

**NOTES ON NANORCHESTES**  
**IV. Four new species from Macquarie Island, Australia**  
**(Acari: Endeostigmatides: Nanorchestidae)**

R. W. Strandtmann<sup>1</sup>

*Abstract.* Two collections of the jumping mite *Nanorchestes* from Macquarie Island, south of Australia, contained 4 new species, *Nanorchestes macquariensis*, *N. marianae*, *N. watsoni*, and *N. rounsevelli*. Also in the collections were 2 specimens of *Nanorchestes bellus*.

I have recently had the opportunity to study 2 small collections of *Nanorchestes* mites (Acari: Nanorchestidae) from Macquarie Island, one made by Keith Watson in 1961 and the other by David E. Rounsevell in 1975-76. The collections comprised 4 new species and 2 specimens of a previously described species, *Nanorchestes bellus* Strandtmann & Sømme, 1977.

I also have 1 specimen from Campbell Island collected by J. L. Gressitt in 1962. It is *Nanorchestes watsoni*, one of the new species described below.

Macquarie I is one of the subantarctic islands, lying south of Australia at 54°30'S by 158°57'E. Campbell I is south of New Zealand at 52°30'S by 169°00'E.

All specimens, except as noted elsewhere in the manuscript, have been returned to David E. Rounsevell, South Australian Museum. The holotypes and some paratypes will be deposited with the South Australian Museum (SAM). Some paratypes will be retained for the Tasmanian Museum and Art Gallery, Tasmania.

In the following descriptions, all measurements are given in micrometres.

***Nanorchestes macquariensis* Strandtmann, new species**

Fig. 1-4

*Diagnosis.* Naso entire, truncate. Cheliceral seta not forked. Empodial claw 10-rayed.

Length 270. *Dorsum.* Naso entire, truncate, ca. 10 wide. Seta *na* 55 long, with short, close, appressed cilia on apical ½. Sensillum *nb* 35, moderately heavy, straight, with coarse, close cilia. Seta *nr* longer and heavier than *nm*. Seta *nm* 14, *nr* 25, *ne* 12. Dorsal body setae branched from the base, 8-10 long. *Gnathosoma.* Cheliceral seta with only 1 arm, 20 long, with fairly uniform, branched cilia. *Legs.* Total setal count not possible from the single specimen available. Tarsus III has 8, femur III 3, and femur IV 3 setae. Empodial claw has 10 rays each side.

Holotype ♂, SUBANTARCTIC IS: MACQUARIE I: Isthmus, amongst *Pucinellia* and green algae on coastal rocks, 17.VIII.1961 (Z/154), Keith Watson collector (SAM). Unique.

***Nanorchestes marianae* Strandtmann, new species**

Fig. 5-13

*Diagnosis.* Naso deeply and widely cleft. Cheliceral seta with 2 subequal arms. Empodial claw with 4-6 rays each side.

1. Department of Biology, Southwest Texas State University, San Marcos, Texas 78666, USA.

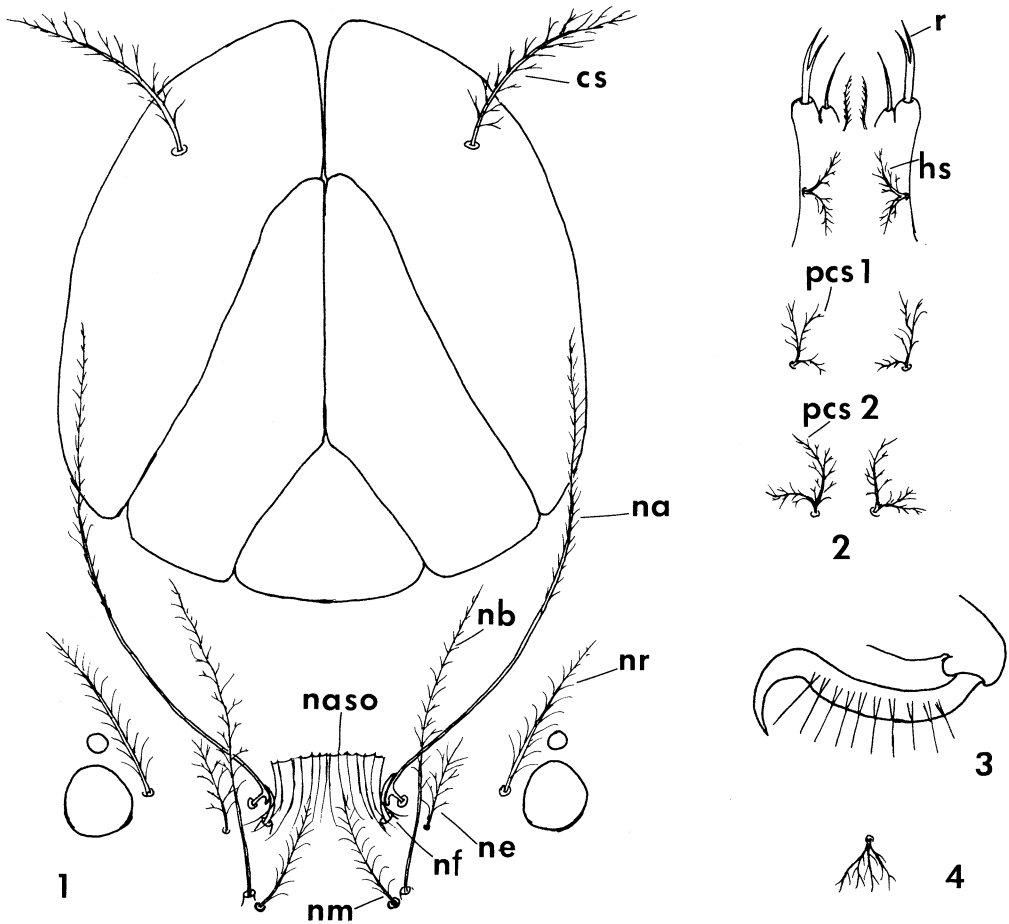


FIG. 1-4. *Nanorchestes macquariensis*, ♂: 1, chelicerae and prodorsal sensory area; 2, hypostome and palp coxal setae; 3, tarsal claw; 4, dorsal body seta.

Average length about 190 (160-210). *Dorsum*. Naso consists of a narrow lobe over base of each seta *na*. Setae *na* widely separated, distance between them about  $2\times$  that of distance between *na* and *nb*. Seta *na* 40-50 with branched cilia on apical  $\frac{1}{2}$ . Sensillum *nb* 35-40, delicate, with sparse, branched cilia. Seta *nm* broad, heavier than seta *nr*. Seta *nm* 12-18, *nr* 15-20, *ne* 10. Body setae 5-6, stalked, branching from near apex. *Gnathosoma*. Cheliceral seta strongly bifurcate. Longer arm 20-28 with moderately long, branched cilia. Shorter arm 15-25 and secondarily bifurcate. *Legs*. Tarsus I barely longer than wide. Sensory line on tarsus II long and prominent. Tarsus III has 8 setae. Femoral formula, 6-3-3-3.

Holotype ♀, SUBANTARCTIC IS: MACQUARIE I: ex soil litter, 7.I.1976, D.E. Rounsevell (SAM). Paratypes. MACQUARIE I: 1♂, 1TN, same data as holotype; 94 specimens on 3 slides comprising 32♂, 14♀, 18N, 30 of undetermined sex or stage, 11.III.1975, D.E. Rounsevell; 7 specimens by Keith C. Watson, as follows: 1 spec., North Head, 3.III.1961 (Z/38); 1♀, Nuggett's Pt., 5.VI.1961 (Z/98); 1 spec., Scoble Lake, 9.VI.1961 (Z/100); 1 spec., Lambing

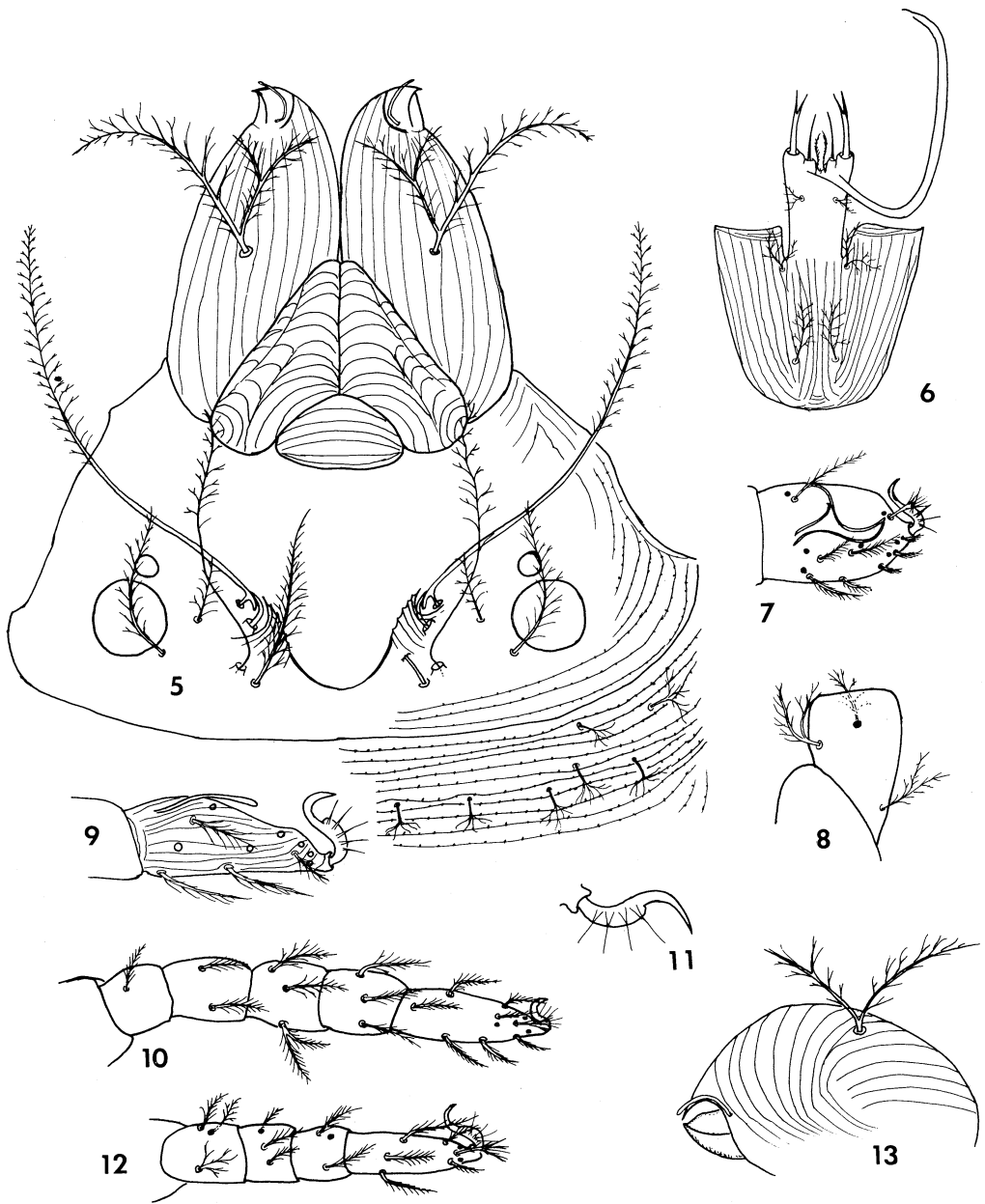


FIG. 5-13. *Nanorchestes marianae*: 5, chelicerae, prodorsal sensory area, and several dorsal body setae; 6, hypostome and palp coxae; 7, tarsus I, lateral view; 8, femur II; 9, tarsus II, lateral view; 10, leg IV; 11, tarsal claw; 12, leg III; 13, chelicera, lateral view.

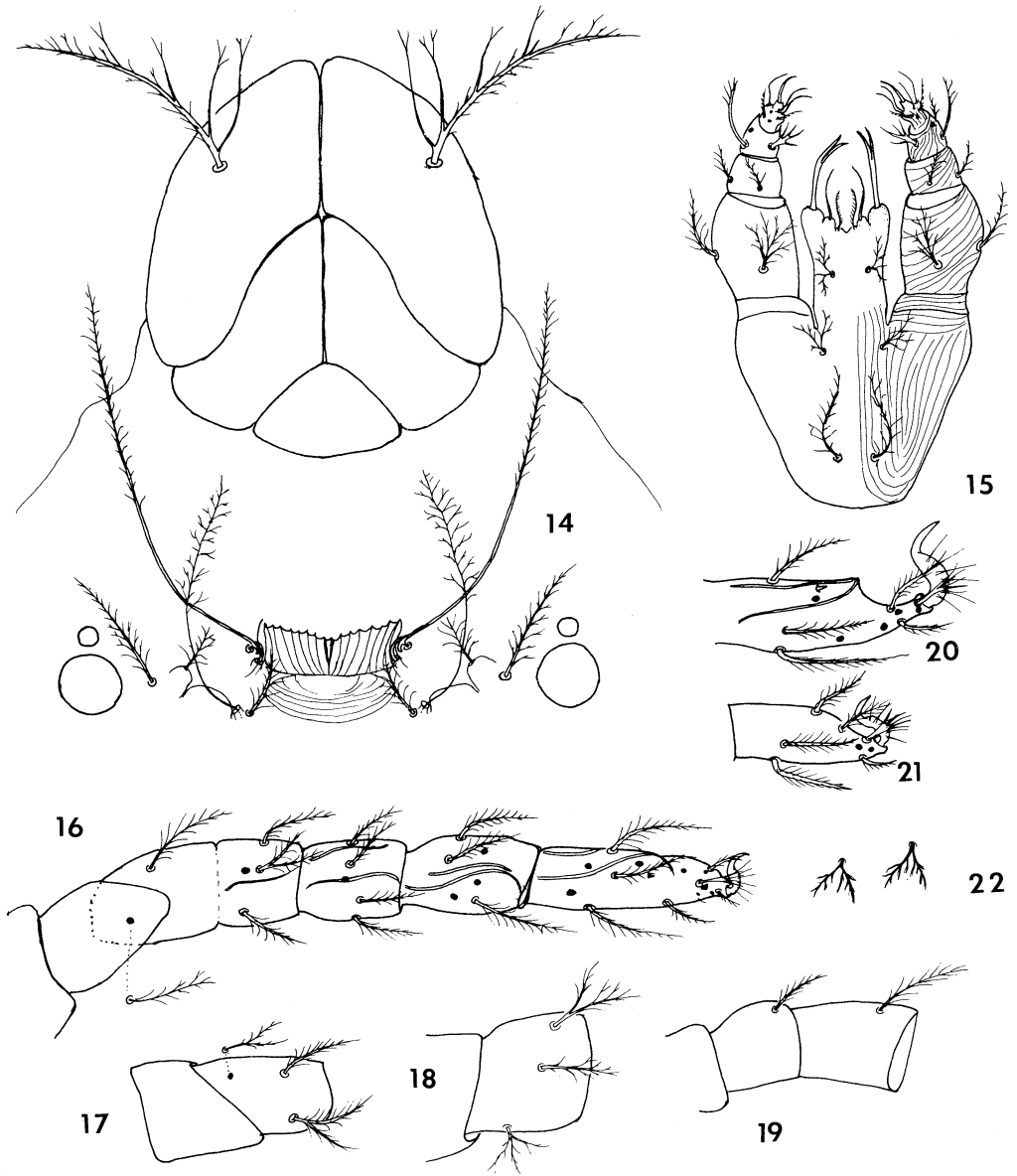


FIG. 14-22. *Nanorchestes watsoni*: 14, chelicerae and prodorsal sensory area; 15, ventral view of gnathosoma; 16, leg I; 17, femur II; 18, femur III; 19, femur IV; 20, distal 1/2 of tarsus I, lateral view; 21, lateral view of tarsus III; 22, dorsal body setae.

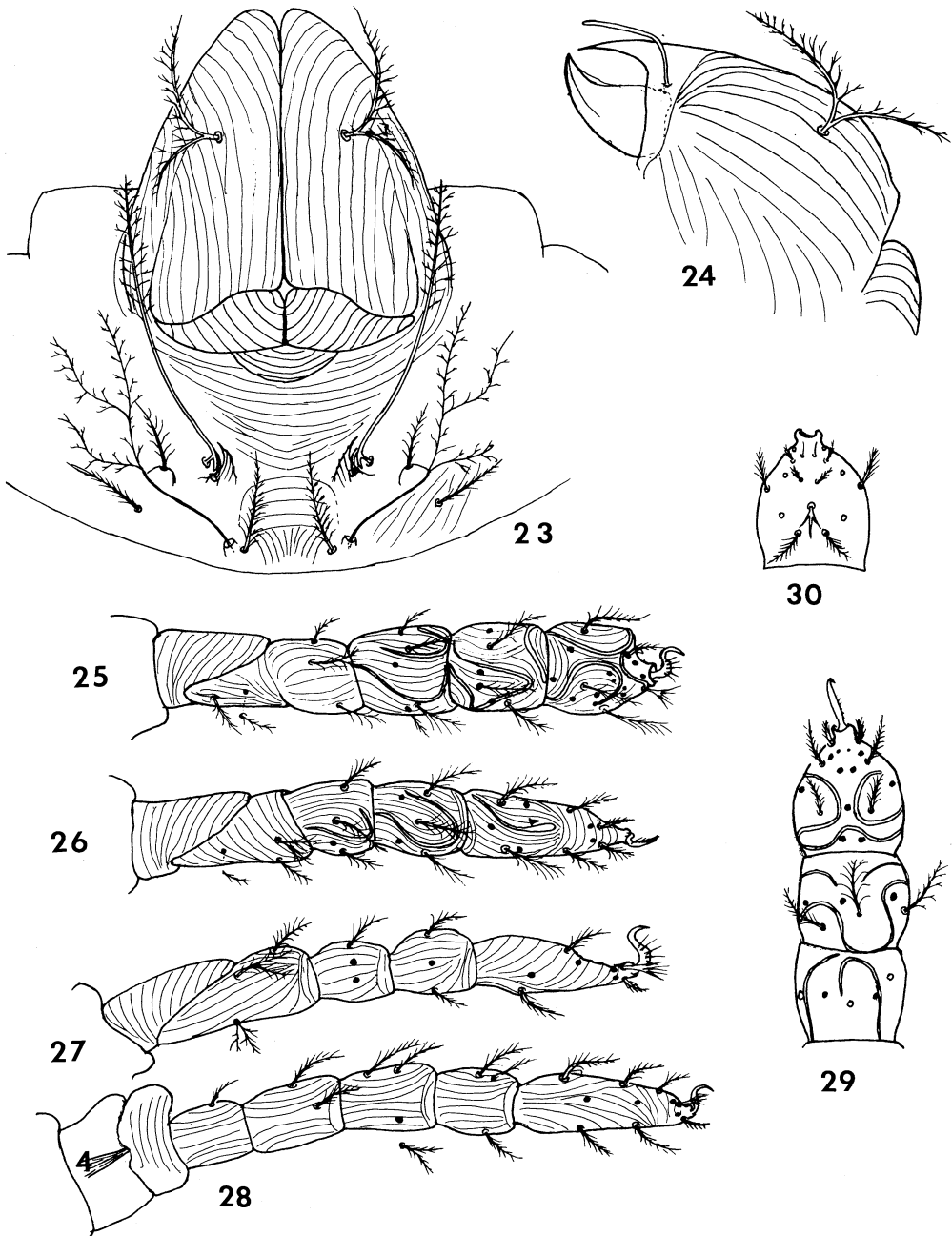


FIG. 23-30. *Nanorchestes rounsevelli*: 23, chelicerae and prodorsal sensory area; 24, lateral view of chelicera; 25, dorsolateral view of leg I; 26, dorsal view of leg II; 27, lateral view of leg III; 28, lateral view of leg IV; 29, dorsal view of tarsus, tibia and genu I; 30, ventral view of tarsus I.

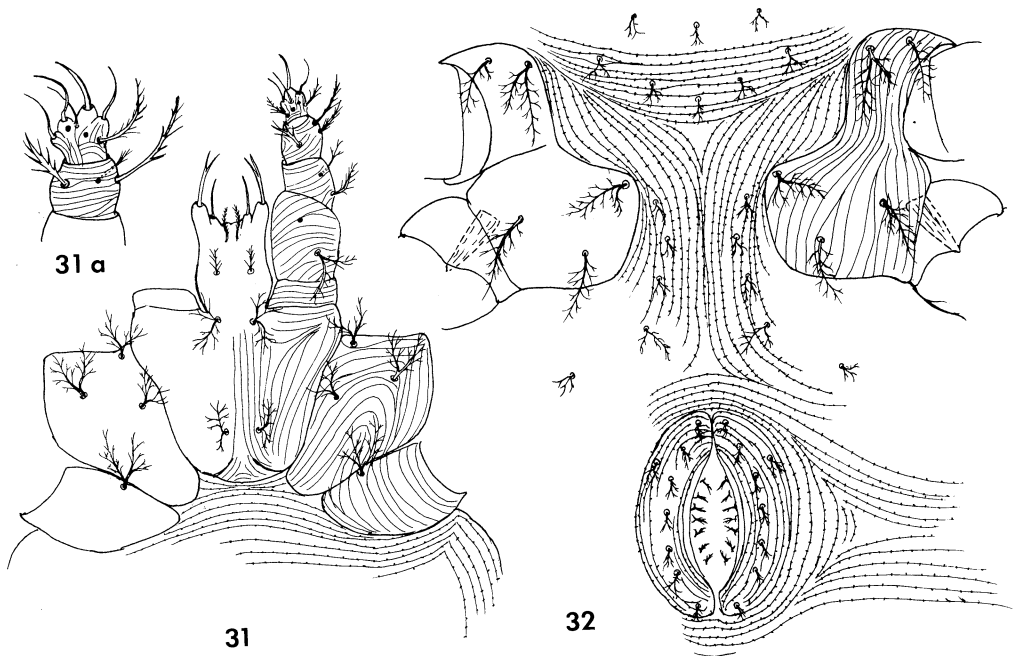


FIG. 31-32. *Nanorchestes rounsevelli*, ♂: **31**, ventral view of gnathosoma and coxae I and II; **31a**, palp tarsus and tibia; **32**, coxae III and IV and ♂ genitalia.

Gully, 20.VI.1961 (Z/104); 1TN, Lambing Gully, 17.VII.1961 (Z/152); 1 spec., 30.XI.1961 (Z/188); 1 spec., Nuggett's Pt., 26.XI.1961 (Z/221).

The mite is named in honor of Marian Yong, research scientist and a very gracious young lady, with the Marine Institute, Honolulu, Hawaii.

#### *Nanorchestes watsoni* Strandtmann, new species

Fig. 14-22

*Diagnosis.* Naso entire, wide, emarginate. Cheliceral seta with 1 main arm bearing 3-4 long, slender branches. Femur IV with 2 setae.

Length 220-250, tritonymph 200. *Dorsum.* Naso entire, concave, medially emarginate, 16-18 wide. Seta *na* 55 (48-60), apical  $\frac{1}{2}$  with moderately long cilia. Sensillum *nb* 35, slender but not delicate, apical  $\frac{2}{3}$  with moderately long cilia. Seta *nm* 11, *nr* 18, *ne* 7. Body setae mostly bifurcate from base, each arm branched, ca. 7 long. *Gnathosoma.* Cheliceral seta 1-armed with 3-4 long, nearly naked branches (or it could be interpreted as 2-armed, with shorter arm smooth and similar to 2-3 others on longer arm). Main arm 25-35, smooth branches 15-18. Basal palp coxal seta not forked. *Legs.* Sensory line of tarsus II only moderately enlarged apically. Empodial claw with 6-7 pairs of rays. *Leg chaetotaxy.* I, 16-6-5-4+2; II, 11-5-4-3; III, 8-3-3-3; IV, 11-3-3-1+1.

Holotype ♀, SUBANTARCTIC IS: MACQUARIE I: from soil litter, 6.I.1976, D.E. Rounsevell (SAM). Paratypes. MACQUARIE I: 3♂, 1♀, 2TN, same data and on same slide as holotype. 1♀, same data as holotype. 1TN, 11.III.1975, D.E. Rounsevell; 1♂, 2♀, 4 of undetermined stage or sex, by Keith Watson, as follows: 1♂, Plateau, ex herbfield soil, 19.I.1961 (Z/3);

1 spec., Nuggett's Pt., ex *Colobanthus muscoides*, 2.III.1961 (Z/31); 1 ♀, North Head, ex *Poa hamiltoni* soil, 3.III.1961 (Z/33); 1 ♀, Aerial Cove, ex lichens from coastal rocks, 20.III.1961 (Z/54); 1 spec., North Head, ex *Poa hamiltoni* soil litter, 9.V.1961 (Z/79); 1 spec., North Head ex *Poa hamiltoni*, 27.VI.1961 (Z/109); 1 spec., Mt Hamilton, ex *Azorella selago*, moss and soil, 27.X.1961 (Z/204). CAMPBELL I (52°30'S by 160°00'E): 1 ♂, 200 m, ex *Azorella* sp. (date not given, probably 1962), J.L. Gressitt (Bishop Museum).

*Comments.* It is difficult to be certain of the chaetotaxy of tarsus I, and my statement of 16 setae may be incorrect. The tritonymph differs from the adult only in the genitalia and slightly shorter sensillae.

The species is named in honor of Keith C. Watson, the discoverer of this mite.

### ***Nanorchestes rounsevelli* Strandtmann, new species**

Fig. 23–32

*Diagnosis.* Sensillae *nb* branched, slender. Epistome short, truncate. Cheliceral seta with 2 subequal arms. Ocelli lacking.

Length. ♂ 200–220, ♀ 180–210, tritonymph 180. *Dorsum.* Seta *na* 35, apical ½ with relatively long, branched cilia. Sensillum *nb* 35, with 2 or 3 slender branches and sparse, moderately long cilia. Seta *nm* 13, *nr* 10, *ne* 10. Naso reduced to narrow lobe over each *nalnf* complex. Ocelli and ocular plates lacking. Dorsal body setae branched from base, 5–7 long. *Gnathosoma.* Cheliceral seta with 2 arms, approximately 18 and 16, both with relatively short, uniform branched cilia. Epistome broad and truncate, not extending forward between chelicerae. Posterior palp coxal setae 2-branched and loosely plumose. *Legs.* Tarsus and tibia I short and thick, with greatly convoluted sensory lines. Telofemur I has only 3 setae. Empodial claw with 5–6 rays each side. *Leg chaetotaxy.* I, 16(?)–6–5–3+2; II, 11–5–4–3; III, 8–3–3–3; IV, 11–3–3–2+1.

Holotype ♂, SUBANTARCTIC IS: MACQUARIE I: 6.I.1976, D.E. Rounsevell (SAM). Paratypes. MACQUARIE I: 2 ♂, 1 ♀, 2TN, same data and on same slide as holotype. 2 ♀ by Keith Watson, as follows: 1 ♀, Plateau, ex *Pleurophyllum hookeri* soil, 26.VI.1961 (Z/107); 1 ♀, Camp Hill, ex grassland soil, 7.5 cm deep, 2.VIII.1961 (Z/133).

*Comments.* The combination of branched sensillae, short truncate epistome, and lack of ocelli make this a truly distinctive species.

It should be noted that 1 of the above-mentioned tritonymphs is in the process of molting to a ♀.

The species is named in honor of David E. Rounsevell of the National Parks and Wildlife Service, Sandy Bay, Tasmania, in recognition of his fine biological work on *Nanorchestes*.

### ***Nanorchestes bellus* Strandtmann & Sømme, 1977**

*Diagnosis.* Naso entire and convex, cheliceral seta with 2 unequal arms.

*Specimens examined.* MACQUARIE I: 1 ♀, 210, 11.III.1975, D.E. Rounsevell; 1 ♀, 260, 6.I.1976, Rounsevell.

*Comments.* These 2 records are the same as reported in Strandtmann (1982).

*Acknowledgments.* I am grateful to the collectors for sending me their material for study. I especially thank David Rounsevell for his interest and for reading the manuscript.

## LITERATURE CITED

- Strandmann, R. W.** 1982. Notes on *Nanorchestes*. II. Four species from Victoria Land, Antarctica. *Pac. Insects* **24**(1): 60-68.
- Strandmann, R. W. & Lauritz Sømme.** 1977. Prostigmatic mites (Acari, Prostigmata) from Sverdrupfjella, Dronning Maud Land, with description of four new species. *Nor. J. Entomol.* **24**: 137-46.