pedicel, smooth except for finely granulate base; fixed finger with 7 bristles, movable finger with 1 tactile bristle in usual position. All coxae granulate and divided, posterior coxae of female indistinctly outlined medially. Femora I and II indistinctly divided, III and IV undivided.

Body length 1.60–1.65 mm; carapace length 0.51–0.53 mm, width 0.60–0.61 mm; pedipalps: femur length 0.49 mm, width 0.11 mm; tibia length 0.39 mm, width 0.125 mm; hand length 0.36 mm, width 0.19 mm; finger length 0.25 mm.

TYPE DATA. *Holotype* ♀: NEW ZEALAND, Chatham I., Mangahou Creek, beating, 10.ii.1967, G. Kuschel (ED). *Paratypes*: Chatham I.—3♂, 4♀, Tuku R., Awatotara and Tamatea, 16–20.ii.1967, Kuschel & Walker; 1♂, 2♀, Awatotara R. mouth, 23.ii.1967, Walker. Pitt I. (southern area)—2♂, 2.iii.1967, Dugdale (ED, NM).

REMARKS. *A. validissimum* is closely related to *A. validum*, but is larger and has the carapace more widened in the metazonal area.

Family ATEMNIDAE

Oratemnus Beier, 1932

Integument mostly smooth, shiny. Vestitural bristles long, acute. Carapace without transverse furrows.

Tergites only partly divided. Flagellum with 4 blades. Only fixed palpal finger with venom apparatus. Palpal tibia with thin pedicel. Tarsus IV with 1 long tactile bristle basally.

Indo-Australian genus.

Oratemnus punctatus (L. Koch)

L. Koch, 1885, *Die Arachniden Australiens* II: 45, pl. 4: 3, 3a–c (*Chelifer*). —Beier, 1948, *Eos* 24: 529, fig. 3 (*Steiratemnus*).

Body length 2.5–3.0 mm; pedipalps: femur length 0.67–0.77 mm, width 0.27–0.33 mm; tibia length 0.66–0.77 mm, width 0.34–0.38 mm; hand length 0.72–0.88 mm, width 0.38–0.46 mm; finger length 0.45–0.52 mm.

Lord Howe I. (Rabbit I., 9.ii.1971, M. Gray). Eastern Australian species.

Family CHERNETIDAE

Lamprochernes Tömösvary, 1882

Integument smooth, shiny. Vestitural bristles long, acute. Carapace with deep submedian transverse furrow. Tergites divided. Flagellum with 3 blades. Only movable palpal finger with venom apparatus. Hind tarsus and tibia with long tactile bristle on proximal half.

Lamprochernes savignyi (Simon)

Simon, 1881, *Bulletin de la Société zoologique de France* 6: 12 (*Chelifer*). —Beier, 1932, *Das Tierreich* 57: 86, fig. 105; 1969, *Records of the Auckland Institute & Museum* 6: 413.

Body length 2.5 mm; pedipalps: femur length 0.42 mm, width 0.19 mm; tibia length 0.43 mm, width 0.22 mm; hand length 0.46 mm, width 0.30 mm; finger length 0.37 mm.

North I. (Auckland, Te Awamutu, Paraparamu) and South I. (Blenheim, Christchurch) (AM, CM, ED, NM).

REMARKS. *L. savignyi*, described from Egypt, is widely distributed in the tropical and subtropical countries of the Old World (Mauritius, Réunion, India). It is often phoretic on flies, and is quite common in garden compost and chicken coops.

Haplochernes Beier, 1932

Integument of carapace nearly smooth, of pedipalps finely granulate. Bristles long, acute. Carapace with transverse furrows, tergites divided. Flagellum with 3 blades. Pedipalps stout, hand slightly thicker than broad. Fixed palpal finger with tactile setae more or less clustered proximally. Tarsus IV with tactile bristle.

Melanesian genus; not found in New Zealand.

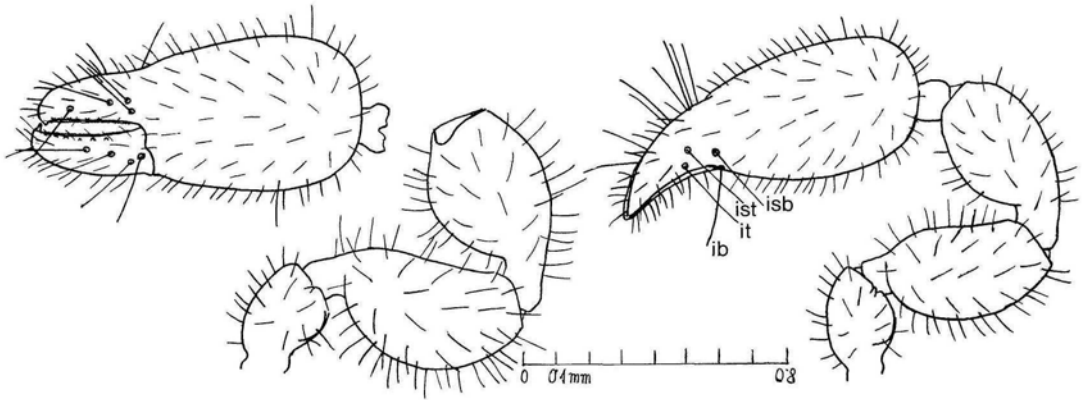


Fig. 14. *Haplochernes norfolkensis* ♂♀, right pedipalp.

Haplochernes norfolkensis n.sp. (Fig. 14)

Hard integument very dark chocolate-brown, carapace lighter at proximal half, trochanter, pedicels, and apices of palpal segments and fingers more reddish-brown; in nymphs only chela dark brown.

Carapace nearly $1.4\times$ longer than wide, widest near middle, basal half far less sclerotised than distal half, very indistinctly granulate; anterior transverse furrow more distinct in male than in female, posterior transverse furrow shallow in both sexes. Eye spot scarcely visible. Tergites III–X divided, others undivided; half tergites of central segments with 6 bristles on hind margin, 1 on lateral margin, 1 on median margin; half tergites of posterior segments with 6–7 bristles on posterior margin, 1 or 2 on lateral margin, and 1 on median margin, half tergites IX and X with 1 discal bristle; last tergite with 12 marginal bristles, lateral ones long, and 1 pair of discal bristles. Last sternite with 14 marginal bristles and 1 pair of discal bristles. Bristles relatively long, especially on posterior segments, with 2 small subapical teeth. Cheliceral palm with 5 bristles, *ES* short; galea with 6 branches in both sexes, proximal branch near base. Pedipalps very stout, with relatively long, acute bristles with 2 or 3 fine denticles subapically; trochanter only dorsally with low hump; femur very abruptly pedicellate, with coarse, low granulation particularly mediobasally, twice as long as wide, tibia $1.8\text{--}2.0\times$ longer than wide, more finely granulate medially; hand $1.9\times$ longer than wide and slightly thicker than wide, granulate medio-distally; chela with pedicel $2.7\times$ (without pedicel $2.5\times$) longer than wide; fingers about one-third shorter than hand without pedicel, each with 6–8 accessory teeth laterally; movable finger with 1 median accessory tooth; fixed finger with 2 accessory teeth distally; position of tactile setae as usual for genus, movable finger with *st* as far from *sb* as from *t*. Legs stout, tarsus IV with 1 long tactile bristle well

proximal of middle. Male: genital area with long, sparse hairs. Female: genital operculum with triangular cluster of bristles.

Body length 2.5–3.5 (♀) mm; carapace length 0.77 mm, width 0.56 mm; pedipalps: ♂ — femur length 0.58 mm, width 0.30 mm; tibia length 0.58 mm, width 0.30 mm; hand length 0.75 mm, width 0.40 mm; finger length 0.43 mm; ♀ — femur length 0.65 mm, width 0.33 mm; tibia length 0.65 mm, width 0.37 mm; hand length 0.72 mm, width 0.47 mm; finger length 0.40 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NORFOLK I., Steels Pt, beaten from *Lagunaria*, 5.xi.1967, G. Kuschel (Division of Entomology, CSIRO, Canberra). **Paratypes**: Norfolk I.—1♀, 3 tritonymphs, Mt. Pitt, 245–315 m (800–1040'), 30.x.1967; 2♀, Middlegate, 3.xi.1967, Kuschel (ED).

REMARKS. *H. norfolkensis* belongs to the group of *warburgi* Tullgren, *atrimanus* Kaestner, *aterrimus* Beier, and *insularis* Beier, but differs from these in having very long bristles on the body and pedipalps, in the colour of the pedipalps, and in having tactile seta *st* halfway between *sb* and *t*.

Thalassochnes Beier, 1940

Integument densely granulate. Vestitural bristles long, stiff, dentate, tergal bristles slightly thickened distally. Carapace with transverse furrows; pale eyespots (not true eyes) present. Flagellum with 3 blades. Palpal fingers with several accessory teeth laterally, only movable finger with venom apparatus. Tarsus IV with 1 long tactile bristle scarcely proximal of middle. Body relatively large.

Endemic to New Zealand.

Key to species of *Thalassochnes*

- Male palpal hand oval, much broader than tibia.....*taierensis*
- Male palpal hand cylindrical, not broader than tibia....*kermadecensis*

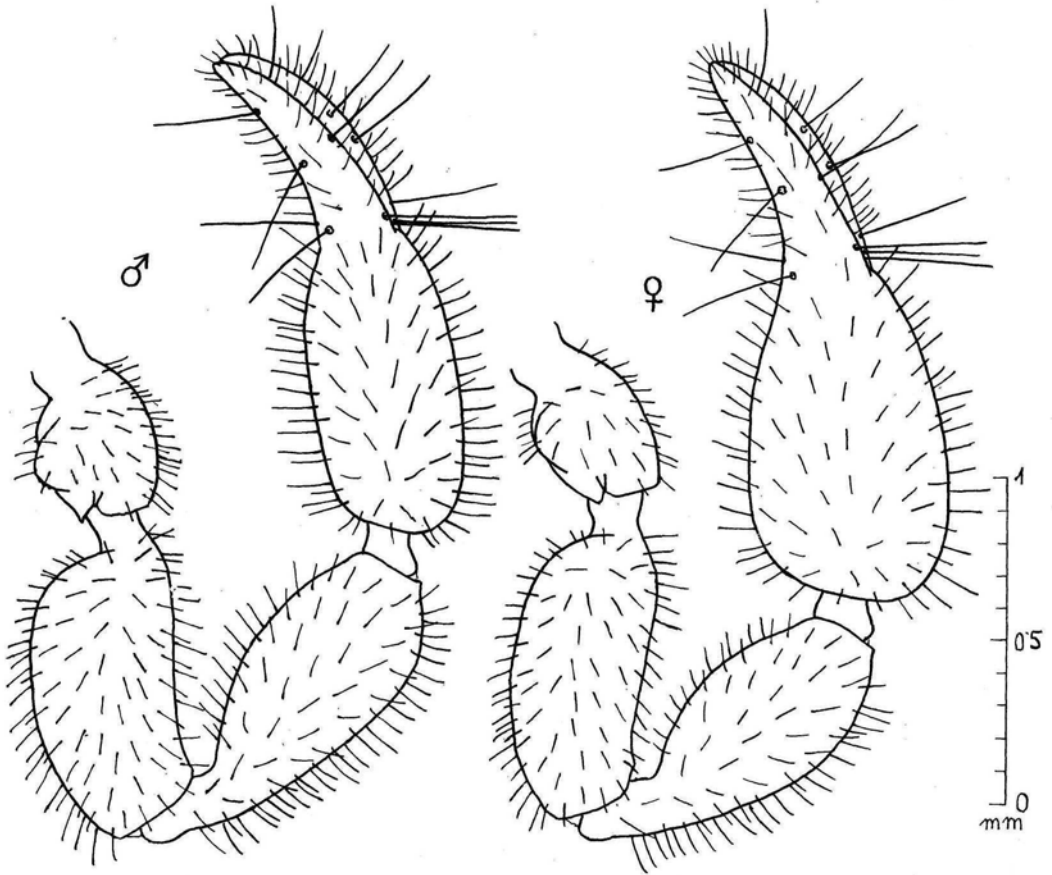


Fig. 15. *Thallassochnes kermadecensis* ♂♀, right pedipalp.

***Thallassochnes taiarensis* (With)**

With, 1907, Journal of the Linnean Society of London, Zoology 30: 55, pl. 8: 6-8 (*Chelifer*). -Ellingsen, 1910, Mitteilungen aus dem Zoologischen Museum in Berlin 4: 376 (as *Chelifer pallipes*). -Beier, 1932, Das Tierreich 57: 111, fig. 128 (as *Haplochnes pallipes*); 1940, Zoologische Jahrbücher, Systematik 64: 182 (as *pallipes*); 1948, Eos 24: 537, fig. 6, 7 (as *pallipes*); 1966, Pacific Insects 8: 369 (as *pallipes*); 1967, Records of the Dominion Museum 5: 293 (as *pallipes*).

Palpal tibia much more slender in male than in female. Specimens from North I. usually larger (palpal femur usually 1.07-1.18 mm in length) than those from South I. (palpal femur usually 0.77-0.90 mm).

Northland to Otago, Chatham Is. Very common under bark and in leaf litter. Specimens: 625 (AM, CM, ED, NM, OM).

REMARKS. Ellingsen was responsible for the misinterpretation of *Chelifer pallipes* White, 1849, a species now placed in *Philomaoria*. Since 1932 I have

consistently used the name *pallipes* for the present species, and became aware of this error so recently that specimens were returned to some institutions under the incorrect name *Thallassochnes pallipes*.

***Thallassochnes kermadecensis* n.sp. (Fig. 15)**

Hard integument dark reddish-brown, tergites of male lighter brown than carapace, densely but not very coarsely granulate. Vestitural bristles numerous, strong and stiff, dorsal vestitural bristles of body rather short, evenly thick throughout, terminally pluridentate; bristles of pedipalps long, acute, usually with 1 or 2 denticles near middle and 1 denticle near apex.

Carapace slightly longer than wide, widest near middle, slightly narrowed caudally, without distinct eye spots; both transverse furrows broad, deeper in female than in male, sub-basal furrow slightly closer to posterior margin than to anterior furrow. Tergites divided, posteriormost indistinctly so; half-tergites usually with 6 bristles on posterior margin, those of

II onwards with 1 bristle on median margin, III onwards with 1 bristle on lateral margin, I–III with 3 discal bristles, IV onwards with 2 or 3; last tergite with 6 marginal bristles, 4 anterior and 4 posterior discal bristles, and 2 long tactile bristles laterally. Pleural membrane very densely and sharply granulate in long rows. Sternites indistinctly squamously granulate, usually with 6 bristles on posterior margin, 2 on lateral margin, 2 on median margin, and 3 on disc, last sternite with 1 discal and 1 lateral pair of tactile bristles, ventral bristles simple, acute. Cheliceral palm with 7 bristles; galea with 5–6 branches apically, branches shorter in male than in female. Pedipalps robust, densely clothed with long setae, dorsal trochanteral hump high; femur abruptly pedicellate, 2.4–2.5× longer than wide, tibia 2.4 (♀)–2.6 (♂)× and hand 1.9 (♀)–2.4 (♂)× longer than wide; chela with pedicel 3.0 (♀)–3.9 (♂)× (without pedicel 2.8 (♀)–3.6 (♂)×) longer than wide; hand in male very narrow, cylindrical, only as wide as tibia; fingers much shorter than hand, without pedicel in both sexes, with 7–8 accessory teeth laterally; tactile setae in characteristic position for genus; femur IV granulate laterally, tarsus IV with 1 very long tactile bristle slightly proximad of middle.

Body length (♂) 3.5 mm, (♀) gravid 5.0 mm; carapace length (♂) 1.10 mm, width 0.85–0.92 mm, (♀) length 1.17 mm, width 0.96 mm; pedipalps: ♂ — femur length 0.90–1.03 mm, width 0.38–0.44 mm; tibia length 1.02–1.15 mm, width 0.40–0.45 mm; hand length 0.98–1.07 mm, width 0.42–0.45 mm; finger length 0.71–0.78 mm; ♀ — femur length 1.0 mm, width 0.40 mm; tibia length 1.06 mm, width 0.42 mm; hand length 1.15 mm, width 0.62 mm; finger length 0.80 mm.

TYPE DATA. Holotype ♂ and allotype ♀: NEW ZEALAND, Kermadec Is, Raoul I., Bell's Flat, litter under *Rhopalostylis cheesemani* (sample 67/74), 25.i.1967, J. C. Watt (ED). Paratypes: 1♂, 6 nymphs, Raoul I., in the fungus *Elfvigia tornata* on trunk of *Metrosideros kermadecensis*, 20.i.1967, Watt (ED); 1♂, 1♀, 2 nymphs, Mayor I., leaf litter, 8.xii.1966, Wise; 1♂, Bay of Islands, E of Waikare, 17.xii.1966, Wise (AM).

REMARKS. *T. kermadecensis* is easily distinguishable from *taierensis* by the bristles of the pedipalps being longer and denser, and the hand of the male being cylindrical and only as broad as the tibia.

Heterochnes Beier, 1966

Integument finely granulate, vestitural bristles clavate, short. Flagellum with 4 blades. Palpal femur abruptly pedicellate; fingers with accessory teeth. Tarsus IV with 1 long tactile bristle anterior to middle.

Endemic; monotypic genus related to the American *Dinocheirus* Chamberlin.

Heterochnes novaezelandiae (Beier)

Beier, 1932, Das Tierreich 57: 170, fig. 178 (*Austrochnes*); 1933, Zoologischer Jahrbücher, Systematik 64: 536, fig. 9 (*Austrochnes*); 1966, Pacific Insects 8: 376.

Robust species, body length 4 mm, palpal femur length about 0.8 mm.

North I. (Mangareia, Wairarapa) and South I. (Stephens I.; Trotters Gorge, N. Otago). Specimens: 4 females (CM, ED).

Opsochnes Beier, 1966

Vestitural bristles short, slender, acute, finely dentate subapically. Carapace with both transverse furrows deep and narrow, sub-basal furrow slightly closer to posterior margin. Two flat eyes. Tergites with more or less distinct pale spots, last tergite without tactile bristle. Flagellum with 3 blades. Palpal trochanter of male slightly hirsute medially; fingers with large accessory teeth laterally. Tarsus IV without tactile bristle.

Monotypic.

Opsochnes carbophilus Beier

Beier, 1966, Pacific Insects 8: 370, fig. 6.

Body length about 3.0 mm; pedipalps: femur length 0.68–0.84 mm; tibia length 0.65–0.79 mm; hand length 0.65–0.80 mm; finger length 0.65–0.80 mm.

North and South Is, Three Kings, Poor Knights, and Chatham Is. Common in littoral zone under stones, in niggerheads (*Carex* sp.), and in rock crevices just above high tide level; occasionally also in bird nests. Specimens: 192 (CM, ED, NM, OM).

Maorichernes Beier, 1932

Vestitural bristles short, dentate, slightly clavate. Carapace with sub-basal transverse furrow close to posterior margin. Eyes absent. Tergites with pale spots near middle, last tergite with tactile bristles. Flagellum with 3 blades. Pedipalps slender; fingers with accessory teeth. Tarsus IV without tactile bristle.

Monotypic and endemic.

Maorichernes vigil (With)

With, 1907, Journal of the Linnean Society of London, Zoology 30: 50–1, pl. 8, 1–2 (*Chelififer*). —Beier, 1932, Das Tierreich 57: 163; 1966, Pacific Insects 8: 372, fig. 7.

Pale yellowish-brown.

Body length 2.8–3.0 mm; pedipalps: femur length 0.95–0.98 mm; tibia length 0.88–0.90 mm; hand length 0.94 mm, width only 0.36–0.37 mm; finger length 0.64–0.70 mm.

North I. from Little Barrier I. and Coromandel to Wellington, South I., Stewart I. Specimens: 188 (AM, CM, ED, NM, OM).

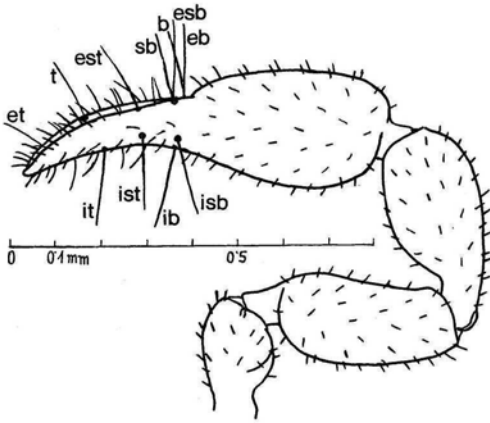


Fig. 16. *Systellochernes alacki* ♂, right pedipalp.

***Systellochernes* Beier, 1964**

Movable palpal finger with only 3 tactile setae. Integument densely and sharply granulate. Vestitural bristles thin, sparsely dentate. Metazone of carapace and anterior tergites with whitish spots. Last tergite with tactile bristles.

Confined to New Zealand and its subantarctic islands.

Key to species of *Systellochernes*

- Cheliceral palm with 5 bristles, posterior margin of carapace with 10.....*zonatus*
- Cheliceral palm with 6 bristles, posterior margin of carapace with 6.....*alacki*

***Systellochernes zonatus* Beier**

Beier, 1964a, Pacific Insects Monograph 7: 118, fig. 2; 1964b, Pacific Insects Monograph 7 (suppl.): 629.

Vestitural bristles long. Tergites II and III with whitish transverse spots.

Body length 1.8–2.5 mm; pedipalps: femur length 0.48–0.52 mm.

Stewart I., Auckland Is, Campbell I., Antipodes Is. Specimens: 260 (CM, ED, NM, OM, H).

***Systellochernes alacki* n.sp. (Fig. 16)**

Hard integument reddish-brown; carapace dark brown laterally, with pair of broad but ill defined paler submedian longitudinal stripes, metazone with 1 pair of large whitish spots continuous with stripes; tergite I with pale posterior margin, II entirely brown, III and IV with 1 pair of large, whitish transverse spots reaching posterior margin on III only. Integument very densely and sharply granulate, granulation on tergites coarser than on carapace. Vestitural bristles short, with fine apical fork and 1 denticle distad of middle.

Carapace 1.2× longer than wide, more finely granulate on prozone than on mesozone and meta-

zone, with small eye-spots; both transverse furrows well developed and granulate, sub-basal furrow 1.3× farther from anterior furrow than from posterior margin. Tergites (except last) broadly divided; central half-tergites with 6–7 bristles posteriorly, 1 laterally, and 1 on median margin, half-tergites from segment VII onwards with 1 discal bristle; last tergite with 6 marginal bristles, 2 discal bristles, and 1 pair of lateral tactile bristles of moderate length. Inter-segmental and pleural membranes with very dense and coarse rasp-like granulation. Sternites VII–X distinctly granulate laterally, XI entirely granulate; last sternite with 1 pair each of lateral and discal tactile bristles, discal bristles shorter. Sternal bristles simple. Cheliceral palm with 6 bristles; galea with 5 unciform branches distally in both sexes. Pedipalps very densely but shallowly granulate; trochanteral humps round; femur abruptly pedicellate, 2.4× longer than wide, tibia 2.2× and hand 1.8× longer than wide; chela with pedicel 3.3× (without pedicel 3.1×) longer than wide; fingers slightly shorter than hand without pedicel, with large accessory teeth; movable finger with 3 tactile setae (*st* absent). Tarsus IV without tactile bristle but with 2 long subapical bristles, and closely proximad of these 1 longer dentate bristle.

Body length (♂) 2 mm; carapace length 0.67 mm, width 0.55 mm; pedipalps: femur length 0.48 mm, width 0.20 mm; tibia length 0.47 mm, width 0.21 mm; hand length 0.50 mm, width 0.27 mm; finger length 0.41 mm. Female unknown.

TYPE DATA. **Holotype** ♂: NEW ZEALAND, South I., Wangapeka, top of Devil's Thumb, 1190 m (3900'), litter under *Nothofagus*, *Podocarpus*, and *Chionochloa* (sample 67/195), 9.iv.1967, F. Alack (ED).

REMARKS. *S. alacki* differs from *zonatus* in the pattern of whitish colour on the body, the shorter vestitural bristles (only half as long), and the numbers of bristles on the chelicerae and hind margin of the carapace. The unique holotype specimen seems to be partly abnormal: seta *sb* is lacking on the left pedipalp, and *it* and *ist* are closer to each other on the right pedipalp.

***Nesiotochernes* n.gen.**

Small, uniformly brown. Integument densely granulate. Vestitural bristles moderately long, finely dentate, not clavate. Carapace slightly longer than wide, without eye-spots, with 2 narrow, sharply incised transverse furrows, sub-basal furrow distant from posterior margin; metazone with shallow median groove, usually not reaching posterior margin. Tergites (except last) divided; last few tergites with discal bristles. Pleural membrane granulate. Cheliceral palm with 5 bristles; flagellum with 3 blades. Pedipalps stout, femur abruptly pedicellate; fingers gaping, with accessory teeth; fixed finger with

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tactile setae *est* and *ist* proximal, *ist* very close to *isb*, *it* scarcely distad of middle, *et* subapical; movable finger with 4 tactile setae, *t* near middle. Tarsus IV with short tactile bristle at apical third. Claws simple. Male: genital operculum sparsely setose, bristles long.

TYPE-SPECIES: *Nesiotochernes stewartensis* n.sp.

REMARKS. *Nesiotochernes* is distinguishable from the related *Systellochernes* by its uniformly brown colour, the full complement of 4 tactile setae on the movable palpal finger, tactile seta *ist* placed well proximad, and the hind tarsus with a short, erect tactile bristle at the apical third.

Nesiotochernes stewartensis n.sp. (Fig. 17)

Hard integument entirely brown, carapace slightly darker than tergites or pedipalps. Body and pedipalps (including hand) densely granulate. Vestitural bristles moderately long, finely dentate.

Carapace slightly longer than broad posteriorly, without distinct eye-spots, median furrow slightly curved cephalad, sub-basal furrow straight nearly halfway between anterior furrow and posterior margin; metazone with granulations slightly finer and denser on median groove than laterally, posterior margin convex at middle. Tergites (except last) broadly divided; half-tergites of segments I–III with 3 bristles, of IV–VI and IX with 4, of VII–VIII with 5, and of X with 2 bristles on posterior margin; each half-tergite with 1 bristle on median margin and 1 laterally; last tergite with 4 bristles on posterior margin, 2 discal bristles, and 2 lateral tactile bristles. Sternites smooth, usually with 6 simple marginal bristles on each half-sternite. Cheliceral palm with 5 bristles, *SB* and *B* finely dentate (if 6 bristles present, basal one strongly shortened); only distal blade of flagellum serrate on 1 side, basal blade short; serrula with 17 blades; galea forked apically, with 3 branches on basal half. Pedipalps stout; trochanteral hump round; femur abruptly pedicellate, 2.5× longer than wide; tibia 2.2× and hand 1.9× longer than wide; chela with pedicel 3.4× (without pedicel 3.1×) longer than wide; fingers at least as long as hand without pedicel, slightly gaping; fixed finger with about 35 teeth, 2 large accessory teeth medially and 7 accessory teeth laterally, tactile setae *est* and *ist* sub-basal, *ist* very close to *isb*, *it* scarcely distad of middle; movable finger with about 38 teeth, 2 large accessory teeth medially and 6 accessory teeth laterally, *st* slightly closer to *t* than to *sb*, *t* scarcely distad of middle. Legs moderately slender; tarsus IV with relatively short, erect tactile bristle at apical third. Male: genital operculum with sparse, rather long setae. Female: genital area with semicircular cluster of about 20 bristles.

Body length (♂) 1.7–1.8 mm, (♀) 2.2 mm; carapace length 0.55 mm, width 0.47 mm; pedipalps: femur

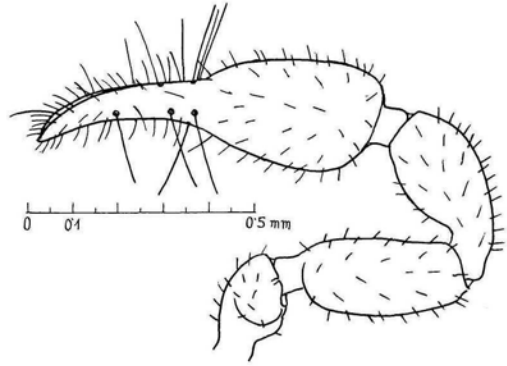


Fig. 17. *Nesiotochernes stewartensis* ♂, right pedipalp.

length 0.43 mm, width 0.17 mm; tibia length 0.40 mm, width 0.18 mm; hand length 0.45 mm, width 0.24 mm; finger length 0.40 mm.

TYPE DATA. **Holotype** ♂: NEW ZEALAND, Stewart I., Port Pegasus, Bald Cone, 275 m (900'), from moss and wind-swept peat on granite (sample 67/168), 10.ii.1967, D. G. Clark (ED). **Paratypes**: Stewart I.—2♂, same data as holotype; 1♂, Smith's Lookout, 455 m (1500'), from moss on open, fairly bare, wet and windy ground (sample 67/169), 11.ii.1967, Clark; 8♂, 7♀, 26 nymphs, Mt. Rakeahua, 610 m (2000'), moss, lichens, and cushion and mat plants from herb field (samples 68/45,48,75–77), 21.ii.1968, Kuschel & McBurney (ED); 3♂, 4♀, 2 nymphs, Table Hill, 610 m (2000'), from mat and cushion plants and moss (samples 68/52,54), 16.ii.1968, Kuschel & McBurney; Big South Cape I., North Peak, 215 m (700'), from *Oreobolus* mat (sample 69/75), 20.ii.1969, McBurney (ED, NM).

Phaulochernes n.gen.

Small, usually uniformly brown, integument granulate. Pleural membrane granulate in rows. Vestitural bristles usually very short, dorsal bristles of body and medial bristles of pedipalps weakly clavate, lateral bristles of pedipalps longer and dentate. Eye-spots of carapace not very distinct; both transverse furrows deep and sharply incised; with deep median longitudinal groove on metazone. Tergites (except last) divided, last tergite without tactile bristles. Cheliceral palm with 6 bristles, accessory bristles dentate, *ES* short; movable finger with subapical lobe small. Pedipalps moderately stout, not or scarcely sexually dimorphic; femur abruptly pedicellate; fingers about as long as hand with pedicel or slightly longer, with accessory teeth; movable finger with venom tooth long, with 4 trichobothria, *st* closer to *t* than to *sb*; fixed finger with terminal claw shorter, tactile seta *it* very close to *ist* and farther from apex than from *isb*. Legs moderately slender; femur IV not broadened; tarsus IV without tactile bristle.

TYPE-SPECIES: *Phaulochernes maoricus* n.sp.

REMARKS. *Phaulochernes* differs from *Nesiotochernes* in having the vestitural bristles of the body

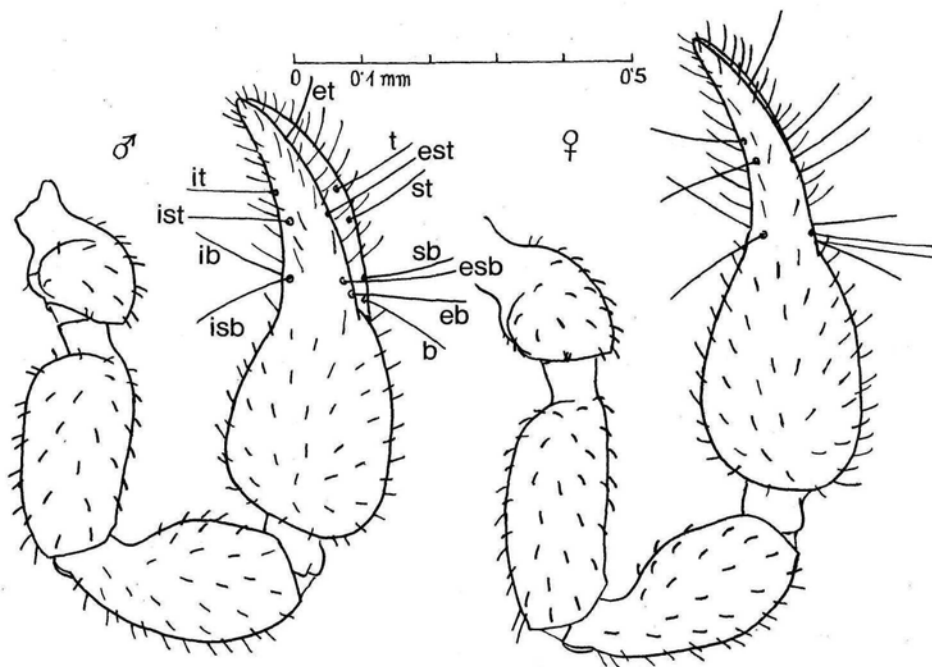


Fig. 18. *Phaulochnes maoricus* ♂♀, right pedipalp.

distinctly clavate and tactile seta *ist* close to *it*. It is distinguishable from *Apatochnes* and *Nesidiochnes* by the shorter vestitural bristles and the presence of a median longitudinal groove on the metazone of the carapace.

Key to species of *Phaulochnes*

1. All tergites uniformly brown.....1
—Some tergites with pale spots.....3
2. Tergites of central segments with 6–7 bristles on posterior margin. Bristles of last sternites slightly clavate. Integument coarsely and not densely granulate.....*maoricus*
—Tergites of central segments with 5 bristles on posterior margin. Bristles of posterior sternites acute. Integument much more finely and densely granulate.....*howdenensis*
3. Carapace about 1.3 × longer than wide. Palpal hand with mediobasal bristles short and fine.....*townsendi*
—Carapace scarcely longer than wide. Palpal hand with mediobasal bristles longer and clavate....*jenkinsi*

***Phaulochnes maoricus* n.sp. (Fig. 18)**

Uniformly brown, carapace darker. Integument coarsely but not very densely granulate. Vestitural bristles short, dorsal bristles of body strongly clavate, median bristles of pedipalps less clavate.

Carapace slightly longer than wide, coarsely granulate, bristles very short and clavate; with 10–12 bristles on posterior margin; both transverse furrows very deep, moderately broad, sub-basal furrow closer to posterior margin than to anterior furrow.

Eye-spots large. Tergites coarsely and moderately densely granulate, granules of last tergite low; vestitural tergal bristles clavate, becoming gradually longer caudad; half-tergites of central segments with 6–7 bristles on posterior margin and 1 on lateral margin, without bristles on medial margin or on disc; last tergite with 6 marginal and 2 discal bristles, without tactile bristles. Sternites smooth, bristles of posterior segments slightly clavate; half-sternites with 7–8 bristles; last sternite with 6 bristles, without tactile bristles. Movable finger with subapical lobe small, conical; galea with 5 branches, these shorter in male than in female; 1 branch basal, distal branches forming terminal fork. Pedipalps coarsely granulate, median bristles of proximal segments very short and slightly clavate, lateral bristles longer and dentate only; trochanteral humps moderately large; femur abruptly pedicellate, 2.3(♂)–2.7(♀) × longer than wide, tibia 2.1–2.2 × and hand 1.6–1.8 × longer than wide; chela with pedicel 3.0–3.2 × (without pedicel 2.7–2.9 ×) longer than wide; fingers at least as long as hand without pedicel, in male as long as hand with pedicel, each finger with 5–6 accessory teeth laterally, fewer medially; fixed finger with tactile seta *it* close to *ist* and farther from apex than from *isb*; movable finger with *st* closer to *t*. Female: genital area with semi-oval cluster of 20 bristles.

Body length (♂) 1.6 mm, (♀) 2.0 mm; carapace length (♂) 0.51 mm, (♀) 0.57 mm, width (♂) 0.49 mm, (♀) 0.53 mm; pedipalps: ♂ — femur length 0.37 mm,

width 0.16 mm; tibia length 0.37 mm, width 0.18 mm; hand length 0.39 mm, width 0.24 mm; finger length 0.39 mm; ♀ — femur length 0.40 mm, width 0.15 mm; tibia length 0.38 mm, width 0.17 mm; hand length 0.42 mm, width 0.24 mm; finger length 0.37 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, South I., Te Anau-Manapouri road, in moss collected among *Leptospermum scoparium*, *Celmisia longifolia*, *Herpolirion novae-zelandiae*, and *Cyathodes fraseri* (sample 66/424), 3.xii.1966, J. I. Townsend (ED). **Paratypes**: 2♂, Nelson, Gordon's Knob, 1585 m (5200'), 19.iv.1967, in moss (sample 67/190), Dugdale, and in *Chionochloa pallens* litter (sample 67/192), Watt; 4 specimens, Purewa Bush, 24.i.1943, McKenzie (CM, ED, NM).

Phaulochernes howdenensis n.sp. (Fig. 19)

Uniformly dark brown, very densely and rather finely granulate on intersegmental and pleural membranes. Vestitural bristles mostly very short and slightly clavate, those on last tergites longer, lateral bristles of tibia and hand also longer, thin, only finely dentate.

Carapace as long as its basal width, with indistinct eye-spots; both transverse furrows deep and relatively broad, sub-basal furrow slightly closer to posterior margin than to anterior furrow, median longitudinal groove slightly abbreviated anteriorly; carapace, especially prozone, with numerous pore-dots. Half-tergites usually with 5 bristles on posterior margin, 1 on median margin, and 1 on lateral margin, without discal bristles; last tergite with 6 marginal bristles, lateral bristles slightly longer and dentate in female. Half-sternites usually with 8 acute marginal bristles, those of last sternite not clavate. Cheliceral palm with 6 bristles, *B* and *SB* dentate apically, *ES* short; movable finger with subapical lobe at least half as long as terminal claw; galea in both sexes with 2 branches near middle and 1 short terminal fork. Pedipalps not sexually dimorphic, moderately stout; trochanteral humps round; femur abruptly pedicellate, 2.6× longer than wide, tibia 2.4× and hand 1.7× longer than wide, chela with pedicel 3.0× (without pedicel 2.8×) longer than wide; fingers shorter than hand without pedicel, with accessory teeth, tactile seta *ist* close to *it*, *it* as far from apex as from *isb*; movable finger with *st* nearly halfway between *sb* and *t*. Legs slender. Male: genital area sparsely setose. Female: genital area with small semicircular cluster of about 24 bristles.

Body length (♂♀) 2.1–2.3 mm; carapace length (♂♀) 0.62 mm, width 0.68 mm; pedipalps (♂♀): femur length 0.54 mm, width 0.21 mm; tibia length 0.55 mm, width 0.23 mm; hand length 0.58 mm, width 0.34 mm; finger length 0.48 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, South I., Hollyford Valley, L. Howden, 610 m (2000'), from moss taken under *Nothofagus menziesii* (sample

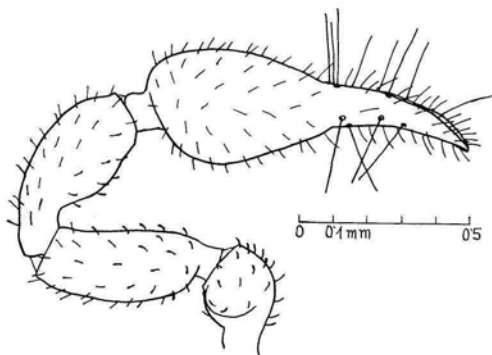


Fig. 19. *Phaulochernes howdenensis* ♀, left pedipalp.

66/518), 14.xii.1966, A. K. Walker & K. Z. Wilson (ED). **Paratypes**: 5♂, 5♀, 23 nymphs, same data as holotype; 1♂, 2♀, Highfalls Creek, end of Hollyford Road, in moss, 10.xii.1966, Walker & Wilson (ED); 1♂, Mt. Lyttle, 915 m (3000'), from moss in tussock (sample 66/528), 15.xii.1966, A. K. Walker; 2♀, Southland, MacLennan, 30 m (100'), in moss, 13.ii.1968, Townsend (ED); 33♂, 33♀, 10 nymphs, Fiordland, L. Te Au, i–ii.1953, Forster (CM, OM); 2♂, 5♀, 9 nymphs, Fiordland, L. Monk, 850 m (2800'), 21.i.1960, Chapman (OM); 1♂, 2♀, Fiordland, Caswell Sound, Stillwater Base Camp, iv.1949, Forster; 1♀, Cascade Creek, i.1951; 1♂, NW Nelson, Heaphy Track, i.1956, Chapman (CM); 1♀, Milford Sd., Arthur R., 19.xii.1944 (NM); 90 ♂♀ and nymphs, Makarora, Cameron Flat, iii.1966 (OM); 1♂, 1♀, 1 nymph, Milford Sound, Anita Bay, 18.xii.1947, Salmon; 2♂, Milford Sound, Cleddau Cirque, 22.i.1940, Salmon (NM).

REMARKS. *P. howdenensis* differs from *mauricus* in being larger, and in having fewer bristles on the hind margin of the tergites, much finer and denser granulation, acute ventral bristles, indistinct eye-spots, and a semicircular cluster of more numerous bristles on the genital area of the female.

Phaulochernes townsendi n.sp. (Fig. 20)

Pedipalps light reddish-brown, carapace olive brown, tergites pale brownish, segment III broadly lighter, occasionally female with all tergites pale along median line. Integument with moderately dense and acute granulation. Vestitural bristles very short, blunt, some finely dentate, dorsal bristles on body distinctly clavate.

Carapace nearly 1.3× longer than wide; prozone and metazone densely granulate, mesozone more sparsely granulate medially; both transverse furrows narrow and deeply incised, sub-basal furrow finely granulate, nearly 2× closer to sclerotised base than to anterior furrow; metazone with median longitudinal groove anteriorly. Eye-spots indistinct. Tergites weakly sclerotised, divided (except last), not very densely granulate, granules small and acute, tergite III broadly desclerotised except on posterior and lateral margins; half-tergites of central segments with 8–9 bristles on posterior margin, 1 on lateral margin,

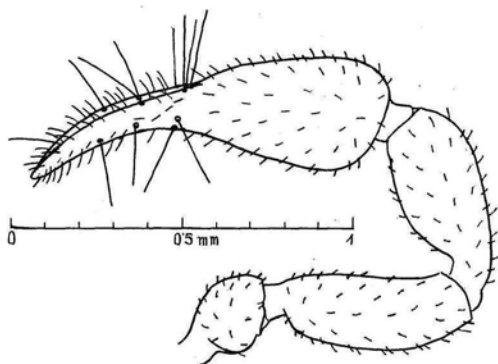


Fig. 20. *Phaulochernes townsendi* ♂, right pedipalp.

and 1 on median margin, bristles very short, inconspicuous and scarcely clavate, bristles of posterior segments slightly longer; last tergite with 8 marginal and 2 discal bristles, without tactile bristles. Sternites squamosely granulate, usually with 6 bristles on posterior margin, 1 each on lateral and median margin, all acute; last sternite with 6 marginal bristles, 1 pair of lateral and 1 pair of median discal bristles. Cheliceral palm with 6 bristles, *ES* short; galea in male stout, with branches. Pedipalps densely granulate; trochanteral humps round; femur abruptly pedicellate, $1.9\times$ longer than wide, tibia $2.0\times$ and hand $1.9\times$ longer than wide, chela with pedicel $3.5\times$ (without pedicel $3.2\times$) longer than wide; all vestitural bristles very short, medial bristles slightly clavate, lateral bristles only finely dentate and usually acute, bristles of hand dentate; fingers about as long as hand without pedicel, with row of accessory teeth; fixed finger with tactile seta *it* nearly as far from *ist* as *ist* from *isb*, and halfway between *isb* and apex; movable finger with *st* halfway between *sb* and *t*, these proximad of middle. Legs slender with very short bristles. Male: genital area with about 26 bristles, 4 median bristles of anterior margin thicker and with larger areoles.

Body length 2.5 mm; carapace length 0.74(0.80) mm, width 0.61 mm; pedipalps: femur length 0.62 mm, width 0.21 mm; tibia length 0.62 mm, width 0.25 mm; hand length 0.64 mm, width 0.33 mm; finger length 0.56 mm.

TYPE DATA. Holotype ♂: NEW ZEALAND, South I., Marlborough, Kenepuru Sounds, Mt. Stokes, 1170 m (3850'), from moss and mat plants taken around rocks, tussock, *Celmisia*, *Gentiana*, and *Cyathodes* on open top (sample 67/245), 12.x.1967, J. I. Townsend (ED). Paratypes: 4♀, South I., Kaikoura, Maungamanu Reserve, 8.xii.1946, Healy (NM).

REMARKS. *P. townsendi* is related to *howdenensis*, but is larger, with the carapace much longer and narrower, the femur and chela of the pedipalps more slender, and tactile seta *it* farther from *ist* and *t* farther from *st*.

Phaulochernes jenkinsi n.sp. (Fig. 21)

Small, dark brown, integument coarsely granulate. Vestitural bristles short, strongly clavate. Males with tergites II–IV with relatively indistinct pale spot sub-basally, that on III largest; females with such spots on segments II–X, on II and III extending to lateral margin, on III widest, on IV–X sublateral, decreasing in size caudad, with some granules in them.

Carapace scarcely longer than broad, both transverse furrows sharply incised, sub-basal furrow closer to posterior margin; metazone with densely granulate median groove. Tergites (except last) divided, as coarsely granulate as carapace; half-tergites usually with 5 short, very strongly clavate, foliaceous bristles on posterior margin, from segment IV and beyond also with 1 bristle on lateral margin and 1 on median margin; last tergite with 6 marginal and 2 discal bristles, without tactile bristles. Pleural membrane densely granulate. Last few sternites with low granulation, lateral bristles slightly clavate. Cheliceral palm with 5 (rarely 6) bristles, *SB* dentate; galea with short branches distally. Pedipalps (including hand) very densely and coarsely granulate, medial bristles clavate, lateral ones dentate; all bristles short, only strongly clavate mediobasal bristles of hand long; trochanteral humps round; femur abruptly pedicellate, $2.3\text{--}2.5\times$ longer than wide; tibia $2.1\text{--}2.2\times$ and hand $1.4(\text{♂})\text{--}1.6(\text{♀})\times$ longer than wide; chela with pedicel $2.4(\text{♂})\text{--}2.7(\text{♀})\times$ (without pedicel $2.2(\text{♂})\text{--}2.5(\text{♀})\times$) longer than wide; fingers scarcely as long as hand without pedicel, with accessory teeth; fixed finger with medial tactile setae at proximal half, *it* close to *ist*, *ist* twice as far from *isb*; movable finger with *st* closer to *t* than to *sb*. Female: genital area with wide area of short bristles, following 2 segments broadly divided and dark brown.

Body length (♂) 1.1–1.25 mm, (♀) 1.25–1.35 mm; carapace length (♂) 0.55 mm, (♀) 0.53 mm, width (♂) 0.48 mm, (♀) 0.50 mm; pedipalps: ♂ — femur length 0.37 mm, width 0.16 mm; tibia length 0.38 mm, width 0.18 mm; hand length 0.34 mm, width 0.25 mm; finger length 0.29 mm; ♀ — femur length 0.42 mm, width 0.17 mm; tibia length 0.41 mm, width 0.19 mm; hand length 0.40 mm, width 0.26 mm; finger length 0.33 mm.

TYPE DATA. Holotype ♂ and allotype ♀: NEW ZEALAND, North I., west side of Shoe I. [off east coast Coromandel], pohutukawa [*Metrosideros excelsa*] forest leaf litter, 21.iv.1967, A. T. Jenkins (AM). Paratypes: 5♂, 4♀, 5 nymphs, same data as holotype (AM); 27♂♀, numerous nymphs, Mercury Is, Korapuke I., south summit ridge crest, from *Metrosideros* and *Meliccytus* litter (sample 72/253), 28.xi.1972, Ramsay (ED).

REMARKS. *P. jenkinsi* is distinguishable by the pale spots on tergites II–IV in males and II–X in females, the stouter pedipalps, the much stronger clavate vestitural bristles, and the long clavate bristles of the palpal hand.

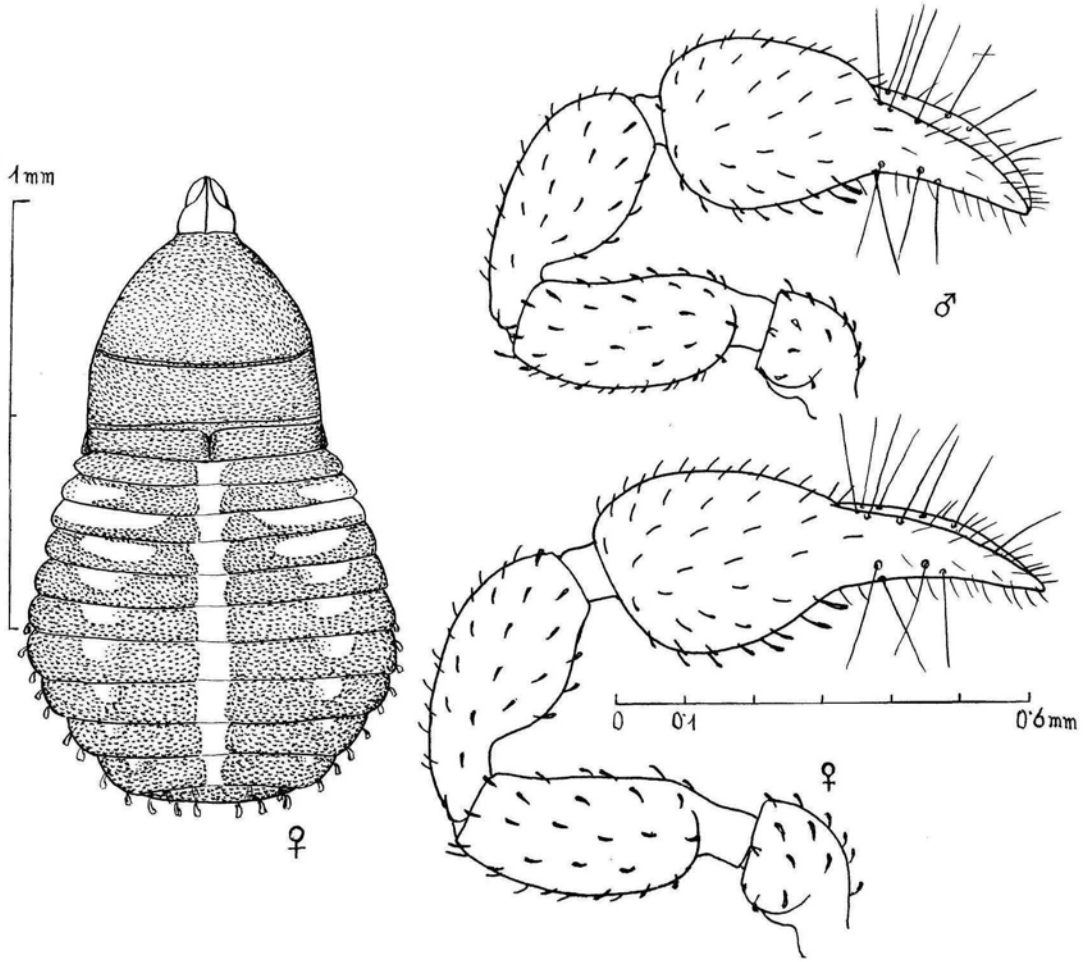


Fig. 21. *Phaulochernes jenkinsi*, body ♀ and left pedipalp ♂♀.

Nesidiochernes Beier, 1957

Bicoloured. Fixed palpal finger with tactile seta *it* at least as far from apex as from *isb*. Tarsus IV without tactile bristle.

Widely distributed in the Pacific. The New Zealand representatives have the vestitural bristles less clavate or only dentate, and the lateral bristles of the last tergite more or less elongate.

Key to species of *Nesidiochernes*

1. Tergite III without whitish spots; last tergite with paired whitish spots *zealandicus*
 —Tergite III with paired whitish spots; last tergite without whitish spots 2
2. Dorsal trochanteral tubercle as granulate as femur. Tergite III almost entirely whitish. Vestitural bristles short *scutulatus*
 —Dorsal trochanteral tubercle very coarsely granulate. Tergites II–IV with common paired whitish spot. Vestitural bristles long *kuscheli*

Nesidiochernes zealandicus Beier

Beier, 1966, Pacific Insects 8: 372, fig. 8.

Carapace with whitish pattern on metazone, tergites IV–XI with whitish pattern, spots on tergites gradually increasing in size posteriorly. Male significantly smaller than female.

Carapace length (♂) 0.62 mm, (♀) 0.88 mm; pedipalps: femur length (♂) 0.58 mm, (♀) 0.67 mm; tibia length (♂) 0.57 mm, (♀) 0.70 mm; hand length (♂) 0.64 mm, (♀) 0.85 mm; finger length (♂) 0.54 mm, (♀) 0.55–0.64 mm.

North and South Is, from Cape Reinga to Canterbury. Specimens: 39 (AM, ED, NM, OM).

Nesidiochernes scutulatus Beier (Fig. 22)

Beier, 1969, Records of the Auckland Institute & Museum 6: 415, fig. 2.

Pale brownish, carapace and tergites with pale spots,

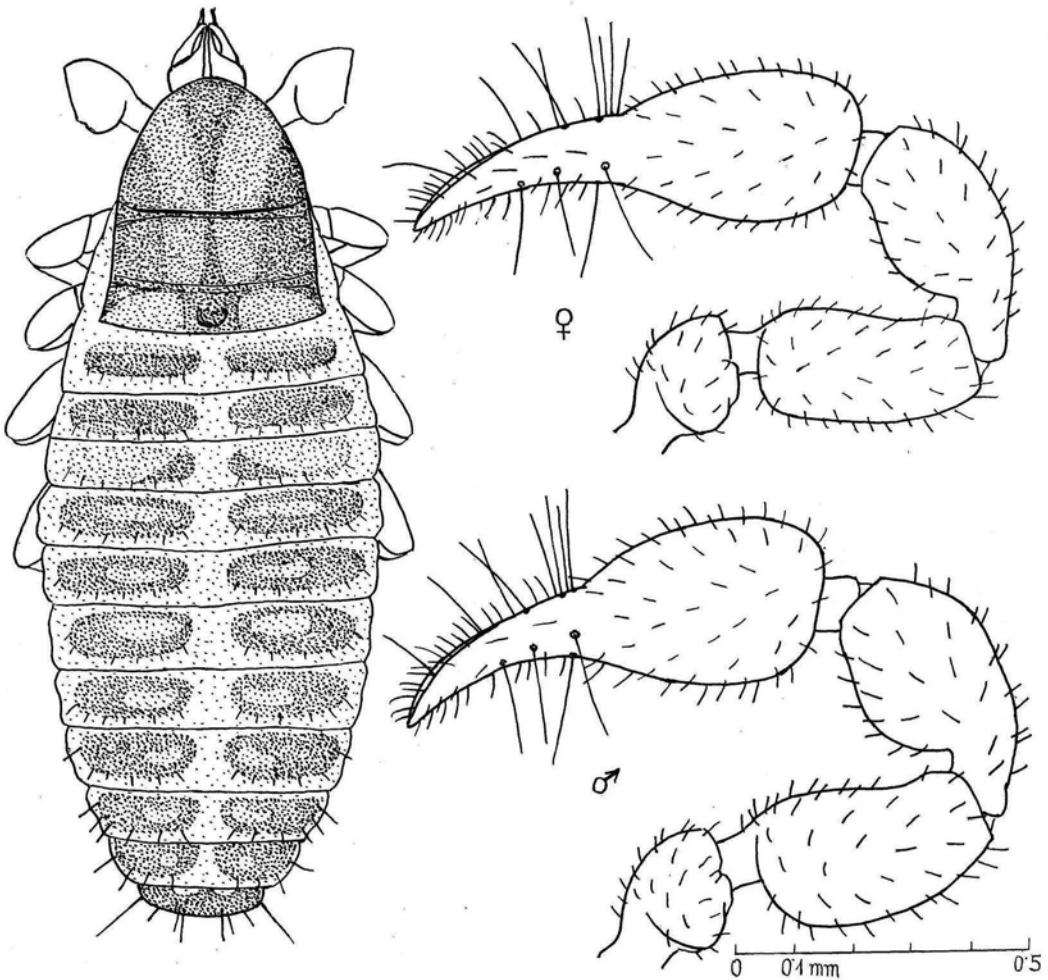


Fig. 22. *Nesidiochernes scutulatus*, body and right pedipalp ♂♀.

segment III almost entirely whitish, spots of other tergites decreasing in size and on last tergite often broken up. Fixed palpal finger with tactile seta *it* well proximad, moderately close to *ist*.

Pedipalps: femur length 0.44–0.51 mm, width 0.18–0.24 mm; tibia length 0.44–0.49 mm, width 0.20–0.25 mm; hand length 0.45–0.51 mm, width 0.24–0.28 mm; finger length 0.38–0.42 mm.

North and South Is, from Hamilton to Dunedin. Specimens: 18 (AM, ED, NM, OM).

Nesidiochernes kuscheli n.sp. (Fig. 23)

Light brownish; prozone and mesozone of carapace with a large, pale spot forked anteriorly but branches not reaching anterior margin; metazone pale with dark median spot and brown lateral margins; tergites pale except narrowly brown posterior and lateral margins, brown posterior transverse stripe wider on tergite I, and last tergite entirely brown;

tergites II–IV with common pair of light spots (posterior margin of tergite II partly pale, that of tergite III almost entirely pale — a pattern similar to that of *Apatochernes antarcticus*). Integument with moderately coarse and sparse granulation, this distinct on light patterns also. Vestitural bristles long, slightly to distinctly clavate, coarsely dentate.

Carapace slightly longer than wide posteriorly, both transverse furrows not very deep, granulate, sub-basal furrow about 1.3× closer to posterior margin than to anterior furrow; metazone medially more finely and densely granulate than paler parts of mesozone; bristles distinctly clavate. Eye-spots indistinct. Tergites (except last) divided, with moderately coarse granulations, last tergite almost smooth; half-tergites of central segments with 7–8 bristles on posterior margin, of segment IX with 6, and of X with 4; last tergite with 4 marginal, 2 lateral, and 2 median discal bristles and pair of

moderately long and acute lateral tactile bristles; bristles longer and more slender on posterior segments. Sternal bristles shorter than tergal ones, those of posterior segments finely dentate; last sternite without tactile bristles. Cheliceral palm with 6 bristles; galea of male stout, with 5 branches for whole length, these longer in female. Pedipalps densely and uniformly granulate, dorsal trochanteral tubercle with some larger granules; femur abruptly pedicellate, $2.9\times$ longer than wide, tibia $2.4\times$ and hand $1.9\times$ longer than wide; chela with pedicel $3.1\times$ (without pedicel $2.9\times$) longer than wide; bristles long and thick, those of proximal segments coarsely dentate, those of hand deeply and finely dentate; fingers slightly shorter than hand without pedicel, with large accessory teeth; fixed finger with tactile seta *it* close to *ist* and much farther from apex than *ist* from *isb*; movable finger with *st* closer to *t* than to *sb*. Male: genital operculum with 3 bristles on posterior margin on each side.

Body length 1.7 mm; carapace length 0.74 mm, width 0.68 mm; pedipalps: femur length 0.67 mm, width 0.23 mm; tibia length 0.62 mm, width 0.26 mm; hand length 0.65 mm, width 0.35 mm; finger length 0.52 mm.

TYPE DATA. **Holotype** ♂: NEW ZEALAND, Stewart I., Rakeahua Valley, 15.ii.1968, G. Kuschel (ED). **Paratypes**: 3♀, L. Hawea, Kidds Bush, 26.x.1964, Johns (CM); 1♀, Lower Hollyford, in moss and lichen, 2.ii.1964, Forster (NM); 1♀, Thompson Sound, 850 m (2800'), 22.i.1958, Forster (OM); 4♂, 5♀, Homer, beaten from ferns and trees, 1.i.1944 & 3.ii.1946, Salmon; 1♂, Mt. Ngamoko, under log, 14.xii.1940, Forster (NM); 2♂, 1♀, Dunedin, Sullivans Dam, 1959 & 1960 (OM).

REMARKS. Although related to *scutulatus*, *kuscheli* differs in colour pattern and in having much longer vestitural bristles, a coarsely granulate trochanteral tubercle, more slender pedipalps, and a larger body.

Smeringochernes Beier, 1957

Vestitural bristles partially clavate and elongate, at least on palpal hand. Tarsus IV without true tactile bristle, but with longer bristle subterminally.

Widely distributed in the Pacific; 1 species in New Zealand.

Smeringochernes zealandicus n.sp. (Fig. 24)

Uniformly pale reddish-brown. Integument usually finely granulate. Vestitural bristles partly strongly pennate-clavate.

Carapace slightly longer than wide, sides parallel over proximal two-thirds, transverse furrows broad and shallow, sub-basal furrow closer to posterior margin. Eye-spots absent. Tergites except last divided; half-tergites of segments V or VI and beyond with 5-6 bristles on posterior margin and 1 on lateral margin, all bristles strongly clavate, those of

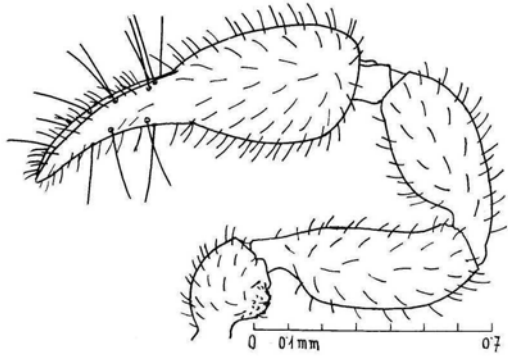


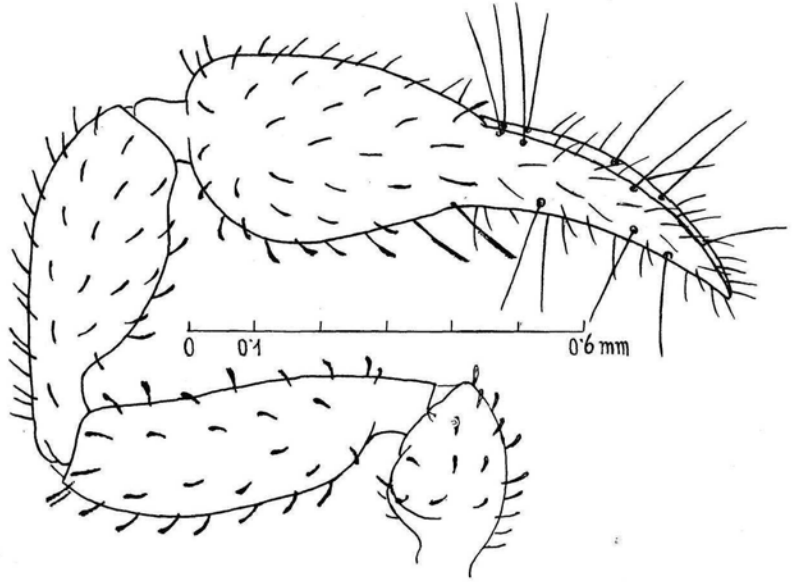
Fig. 23. *Nesidiochernes kuscheli* ♂, right pedipalp.

last tergite long; last tergite with pair of discal bristles and long lateral tactile bristles. Pleural membrane with very dense, rasp-like granulation. Half-sternites with 6-7 bristles, these simple, but on last segments finely dentate; last sternite undivided, with 2 pairs of moderately long median and lateral tactile bristles. Cheliceral palm with 6 bristles, *IS* unusually long, *ES* very short, *B*, *SB*, and accessory bristle dentate distally; galea with short, forked branch ventrobasally and some longer twigs on main branch. Pedipalps scarcely longer than body, with clavate bristles medially and usually with dentate bristles laterally, medial bristles of femur not very long, hand with 2 very long, strong, dentate bristles mediodistally; trochanteral tubercles broadly rounded; femur rather abruptly pedicellate, $2.6(\text{♀})$ - $3.2(\text{♂})\times$ longer than wide; tibia $2.5(\text{♀})$ - $2.7(\text{♂})\times$ and hand 1.7 - $1.8\times$ longer than wide; chela with pedicel 3.2 - $3.3\times$ (without pedicel 2.9 - $3.0\times$) longer than wide; fingers thick, scarcely longer than hand without pedicel. Legs with clavate lateral bristles; posterior tarsi slender, with longer, acute tactile bristle subapically. Female: coxae IV with long bristles on posterior margin; genital area with about 18 short bristles in semicircular cluster.

Body length (♂) 1.8 mm, (♀) 2.4 mm; carapace length (♂) 0.61 mm, (♀) 0.68 mm, width (♂) 0.49 mm, (♀) 0.55 mm; pedipalps: ♂ — femur length 0.57 mm, width 0.18 mm; tibia length 0.55 mm, width 0.20 mm; hand length 0.53 mm, width 0.29 mm; finger length 0.48 mm; ♀ — femur length 0.58 mm, width 0.22 mm; tibia length 0.55 mm, width 0.22 mm; hand length 0.56 mm, width 0.32 mm; finger length 0.50 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, North I., Whangaroa Co., Tauranga Bay, Butterfly Bay, rotting wood/soil, 28.ix.1966, K. A. J. Wise (AM). **Paratypes**: 1♀, 5 nymphs, type loc.; 2♀, Waitemata Co., Wade Heads and Tindalls Beach, forest remnant, 28.ii.1968, Wise; 3♂, 6♀, Whangarei Co., x.1967 & vii.1968, Wise; 1♂, 1 nymph, Mangonui Co., Mt. Orowhana N

Fig. 24. *Smeringochernes zealandicus* ♂, left pedipalp.



of Herekino, 2.v.1949, Wise; 1♀, Hokianga Co., Mangamuka Gorge, forest leaf-litter, 19.xi.1966, Wise; 1♀, Rodney Co., S of Wellsford, 26.ii.1967, Wise; 5♂, 5♀, 16 nymphs, Bay of Islands Co., diverse forests, xii.1966, xii.1967, & x.1968, Wise (AM); 1♂, Masterton, Solway Showground, 15.iii.1966; 1♀, 4 nymphs, Peel Forest, 30.ix.1966; 2 nymphs, Lower Portobello, i.1966, Beatson (OM); 2♂, 3♀, Bay of Plenty, Omaio, 14.iii.1962, Dell; 1♀, Dannevirke, 12.iv.1943 (ED, NM).

REMARKS. This is the first record of *Smeringochernes* in New Zealand; it was previously known from New Guinea and the Solomon Islands. *S. zealandicus* is larger, has long tactile bristles on the last tergite, and has relatively short medial bristles on the palpal femur.

Sundochernes Beier, 1932

Integument densely and finely granulate. Vestitural bristles very short, moderately clavate. Carapace with transverse furrows shallow, sub-basal furrow closer to posterior margin than to anterior furrow. Last segment without tactile bristles. Cheliceral palm with 6 bristles. Pedipalps robust, femur abruptly pedicellate. Tarsus IV without tactile bristle.

Indonesia, Australia.

Sundochernes grayi n.sp. (Fig. 25)

Dark reddish-brown, metazone of carapace yellowish, 1 median spot brownish. Carapace about 1.2× longer than its posterior width, densely and finely granulate, with numerous small pore-dots between bristles, bristles very short, indistinct, clavate; both transverse furrows moderately distinct, sub-basal

furrow slightly closer to posterior margin. Eye-spots absent. Tergites (except last) granulate; half-tergites with 3–4 marginal bristles, usually with 1 bristle on lateral margin and 1 on median margin, bristles moderately clavate, gradually increasing in length; last tergite with pair of discal bristles, without tactile bristles. Sternal bristles very short, clavate on posterior segments; last sternite without tactile bristles. Cheliceral palm with 6 bristles; galea long, with small branches apically. Pedipalps with numerous pore-dots and very short bristles, these clavate on median surface of segments, only 4 bristles of hand near finger base longer and dentate-clavate; dorsal trochanteral tubercle high; femur strongly pedicellate, 3× longer than wide; tibia 2.5× and hand 1.7× longer than wide; chela with pedicel 2.8× (without pedicel 2.6×) longer than wide; fingers distinctly shorter than very broad hand without pedicel, with accessory teeth; fixed finger with tactile seta *it* close to apex, *st* closer to *t* than to *sb*. Legs slender. Female: genital area with 1 cluster of 14 bristles.

Body length (♀) 2.5 mm; carapace length 0.80 mm, width 0.67 mm; pedipalps: femur length 0.62 mm, width 0.21 mm; tibia length 0.60 mm, width 0.24 mm; hand length 0.66 mm, width 0.39 mm; finger length 0.44 mm. Male unknown.

TYPE DATA. Holotype ♀: LORD HOWE I., nr Old Settlement, 67 m (220'), 30.i.1971, M. Gray (S).

REMARKS. *S. grayi* is close to *dewae* Beier of New South Wales, but is smaller and has much sparser tergal bristles, more slender palpal tibia, longer clavate bristles on the hand mediolaterally, relatively shorter fingers, and tactile seta *it* closer to *ist*.

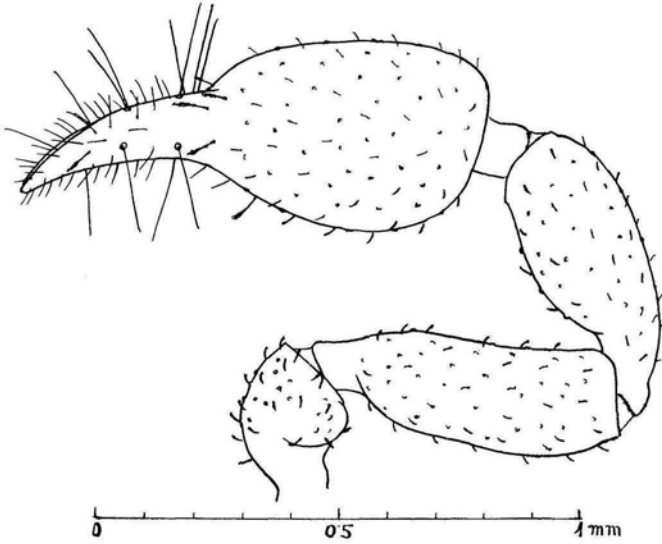


Fig. 25. *Sundochernes grayi* ♀, right pedipalp.

Apatochernes Beier, 1948

Tergites often with whitish patterns. Integument with moderately dense granulation. Vestitural bristles clavate and dentate, occasionally foliaceous. Carapace with 2 distinct transverse furrows, sub-basal furrow closer to posterior margin than to anterior furrow. Cheliceral palm with 5–7 bristles. Pedipalps robust or slender; femur not very abruptly pedicellate; fingers with accessory teeth. Legs slender; tarsus IV without tactile bristle.

Endemic to New Zealand.

Key to species of *Apatochernes*

1. Palpal hand of ♂ without ventral area of sense cones, sometimes with few scattered cones between bristles.....2
—Palpal hand of ♂ with distinct ventral area of sense cones.....9
2. Bristles of palpal hand short and stiff.....3
—Bristles of palpal hand long and pliable, especially in ♂.....8
3. Fixed palpal finger with tactile seta *ist* about halfway between *isb* and *it*. Larger (palpal femur at least 0.64 mm long).....4
—Fixed palpal finger with tactile seta *ist* much closer to *it* than to *isb*. Smaller (palpal femur 0.56–0.62 mm long). Of almost uniform colour.....*nestoris*
4. Pedipalps stout, femur 2.4–2.6 × longer than wide 5
—Pedipalps slender, femur 3.2 × longer than wide.....*turbotti*
5. Last tergite and sternite undivided.....6
—Last tergite and sternite divided. Tergites with lateroanterior angle desclerotised.....*posticus*
6. Body with whitish spots. Half-tergites with 1 or without discal bristle.....7
—Body without whitish spots. Half-tergites with 3 discal bristles.....*vastus*
7. Cheliceral palm with 6–7 bristles. Dorsum with cruciform pattern, its 2 arms on segments IV and V, more distinctly so in males.....*cruciatius*
—Cheliceral palm with 5 bristles. Dorsum whitish, with paired brown spots, segment III almost entirely whitish.....*solitarius*
8. Last tergite with lateral bristles very long. Dorsum of ♂ with whitish, cruciform longitudinal stripe, broadest on segment IV.....*obrieni*
—Last tergite with lateral bristles moderately long. Dorsum of ♂ without cruciform pattern.....*gallinaceus*
9. Palpal hand of ♂ with small, ventral, transverse area of 25 or fewer sense cones close to base of movable finger.....10
—Palpal hand of ♂ with large longitudinal area of 45 or more sense cones ventrally on distal half or ventrolaterally.....12
10. Cheliceral palm with 7 bristles. Vestitural bristles long and strongly clavate-dentate, foliaceous. Palpal fingers with accessory teeth well developed.....11
—Cheliceral palm with 6 bristles. Vestitural bristles short, thinner. Palpal fingers without accessory teeth.....*wisei*
11. Pedipalps sparsely setose. Half-tergites with 5–6 marginal bristles. ♂: palpal hand with sense area bearing 18–20 cones.....*curtulus*
—Pedipalps densely setose. Half-tergites with 7–10 marginal bristles. ♂: palpal hand with sense area bearing about 12 cones.....*maoricus*
12. ♂: palpal hand with sense area ventrolateral. Pedipalps slender.....13
—♂: palpal hand with sense area ventral on distal half. Pedipalps stout.....14
13. Vestitural bristles long, strongly clavate. Palpal fingers shorter than hand without pedicel, each with < 50 marginal teeth.....*proximus*
—Vestitural bristles short, very slightly clavate. Palpal fingers nearly as long as hand with pedicel, each with > 60 marginal teeth.....*cheliferooides*

14. Last tergite with long tactile bristles laterally. Tergite III more or less whitish. ♂: palpal hand with sense area bearing about 85 cones. Carapace length 1.0 mm, palpal femur length 0.80–0.95 mm. 15
 — Last tergite without tactile bristles, or with short ones. Tergite III not whitish. ♂: palpal hand with sense area bearing about 45 cones. Carapace length 0.60–0.85 mm, palpal femur length 0.60–0.68 mm. 16
15. Medial palpal bristles very short, only dentate. Carapace with metazone only indistinctly paler on sides. *insolitus*
 — Medial palpal bristles short, clavate. Carapace with metazone distinctly marked with paired whitish or yellowish spots. *kuscheli*
16. Last tergite and sternites almost smooth; sternal bristles acute. Palpal hand 1.6× longer than wide, with short bristles. 17
 — Last tergite and sternites granulate; sternal bristles clavate. Palpal hand broader, 1.5× longer than wide, with longer bristles. Tergites II–IV with paired, connected whitish spots. *chathamensis*
17. Tergites II–IV with very distinct paired, connected whitish spots 18
 — Tergites II–III indistinctly paler sublaterally. *antarcticus pterodromae*
18. Last tergite without tactile bristles. *antarcticus antarcticus*
 — Last tergite with short, usually dentate, tactile bristles laterally. *antarcticus knoxi*

***Apatochernes nestoris* Beier (Fig. 26)**

Beier, 1962, Records of the Canterbury Museum 7: 400, fig. 2; 1966, Pacific Insects 8: 374; 1967, Records of the Dominion Museum 5: 294.

Small, uniformly reddish-brown. Pedipalps stout, vestitural bristles thick, distinctly clavate. Last tergite with discal bristles and with short, occasionally dentate tactile bristles laterally. Male: palpal hand without area of sense cones ventrally.

Body length (♂) 1.5–2.0 mm, (♀) 2.0–2.3 mm; carapace length (♂) 0.62–0.65 mm, (♀) 0.66–0.70 mm; pedipalps: ♂ — femur length 0.53–0.56 mm, width 0.22 mm; tibia length 0.53–0.56 mm, width 0.25–0.26 mm; hand length 0.53–0.54 mm, width 0.32 mm; finger length 0.45–0.46 mm; ♀ — femur length 0.54–0.62 mm, width 0.22 mm; tibia length 0.53–0.58 mm, width 0.25 mm; hand length 0.55–0.60 mm, width 0.31 mm; finger length 0.44–0.45 mm.

North I., Bay of Plenty (Whale I.); South I., Westland (Nelson Creek, Barrytown, Murrays Mistake; Open Bay Is.); Stewart I. (Bench I.). Found in nesting burrows of birds (*Nestor meridionalis*, *Puffinus griseus*, *Procellaria westlandica*, *Pterodroma macroptera*). Specimens: 93 (CM, ED).

***Apatochernes turbotti* Beier (Fig. 27)**

Beier, 1969, Records of the Auckland Institute & Museum 6: 417, fig. 3.

Uniformly reddish-brown, densely and finely granulate. Sternites IV–VII in both sexes with numerous

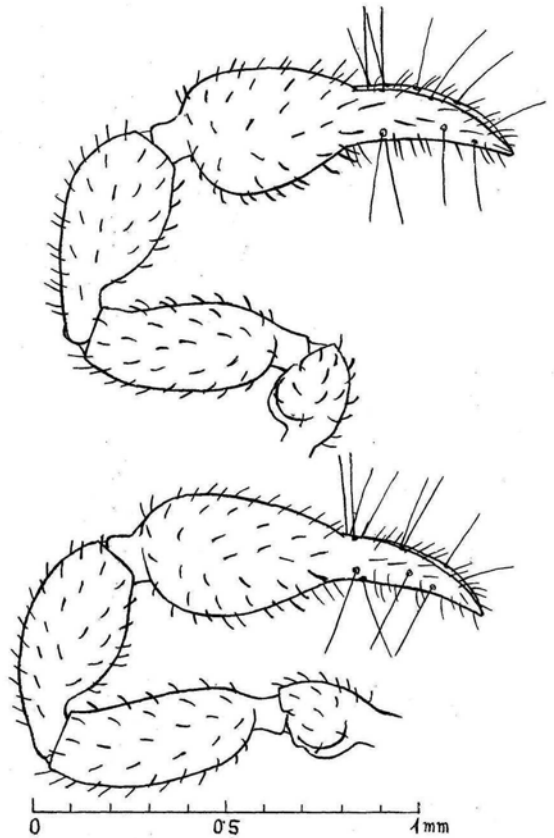


Fig. 26. *Apatochernes nestoris*, left pedipalp ♂♀ (Whale I.).

pore-dots in irregular transverse rows. Last tergite with lateral bristles relatively long, clavate. Cheliceral palm with 5–6 bristles. Pedipalps with vestitural bristles on medial side short, distinctly clavate. Male: palpal hand without area of sense cones ventrally.

Body length (♂) 1.7–2.0 mm, (♀) 2.6–3.0 mm; carapace length (♂) 0.68–0.74 mm, (♀) 0.86–0.92 mm, width (♂) 0.63–0.74 mm, (♀) 0.79–0.80 mm; pedipalps: ♂ — femur length 0.70 mm, width 0.22–0.23 mm; tibia length 0.68 mm, width 0.24–0.27 mm; hand length 0.68–0.73 mm, width 0.36–0.37 mm; finger length 0.58–0.65 mm; ♀ — femur length 0.74–0.82 mm, width 0.23–0.26 mm; tibia length 0.73–0.82 mm, width 0.26–0.30 mm; hand length 0.75–0.80 mm, width 0.47–0.50 mm; finger length 0.65–0.80 mm.

Three Kings Is and Northland, from North Cape to Bay of Islands. Specimens: 210 (AM, ED, NM, OM).

***Apatochernes posticus* n.sp. (Fig. 28)**

Carapace and pedipalps very dark chocolate-brown, tergites somewhat paler brown. Integument densely

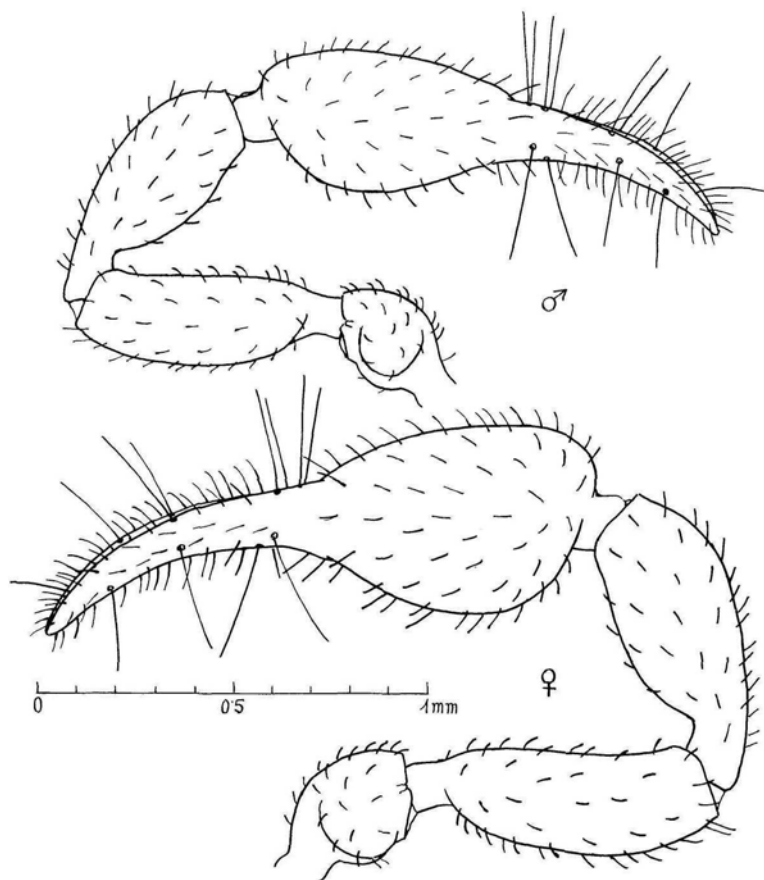


Fig. 27. *Apatochernes turbotti*, left and right pedipalp ♂♀.

granulate. Vestitural bristles thick, long, dentate, usually distinctly clavate.

Carapace 1.2× longer than wide, slightly ovate; submedian transverse furrow moderately deep, subbasal furrow shallow and about one-quarter closer to posterior margin than to submedian furrow. Eyespots distinct. All tergites (including last) divided, tergites VI–XI desclerotised at lateral angles, these paler spots larger on posterior segments and extending gradually to anterior margins; half-tergites of segments IX–XI desclerotised also at median anterior angles; half-tergites of central segments with 6 or 7 bristles on posterior margin, 1 or 2 of these subdiscal, and 1 bristle on lateral and 1 on median margin; half-tergites of segment VI and beyond with 1 discal bristle; half-tergites of segment X with 5 bristles on posterior margin, 1 each on lateral and median margins, and 1 on disc; half-tergites of last segment with 4 marginal bristles, lateral one slightly longer and slightly clavate, and with 2 discal bristles. Sternites IV–IX with numerous pore-dots, X and XI with sparse pore-dots; sternal bristles simple, those of last 2 segments dentate, lateral and median discal

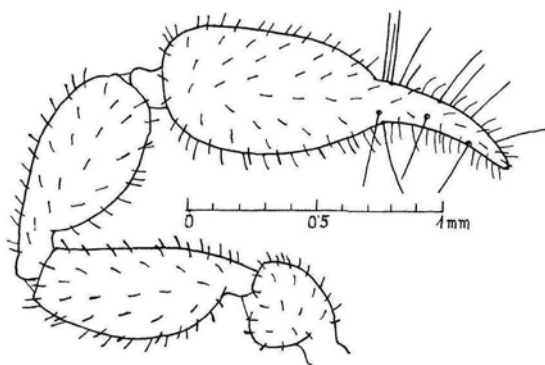
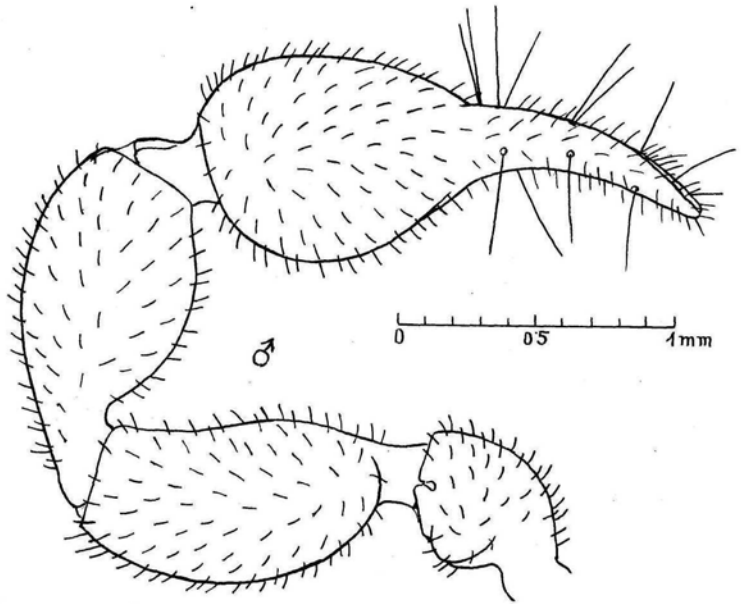


Fig. 28. *Apatochernes posticus* ♂, left pedipalp.

bristles of last sternite slightly longer; last sternite divided, each half-sternite with 3 marginal and 2 discal bristles. Cheliceral palm with 7 bristles; galea of male simple. Pedipalps stout, bristles of trochanter and femur and medial bristles of tibia dentate and slightly clavate, others only dentate; trochanteral humps high; femur subabruptly pedicellate, 2.4× longer than wide; tibia 2.2× and hand 1.9× longer

Fig. 29. *Apatochernes vastus* ♂, left pedipalp.



than wide; chela with pedicel $3.1\times$ (without pedicel $2.9\times$) longer than wide; fingers much shorter than hand without pedicel and about $0.5\times$ as long as hand with pedicel, with accessory teeth. Legs moderately slender, with dentate and slightly clavate bristles. Nymphs with palpal hand dark.

Body length (♂) 3.0 mm; carapace length 0.98 mm, width 0.82 mm; pedipalps: femur length 0.86 mm, width 0.36 mm; tibia length 0.89 mm, width 0.40 mm; hand length 0.95 mm, width 0.49 mm; finger length 0.62 mm. Female unknown.

TYPE DATA. **Holotype** ♂: NORFOLK I., Mt. Pitt, 300 m (1000'), from *Meryta angustifolia*, 1.xi.1967, G. Kuschel (Division of Entomology, CSIRO, Canberra). **Paratype**: 1 deutonymph, Norfolk I., Mt. Pitt, 245 m (800'), 3.ix.1967, Kuschel.

REMARKS. *A. posticus* is related to *turbotti*, but is larger, with the cheliceral palm bearing 7 bristles, the pedipalps stouter but the hand narrower, and the vestitural bristles longer. It is recognisable by the divided last tergite and sternite and the colour pattern of the last segments.

Apatochernes vastus n.sp. (Fig. 29)

Large and very robust, uniformly dark reddish-brown, tergites dull brown. Hard integument finely and densely granulate, pleural and intersegmental membranes sharply and very densely granulate. All tergites with pore-dots, numerous on XI. Vestitural bristles of dorsum slightly clavate, those of pedipalps thick, stiff, dentate on their distal half.

Carapace very slightly longer than wide, transverse furrows deep, sub-basal furrow slightly closer

to posterior margin than to submedian furrow; posterior margin with about 18 bristles. Half-tergites of central segments with about 8 bristles on posterior margin, 1 each on median and lateral margins, and 3 or 4 discal bristles; last tergite undivided, with 8 bristles on posterior margin and 2 pairs of discal bristles, lateral bristle longer, slightly thickened, blunt, and dentate apically. Sternal bristles acute, those of posterior segments blunt and dentate; last sternite undivided, with 2 longer, acute discal bristles in addition to marginal bristles. Cheliceral palm with 7 bristles, 3 of these dentate, *ES* short; flagellum with 3 blades, distal blade shortly pennate unilaterally; galea in male only shortly dentate, in female with 6 long twigs arranged in pairs, 1st pair near base. Pedipalps very stout; trochanteral tubercles well developed; femur abruptly pedicellate, $2.1-2.2\times$ longer than wide; tibia $2.1\times$ and hand $1.6\times$ longer than wide; chela with pedicel $2.7-2.8\times$ (without pedicel $2.4-2.5\times$) longer than wide; fingers as long as hand without pedicel, with accessory teeth; tactile seta *ist* opposite *est* and nearly halfway between *isb* and *it*. Legs slender, with dentate vestitural bristles.

Body length 3.3-4.0 mm; carapace length 1.20-1.30 mm, width 1.10-1.20 mm; pedipalps: femur length 1.05-1.25 mm, width 0.50-0.57 mm; tibia length 1.20-1.30 mm, width 0.57-0.61 mm; hand length 1.15-1.20 mm, width 0.72-0.73 mm; finger length 0.90-0.93 mm.

TYPE DATA. **Holotype** ♂: NEW ZEALAND, Northland, Omahuta Forest, Kauri Sanctuary, in *Mystacina tuberculata* guano, 8.v.1974, G. Kuschel (ED). **Paratypes**: 5♂, 4♀, same data as holotype (ED, Mus. Vienna). Very common in old, hollow kauri (*Agathis australis*) trees (G. Kuschel, pers. comm.) (AM, CM, ED, NM, OM).

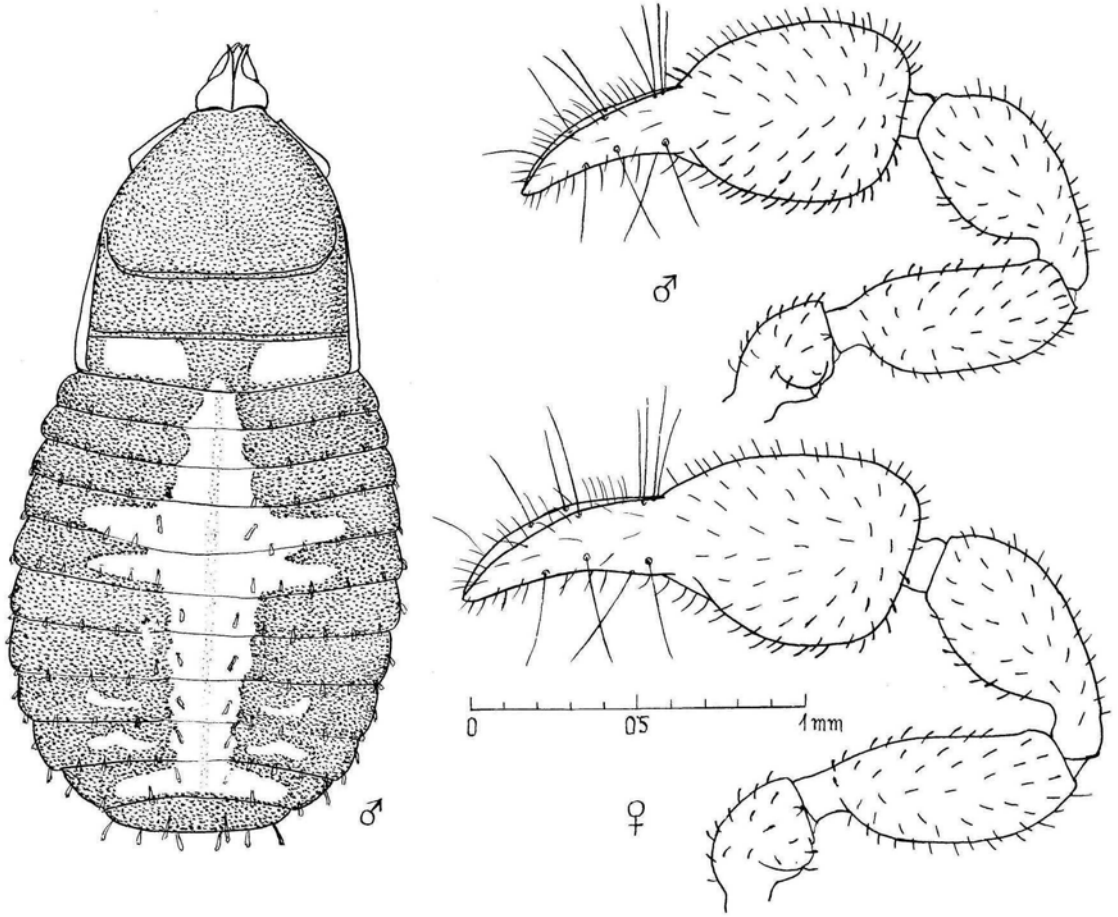


Fig. 30. *Apatochernes cruciatus*, body and right pedipalp ♂♀.

REMARKS. *A. vastus* is characterised by its large size and stout pedipalps, and the large number of discal bristles on the tergites.

Apatochernes cruciatus n.sp. (Fig. 30)

Carapace and pedipalps dark brown. Carapace with 2 transverse, sublateral spots extending from sub-basal transverse furrow almost to posterior margin, these more distinct in male; tergites, except last, broadly divided and more or less desclerotised towards median line, especially on segments IV, V, and X, thus forming whitish cross with 2 cross-bars (most distinct in males), in males half-tergites of segments VIII and IX paler centrally; pattern similar in females, but less contrasting, all tergites paler centrally and segments I-X with 4 longitudinal rows of darker spots, 1 submedially and 1 laterally; last tergite uniformly brown in both sexes. Integument with dense, relatively sharp granulation, this absent

on desclerotised parts. Pleural membrane with dense, rasp-like granulation. Vestitural bristles short, strongly clavate.

Carapace slightly longer than wide, sub-basal transverse furrow almost twice as far from anterior furrow as from posterior margin. Half-tergites with 5 or 6 marginal bristles, from segment IV and beyond also with 1 bristle on lateral margin; bristles of last segments slightly longer; last tergite with 6 marginal and 2 discal bristles, without tactile bristles. Sternites almost smooth, last sternite with many sensory pores; sternal bristles acute, but in female lateral marginal bristle of last few segments slightly clavate. Cheliceral palm with 6(♂) or 7(♀) bristles, *B*, *SB*, and accessory bristles distinctly clavate, especially in female; galea with claw-shaped twigs, short in male, slightly longer in female. Pedipalps robust; trochanteral humps round; femur abruptly pedicellate, 2.4-2.6× longer than wide; tibia 2.1-2.3× and hand 1.5× longer than wide; chela with pedicel 2.4-2.6× (without

pedicel 2.2–2.3×) longer than wide; hand broad, strongly constricted distally at base of fingers in male, without area of sense cones ventrally; medial bristles relatively thick and coarsely dentate on distal half, almost clavate; lateral bristles finely dentate in female, more strongly so in male; fingers much shorter than hand without pedicel and slightly longer than width of hand in male, with large accessory teeth (about 6 laterally and 3 medially); tactile seta *st* closer to *t* than to *sb*. Legs moderately slender.

Body length (♂) 2.2 mm, (♀) 3.0 mm; carapace length (♂) 0.85 mm, (♀) 0.98 mm, width (♂) 0.74 mm, (♀) 0.86 mm; pedipalps: ♂ — femur length 0.75 mm, width 0.31 mm; tibia length 0.72 mm, width 0.34 mm; hand length 0.76 mm, width 0.53 mm; finger length 0.58 mm; ♀ — femur length 0.82 mm, width 0.31 mm; tibia length 0.79 mm, width 0.35 mm; hand length 0.88 mm, width 0.58 mm; finger length 0.68.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, North I., off east coast of Coromandel Co., west end of Green I., leaf litter and soil, 26.iv.1967, J. A. F. Jenkins (AM). **Paratypes:** 10♂, 7♀, 17 nymphs, type loc.; 17♂, 11♀, 15 nymphs, Mangonui Co., North Cape area, Taputaputa Res. and Kerr Pt, 6–7.xii.1967, Wise; 1♀, Otamatea Co., Maungaturoto area, Wilson Causer Rd., moss on tree, 9.vii.1967, Wise; 1♂, Waitemata Co., Wade Heads, swept in northern forest remnant, 29.ii.1968, Wise; 2♂, 1♀, 4 nymphs, Bay of Islands Co., Pahi Block coast, Pahi Bay, forest remnant, 8.xii.1967, Wise; 1♂, Poor Knights Is, xii.1958, from leaf mould, Kinsky (AM, ED); 11♂, 8♀, 5 nymphs, Mercury Is, Korapuke I., S summit ridge crest, litter of *Metrosideros*, *Melicytus*, and *Phormium* (samples 72/252–3) (ED).

REMARKS. *A. cruciatus* is easily recognisable by its characteristic colour pattern. Although close to *obrieni* it has more robust pedipalps, a broader hand, and shorter bristles on the last segment.

Apatochernes obrieni Beier

Beier, 1966, *Pacific Insects* 8: 374, fig. 9; 1967, *Records of the Dominion Museum* 5: 295, fig. 12; 1969, *Records of the Auckland Institute & Museum* 6: 413.

Abdomen with whitish cruciform pattern, arms of cross on segment IV, stem widening caudally. Bristles of last tergite remarkably long. Male: palpal hand with relatively long, dense and dentate bristles, without area of sense cones ventrally.

Body length (♂) 2.0–2.2 mm, (♀) 3.0 mm; carapace length (♂) 0.80 mm, (♀) 0.95–0.98 mm; pedipalps: ♂ — femur length 0.67–0.72 mm, width 0.26–0.27 mm; tibia length 0.71 mm, width 0.29 mm; hand length 0.75 mm, width 0.42 mm; finger length 0.60 mm; ♀ — femur length 0.77–0.87 mm, width 0.28–0.30 mm; tibia length 0.77–0.87 mm, width 0.32–0.35 mm; hand length 0.85–0.93 mm, width 0.47–0.57 mm; finger length 0.65–0.70 mm.

North and South Is. Specimens: 1067 (AM, CM, ED, NM, OM).

Apatochernes gallinaceus Beier

Beier, 1967, *Records of the Dominion Museum* 5: 296, fig. 13.

Very similar to *obrieni* but without whitish cross on abdomen, bristles of last tergite not very long, and medial palpal bristles thinner and longer. Male: palpal hand without area of sense cones ventrally.

Body length 2.2–2.3 mm; carapace length 0.80 mm, width 0.70 mm; pedipalps: ♂ — femur length 0.72 mm, width 0.25 mm; tibia length 0.72 mm, width 0.28 mm; hand length 0.72 mm, width 0.43 mm; finger length 0.55 mm.

Hen and Chickens Is (E. Chicken I., Coppermine I., Whatuke I.). Specimens: 6 (ED, NM).

Apatochernes solitarius n.sp. (Fig. 31)

Carapace and pedipalps reddish-brown, carapace slightly paler centrally, its metazone yellowish, with brown median spot and lateral margins narrowly brownish; abdomen pale yellowish, segments I–X with 2 pairs of brown spots, 1 medially and 1 laterally, spots of segment III smallest, those of segment 4 largest; transverse median spots of segment IV and beyond decreasing in size caudad, smallest on segment X; median spots of segments IV and V connected to lateral spots by narrow band on posterior margin; last tergite with large median spot and pale sides. Integument densely and evenly granulate. Vestitural bristles usually strongly dentate and strongly clavate.

Carapace slightly longer than wide, transverse furrows narrow and deep, sub-basal furrow slightly closer to posterior margin. Tergites (except last) divided and granulate; half-tergites with 6 or 7 bristles on posterior margin, from segment IV with bristle on lateral margin, from segment V with 1 discal bristle; last tergite with 4 discal bristles and with lateral bristle slightly longer, strongly dentate distally and slightly clavate; all bristles of posterior segments gradually lengthening caudad. Sternal bristles acute or finely dentate on last segments. Cheliceral palm with 5 bristles; galea of female stout, with 3 or 4 short terminal branches. Pedipalps stout; dorsal trochanteral hump relatively large; femur abruptly pedicellate, 2.3× longer than wide; tibia 2.0× and hand 1.7× longer than wide; chela with pedicel 3.0× (without pedicel 2.8×) longer than wide; fingers as long as hand without pedicel, with accessory teeth, fixed finger with tactile seta *est* shorter, remarkably far proximad; vestitural bristles of pedipalps strongly dentate and clavate. Legs with short, clavate bristles dorsally, femora granulate laterally. Female: genital area with slightly more than 20 bristles.

Body length (♀) 2.5 mm; carapace length 0.80 mm, width 0.73 mm; pedipalps: femur length 0.64 mm,

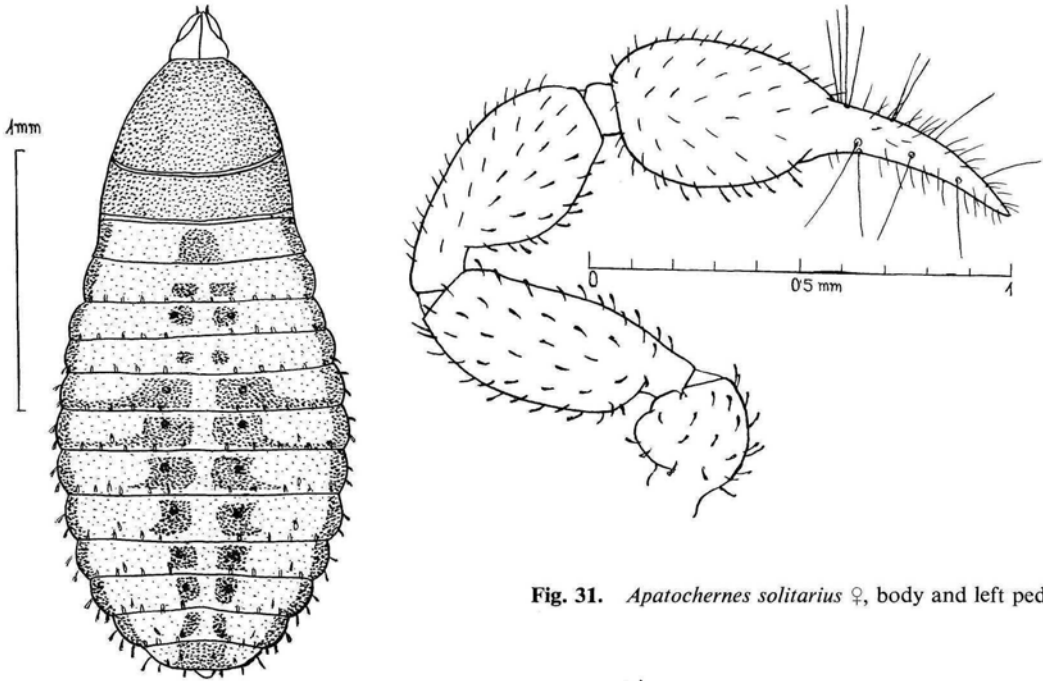


Fig. 31. *Apatochernes solitarius* ♀, body and left pedipalp.

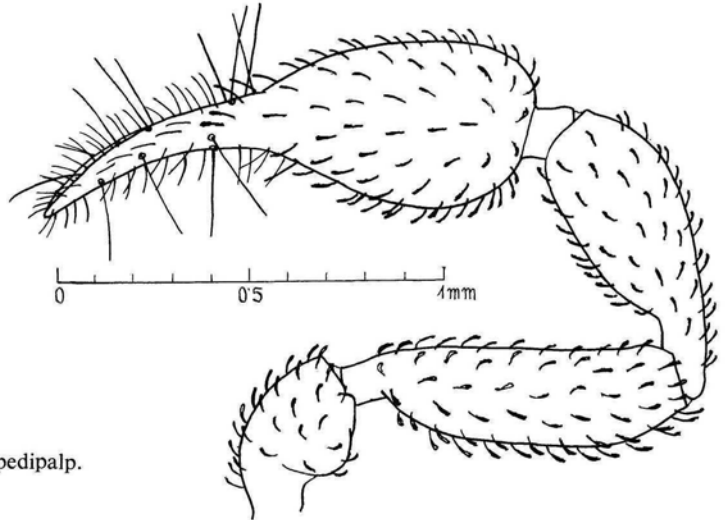


Fig. 32. *Apatochernes mauricus* ♀, right pedipalp.

width 0.28 mm; tibia length 0.61 mm, width 0.30 mm; hand length 0.59 mm, width 0.35 mm; finger length 0.50 mm. Male unknown.

TYPE DATA. **Holotype** ♀: NEW ZEALAND, North I., east coast Coromandel, south side Te Anaputa Pt, forest remnant, nikau (*Rhopalostylis sapida*) leaf litter, 10.xii. 1966, K. A. J. Wise (AM).

REMARKS. *A. solitarius* is distinguishable from the closely related *cruciatulus* by its smaller size, different colour pattern, and tactile seta *est* of the fixed palpal finger being more proximal.

Apatochernes curtulus Beier

Beier, 1948, *Eos* 24: 546, fig. 10; 1967, *Records of the Dominion Museum* 5: 294, fig. 11.

Palpal femur with pedicel long and not abrupt; fingers relatively long; vestitural bristles sparse, strongly dentate-clavate. Half-tergites of segments IV–VII or IX pale transversely on central part. Male: palpal hand with 18–20 usually paired sense cones on ventro-distal sensory area at base of movable finger.

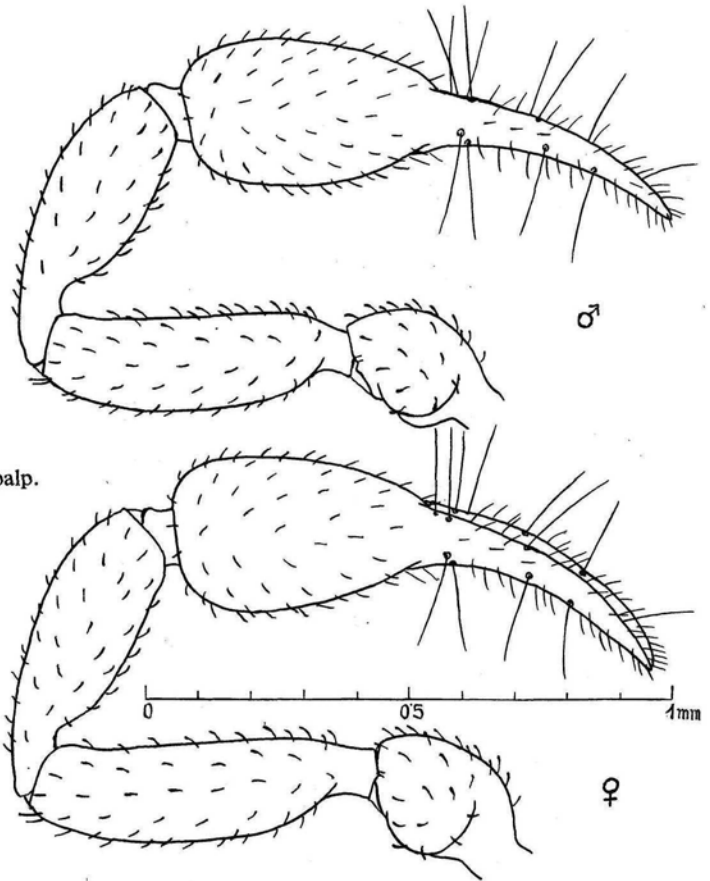


Fig. 33. *Apatochernes wisei* ♂♀, left pedipalp.

Body length (♂) 2.0 mm, (♀) 2.3–2.7 mm; carapace length (♂) 0.65 mm, (♀) 0.72–0.90 mm; pedipalps: ♂ — femur length 0.55 mm, width 0.20 mm; tibia length 0.51 mm, width 0.23 mm; hand length 0.53 mm, width 0.31 mm; finger length 0.47 mm; ♀ — femur length 0.62–0.70 mm, width 0.22–0.23 mm; tibia length 0.59–0.65 mm, width 0.26–0.27 mm; hand length 0.61–0.70 mm, width 0.40 mm; finger length 0.55–0.62 mm.

South I. (southern Westland, western Otago, Fiordland), Stewart I. (Codfish I.). Specimens: 225 (CM, ED, NM, OM).

***Apatochernes maoricus* Beier (Fig. 32)**

Beier, 1966, Pacific Insects 8: 375, fig. 10.

Plurisetose, variable in pattern, segments IV and V usually pale transversely but occasionally uniform throughout, with 7–8 (rarely 10) marginal bristles. Bristles long and very strongly clavate-dentate. Male: palpal hand bearing about 12 cones on ventral sensory area at base of movable finger.

Body length 2.5–3.3 mm; carapace length 0.80–0.90 mm, width 0.80 mm; pedipalps: femur length

0.78–0.89 mm, width 0.25–0.26 mm; tibia length 0.74–0.80 mm, width 0.30–0.31 mm; hand length 0.70–0.80 mm, width 0.41–0.43 mm; finger length 0.62–0.66 mm.

North I. to Stewart I. and Auckland Is (Enderby I.). Specimens: 195 (CM, ED, NM, OM).

***Apatochernes wisei* n.sp. (Fig. 33)**

Pale reddish-brown; carapace uniform in colour, tergites (except last) with pair of small, submedian, pale spots; trochanter and hand of pedipalps slightly darker than yellowish-brown femur and tibia. Integument uniformly granulate. Vestitural bristles of body and median bristles of pedipalps short, moderately strong, foliaceous.

Carapace not (♀) or slightly (♂) longer than wide; with indistinct eye-spots; anterior transverse furrow well developed, sub-basal furrow shallower and more than twice as far from anterior furrow as from posterior margin. Tergites (except last) divided; half-tergites of anterior and posterior segments with 7 bristles on posterior margin, of central segments with 8–9, from segment III with 1 bristle on lateral

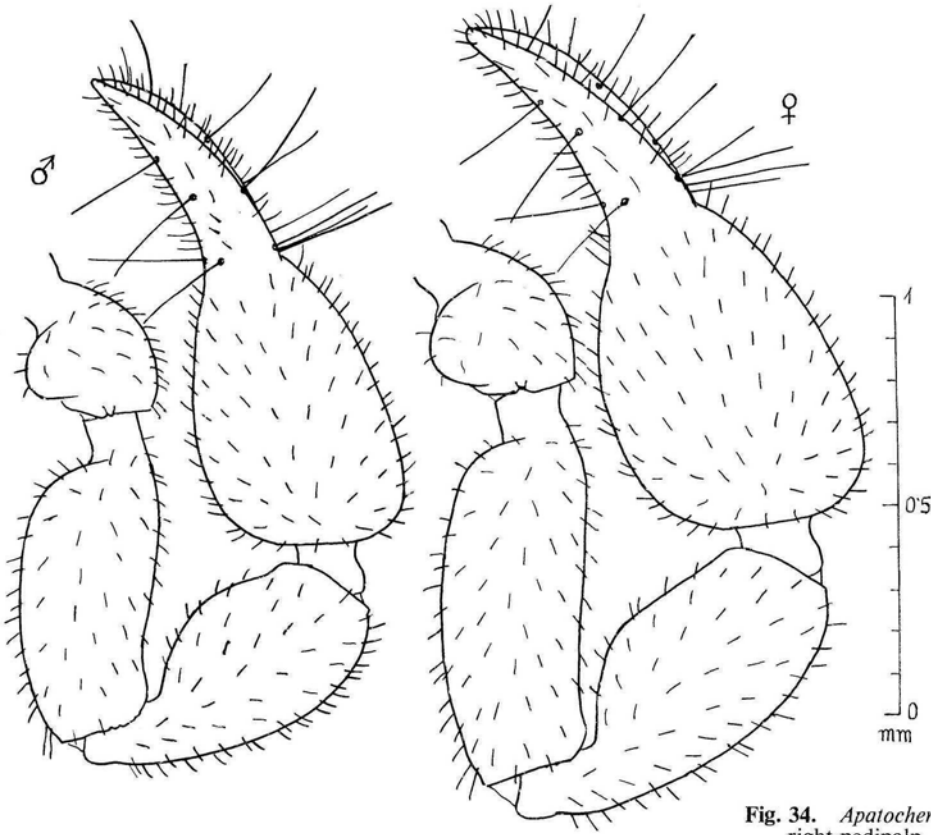


Fig. 34. *Apatochernes insolitus* ♂♀, right pedipalp.

margin; male with discal bristle on half-tergites of segments IX and X; last tergite with 10 marginal and 4 discal bristles in transverse row, without tactile bristles; bristles of posterior segments scarcely longer than very short bristles of anterior segments. Sternal bristles short and acute. Cheliceral palm with 6 bristles, *BS*, *B*, and usually also accessory bristles dentate; galea acutely conical in male, with short denticles apically in female. Pedipalps (including hand) slender, granulate; trochanteral tubercles round, dorsal tubercle larger than ventral; femur distinctly but not abruptly pedicellate, 3.3–3.6× longer than wide; tibia 2.9–3.0× and hand 1.9–2.0× longer than wide; chela with pedicel 3.5–3.7× (without pedicel 3.3–3.5×) longer than wide; hand of male with ventral sense area of 25 cones distally near base of movable finger; fingers long and thin, about as long as hand with pedicel, accessory teeth absent; movable finger with tactile seta *st* halfway between *sb* and *t*. Legs slender. Female: genital area sparsely and thinly setose.

Body length (♂) 1.8 mm, (♀) 2.2 mm; carapace length (♂) 0.67 mm, (♀) 0.71 mm, width (♂) 0.59 mm, (♀) 0.71 mm; pedipalps: ♂ — femur length 0.59 mm, width 0.18 mm; tibia length 0.57 mm, width 0.20

mm; hand length 0.54 mm, width 0.28 mm; finger length 0.51 mm; ♀ — femur length 0.66 mm, width 0.185 mm; tibia length 0.58 mm, width 0.19 mm; hand length 0.54 mm, width 0.29 mm; finger length 0.54 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, North I., Mangamuka Hills, summit (382 m), forest, debris beaten from *Freycinetia*, 19.xi.1966, K. A. J. Wise (AM). **Paratypes:** 2♂, 1♀, 6 nymphs, Mangonui Co., Mangamuka Hills, dry *Astelia* bases on tree, 19.xi.1966, Wise; 1♂, 3 nymphs, Mt. Mangamuka, 7.i.1967; 1♀, Taumarunui, Tuna Saddle, 10.i.1967; 1♂, 1 nymph, Waikouaiti, Hawkesbury Bush, 20.x.1966, Wise; 1♂, 2♀, N Nelson, Taumata Creek, beating kiekie (*Freycinetia*), 5.i.1968, Climo; 1♂, Waikanae, under log, 3.i.1948, Forster; 2♂, 1♀, Wellington, Karori, Johnstons Hill, from *Astelia solanderi*, 2.x.1943, Salmon; 1♀, Mt. Arthur, Leslie R., 24.i.1948, Dell; 1♂, Franklin Co., Hunua Ra., forested ridge above Cosseys Ck dam, beaten from kiekie (*Freycinetia*), 1.x.1967; 2♂, Whangarei Co., Parakao, 16.iii.1968, Wise (AM, CM, ED, NM, OM).

REMARKS. *A. wisei* is apparently close to *maoricus*, from which it differs in its smaller size, the colour patterns of the tergites, the bicoloured pedipalps, the long, thin fingers without accessory teeth, and tactile seta *st* of the movable finger being halfway between *sb* and *t*.

Apatochernes proximus Beier

Beier, 1948, Eos 24: 543, fig. 9.

Large, with relatively slender pedipalps. Palpal femur pedicellate. Vestitural bristles long, clavate. Fingers shorter than hand without pedicel.

Body length 3.5 mm; carapace length 1.1 mm; pedipalps: femur length 1.02 mm, width 0.28 mm; tibia length 0.95 mm, width 0.32 mm; hand length 0.97 mm, width 0.45 mm; finger length 0.70 mm.

South I. (L. Wakatipu, Kaituna Valley, Shenandoah Saddle) and Auckland Is (Enderby I.). Specimens: 19 (CM, ED, NM, OM).

Apatochernes cheliferoideus Beier

Beier, 1948, Eos 24: 542, fig. 8.

Similar to *A. proximus* Beier, but smaller, sparsely setose, with short and slightly clavate bristles, palpal fingers about as long as hand with pedicel. Male: palpal hand with large, elongate area of numerous sense cones ventrolaterally.

Body length 2.5 mm; carapace length 0.90 mm; pedipalps: femur length 0.87 mm, width 0.22 mm; tibia length 0.82 mm, width 0.26 mm; hand length 0.79 mm, width 0.40 mm; finger length 0.77 mm.

South I., from Nelson to Fiordland. Specimens: 20 (CM, ED, OM).

Apatochernes insolitus n.sp. (Fig. 34)

Carapace and palpal femur reddish-brown, tergites brownish, segments I and II darker, III paler than others, last segment nearly white in nymphs; carapace with 2 paler semicircular spots on posterior margin. Integument densely and finely granulate. Vestitural bristles short, dorsal bristles of body slightly clavate and dentate distally, medial bristles of pedipalps thick, not clavate, strongly dentate, lateral bristles thinner and finely dentate.

Carapace slightly longer than wide, slightly broadened caudad, with dense, uniform, fine granulation except on pale basal areas; vestitural bristles very short; both transverse furrows well developed, sub-basal furrow slightly more shallow and about twice as far from anterior furrow as from posterior margin. Eye-spots small. Tergites (except last) broadly divided, densely granulate; half-tergites of central segments with 9–10 bristles on posterior margin, 1 on lateral and 1 on median margin, median bristles on posterior margin of segments VIII and IX subdiscal; last tergite with 8 marginal, 2 subdiscal, and 4 discal bristles and 1 pair of long, lateral, tactile bristles; bristles very short on anterior segments, longer on posterior; last tergite with many large sense dots. Sternites very finely granulate, half-sternites with about 12 bristles on posterior margin; last sternite with 8 bristles on posterior margin, 1

pair of long bristles on lateral margin, and 4 discal bristles, the median pair longer. Pleural membrane densely and acutely granulate in rows. Cheliceral palm with 5 or 6 bristles, *B* and *SB* dentate; flagellum with 3 blades, distal blade unilaterally pennate; serrula with 22 blades; galea with 5 unciform branches distally. Pedipalps stout, finely granulate medially, vestitural bristles short. Femur abruptly pedicellate, 2.5(♂)–2.8(♀) × longer than wide; tibia 2.1(♂)–2.3(♀) × and hand 1.7–1.8 × longer than wide; chela with pedicel 2.8–3.0 × (without pedicel 2.6–2.7 ×) longer than wide; hand of male ventrally with elongate area of sense cones on distal half; fingers slightly shorter than hand without pedicel; fixed finger with 4 accessory teeth laterally, 3 medially; tactile seta *ist* scarcely distad of *est* and slightly closer to *it* than to *isb*, *it* distad of middle and twice as far from apex as from *ist*; movable finger with 3 accessory teeth laterally, 1 medially, *st* closer to *sb* than to *t*. Legs moderately stout; tibia about 3.7 × and tarsus 3.5 × longer than wide, tarsus much shorter than tibia (3:5). Male: genital area with relatively few, short bristles. Female: genital area with about 40 short and curved bristles.

Body length (♂) 3.0–3.3 mm, (♀) 4.0 mm; carapace length (♂) 1.05 mm, (♀) 1.10 mm, width (♂) 0.85 mm, (♀) 1.0 mm; pedipalps: ♂ — femur length 0.80 mm, width 0.32 mm; tibia length 0.76 mm, width 0.36 mm; hand length 0.80 mm, width 0.46 mm; finger length 0.62 mm; ♀ — femur length 0.95 mm, width 0.34 mm; tibia length 0.92 mm, width 0.40 mm; hand length 0.92 mm, width 0.50 mm; finger length 0.70 mm.

TYPE DATA. Holotype ♂ and allotype ♀: NEW ZEALAND, South I., Totaranui-Anapai Ridge, fumagine fungus from *Nothofagus* trees (sample 67/197), 6.v.1967, F. Alack (ED). Paratypes: 2♂, 3♀, 30 nymphs, same data as holotype; 1♀, Nelson, Lower Moutere, Thorp's orchard, 27.xii.1959, Perrot; 1♂, 5♀, Nelson, Mahana, Brice's orchard, 27.xii.1957, 13–24.i.1958, & 30.i.1959; 8♀, Nelson, Appleby, Simpson's orchard, light trap, 16.xii.1957 & 27.i.1958; 1♂, 2♀, Nelson, Lower Moutere, Thorpe's orchard, 13.i.1958; 2♀, Nelson, Annesbrook, 2.i.1958 (ED); 1♀, Marlborough, Dashwood Park, 160 m (534'), 16–25.iii.1969 (OM).

REMARKS. *A. insolitus* differs from all other species of *Apatochernes* in its colour pattern, the very short vestitural bristles (which are slightly clavate on the body and strongly dentate on the medial side of the pedipalps), and the long tactile bristles on the last tergite.

Apatochernes kuscheli n.sp. (Fig. 35)

Carapace and pedipalps dark reddish-brown; tergites and legs pale brown; metazone of carapace with paired, yellowish, transverse spot between posterior furrow and posterior margin but not extending to lateral margins; in male half-tergites of segment II with small, pale median spot, darker between spot

and lateral margin, III whitish-yellow except brownish lateral and median margins, IV with large, pale, median spot reaching anterior but not posterior margin; in female half-tergites of segment III dark medially and laterally, broadly pale centrally, IV narrowly whitish on middle of anterior margin; in both sexes half-tergites of segments V–X desclerotised and whitish on anterolateral and posteromedian angles. Integument densely and finely granulate, tergites with more rasp-like granulation. Dorsal vestitural bristles of body short and thick, bristles of pedipalps slightly longer and weakly clavate.

Carapace $1.3\times$ longer than wide, not broadened at metazone; metazone more finely and densely granulate on dark median spot; both transverse furrows narrow, deep, sub-basal furrow about twice as far from anterior furrow as from posterior margin. Eye-spots large, not obvious. Half-tergites usually with 7 bristles on posterior margin, 1 on lateral and 1 on median margin, those of segments VII–X with 1 discal bristle; last tergite with 6 marginal bristles, 1 pair of discal bristles, and 1 pair of long tactile bristles laterally. Pleural membrane densely granulate in longitudinal stripes. Sternites (except X) with numerous sense pores, posterior sternites granulate; sternal bristles short and simple, each half-sternite usually with 7 bristles; last sternite with long tactile bristles laterally. Cheliceral palm with 6 bristles; galea with 6 short branches, 3 proximal and 3 terminal. Pedipalps very stout, bristles slightly longer than those of body, medial bristles dentate and slightly clavate, lateral bristles dentate only; trochanteral tubercles large and round; femur stout, abruptly pedicellate, $2.5\times$ longer than wide; tibia $2\times$ longer than wide, strongly broadened medially; hand broadly ovate, in male with elongate ventral area of about 85 sense cones extending from middle to base of movable finger; hand $1.6\times$ longer than wide; chela with pedicel $2.7\times$ (without pedicel $2.5\times$) longer than wide; fingers hardly shorter than hand without pedicel, each with 35–37 teeth; fixed finger with 4 accessory teeth laterally and 3 medially, tactile seta *it* halfway between *isb* and apex, *ist* closer to *it* than to *isb*; movable finger with 6 accessory teeth laterally and 4 medially, *st* halfway between *sb* and *t*. Legs slender. Male: genital area sparsely setose, but with dense row of 10 bristles caudally.

Body length (δ) 2.8 mm, (♀) 3.5 mm; carapace length 1.0 mm, width 0.75 mm; pedipalps: femur length 0.81 mm (δ rarely 0.70 mm), width 0.33 mm; tibia length 0.80 mm, width 0.40 mm; hand length 0.85 mm, width 0.53 mm; finger length 0.64 mm.

TYPE DATA. **Holotype** δ : NEW ZEALAND, South I., 22.5 km E of Lewis Pass, in litter (sample 61/4), 19.xi.1961, G. Kuschel (ED). **Paratypes**: 1 ♀ , Fiordland, Hollyford R., below Hidden Falls, from hanging moss on live trees of *Aristotelia serrata*, *Carpodetus serratus*, and *Nothofagus*

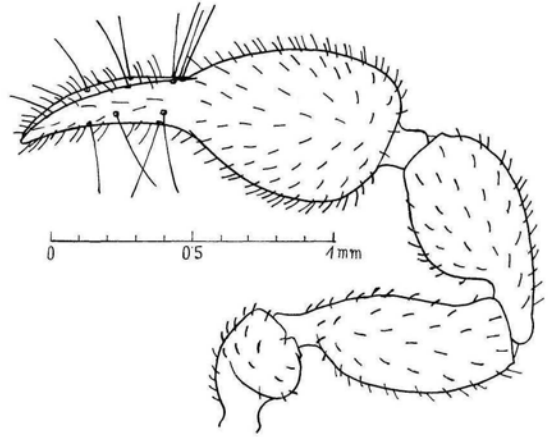


Fig. 35. *Apatochernes kuscheli* δ , right pedipalp.

menziesii (sample 67/41), 14.i.1967, Kuschel; 1 δ , Flora Hut, from lichens, 28.i.1948, Forster; 1 ♀ , Flora Saddle, 700 m (2300'), from moss and lichen, 26.ii.1946; 1 ♀ , Tableland, at Balloon Hut, 1280 m (4200'), 26.i.1948, Salmon; 1 ♀ , Mt. Arthur, Leslie R. Track, 2.i.1948; 1 δ , Growler, Flora Track, 27.i.1948, Forster; 1 δ , Whare Flat, 4.i.1966; 1 ♀ , Cooper's Creek, 11.xii.1948; 2 ♀ , L. Sumner, 13.iv.1952 (CM, ED, NM, OM).

REMARKS. *A. kuscheli* is closely related to *antarcticus*. It is similar in colour pattern but larger and more robust; the palpal segments are stouter and more densely setose; the last tergite has 2 long tactile bristles laterally; tactile seta *est* of the fixed finger is proximad of *ist*; and males have about 85 cones (45 in *antarcticus*) on the sensory area of the palpal hand.

Apatochernes antarcticus Beier

Metazone of carapace and tergites II–IV usually with very distinct paired whitish spots, those of the tergites connected longitudinally. Dorsum of body and medial surface of pedipalps with vestitural bristles short and slightly clavate. Carapace with sub-basal transverse furrow one-third closer to posterior margin than to anterior furrow. Last tergite usually without tactile bristle. Male: palpal hand with ventral sense area of about 45 cones elongate, extending from base of movable finger to middle of hand.

There seem to be 3 distinct subspecies, 2 geographical and 1 ecological.

Apatochernes antarcticus antarcticus Beier

Beier, 1964a, Pacific Insects Monograph 7: 116, fig. 1; 1964b, Pacific Insects Monograph 7 (suppl.): 629; 1969, Records of the Auckland Institute & Museum 6: 414.

Whitish patterns very apparent. Last tergite without tactile bristles.

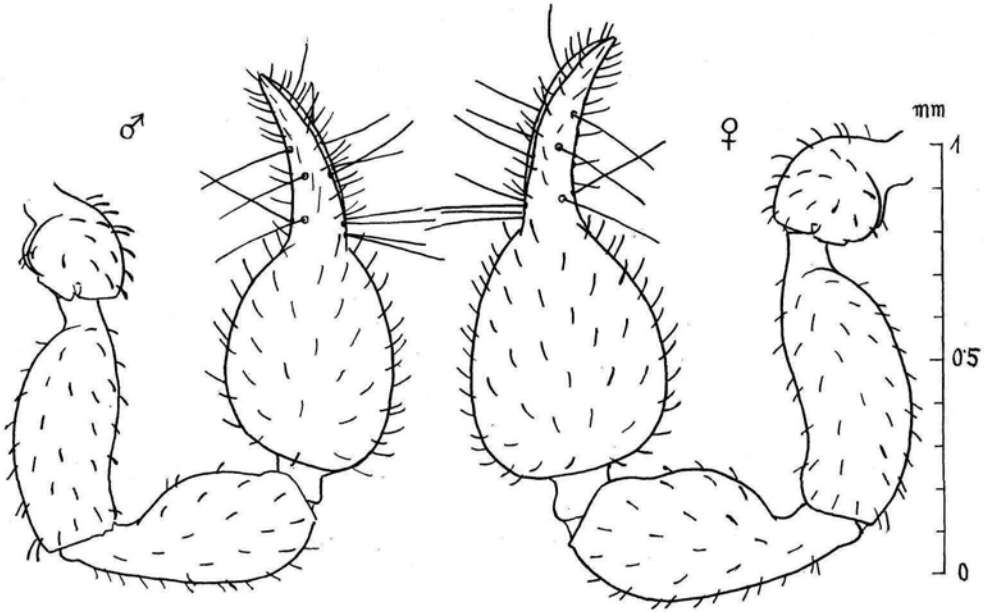


Fig. 36. *Apatochernes chathamensis*, right pedipalp ♂, left ♀.

Body length (♂) 2.1–2.2 mm, (♀) 2.3–2.8 mm; carapace length 0.59–0.60 mm, width 0.51–0.52 mm; pedipalps: femur length 0.63–0.64 mm, width 0.23–0.24 mm; tibia length 0.60–0.62 mm, width 0.29–0.30 mm; hand length 0.64–0.65 mm, width 0.40–0.41 mm; finger length 0.54–0.56 mm.

Auckland Is and Campbell I. (very abundant in litter, tussock, ferns, and moss); Stewart I. (Half-moon Bay); South I. (Foveaux Strait). Specimens: 500+ (AM, CM, ED, NM, OM).

Apatochernes antarcticus knoxi n.sp.

Last tergite with pair of short, mostly dentate tactile bristles laterally. Colour patterns and measurements as in nominate subspecies.

The Snares and Antipodes Is. Specimens: 2000+ (CM, ED, NM).

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, Snares I., east end of south-west promontory razorback, 11.iii.1971, D. S. Horning (DSIR).

Apatochernes antarcticus pterodromae Beier, new status

Beier, 1964b, Pacific Insects Monograph 7 (suppl.): 628, fig. 1 (as species).

Whitish patterns reduced, only tergites II and III with paired pale spots sublaterally.

Body length 2.0 mm; carapace length 0.85 mm, width 0.73 mm; pedipalps: femur length 0.68 mm, width 0.26 mm; tibia length 0.68 mm, width 0.31

mm; hand length 0.72 mm, width 0.44 mm; finger length 0.66 mm.

Auckland Is (Ocean I.), Stewart I. (Motunau I.). Found in nests of *Pterodroma lessoni* and *Pachyptila turtur*. Specimens: 27 (CM, NM).

Apatochernes chathamensis n.sp. (Fig. 36)

Dark brown, metazone of carapace with pair of pale transverse spots; tergites II–IV with common pair of irregularly margined, whitish, transverse spots terminating near anterior of segment IV; pedipalps pale reddish-brown, femur and tibia often centrally darker; hand, particularly in female, occasionally blackish-brown. Integument densely granulate, intersegmental and pleural membranes densely and acutely granulate. Vestitural bristles very short, strongly clavate on body, weaker on pedipalps, elongate on hand.

Carapace slightly longer than wide posteriorly, without distinct eye-spots; both transverse furrows narrow but deep, sub-basal furrow twice as far from anterior furrow as from posterior margin in male, scarcely so in female. Last tergite undivided, distinctly granulate; half-tergites of central segments with 6–7 bristles on posterior margin and 1 on lateral margin, none on disc or median margin; last tergite with 4 marginal and 2 discal bristles, without tactile bristles. Sternites with low granulation and with numerous pore dots, particularly on anterior segments; sternal bristles short, distinctly clavate on last segments. Cheliceral palm with 6 bristles, *B* and

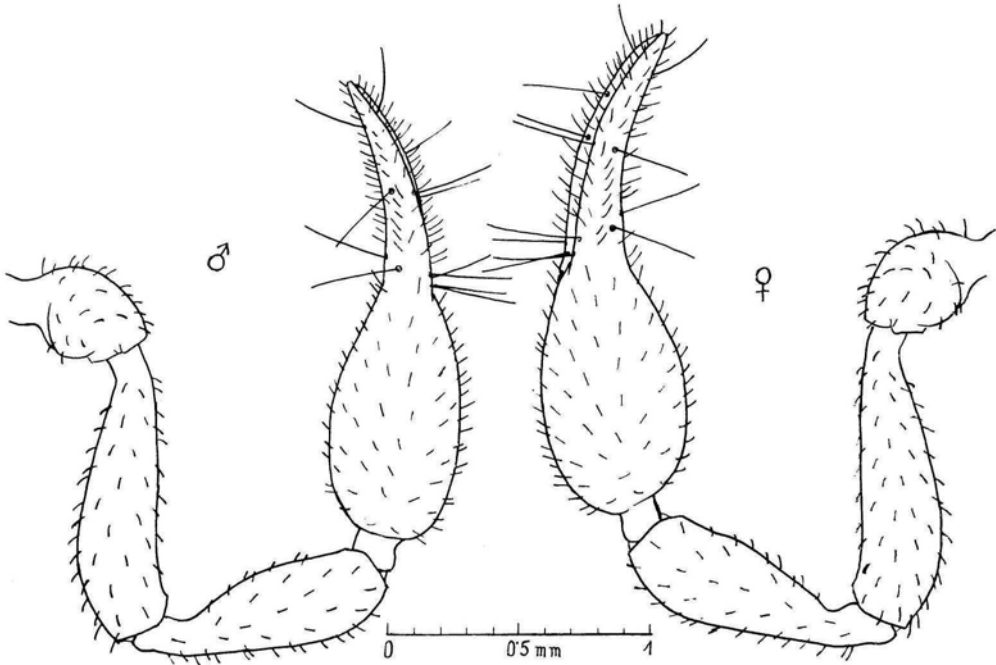


Fig. 37. *Nesochernes gracilis norfolkensis* ♂♀, right and left pedipalp.

SB strong and dentate, *ES* short; galea with 5 branches in both sexes, 1 near base; fixed finger with subapical lobe conical and about half as long as terminal claw. Pedipalps stout; trochanteral tubercle rounded; femur distinctly but not abruptly pedicellate, convex laterally, concave medially, 2.6–2.7× longer than wide; tibia 2.2–2.3× longer than wide; hand very broadly ovate, abruptly narrowed distally, 1.5× longer than wide; chela with pedicel 2.6–2.7× (without pedicel 2.3–2.4×) longer than wide; hand of male with large oval area of about 45 sense cones ventrally on distal half; fingers thin, slightly shorter than hand without pedicel, arising abruptly from hand; fixed finger with about 35 teeth and usually with 7 accessory teeth laterally and 2 medially, tactile seta *ist* slightly closer to *it* than to *isb*, *it* as far from apex as from *isb*; movable finger with 38 teeth, with 4 accessory teeth laterally and 3 medially, *st* close to *t*. Legs slender. Male: genital area sparsely setose. Female: genital area large, with about 24 short bristles.

Body length (♂) 2.0 mm, (♀) 2.2–2.5 mm; carapace length (♂) 0.68 mm, (♀) 0.80 mm, width (♂) 0.62 mm, (♀) 0.74 mm; pedipalps: ♂ — femur length 0.60 mm, width 0.23 mm; tibia length 0.60 mm, width 0.26 mm; hand length 0.60 mm, width 0.39 mm; finger length 0.46 mm; ♀ — femur length 0.68 mm, width 0.25 mm; tibia length 0.68 mm, width 0.30 mm; hand length 0.68 mm, width 0.45 mm; finger length 0.50 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NEW ZEALAND, Chatham I., Kaingaroa, Point Munning, litter under *Macropiper excelsum* and *Corynocarpus laevigatus* (sample 67/149), 28.ii.1967, A. K. Walker (ED). **Paratypes:** Chatham I.—70♂, 80♀, 37 nymphs, same data as holotype; 1♂, 1♀, Awatotara, tableland bush, 180 m (600'), litter under *Myrsine*, *Dracophyllum*, *Pseudopanax*, *Corokia*, and tree-ferns (sample 67/139), 21.ii.1967, Ramsay; 57♂, 31♀, 57 nymphs, Limestone Quarry, in dry litter under *Corynocarpus*, *Macropiper*, and *Myosotidium hortensia* and in moss from limestone rocks (samples 67/106–9), 11.ii.1967, Kuschel & Walker; 2♂, 1♀, 6 nymphs, Rotoparaoa, in very dry and sandy litter of sand-dune vegetation with *Cyathodes parviflora*, *Pimelea areraria*, *Acaena*, and grasses (sample 67/117), 12.ii.1967, Walker; 3♀, Hapapupu, 27.ii.1967, Ramsay; 2♀, 9 nymphs, Point Weeding, litter on flat coastal rock nr splash zone, under *Coxella dieffenbachii*, *Samolus repens*, *Asplenium*, and *Blechnum* at damp and shady corner of cliff (sample 67/120), 14.ii.1967, Kuschel & Ramsay; 14♂, 14♀, numerous nymphs, Awatotara R. mouth, litter of *Coxella* and grasses on dry ground at foot of coastal cliff (sample 67/145), 23.ii.1967, Walker; 11♂, 11♀, 13 nymphs, Kaingaroa Harbour, dry litter under *Olearia traversii* on sand-dunes (sample 67/161), 1.iii.1967, Walker; 1♂, 10 nymphs, Mt. Maunganui, 150 m, from *Pyrrosia serpens* climbing on *Myrsine* tree (sample 67/163), 3.iii.1967, Ramsay, Valentine, & Walker; 2♂, 2♀, 5 nymphs, Kaingaroa, Weisner's Bush, 25.i.1954, Forster; 1♀, Fortyfours, i.1954, Knox; The Sisters—4♂, 3♀, 10 nymphs, 19.i.1954, Forster (CM, ED, NM).

REMARKS. *A. chathamensis* is closely related to *antarcticus*. It is very similar in size and colour pattern, but differs in having the last tergite and sternite granulate, the bristles of the last sternites clavate, a much broader palpal hand with longer and

distinctly dentate bristles, and tactile seta *it* farther from the finger apex. Also, in males the area of sense cones on the ventral side of the palpal hand is wider, extending from the middle of the hand to the base of the movable finger.

Nesochernes Beier, 1932

Very large; uniform in colour. Integument with fine, low granulation. Vestitural bristles short, slightly clavate. Carapace with sub-basal transverse furrow much closer to posterior margin than to anterior furrow. Last tergite without tactile bristles. Cheliceral palm with 7 bristles; flagellum with 3 or 4 blades. Palpal femur clavate, >1 mm long; hand in male without sense cones ventrally; fingers with numerous accessory teeth. Tarsus IV without tactile bristle.

A monotypic genus of New Zealand and Norfolk I., but each geographical area with a different subspecies.

Key to subspecies of *Nesochernes*

Serrula externa of chelicerae with about 25 blades. Larger (4.0–5.0 mm). New Zealand.....*gracilis gracilis*

Serrula externa of chelicerae with about 20 blades. Smaller (2.7–3.3 mm). Norfolk I.....*gracilis norfolkensis*

Nesochernes gracilis gracilis Beier

Beier, 1932, Das Tierreich 57: 184, fig. 192; 1969, Records of the Auckland Institute & Museum 6: 114 (as *Apatochernes cheliferoideus*)

Chelicerae with serrula externa bearing about 25 blades. Flagellum with 3 or 4 blades (often within the same population).

Body length 4.0–5.0 mm; pedipalps: femur length 1.4 mm; tibia length 1.3 mm; hand length 1.26 mm; finger length 1.27 mm (average dimensions).

North I. and northern South I., from North Cape to Marlborough and Westland; mainly coastal. Specimens: 165 (AM, CM, ED, NM, OM).

Nesochernes gracilis norfolkensis n.ssp. (Fig. 37)

Chelicerae with serrula externa bearing about 20 blades. Flagellum with 3 blades.

Body length (♂) 2.7–3.0 mm, (♀) 3.0–3.3 mm; carapace length 1.0–1.10 mm, width 0.90–1.0 mm; pedipalps: femur length 1.12–1.15 mm, width 0.30–0.31 mm; tibia length 0.98–1.08 mm, width 0.31–0.35 mm; hand length 1.07–1.08 mm, width 0.50–0.55 mm; finger length 0.88–1.0 mm.

TYPE DATA. **Holotype** ♂ and **allotype** ♀: NORFOLK I., Mt. Bates, 245 m (800'), in very dry litter of *Rhopalostylis*, *Cyathea*, *Myrsine*, *Homalanthus*, *Pennantia*, and *Asplenium* (sample 67/293), 6.xi.1967, G. Kuschel (Division of Entomology, CSIRO, Canberra). **Paratypes**: Norfolk I. —4♂, 3♀, 8 nymphs, Mt. Bates, 240–300 m (800–1000'), in very dry leaf litter of very mixed bush (samples 67/293, 295, 296), 6.xi.1967, Kuschel; 10♂, 4♀, 17 nymphs, Mt. Pitt, 305 m (1000'), in very dry litter of *Rhopalostylis*

baueri and *Cyathea brownii* (sample 67/291), 30.x.1967, Kuschel (ED); Mt. Pitt, 13.ii.1952, Laird (CM); 1♂, Anson Bay, beating, 4.xi.1967, Kuschel (ED).

Reischekia Beier, 1948

Vestitural bristles strongly clavate. Integument (including sternites) granulate. Cheliceral palm with 6 or 7 bristles. Palpal fingers long and thick, without accessory teeth. Fixed finger with tactile seta *it* well distad. Legs slender, hind tarsus without tactile bristles. Male: genital area characteristic of Chernetidae.

Endemic to New Zealand.

Key to species of *Reischekia*

- Vestitural bristles of pedipalps weakly clavate. Cheliceral palm with 6 bristles. Body smaller.....2
—Vestitural bristles of pedipalps strongly clavate. Cheliceral palm with 7 bristles. Body larger.....*coracoides*
- Posterior tergites with discal bristles. Last sternite with 1 pair of true tactile bristles, last tergite without these.....*exigua exigua*
—Posterior tergites without discal bristles. Last sternite with 2 pairs of true tactile bristles, last tergite with 1. Sternal bristles dentate.....*exigua sentiens*

Reischekia coracoides Beier (Fig. 38)

Beier, 1948, Eos 24: 549, fig. 11–14; 1967, Records of the Dominion Museum 5: 297.

Integument coarsely but not very densely granulate. Vestitural bristles strongly clavate.

Carapace with both transverse furrows broad, sub-basal furrow very close to posterior margin. Tergites with 6–7 bristles on posterior margin, last tergite without tactile bristles. Sternites granulate, posterior sternites with clavate bristles. Cheliceral palm with 7 bristles, all dentate except *IS*, *LS*, and short *ES*. Pedipalps slender; femur 3.5(♀)–3.9(♂)× and tibia 3.0× longer than wide; hand cylindrical, 2.5× longer than wide; chela 4.8(♀)–5.3(♂)× longer than wide; fingers long and thick in relation to hand, about as long as hand with pedicel or slightly longer, and almost as long as femur, without accessory teeth. Legs slender.

Body length (♂♀) 1.5–2.5 mm; carapace length 0.65–0.75 mm, width 0.57–0.61 mm; pedipalps: femur length 0.66–0.74 mm, width 0.17–0.21 mm; tibia length 0.60–0.67 mm, width 0.20–0.22 mm; hand length 0.57–0.68 mm, width 0.23–0.27 mm; finger length 0.62–0.74 mm.

North I. (western Taupo) and South I. (from Marlborough and Nelson to Southland and Fiordland). Specimens: 22 (CM, ED, NM, OM).

Reischekia exigua exigua n.ssp. & ssp. (Fig. 39)

Pale reddish-brown, coarsely but not very densely granulate. Vestitural bristles short, dentate, slightly clavate.

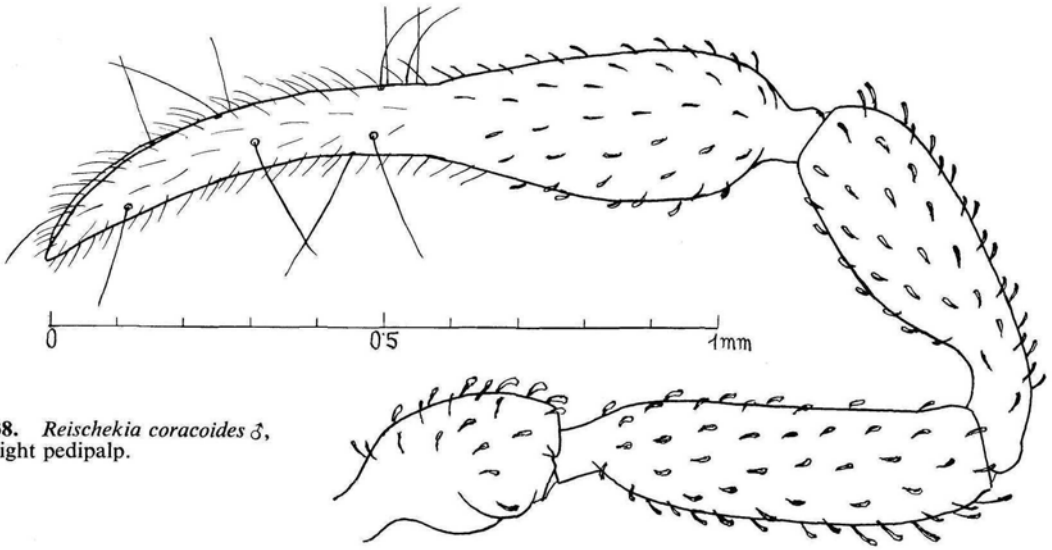


Fig. 38. *Reischekia coracoides* ♂, right pedipalp.

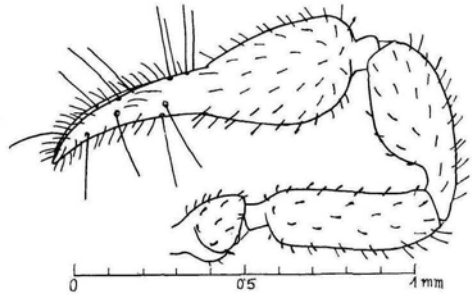


Fig. 39. *Reischekia exigua exigua* ♀, right pedipalp.

Carapace 1.2–1.3× longer than wide, both transverse furrows deep, sub-basal furrow one-third closer to posterior margin than to anterior furrow. Half-tergites with 6–7 bristles on posterior margin. Pleural membrane with dense rows of sharp granules. Sternites distinctly granulate. Cheliceral palm with 6 bristles, 3 sub-basal bristles dentate apically, *ES* very short; lamina exterior relatively broad; galea with 5 branches. Pedipalps slender, their lateral bristles and bristles of hand only dentate; femur abruptly pedicellate, 3.4–3.6× longer than wide; tibia 2.5–2.7× and hand 1.8–2.0× longer than wide; chela 3.5–3.8× longer than wide; fingers about as long as hand with pedicel, without accessory teeth; tactile seta *it* subapical. Legs slender, bristles thick and dentate. Female: genital area with 16–18 short bristles, irregularly dispersed on a transverse area.

Body length (♀) 1.8–2.2 mm; carapace length 0.59–0.65 mm, width 0.50 mm; pedipalps: femur length 0.52–0.58 mm, width 0.15–0.17 mm; tibia length 0.45–0.55 mm; hand length 0.50–0.53 mm, width 0.27–0.29 mm; finger length 0.50–0.52 mm. Male unknown.

Tergites of segments VIII–X with 1 pair of discal bristles; last tergite with 8 marginal and 2 discal bristles, without tactile bristles. Last sternite of male with 1 pair of short, lateral tactile bristles. Sternal bristles simple.

TYPE DATA. **Holotype** ♀: NEW ZEALAND, South I., Fiordland, Pyke Valley, head of L. Alabaster, very dry litter around grass in open area (sample 67/12), 11.i.1967, A. K. Walker (ED). **Paratype** ♀: Westland, Okarito, in old, broken-down white heron [*Egretta alba modesta*] nests (sample 68/5), 19.i.1968, Alack (ED).

***Reischekia exigua sentiens* n.ssp.**

Tergites of segments VIII–X without discal bristles; last tergite with 6 marginal and 2 discal bristles, and with 1 pair of true tactile bristles. Last sternite with 2 long tactile bristles. Sternal bristles dentate.

TYPE DATA. **Holotype** ♀: NEW ZEALAND, North I., Waipoua State Forest, litter under *Agathis australis*, *Knightia excelsa*, and *Cyathodes fasciculatus* (sample 67/253), 20.x.1967, J. C. Watt (ED).

Family CHELIFERIDAE

***Philomaoria* Chamberlin, 1931**

Vestitural bristles long, thin, acute and finely dentate apically. Two eyes present. Last sternite of male coarsely granulate or papillate. Flagellum with 4 blades. Trochanteral tubercles low. Both palpal fingers with venom apparatus, without accessory teeth. Fixed finger with medial tactile setae more or less clustered basally. Coxae IV not modified in male.

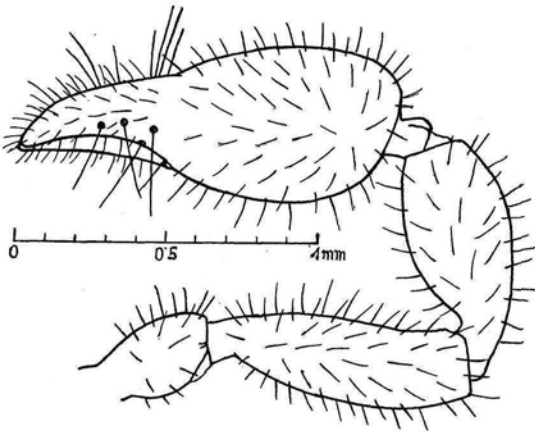


Fig. 40. *Philomaoria pallipes* ♂, right pedipalp (Lord Howe I.).

Tarsus IV with tactile bristle.

A genus of subfamily Withiinae, endemic to New Zealand.

Key to species of *Philomaoria*

- Carapace with fine, not mosaic granulation. Sub-basal furrow distinct. ♂: last tergite coarsely but bluntly granulate. *pallipes*
- Carapace with coarse, low mosaic granulation. Sub-basal furrow indistinct. ♂: last tergite hispidly granulate. *hispidia*

***Philomaoria pallipes* (White) (Fig. 40)**

White, 1849, Proceedings of the Zoological Society of London 17: 6 (*Chelifera*). —With, 1905, Annals & Magazine of Natural History (7)15: 111, tab. 7, fig. 3a,b (*Chelifera*).

novazealandica Chamberlin, 1931, Canadian Entomologist 63: 291; —Beier, 1932, Das Tierreich 57: 226; 1948, Eos 24: 550, fig. 15; 1962, Records of the Canterbury Museum 7: 402; 1966, Pacific Insects 8: 376; 1969, Records of the Auckland Institute & Museum 6: 414. New synonymy.

Carapace finely and uniformly granulate, sub-basal transverse furrow distinct. Tergites finely squamosely sculpturate, last segment more coarsely granulate. Last sternite in male densely and coarsely papillate. Palpal hand very thick. Fixed finger with medial tactile setae clustered, but *ist* and *it* near middle of finger. Tarsus IV with tactile bristle on distal half.

Body length 4–5 mm; pedipalps: femur, tibia, and hand all about 0.90–1.0 mm in length.

North I. to Stewart I., Chatham Is, Lord Howe I. Specimens: 251 (AM, CM, ED, NM, OM, S).

***Philomaoria hispidia* n.sp. (Fig. 41)**

Carapace dark brown, paler basally; pedipalps dark brown, trochanter and pedicels of segments pale reddish-brown; tergites pale brown.

Carapace 1.4× longer than wide, with dense, coarse, low, mosaic-like granulation; anterior transverse furrow distinct in female, indistinct in male, posterior furrow indistinct in both sexes; 6 bristles on posterior margin. Eyes large, slightly convex. Tergites I–VIII divided, IX and X indistinctly divided in female, undivided in male, last tergite undivided; sclerites with dense, coarse, squamose granulation, this much sharper in male than in female; squamose granules larger in posterior segments of male, erect and sharp. Last tergite hispidly granulate in male, almost smooth in female. Last tergite with 6 marginal and 4(♂) or 6(♀) discal bristles; half-tergites of anterior segments with 3 or 4 posterior marginal bristles, of other segments with 4; from segment III with 1 lateral marginal bristle, from segment VI or VII with 1 median marginal bristle; bristles long, slender, finely dentate terminally, longer on posterior segments, especially lateral and median marginal bristles. Pleural membrane finely striate longitudinally. Sternites with weak, scale-like sculpture, last sternite with dense and coarse granulation in male, the granules squamose to conical, often bifid; half sternites with 4–6 bristles on posterior margin and 1 on lateral margin of last 3–4 segments, lateral bristle very long on last 2 sternites. Cheliceral palm with 5 bristles; galea with 3 terminal and 2 subterminal denticles in both sexes. Pedipalps stout; femur medially, tibia and hand mediolaterally with dense, coarse, low granulation; bristles long, much longer and acute in male, shorter, sparsely and finely denticulate in female; trochanter with no tubercles; femur very stout, abruptly and very shortly pedicellate, 2.2–2.3× longer than wide; tibia 2.2× longer than wide; hand thicker than broad, 1.8× longer than wide; chela with pedicel 2.8–2.9× (without pedicel 2.6–2.7×) longer than wide; fingers much shorter than hand without pedicel, lacking accessory teeth; fixed finger with all tactile setae except *et* on proximal half, *ist* halfway between *isb* and *it* in male or slightly closer to *it* in female and almost opposite *est*; movable finger with tactile setae *b*, *sb*, and *st* equidistant, *t* slightly farther away. Legs stout; tarsi short, tarsus IV with 1 long tactile bristle near middle of fore margin. Male: anterior genital operculum with about 16 bristles. Female: genital area with about 20 bristles.

Body length (♂) 3.0 mm, (♀) 3.3–3.5 mm; carapace length (♂) 0.80 mm, (♀) 0.83 mm, width (♂) 0.57 mm, (♀) 0.58 mm; pedipalps: ♂ — femur length 0.55 mm, width 0.25 mm; tibia length 0.58 mm, width 0.26 mm; hand length 0.70 mm, width 0.40 mm; finger length 0.45 mm; ♀ — femur length 0.60 mm, width 0.29 mm; tibia length 0.65 mm, width 0.30 mm; hand length 0.73 mm, width 0.41 mm; finger length 0.53 mm.

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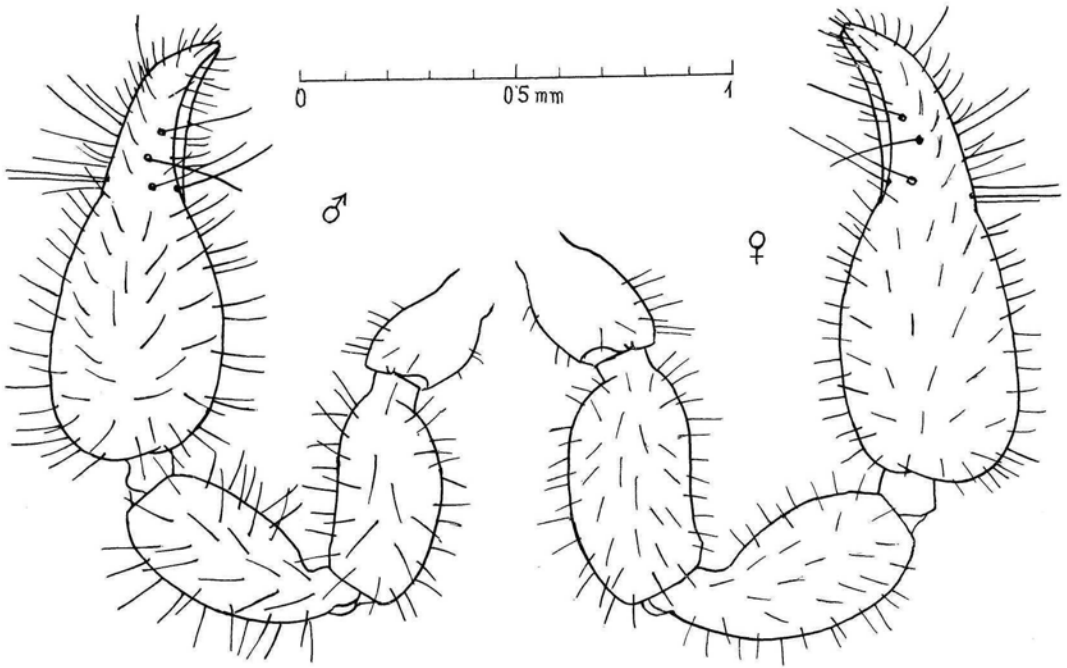


Fig. 41. *Philomaoria hispida* ♂♀, left and right pedipalp.

TYPE DATA. **Holotype** ♂: NEW ZEALAND, South I., Marlborough, Pelorus Bridge, sifted litter from under decaying logs in dense mixed forest (sample 67/220), 25.vii.1967, G. Kuschel (ED). **Paratypes:** 1♂, 3♀, 2 nymphs, Fiordland, Hollyford Valley, Hidden Falls, from moss and lichens on old, dead tree (sample 67/4), from moss on trunk of live *Nothofagus menziesii* (sample 67/7), and from very dry, low-growing moss on open, stony riverbed, with grass and a trailing *Coprosma* nearby (sample 67/14), 6 & 14.i.1967, Walker; 2♀, Pyke Valley, head of L. Alabaster, very dry litter in *Nothofagus menziesii* forest (samples 67/17,21), 11.i.1967, Walker; 1♀, Pelorus side of Maungatapu Saddle, 700 m (2300'), litter under *Weinmannia racemosa*, *Nothofagus fusca*, and *Blechnum discolor* (sample 67/85), 15.ii.1967, Townsend, (ED); 1♀, Lower Hollyford Valley, beaten from ferns, 2.ii.1946, Salmon; 1♀, 1 nymph, Westland, L. Ianthe, 19.xi.1955, Falla; 1♀, Westhaven, 300 m (1000'), moss, 15.xi.1952, Salmon; 2♀, Palmerston North, Awahuri, under bark, 17.xii.1939, Salmon (NM); 1♀, Greymouth, Maori Creek, viii.1956, Jackson; 1♀, nr Whakapohai River, N of Haast, 13.ii.1966, McHugh; 1♀, Fergusson's Bush, 28.ix.1966; 1♂, 1♀, Taumarunui, Tuna Saddle, 10.i.1967 (OM).

REMARKS. *P. hispida* differs from *pallipes* in its much smaller size and in having denser, mosaic-like sculpture on the carapace, obsolete transverse furrows, the last tergite of the male hispidly granulate and the other tergites more coarsely granulate, the trochanteral tubercle absent, the palpal femur stouter, the tarsi shorter, and the tactile bristle of tarsus IV placed near the middle of the segment.

Protochelifer Beier, 1948

Carapace uniformly granulate, without larger granules, eyes present. Bristles short and thin, finely dentate. Tergites of male without lateral keels. Cheliceral palm with 5 or 6 acute bristles, *ES* long; flagellum with 3 blades. Pedipalps very slender, both fingers with venom apparatus, without accessory teeth. Tarsal claws simple. Male: rams-horn organs indistinct or absent; sternites without sense cones; coxae IV scarcely excavate, coxal sacs without atrium; anterior legs not sexually dimorphic.

Australia, Tasmania, and New Zealand.

Key to species of *Protochelifer*

- Tergal vestitural bristles thin, not clavate. Palpal femur longer than carapace (at least 1.2 mm).....*novaezealandiae*
 Tergal vestitural bristles distinctly clavate. Palpal femur as long as carapace (at most 0.90 mm).....*exiguus*

Protochelifer novaezealandiae Beier

Beier, 1948, *Eos* 24: 554, fig. 16-18.

maori Chamberlin, 1949, *American Museum Novitates* 1430: 43, fig. 12. **New synonymy.**

Vestitural bristles short, thin, finely dentate. Cheliceral palm with 5-6 bristles. Fixed palpal finger with position of tactile setae *est* and *ist* somewhat variable, slightly closer to *et-it* or to *est-isb*. Body length (♂) 3.5 mm; carapace length 0.90 mm; pedipalps:

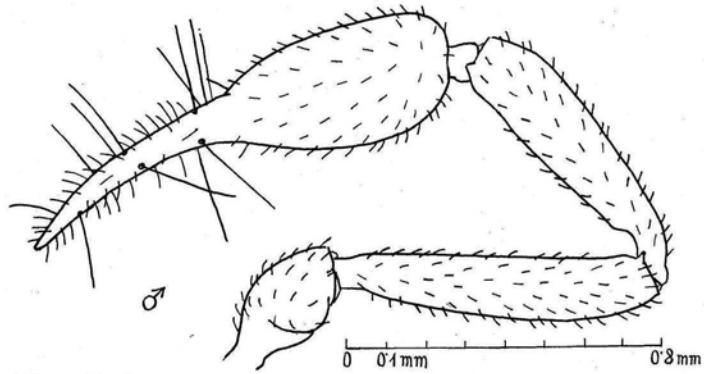
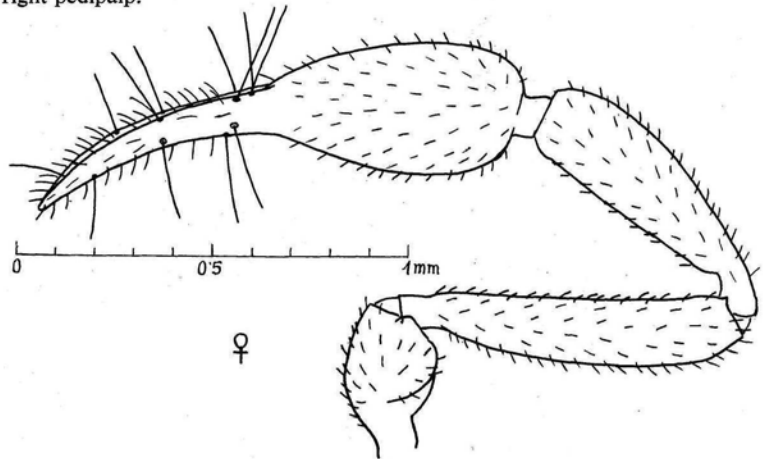


Fig. 42. *Protochelifer exiguus* ♂, right pedipalp.



femur length 1.25–1.35 mm, width 0.20–0.22 mm; tibia length 1.06–1.10 mm, width 0.24–0.26 mm; hand length 0.91–0.95 mm, width 0.41–0.43 mm; finger length 0.95–0.97 mm.

North I. to Stewart I., Chatham Is. Specimens: 63 (CM, ED, NM, OM).

***Protochelifer exiguus* n.sp. (Fig. 42)**

Body and palpal hand dark brown, proximal palpal segments and legs pale brownish. Integument very densely and uniformly granulate, granules contiguous as a mosaic. Dorsal vestitural bristles of body short, dentate, moderately clavate, those of pedipalps curved, slightly thickened in middle, only very finely dentate.

Carapace slightly longer than wide, slightly broadened basally; transverse furrows straight, anterior furrow very narrow, deep, sub-basal furrow much closer to posterior margin than to anterior furrow, shallow in male, deep in female. Eyes well developed. Tergites without sexual characters in male; central half-tergites with 8–9(♂) or 10–11(♀) bristles on posterior margin and 1 on lateral margin, bristles moderately clavate; last tergite with 10

marginal bristles, without discal or tactile bristles. Sternites V–X granulate laterally, last sternite entirely granulate; sternal bristles almost simple. Cheliceral palm with 5 bristles; galea with blunt subterminal denticles in males only. Pedipalps slender, longer than body; dorsal trochanteral tubercle well rounded, ventral tubercle weakly so; femur shortly pedicellate, about as long as carapace, 5.1–5.2× longer than wide; tibia 3.7(♀)–4.3(♂)× and hand 2.1–2.2× longer than wide; chela with pedicel 4.0–4.1× (without pedicel 3.8×) longer than wide; fingers scarcely as long as hand with pedicel; tactile seta *ist* scarcely proximad of *est* and distinctly closer to *isb* than to *it*. Anterior legs of male without sexual differences, coxae IV about 1.7× longer than broad, weakly concave posteriorly; coxal sacs large, about three-quarters length of coxae, without atrium but with tuft of hairs medially. Tarsus IV without tactile bristle. Male: genital operculum with oral lip bearing double row of longer bristles.

Body length (♂) 2.00 mm, (♀) 2.2 mm; carapace length (♂♀) 0.80 mm, width (♂) 0.71 mm, (♀) 0.74 mm; pedipalps: ♂ — femur length 0.82 mm, width 0.16 mm; tibia length 0.78 mm, width 0.18 mm;

hand length 0.65 mm, width 0.30 mm; finger length 0.63 mm; ♀ — femur length 0.88 mm, width 0.17 mm; tibia length 0.77 mm, width 0.21 mm; hand length 0.73 mm, width 0.34 mm; finger length 0.68 mm.

TYPE DATA. **Holotype** ♂: NEW ZEALAND, Fiordland, S end of L. Wilmot, moss and litter in open forest (sample 67/26), 11.i.1967, A. K. Walker (ED). **Paratypes**: 1♂, type loc. (Mus. Vienna); 1♀, L. Te Au nr Te Anau, 12–24.i.1953, Forster (CM); 8♂, 14♀, Auckland Is, Port Ross, Ranui Cove, under logs and stones on forest floor, 8.xi.1954, Gourlay (NM); 4♂, 5♀, Auckland Is, Adams I., Magnetic Station Cove, supralittoral nr petrel burrows and beating in forest, 18 & 24.i.1966, Johns & Kuschel (ED); 2♂, 2♀, 1 nymph, Stewart I., Port Pegasus, Shipbuilders Cove, under bark, 21.ix.1969 (CM); 1♂, 1♀, Stewart I., under dry bark, 18.ii.1959, Kikkawa & Chapman (OM).

REMARKS. *P. exiguus* is much smaller than *novae-zealandiae*, darker in colour, and has the dorsal vestitural bristles of the body distinctly clavate, a relatively longer carapace, and a shorter and less slender palpal femur which is not longer than the carapace.

Chelifer Geoffroy, 1762

Carapace with large granules in addition to usual granulation. Tergites of male with lateral keels. Both palpal fingers with venom apparatus, without accessory teeth. Claws forked apically, subterminal bristle dentate. Male: rams-horn organs large; coxae IV deeply excavated posteriorly, with coxal sacs.

Chelifer cancroides (Linnaeus)

Linnaeus, 1758, *Systema Naturae* (10)1: 616 (*Acarus*). Nearly cosmopolitan, often synanthropic species. Specimens: 7 — Kaikoura, Wharekiri, Donegals Flat, in nest of *Sturnus vulgaris*, 11.iv.1971; and Auckland, Owairaka, timber in insectary, 15.i.1945 (CM, ED).

SUPPLEMENT

After submitting the manuscript of this paper I was sent some additional material for identification, which contained a nearly cosmopolitan species not previously recorded from New Zealand and a further undescribed species, as follows.

Phaulochernes kuscheli n.sp.

Very similar to *P. howdenensis*. Uniformly brown. Integument slightly more prominently and more sparsely granulate. Vestitural bristles as in *Apatochernes*, more numerous, longer and distinctly more clavate than in *P. howdenensis*. Half-tergites of central segments with 7 or 8 bristles on posterior margin, without discal bristles; last tergite with 6 marginal bristles and 2 discal bristles. Last sternites with rather strongly clavate bristles. Shape of pedipalps as in *P. howdenensis*; femur 3.0× longer than wide,

tibia 2.5× and hand 1.5× longer than wide, chela with pedicel 2.9× longer than wide; fingers as long as hand without pedicel. Hind coxae slightly more slender than in *P. howdenensis*, noticeably more than twice as long as broad (in *P. howdenensis* slightly less than twice as long as broad). Male genital area larger and broader, scarcely twice as long as broad (in *P. howdenensis* more than twice as long as broad).

Body length (♂) 1.8 mm; carapace length and width 0.64 mm; pedipalps: femur length 0.50 mm, width 0.17 mm; tibia length 0.48 mm, width 0.19 mm; hand length 0.43 mm, width 0.28 mm; finger length 0.38 mm.

TYPE DATA. **Holotype** ♂: NEW ZEALAND, Auckland City, Lynfield, Wairaki Stream, sweeping native vegetation at night, 2.xi.1974, G. Kuschel (ED).

Withius subruber (Simon)

Simon, 1881, *Bulletin de la Société Zoologique de France* 6: 12 (*Chelififer*).

A series of specimens, Auckland, Kumeu, in chicken manure (sample 75/144), 21.vi.1975, J. C. Watt (ED). The first record of this species for New Zealand.

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