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EUPODIFORM MITES FROM POSSESSION ISLAND, CROZET ISLANDS, WITH A KEY TO THE SPECIES OF *EUPODES* (Acarina: Prostigmata)[1]

By **R. W. Strandtmann[2] and Lewis Davies[3]**

Abstract: New species described are *Eupodes crozetensis* and *Protereunetes crozeti*. *Rhagidia kerguelenensis* (Cambridge) is redescribed. There are apparently 2 forms of *Rhagidia kerguelenensis* differing by slight variances in the chelicera. *Eupodes crozetensis* is also represented by 2 forms which differ by length of the dorsal body setae. Forms not identified to species, but for which collection data are given include the following: *Erythraeus* sp.; *Bryobia* sp.; *Bdellodes* sp.; *Ereynetes* sp.; and *Tydeus* sp. The mites were extracted from core samples of various soils and vegetation types by Berlese funnel.

This paper deals with certain Prostigmata from Possession Island, Crozet Islands, collected by Lewis Davies in January-April 1968, mainly by Berlese funnels (40-watt bulbs as heat source) from cores of 20 cm diameter, approximately 15 cm deep, of soils under different vegetation types. Plant names in this paper follow the nomenclature given by Greene & Greene (1963). All the soils sampled were from sites within 1 km of the French Base, overlooking Crique du Navire at the SE end of the island. Other Prostigmata obtained will be dealt with in a later paper.

Sincere thanks are due to the administration of Terres Australes et Antarctiques Francaises who generously permitted Lewis Davies to visit Possession Island, and provided all hospitality and facilities. The Transantarctic Association kindly financed travel to and from La Reunion. Peter J. Tilbrook (British Antarctic Survey) helped generously in sorting material initially.

Rhagidia kerguelenensis (Cambridge) Fig. 1-6.

Synonymy:

Poecilophysis kerguelenensis Cambridge, 1876
Rhagidia kerguelenensis (Cambridge): André, 1947

♂. (Fig. 1). Length, 800 μ (600-945). 18 specimens measured. Coxal formula, 3-1-6-3; trochanter, 1-1-2-2. Genital setae, 6 pairs; paragenitals, 5 pairs. Sensory setae: Leg I: 4 oblique

1. Thanks are here expressed to the administration of Territoire des Terres Australes et Antarctiques Francaises (Administrateur Superieure M. Pierre Rolland) for allowing Dr Lewis Davies to visit Possession Island and for generously providing full living and working facilities during Jan.-April 1968, when the material from the Crozet Islands dealt with in this paper was collected.
2. Dept. of Biology, Texas Tech University, Lubbock, Texas 79409, U. S. A.
3. Dept. of Zoology, University of Durham, England.

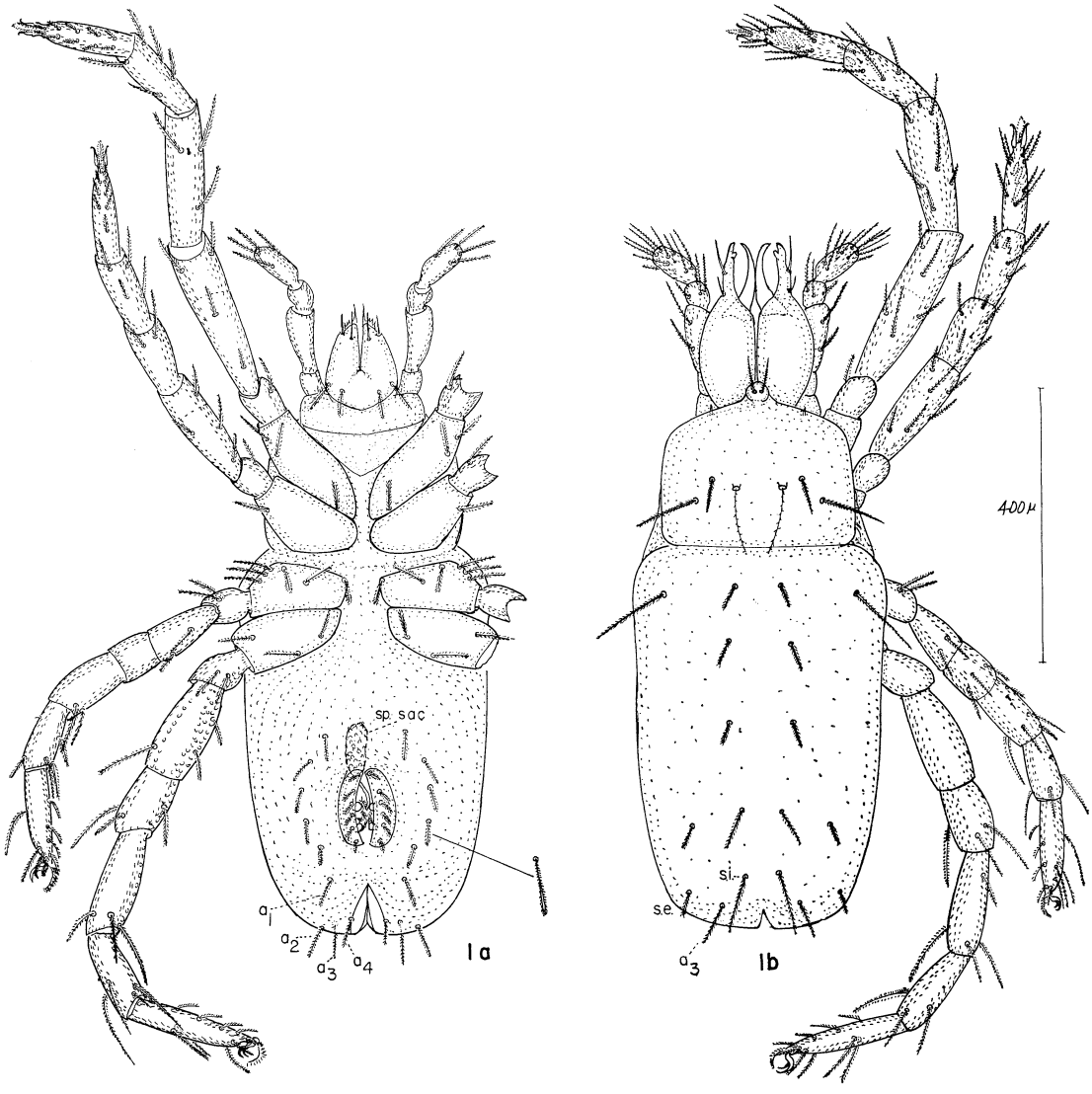


Fig. 1. *Rhagidia kerguelenensis*, ♂ : a, ventral; b, dorsal.

rhagidial organs on tarsus I, with stellate seta between 2 basal; tibia I with a small dorsal tibial organ, apically in a depression and a small solenidion near its posterior end. Genu I with a ventriapical solenidion. Leg II: tarsus with 3 rhagidial organs, irregularly tandem, the depressions separate or confluent; tibial organ in a pit with a small solenidion near its posterior end; genu with a mid-dorsal solenidion. Leg III: paired solenidia dorsobasally on tibia; 1 solenidion dorsomedial on genu. Leg IV: 1 small solenidion dorsomedial on tibia. *Cheliceral shears* large, ratio of shear length to total length of chelicera 1-2.33. Fixed digit of 2 types: either bluntly rounded at tip with a distinct, subapical tooth, or with 4 blunt, apical cusps (fig. 6c-f). In either case, inner margin of movable digit smooth, or the denticulations so fine as to be hardly

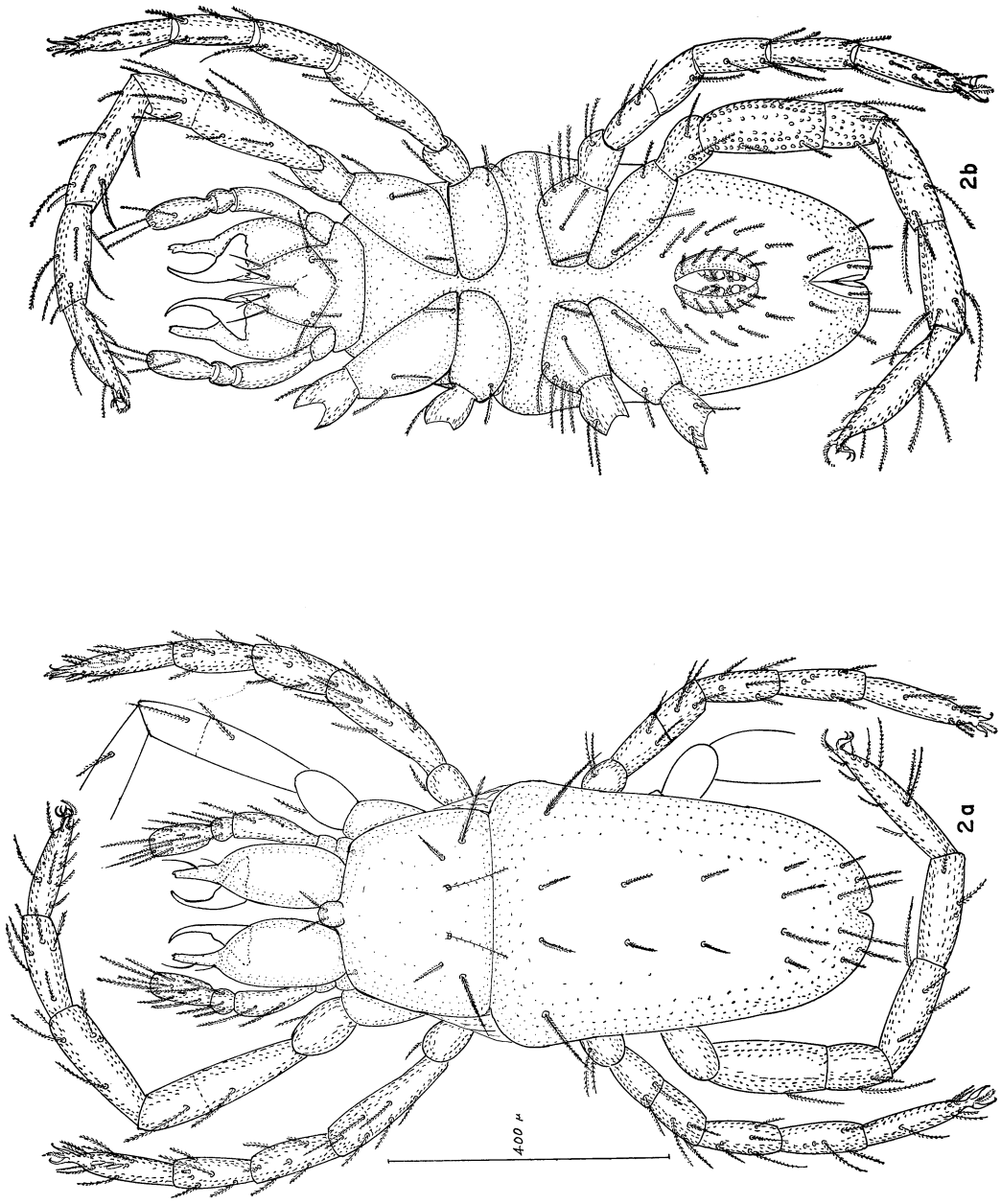


Fig. 2. *Rhagidia kerguelenensis*, ♀: a, dorsal; b, ventral.

noticeable. Cheliceral setae unequal, apical originates about middle of fixed digit and extends beyond tip; basal originates at point where digit enlarges, and does not reach apical seta. Pedipalpal setae 0-2-3-10; plus a small mid-dorsal solenidion on apical segment. The 10 setae on apical segment in a definite pattern; i. e., 2 dorsobasal, 3 dorsomedial, 4 apical, 1 ventrimedial. *Sperm sac* clavate and rather small, about as long as genital covers.

♀. (Fig. 2). Length, 790 μ (610-1000). 11 specimens measured. The specimen measuring 1000 μ contained 5 eggs. However, another specimen containing 4 eggs measured only 700 μ. *Ventral chaetotaxy* and leg chaetotaxy as in ♂. Chelicerae large, as in ♂; ratio of shears to total length 1-2.33. Genital covers somewhat longer than those of ♂.

Nympha III: (Fig. 3). Length, 625 μ (450-760). 21 specimens measured. Coxal formula, 3-1-5-3; trochanters, 1-1-2-2; genital setae, *4 on each cover*; paragenital setae, 4 pairs. *Tarsus I* with 3 or 4 oblique rhagidial organs; stellate seta between the 2 basal. Tarsus II with 3 r.o. Leg chaetotaxy otherwise as in ♂. *Chelicera*: Ratio of shears to total length 1-2.33.

It is highly unusual for the tritonymph to have 4 setae per genital shield. All tritonymphs of other *Rhagidia* species that we have seen have 3. Unfortunately, the tritonymph of *R. kerguelenensis* has not been mentioned by previous authors.

Nympha II: (Fig. 4). Length, 495 μ (375-580). 14 specimens measured. Coxal formula, 3-1-4-1; trochanter, 1-1-2-1. Genital setae, 2 pairs; paragenitals, 2 pairs. Tarsus I with 2 or 3 oblique r.o., with the stellate seta between them. Tarsus II with 2 tandem r.o. Leg chaetotaxy otherwise as in adult, except for fewer setae on some basal leg segments. *Chelicera:* Ratio of shears to tatal length 1-2.35. *Pedipalp setae*, 0-2-3-10.

Nympha I: (Fig. 5). Length, 370 μ (330-400). 6 specimens measured. Coxal formula, 3-1-3-0; trochanter 0-1-1-0 or 0-1-0-0; genital setae, 1 pair; no paragenital setae. One pair of genital disks. *Tarsus I* with 1 r.o. and the stellate seta at its base. Tarsus II with 1 r.o. Sensory setae otherwise as in ♂. *Chelicerae:* Ratio of shears to total length 1-2.68.

Pedipalp setae formula, 0-2-3-9, the inner seta of the dorsomedial group of segment 4 is lacking. *Leg IV* has setae only on tarsus (7), and tibia (1).

Collection data: 71 specimens of all stages except the larva were collected on Possession Island within 1 km of the French Base. They were extracted by Berlese funnels from cores of the following plant types.

Mosses (including *Rhacomitrium*) and *Blechnum pennamarina* on peat; 8 ♂♂, 6 ♀♀, 4 N III, 1 N II.

Tufts of *Deschampsia elegantula* in mineral soil pockets in fell-field; 4 ♂♂, 1 ♀, 9 N III, 4 N II, 4 N I.

Poa cookii tussock on thick peat; 1 ♀.

Azorella selago cushion including interior friable peat; 5 ♂♂, 3 ♀♀, 6 N III, 8 N II, 2 N I.

Deschampsia elegantula with mosses on thin peat; 1 ♀, 2 N II.

Remarks: Nathan Banks (Canadian Entomologist **32**: 30, 1900) was the first to synonymize *Poecilophysis* and *Rhagidia*. Marc André (1947) gave an excellent synopsis of the synonymy of *Rhagidia* and a thorough and more accurate redescription of *kerguelenensis*. André's redescription was based on specimens from the Crozet Islands and I am convinced the material we have here described is identical with that described by André, but before that can be accepted, a few apparent discrepancies need to be explained. André

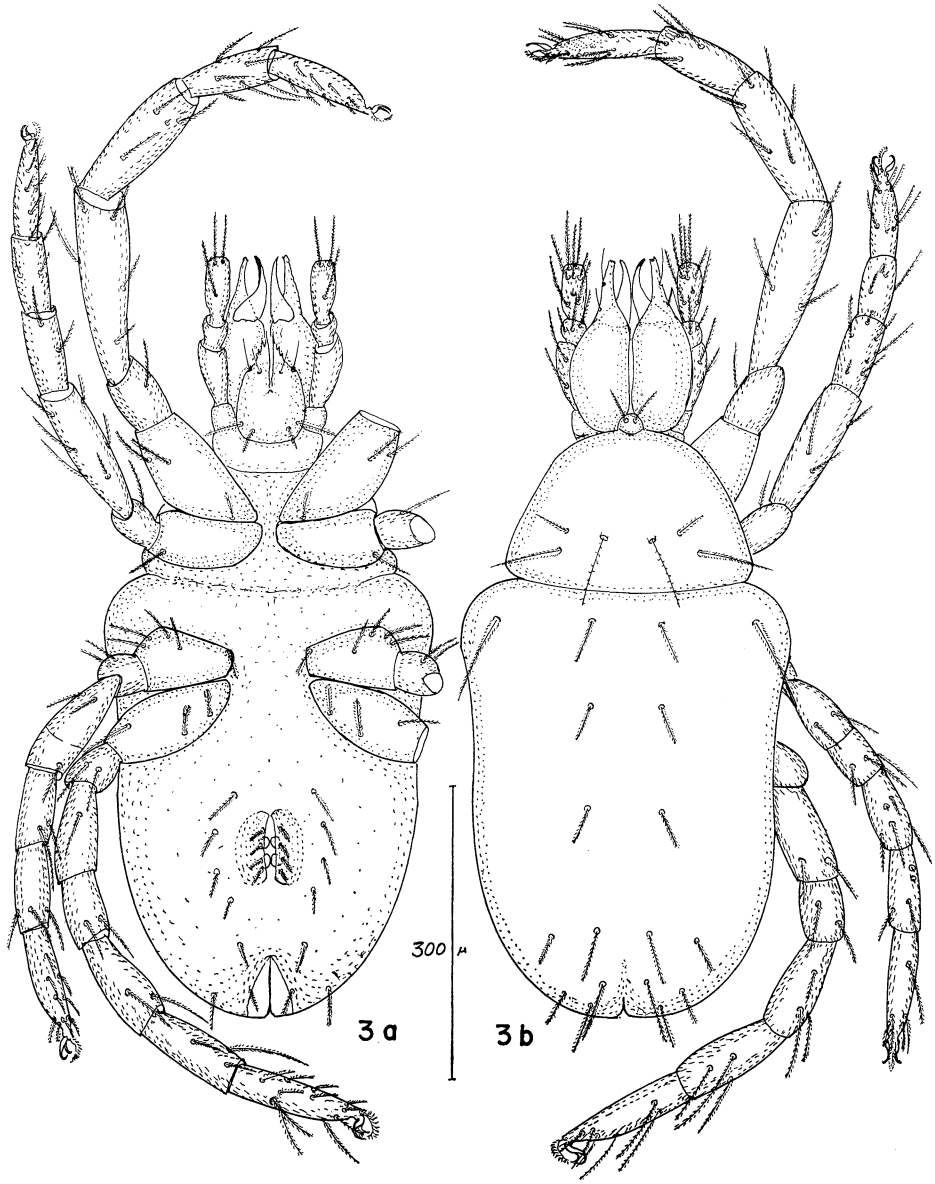


Fig. 3. *Rhagidia kerguelenensis*, tritonymph: a, ventral; b, dorsal.

gives the coxal formula[4] as 2-1-6-3. This must be an error as all stages of all species of *Rhagidia* always have 3 setae on coxa I. He further shows 6 pairs of paragenital setae whereas we find only 5 pairs. However, the most posterior pair of paragenital setae shown by André in his fig. 6 is actually the 1st pair of anal setae. Since *Rha-*

[4] André referred to the true coxe as *epimeres*, as did nearly all authors at that time.

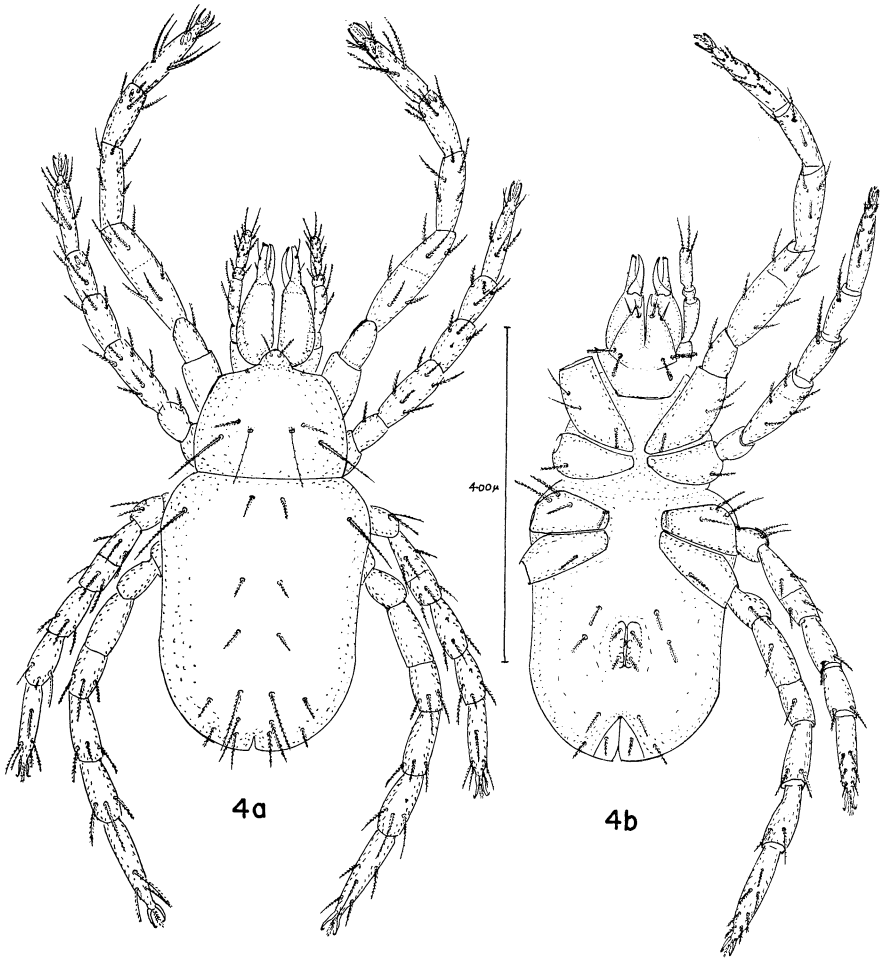


Fig. 4. *Rhagidia kerguelenensis,* deutonymph : a, dorsal; b, ventral.

gidia always has 4 pairs of anal setae, it follows that the fig. 6 of André has 3 rather than 2 pairs of anal setae on the ventral side and that only 1 pair of anal setae is on the dorsal side. André states that his *kerguelenensis* has only 2 setae in the lumbar row whereas *gelida* has 4. However, we believe this is due solely to an exaggerated displacement of setae. What André shows as the outer seta of the sacral row is actually the outer lumbar seta (e. l.) ; and what he has shown as an outermost anal seta, is actually the outer sacral seta (e. s.). There is, therefore, no discrepancy in setae between Audré's specimens and ours.

Rhagidia kerguelenensis is apparently represented by 2 forms on Possession Island. One form (fig. 1b and fig. 6e, f) has a distinct subapical tooth on the immovable digit of the chela (type 1) ; the other (type 2), does not (fig. 2–5 and 6c, d). This feature is fairly obvious and exists in every stage of development, but we were not able to cor-

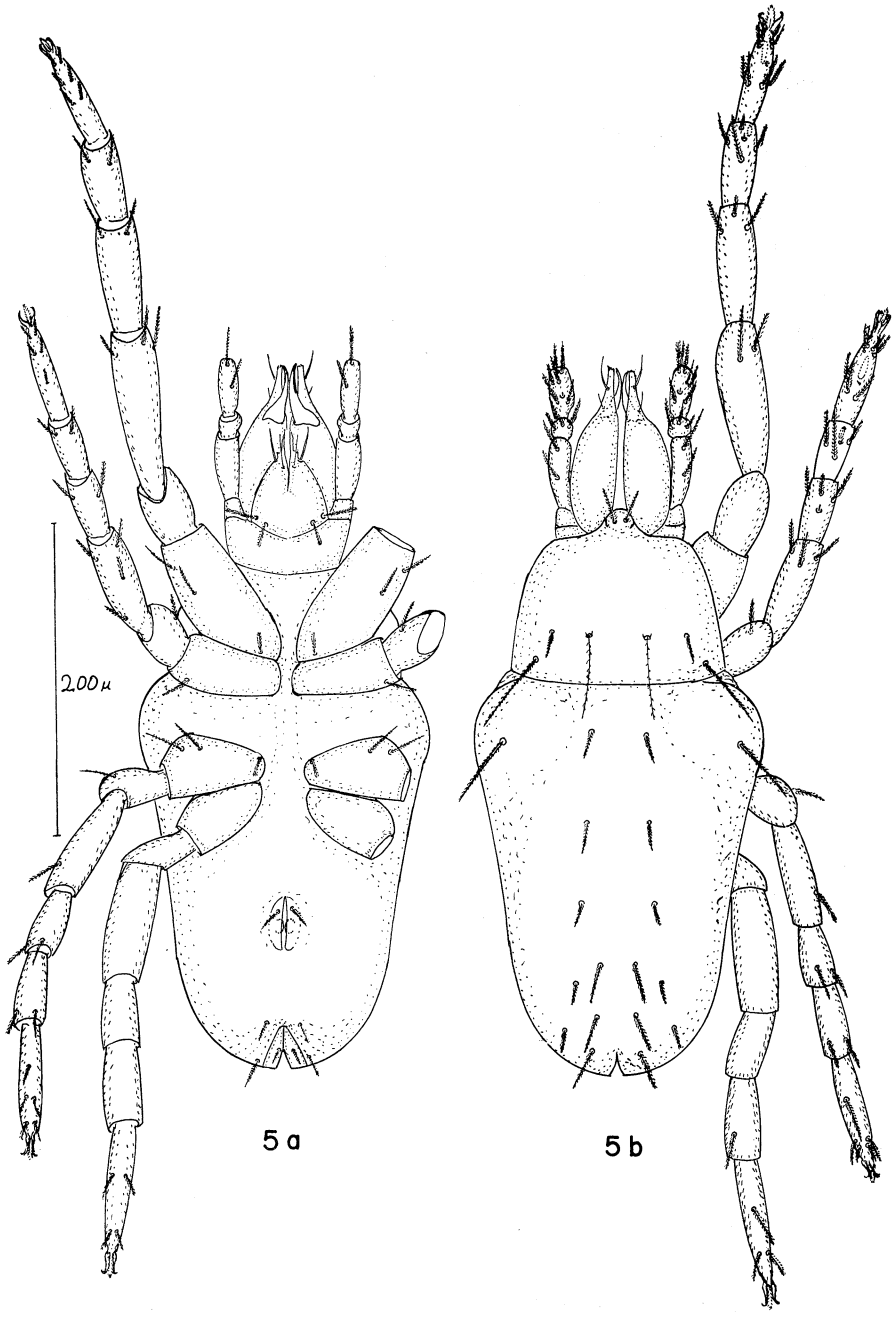


Fig. 5. *Rhagidia kerguelenensis*, protonymph: a, ventral; b, dorsal.

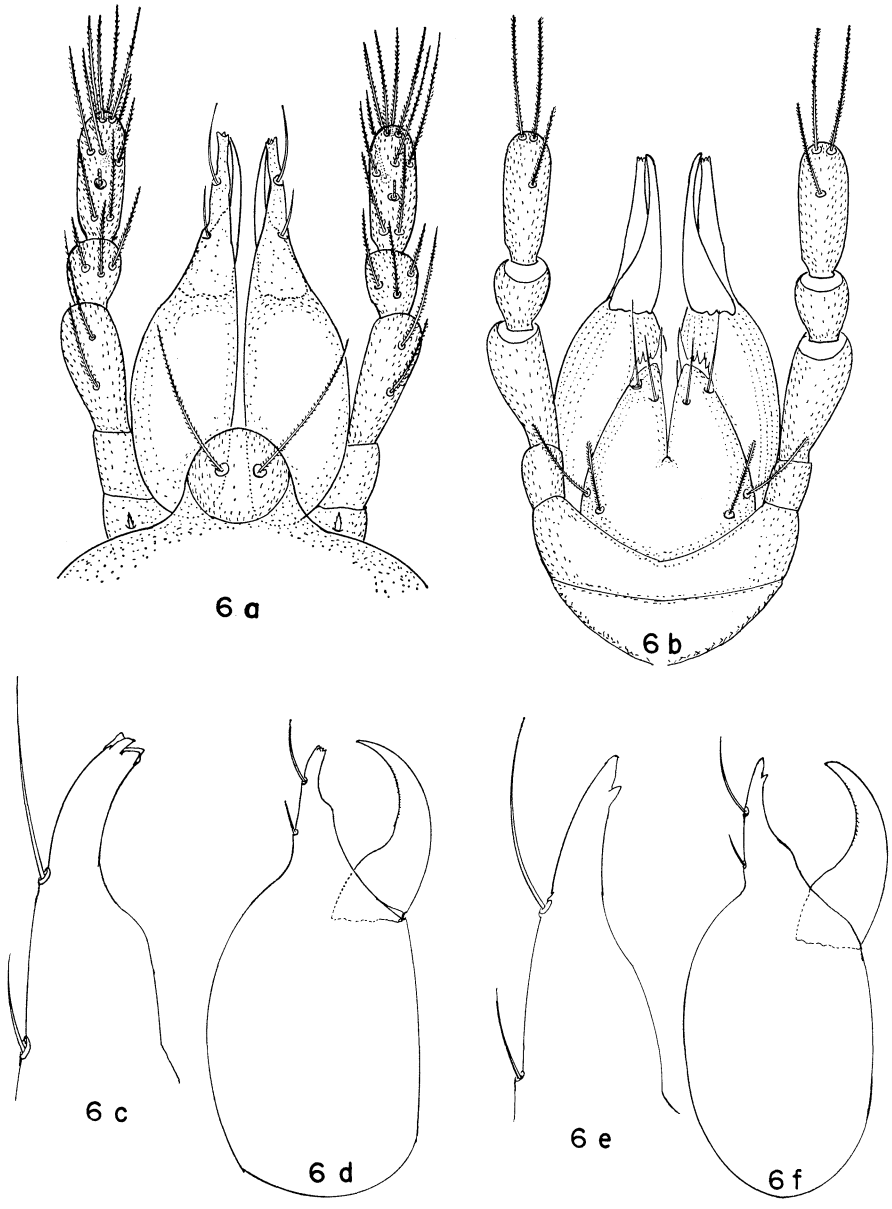


Fig. 6. *Rhagidia kerguelenensis*: a, pedipalps, chelicerae and epistome, dorsal view; b, pedipalps, chelicerae, and hypostome, ventral view; c, enlarged lateral view of fixed digit of chela, showing the 2 cheliceral setae and the quadridentate tip of the type 1 chela; d, lateral view of chelicera, type 1; e, enlarged lateral view of tip of type 2 chela; f, lateral view of type 2 chelicera.

Table 1. Setae lengths, *Rhagidia kerguelenensis**.

	Type 1 ♂			Type 2 ♂			Type 1 ♀		
	Average	Range	*N*	Average	Range	*N*	Average	Range	*N*
v.i.	20	(18-22)	8	19	(17-20)	6	21	(19-22)	7
v.e.	20	(15-22)	4	18	(16-20)	6	23	(17-25)	5
sc.	50	(44-52)	4	39	(37-43)	5	52	(48-56)	4
tr.	40	(38-42)	5	37	(35-40)	6	43	(40-46)	6
h.i.	20	(15-23)	5	16	(15-20)	6	21	(17-24)	7
h.e.	55	(50-55)	6	45	(40-49)	5	55	(52-60)	7
d1	18	(15-20)	7	15	(13-16)	5	20	(16-25)	8
d2	19	(16-21)	7	15	(13-16)	5	20	(17-25)	8
l.i.	35	(27-44)	5	24	(23-26)	5	33	(30-40)	7
l.e.	19	(18-21)	5	15	(13-17)	6	19	(17-20)	7
s.i.	45	(39-50)	6	36	(33-41)	6	44	(42-49)	5
s.e.	20	(17-21)	6	17	(14-20)	6	22	(20-25)	5

	Type 2 ♀			Type 1 Ny III			Type 2 Ny III		
	Average	Range	*N*	Average	Range	*N*	Average	Range	*N*
v.i.	20	(17-21)	2	15	(15-16)	3	15	(14-15)	3
v.e.	18	(16-18)	2	17	(15-20)	4	15	(15)	3
sc.	41	(40-42)	3	40	(36-45)	4	29	(28-32)	3
rt.	37	(36-38)	2	35	(31-38)	5	30	(28-32)	4
h.i.	19	(17-20)	2	14	(13-15)	4	12	(11-12)	3
h.e.	48	(46-50)	3	44	(40-47)	3	33	(32-35)	3
dl.	16	(15-18)	3	14	(12-15)	3	11	(10-12)	4
d2	16	(13-18)	3	14	(13-15)	3	11	(11)	3
l.i.	27	(23-30)	2	24	(21-25)	3	17	(16-18)	3
l.e.	17	(15-18)	2	14	(12-15)	3	11	(10-11)	3
s.i.	38	(37-40)	2	34	(32-35)	3	27	(26-27)	3
s.e.	19	(19)	1	13	(11-15)	3	11	(11)	3

* Measurements are given in microns.

relate it with geographic distribution, nor with any morphological feature except possibly lengths of dorsal setae. Table 1 shows the mean, range, and size sample of all the dorsal setae for ♂♂, ♀♀, and Nympha III. It can be seen that all the setae are consistently smaller for type 2 than for type 1. Ventral setae and leg setae were not measured. Both type 1 and type 2 forms were recovered in approximately equal numbers from all core samples in which *Rhagidia* were found.

Marc André's description (1947) of the chela indicates that he was dealing with our type 1. Hence, if these really are distinct species, then type 2, with the subapical cheliceral tooth, needs naming (see table 2).

Table 2. Body length by cheliceral type, *Rhagidia kerguelenensis*.*

	Type 1 Chela	Type 2 Chela
♂	825 (650-900) 9	786 (600-945) 9
♀	780 (610-1000) 9	800 (700-900) 2
Ny III	645 (500-750) 9	606 (450-760) 12
Ny II	500 (375-550) 8	485 (430-580) 6
Ny I	365 (330-400) 4	375 (350-400) 2

* Measurements are given in microns.

Protereunetes crozeti Strandtmann & Davies, new species Fig. 7 a-k.

A very small delicate mite with short, plumose setae and all legs shorter than the body.

Adult: 220-290 μ long; coxal formula, 3-1-4-3; trochanters, 1-1-1-1; genital setae, 6 on each cover, the longest seta anterior, the shortest posterior, and none more lateral than the others; paragenital setae, 4 pairs. Anal pore terminal, surrounded by 3 pairs of setae, the anterior short, and 2nd and 3rd generally on dorsal side. Dorsum: body suture and shoulders rather distinct; setae small, delicate, lightly plumed (fig. 6c). Average lengths of setae in microns: v.i. 11, v.e. 15, sc. 22, tr. 33 ♂♂ and 48 ♀♀, hi. 11, h.e. 22, dl 11, d2 11, l.i. 13, l.e. 17, s.i. 17. s.e. 15. *Pedipalp:* Terminal segment about as long as subterminal, laterally compressed, bearing a small latero-basal sensory seta on outer side, plus 7 plumed setae, 1 of which is large and mid-dorsal (fig. 6f, g). Sensory setae of legs (fig. 6d-k): On tarsus I, 2 rhagidial organs in separate fields and staggered rather than tandem, basal longer than apical, a stellate seta at base of basal r.o. Tibia I with a small, dorso-apical r.o. (at apex of which appears to be a small spiniform), and a longer mid-dorsal r.o. Tarsus II with 3 r.o. the basal longer than either of the 2 apical; tibia II with a small dorso-apical and a longer mid-dorsal r.o. All leg setae relatively small and lightly plumed. Leg I averaged 250 μ long. Femora I and II undivided; III and IV divided. Number of setae per segment is given as follows;

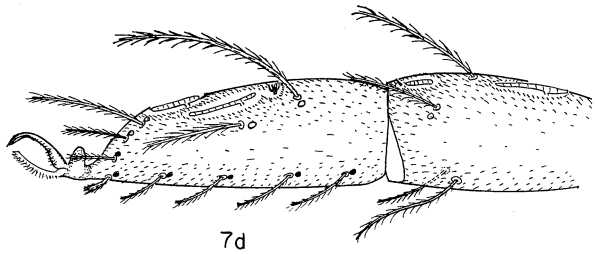
	ta.	ti.	g.	f.	tr.	coxa
I	20	5	6	12	1	3
II	13	5	4	10	1	1
III	12	4	2?	5+5	1	4
IV	11	5	3?	3+3	1	3

♂. Length 250 μ (220-275). 6 specimens measured. With a sperm sac.

♀. Length 270 μ (230-290). 3 specimens measured. One ♀ 290 μ long contained 1 egg, another 280 μ long contained 2 eggs.

Nympha III: Length 230 μ (1 specimen only). Coxae, 3-1-4-3; trochanters, 1-1-1-1, genital setae, 3 pairs; paragenitals, 3 pairs.

Fig. 7. *Protereunetes crozeti* n. sp.: a, dorsal; b, ventral; c, enlarged view of a body seta; d, lateral view of tarsus and tibia of leg I; e, lateral view of tarsus and tibia of leg II; f, lateral view of terminal segment of pedipalp; g, dorsal view of terminal segment of the right pedipalp; h, i, j, k, diagrammatic sketches to show position of setae and rhagidial organs of legs I to IV respectively. The open circles are dorsal, the filled circles ventral.



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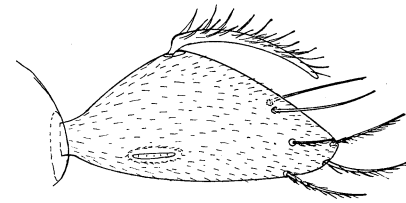

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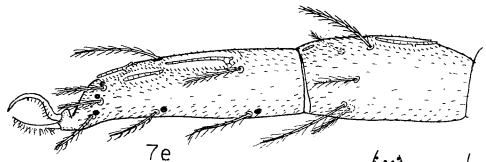

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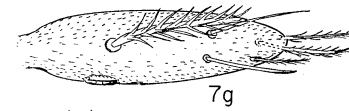

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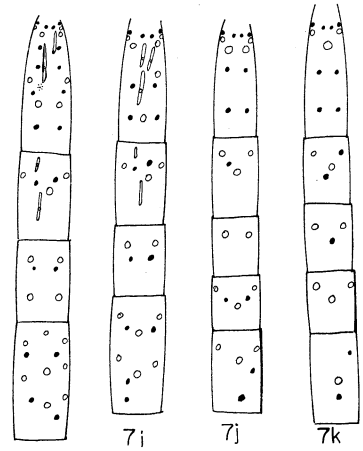

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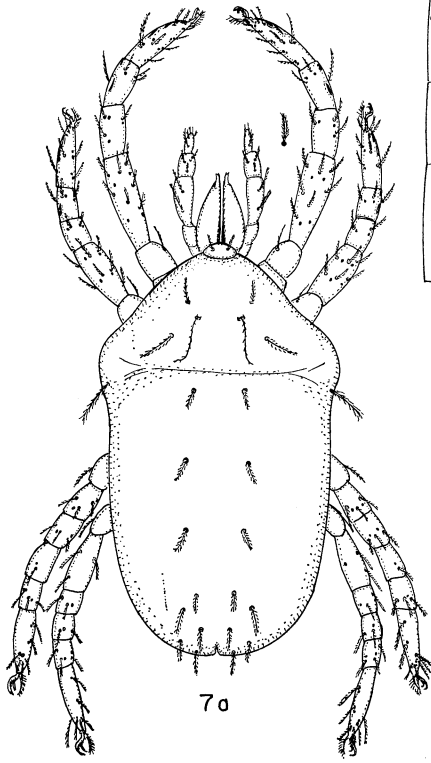

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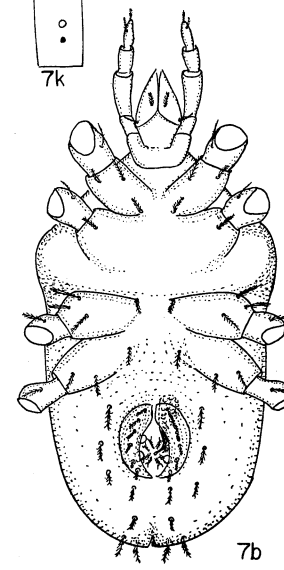

7b

Nympha II: 190 μ (185-200). Two specimens only; coxal formula, 3-1-3-2; trochanters, 0-0-1-0; genital setae, 2 pairs; paragenitals, 2 pairs.

Holotype: ♂ From *Deschampsia elegantula* tuft in mineral soil pocket in fell-field adjoining the French Base buildings, 10.IV.1968. Possession Island, Crozet Islands. Details of other specimens: Berlese funnel, same site as holotype, 26.II.1968, 1 ♀; 10.IV.1968, 2 ♂♂: 1 Ny III. Berlese funnel, moss and *Blechnum penna-marina* on peat, near Base, 1.II.1968, 1 ♀. Berlese funnel, *Deschampsia elegantula* with mosses on thin peat, near Base, 8, 9.II.1968, 4 ♂♂, 1 ♀, 2 Ny II.

Remarks: This mite is similar to *P. minutus* in body size, setal structure and types of leg sensory setae. *P. crozeti* differs in a somewhat broader body, the large mid-dorsal seta on segment 4 of the pedipalp, the unequal size and non-tandem position of the rhagidial organs of tarsus I.

Eupodes crozetensis Strandtmann & Davies, new species Fig. 8-9.

A small, delicate, slender-legged mite, 400 to 450 microns long. Body suture between pro- and metapodasoma present but not pronounced.

Dorsum: (fig. 8a) setae h.i., dl and d2 very long and generally curving upward; of rather uniform diameter from base to tip. Lumbars and sacrals shorter and more slender. External verticals longer than scapulars. *Venter:* (fig. 9a). Coxal formula 3-1-4-3. Outer apical seta of coxa I from 1/2 to 1/3 as long as inner apical and generally not clavate; all other coxal setae narrowly clavate. Genital setae, 6 pairs, 4th pair more lateral than others. Paragenital setae, 5 pairs. Anal pore terminal; anal setae 1 ventral, slightly clavate, and approximately 1/3 as long as anals 2 and 3, which are filiform and dorsal. *Gnathosoma:* Hypostome (fig. 9a) slender, with 2 pairs of setae, anterior pair broadened apically, coarsely pubescent, and very near anterior tip of hypostome. Posterior pair marginal, near base, slender, filiform, and finely pubescent. Chelicerae slender, pubescent, with malformed chelae and a small seta dorsally at base of shears. Pedipalps (fig. 8a, 9f), slender, all segments considerably longer than wide. Terminal segment approximately 1/2 as long as subterminal, bearing 7 or 8 setae mostly at anterior end, 1 of which originates subterminally, is flattened apically, and characteristically bends upward (fig. 9f); a small rhagidiform organ near base on outer side. *Legs:* Leg I slender, from 100 to 200 microns longer than body; II and III shorter than body; IV about as long as body and with an enlarged basifemur. Setae numerous, slender, finely pubescent, and tending to increase in length from Leg I to Leg IV. Some ventral leg setae long and enlarged apically. Femora I, III, and IV divided, femur II undivided. Trochanters; formula 1-1-1-1, setae on trochanter I and II small, slender and so finely pubescent as to appear nude. On trochanters III and IV seta longer, clavate, and coarsely pubescent. Trochantal seta III especially long, averaging 55 μ. Sensory setae: tarsus I has 2 equal r.o. tandem in confluent fields, with a basal stellate seta. Tibia I has a very small dorsoapical knob-like seta (fig. 8b) and a dorsobasal solenidion. Tarsus II (fig. 8c, d) has 2 r.o. tandem in confluent fields, the anterior shorter than the basal, and with a small spiniform at base of longer r.o. Tibia II has a small dorsoapical r.o. and a dorsobasal solenidion. Otherwise only apparent sensory setae a dorsobasal solenidion on tibiae III and IV of ♂. In ♀ solenidion of tibia III and IV may or may not be present, but when it is, it is small and exceedingly difficult to find.

♂. Somewhat smaller than ♀, averaging 400 μ. Sperm sac clear, clavate, and somewhat hammer-headed.

♀. Averages 465 μ long. 14 out of 17 ♀♀ measured contained eggs. Number of eggs in

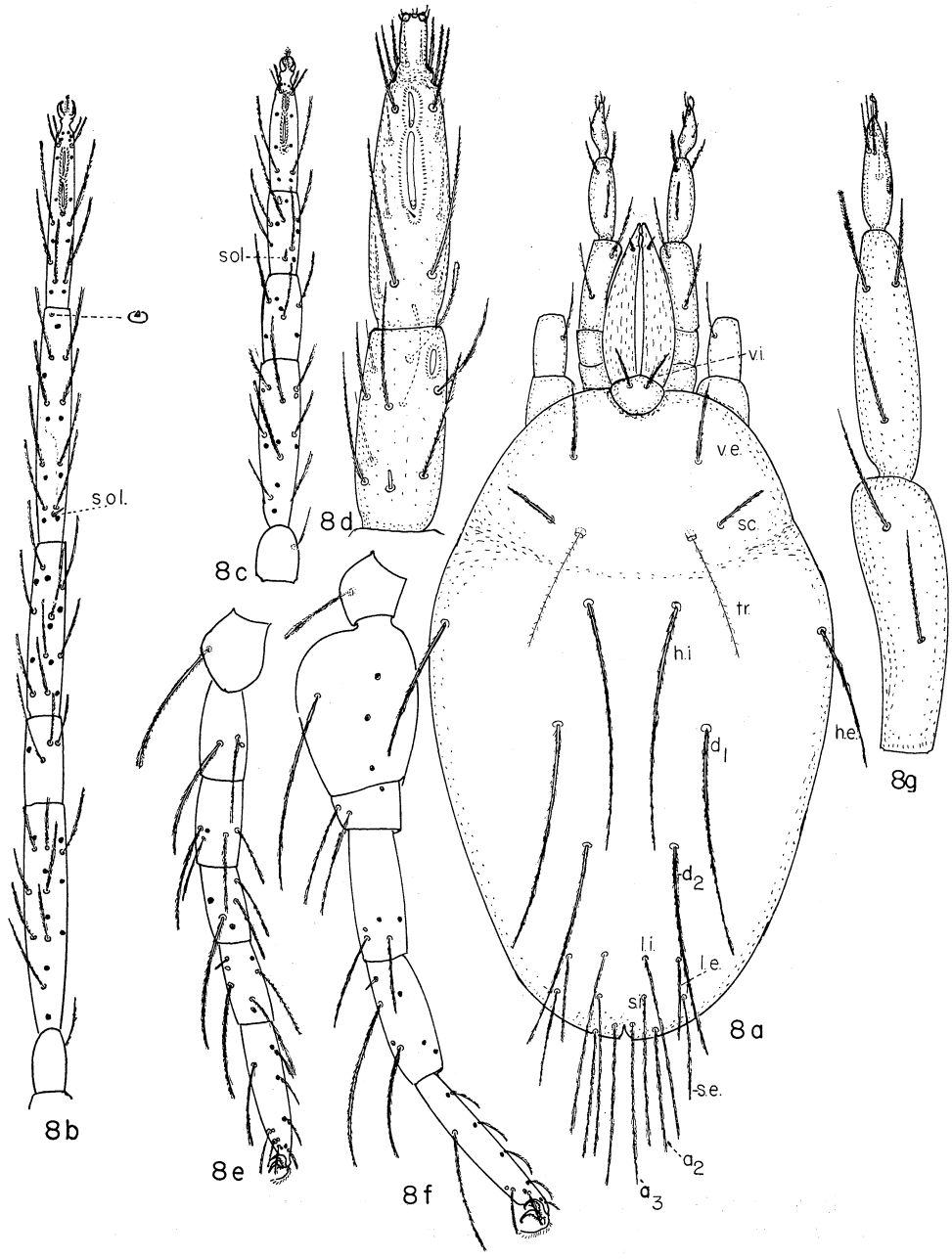

Fig. 8. *Eupodes crozetensis* n. sp. ♂: a, dorsal view; b, leg I, dorsal view; c, leg II, dorsal view; d, tarsus and tibia of leg II enlarged, dorsal view; e, dorsolateral view of leg III; f, dorsolateral view of leg IV; g, dorsal view of right pedipalp. (The setae of the opposite side of the appendages are shown either as dotted lines or as circles.)

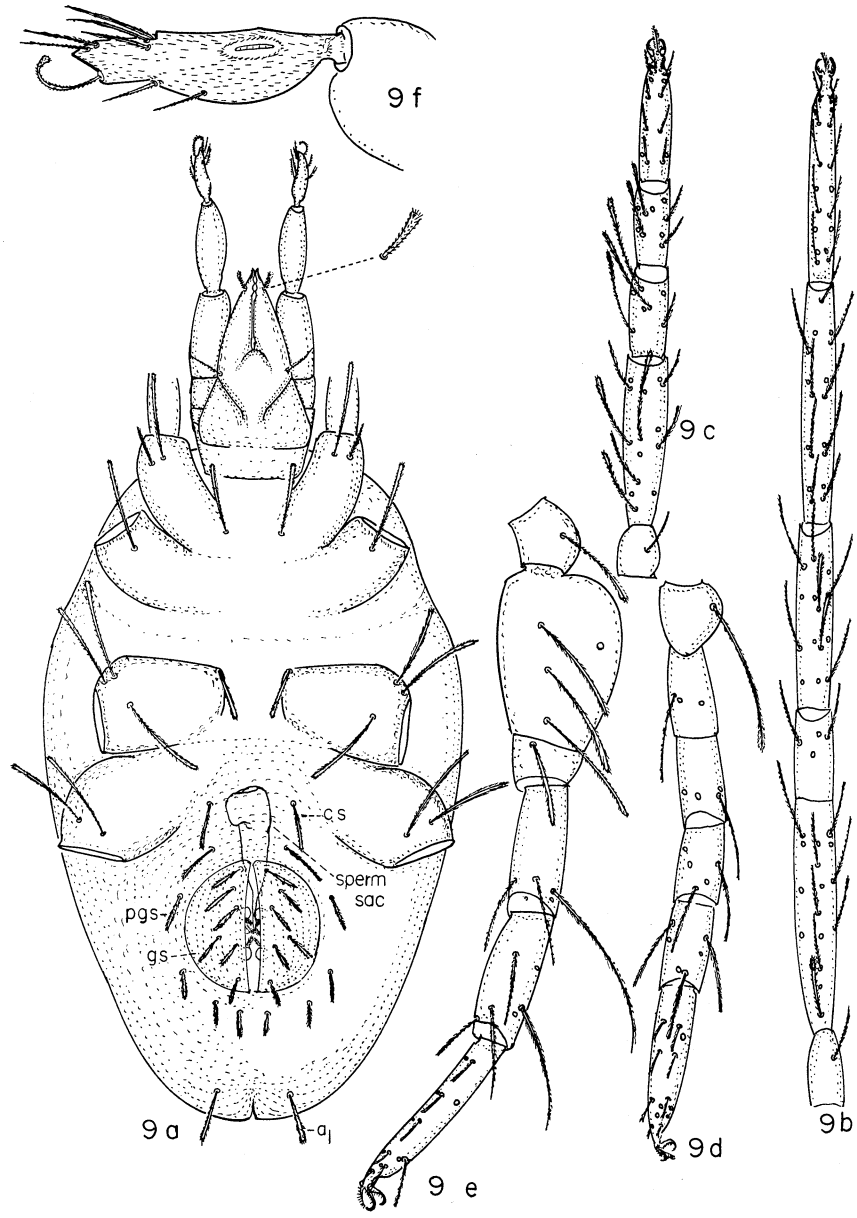

Fig. 9. *Eupodes crozetensis* n. sp. ♂ : a, ventral view; b, ventral view of leg I; c, ventral view of leg II; d, ventrilateral view of leg III; e, ventrilateral view of leg IV; f, lateral view, outer side, of the left pedipalp.

these 14 averaged 4.4 per♀, ranging from 1 to 8.

Nympha III: 324 μ l ong (290-350); 7 specimens measured. Coxal formula, 3-1-4-3; trochanters 1-1-1-1, genital setae 3 pairs; paragenitals, 4 pairs. Legs I and dorsal setae shorter in proportion to body length than in adult. Otherwise as adult.

Nympha II: (1 specimen only). 240μ long. Leg I, 250 μ. Coxal formula, 3-1-4-2; trochanters 1-1-1-0. Genital setae, 2 pairs; paragenitals, 2 pairs.

Nympha I: (1 specimen), 200 μ; Leg I, 180 μ. Coxae 3-1-3-0; trochanters, 0-0-1-0; genital setae 1 pair; paragenitals, none.

Holotype: ♂. Collected by Berlese funnel from *Deschampsia elegantula* tuft in mineral soil pocket in fell-field adjoining French Base Buildings, Possession Island, Crozet Islands, 10. IV.1968 (L. Davies).

Other specimens; all by Berlese funnel:

Mosses with *Blechnum penna-marina* on peat, 2 ♀♀, 1N III. *Poa cookii* tussock on thick peat, 5 ♀♀. *Azorella selago* cushion in fell-field, 9 ♂♂, 5 ♀♀, 2 N III. *Deschampsia elegantula* tufts in mineral soil pocket in fell-field, 20 ♂♂, 14 ♀♀, 1 N III, 1 N II, 1 N I. *D. elegantula* with mosses on thin peat, 5 ♀♀, 2 N III.

Table 3. Measurements of *Eupodes crozetensis.**

Length of:	Form A ♂			Form B ♂		
	Average	Range	N	Average	Range	N
Body	400	(350-450)	19	364	(340-390)	7
Leg I	556	(525-620)	11	478	(440-560)	6
Seta i.h.	139	(120-155)	12	88	(all/same)	6
Seta d1	140	(130-165)	14	85	(78-88)	4
Seta d2	133	(120-147)	7	77	(all/same)	3

Length of:	♀			♀		
	Average	Range	N	Average	Range	N
Body	452	(375-500)	14	377	(350-400)	13
Leg I	610	(530-660)	11	480	(450-515)	6
Seta i.h.	141	(120-165)	12	90	(78-97)	14
Seta d1	145	(132-155)	6	82	(77-88)	11
Seta d2	142	(133-155)	7	80	(77-84)	7

* Stated in microns.

Note: There are 2 forms of *Eupodes* represented in the material before us which differ only in body size and lengths of body setae. The larger form is described above. The smaller form seems to agree in all respects (i. e., coxal formula, trochantal setae, leg sensory setae, leg chaetotaxy, and lengths of setae relative to each other) and we are, therefore, considering them as 2 forms of the same species. The larger form, with longer setae we will call Form A; the smaller form, with shorter setae, Form B.

FormA is the more abundant and is illustrated in fig. 8 and 9. Table 3 gives comparative measurements. Both forms were found together in *Deschampsia elegantula* tufts in mineral soil pockets in fell-fields.

Key to some of the species of *Eupodes*

Over 50 names have been proposed for various forms of *Eupodes* but at least 40 of these names are accompanied by drawings and descriptions that are either erroneous or nondiagnostic and hence, impossible to identify. The remaining species, including *E. crozetensis*, may be differentiated with the aid of the key presented below, we hope.

One species not included in the following key because the description is incomplete is *Eupodes longipilus* Sig Thor, 1934. However, it deserves special mention because the one character stressed — lengths of dorsal setae — indicate it could be the same as our *E. crozetensis*. The description states: (free translation) "Body 600-400 μ, very large, round, and broad. An obvious feature is the long setae (90-140 μ). Although the i.v. setae are only 40 μ, the trichobothria are 100, i.h. *ca* 180, and the others 90-140." The long body setae, plus the geographic location, Capetown, South Africa, indicate that *crozetensis* could be the same thing.

Keys to species of the genera *Rhagidia* and *Protereunetes* may be found in Strandtmann (1971).

1a. Dorsal setae short, not 1/2 as long as distance between setal bases 2
1b. Dorsal setae longer, from nearly as long as interspaces, to much longer 3
2a. Dorsal setae hair-like, not prominently swollen basally. Femur IV very thick, as wide as long. Body, 325-420 μ ..... **ocellatus** Willmann, 1952
2b. Most dorsal setae, and most leg and pedipalpal setae swollen basally. Legs I about as long as body. L. 420 μ. Intertidal zone of the Red Sea ..... **riedli** Schuster, 1965
3a. The i.l., i.s., and trichobothria are slender; all other body setae are distinctly swollen basally. Leg setae not swollen. Leg I about as long as body. L. 450-650 μ. Italy... ..... **fusifer** R. Canestrini, 1886
3b. External lumbar and external sacral setae (e.l. and e.s., respectively), hairlike. The other dorsal setae may be thicker basally than apically but not as pronounced as in 3a above 4
4a. Femur IV not noticeably swollen. Legs I ca 1.5 × length of body. Coxae 3-1-4-3. Genital setae 6 pairs, 1 pair more lateral than others. Paragenital setae 5 pairs. Dorsals slender, just barely as long as interspaces. Tibiae I and II each with an apical and a basal, small rhagidiform seta; III and IV with a basal solenidion. Length 450 μ. Antarctica ..... **totanfjella** Strandtmann, 1967
4b. Femur IV swollen 5
5a. Epivertex sharply pointed. Three pairs of setae in humeral row (*sic*). Leg I slightly longer than body; dorsal setae overlap. Body 300 μ long. Germany .... **acuminatus** Willmann, 1952
5b. Epivertex rounded. Only the usual 2 pairs of setae in humeral row (viz, i.h. and e.h.) 6
6a. Leg I ca 2 × length of body 7
6b. Leg I varying from about as long as body to 1-1/2 × the length of the body 8

7a. Dorsal and humeral setae much heavier than lumbars and sacrals; the latter, together with anals 2 and 3, clustered at posterior end of body. All tibiae with a dorso-basal, erect, solenidion. Femur I slightly swollen and very long, about 3/4 as long as body. 400 μ. Campbell Island (Subantarctica); Japan.....**longisetatus** Strandtmann, 1964

7b. Lumbar setae about as heavy as dorsals 1 and 2; sacrals and anals more slender. Femur I not thickened and about 1/2 as long as body.....10

8a. Dorsal suture not prominent. 5 pairs of paragenital setae.....9

8b. Dorsal suture obvious. 6 or 7 pairs of paragenital setae.....11

9a. Coxal and paragenital setae rather short and prominently clavate. Tibia I with 22-24 setae; genu I with 20-22 setae. Solenidion on tibiae I and II small and cryptic; apex of tibia I with a small elongated depression, at tip of which is a small spiniform. Sperm sac of ♂ clavate and very coarsely granular within. 480 μ. Victoria Land, Antarctica..... **wisei** Womersley & Strandtmann, 1963

9b. Coxal and paragenital setae longer, more slender, less prominently clavate. Tibia I with 16-18 setae; genu I with 14-16 setae. Tibia I with a very small knob-ilke seta at apex, and lacking the small, sensory depression. Sperm sac clear, clavate, with a hammer-like head. 450 μ. Crozet Islands..... **crozetensis***

10a. Dorsal setae about as long as interspaces. Body converges strongly posteriorly. Sperm sac a spherical balloon. Terminal segment of pedipalp swollen, about 2 × as long as broad. 350-500 μ. Northern Europe and Greenland..... **variegatus** C. L. Koch, 1938

10b. Dorsal setae coarse and much longer than interspaces. Body parallel-sided. Terminal segment of pedipalp slender, 3 or 4 × as long as broad. 650 μ. Denmark and Italy..... **berlesei** Sig Thor, 1912

11a. 6 pairs of paragenital setae.....12

11b. 7 pairs of paragenital setae. 5 pairs of genital setae. 300-350 μ. Northern Europe ..... **voxencollinus** Sig Thor, 1934

12a. Legs I no longer than body. 355 μ. Holland, Greenland.....**viridis** Oudemans, 1906

12b. Legs I, 1-1/4 to 1-1/2 × length of body. Seta of trochanter I 2 or 3 × as long as seta of trochanter II and about as long as seta on trochanter III. 450 μ. Alaska..... ..... **alaskanensis** Strandtmann, 1971

Note

Other species of Prostigmata found with the foregoing eupodiform mites, not but identified beyond the genus are as follows (3P etc=Davies coll'n numbers):

Erythraeus sp. 3P (2 specimens).

Bryobia sp. 2P (5 specimens); 9P (1 specimen).

Bdellodes sp. 2P (1 specimen); 4P (1 specimen); 9P (1 specimen); 15P (1 specimen); Pl-20 (4 specimens)

Ereynetes sp. 4P (8 specimens); 15P (4 specimens); 19P (2 specimens); P-20 (1 specimen); 31P (3 specimens).

Tydeus sp. 15P (2 specimens).

Nanorchestes sp. 4P (1 specimen).

* Described as new.

Abbreviations Used for Setae

a 1 —— first anal
a 2 —— second anal
a 3 —— third anal
a 4 —— fourth anal
d 1 —— first dorsal
d 2 —— second dorsal
h e —— external humeral
h i —— internal humeral
l e —— external lumbar
l i —— internal lumbar
r o —— rhagidial organ (any specialized seta in a recumbent postion within a depression.)
s c —— scapular
s e —— external sacral
s i —— internal sacral
sol —— solenidion (any specialized seta in an erect position)
t r —— trichobothrium (also, pseudostigmatic organ)
v e —— external vertical
v i —— internal vertical

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