The Genus Folsomia (Collembola) in New Zealand.


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The genus Folsomia Willem until recently was represented in New Zealand by three cosmopolitan species only. The first endemic species was described early this year; and the present paper adds a further four new species to this genus from New Zealand. They all have been obtained by either sifting leaf mould or by passing leaf mould through a Berlese Funnel. Eight species of Folsomia, therefore, are now known from New Zealand, three of which are cosmopolitan, the remaining five being endemic. The following key will assist in their separation:

1. Ocelli present.
   Ocelli absent.
   2. Bluish-grey species with eight ocelli to each side.
      Colour, white; with fewer ocelli to each side.
      Marsupium bidentate.
      F. sedecimoculata sp. nov.
   3. Two ocelli to each side.
      F. quadrioculata Tulk.
   4. Colour, white; macro tridentate.
      Colour, white; macro bidentate.
      F. diplophtalmum Axelson.
   5. Dens approximately half as long again as manubrium; macro with lateral basal spines to each side.
      Dens twice as long as manubrium; macro without lateral basal spines.
      F. fmetaroides Axelson.
   6. Claw with single inner tooth.
      Claw without any teeth.
      F. lunata sp. nov.
   7. Claw with single inner tooth.
      Claw without any teeth.
      F. novae-zealandiae sp. nov.
      F. parasitica Salmon.
      F. miradentata sp. nov.

Folsomia lunata sp. nov. Plate 11, figs. 1–4.

Colour: White all over.

Clothing: Body and appendages well clothed with short plain setae, longer around the posterior region.

Body: Length up to 1·1 mm. Antennae slightly longer than the head, the four segments related as 12:20:16:34. Ant. IV apically with a pair of sensory-rod and numerous setae. Ant. III with sensory organ of two unguarded sense rods. Ocelli absent. Postantenial organ double outlined, crescent shaped, very large, equal in length to the first antennal segment and with sometimes an inner single-outlined crescent.

Legs: Claw with inner edge distinctly curved and prominent inner tooth at a little above half-way down. No outer teeth. A small seta on each side of claw base. Empodial appendage lanceolate, the inner margin gently truncate and reaching to a half or two-thirds down claw. No tenent hairs.

Furcula: Dens to manubrium as 45:35. Dens to macro as 35:6. Macro tridentate, with a strong and prominent lateral basal spine to each side. Apical tooth very slightly upturned, pre-apical erect and very large. Third tooth just forward of centre, erect and large but not so large as pre-apical. Dens with a few corrugations near middle.
and with eleven short ventro-lateral setae, being a basal pair, a row of seven and two odd setae near middle.

**Locality:** Johnston’s Hill, Karori. In leaf mould. (Author’s Collection.)

**Type:** Slide 3/1339 Dominion Museum Collection.

**Folsomia novae-zealandiae** sp. nov. Plate 11, figs. 5–10.

**Colour:** White all over.

**Clothing:** Body and appendages well clothed with short plain setae, with longer similar setae around the posterior region. Dens with many strong setae each about two-thirds the length of the mucro.

**Body:** Length up to 1 mm. antennae slightly longer than the head, the four segments related as 8:12:14:23. Ant. IV apically with sensory dome and numerous sensory setae; pre-apically with a single sense rod and protecting guard seta. Ant. III with sensory organ consisting of two short straight sense clubs behind an integumentary fold. Ocelli absent. Postantennal organ elongate elliptical to slightly crescentic, double outlined with strong inner and outer crescents and sometimes a point near the middle. The organ is very long, being equal to the length of the basal antennal segment.

**Legs:** Claw with inner edge straight and without any teeth. A small seta on each side of the base of the claw. Empodial appendage lanceolate, the inner margin slightly truncate and reaching to about half-way down the claw. No tenent hairs.

**Furcula:** Dens half as long again as manubrium. Dens to mucro as 42:12. Mucro tridentate similar to that of *F. lunata*, with the central tooth somewhat smaller than the pre-apical, the basal spines latero-ventral in position, one more basal than the other. Several distinct corrugations at middle of dens. Latero-ventrally on dens a row of six setae and ventrally six irregularly placed setae.

**Locality:** Buller’s Bush, Levin, from leaf mould (common); Akatarawa Saddle, 1200 ft. altitude, west side in leaf mould (Author’s Collection); D’Urville Island, from leaf mould in beech forest at 1500 ft. altitude (collected by Dr. W. R. B. Oliver).

**Type:** Slide 3/1336 and Figured Paratype: Slide 3/1335, Dominion Museum Collection.

**Folsomia miradentata** sp. nov. Plate 11, figs. 11–14.

**Colour:** White all over.

**Clothing:** Of simple setae comparatively long posteriorly.

**Body:** Length up to 0.4 mm. Antennae approximately the same length as the head, the four segments related as 11:14:16:33. Ant. IV with large sensory dome at apex, four long and two short curved sub-apical sense rods. Sensory organ of Ant. III consisting of two exposed curved sense rods together with one single exposed sense rod above the pair. Postantennal organ crescentic with prominent inner crescent surrounded by less prominent outer crescent, the two considerably further separated at the ends than in the middle, the whole organ slightly longer than the length of the basal segment. Ocelli absent.

**Legs:** Claw stout at base, strongly curved on inner edge and without any teeth. Empodial appendage lanceolate, about half as long as claw. No tenent hairs
Figs. 1-4. *Polsomnia lunata* n.sp.
Fig. 1—Base of antenna and postantennal organ. Fig. 2—Foot. Fig. 3—Sensory organ of Ant. III. Fig. 4—Mucro and apex of dens (diagonal view).
Figs. 5-10. *Polsomnia norae-zealandiae* n.sp.
Fig. 5—Base of antenna and postantennal organ. Fig. 6—Apex of Ant. IV. Fig. 7—Sensory organ of Ant. III. Fig. 8—Foot. Fig. 9—Mucro from below. Fig. 10—Mucro (side view).
Figs. 11-14. *Polsomnia miradentata* n.sp.
Fig. 11—Base of antenna and postantennal organ. Fig. 12—Mucro and apex of dens. Fig. 13—Foot. Fig. 14—Apex of Ant. IV.
Figs. 15-19. *Polsomnia sedecimoculata* n.sp.
Fig. 15—Mucro and apex of dens. Fig. 16—Mucrodens and apex of manubrium. Fig. 17—Apex of Ant. IV. Fig. 18—Base of antenna, ocellar group and postantennal organ. Fig. 19—Foot.

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Furcula: Stout, manubrium equal in length to mucrodens. Muero bidentate, the apical tooth small, the other relatively enormous. Dens with a very long basal ventral seta and two (sometimes three) shorter ventral setae. Manubrium, dens. and muero all indistinctly separated.

Locality: Akatarawa Saddle, west side, 1200 ft. altitude, in leaf mould. (Author’s Collection.)

Type: Slide 3/1397 Dominion Museum Collection.

Folsomia sedecimoculata sp. nov. Plate 11, figs. 15–19.

Colour: Bluish-grey with irregularly defined black ocellar fields. Mounted a ground colour of greyish-white overlay with scattered blue pigment granules. Antennae, legs and furcula with very few granules.

Clothing: Lightly clothed with short simple setae.

Body: Length up to 0·6 mm. Antennae approximately as long as the head, the four segments related as 8:11:11:23. Ant. IV with two small sub-apical sense clubs each in a pit. Ant. III with sensory organ consisting of two curved sense rods close together arising from behind a strong integumentary fold. Ocelli, eight to each side regularly arranged and all equal. Post-antennal organ very long, elliptical, with indentation at the middle of the anterior edge, almost equal in length to the basal antennal segment, and double outlined.

Legs: Claw stout and short, without any teeth. Empodial appendage one-third length of claw, with narrow outer and broad inner lamellae both reaching to tip. No tenent hairs.

Furcula: Manubrium to mucrodens as 20:24. Dens coarsely corrugated along middle section. Muero bidentate with two teeth almost at right angles, the apical slightly upturned but small. Manubrial hooks long, manubrium dens joint much swollen. Dens with a row of eight dorsal setae each of about the same length as the muero, four longer ventral setae and two lateral ones.

Localities: Buller’s Bush, Levin, from leaf mould (Author’s Collection); D’Urvile Island, from leaf mould collected in beech forest at 1500 ft. by Dr. W. R. B. Oliver; Akatarawa Saddle, west side, 1200 ft altitude, in leaf mould in native bush; Johnston’s Hill, Karori, in mould in native bush (Author’s Collection).

Type: Slide 3/1364 and Figured Paratype: Slide 3/1365, Dominion Museum Collection.

Remarks: This species is closely related to F. bidenticulata, of North America, from which it is readily distinguished by its smaller size, relatively very much longer postantennal organ, and the different relationship of the manubrium to the mucrodens. In bidenticulata the manubrium is longer than the mucrodens, whereas in this new species the mucrodens is the longer.

Selected Bibliography.


Womersley, H., 1933. Primitive Insects of South Australia.