

# Two New Species of New Zealand Collembola

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## Summary

Two new species *Montachorutes megacephala* and *Sminthurinus tuncatus* are described and two subantarctic species of Collembola are recorded from the New Zealand mainland for the first time.

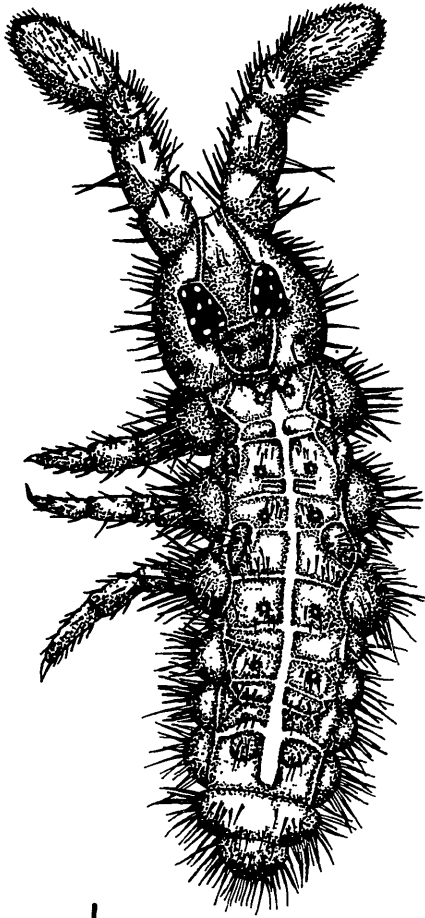
STACH in his paper of 1949 dealing with the families Anuridae and Pseudachorutidae suggested the establishment of distinct genera, based primarily on the dentition of the mandibles, for several Ceratrimeria-like forms of Collembola. For the species *Pseudochorutes remyn* Denis, 1935, from Macedonia he set up the genus *Montachorutes* characterized by possessing a mandible with eight apical teeth, a maxilla with two apical lamellae and a long slender mucro. I now have a species from New Zealand which falls fairly well within these characters except that the mandible has thirteen apical teeth. It is possible that this New Zealand species could be regarded as forming another distinct genus, but I consider, myself, that the dentition of the mandibles should be regarded with caution in the establishment of new genera, and that where the basic structure of the mandibles is similar, differences in the number of teeth are only of specific rank. I intend, therefore, to place this new species from New Zealand in the genus *Montachorutes* Stack, 1949, which is the first record of the genus outside Europe. This involves also the widening of Stach's definition of the genus in respect to the number of teeth on the mandibles.

## *Montachorutes megacephala* n.sp. Figs. 1-9, Text-Fig. 1.

**COLOUR.** Top of head and dorsal region of trunk except Abds. V and VI ochreous yellow, more or less overlaid by bluish-black coarse granular pigment; sides of head, antennae and thoracic paratergal areas a deep bluish black, Abds. V and VI, abdominal paratergal areas and legs a paler bluish black; sometimes a distinct mid-dorsal, longitudinal, yellowish stripe from Th. I to Abd. V with the intersegmental and intertergal margins similarly marked by narrow yellowish bands; ventral surface ochreous to pale bluish-black; furcula pale blue with either colourless or black mucrones, ocelli on black fields

**CLOTHING.** All setae plain, sparse dorsally on head and thorax, short setae dorsally on abdomen where they are more numerous. On paratergal areas of thorax and abdomen, on dorsal bosses, on sides of head, and dorsally on Abds. V and VI are many setae which sometimes are extremely long; antennae with long setae on segments I-III, setae of Ant. IV much shorter; some setae on Ant. II longer than the segment itself; legs with occasional short to medium length setae on sides and ventral surfaces

**BODY.** Length of type specimen 2.25 mm., maximum width, 0.5 mm.; antennae 0.67 mm. long; the head and antennae together measure 1.0 mm., giving the insect the appearance of having a very large anterior or head region; an effect



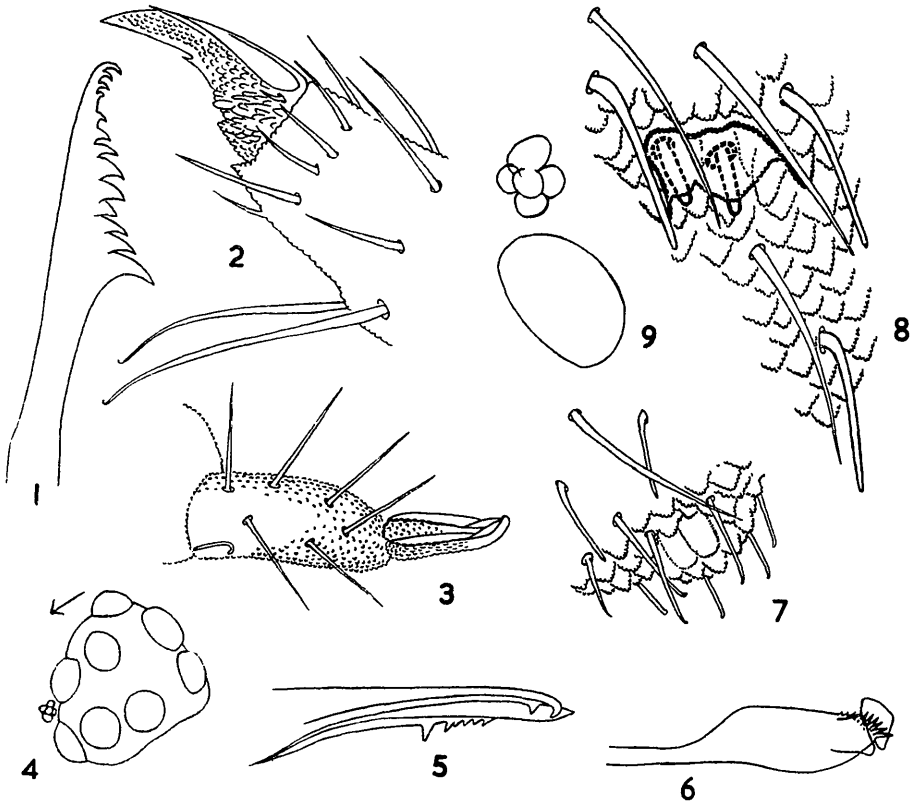
TEXT-FIG. 1.—*Montachorutes megacephala* n.sp.  
Type specimen, dorsal aspect, legs of right  
side folded under the body.  $\times 80$ .

which is enhanced by the greatly protruding cone of the mouth parts. Cuticle finely granulate on appendages, coarsely granulate to tuberculate on body. Antennae about one-third the length of the body, very stout, the four segments distinct and related as 10:15:12:32. Ant. IV ventrally and apically with many short, curved, rather slender sense rods which, around the apical region, are often faintly "hooked" at their tips; dorsally Ant. IV with many moderately long simple setae and, at apex, two small cuticular papillae, not much larger than the cuticular granules (Fig. 7). Subapically on the dorsal surface of Ant. IV occurs a pair of small, stout sense rods (Fig. 8) which are scarcely bigger than the cuticular granules between them and which are situated in a small cuticular depression surrounded by simple setae and guarded by three long, slender, bent sense rods. No sensory organ occurs on Ant. III. Mandible and maxilla both stylet-like, the mandible (Fig. 1) with 13 apical teeth, the maxilla (Figs. 5-6) with, on the lacinia, two apical lamellae and an apical fringe of six needle-like teeth passing into a suggestion of four smaller teeth or serrations, (Fig. 6); the galea with pointed apex, two apical and six subapical teeth arranged as in Fig. 5. Ocelli eight to each side, subequal as figured; post-antennal organ with central boss and four peripheral

lobes, the whole smaller than the adjacent ocellus. Paratergal areas of thorax very prominent, swollen, those of abdomen less swollen and not so clearly demarcated along internal dorsal margins. Occasional small dorsal bosses occur as figured, particularly in association with the paratergal areas of the thorax. Dorsally on each side of Th. I, II and III and on Abds. I and II occurs a small, dark pigmented, strongly tuberculated, raised structure rather like a very small boss or rosette of tubercles which is devoid of setae and which may be sensory in function. Posterior margin of Abd. V straight and Abd. VI clearly visible from above. Rami of tenaculum each with three barbs, the corpus naked of setae.

**LEGS** Claw very strongly tuberculated around base and granulated almost to apex; the strong tubercles just below base appear like a blunt tooth unless carefully examined. A pair of external teeth at four-fifths down and a single inner tooth just below centre. A short basal seta to each side of claw; tenent hairs absent but a pair of very long, tapering setae with slightly "hooked" apices overhang claw and reach almost to claw tip. Unguiculus rudimentary and represented by a strongly tuberculated, raised, basal area.

**FURCULA.** Dens and mucro subequal, the manubrium a little longer than the dens. Mucro boat-shaped, coarsely granulate on basal two-thirds and with a slightly upturned apex from which a plain subdivided lamella passes along each side to the base. Dens with manubrial hooks, and six long setae on posterior face arranged as two groups of three, one proximal the other distal; some of these setae longer than the mucro. Manubrium on posterior face with a distal row of six long setae and a proximal row of four shorter setae.



FIGS. 1-9.—*Montachorutes megacephala* n.sp. FIG. 1—Mandible  $\times 560$ , from Paratype. FIG. 2—Hind foot  $\times 240$ , from Type. FIG. 3—Dens and mucro  $\times 240$ , from Paratype. FIG. 4—Ocelli and postantennal organ, right side  $\times 140$ , from Paratype. FIG. 5—Apex of galea of maxilla  $\times 560$ , from Paratype. FIG. 6—Apex of lacinia of maxilla  $\times 560$ , from Paratype. FIG. 7—Apical sensory tubercles Ant. IV.  $\times 700$ , from Type. FIG. 8—Subapical sense organ Ant. IV.  $\times 700$ , from Paratype. FIG. 9—Postantennal organ and adjacent ocellus  $\times 560$ , from Paratype.

**LOCALITY.** South Terrace, Karamea, from leaf mould. Coll. R. R. Forster (type locality); paratype from Waiho Gorge, South Westland, in leaf mould. Coll. J. T. S.

**TYPE.** dissected and mounted on two slides deposited in the Canterbury Museum, Christchurch. Paratype in the Author's Collection.

The second species I have to describe was included in a collection made from a salt meadow and a grassy meadow at Allen's Beach, Dunedin, from where it was collected by Miss K. Paviour-Smith, who kindly sent this material to me for identification. This species belongs to the genus *Sminthurinus* of the Symphyleona.

***Sminthurinus tunicatus* n.sp. Figs. 10-16.**

**COLOUR.** Black to deep blue-black with legs and furcula pale to white a large white squarish area on top of the head behind the antennae and between the ocellar fields; antennae deep violet to black; ocellar fields intensely black.

**CLOTHING.** Very sparse, of short simple setae except posteriorly, where numerous longer simple setae occur; the male with a pair of strongly recurved, coarsely serrated setae on anal segment. Dens with an apical ring of six short, stout setae, a row of six simple setae on posterior face and an exterior lateral row of five similar setae. Legs with occasional short simple setae on basal joints but more numerous setae on tibiotarsi. Antennae similarly with occasional short, simple setae. A single short, stiff sensory bristle arising from a small bothriotrich on each side of furcal segment.

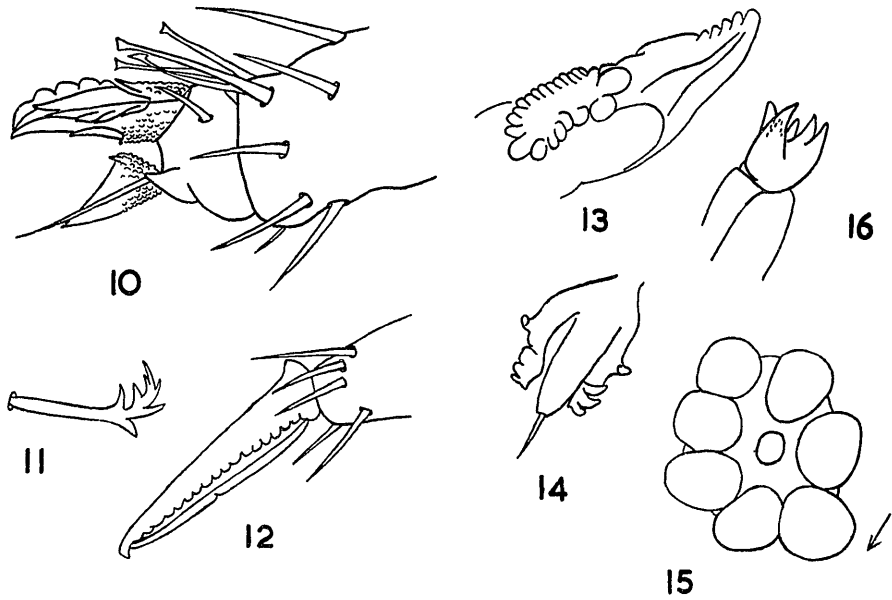
**BODY.** Length to 0.8 mm. Antennae a little longer than the head, the four segments related as 15:25:35:72. Ant. III with very large sub-basal undivided wart-like organ, and two stout, straight, expanded, subapical sense rods. Ant. IV with apical sensory knob, 5-6 short straight apical sense rods and with moderate clothing of short, curved simple setae. Mandible with peculiar tuberculated molar area (Fig. 13), maxilla head with six teeth (Fig. 16). Ocelli eight to each side arranged as figured. Segmentation of body quite distinct. Rami of tenaculum each with three barbs and a basal lateral process, corpus with a single simple seta (Fig. 14).

**LEGS.** Claw with one pair of external teeth at about one-half and another pair at about four-fifths down, two small inner teeth at one-third and two-thirds, a fairly long basal seta to each side and a prominent serrated tunica. Unguiculus with central rib extended as a filiform process reaching beyond apex of claw on front and middle feet, and to level of apex on hind feet; a broad outer lamella and a broader angular inner lamella carrying a spine on the angle. Four clavate tenent hairs, shorter than claw, to each foot, arranged with one pair arising higher on the tibiotarsus than the other. Base of claw and of unguiculus finely granulated.

**FURCULA.** Mucro 19. dens 47: manubrium 25. Mucro trilamellate, finely granulate, tapering with slightly upturned apex, coarsely serrated outer lamella, plain middle lamella and inner lamella with a single notch at about the centre.

Type and Paratypes in the author's collection.

From the same locality at Allen's Beach Miss Paviour-Smith's collection also contained specimens of the Subantarctic species *Tullbergia subantarctica* Salm. and *Parafolsomia decemocolata* Salm., neither of which has previously been recorded from the New Zealand mainland.



FIGS 10-16—*Smalthurmus tunicatus* n.sp. FIG 10—Hind foot  $\times 900$ . FIG. 11—Clasp seta of male  $\times 500$ . FIG 12—Mucro and apex of dens  $\times 500$ . FIG 13—Apex of mandible  $\times 500$ . FIG. 14—Tenaculum  $\times 500$ . FIG. 15—Ocelli, left side  $\times 500$ . FIG. 16—Head of maxilla  $\times 500$ . FIGS 10, 11 and 14 from Type; others from Paratypes