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INVESTIGATIONS ON THE ORIBATID FAUNA OF NEW ZEALAND

PART II

BY

MARIE HAMMER

København 1967

Kommissionær: Munksgaard

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CONTENTS

Synopsis

The present paper is Part II of a study on the oribatids of New Zealand. It includes mention of 82 species within the superfamilies Cepheoidea-Carabodoidea, Liacaroidea, Oribatelloidea, Ceratozetoidea, and Oribatuloidea, mainly pteromorphous species. 13 species have previously been described, 2–3 have been described by RAMSAY, but not published. 13 new genera and 66 new species have been set up. All species with the exception of three previously described and easily recognizable ones have been pictured, a few with drawings of details, only. For each species an account is given of the character of the biotope and of finding places in New Zealand. A total survey of all the species found and of their occurrence in New Zealand, as well as the relation of the fauna to other regions investigated, especially South America, will be given in Part III.

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BIANCO LUNOS BOGTRYKKERI A/S

Preface and Introduction

The present paper constitutes Part II of my *Investigations on the Oribatid Fauna of New Zealand.* In Part I 130 species are described, mainly non-pteromorphous species. Part II deals with 82 species within the superfamilies Cepheoidea-Carabodoidea, Liacaroidea, Oribatelloidea, Ceratozetoidea, and Oribatuloidea, mainly pteromorphous species. In Part III I shall discuss the Galumnoidea, the genus *Oppia* sensu lato, and perhaps the Phthiracaroidea, if the treatment of the last-mentioned group is not left to a specialist on this group. Furthermore I shall deal with synoptic conclusions regarding the distribution of the species, partly in New Zealand, partly in relation to previous investigations, especially in South America.

In Part II I have abandoned the morphological terms used by earlier acarologists and have adopted the terms used by GRANDJEAN and later research-workers. I have done so in order to avoid a mixing-up of concepts and to provide more clarity for young scientists. As this applies to very few terms, it will hardly cause any difficulties to the reader's understanding. The previous concept Tectop. I is now termed tutorium. Tectop. II is now called Tectop. I in conformity with its function of protecting Leg I. Tectop. II protects Leg II. Apodema I is situated near the margin of the camerostome and is mostly little conspicuous. Apodema II is the previous Apodema I, and the sejugal apodema was previously mentioned as Apodema II. This concludes the confusion; the other early terms are unaltered.

In the present paper a few species of oribatids are mentioned which have been collected from bird's nests in New Zealand by Mr. C. MITCHELL, P. B. Bishop Museum, Honolulu. I want to offer my best thanks to Dr. J. L. GRESSITT, Bishop Museum, for assigning to me the task of working-up this in several respects extremely interesting material.

The present paper is the sixth of a number of publications on the distribution of the oribatids on the southern hemisphere. They have all been printed by the Royal Danish Academy of Sciences and Letters, to the Directors of which I owe an immense debt of gratitude. The Carlsberg Foundation has given financial support to me during the work, and the Royal Danish Academy of Sciences and Letters has defrayed the expenses of the linguistic revision of my manuscript, which has been made by Mr. NIELS HAISLUND, M.A. For all this assistance I offer my most cordial thanks.

Fredensborg, May 1966. MARIE HAMMER

List and Descriptions of the Species Found

Tikizetes n. gen.

Pycnotic, probably belonging to the superfamily Cepheoidea, but different from all the known genera. Propodosoma narrow as compared with the broad, rounded hysterosoma. True lamellae as vertical thin blades. Rostral, lamellar, and interlamellar hairs present. Pseudostigmata big, open anteriorly, situated far laterally. The pseudostigmatic organ flagelliform. Hysterosoma arched, long, and broad; its anterior border with two small forwards projecting edges. 6 pairs of long, feathered, submarginal, notogastral hairs, 3 tiny postero-marginal ones. Genital and anal fields separated, the latter being very large. 7 pairs of genital hairs. All legs monodactylous. Femora and Coxae III–IV with a pointed tooth.

Tikizetes spinipes n. sp.; fig. 1.

Colour clear brown. Length about 0.71 mm.

The propodosoma is conical anteriorly and broad with parallel sides posteriorly. The tip of the rostrum is conical, but ventrally a fine membranous plate covers the ventral side of the rostrum and makes it look broader. The rostral hairs are smooth and bent medially. The proximal part of the lamellae, which are narrow ridges, converge, then the lamellae run parallel, at the same times becoming thin blades, which stand up as vertical plates. The latter are posteriorly decorated with pits, anteriorly with radiating stripes. The anterior part of the vertical plates forms the cusps, which taper towards the tip, where the lamellar hair is situated. The latter is very thin towards the tip and smooth. There is no translamella, only a short medially running part of the medial thickening of the lamellae. The interlamellar hairs, which are situated on short apophyses off the point where the lamellae change directions, are very long, soft, bent, and provided with a broad fringe of thin, secondary bristles. The pseudostigmata, which are situated far laterally at some distance in front of the anterior border of the hysterosoma, are big bowls, which are open anteriorly. The pseudostigmatic organs are flagellants, almost equally thick throughout, and smooth.

The hysterosoma is only slightly longer than it is broad. Its anterior border is a low arch, which is heavily chitinized. The shoulder is rounded, but behind the pseudostigma there is a short forwards projecting edge or tooth, formed by the anterior border being displaced a little posteriorly. At some distance from the border there are

6 pairs of long, bent hairs, fringed like the interlamellar hairs. On the posterior border of the hysterosoma three pairs of tiny hairs can be seen. The sculpture consists of low, indistinct, more or less longitudinal, posteriorly transverse wrinkles. Fig. 1 a shows the ventral side. Apodema II is a thin, transverse, straight line, the sejugal apodema, which also is very thin, is directed towards the genital field. Between Apodemata II and the sejugal apodemata there is a darker zone with a lying 8-shaped belt between the sejugal apodemata. The genital field is not half as big as the anal field. There are 7 pairs of genital hairs, viz. four anterior ones in a line along the medial border, three in a curved longitudinal line almost in the middle of the plates. There is one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs, all of them being smooth. Ad 1 and ad 2 are situated behind the anal field, ad 3 off the posterior half of the plates. The fissure iad is located at some distance from the lateral margin of the anal field, in front of ad 3. All legs are monodactylous. Leg I, is shown in fig. 1 b. Femora I–II have distally a dorsal, brush-shaped hair, medially a smaller one. The solenidia of Genu, Tibia, and Tarsus I are very long. Fig. 1 c shows Leg IV. Coxae and Femora III–IV have each a sharp tooth, on the femora not situated distally as is usually the case, but almost in the middle of the ventral side. Tarsus III has proximally a smooth ventral spine. The number of solenidia of the legs is:

	I	II	III	IV
Tarsus	2	2	0	0
Tibia	2	1	1	1
Genu	1	1	1	1
Femur	0	0	0	0

The mandible is slender with many strong teeth, fig. 1 d. A distinct spine projects anteriorly, but as I am unable to see its insertion I cannot tell whether it belongs to the mandible. A thin layer of secretion covers the surface of the propodosoma.

Fox Glacier: One specimen in moist to wet liverworts or low mosses on a thick trunk in native forest; four individuals in mouldering leaves in native forest on Lake Matheson.

Pseudoceratoppia n. gen.

Pseudoceratoppia belongs to the superfamily Liacaroidea, and has superficially a great similarity to *Ceratoppia*. The lamellae are long, converging with a slender cuspis. Tutorium a broad plate with a long free tip. The pseudostigmatic organ is thread-shaped to slightly clavate. Propodosoma and hysterosoma separated by a straight line. No pteromorphae. Hysterosoma of very characteristic shape, broad, globular with the latero-anterior border slightly depressed in the middle. Only a few notogastral hairs of very variable length and shape can be seen. The ventral side with a transverse ridge immediately in front of the genital field and two curved ridges running from the anterior border of the genital field to Acetabulum IV. Genital and anal field separated

by a long distance. The anal fields is by far the biggest. 6 pairs of genital hairs, 1 pair of aggenital hairs, 2 pairs of anal hairs, and 3 hairs of adanal hairs. Legs rather short, tridactylous. Genu I with an unusually long medial hair. Mandibles of the normal, chelicere type. Big dark species.

Pseudoceratoppia sexsetosa n. sp.; fig. 2.
Colour brown. Length about 0.86 mm.

The propodosoma is broad, triangular. The tip of the rostrum is pointed as in *Ceratoppia*, but there are no lateral teeth. The rostral hairs, which are inserted on the dorsal surface, are slightly barbed, directed straight forwards, and they are twice to three times longer than their mutual distance. The lamellae, which are situated far from the lateral sides, are narrow, slightly converging, the cusps, however, parallel. The cusps, which are no broader than the distal part of the lamellae, are about half as long as their mutual distance. There is no translamella. The lamellar hairs, which are directed straight forwards, are rather thin and faintly barbed. They reach by one third of their length beyond the tip of the rostrum. The interlamellar hairs are situated at a short distance from the lamellae and from the anterior border of the hysterosoma. They are thin, slightly barbed, and reach the tip of the rostrum. The pseudostigmata, which are small cups, are situated immediately in front of the anterior margin of the hysterosoma. The pseudostigmatic organ is a barbed thread, half as long as the interlamellar hairs and no thicker. The tutorium is a broad blade with a long free tip, see fig. 2a. It is longitudinally striped. The hysterosoma is as long as it is broad. The anterior border is straight, and the latero-anterior border has a slight depression in the middle, a rounded shoulder, and a characteristic edge behind the depression. Only six notogastral hairs can be seen, all of them long, thin, and barbed. Four are situated near the latero-posterior border, two at a short distance from the posterior end. The long radiating hairs add to the similarity to *Ceratoppia*. The ventral side is shown in fig. 2 b. A characteristic feature is a dark transverse ridge located immediately in front of the genital field. In front of this ridge the integument is a lighter colour than behind it. The epimeric hairs are long, barbed, and directed forwards. From the anterior border of the genital field a curved ridge runs on either side backwards to Acetabulum IV. The genital field is much smaller than the anal field (the anal field is shortened in fig. 2b due to pressure, and the anterior anal hair is displaced posteriorly). The six pairs of genital hairs, the aggenital hairs, the anal hairs, and the adanal hairs are all barbed and moderately long. Ad 3 is preanal, ad 1 and ad 2 are postanal. Iad cannot be seen. A circumpedal ridge and discidium can be seen both in a lateral and in a ventral view. The legs have three almost equally strong claws. Genu I with a very long medial hair (figs. 5a and 6). The number of solenidia of Legs I–IV is, beginning with the tarsus, 2:2:1:0;2:1:1:0;0:1:1:0;0:1:0:0.

Ramsay has described a species: *Ceratoppia sexpilosus* (see Hammer, 1966, p. 5), which may represent *Pseudoceratoppia sexsetosa*, but as it has not been published and I have no paratype of this species, its identity is so far uncertain.

Rotorua: One specimen in *Sequoia* forest at The Forest Research Institute, Whakarewarewa; several individuals in dead leaves in Kaingaroa State Forest (STYLES coll.).

Fox Glacier: One specimen in luxurious moss on a dead trunk.

Pseudoceratoppia microsetosa n. sp.; fig. 3.
Colour mahogany red. Length about 0.95 mm.

As the following species in most characters are similar to the preceding one, only the most important differences will be mentioned. The tip of the rostrum is small. The cusps reach the base of the rostral hairs. They are proportionately shorter than in *P. sexsetosa*. The interlamellar hairs are thick, barbed, and only a little longer than their mutual distance. The pseudostigmatic organ is a short, slender club. The hysterosoma is a little broader than it is long and it has the same characteristic depression in its latero-anterior border. The six notogastral hairs are very short and thin.

Rotorua: Four specimens on green foliage in State Forest, Whakarewarewa (STYLES partly coll.).

Pseudoceratoppia asetosa n. sp.; fig. 4.
Colour mahogany red. Length about 0.85 mm.

The tip of the rostrum is rounded. Interlamellar hairs absent in all the specimens found. The pseudostigmatic organ is short, lanceolate, set with minute bristles. The hysterosoma is considerably broader than it is long. No notogastral hairs can be seen. Fig. 4a shows the ventral side, which is very similar to that of *P. sexsetosa*. The adanal hairs cannot be seen, only their pores.

Lake Rotoiti: Two individuals in thick moss and bone-dry lichens in open *Manuka* shrub and *Nothofagus* forest a few hundred feet above lake level.

Queenstown: One specimen in dripping wet moss on a vertical slope about 2000 feet above sea level.

Milford: Three specimens in a dense carpet of low mosses (? liverworts) on a rotten trunk in shadow on the beach.

Pseudoceratoppia clavasetosa n. sp.; fig. 5.
Colour mahogany red. Length about 1.20 mm.

The tip of the rostrum is rounded. The cusps are short, no longer than broad, tapering distally. The interlamellar hairs, which are shorter than their mutual distance, are thick and scaly. The pseudostigmatic organs are broadly clavate, set with minute scales. The hysterosoma is proportionately narrow, i.e. it is as broad as it is long. The six notogastral hairs are slender clubs set with minute scales. The ventral side is similar to that of the preceding species. Ad 1 and ad 2 are moderately long, situated postanally as in *P. sexsetosa*. Ad 3 is preanal. Fig. 5 a shows the anterior part of Leg I. Genu I has a long medial hair. Tarsus I has ventrally a stiff, distal spine. The three claws are almost equally strong.

Nelson District: Golden Downs State Forest three specimens on green foliage (STYLES coll.).

Pseudoceratoppia diversa n. sp.; fig. 6.
Colour mahogany red. Length about 0.92 mm.

The tip of the rostrum is rounded. The lamellae are situated more laterally and they are broader than in the preceding species. The cusps, which taper towards the tip, have a lateral tooth. They almost reach the tip of the rostrum. There is a transverse ridge in front of the lamellae, but it does not represent the translamellae. The rostral hairs, the lamellar hairs, and the interlamellar hairs are proportionally thin. The interlamellar hairs are shorter than their mutual distance. The pseudostigmatic organs are very thin, smooth flagellants, about twice as long as the interlamellar hairs. The hysterosoma is a little divergent from that of the preceding species by having a short edge on the latero-anterior border. The depression in the latero-anterior margin behind the edge is not so deep. The hysterosoma is longer than it is broad. On the dorsal surface of the hysterosoma of a bleached specimen some small pores can be seen. On the posterior border there are six extremely small hairs. The ventral side reminds of that of the preceding species. Ad 1 and ad 2 are postanal, long and thin, ad 3 is preanal and also long. All legs have three almost equally strong claws. Genu I and Tibia I have each an extremely long medial hair.

Keri-Keri: Three individuals in thin moss on a lawn. One specimen in moss and liverworts on a stone-post.

(*Leiosoma longipilis* Moniez 1864, fig. 1, may belong to *Pseudoceratoppia*.

It is 0.70 mm long, and it has a triangular propodosoma, a broad, rounded hysterosoma with five long hairs on the posterior border. The figure and the description are, however, too deficient to determine its identity).

Tectocepheus velatus (Mich.) var. *sarekensis* Trägårdh; fig. 7.

Specimens of the genus *Tectocepheus* have been found in one third of all the samples and in many localities, i.e. Keri-Keri, Puketi, Waitakere, Rotorua, Waitomo, New Plymouth, Pauatahanui, Pu Pu springs, Upper Takaka, Dunedin, and at Milford. It is commonest in open land biotopes, i.e. found in huge numbers in dry moss on a sunny lawn. This genus has been in dispute for years and nobody seems to be able to distinguish the different species in spite of many efforts made by several scientists. HAARLØV (1952) arrives at the result that "All hitherto described species and varieties of the genus *Tectocepheus* (except *T. alatus*) belong to *Tectocepheus velatus*", whereas KNÜLLE (1953) keeps the species already described and adds a number of new species. During my work on the South American oribatids I tried myself to distinguish the many different forms or varieties found there by dissecting in the way of Knülle, but finding all possible transitions between the extremes I finally gave it up after having made numerous sketches. I shall therefore here only figure some forms of different sizes and

of different shapes of the cusps and of the pteromorphae without rendering an account i.a. of the notogastral hairs and other characters, which apparently are of no specific importance. Fig. 7 shows a specimen of what is usually called *T. sarekensis* Trägårdh with its very broad and rounded cusps. Length about 0.34 mm. The lyrifissure iad is directed laterally (Knülle 1953, p. 284, fig. 4). This is the one most commonly found.

Tectocepheus velatus (Mich.) var. *minor* Berl.; fig. 8.

Fig. 8. shows a smaller specimen, 0.29 mm in length, with narrow, pointed cusps. Apparently it corresponds to *T. minor*. Iad is directed laterally.

Keri-Keri: Two specimens in moss on a lawn; 7 at Bay of Islands (Stagaard coll.). New Plymouth: One individual in moss on a lawn.

Tectocepheus velatus (Mich.) var. *novus* n. var.; fig. 9.

Fig. 9 shows a very small whitish species or variety, which I have not seen before. Length about 0.25 mm. The cusps are tapering and have a short medial tooth. The pseudostigmatic organs are unusually long as compared with the small body. The pteromorphae are more strongly pointed laterally than in *T. minor*. The grains of the cerotegument are greyish and almost equally large. I ad is parallel to the anterior part of the lateral side of the anal field. A few specimens were collected by Stagaard at Bay of Islands. One specimen in liverworts and low ferns in native forest, New Plymouth.

Lamellobates palustris Ham.; fig. 10.

Colour light brown. Length about 0.31 mm.

Although the cusps are a little narrower than in the species from the Argentine (Hammer 1958, fig. 124), the specimens from New Zealand agree in all other details with the specimen from South America.

Rotorua: Seven specimens in thick moist moss under *Manuka* shrub in the thermal area.

Parahypozetes n. gen.

Parahypozetes, which belongs to the superfamily Ceratozetoidea, is in many respects similar to *Hypozetes* (Balogh 1959, p. 15, figs. 17–18). It differs, however, in the shape of the lamellae and in the appearance of the ventral side. Lamellae and the cusps are well developed, broad, covering most of the propodosoma. A narrow translamella usually present. Lamellar hairs rather rough, inserted on the ventral side of the cusps. Interlamellar hairs very long, usually reaching the tip of the rostrum. Pseudostigmatic organ rodshaped. The tutorium with a long free tip. The latero-anterior border of the pteromorphae usually reaching as far anteriorly as the anterior border of the hysterosoma. Ten pairs of notogastral hairs. Three pairs of sacculi. Sejugal apodemata located behind the anterior border of the genital field, reaching the latter by narrow ridges. Six pairs of genital hairs, one pair of aggenital hairs, two

pairs of anal hairs, and three pairs of adanal hairs. The hairs inserted beside the hair pore. The lyrifissure iad situated near the anterior border of the anal field. Tibiae I–II and Genus I–II each with a long smooth spine. Tarsi I–II often with a branched, ventral spine. The number of claws is variable. The dorsal edge of the lateral claws serrate. Mandibles of the normal, chelicere type. Maxillar palp with five joints.

Parahypozetes grandis n. sp.; fig. 11.
Colour dark mahogany red. Length about 0.88 mm.

The rostrum is conical. The rostral hairs are inserted rather far posteriorly on the lateral sides. They are slightly barbed, and they almost meet in a broad curve in front of the rostrum. Immediately behind the tip of the rostrum there is a pale spot with a strong tooth from its posterior border. The spot has lateral thickenings. The lamellae are very broad and cover most of the propodosoma, leaving the tip of the rostrum free in front of the cusps. The latter are a little broader than the lamellae and are separated by only a short distance, which is longest immediately in front of the short, curved, and very narrow translamella. The cuspis has a broad, rounded, medial tip and a small, pointed, lateral tip. The border is straight between the tips. The size of the tips or teeth and the distance between them are, however, variable. The lamellae are wrinkled in all directions often with small dots between the wrinkles. The lamellar hair is situated near the medial tip on the ventral side of the cuspis. A narrow furrow runs from its insertion to the posterior border of the cuspis. The lamellar hairs are rather thick, smooth, and as long as the rostral hairs. They reach beyond the tip of the latter. The interlamellar hairs, which are slightly rough, are very long and reach the tip of the rostrum. They are inserted below the anterior border of the hysterosoma close to the lamellae. The pseudostigmata, which are deep cups with a long anterior tip, are halfway hidden below the anterior border of the hysterosoma. The pseudostigmatic organs are rod-shaped, long and slender, slightly flattened at the tip and apparently without secondary bristles. They are directed forwards. The tutorium is a broad plate with a free tip, which almost reaches the anterior border of the cuspis.

The hysterosoma is slightly arched anteriorly, reaching beyond the base of the interlamellar hairs. The latero-anterior border of the pteromorphae reaches as far or further. The ptermorphae are very long. There are 10 pairs of notogastral hairs. They are rather long and smooth, ta being the longest, p 1–p 3 the shortest. Ti is situated at a level a little behind te. The integument is extremely finely and densely punctate. The pteromorpha has radiating stripes, and has along its outer border small dark dots between the stripes, probably due to secretion. Behind the anterior border of the hysterosoma a longish pale spot can be seen. The ventral side is shown in fig. 11 a. The sejugal apodemata are situated far posteriorly. By a narrow ridge they reach the genital field off the third genital hair. The distance between the posterior border of the camerostome and the genital field is short with only two pairs of epimeris hairs, viz. 1a and 2a (in *Hypozetes* three pairs). There are six pairs of genital hairs, which are geniculate, viz. three pairs on the anterior border and three in a longitudinal row at

some distance from the lateral border. Fig. 11 b shows a genital hair inserted beside the hair pore, which is surrounded by a rather large round plate. The anal field is much larger than the genital field. There are two pairs of anal hairs and three pairs of adanal hairs. Ad 1 and ad 2 are situated behind the anal field, ad 3 off the middle of the lateral border. Iad is located off an 1, i.e. far anteriorly. All the hairs are geniculate and smooth. Fig. 11 c shows Genu. Tibia and Tarsus I, fig. 11 d Leg II. Genus I–II and Tibia I–II have a long, smooth spine. Tarsus II has ventrally a very strong, branched spine. The distal hairs of the tarsi end in a small knob. There are three claws, the middle one being the strongest. The dorsal edge of the lateral claws is serrate. The number of solenidia of Legs I–IV is, beginning with the tarsus, 2:2:1:0;2:1:1:0; 0:1:1:0;0:1:0:0; respectively.

Keri-Keri: A few individuals at Keri-Keri falls; many in a cleft with water (STAGAARD coll.).

Puketi: Numerous in thin moss and lichens on trees and on dead branches; a single one in luxurious moss on a *Rimu* tree.

Rotorua: A few individuals in the thermal area (STAGAARD coll.); numerous in dry moss on the ground and in dead leaves in the thermal area, also on lawns at The Forest Research Institute, Whakarewarewa.

Waitomo: Two specimens in dead leaves.

New Plymouth: Several in dead leaves; in moss on a tree in native forest.

Lake Rotoiti: Several individuals in thick, moist moss on a log in *Nothofagus* forest.

Fox Glacier: A few in dead leaves in native forest on Lake Matheson.

Milford: A few individuals in several samples taken in moist moss on a log and in dead leaves in *Nothofagus* forest.

Parahypozetes bidentatus n. sp.; fig. 12.
Colour brown. Length about 0.57 mm.

As the following species in most characters are similar to *P. grandis* I shall restrict myself to mentioning only some characters in which the species in question deviates from the type species, *P. grandis*.

In *P. bidentatus* the cusps are separated by a rather long, straight and narrow ridge on which there are two dark tubercles. Behind this ridge a faint, curved line, i.e. the translamella, can be seen. The cuspis has a broad, pointed lateral tooth, no medial tooth. The anterior border of the cuspis behind the lamellar hair forms a faint lobe. The lamellar hairs are thick, uneven. They are inserted near the anterior border of the cuspis on the ventral side. This species has only one claw.

Puketi, Waitakere, Rotorua, New Plymouth, Pauatahanui, and Lake Matheson near Fox Glacier. Found in huge numbers at Rotorua in low moist mosses and in dead leaves on the ground in the thermal area, very often together with *P. grandis*.

Parahypozetes quadridentatus n. sp.; fig. 13.
Colour brown. Length about 0.65 mm.

The cusps are longer than broad and have parallel medial sides for most of their length, the space between them widening slightly at the translamella, viz. the ridge between the lamellae. The cusps have each two teeth, viz. a long medial one directed straight forwards as a continuation of the medial border of the cuspis, and a shorter lateral one, which is directed forwards and outwards. In some specimens there are two small lateral teeth. The cuspis amounts to two fifth of the length of the whole lamellar structure. The distance between the cusps is about one third of the width of the cuspis. The lamellar hairs are thick and rather short. They are inserted at some distance from the anterior border of the cuspis on the ventral side of the latter. The interlamellar hairs, which reach beyond the cusps, are uneven. The pseudostigmatic organs are very slender, and no thicker than the interlamellar hairs. The legs have only one claw.

Lake Rotoiti: A few individuals in slightly moist, dead leaves in *Nothofagus* forest.

Fox Glacier: Several specimens in different samples taken in dense mosses, small ferns, and dead leaves in native forest; also in drier vegetation of grass and low plants outside the forest.

Parahypozetes furcatus n. sp.; fig. 14.
Colour mahogany red. Length about 0.69 mm.

The specific name originates from the shape of the cuspis, which is furcate, having two equally long pointed teeth. The cusps are almost as long as the lamellae. They are convex medially, where they touch in the middle, leaving a narrow space open in front of the translamella. The latter is an arch, open anteriorly. The pseudostigmatic organs are as thick as the lamellar hairs and twice as thick as the interlamellar hairs. All legs have three claws, the middle one of which is the strongest, and much stronger than the lateral ones.

Waitakere: Several specimens in moist grass, moss, and dead leaves in native forest.

Waitomo: One specimen in thick moss in native forest; many individuals in dead leaves in a cleft at the roadside, shadowed.

New Plymouth: A single specimen in dead leaves in native forest.

Parahypozetes lobatus n. sp.; fig. 15.
Colour light brown. This light colour may be due to the only specimen found being young. Length about 0.43 mm.

The medial part of the cusps forms a lobe, which halfway covers the dark tubercles on the transverse ridge. The lobes do not touch, but leave a broad space open, in which the rostrum can be seen. The tip of the rostrum seems to be faintly serrate. The cusps have a small pointed, lateral tooth as a district continuation of

the lateral border. The translamella forms a broken arch, which is semicircular. The lamellar hairs are inserted closest to the medial border of the cuspis. The latter reaches the tip of the rostrum. The pseudostigmatic organs are very long and much thicker than the interlamellar hairs. Legs I–II have two claws, viz. a normal strong one and a rudimental inner claw; the latter is present only on Legs I–II. Legs III–IV have only one claw.

Fox Glacier: One specimen in thick moss in native forest on Lake Matheson.

Parahypozetes giganteus n. sp.; fig. 16.
Colour mahogany red. Length about 1.16 mm.

The cusps are separated by a distance, which is almost as long as the width of the cusps. The latter have almost in the middle of their anterior border a small tooth. The lamellar hairs are inserted on the medial border of the cusps. They are uneven and comparatively thin. The interlamellar hairs are very thin and reach beyond the tip of the cusps. The pseudostigmatic organs are unusually short for the genus, and thin, too. The legs have three almost equally strong claws.

Waipahihi Stream northeast of Invercargill: One specimen in dead leaves in National Park (STYLES coll.).

Parahypozetes macrodentatus n. sp.; fig. 17.
Colour brown. Length about 0.65 mm.

Characteristic of this species is the long medial tooth, which is rather pointed. The latero-anterior part of the cuspis forms a broad, somewhat shorter tooth. The lamellar hairs are inserted at the bottom of the right angle between the teeth. Between the cusps there is rather a narrow space. The translamella is indistinct. The interlamellar hairs are thin (one is broken in fig. 17). The pseudostigmatic organ is thin and short, too. All legs have three claws, the middle one of which is twice as strong as the lateral claws.

Kaingaroa State Forest southeast of Rotorua: Two specimens in dead leaves (STYLES coll.).

Parahypozetes maximus n. sp.: fig. 18.
Colour black. Length about 1.24 mm.

As this species is completely black, apart from a light spot behind the anterior border of the hysterosoma and the anterior part of the pteromorphae, and as I did not succeed in bleaching it sufficiently I have been able to show only the most important characters, i.e. its size and the shape of the cusps. The cusps end in two slender, diverging teeth as in *P. furcatus*. The lamellar hairs, which are inserted between the teeth, bend towards each other in a curve. They are equally thick throughout and rather short. The cusps are separated by some distance, whereas they touch in the much smaller species; *P. furcatus*. I have not been able to see a translamella, only a

faint line. The pseudostigmatic organ is short as in *P. giganteus*. Inside, the pseudostigma is strengthened by a chitinous spiral.

Arthur's Pass: One specimen in *Nestor notabilis*' nest (C. MITCHELL, B.P. Bishop Museum, Honolulu, coll.).

Edwardzetes novazealandicus n.sp.; fig. 19.
Colour brown. Length about 0.73 mm.

As most of the species within the genus *Edwardzetes* are very similar, it is not necessary to repeat here all its characters (cp. *E. andicola* Ham. (1958, p. 89, fig. 110) with fig. 19), but only to mention some characteristic features. *E. novazealandicus* differs from *E. andicola* by its somewhat shorter notogastral hairs, but first of all it is possible to distinguish them by the differences in Legs I–II. Fig. 19a shows Femur and Genu I; fig. 19b shows Leg II. Genus I–II have both a distal ventral tooth, which is longest in Genu I. Genu II has a thin distal spine. Femur II has a tongue-shaped distal, ventral keel, which is absent in Femur I. In *E. andicola*, fig. 19c, Genu II has no distal tooth, but a spine, which is a little stronger than in *E. novazealandicus*. The ventral keel on Femur II is low. Genu I has neither a spine nor a distal tooth. These two species can easily be distinguished from *E. dentifer* Ham. (1962 a, p. 69, footnote), as *E. dentifer* has very short and thin notogastral hairs. Genu II, fig. 19d, has a strong tooth and a short thick spine. The ventral keel on Femur II is tooth-shaped. These three species have a strong medial claw and two thin lateral claws.

Keri-Keri, Rotorua, Waitomo, New Plymouth, Pauatahanui, Lake Rotoiti, Hokitika, Fox Glacier, and Milford. It has been found in thick, moist moss near a stream, in moist moss and liverworts on the bank of Lake Tarawera, in thick moss on a branch, in moist-wet moss on a trunk, etc., in the greatest number in thick moss under trees on a riverbank at Hokitika.

Parafurcobates n. gen.

Parafurcobates agrees in most characters with *Furcobates* Sell. 1959. It differs, however, in the appearance of the ventral side, and in smaller details.

Parafurcobates cuspidatus n. sp.; fig. 20.
Colour light brown. Length about 0.63 mm.

The propodosoma is comparatively broad, its posterior part having rounded sides, its anterior part slightly concave sides. The rostrum is broad, truncate, due to a ventral, hyaline lip. The dorsal part of the rostrum is pointed, slightly projecting with a small distal tooth and a V-shaped opening behind the projecting part. A long tooth from the posterior border of the opening fits into the anterior part of the opening. The rostral hairs, which are situated laterally on the edged rostrum, close to its anterior border, are stiff, pointed, and densely unilaterally barbed. The lamellae are broad. Their proximal part converge, whereas the cusps are parallel. The latter are half as long

as the lamellae. The lamellae, which are broadest off the translamella, consist proximally of a vertical, finely longitudinally striped, thin blade, distally of an apparently more solid ridge, which forms the cuspis and which tapers both proximally towards the pseudostigma and distally in the cuspis. The cusps have a tiny lateral tooth. Their mutual distance is about two thirds of their length. The translamella is half as broad as the lamellae off the translamella. The lamellar hairs, which are more than twice as long as the cusps, are rather thick and distinctly barbed. The interlamellar hairs are slightly thinner than the lamellar hairs and of the same length as the lamellar hairs; they are erect and seem shorter. In *Furcobates hastata* (Kramer) the interlamellar hairs are much longer. The pseudostigmata are big, open bowls, which have a broad, lateral lobe. The pseudostigmatic organ is short, clavate. The stalk is rather short and thin. The tutorium ends in a short free tip, fig. 20 a, which does not reach the tip of the cusps (in *Furcobates hastata* it has a long free tip).

The anterior margin of the hysterosoma, which is broadly arched, projects beyond the pseudostigmata and beyond the projecting tip of the pteromorphae. Laterally to the pseudostigma there is a small lobe on the anterior border of the pteromorpha, further laterally a deep incurvation. There are 9 (probably 10) pairs of notogastral hairs; most of them cannot be seen as they are tiny. I am unable to discern the hair pore for p. 3. There are four pairs of area porosae, all very distinct, and perhaps two small areae porosae postanalis of the existence of which I am not quite sure. Fig. 20 b shows the ventral side. The sejugal apodemata do not form a transverse ridge as in *Furcobates*, in which it can be seen a short distance in front of the genital field. Immediately in front of the genital field, following its anterior border there is a dark curved ridge, which laterally ends near Acetabulum IV. There are? six genital hairs (one cannot be seen with certainty). Ad 3 is situated off the posterior half of the lateral side at some distance behind iad. Ad 1 and ad 2 are located behind the anal field. A long, curved indistinct fold can be seen laterally to the anal field. All legs are tridactylous with a strong middle claw and two thin lateral claws. Femur 1 has a low distal keel ventrally, Femur II a short broad, rounded keel. Genus I–II have a strong distal tooth, which is absent in *Furcobates*. Fig. 20 c shows Genu and Tibia I. Tibia I has a small distal tooth. Tibiae I–II have a coarse, distal spine. The palp, fig. 20 d, is similar to that of *Furcobates* except that SELLNICK 1959, p. 81, fig. 8 depicts only two hairs on the tibia, in *Parafurcobates* there are three.

Lake Rotoiti: Two individuals in decayed leaves; two in moist to wet *Leucobryum* in a spring locality; one in moss on the ground, all in *Nothofagus* forest.

Fox Glacier: One specimen in dead leaves in native forest on Lake Matheson.

Milford. One individual in moist moss on the ground in *Nothofagus* forest.

Macrogena Wallwork*). (Type: *M. monodactyla*).

Small poronotic oribatids belonging to the superfamily Ceratozetoidea. Lamellar and interlamellar hairs very thick and rough. Pseudostigmatic organs clavate. Rostrum

*) Still unpublished january 1967.

tripartite, the lateral parts bending ventrally, reaching the lateral border of the camerostome. Broad lamellae and translamella. Cusps present. The tutorium with long free tip. Pteromorphae connected by a narrow bridge, not movable. 10 pairs of notogastral hairs. Areae porosae present. No sternal plate. Five pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs. Discidium and circumpedal ridge present. All tarsi monodactylous. Solenidia of Genus I–II and of Tibiae I–II very long.

Macrogena rudentiger n. sp.; fig. 21.
Colour yellow, propodosoma light brown. Length about 0.24 mm.

On the tip of the rostrum two small tips can be seen, which, when laid bare, reveal that the rostrum has two deep incurvations and the tips represent the lateral border of these incurvations, fig. 21 a. The rostral hairs, which are inserted on the lateral sides, are bushy, unilaterally barbed. The lamellae are broad. The cusps are as broad as the lamellae and so short that they hardly project beyond the broad translamella. Between the cusps the translamella is slightly concave. The space between the lamellae is a regular rounded arch. The lamellar hairs are inserted in the middle of the cusps. On either side of the hair there is a hardly marked tooth. The lamellar hair is thick, rough, almost smooth at the tip. They are slightly longer than their mutual distance (see also fig. 21 a). The interlamellar hairs, which are situated immediately in front of the anterior margin of the hysterosoma and rather close together, are surrounded by a dark ring at their base. Proximally they diverge, then they converge, the tips almost meeting a good distance in front of the tip of the rostrum. They are much thicker than the lamellar hairs. The pseudostigmatic organs are situated in broad cusps, the larger part of which projects beyond the anterior margin of the hysterosoma. They are clavate, broadest at the tip and set with minute bristles. They are directed medially. The tutorium has a free tip with a few small distal teeth, fig. 21 a. This tip reaches beyond the cusps.

The anterior border of the hysterosoma is almost straight in the middle, projecting laterally to the pseudostigma, then drawing slightly back. The pteromorphae are connected by a very narrow bridge. Behind the anterior border of the hysterosoma a large light spot can be seen. There are 10 pairs of short, smooth notogastral hairs, situated as shown in fig. 21. The areae porosae are very small and indistinct, only three pairs can be seen. The ventral side, fig. 21 b. Apodemata II, Sejugal Apodemata and Apodemata III are present as short faint ridges. There is no sternal plate. There are five pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs. Ad 1 and ad 2 are postanal, ad 3 latero-anal. All legs are monodactylous. Fig. 21 c shows Leg I (not all the hairs are figured). Genus I–II have a distal spine, which is shortest in Genu II. Femur II has a long ventral distal tooth. Tarsus I has ventrally a long rough spine. The solenidia of all tibiae and of Genus I–II are very long. The solenidion of Genu I is undulating proximally. Mandibles of the normal, chelicere type.

Puketi: Numerous in thick, moist-wet mosses on the ground in dense native forest. A single individual in luxurious moss on the trunk of a *Rimu* tree.

Waitakere: 10 individuals in moist moss, liverworts, and dead leaves in native forest.

Macrogena crassa n. sp.; fig. 22.
Colour yellow to light brown. Length about 0.28 mm.

As *Macrogena crassa* is identical with *M. rudentiger* in almost all characters only the few differences will be mentioned. The lamellar and the interlamellar hairs are coarser (hence the specific name) and the interlamellar hairs are parallel and much shorter. The latter reach only a little beyond the tip of the cusps. The cusps are more pronounced, as the incurvation in the anterior border of the translamella is deeper. They are rounded at the tip. The length of the cusps varies greatly, and in some specimens the incurvation between them is semicircular, the cusps and the translamella then are narrower than shown in fig. 22. In these specimens the lamellae are also narrower and the space between them not an even arch, but more square; the interlamellar hairs are slightly thinner and not so rough, altogether a more delicate form of a somewhat darker colour. These specimens have all been collected round Fox Glacier and at Milford.

Waitakere: Two specimens in moist liverworts and mosses on a trunk in native forest.

Pu Pu Springs: Several individuals in almost dry mosses under *Manuka* shrub near the spring.

Lake Rotoiti: Numerous in moist moss on a rotten log; in moss on the ground; fewer in moist-wet moss in a spring locality, all in *Nothofagus* forest.

Queenstown: A few in dripping wet moss on a vertical slope.

Fox Glacier: Several specimens in luxurious moss at the foot of a gigantic tree, all covered by mosses; and in liverworts and mosses on a trunk in native forest.

Milford: A few individuals in moss from dead branches of a tree-fern; a few in moss and liverworts on rotten branches in *Nothofagus* forest.

Pedunculozetes andinus Ham. (1962 a, p. 68, fig. 62).
Length about 0.47 mm.

As *P. andinus* is easily recognizable I have not figured it. It is one of the commonest species in New Zealand.

Keri-Keri, Waitakere, Rotorua, Waitomo, New Plymouth, Pauatahanui, Pu Pu Springs, Hokitika, Fox Glacier, Queenstown, and Milford. It has been found in the greatest number in moss on a slope near a small stream in deep shadow, and in moss on a rotten trunk at Keri-Keri. Moreover, numerous in moss and liverworts on the ground in native forest; in moss and grass on a lawn, both at Waitakere.

Pedunculozetes minutus n. sp.; fig. 23.
Colour yellowish to light brown. Length about 0.40 mm.

P. minutus can be distinguished from *P. andinus* only by its lighter colour, its smaller size, and especially by its extremely long pseudostigmatic organs. The latter reach the tip of the lamellae. The head of the pseudostigmatic organ is lanceolate in profile, in a lateral view a broad ribbed plate, fig. 23a, as is also the case in *P. andinus*. The notogastral hairs are a little longer and more curved. The sejugal apodema and Apodema III meet at some distance from the anterior margin of the genital field. This is not figured correctly in HAMMER 1962 a, fig. 62b.

Pu Pu Springs; 30 specimens in almost dry mosses under *Manuka* shrub.

Tutorozetes n. gen.

The relationship of *Tutorozetes* must be within the superfamily Ceratozetoidea. It has true lamellae and translamella. The tutorium huge, covering the lateral side. Pseudostigmatic organs ball-shaped. Pteromorphae connected by a chitinous bridge, not moveable. 10 pairs of notogastral hairs. Areae porosae present. All apodemata short, not reaching the middle or sternal line. Discidium and circumpedal ridge present. Six pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs. All legs monodactylous.

Tutorozetes termophilus n. sp.; fig. 24.
Colour light brown. Length about 0.26 to 0.30 mm.

The propodosoma, which is triangular, is covered on its lateral sides by two broad plates, viz. Tutorium and Tectop. I. The rostrum is broad and rounded. The rostral hairs, which are situated near the anterior border, are very short and thin. The lamellae are located in the middle of the propodosoma. They are equally broad throughout, almost parallel, and they only halfway reach the tip of the rostrum. The cusps are short, dull, and narrower than the lamellae. The lamellar hairs are thin, smooth, and about half as long as their mutual distance. The interlamellar hairs, which are inserted below the anterior border of the hysterosoma, are likewise thin and short. The pseudostigma is almost covered by the anterior border of the hysterosoma, only an anterior tip projects.

The pseudostigmatic organ has a round head set with minute bristles. The stem is short and thin. Between the pseudostigmatic a trim of secretion can be seen, usually lying along the anterior border of the hysterosoma, but now and then separated from the latter. The tutorium is a large, broad plate, which anteriorly reaches beyond the cuspis. In a lateral view, fig. 24a, it can be seen that it covers most of the lateral side. In a ventral view, fig. 24b, it reaches the border of the camerostome. Tectop. I is deep and well developed.

The anterior border of the hysterosoma, which is longer than broad, is arched. The same is the case with the anterior border of the pteromorphae. The three arches

thus formed are equally broad and reach equally far anteriorly. The pteromorphae are connected by a chitinous bridge, which is a slightly darker colour than the integument behind it. The pteromorphae are broad, their distal part bent ventrally. They are not movable. There are 10 pairs of short, thin notogastral hairs, situated as shown in fig. 24. The areae porosae are very indistinct and only three pairs can be seen with certainty, viz. Aa, A 1, and A 2. In the integument there are numerous cracks.

The ventral side is shown in fig. 24b. Apodemata II are very short, separated from each other by a distance twice their length. The sejugal apodemata, which are a little longer and parallel to Apodemata II, are separated from the anterior border of the genital field by a distance of their own length. Apodemata III are half as long as Apodemata II. There is no chitinous sternal plate. The discidium is distinctly developed. The circumpedal ridge reaches Tectop. II, from which a thin line proceeds for a short distance obliquely forwards and medially. The genital field is almost quadrangular. There are six pairs of genital hairs. The anal field is narrowest anteriorly. There are two pairs of short anal hairs. Three pairs of adanal hairs. Ad 1 and ad 2 are located near the latero-posterior corner of the field, ad 3 near the lateral side. The lyrifissure iad is situated immediately in front of ad 3. Surrounding the anal field from the lateral and the posterior sides a broad furrow can be seen and farther laterally a shorter similar one. The legs: Femora I–II have a ventral keel, narrow in Femur I. In Femur II it is short and broad and reminds of a distal tooth. Genu I has a long distal tooth, Genu II a shorter one. Tibia I has a short distal dorsal tooth. All legs are monodactylous.

Rotorua: Many individuals in moss in a dry and sunbaked locality with *Manuka* shrub in the thermal area.

Magellozetes clathratus n. sp.; fig. 25.
Colour yellow. Length about 0.36 mm.

Characteristic of *Magellozetes*, apart from the rostral projections, is a lateral tooth on the cusps. The tooth is distinctly separated from the medial part of the cusps, on which the lamellar hair is situated. This is not pointed out clearly enough in the description of *M. processus* Ham. (1962 a, p. 65), but, a distinct tooth is figured in fig. 59. *M. clathratus* has on the tip of the rostrum three projections separated by deep incisions. The two lateral ones are rounded laterally, inclining medially, and almost touching the middle projection, which is T-shaped. The projections, which form a fine lattice (hence the specific name) are rather thin distally, but strongly chitinized proximally. Immediately behind the middle projection there is a V-shaped opening in the dorsal surface of the rostrum. The rostral hairs are distinctly barbed. The lamellae are very broad as compared with those of *M. processus*, broadest off the translamella. The latter is only slightly narrower than the lamellae. Its posterior border overlaps the medial border of the lamellae and seems to push them aside, which is indicated by a faint wrinkle at either end of the translamella. The cusps are broad.

They are separated by an incurvation, which is almost as broad as the space between the lamellae. The medial part of the cuspis inclines laterally towards a long tooth or tip, which reaches just beyond the base of the lamellar hair. Between the lateral tooth and the medial part there is a longitudinal furrow reaching beyond the posterior border of the translamella. The outer part of the lamellae is longitudinally striped, the inner part is faintly transversally wrinkled. The lamellar hairs, which are finely barbed, are twice as long as their mutual distance. The interlamellar hairs are very thick, barbed, and reach the tip of the rostrum. The pseudostigma is a broad, open bowl, most of which is projecting in front of the anterior border of the hysterosoma. The pseudostigmatic organ has a broad club on a short stalk.

The anterior border of the hysterosoma is arched in the middle, drawing back behind the pseudostigmata. The pteromorphae are undulating with a distal projecting tip. The notogastral hairs, which are situated as shown in fig. 25, are much longer than in *M. processus*. The areas porosae are indistinct, especially A 1. As the ventral side does not differ from that of *M. processus* it has not been figured. All legs have three claws, the middle one of which is the strongest.

Milford. A few specimens in dead leaves in *Nothofagus* forest, near Bowen Fall; many individuals in luxurious moist moss on sandy soil in the same locality.

Ceratozetes gracilis (Mich.); fig. 26.
Colour brown with a reddish brown zone across the hysterosoma. Length about 0.62 mm.

Keri-Keri: Numerous in moss on the ground near a small stream in a deep cleft with tall trees; in mosses on a rotten trunk; in dead leaves; a few specimens in dead needles of a fir; many in moss and liverworts at a roadside in shadow, etc.

Waitakere: A few specimens in moss and grass under bushes in a garden.

Rotorua: One individual in moist liverworts and moss on a slope on Lake Tarawera.

New Plymouth: Six specimens in moss and grass on a lawn in a park.

Ceratozetes mediocris Berl.; fig. 27.
Colour yellow with a reddish brown zone across the hysterosoma. Length about 0.37 mm.

C. mediocris is closely related to *C. monticola* Ham. (1961, fig. 110). The latter is, however, smaller (0.33 mm), yellow, or light brown without a reddish zone across the hysterosoma. The anterior border of the hysterosoma is highly arched and the rostral hairs, the lamellar hairs, and the interlamellar hairs are much shorter and thinner, too. *C. monticola* may be a variety of *C. mediocris* Berl.

Keri-Keri: Numerous in moist moss on a lawn, under bushes; many in moist grass and *Hieracium* at a road-side.

Ceratozetes bicornis n. sp.; fig. 28.

Colour brown with a reddish brown zone across the hysterosoma. Length about 0.38 mm.

On either side of the tip of the rostrum there is a small tip. The lamellae have very long cusps, which project as horns (hence the specific name). The cusps, which are half as long as the lamellae, incline a little. Their tip is rounded without a tooth. They are almost as broad as the lamellae. The cuspis and the lamella together are slightly S-shaped and do not form a straight line as in *C. furcatus* (Pearce & Warburton) (= *C. argentinensis* Ham. (1958, fig. 105). The lamellar hairs are thick and uneven, though tapering towards the tip. They are almost one and a half times longer than the cusps. The interlamellar hairs, which are situated close to the lamellae, are also uneven, and so long that they reach the tip of the rostrum. There is no translamella, but the medial thickening of the lamellae indicates its place. Immediately in front of this place there is a transverse ridge. The pseudostigmatic organs are slender clubs. The propodosoma is covered by a veil of secretion.

The anterior border of the hysterosoma is highly arched, reaching beyond the insertion of the interlamellar hairs. The latero-anterior tip of the pteromorpha, which also projects, reaches a level off the anterior part of the pseudostigma, thus forming a long regular curve between the anterior border of the hysterosoma and the tip of the pteromorpha. The hysterosoma is as broad as it is long, broadest across the hairs, te. The notogastral hairs are very fine and often bent near the tip. The areae porosae are very indistinct.

The ventral side does not show any particular characters, and it agrees with fig. 257 for *C. gracilis* (Mich.) in Willmann 1931. There are six long genital hairs, all directed forwards, viz. two on the anterior border and four in a straight line not far from the medial border. One pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs. Ad 3 is situated off the middle of the lateral side of the anal field. Iad is located close to the anal field a short distance in front of ad 3. Ad 1 and ad 2 are situated behind the anal field, the distance ad 1 – ad 1 being two to three times longer than ad 1–ad 2. Genus I–II have a lateral spine. All legs with only one strong claw.

This species reminds very much of *C. furcatus* (Pearce & Warburton) by its long cusps, by the broad arched hysterosoma, and by its hook-shaped notogastral hairs. It is, however, smaller in size (*C. furcatus* 0.50 mm in the Argentine), the cusps shorter, not so straight, and the notogastral hairs not so dark.

Rotorua: Many individuals in wet moss on a stone in a small pond with gold fish, shadowed, at the Forest Research Institute, Whakarewarewa.

Queenstown: Many in a spring locality at Lake Moke, in wet thick moss, *Mimulus*, low *Juncus*, and grass.

Ceratozetes hamobatoides n. sp.; fig. 29.

Colour light brown, darkest in a zone across the hysterosoma. Length about 0.38 mm.

The whole appearance of this species reminds so much of *Hamobates* (Hammer, 1962 a) that I am in doubt whether to incorperate it within *Hamobates* or *Ceratozetes*,

but as all legs have only one claw and *Hamobates* is characterized by having three claws on Legs III–IV (the lateral claws being hook-shaped) I shall so far establish it within *Ceratozetes*.

The propodosoma is conical, very broad posteriorly. On the tip of the rostrum two short tips can be seen. The rostral hairs, which are inserted rather far posteriorly, are very long, thin, and unilaterally finely barbed. The lamellae are long, inclining, and broadest off the base of the cusps. The latter, which are almost parallel, are approximately half as long as the lamellae. They taper towards the tip. The distance between them is shorter than their length. There is no translamella. A few indistinct transverse ridges can be seen between the cusps. The lamellar hairs are stiff, slightly rough, and about as long as the cusps. They reach beyond the tip of the rostrum. At their base a tiny ventral tip can be seen. The interlamellar hairs are situated behind the tip of the highly arched anterior border of the hysterosoma. They are almost equally thick throughout, slightly rough, and about twice as long as the lamellar hairs. They reach the tip of the cusps. The pseudostigmata have an anterior sharp tip. The pseudostigmatic organs are long, slender, grey clubs provided with small scales. The tutorium has a very long free tip, which almost reaches the tip of the cusps. Between the lamellae and the cusps something like a hyaline funnel can be seen. It projects beyond the tip of the rostrum, but only in the type specimen, probably a sheet of secretion.

The hysterosoma is broader than it is long. Its anterior border projects between the lamellae and almost to the base of the cusps leaving only a short space open between it and the cusps. The tip of the pteromorphae projects as far anteriorly as the anterior border of the pseudostigmata, the whole anterior border thus becoming strongly undulate. There are ten pairs of notogastral hairs, all extremely small. The hair pores are clear. Areae porosae cannot be seen as is often the case within *Ceratozetes*, whereas they are very distinct within the two described species of *Hamobates* from Chile (Hammer 1962 a, figs. 60–61). The ventral side has the same appearance as in *C. bicornis*. There are six long genital hairs, one aggenital hair, two anal hairs situated close to either end of the plate, and three adanal hairs, viz. ad 3 off the middle of the lateral side, ad 1 and ad 2 in a curve behind the anal field. The distance ad 1–ad 1 is twice as long as ad 1–ad 2. Genus I–II have each a short lateral spine. All legs have only one strong claw.

Fox Glacier: Several individuals in wet, lowly *Scirpus* on the bank of Lake Matheson; one specimen in wet liverworts and moss in a ditch along the road.

Onychobates n. gen.

Onychobates belongs to the superfamily Ceratozetoidea. It is so peculiar in many ways that it is not easy to place it in any of the existing families. Propodosoma and hysterosoma are separated. True pteromorphae present, not moveable. Lamellae and cusps present. No true translamella, but a chitinous scale in its place. Tutorium present. Pseudostigmatic organs broad, disk-shaped. Tectop. I–II well developed.

Hysterosoma poronotic. Only one pair of areae porosae present. Ten pairs of notogastral hairs. Ventral side with discidium and circumpedal ridge. 6 pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs, the latter situated in a row along the lateral side of the anal field. Tarsi I–III with one claw, Tarsus IV besides with a long thin outer claw. The claws apparently adapted for clinging to feathers.

Onychobates nidicola n. sp.: fig. 30.
Colour yellowish. Length about 0.375 mm.

The propodosoma is more or less triangular with a broad tripartite rostrum. The middle part of the rostrum is rounded, whereas the lateral parts are pointed, fig. 30 a. The rostral hairs are inserted laterally in front of a broad plate, the anterior end of which in a dorsal view can be seen in front of the base of the rostral hair as a tooth. The lamellae, which are located in the middle of the propodosoma, are for most of their length parallel, and also the cusps are parallel. The lamellae seem to make a turn a short distance behind the cuspis, the inner side of the lamella thus continuing into the outer side of the cuspis. The cusps are approximately two thirds as long as their mutual distance. They have no distal tooth. There is no translamella, but immediately in front of its place there is a short ridge with a bipartite scale on its anterior border. The lamellar hairs, which are as long as the lamellae without cusps, are barbed. The interlamellar hairs, which are situated in the corner between the lamellae and the anterior border of the hysterosoma, sit on the end of a short oblique ridge coming from the pseudostigma. They are almost two and a half times longer than their mutual distance and barbed. No exopseudostigmatic hair has been observed. Fig. 30 a shows the propodosoma in a lateral view. The tutorium ends in a free tip, which reaches as far anteriorly as the cuspis. The pseudostigma, which can be seen immediately behind the anterior border of the hysterosoma, has a long anterior tip. The pseudostigmatic organ is a rounded, angular disk set with minute bristles on a thin stem.

The hysterosoma is as broad as it is long. Its anterior border is almost straight, its posterior half is semicircular. The pteromorphae are broad, their latero-anterior border sligthly projecting (in fig. 30 they are pressed a little out of shape). They are not mobile. Laterally to the pseudostigma there is a short curved ridge. Near its posterior end the hair, ta, is situated and a short distance behind ta ti can be seen. Further laterally the lyrifissure ia is situated. There are ten pairs of notogastral hairs. The only hairs discernible are those seen in profile along the posterior border. Only one pair of areae porosae is present, apparently represented by A 1. It is longish and large.

The ventral side is shown in fig. 30 b. Apodemata II are connected by faintly chitinized spurs from the ventral plate. The sejugal apodemata are also connected by a faintly chitinized transverse band. Apodemata III are very short. A discidium is present. The circumpedal ridge reaches Apodemata II. Epimere I is striated. The genital field is as broad as the anal field, but shorter. There are six pairs of genital

hairs, all of which are situated at a short distance from the lateral border and directed medially. They are strong and barbed, as is the case with all the hairs of the ventral side. The aggenital hairs are long. The adanal hairs have an unusual position, all being arranged in a row along the lateral side of the anal field. They are directed medially, which is also the case with the anal hairs. Iad is located near the latero-anterior border of the anal field. All legs have very long, thin, and barbed hairs. There are no spines and no teeth anywhere. Tarsi I–III have a long, slightly curved sickle-shaped claw, which sit on the end of a long thin stalk against which the claw can be bent, so that the two parts together serve as a kind of a nipper. This has probably something to do with the mite's habitat being birds' nests, and with the mite's possible more or less parasitic way of living. Tarsus IV, fig. 30c, besides the normal claw has a long, thin outer claw. Fig. 30 d shows Tibia and Tarsus I.

Arthur's Pass: Four specimens in *Gerygone igata* nest (C. MITCHELL, B.P. Bishop Museum, Honolulu coll.).

Anellozetes longicaulis n. sp.; fig. 31.
Colour light brown, deepest brown on the propodosoma and across the hysterosoma. Length about 0.37 mm.

Anellozetes is characterized by having a ring round the rostrum (see HAMMER 1962 b, fig. 14). In a lateral view it can be seen that the "ring" is not closed and that the plate, which lies round the lateral side of the rostrum, ends on the dorsal surface in a tip, from which proceed two faint lines, one in direction towards the translamella, the other running transversally across the rostrum, thus forming in front of the lamellae two tips connected by a transverse line. The different species of *Anellozetes* are very difficult to distinguish except by very careful study. They are very much alike, only the differences will therefore be mentioned. Their distribution within New Zealand is for the same reason difficult to tell, as I cannot examine every specimen found.

A. longicaulis differs from *A. muscicola* only in a few characters. It is a trifle smaller (*A. muscicola* 0.40 mm). The distance between the lamellae is longer, and the pseudostigmatic organ has a much smaller head, and especially a long and thin stalk, which is several times longer than the head (hence the specific name). The stalk is straight, bent outwards and backwards, then upwards and forwards. In *A. muscicola* the head is not much longer than the stalk. No notogastral hairs can be seen, not even all the hair pores. The pteromorphae are not so distinctly striped as those of *A. muscicola*. There are two light "fields" on the pteromorphae, viz. one behind the anterior margin, the other in the posterior part of the pteromorpha, separated by a greyish-yellow middle field from where the stripes radiate. All legs have three claws, viz. a strong middle one and two thin, lateral ones.

Rotorua: One specimen in wet moss on a stone in a pond with gold fish.

Lake Rotoiti: Two specimens in moist moss on a dead trunk in *Nothofagus* forest.

Hokitika: One individual in liverworts and moss on a river bank, under trees.

Fox Glacier: Three individuals in moist moss and grass; one in grass, *Cares*, *Ranunculus*, and moss, all taken at the roadside.

Anellozetes intermedius n. sp.; fig. 32.
Colour light brown-brown. Length about 0.37 mm.

A. intermedius can be recognised by its thin and short interlamellar hairs. In a dorsal view they often appear shorter due to their erect position. Sometimes they are only half as long as their mutual distance. The light fields in the pteromorphae stand out more distinctly than in the preceding species, probably due to a slightly darker colour of the surroundings. Fig. 32a shows the pseudostigmatic organ. Fig. 32b shows the ventral side. All legs are tridactylous with a strong middle claw and two very thin lateral ones.

Keri-Keri: One specimen on a river in a cleft (STAGAARD coll.); several in wet moss on a stone in a river; several also in moss and lichens on a tree, about one metre from a stream.

Moerewa south of Keri-Keri: many individuals on the walk of a freezing house and on a water pipe (STAGAARD coll.).

Rotorua: Five individuals in wet moss on a stone in a pond with gold fish, Whakarewarewa.

Waitomo: A few in moss on a trunk.

Lake Rotoiti: One specimen in moss on the ground in *Nothofagus forest*.

Christchurch: Four specimens in moist moss and low plants on a slope with oozing water.

Fox Glacier: Two specimens in thick liverworts and dead leaves on the ground in native forest.

Anellozetes luteus n. sp.; fig. 33.
Colour yellow. Length about 0.32 mm.

A. luteus is the smallest one of the three species found in New Zealand. Its smaller size and its lighter colour are in reality the two best characters to distinguish it from the two preceding species. The lamellar hairs are short and do not reach the tip of the rostrum. In *A. intermedius* the lamellar hairs just reach the tip of the rostrum and in *A. longicaulis* they project with half their length beyond the tip of the rostrum. Interlamellar hairs are absent, or so small that I am unable to see them. The pseudostigmatic organ is perhaps a little shorter than that of *A. intermedius*. The anterior light field of the pteromorpha does not stand out so distinctly as in *A. intermedius* due to the yellow colour. All legs are tridactylous with a strong middle claw and two very thin lateral claws. The hysterosoma is a little more slender than in the two preceding species.

Keri-Keri: Found together with *A. intermedius* by a river (STAGAARD coll.), and in moss and lichens on a tree.

Waitakere: Two specimens in liverworts and moss on a trunk in native forest.

Rotorua: Two specimens together with *A. longicaulis* and *A. intermedius* in moss on a stone in a pond, Whakarewarewa.

Waitomo: Several individuals in liverworts, moss, and dead leaves in a tree-fern forest in a deep cleft, and together with *A. intermedius* in moss on a trunk.

Fox Glacier: One specimen in moss and dead leaves in native forest; a few in moss on a dead trunk.

Campbellobates has been established by WALLWORK (Pacific Insects Monograph 7, 1964b. Type species: *Campbellobates acanthus* Wallwork).

Campbellobates latohumeralis n. sp.; fig. 34.
Colour light brown. Length about 0.28 mm.

Across the pteromorphae this species is unusually broad. In the middle of the hysterosoma it is narrow, then again broad, so that the hysterosoma more or less gets the shape of an hour-glass. The propodosoma is extremely narrow with parallel lateral sides. The rostrum is rounded and has two short incisions, which divide the rostrum into three parts, viz. a broad rounded middle part and on either side of that a pointed lateral part. The rostral hairs, which are smooth and inserted on the lateral sides, are situated on the end of a narrow ridge, the tutorium, fig. 34a. Along the tutorium there is a trim of secretion, which widens distally and forms a transverse belt of secretion situated between the rostral and the lamellar hairs. The lamellae are very narrow costulae, almost parallel and situated near the lateral side of the propodosoma. The lamellar hairs are thin, smooth, and about as long as the rostral hairs. The interlamellar hairs, which are situated in the corner between the lamella and the anterior border of the hysterosoma, are twice as long, and smooth. The exopseudostigmatic hair cannot be seen, although there is a small pore. The pseudostigmata are completely hidden far behind the anterior margin of the hysterosoma. The pseudostigmatic organs are clavate, broadest distally, and reach almost half the length of the head beyond the anterior margin of the hysterosoma. The exposed part of the head is partly hidden below a triangular plate, which projects under the anterior border of the hysterosoma and reaches a short distance beyond the base of the interlamellar hair. Also in a lateral view this triangular plate, which is attached to the pseudostigma, can be seen, fig. 34a.

The anterior border of the hysterosoma is one long slightly convex line without showing a transition to the pteromorphae. The latter are very broad and not moveable. There are ten pairs of notogastral hairs, which are inserted beside their pore. They are black, light proximally, and moderately long and thick. Sacculi are present, but very indistinct, and I am unable to see more than Sa and S 1. The lyrifissurae im and ip are long and distinct.

The ventral side, fig. 34 b. Apodemata II, the sejugal apodemata and Apodemata III meet the middle line, where there is a narrow sternal ridge, which goes right up

to the camerostome. Apodema II and the sejugal apodema are parallel, directed medially and backwards, whereas Apodema III runs transversally. It is separated from the opposite one by a small plate on the sternal ridge. There is a broad chitinous bridge immediately in front of the genital field with a line running to Acetabulum IV. A faint frame can be seen round the lateral and the posterior border of the genital field. There are three pairs of genital hairs, and a very small pore on the anterior margin. Aggenital hairs are absent. The anal field is a regular oval and it has only one pair of hairs, which are situated in the anterior fourth of the plates. There is no preanal plate. Iad is situated off the anal hair. Ad 3 is located behind iad. Ad 1 and ad 2 are situated behind the anal field, the distance ad 1–ad 1 being only slightly longer than ad 1–ad 2. A faint veil covers the latero-posterior part of the ventral plate. The legs, which are hidden below the broad pteromorphae, are in many ways peculiar. They are rather short. All tarsi are monodactylous. Fig. 34 c shows Leg I (not all hairs are figured). Genu 1 has a thin spine, Tibia I three spines. Tarsus I has dorsally a narrow proximal slit. At the base of the claw there are two short thick brush-shaped hairs, which are slightly bipartite distally; they are black. Fig. 34 d shows Leg III with three strong spines on the tibia, a dorsal slit in the tarsus and two distal brush-shaped hairs. Also Legs II and IV have spines on the tibia. Mandibles are of the normal, chelicere type.

Fox Glacier: Three specimens in moist-wet liverworts on a big trunk in native forest.

Milford: Three individuals in wet liverworts and moss on a rotten branch in *Nothofagus* forest; three in mosses on the ground; five individuals in mosses on a stone.

Campbellobates occultus n. sp.; fig. 35.

Colour yellowish in the anterior half, brownish posteriorly. Length about 0.29 mm.

Although this species in many ways seems to differ from the preceding one they have so many important characters in common that they without any doubt must belong to the same genus. The propodosoma is not so narrow and the hysterosoma not so broad as in *C. latohumeralis*. The lamellae are long and parallel, but to me it looks as if they and the whole propodosoma as far as the lamellar hairs are covered by a large shield issuing together with the triangular plate from the surroundings of the pseudostigmata. A similar curved line in front of the lamellar hairs can be seen also in the preceding species. The rostrum is rounded and the rostral hairs are smooth. The lamellar hairs are also smooth and curly. The interlamellar hairs are dark, though clear proximally, bent, and as long as the rostral hairs, viz. a little shorter than their mutual distance. The triangular plate has a short anterior slit, parallel to the lamella. The pseudostigma and the pseudostigmatic organ are completely hidden by the pteromorpha and the triangular plate (hidden=occultus). The pseudostigmatic organs are slender clubs.

The anterior border of the hysterosoma is slightly convex without showing

where the pteromorphae begin. The latter are very long and comparatively narrow, and the hysterosoma is no broader across the pteromorphae than behind them. There are 10 pairs of notogastral hairs, most of them are, however, broken. They are inserted beside the hair pore. The few hairs left are long, smooth, and very thin at the tip. They are clear at the base, otherwise dark. Of sacculi only Sa can be seen. The lyrifissurae im and ip are distinct.

The ventral side, fig. 35 a, differs a little from that of *C. latohumeralis*, as Apodemata III from the two sides do not reach the sternal plate. Only three pairs of genital hairs can be seen, no aggenital hairs. There is one pair of anal hairs and three pairs of adanal hairs, which are situated as in the preceding species. No preanal plate. The legs are monodactylous. All tarsi with two thick brush-shaped bipartite hairs. The Genus and Tibiae have similar strong spines as found in the preceding species.

Fox Glacier: One specimen in luxurious moss on a dead trunk in native forest.

Campbellobates aureus n. sp.; fig. 36.
Colour golden. Length about 0.335 mm.

Although only a skin without hairs and legs of this beautiful mite is present, there are so many characters which are common to the two preceding species, that I establish it within the same genus.

The propodosoma is very narrow as in *C. latohumeralis* and the hysterosoma is very broad, especially across the pteromorphae. The lamellae are long and parallel and seem to be covered by a hyaline plate, the anterior border of which I am unable to see. The triangular plate has the same shape as in *C. occultus* with a medial branch round the base of the interlamellar hair. These two branches form together an indistinct arch in front of the anterior margin of the hysterosoma. The pseudostigmata are not situated so far posteriorly as in the preceding species and the pseudostigmatic organs project with half their length beyond the anterior border of the hysterosoma. The pseudostigmatic organs are short, broad clubs. Below them the thick, spine-shaped exopseudostigmatic hair can be seen. All the notogastral hairs are missing, the hair pores are distinct. The integument of the hysterosoma is beautifully decorated with small yellow dots on the golden ground.

Fig. 36a shows the ventral side, which agrees that with of *C. latohumeralis*. Behind and laterally to the genital field there are a few asymmetric pores, smaller than the hair pores, and I think that none of them represents the aggenital hair pore. From Acetabulum IV strong chitinous folds run obliquely backwards. There are three pairs of genital hairs and a minute anterior pore, one pair of anal hairs, and three pairs of adanal hairs. Ad 3 is situated farther laterally than in the two preceding species. The ventral plate is decorated with small yellow dots. All legs are missing.

Milford: One skin in mosses below ferns in shadow near the beach.

Punctoribates punctum (C. L. Koch); fig. 37.
Length about 0.36 mm.

Keri-Keri: Many individuals in moss on a lawn, and in moss and grass at the road-side.

Waitakere: Several specimens in moss and grass under bushes in a garden.

Nelson: A few in moss and grass on a lawn.

Punctoribates manzanoensis Ham.; fig. 38.
Length about 0.46 mm.

Keri-Keri: Two specimens in wet moss on a stone in a stream; several specimens in moist to wet moss at the edge of a swamp.

Magnobates n. gen.

Magnobates must be placed within the superfamily Ceratozetoidea, whereas its familiar relationship is uncertain.

Propodosoma and hysterosoma separated. Propodosoma with lamellae, large tutorium. No translamella and no cusps. The pseudostigmatic organs flagella. The cusp halfway hidden below the anterior border of the hysterosoma. The ptermorphae are movable. 10 pairs of notogastral hairs, four pairs of sacculi. The ventral side has a sternal plate; it is strongly chitinized. Four pairs of genital hairs, one pair of aggenital, two pairs of anal, and three pairs of adanal hairs. All tarsi are tridactylous, lateral claws with inner subsidiary tooth.

Magnobates flagellifer n. sp.; fig. 39.
Colour reddish brown. Length about 1.0 mm.

The propodosoma is narrow with slightly inclining lateral sides. The latter are covered by the large tutorium, which reaches the base of the rostral hair, and ends in a blunt tooth. The rostrum is rounded and it has on its dorsal surface a slit with a triangular lobe projecting from the posterior border of the slit. The rostral hairs, which are inserted laterally, are faintly barbed, and are as long as their mutual distance. The lamellae, which are situated far laterally, taper towards the lamellar hairs. They are dark. Their anterior end is not well defined and the lamellae apparently merge in a curve in front of the lamellar hairs without forming a true translamella. The lamellar hairs are very thin, smooth, and approximately as long as their mutual distance. The interlamellar hairs, which are situated near the lamellae at a long mutual distance, are both broken on the only specimen found. They are thin and smooth. The anterior part of the pseudostigmata can be seen in front of the pteromorphae. The pseudostigmatic organs are long, thin, and smooth flagella.

The anterior border of the hysterosoma is arched, the posterior end is rounded. The latero-anterior part of the pteromorphae projects, but not so far anteriorly as the anterior margin does. The pteromorphae are mobile. There are 10 pairs of notogastral hairs, which are situated as shown in fig. 39. The hairs are thin and smooth.

There are four pairs of sacculi. Across the dorsum a row of small light cracks can be seen. Farther posteriorly there are some dark spots.

The ventral side is shown in fig. 39a. It is heavily chitinized, all apodemata being surrounded by trims of dark chitinizations. The epimeres have densely set light spots. Apodemata II and III are short, whereas the sejugal apodemata are long and almost reach the anterior border of the genital field. The latter has four pairs of hairs, i.e. two in the latero-anterior corner and two in the latero-posterior one. The anal field is very long. There are two pairs of anal hairs and three pairs of adanal hairs. Ad 3 is preanal, ad 1 and ad 2 are situated in a big curve behind and laterally to the anal field. The distance ad 1–ad 1 is about twice as long as ad 1–ad 2. A deep furrow almost surrounds the anal field from the posterior end. Farther laterally there are low folds. The circumpedal ridge reaches Tectop. II. It is very difficult to see details of the lateral side of the ventral side, but a discidium is apparently present. All legs are tridactylous, the middle claw being the strongest. The two lateral claws have immediately behind the tip a long inner subsidiary tooth, fig. 39 b. Femur II has distally a short, but very broad ventral keel. Tibia II has distally in front of the solenidion a sharp tooth, fig. 39 b. The solenidion of Tibia II is very short. All the hairs of the legs are long and feathered.

Keri-Keri: One specimen in thin moss on a lawn.

Baloghobates n. gen.

Baloghobates belongs to the superfamily Ceratozetoidea. It has superficially a great similarity to *Edwardzetes*, but deviates in having movable pteromorphae. Propodosoma and hysterosoma are separated by a distinct line. Lamellae with short cusps present. Translamella incomplete, or narrow. Tutorium present. Dorsal surface of the rostrum with an opening. A minute tip on the lateral side of the rostrum. Pseudostigmatic organs clavate. Hysterosoma broad with movable pteromorphae. Four pairs of areae porosae. 9–10 pairs of notogastral hairs. Discidium and circumpedal ridge present. All apodemata short. 6 pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs. All tarsi tridactylous. This genus is named after the famous acarologist, Dr. J. Balogh, Budapest.

Baloghobates nudus n. sp.; fig. 40.

Colour light brown. Length about 0.83 mm.

A short distance behind the tip of the rostrum, which is round, there is on either side a tiny tip. Between the tips there is on the dorsal surface a light spot, from the posterior border of which two short dark tips project. They represent the ends of narrow ridges, which are located along the lateral side of the rostrum, fig. 40 and fig. 41 a. The rostral hairs, which are situated on the lateral sides on a level with the lamellar hairs, are curved and densely unilaterally feathered. The lamellae, which are situated rather far laterally, incline a little, tapering towards the short cusps. The translamella is represented by a short ridge on either side, in its middle by an indistinct

line. The lamellar hairs are thin, barbed, and about twice as long as their mutual distance. The interlamellar hairs have a longer mutual distance than the lamellar hairs and are as long as the latter. The tutorium has a broad free tip, which reaches beyond the base of the rostral hairs. Ventrally to its free tip it is serrate. The pseudostigmata are hidden by the anterior border of the hysterosoma, and only their anterior tip projects. The pseudostigmatic organs have a rounded, clavate head, which is broadest distally, on a thin short stem.

The anterior border of the hysterosoma is slightly arched. The pteromorphae project distally as far anteriorly as the hysterosoma. Behind the anterior border of the hysterosoma there is a tripartite yellow spot surrounded by brown lines. The pteromorphae are movable. In the middle of the pteromorpha there is a dark middle field from which dark lines radiate. In front of this middle field there is a light field, and a smaller light field near the posterior border of the pteromorpha. The lyrifissure ia can be seen at the base of the middle field. There are four pairs of dark areae porosae. There are probably 10 pairs of notogastral hairs, although p 1 cannot be seen. The pores can be seen only, as the hairs are missing or indiscernible.

The ventral side is shown in fig. 40a. Apodemata II and the sejugal apodemata are short and parallel, Apodemata III much shorter. The discidium is broad. A circumpedal ridge runs to Acetabulum I. I cannot tell with certainty the exact appearance of the lateral region. Tectop. I and II are well developed. Tectop. I has a hyaline trim anteriorly. The genital field is comparatively broad. There are 6 pairs of long, barbed genital hairs. Ad 3 is situated at some distance from the middle of the lateral side of the anal field, ad 1 and ad 2 behind the anal field. Ad 1 and ad 2 are bent forwards. Iad is situated between ad 3 and the anal field. The femora have no ventral keel, although a faint tongue-shaped projection can be seen distally on Femur I, fig. 40b. Genus I–II have a distal tooth, fig. 40b–c. Fig. 40c shows Leg II. All tarsi are tridactylous, the claws being almost equally thick, the middle one only slightly stronger than the lateral ones. No subsidiary tooth. All hairs of all legs are strong and feathered. Femora II–III have a medial curly hair, fig. 40 c. The largest part of the medial side of Femora I–II is punctate.

Rotorua: A large number on the green foliage of the low bush vegetation in the Redwood forest at Whakarewarewa.

Tapanui n. of Invercargill: A few individuals on green foliage in the State Forest (Styles coll.). Found in great numbers from samples taken from green foliage in *Pinus radiata* forest, i.e. at Kaingaroa Forest Southeast of Rotorua, at Anzac Park, Palmerston North, and "Treelands", Himitangi in the southern part of the South island, all coll. by Styles.

Baloghobates parvoglobosus n. sp.; fig. 41.
Colour light brown. Length about 1.16 mm.

B. parvoglobosus reminds so much of *B. nudus*, that only a few characters which are characteristic of this species will be mentioned. It is considerably bigger than

B. nudus. The pseudostigmatic organs have minute round clubs on a comparatively long, thin stem. In profile they appear to be longish; see fig. 41a, which shows the propodosoma in a lateral view with the opening behind the tip of the rostrum and the different tips (see under *B. nudus*). Also the exopseudostigmatic hair can be seen. It is rather long. The areae porosae are all big and longish. 10 pairs of notogastral hair pores can be seen. The ventral side is like that of *B. nudus*. All tarsi have three almost equally strong claws.

Arthur's Pass: One specimen in *Nestor notabilis* nest (C. MITCHELL, B. P. Bishop Museum, Honolulu coll.).

Zealandobates grandis Ramsay; fig. 42.
Colour mahogany red. Length about 0.78 mm.

Zealandobates has been established by RAMSAY, but not published (see HAMMER 1966, p. 5).

The rostrum is broadly rounded. The rostral hairs, which are situated far backwards almost at the same level as the lamellar hairs, are thin and finely barbed. The lamellae are broad, their lateral sides converging, ending in the little pronounced cusps. Their medial border is straight proximally. Towards the cusps they bend laterally and meet the lateral border at the lamellar hair. The cusps have a minute medial tooth. The translamella, which is broken in the middle, consists of only an undulating line. The lamellar hairs are as long as their mutual distance and pectinate; they are almost equally thick throughout. The interlamellar hairs, which are situated at a slightly shorter mutual distance than the lamellar hairs, are a little longer than their mutual distance, pectinate and almost equally thick throughout. The pseudostigma projects for most of its length beyond the anterior margin of the hysterosoma. It has a big open collar round the cup. The pseudostigmatic organ is a minute club set with small bristles on a proportionately long stalk. The tutorium is a broad plate with a rounded tip, which projects beyond the cusps. The dorsal surface of the rostrum is finely striped, whereas the space between the lamellae has a meander pattern.

The hysterosoma is as broad as it is long. The anterior border is a low broad arch. The pteromorphae, which are movable, project a good distance beyond the anterior margin of the hysterosoma. They are decorated with a veil of hexagonal secretion cells, which give the whole dorsal surface a delicate pattern. There are 13 pairs of stiff, more or less spine-shaped hairs, which are a little rough or uneven, fig. 42a. They are situated on low apophyses. The anterior hair c 2, is slightly longer than the others. Areae porosae cannot be seen, although there is a faint spot laterally to lp.

Fig. 42b shows the ventral side. All the apodemata are very short and none of them reach the middle line. The sejugal apodema is the longest. The discidium is broad. The circumpedal ridge reaches Acetabulum I. Tectop. I is deeply bowl-shaped with an anterior trim, which covers the base of Leg I ventrally. The genital field is

separated from the anal field by a distance twice its length. There are 6 pairs of genital hairs, viz. two on the posterior half of the plates, four on the anterior half, two of them near the anterior border, the two others in the middle line. The anal field is much longer than the genital field. There are two pairs of anal hairs, one at either end. Three pairs of adanal hairs, viz. ad 3 off the middle of the lateral side, ad 1 and ad 2 in a curve behind the anal field. Iad is situated near the latero-anterior corner of the anal field in front of ad 3. The sculpture of the ventral plate consists of low, broken dark lines, which are parallel to the border of the hysterosoma, and of indistinct polygonal cells. All tarsi are tridactylous. The middle claw is only a little stronger than the lateral claws. Fig. 42c shows Genu, Tibia, and Tarsus I. Both the genu and the tibia have a distal, lateral, rough spine. The genu has moreover a distal tooth. Genu II has a smaller spine and a distal tooth. The distance between the solenidia of Tarsus I is very long.

Keri-Keri: Two specimens in moist grass and moss on the ground near a small stream in a deep cleft with tall trees.

"Treelands", Himitangi, west of Palmerston North: Numerous on green foliage (STYLES coll.).

Balmoral, north of Christchurch: Many individuals on branches (STYLES coll.).

Setobates medius n. sp.; fig. 43.

Colour light brown to brown. Length about 0.61 mm.

As the species within the genus *Setobates* are very much alike and as it is mostly the different size which apparently counts, I have called this medium-sized species *S. medius*, to distinguish it from *S. magnus* Balogh, which is about 1.04 to 1.05 mm long (BALOGH 1962, p. 122, figs. 67–69).

The rostrum is short, rounded (in *S. magnus* pointed). The lamellae are situated at some distance from the lateral sides of the propodosoma. They are rather narrow and consist of a thin lamella and a somewhat broader sublamella. A prolamella runs to the rostral hair. The rostral hairs are curved, pectinate, and project with half their length beyond the tip of the rostrum. The lamellar hairs, which are very thin and slightly pectinate, are longer than the lamellae. The interlamellar hairs are also very thin towards the tip and slightly pectinate. They reach beyond the tip of the rostrum. The pseudostigma has on its lateral border a distinct broad tooth. The pseudostigmatic organ is a slender club set with minute bristles in a few longitudinal rows, fig. 43 a. It is geniculate in the middle and directed outwards and backwards.

The anterior margin of the hysterosoma is slightly convex, whereas the anterior border of the pteromorphae is almost straight. The hysterosoma is only a little longer than broad. The outer half of the pteromorphae is yellow, and very finely striped, the inner half is greyish-brown. There are 13 pairs of notogastral hairs, which are arranged as shown in fig. 43. The hairs are very thin and curly. Medially

to c 2 there is apparently another hair pore. I am, however, unable to see a hair. There are four pairs of sacculi. In front of and between the hairs, h 1, there are many light spots. The ventral side, which is shown in fig. 43b, agrees with that of *S. magnus* Balogh. The most characteristic feature is that ad 3 are situated immediately in front of the anal field. Also the appearance of the dorsal side of Tarsus I, fig. 43c, agrees with Balogh's fig. 69, showing the same part of the tarsus. All tarsi are tridactylous with a strong middle claw and thin lateral claws. No sculpture can be seen.

Keri-Keri: Several individuals near a river (Stagaard coll.).

Setobates minor n. sp.; fig. 44.

Colour light brown to brown. Length about 0.42 mm.

S. minor can be distinguished from *S. medius* by its smaller size and by a distinct line across the pteromorphae separating the finely striped, greyish-yellowish outer border from the median greyish part. The lamellar and the interlamellar hairs are not so thin as in *S. medius*. They are finely barbed. The pseudostigmata have, as in *S. medius*, a sharp, lateral tooth. The notogastral hairs, which are arranged as shown in fig. 44, are hardly discernible, apparently longest along the posterior border of the hysterosoma or easiest to see there. The distance between the two dorsal rows of hairs is shorter than in *S. medius*. H 2–h 1–h 1–h 2 are situated almost in a transverse line and rather close together. The distance h 1–h 1 is about twice as long as h 1–h 2. Ps 2 is situated almost at the same level as h 1 and h 2.

The ventral sides agrees with that of *S. medius*. Ad 3 is situated immediately in front of the anal field. All tarsi are tridactylous. The dorsal side of Tarsus I has the same appearance as in *S. medius*. There is no sculpture on the integument.

Keri-Keri: Several specimens at Keri-Keri falls (Stagaard coll.).

New Plymouth: Many individuals in moss, grass, and white clover on a lawn shaded by tall trees in a former native forest.

Pauatahanui: Several specimens in bitten-off grass and white clover on the bank of a small stream.

Nelson: One specimen in moss and grass on a lawn.

Setobates discors n. sp.; fig. 45.

Colour light brown. Length about 0.54 mm.

It is with some doubt that I incorporate this species within the genus *Setobates*, although it agrees in almost everything with *Setobates*. It deviates, however, in a very important character, having a tiny hair near the anterior border of the pteromorphae. As I have found only one specimen with this hair, it may be an anomaly. In the same sample there is, moreover, another specimen, which I am unable to distinguish from the one with the hair on the pteromorphae except for lack of this hair.

The rostrum is slightly pointed, ending in a tiny tip. The rostral hairs are thin, bent, and slightly barbed. The lamellar and the interlamellar hairs are thin and finely

barbed. They are both about as long as the lamellae. The lamella and the sublamella have not been studied. The pseudostigma has a lateral, rounded tooth. The pseudostigmatic organ is lanceolate, very slender with a few longitudinal rows of minute bristles. The head is about half as long as the stalk.

The hysterosoma is approximately as broad as it is long. The anterior border is slightly convex, the anterior border of the pteromorphae is almost straight. The pteromorphae are very broad and have an incurvation in the middle of their lateral border. A faint line separates the outer finely striped part from the medial part. There are 13 pairs of notogastral hairs. The hairs are very thin and slightly curly. Besides the 13 pairs of notogastral hairs there is a tiny hair near the anterior border of the pteromorphae. It is situated at the end of a long furrow, which runs obliquely backwards. On the right side the hair is missing, the furrow and the hair pore are present. There are four pairs of sacculi. The distance between the hairs, ps 1, is very long as compared with that of the preceding species.

The ventral side agrees in every detail with that of the two preceding species (see fig. 43b), thus ad 3 is situated immediately in front of the anal field. Also the appearance of the dorsal side of Tarsus I is similar to that shown in fig. 43 c. All tarsi are tridactylous with a strong middle claw and faintly developed lateral claws. Femur II has a distal tooth on the ventral keel.

Keri-Keri: Only one specimen in a thin layer of moss and lichens on a tree near a small stream in a cleft, shadowed.

Grandjeanobates novazealandicus n. sp.; fig. 46.
Colour brown. Length about 0.42 mm.

Grandjeanobates has been established by Ramsay, but no yet published (see Hammer 1966, p. 5). The type species is *G. australis* from New Zealand. *Grandjeanobates* belongs to the superfamily Oribatuloidea and is near *Scheloribates*.

The propodosoma is very narrow as compared with the hysterosoma. The latter has very long pteromorphae. The rostrum is conical and the lateral sides of the propodosoma are almost parallel. The rostral hairs, which are situated on the lateral sides of the propodosoma, are thin and smooth. They reach by half their length beyond the tip of the rostrum. The lamellae, which are parallel and situated near the lateral sides, consist of a narrow lamella and a broad sublamella. Proximally the lamella is double, fig. 46a. In a dorsal view one gets an impression that the lamella is folded laterally and ventrally covering the sublamella. In that way the small fold in front of the pseudostigma can be explained as representing the proximal part of the lamella. The lamellar hairs are very thin, smooth, and a little longer than their mutual distance. The interlamellar hairs are extremely thin, smooth, and slightly longer than their mutual distance. The pseudostigma is hidden immediately behind the anterior border of the hysterosoma. It is covered dorsally by a broad lobe, fig. 46b, which is usually hidden below the pteromorpha. The pseudostigmatic organ is a short club, which just reaches beyond the anterior border of pteromorpha.

The hysterosoma, which is longish with parallel lateral sides, is characterized by having very long and narrow pteromorphae. The anterior border is slightly convex and the anterior border of the pteromorphae almost projects as far anteriorly as the hysterosoma. The pteromorphae, which have a faint incurvation in the middle of their lateral border, are light brown. Their distal part is finely striped. There are 10 pairs of notogastral hairs, which are thin, curly, and moderately long. They are situated as shown in fig. 46. There are four pairs of sacculi.

Fig. 46c shows the ventral side, which has much in common with that of *Scheloribates*. Apodemata II are faintly developed. They are separated by a small plate, which is often divided by a longitudinal furrow. The sejugal apodema and Apodema III almost meet in front of the genital field. There is a very narrow sternal ridge. The epimeres have pale spots. The circumpedal ridge is indistinct. The genital field is very small as compared with the anal field. There are four pairs of genital hairs. The aggenital hairs are situated almost behind the genital field, i.e. rather medially. There are two pairs of anal hairs and three pairs of adanal hairs. Ad 3 is situated immediately in front of the anal field, ad 1 rather laterally behind the lateral side of the anal field, ad 2 at some distance from the lateral side. Iad is located near the latero-anterior corner of the anal field. The anal field almost touches the posterior border of the ventral plate. All tarsi are tridactylous and have a strong claw and two very thin lateral claws. Femur II has a ventral keel with a distal tooth.

G. novazealandicus reminds much of *G. australis* Ramsay. The latter has stronger lateral claws, which apparently have an inner tooth behind the tip of the claw. I cannot see a similar subsidiary tooth in the very thin lateral claws of *G. novazealandicus*.

Waitakere: One specimen in moist moss and dead leaves; a few in liverworts, moss, and small ferns on a dead trunk, all in native forest.

Rotorua: One specimen in liverworts and moss on a slope at Lake Tarawera.

New Plymouth: Sex individuals in moss on a trunk in native forest.

Although it is rather purposeless to describe species of the genus *Scheloribates*, which in most cases cannot be recognised from figures, only by comparison of specimens, it must be done, otherwise one gets an impression that *Scheloribates* has not been found in the material investigated. Stress must be laid on the shape and the size of the body, the exact position of sacculi and of notogastral hairs, the number of claws, etc. In many species a study of the appearance of the ventral side seems to be the best way to distinguish the species in question. Instead of repeating information concerning length, i.e. of the lamellar hairs and the interlamellar hairs, which does not vary much within the many species, I shall in the following let the figures speak for themselves.

Scheloribates crassus n. sp.; fig. 47.

Colour clear brown, except for the border of the pteromorphae, which is yellowish to clear. Length varying from 0.58 mm to 0.98 mm (0.58; 0.60; 0.61; 0.70; 0.78; 0.79; 0.93; 0.98).

The propodosoma is conical anteriorly, whereas the posterior part has parallel sides and is very broad. The lateral sides in front of Leg I are slightly concave. The rostral hairs, which are inserted on the lateral sides of the rostrum on the end of the prolamella, are one and a half times longer than their mutual distance. They project with half their length beyond the tip of the rostrum. They are uneven. The lamellae are located at some distance from the lateral sides of the propodosoma. They appear rather broad. In a lateral view, fig. 47a, it can be seen that they consist of a narrow lamella and a broader sublamella, which meet and merge a short distance behind the lamellar hair. From the base of this hair a narrow prolamella runs to the rostral hair. The lamellar hairs are extremely thick and coarse (= crassus) and about twice as long as their mutual distance. Between the base of the lamellar hairs there is a distinct curved ridge. The interlamellar hairs, which are about twice as long as their mutual distance, are rather thick, but thin as compared with the lamellar hairs. They are uneven. The pseudostigmatic organs are slender clubs, the head set with short bristles. The stalk is rather long, and when stretched out, it almost reaches the lateral border of the pteromorpha.

The hysterosoma is very broad as compared with the propodosoma. Its anterior margin is slightly convex. The anterior margin of the pteromorphae is almost straight. The pteromorphae have a clear to yellowish outer part, the medial border of which is indicated by a broken line. There are 10 pairs of hair pores on the dorsal surface, but tiny hairs can be seen only on the posterior border. There are five pairs of sacculi, S 1 being divided into an anterior and a posterior sacculus. They are all large and distinct, arranged as shown in fig. 47. All tarsi are tridactylous with a strong middle claw and two thin lateral claws. Genus and Femora I–II have medially a thick, bushy hair. Femur II has a ventral keel, which distally ends in a bipartite tooth, fig. 47a.

The ventral sides is shown in fig. 47b. There are four pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs, all very small. Ad 3 is preanal, and situated at rather a long distance in front of the anal field. Ad 1 and ad 2 are situated more or less off the posterior part of the lateral side of the anal field. The distance ad 1–ad 1 is twice as long as ad 1–ad 2. Most of the hairs of the ventral side are hardly discernible, and not all have been seen.

Found almost everywhere, thus at Keri-Keri, Puketi, Waitakere, New Plymouth, Pauatahanui, Nelson, Upper Takaka, Lake Rotoiti, Dunedin, Fox Glacier, and Milford. It prefers wet and moist localities, i.e. thick wet moss on a stone in a stream, moss and dead leaves on the ground, moss and small ferns on a log, *Scirpus* vegetation near a spring locality, moss on the edge of a swamp, etc.

Scheloribates anzacensis n. sp.; fig. 48.
Colour clear to light brown. Length about 0.86 mm.

The rostrum is pointed. The rostral hairs are thin, barbed, and reach by half their length beyond the tip of the rostrum. The lamellae are brown. The lamellar hairs are thin, slightly barbed, and twice as long as their mutual distance. The interlamellar hairs are also thin, slightly barbed, and considerably longer than the lamellar hairs. The pseudostigmatic organs are very small as compared with the broad pteromorphae. The head is a tiny club set with minute bristles, the stalk is two to three times longer than the head. Laterally the head reaches only the middle of the anterior border of the pteromorpha. The anterior border of the hysterosoma is a little convex, the anterior border of the pteromorphae is concave, and the tips of the pteromorphae project as far anteriorly as the anterior border of the hysterosoma. The posterior half of the hysterosoma is semicircular. The pteromorphae have yellowish to white distal borders; proximally they are ochre-brown. There are 10 pairs of notogastral hair pores, the hairs are absent. The four pairs of sacculi are big and distinct.

Fig. 48 a shows the ventral side. Apodemata II are very short, the sejugal apodemata and Apodemata III of ordinary length for a *Scheloribates*, almost meeting in front of the latero-anterior border of the genital field. The anterior genital hairs are exceptionally long. Ad 3 is situated on the dark frame surrounding the anal field, in front of the latter. Ad 1 and ad 2 are situated behind the anal field, the distance ad 1–ad 1 being much longer than ad 1–ad 2. Tectop. I is broad, yellowish like the distal border of the ptermorphae. All tarsi are tridactylous with a strong middle claw and two faintly developed lateral claws.

Anzac Park, Palmerston North: 31 specimens on the ground (Styles coll.).

Scheloribates pacificus n. sp.; fig. 49.
Colour light brown to brown. Length about 0.53 mm.

The rostrum is conical. The rostral hairs, which are thin, especially towards the tip, barbed, and undulating, reach by half their length beyond the tip of the rostrum. The lamellar hairs, which likewise are very thin towards the tip, but smooth, reach by one third of their length beyond the rostral tip. The interlamellar hairs, which are very thin and smooth, reach beyond the tip of the rostrum. The pseudostigmatic organs are clavate, the head broadest distally. The stalk is short and the pseudostigmatic organs do not reach laterally beyond Tectop. I.

The hysterosoma is broad as compared with the propodosoma. Its anterior border is almost straight. The lateral sides are parallel and the posterior half of the hysterosoma is semicircular. The anterior borders of the pteromorphae withdraw a little and the latero-anterior corner is rounded. The distal or outer borders of the pteromorphae are whitish, the proximal part is light-brown. The outer border is decorated with undulating, short lines, forming low or shallow pits between them. There is no radiating striation. The notogastral hairs are moderately long, slightly curly, and thin

towards the tip. The hair pores are much bigger than the hair base and clear. There are four pairs of sacculi.

Fig. 49a shows the ventral side. Apodemata II are longer than those of the preceding species. Ad 3 is situated in front of the anal field close to its anterior border, ad 1 at the latero-posterior corner and ad 2 much farther laterally. All tarsi are tridactylous with a strong middle claw and two thin lateral ones.

Hokitika: Two specimens in luxurious moss and liverworts under trees on the river bank; one specimen in dry moss, grass, and *Medicago* at the roadside.

Scheloribates keriensis n. sp.; fig. 50.
Colour light brown. Length about 0.46 mm.

The rostrum is conical, rounded at the tip. The rostral hairs are barbed and reach by half their length beyond the tip of the rostrum. The lamellar hairs are broken. The interlamellar hairs are rather thick, barbed, and perhaps a little longer than their mutual distance. The pseudostigmatic organs reach beyond the lateral sides of the pteromorphae. They are slender, the head tapering, being drawn out into a long thread, which is set with minute bristles like the head itself (on the left side the tip is broken).

The anterior border of the hysterosoma is slightly convex, the anterior border of the pteromorphae is almost straight. There is a slight depression on the lateral side of the pteromorphae. These have a distal greyish border without any sculpture; the proximal part is light brown. The right pteromorpha in fig. 50 is anomalous, having a distinct hair pore near its anterior margin. The hair is absent. The 10 pairs of notogastral hairs are not discernible, except those on the posterior border. There are four pairs of sacculi.

Fig. 50 a shows the ventral side. Apodemata II are short. The sejugal apodemata and Apodemata III from each side are fused medially, forming a V-shaped figure, which is open laterally. Ad 3 is preanal and is situated within the dark frame surrounding the anal field. Ad 1 and ad 2 are situated behind the anal field with a long distance between the hairs ad 1. All tarsi are monodactylous.

Keri-Keri: One specimen in a thick, wet carpet of small ferns and mosses near a small stream in a deep cleft grown with tall trees.

Scheloribates zealandicus n. sp.; fig. 51.
Colour light brown. Length about 0.37 mm.

The rostrum is broadly rounded. The rostral hairs, which are barbed, project by half their length beyond the tip of the rostrum. The lamellar hairs, which reach by one third of their length beyond the tip of the rostrum, are approximately as long as the lamellae. The interlamellar hairs are shorter, but also barbed. The pseudostigmatic organs have a lanceolate head, which is as long as the stalk and set with minute bristles in longitudinal rows. The head reaches beyond the lateral side of the pteromorpha.

The hysterosoma is longish and has a slightly convex anterior margin. There is rather a deep incurvation between the anterior margin and the latero-anterior tip of the pteromorphae. The latter project almost as far anteriorly as the anterior border of the hysterosoma. The outer or distal borders of the pteromorphae are greyish and finely striated, the proximal part is light brown. The notogastral hairs are extremely small, and most of them have not been seen. There are four pairs of sacculi. The hair ms is situated very close to S 1, r 3 close to S 2, and r 1 immediately in front of S 3. Fig. 51 a shows the ventral side. Apodemata II are short, the sejugal apodemata are longer than Apodemata III. The sternal plate is rather broad. Along the oblique line laterally to Acetabulum IV there are several small light spots. On the ventral plate there is a long oblique line on either side in front of the anal field but more laterally. The adanal hairs are situated as usually, i.e. ad 3 in front of the anal field, ad 1 and ad 2 behind the field with a long distance between the hairs ad 1. All tarsi are tridactylous with a strong middle claw and two faintly developed lateral ones.

Keri-Keri: Several individuals at Bay of Islands (STAGAARD coll.).

Lake Rotoiti: One specimen in moist to wet *Sphagnum* at a spring locality in *Nothofagus* forest, many individuals in wet moss and liverworts on a vertical slope above a small stream in *Nothofagus* forest.

Scheloribates conjuges n. sp.; fig. 52.

Colour light brown. Length about 0.41 mm.

The rostrum is conical. The rostral hairs, the lamellar hairs, and the interlamellar hairs are distinctly barbed. The head of the pseudostigmatic organ is slightly thicker than the stem. It is set with minute bristles, which lie down, for which reason the head appears smooth. It ends in a thin tip.

The anterior border of the hysterosoma is slightly arched. As the latero-anterior tip of the pteromorphae project, a rather deep incurvation is formed on either side laterally to the pseudostigma. The hysterosoma is short and rounded. In the middle of the lateral side of the pteromorphae there is a faint incurvation. The distal border of the pteromorphae is greyish, the proximal part is dirt greyish to brown. The notogastral hairs are so short that only a few seen in profile on the posterior border can be seen. There are four pairs of sacculi. Sa is rather big, the others are small and rather indistinct. Most of them are coupled with a hair (hence the specific name). The notogastral hairs are situated asymmetrically on the two sides in fig. 52.

The ventral side is shown in fig. 52a, which does not show any characteristic features, but it is to be hoped that the size and the shape of the reticulation of the epimeres can help in recognizing this species. All tarsi are monodactylous. Tectop. I is slightly obliqued striated.

Keri-Keri: Four specimens in thick moist moss on the ground near a small stream in a deep cleft with tall trees.

Scheloribates aequalis n. sp.; fig. 53.
Colour yellow. Length about 0.40 mm.

S. aequalis reminds so much of the preceding species, that only a few characters will be mentioned. It is a lighter colour. The pseudostigmatic organs are not quite so pointed. The anterior border of the hysterosome proceeds on either side as a line across the pseudostigma and farther laterally, making a bend and disappearing into a deeper level. Sa is long and narrow, S 1–S 3 are small and rounded. The position of the sacculi coupled with a notogastral hair is practically the same as in *S. conjuges*. I can see no difference between the appearance of the ventral side and that of the preceding species. All tarsi have, however, three claws, the middle one of which is the strongest.

Rotorua: Three individuals in dry moss under *Manuka* shrub in the thermal area.

Rostrozetes foveolatus Selln.; fig. 54.
Colour light brown. Length about 0.35 mm.

The specimens investigated agree with the description by Sellnick 1925, p. 84, figs. 6–7, and with that by Beck 1965.

Rotorua: Many individuals in moist moss and small ferns under *Manuka* shrub, and in thick, green, moist mosses also under *Manuka* shrub, both biotopes in the thermal area.

Peloribates fragilis n. sp.; fig. 55.
Colour light brown. Length about 0.51 mm.

The rostrum is broad, conical. The rostral hairs, the lamellar hairs, and the interlamellar hairs are all pectinate, The former just reach beyond the tip of the rostrum, the lamellar hairs reach it by one third of their length and the interlamellar hairs reach not quite so far as the lamellar hairs. The pseudostigmatic organ has, as seen in a dorsal view, an almost circular head on a moderately long stalk. When laid bare, fig. 55a, the head is pear-shaped, broadest distally and set with a few scales in two transverse rows. The stalk is several times longer than the head.

The notogastral hairs are very long and often broken as they are fragile (hence the specific name). They are smooth for most of their length, and proximally very finely barbed. They are undulating and extremely thin towards the tip. They are of different length, l a and h 1 being the longest. These are approximately twice as long as the interlamellar hairs and almost as long as across the hysterosoma.

Rotorua: Three specimens on green foliage below tall redwood trees at Forest Research Institute, Whakarewarewa.

New Plymouth: Four individuals in moss on a dead trunk in native forest.

Arthur's Pass: Five specimens in *Gerygone igata's* nest (C. Mitchell, B.P. Bishop Museum, Honolulu coll.).

Fox Glacier: One specimen in thick moist moss and liverworts on a trunk in native forest.

Peloribates magnisetosus Ramsay; fig. 56.
Colour light brown. Length about 0.42 mm.

P. magnisetosus has been established by Ramsay, but not yet published (see Hammer 1966, p. 5).

The rostrum is conical and very broad (it is probably a little flattened and too broad in fig. 56). The rostral hairs, the lamellar hairs, and the interlamellar hairs are barbed. The rostral hairs are shorter than their mutual distance, the lamellar hairs as long as their mutual distance, and the interlamellar hairs almost as long as their mutual distance. The pseudostigmatic organ has a slender lanceolate head, which is pointed at the tip and set with minute bristles. The stalk is very long, about four times longer than the head.

The hysterosoma is as broad as it is long and almost circular when the pteromorphae are bent ventrally. The notogastral hairs, 14 pairs, are equally thick throughout and faintly barbed. They are not equally long, although the variation in length is not big. The hair, 1a, is shorter and also thinner than the one in front of it, c 2. The hairs, ps 1 are as long as their mutual distance, and most of the notogastral hairs are as long as ps 1. Indistinct sacculi are present.

Keri-Keri: One specimen in a thick, green carpet of wet mosses and small ferns near a brook in a deep cleft, in deep shadow.

Incabates angustus n. sp.; fig. 57.
Colour light brown. Length about 0.35 mm.

Incabates angustus is twice as long as broad across the pteromorphae and much narrower than *I. nudus* Hammer (1961, p. 108, fig. 104).

The rostrum is conical, rounded at the tip. The rostral hairs are thin, slightly barbed and reach by half their length beyond the tip of the rostrum. The lamellar hairs, which are very thin and perhaps extremely finely barbed, are about one and a half times longer than their mutual distance. The lamellae are very long and almost parallel. Their proximal part is erect. The interlamellar hairs, which are situated at some distance from the anterior border of the hysterosoma, are surrounded by a ring. They are also very thin and as long as the lamellar hairs. The pseudostigma has a posterior tip, which projects beyond the anterior border of the hysterosoma. The pseudostigmatic organ has a disk-shaped head on a thin stalk. It is bent backwards and then forwards.

The anterior border of the hysterosoma is arched, reaching beyond the anterior border of the pseudostigmata. The anterior borders of the pteromorphae withdraw a little, forming together with the anterior border of the hysterosoma a broad, almost even arch. The pteromorphae, which are not movable, are narrow and have a distinct longitudinal, curved line from the pseudostigma to about off the hair te. There are 10

pairs of notogastral hairs, but apart from the hair p 1, only the pores can be seen. The hair is thin, hyaline, and therefore hardly discernible. There are four pairs of sacculi. Sa is situated between te and ti, though a little farther anteriorly. S 1 is located at a short distance behind im and near ms. S 2 is situated at a short distance in front of r 2, and S 3 behind r 1. The glands, which usually can be seen along the lateral and the posterior borders of the hysterosoma, are in *Incabates* situated much farther medially.

Fig. 57a shows the ventral side. Apodema II is short and reaches a spur from the faintly developed sternal plate. The sejugal apodema is considerably longer. It reaches a broad plate in front of the genital field. Apodema III is very short. The genital field is narrow and has four pairs of genital hairs. The genital and the anal fields are separate by a long distance, and the anal field is situated close to the posterior end of the ventral plate. Ad 3 is preanal and is situated at a good distance in front of the anterior border of the anal field. Ad 1 is located off the latero-posterior corner of the field and ad 2 off the middle of the lateral side of the anal field. The fissure iad is situated off the anterior anal hair. A discidium is present. The circumpedal ridge reaches Tectop. II. All tarsi are tridactylous with a strong middle claw and faintly developed lateral claws.

Waitakere: One specimen in liverworts and small ferns on a dead trunk in native forest.

New Plymouth: Two individuals in moss on a trunk in native forest.

Subphauloppia n. gen.

The rostrum forms a broad, more or less hyaline lip, on the dorsal surface of which the rostral hairs are situated. The anterior border of the hysterosoma highly arched, reaching halfway between the lamellar and the interlamellar hairs. Lamellae absent. Pseudostigmatic organs situated far behind the anterior border of the hysterosoma. No pteromorphae, no protruding shoulders. 10 pairs of notogastral hairs. Areae porosae present. *Subphauloppia* reminds much of *Phauloppia*, but it deviates by its lack of lamellae and by having only 10 pairs of notogastral hairs (*Phauloppia* 13 pairs).

Subphauloppia dentonyx n. sp.; fig. 58.

Colour dirty to light brown. Length about 0.33–0.37 mm.

The rostrum is very broad, almost semicircular and more or less hyaline. The small indentation in its tip, fig. 58a, cannot be seen in a dorsal view and may be due to slight damage. The rostral hairs, which are situated on the dorsal surface of the rostrum at some distance from the lateral sides and a good distance behind the anterior border, are smooth and almost as long as their mutual distance. They project by only half their length beyond the tip of the rostrum. Lamellae are absent. The lamellar hairs, which are situated almost in the middle of the propodosoma, have a shorter mutual distance than the rostral hairs. They are thicker than the latter, barbed, and a little longer than their mutual distance. The interlamellar hairs are likewise barbed, and as long as their mutual distance. They are situated halfway between the pseudo-

stigma and the anterior point of the hysterosoma. Off the base of the lamellar hair an area porosa lamellaris can be seen, fig. 58 a. The posterior part of the propodosoma is very broad and has almost parallel lateral sides. The dorsal surface of the propodosoma has indistinct and irregularly curved folds or wrinkles.

The anterior border of the hysterosoma is highly arched, the lateral sides forming a right angle, which projects halfway between the lamellar and the interlamellar hairs. The pseudostigmata, which are concealed under the lateral borders, are situated far behind the anterior point of the hysterosoma. The pseudostigmatic organs are short and clavate, broadest distally. The head reaches beyond the lateral border of the hysterosoma. There are 10 pairs of notogastral hairs. They are very thin, and it is extremely difficult to see them. They are in fig. 58 situated asymmetrically on the two sides, also the areae porosae are asymmetrical. In one specimen there are two A 1 on the left side, one A 1 on the right side. In another specimen the opposite is the case. The integument has dense, golden punctures, which can be seen only when the integument is laid bare.

Fig. 58b shows the ventral side. All the apodemata are short and do not by far reach the opposite one in the middle plane. The genital field is rounded and there are four pairs of genital hairs. The aggenital hairs are situated at a good distance behind the genital field. The anal field touches the posterior border of the ventral plate. The fissure iad is located obliquely in front of the anal field, close to the anterior margin. Ad 3 is situated in front of iad, ad 2 off the middle of the lateral side, and ad 1 behind the anal field. All tarsi have three equally strong claws. All the tarsi are very short. Fig. 58 a shows Tibia and Tarsus I (not all the distal hairs of the tarsus are figured). All the claws have a strong, inner subsidiary tooth a short distance behind the tip.

Keri-Keri: One specimen in decaying leaves on a slope down to a small stream, in shadow.

Pauatahanui: One specimen in wet moss and liverworts in a small depression grown with *Scirpus* near a small stream in open forest.

Milford. One individual in wet liverworts on a dead branch in *Nothofagus* forest.

Paraphauloppia n. gen.

Like the preceding genus *Paraphauloppia* has a broad rostrum, but the rostral hairs are situated on the lateral sides. Narrow costulae present. Dorso-sejugal line indistinct and not so strongly arched as in *Subphauloppia*. 10 pairs of notogastral hairs. Areae porosae present. Ventral side with a transverse belt connecting the sejugal apodemata. A faintly developed sternal plate. Circumpedal ridge very distinct. Anal field close to the posterior border of the ventral plate. All tarsi tridactylous.

Paraphauloppia novazealandica n. sp.; fig. 59.

Colour yellowish to light brown. Length about 0.34 mm.

The rostrum is very broad and rounded. The rostral hairs, which are barbed, are situated near the lateral sides. The lamellae are represented by narrow costulae.

They are broken proximally by a short, bent ridge issuing from the pseudostigma and running to the base of the interlamellar hairs. A short distance behind the lamellar hair there is a tiny indentation in the costula. The lamellar hairs are barbed and as long as their mutual distance. They have the same mutual distance as that of the rostral hairs. The interlamellar hairs, which are shorter than the lamellar hairs and barbed, have a longer mutual distance than the lamellar hairs. The pseudostigma is almost entirely exposed, only its posterior part is hidden below the lateral border of the hysterosoma. The pseudostigmatic organ is a round disk on a thin stalk. A tiny exopseudostigmatic hair is present. The area porosa lamellaris can be seen laterally to the lamellar hair.

The hysterosoma is oval, the anterior and the posterior end being a little narrower than the middle. The anterior margin is indistinct. In the latero-anterior border there is a slight incurvation off the pseudostigma. There are 10 pairs of notogastral hairs, which are thin and smooth. There are (?) four pairs of areae porosae. Aa is large, A 2 almost as big, A 1 considerably smaller, and A 3 indistinct, not present with certainty.

Fig. 59a shows the ventral side. Apodemata II are narrow. The sejugal apodema, which is broader, meets the opposite one in a broad, transverse belt. I cannot tell the number of genital hairs; there are probably four, although I have seen only three hair pores. The aggenital hairs are situated rather close to the genital field. Ad 3 is situated at some distance in front of the anal field, ad 2 off the middle of the lateral side, and ad 1 behind the anal field. Iad is located in front of the anal field. All tarsi are tridactylous with a strong middle claw and two faintly developed lateral claws.

Lake Rotoiti: 11 specimens in thick moss and bone-dry lichens and *Lycopodium* in open *Manuka* and *Nothofagus* forest a few hundred feet above lake level.

Crassoribatula n. gen.

Crassoribatula in many ways reminds of *Oribatula*. The lamellae are short, narrow, and inclining. No cusps and no translamella. Anterior border of hysterosoma concave. 10 pairs of notogastral hairs. 4 pairs of areae porosae. No ventro-sejugal ridge. 6 pairs of genital hairs. All tarsi tridactylous, homodactylous. Integument with densely set dark tubercles covered by a secretious veil, which also covers the lateral parts of ventral plate.

Crassoribatula maculosa n. sp.; fig. 60.
Colour brown. Length about 0.64 mm.

The propodosoma is triangular, rather broad; its lateral sides are concave. The rostrum is broad, rounded. On its dorsal surface there is a small light spot. The rostral hairs, which are inserted laterally, reach by half their length beyond the tip of the rostrum, meeting in a big curve. They are densely unilaterally feathered. The lamellae, which are narrow and so short that they reach only one third of the distance to the tip of the rostrum, incline, forming most of an even arch. They proceed for a short distance beyond the base of the lamellar hair. The lamellar hairs are at least twice as

long as their mutual distance and densely barbed. The interlamellar hairs are like the lamellar hairs long and barbed. Round their base there is a thick ring, which is situated on a ridge issuing from the pseudostigma, and which proceeds beyond the interlamellar hair as faint lines. The exopseudostigmatic hair is long and barbed. Fig. 60 a shows the propodosoma in a lateral view. The pseudostigma is hidden below the anterior border of the hysterosoma, only its anterior tip projects. The pesudostigmatic organ consists of a round head, which is fully exposed, and rather a short stalk. It is bent backwards and then forwards.

The hysterosoma is a regular oval without protruding shoulders. The anterior border is, however, unusual, being concave. On the posterior border there are two low incurvations medially to p 1. The pteromorphae are very narrow and rounded. The 10 pairs of notogastral hairs are arranged as shown in fig. 60. They are light proximally, but dark for most of their length. They are thick, curved, very thin towards the tip, and moderately long. The hair ti has an unusual position, being placed far laterally and behind Aa. Also ms, r 3, and r 2 are situated far laterally. Aa is long and narrow, sometimes divided into two. A 3 is bigger than A 1 and A 2. The integument is decorated with dark tubercles, which in the dorsal middle form an indistinct irregular pattern.

Fig. 60 b shows the ventral side. There is no sternal plate. Apodemata II and the sejugal apodemata are well developed. The latter do not meet in the sternal middle forming a ventro-sejugal ridge as in *Oribatula*. The genital field is not much smaller than the anal field. There are 6 pairs of long, thin genital hairs. The aggenital hairs are situated in their usual position. The anal field is located at some distance from the posterior border of the ventral plate. There are two pairs of long anal hairs. Ad 3 is preanal and situated rather far laterally. Ad 1 and ad 2 are situated in a broad curve behind the anal field, the distance ad 1–ad 1 being twice as long as ad 1–ad 2. Iad is located off the middle of the lateral side of the anal field. A secretitious veil from the dorsal surface covers the lateral sides of the ventral plate. All legs are strong. Femora I–II have no ventral keel, Genus I–II have no distal tooth, no spines. All hairs of the legs are thick, barbed, and dark. Fig. 60 c shows Tibia and Tarsus I. All tarsi are tridactylous and homodactylous. Mandibles of the normal chelicere type.

Rotorua: One specimen in dead leaves and moss under *Manuka* shrub in the thermal area; one individual on green foliage of the undervegetation in redwood forest, Whakarewarewa.

"Treelands", Himitangi, Palmerton North: One specimen on green foliage (STYLES coll.).

Lake Rotoiti: One specimen in moss on a decaying trunk in *Nothofagus* forest.

Zygoribatula connexa (Berl.) (= *Z. striatissima* Hammer (1962 a, fig. 49).
Z. connexa, which is easily recognizable by having a fine striation over the whole dorsal surface of the hysterosoma, has not been figured in this investigation.

Pauatahanui: Two specimens in wet liverworts and mosses under bushes on a river bank; one specimen in liverworts on a vertical slope.

Zygoribatula novazealandica n. sp.; fig. 61.
Colour light brown, darkest across the hysterosoma. Length about 0.52 mm.

In *Z. novazealandica* the rostrum is pointed, ending in a tip as is the case also in *Z. lata* Ham. (1961, fig. 74). The new species is distinct from *Z. lata* by the shape of the lamella, in which there seems to be a deep furrow between the medial and the lateral part of the lamella, by having a short tooth on either side of the base of the lamellar hair, and especially by having a distinct rounded shoulder and small areae porosae.

The lamella is longer and narrower than in *Z. lata* and not so strongly twined. The translamella is also narrower, half of its width being occupied by the posterior thickening. The lamellar and the interlamellar hairs are equally long when laid bare; the rostral hairs are slightly shorter.

The hysterosoma is very broad, and it has a distinct rounded shoulder with a short rough seta, behind which a much thinner hair can be seen. The areae porosae are small, apart from Aa, which is longish, the others are round. There are apparently five pairs, A 2 having a more indistinct pore at some distance in front of it. There are 14 pairs of notogastral hairs, which are smooth and rather short.

Keri-Keri: Several individuals on a slope with plantation (STAGAARD coll.).

Ingella n. gen.

Ingella belongs to the superfamily Oribatuloidea, more precisely to those genera without a distinct dorso-sejugal border. viz. *Maculobates*, *Totobates* etc. It has broad costulae without cusps. Rostral, lamellar, and interlalamellar hairs long. Pteromorphae not movable. Areae porosae present. 10 pairs of visible notogastral hairs. No dorsal sculpture. Two pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs, ad 3 being preanal. All tarsi monodactylous. Solenidia of all tibiae and of Genus I–II ending in a knob (bulla). This genus is named after my daughter Inga.

Ingella bullager n. sp.; fig. 62.
Colour yellowish to light brown. Length about 0.42 mm.

The propodosoma is conical with rounded lateral sides. The rostrum is short, broad, and rounded. The rostral hairs, which are situated on the lateral sides, project by about two thirds of their length beyond the tip of the rostrum. They are unilaterally barbed and very thin towards the tip, which is bent. In front of their base a small tip can be seen. The lamellae, which are equally broad throughout, incline a little. The lamellar hairs are about one and a half times longer than their mutual distance, unilaterally barbed, and very thin towards the tip, which also is bent. The interlamellar hairs, which are situated at the end of a short, curved ridge, a prolongation of the pteromorpha, are directed upwards and laterally in a big curve. They are longer than their mutual distance, unilaterally barbed, the tip is thin and bent. The pseudostigmata

are completely hidden by the anterior border of the pteromorphae. The pseudostigmatic organ is clavate, the head is almost round, broadest distally, and set with minute bristles. They just reach beyond the anterior border of the pteromorphae. Between the lamellae the integument is faintly wrinkled, forming between the wrinkles shallow light hollows. Fig. 62 a shows the propodosoma in lateral view. From this it can be seen that the pteromorpha reaches the interlamellar hair, from which the interlamellar ridge runs to the lamellar hair. The prolamella reaches beyond the rostral hair as a small tip, which in dorsal view can be seen in front of the base of the rostral hair.

The hysterosoma, which is broadest across its middle, is truncate posteriorly, with two very low incurvations. Its anterior border is indicated only by a different shade in the colour of the integument. The pteromorphae have rounded, protruding shoulders. Their anterior border withdraw, their lateral border is slightly concave behind the shoulder. The pteromorphae are prolonged into a short ridge, which runs to the interlamellar hair. From this ridge several stripes radiate over the anterior part of the pteromorpha. There are 10 pairs of notogastral hairs, which are arranged as shown in fig. 62. They are thin, smooth, and curved. The hair pores are longish. There are four pairs of areae porosae, which are all distinct, Aa being the biggest. In the posterior part of the hysterosoma many light spots can be seen.

Fig. 62b shows the ventral side. The sternal plate, which is faintly chitinized, is narrow between Epimeres I, a broad plate is seen between Epimeres II and the fused Epimeres III–IV. Apodemata II are short and broad, the sejugal apodemata are considerably longer and also narrower. The genital field is small as compared with the large anal field. The latter almost touches the posterior border of the ventral plate. All the hairs of the ventral side are long, thin, and smooth. There are two pairs of genital hairs, one at either end. The aggenital hairs are situated in the usual position. There are three pairs of adanal hairs. Ad 3 is preanal and is situated at a short distance from the latero-anterior corner of the anal field; ad 2 is located off the middle of the lateral side, and ad 1 near the latero-posterior corner of the anal field. Iad is situated off the anterior anal hair. All tarsi are monodactylous. Fig. 62 c shows Leg I. The two solenidia of the tarsus are approximately equally long and end in a knob (in fig. 62a the anterior one is either abnormal or in some way bent below the claw, appearing too short). All the femora are broad and furnished with strong, barbed hairs. The solenidion of Genus I–II likewise end in a knob. I cannot see how many of the distal hairs of Tarsus I end in a knob and whether both the solenidia of Tibia I have a distal knob. Mandibles of the normal type.

Rotorua: One specimen on green foliage of the undervegetation in redwood forest, Whakarewarewa, the Forest Research Institute; two individuals on green foliage in Rotoehu State Forest (Styles coll.).

Waitomo: One specimen in thick moss on a dead trunk, in shadow.

Anzac Park, Palmerston North: Two individuals on the ground (Styles coll.).

Pauatahanui: One individual in thick moss, and low plants on a vertical

slope at the roadside; one in wet moss and liverworts in a depression grown with *Scirpus* in native forest.

Hokitika: One individual in thick moss and liverworts on a river bank in shadow.

Protoribates capucinus Berl.
(see WILLMANN 1931, p. 160, fig. 240; HAMMER 1961, p. 108, fig. 103).

Keri-Keri: Numerous in moist to wet luxurious moss on the ground in dense, entangled shrub vegetation.

Liebstadia similis (Mich.).; fig. 63.
Colour light brown. Length about 0.47–0.52 mm.

Although the pteromorphae in fig. 63 are slightly more pronounced and a little more dentate, too, than in the specimens of *L. similis* in my collection from Europe and America, this is probably only a slight variation, as a smaller specimen, fig. 63 a, does not deviate from the typical form. A third specimen, fig. 63 b, from the same sample as the one figured in fig. 63 differs by having a not so strongly pointed rostrum, by its more rounded shape (0.47 mm long), and by the deeper incurvation behind the pteromorphae, which are smooth, not serrate.

On the dorsal surface of the hysterosoma two small pores situated almost between the areae porosae, A 2, can be seen. They are apparently secretory. Similar pores are present also in some specimens of *L. similis* examined by me from Denmark and Alaska.

Pauatahanui: One specimen in grass and white clover on the bank of a small stream.

Hokitika: Two specimens in moss, grass, and *Medicago* at the roadside.

Maculobates-Totobates.

In the oribatid material from New Zealand there is a great number of very similar species belonging to *Maculobates* and *Totobates*, which have appeared to be very difficult to distinguish. Although there is a great difference between the big, broad, and brown *Maculobates longiporosus* Hammer (1962, p. 61, fig. 54) and the small slender, and greyish *Totobates elegans* Hammer (1958, p. 81, fig. 100), it becomes extremely difficult to distinguish between these two genera when both of them are represented by small species and there is any imaginable transition between the two extremes. The main difference is that the pteromorphae of *Totobates* have a distinct curved line, which may indicate hinged pteromorphae. These are often bent steeply ventrally. This line is indistinct in the case of *Maculobates* and the pteromorphae are not bent ventrally and not hinged. This makes *Macubolates* broader. In both genera there is no distinct border between the propodosoma and the hysterosoma. There are three pairs of areae porosae, and there are 10 pairs of notogastral hairs. Lamellae and prolamellae always present, accessory ridge usually present in *Totobates*, lacking or

very faintly developed in *Maculobates*. No translamella, no cusps. The ventral sides are almost alike in both genera. There are three pairs of genital hairs and three pairs of adanal hairs; ad 3 is always preanal. One claw.

As the different species within the two genera can be distinguished mainly by their size, their colour, their shape, the position of the notogastral hairs, the position of the hairs close to the sternal line, and a few more details, only a few characters will be mentioned for each species. The figures will show the differences, but a careful study of the position of the hairs is necessary.

Maculobates luteomarginatus n. sp.; fig. 64.
Colour brown with a broad, light brown to yellow, flattened margin surrounding the hysterosoma. The distal part of the pteromorphae is yellowish. Length about 0.65 mm.

The rostrum protrudes like a nose, which can be seen also in a lateral view, fig. 64a. The rostral, the lamellar, and the interlamellar hairs are all rather long and very faintly barbed. The pseudostigmatic organ is clavate. The head, which is as long as the stem, is lanceolate. Only the head is exposed. On the anterior border of the pseudostigmata there is a long tip, which can be seen in front of the anterior border of the pteromorpha. Fig. 64 a shows the lamella, the interlamellar ridge, and the prolamella. The hysterosoma is as broad as it is long. The anterior border of the pteromorphae is withdrawn. The notogastral hairs are moderately long, curved, and smooth. The distances r 1–r 1, r 1–r 2, p 1–p 1, and p 1–p 2 are equally long and in reality rather short as compared with those of the following species. Aa is longish, A 2 and A 3 smaller and round.

Fig. 64 b shows the ventral side. The sternal ridge is lacking anteriorly and very narrow between Epimeres II. In front of the genital field there is a broad plate connecting the sejugal apodemata and continuing obliquely backwards to Acetabulum IV. The genital hairs are long and thin. Discidium, custodium, and circumpedal ridge present.

Fox Glacier: One specimen in thick liverworts and dead leaves on the ground in native forest; many individuals in decaying leaves in native forest.

Maculobates magnus n. sp.; fig. 65.
Colour light brown. The distal part of the pteromorphae yellowish. Length about 0.58 mm.

The tip of the rostrum is very pointed, ending in a small chitinous tip. The head of the pseudostigmatic organ is very narrow, only a few times broader than the thin stalk. Fig. 65a shows the pseudostigma with its long anterior tip. Fig. 65b shows the lamella, the interlamellar ridge, and the prolamella. Parallel to the lamella an indistinct short ridge can be seen, which may represent a rest of the accessory ridge, which usually is present in *Totobates* (Wallwork 1964) (see below sub *Totobates*).

The hysterosoma is as broad as it is long. The anterior border of the pteromorphae do not withdraw as in *M. luteomarginatus*, but run transversally. The notogastral

hairs are proportionately shorter than in the preceding species. The distance r 1–r 1 is almost twice as long as p 1–p 1. R 2 is not in line with r 1, but situated farther posteriorly. All areae porosae are equally big. Fig. 65 c shows the ventral side.

Fox Glacier: Four specimens in decaying leaves in native forest on Lake Matheson.

Maculobates vulgaris n. sp.; fig. 66.

Colour yellow-brown. The distal part of the pteromorphae is not much lighter than the proximal part. Length about 0.44 mm.

The lamellar and the interlamellar hairs are very thin and faintly barbed. Both of them are as long as their mutual distance. The head of the pseudostigmatic organ is broad, oval, and set with minute bristles. The anterior border of the pteromorphae is withdrawn. The hysterosoma is a little longer than it is broad. The oblique line across the pteromorphae is probably due to a slight pressure caused by the cover glass. The notogastral hairs are thin and slightly curly. The distance r 1–r 1 is longer than p 1–p 1 and twice as long as r 1–r 2. All areae porosae are the same size. Fig. 66 a shows the propodosoma in a lateral view. The interlamellar ridge is double for some distance, but I cannot tell whether this is a rule.

Fig. 66 b shows the ventral side. The sternal plate is completely lacking anteriorly between Epimeres I. Between Epimeres II it is a broad plate, which connects Apodemata II and the sejugal apodemata.

Rotorua: Several specimens in moss on a lawn at the Forest Research Institute, Whakarewarewa.

Pauatahanui: Many individuals in moist decaying leaves; several in wet liverworts and in thin mosses on dead branches in native forest.

Maculobates luteus n. sp.; fig. 67.

Colour light yellow all over the body. Length about 0.43 mm.

The tip of the rostrum is truncate. The rostral hairs, the lamellar hairs, and the interlamellar hairs are very long, extremely thin, and slightly barbed, at least proximally. The pseudostigmatic organ has a broad, rounded head set with short bristles.

The hysterosoma is as broad as it is long, and the anterior border of the pteromorphae, which run transversally for some distance, make the hysterosoma seem almost quadrangular. The notogastral hairs are thin and smooth. The distance r 1–r 1 is long and approximately the same as p 1–p 1. It is twice as long as r 1–r 2. Aa and A 2 are the same size, A 3 is smaller. The distance A 3–A 3 is very long. The lamella, the lamellar ridge, and the prolamella are normal. There is no accessory ridge.

Fig. 67 a shows the ventral side. The hairs of the ventral side are very long and thin.

Waitomo: Several specimens in thick moss and liverworts on a trunk in native forest.

Maculobates longus n. sp.; fig. 68.
Colour light brown. Length about 0.33 mm.

The tip of the rostrum is truncate. The rostral hairs, the lamellar hairs, and the interlamellar hairs are longer than their respective mutual distance. The head of the pseudostigmatic organ is broad, clavate, and set with minute bristles. There is no accessory ridge.

The hysterosoma is one and a half times longer than broad and has parallel lateral sides. The anterior borders of the pteromorphae run transversally, forming broad shoulders. The distal part of the pteromorphae, bordered medially by an indistinct line, is short, triangular, and slightly greyish. The notogastral hairs are short, thin, and slightly curly. Characteristic of this species is the rather short distance r 1–r 1, which is approximately the same as r 1–p 1 and p 1–p 1. A 3 is situated halfway between r 1 and p 1. Aa is bigger than A 2 and A 3, the two latter of which are the same size. The ventral side does not show any characteristic feature.

Hokitika: One specimen in thick moss and liverworts under trees on the river bank.

Milford: One specimen in thick moss on dead branches in tree-fern forest; one in thick moss, white clover, and grass at the roadside.

Maculobates longipilosus n. sp.; fig. 69.
Colour light brown, the distal part of the pteromorphae yellow-greyish. Length about 0.38 mm.

The tip of the rostrum is truncate. The lamellar hairs are long, curly, and extremely thin towards the tip. They are distinctly barbed proximally. Also the interlamellar hairs are very long and thin. The pseudostigmatic organ has a rounded head, only the distal part of which is exposed. Fig. 69 a shows the lateral side of the propodosoma with the lamella, the interlamellar ridge, and the prolamella. There is no accessory ridge. The hysterosoma is longer than broad. The anterior borders of the pteromorphae are sloping, distally almost transverse. The notogastral hairs are very long, curly, and thin. R 1 is only half as long as the others. The distance r 1–r 1 is a little longer than p 1–p 1. The latter is almost twice as long as p 1–p 2. Aa and A 2 are the same size, A 3 is smaller.

Fig. 69b shows the ventral side. The sternal plate is hardly developed. The hairs of the ventral side are very long. An 1 is situated close to the anterior border of the anal plate.

Keri-Keri: One specimen by a river in a steep cleft (Stagaard coll.).

Rotorua: One specimen in a thick layer of a little moist moss or ?liverworts under *Manuka* shrub in the thermal area.

Maculobates minor n. sp.; fig. 70.
Colour yellow. Length about 0.29–0.32 mm.

This species bears a great similarity to *M. longus*; it is, however, broader and shorter. The distance between the lamellae is longer. The pseudostigmatic organs have broad, round clubs. Fig. 70a shows the propodosoma in lateral view. It is built like other *Maculobates* species and has no accessory ridge. The anterior borders of the pteromorphae run transversally and form broad shoulders. The distal part of the pteromorphae is greyish. It is, however, easily recognisable by having r 1, A 3, and ip close together in a line. In some specimens ip cuts into the posterior margin, leaving a deep incision. The distance r 1–p 1 is short. Fig. 70 b shows the ventral side. As it is very faintly chitinized, hairs could not be seen,—if they are present at all, nor all the hair pores.

Puketi: One specimen in moss on a *Rimu* tree.

Waitomo: One specimen in ?liverworts under a tree-fern in deep shadow.

Pauatahanui: One specimen in moss and liverworts in a depression with *Scirpus* in native forest.

Pu Pu Springs: One individual in almost dry moss under *Manuka* shrub.

Fox Glacier: One specimen in thick moss and liverworts on a trunk in native forest.

Milford: One specimen in moist to wet moss on a rotten branch in *Nothofagus* forest; one in wet moss on the ground in the same locality.

? *Maculobates acutissimus* n. sp.; fig. 71.
Colour light brown to brown. Length about 0.67 mm.

For the present I place this species within the genus *Maculobates*, although it deviates in some respect from the species belonging to *Maculobates* mentioned above. This will be evident from the description.

The rostrum is very pointed (hence the specific name). The rostral hairs are short and do not reach much beyond the tip of the rostrum. The lamella can be seen best in lateral view, fig. 71a. Below the lamella there is an asseccory ridge, which usually is not present in *Maculobates*. It does not reach the prolamella. The interlamellar ridge is represented by a short anterior ridge, which does not reach the interlamellar hair. The lamellar hair is very short and thin. The interlamellar hair is perhaps slightly stronger. The pseudostigmatic organ is a short club, which is broadest distally, sitting on a thin stalk. Only the distal half of the head is exposed. Tectop. I is well developed, ending in a tip, which can be seen best in ventral view. There is apparently no line between the propodosoma and the hysterosoma, and the anterior border of the pteromorphae does not reach the interlamellar hairs, as is otherwise the case in *Maculobates* species.

The hysterosoma is broad due to the very broad pteromorphae. These are not movable. From their latero-anterior edge a faint keel seems to run to their posterior border, laterally to which the border of the pteromorpha is bent ventrally. The ptero-

morphae are light brown all over and there is no line separating a distal lighter part from a proximal darker part as in other species within the genus *Maculobates*. Behind the latero-anterior edge of the pteromorphae there is a deep incurvation in their lateral side. There are 10 pairs of notogastral hairs, which are thin, curly, and smooth. There are three pairs of big, distinct areae porosae.

Fig. 71 b shows the ventral side, which does not deviate much from that of other *Maculobates* species. The lyrifissure iad is situated near the lateral side of the anal field. It is rather long and bent. The eggs, of which one specimen contained eight, are unusually long and narrow. All the femora have a broad keel. The tarsi are bilaterally flattened with two rows of dorsal, chitinous keels between which the claw can be reflected. All tarsi are monodactylous. The solenidia of Tarsus II are situated very close together far from the proximal part of the tarsus; no hairs proximally to them. Tarsus II has a dorsal slit proximally. Solenidion 2 of Tarsus I is located on the tip of a rather long, pointed projection.

Arthur's Pass: Two specimens in nest of *Nestor notabilis* (C. Mitchel, B. P. Bishop Museum, Honolulu coll.).

Totobates ovalis n. sp.; fig. 72.
Colour light brown. Length about 0.35–0.38 mm.

The rostrum ends in a small pointed chitinous tip. The rostral hairs, the lamellar hairs, and the interlamellar hairs are very thin and ?smooth. The pseudostigmatic organ has a small pear-shaped head, which is broadest across the middle. Fig. 72 a shows part of the propodosoma in lateral view. There is a narrow but distinct accessory ridge (ar), which almost reaches the prolamella (prl). Within the distinct line across the pteromorphae the hysterosoma is a regular oval. The distal part of the pteromorphae is a slightly lighter colour than the notogaster. There are 10 pairs of notogastral hairs, which are thin, smooth, and curly. R 1 seems to be shorter and thinner than the others. The distance r 1–r 1 is approximately twice as long as p 1–p 1. The latter is as long as r 1–r 2. Aa is a little bigger than A 2 and A 3.

Fig. 72 b shows the ventral side. The sternal plate is very narrow between Epimeres I, broader between Epimeres II. There is a broad, dark ring round the genital field.

Found at Keri-Keri, Waitakere, Rotorua, Waitomo, New Plymouth, Pauatahanui, Upper Takaka, Fox Glacier, Lake Matheson, and Milford, always in small numbers. Its habitat is moss and liverworts on the ground, on trunks, dead leaves, usually in native forest.

Totobates latus n. sp.; fig. 73.
Colour yellowish to light brown. Length about 0.34 mm.

The rostrum is pointed. The rostral hairs, the lamellar hairs, and the interlamellar hairs are very thin, smooth, and the same length, about as long as the mutual distance of the rostral hairs. The head of the pseudostigmatic organ is pear-shaped

and fully exposed. The lamellae are bent a little about one third from their distal end. There is a long accessory ridge as in *T. ovalis* (see fig. 72 a), which almost reaches the prolamella. The anterior borders of the pteromorphae withdraw for their whole length, forming no projecting shoulders, although the latero-anterior margin of the pteromorphae bending ventrally forms a small sharp edge. The pteromorphae are bent ventrally along the distinct curved line across them.

The hysterosoma is comparatively broad and its shape, with the long, sloping shoulders, is the most characteristic feature of this species. The distance r 1–r 1 is a little longer than p 1–p 1 and as long as r 1–p 1. Aa and A 2 are slightly bigger than A 3.

Waitakere: 8 specimens in liverworts and moss on a log in native forest.

Lake Rotoiti: A few individuals in moist to wet *Sphagnum* in a spring locality in *Nothofagus* forest.

Fox Glacier: Many in decaying leaves and small ferns on the ground in native forest; one in thick moss by Lake Matheson.

Milford: A few specimens in liverworts on a dead branch in *Nothofagus* forest.

Totobates antarcticus Wallwork (= *Liebstadia uniova* Ramsay; see HAMMER 1966, p. 5); fig. 74.

Colour yellowish to light brown. Length about 0.33 mm.

The rostrum is truncate. The rostral hairs, the lamellar hairs, and the interlamellar hairs are thin, smooth, and short. The asseccory ridge is distinct, fig. 74 a. The head of the pseudostigmatic organ is rounded and shorter than in the preceding species. The species is recognizable by the shape of the hysterosoma, where only the small edge of the latero-anterior borders of the pteromorphae break the regular longish oval. The areae porosae are small. The distance r 1–r 1 is a little longer than p 1–p 1 and equal to r 1–r 2. Fig. 74 b shows the ventral side.

This species has been very well described by WALLWORK, 1964a, under the name of *T. elegans* (Hammer) ssp. *antarcticus* n. ssp. from Campbell Island. Dr. WALLWORK kindly sent me specimens from Campbell Island for comparison with *T. elegans*, and it appeared that *Totobates elegans* ssp. antarcticus has nothing to do with *T. elegans*, but is a good species, the name of which must be *T. antarcticus* Wallwork.

Found at Keri-Keri, Waitakere, New Plymouth, Pauatahanui, Lake Rotoiti, Fox Glacier, and Milford: in mosses and lichens on a tree, in liverworts, in decaying leaves, etc., usually in *Nothofagus* forest. It is often found in great numbers, i.e. in moss on a dead trunk at Fox Glacier, National Park.

Totobates minimus n. sp.; fig. 75.

Lighter of colour than all the preceding species. Length about 0.29 mm.

The tip of the rostrum is truncate. The rostral hairs, the lamellar hairs, and the interlamellar hairs are short and thin, the rostral hairs being the longest. The accessory ridge, fig. 75 a, is shorter than that of *T. antarcticus*. This species most of all resembles

T. antarcticus, but can be distinguished by being broader across the shoulders and by its much shorter hysterosoma. Its great width can be seen especially by a study of the ventral side as compared with that of *T. antarcticus*. The hairs 1 a from the two sides are situated with a long mutual distance as compared with those of *T. antarcticus*. *T. minimus* may be a variety of *T. antarcticus*.

Found at Fox Glacier in thick moss at the foot of a giant tree; in decaying leaves; in moss on trunks, etc., all in native forest; by Lake Matheson in thick moss.

Totobates macroonyx n. sp.; fig. 76.
Colour yellowish to light brown. Length about 0.38 mm.

The tip of the rostrum is truncate. The rostral hairs, the lamellar hairs, and the interlamellar hairs are very thin, long, and all of them longer than their respective mutual distance. An accessory ridge is not present, but there is an indistinct line, which may represent the accessory ridge, fig. 76a. The pseudostigmatic organ has a comparatively small and narrow head.

The hysterosoma is as broad as it is long. The anterior borders of the pteromorphae withdraw for their whole length. The distal part of the pteromorphae is yellowish-grey and has finely radiating stripes. The notogastral hairs are slightly curly. The distance r 1–r 1 is longer than p 1–p 1, and almost twice as long as r 1–r 2.

Fig. 76 b shows the ventral side. The four hairs, 2 a and 3 a from the two sides are situated in a transverse line in front of the genital field. The most characteristic feature of this species is the very long and slender claw of all tarsi. The claw of Tarsus II is almost as long as the tarsus, fig. 76c.

Lake Rotoiti: Numerous in dripping wet moss in oozing water (a spring?) in *Nothofagus* forest.

Totobates communis n. sp.; fig. 77.
Colour yellowish to light brown. Length about 0.35 mm.

The tip of the rostrum is truncate. The rostral hairs, the lamellar hairs, and the interlamellar hairs are thin and moderately long, i.e. considerably longer than those of *T. latus*. The pseudostigmatic organ has a short head, which is equally broad throughout. A distinct accessory ridge is not present, but it may be represented by an indistinct line which can be seen ventrally to the lamella, widening towards the prolamella, fig. 77a.

The hysterosoma is almost as broad as it is long. The anterior borders of the pteromorphae run transversally for most of their length. The notogastral hairs are thin and smooth. The distance r 1–r 1 is equal to p 1–p 1 and longer than r 1–r 2. Characteristic of the ventral side, fig. 77b, is the position of 2 a and 3 a from the two sides, being situated almost in a longitudunal line in the middle of the sternal plate. The hairs 1 a are situated rather close together.

Waitakere: One specimen in moss and liverworts in native forest.

Waitomo: One individual in decaying leaves under trees at the roadside.

Lake Rotoiti: Several individuals in thick moss with bone-dry lichens and *Lycopodium* in open *Manuka* shrub and *Nothofagus* forest a few hundred feet above lake level.

Angullozetes n. gen.

Angullozetes is closely related to *Maculobates* and *Totobates* and apparently belongs to the family Haplozetidae under the superfamily Oribatuloidea. The following characters may serve to define the genus. No distinct border between the propodosoma and the hysterosoma. Poronotic. True ventrally curving pteromorphae, which do not seem to be movable. Lamellae and sublamellae present. No prolamella and no interlamellar ridge. No translamella and no cusps. No tutorium. 10 pairs of notogastral hairs. Sternal plate broad. Discidium, custodium, and circumpedal ridge present. Three pairs of genital hairs, one pair of aggenital hairs, two pairs of anal hairs, and three pairs of adanal hairs. Ad 3 preanal. All tarsi monodactylous.

Angullozetes rostratus n. sp.; fig. 78.

Colour light brown. Length about 0.36 mm.

Both the propodosoma and the hysterosoma are angular (hence the generic name). The propodosoma is comparatively narrow with rounded lateral sides. The rostrum is protruding and well defined, as can be seen best when it is laid bare. Fig. 78 a shows a dorsal view of the right side of the propodosoma as seen from inside. On the dorsal side of the rostrum there is a slit, a short distance behind which the minute rostral hairs can be seen. A broad dark band runs from the rostrum to Acetabulum I. This band can be seen also in lateral view, fig. 78b. The lamellae, which are situated far laterally, are curved and taper towards the tip. The lamellar hair is situated near the lamellar tip. It is as minute as the rostral and the interlamellar hair. Below the lamella there is a strong accessory ridge, which distally runs parallel to the distal part of the lamella. In fig. 78a it has another direction, which may be due to a damaging fracture along the broken line and the preparation being slightly flattened out. There is no interlamellar ridge between the interlamellar hair and the lamellar hair, and no prolamella from the lamellar hair to the rostral hair. The pseudostigmatic organ is set in a deep cup far below the anterior border of the pteromorpha. It has a spherical head on a very long, thin stem and only the head is exposed.

The hysterosoma is angular and its anterior half is broader than the posterior half. The pteromorphae are broad, but only a narrow distal part is bent ventrally. Their anterior borders withdraw, forming a long sloping line continuing into the lateral side of the pteromorphae. There are 10 pairs of notogastral hairs, which are so minute, that only those seen in profile can be discerned. The hair pores are distinct. There are three pairs of areae porosae situated as in *Totobates* and *Maculobates*; all are approximately the same size.

Fig. 78c shows the ventral side, which in most details agrees with that of *Totobates* and *Maculobates*. A short discidium is present. The circumpedal ridge joins the

anterior part of the discidium and forms a custodial ridge. The sternal plate is broad, but faintly chitinized. There are three pairs of genital hairs, viz. one on the anterior margin, and two in the posterior half of the plates. Ad 3 is situated in front of the anal field, as is the case also in *Totobates* and *Maculobates*. The positions of ad 1, ad 2, and iad are the same as in the two preceding genera. Behind the anal field and halfway surrounding its posterior end there is a fold or wrinkle. All tarsi are monodactylous. There are no secondary teeth. A broad ventral keel is developed on all femora. The tarsi of all legs are bilaterally flattened and the claw, when bent backwards, rests between two rows of hairs. Tibia II has a short distal tooth. Tarsi I–II have a proximal dorsal slit.

Fox Glacier: A few specimens in thick mosses and decaying leaves in native forest; numerous in dead leaves on the ground.

Milford: Several specimens in dead leaves in *Nothofagus* forest; one in wet moss on a rotten branch.

Andacarus ligamentifer n. sp.; fig. 79.
Colour white-yellowish. Length about 0.39 mm.

The rostrum is narrow, rounded, and is situated at a much lower level than the posterior part of the propodosoma. The rostral hairs, which are greyish and not feathered as the lamellar hairs, are rather thin. The lamellar hairs are thick, feathered, black, and at least twice as long as their mutual distance. The interlamellar hairs, which in fig. 79 are more or less erect, in other specimens reach beyond the base of c 1. The quadrangle between the interlamellar hairs is drawn out into short tips in all four corners. On its posterior border an indistinct pattern like that within the quadrangle can be seen. The posterior exopseudostigmatic hair is longer than the lamellar hair, but not so long as the hair cp. The anterior exopseudostigmatic hair is a short, stiff seta. The pseudostigmatic organ is very long and tape-shaped.

The integument of the hysterosoma has no sculpture. It is whitish, and the sclerites are often so faintly chitinized that they cannot be seen. C 2 and c 3 are very short, much shorter than f 1. In fig. 79 c 1 is erect, but when stretched backwards it reaches beyond the base of d 1. The latter is thinner than d 2. In some specimens it is as thick as d 2 and reaches beyond the base of e 1. E 1 is undulating. The ventral side has not been studied. The female contains from two to four eggs.

Found at Waitakere, Rotorua, Waitomo, Lake Rotoiti, Fox Glacier, Lake Matheson, and at Milford. It has usually been found singly or in small numbers, i.e. three specimens in rather dry mosses under *Manuka* shrub at Waitakere; 9 individuals in low plants under *Manuka* shrub in the thermal area, Rotorua; by Lake Rotoiti one specimen in thick moss and bone-dry lichens and *Lycopodium* in open *Manuka-Nothofagus* forest; at Fox Glacier and Milford in mosses and liverworts on dead branches and in dead leaves.

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Explanation of the Figures on Plates I–XL

Fig. 1. *Tikizetes spinifer* n. gen. n. sp.
– 1a. — — ventral side.
– 1b. — — Leg I.
– 1c. — — Leg IV.
– 1d. — — mandible.
– 2. *Pseudoceratoppia sexsetosa* n. gen. n. sp.
– 2a. — — propodosoma in lateral view. (Shows erroneously *P. microsetosa*).
– 2b. — ventral side.
– 3. — *microsetosa* n. sp.
– 4. — *asetosa* n. sp.
– 4a. — — ventral side.
– 5. — *clavasetosa* n. sp.
– 5a. — — Genu, Tibia and Tarsus I.
– 6. — *diversa* n. sp.
– 7. *Tectocepheus velatus* (*Mich*). *v. sarekensis* Trägårdh.
– 8. — — — *v. minor* Berl.
– 9. — — — *v. novus* n. var.
– 10. *Lamellobates palustris* Ham.
– 11. *Parahypozetes grandis* n. gen. n. sp.
– 11a. — — ventral side.
– 11b. — — genital hair.
– 11c. — — Leg I.
– 11d. — — Leg II.
– 12. — *bidentatus* n. sp.
– 12a. — — tip of pseudostigmatic organ full face.
– 13. — *quadridentatus* n. sp.
– 14. — *furcatus* n. sp.
– 15. — *lobatus* n. sp.
– 16. — *giganteus* n. sp.
– 17. — *macrodentatus*.
– 18. — *maximus* n. sp.
– 19. *Edwardzetes novazealandicus* n. sp.
– 19a. — — Femur and Genu I.
– 19b. — — Leg II.
– 19c. — *andicola* Ham. Femur and Genu II.
– 19d. — *dentifer* Ham. Femur and Genu II.
– 20. *Parafurcobates cuspidatus* n. gen. n. sp.
– 20a. — — propodosoma in lateral view.
– 20b. — — ventral side.
– 20c. — — Genu and Tibia I.
– 20d. — — palp.

Fig. 21. *Macrogena rudentiger* n. sp.
– 21a. — — propodosoma in an oblique lateral view.
– 21b. — — ventral side.
– 21c. — — Leg I.
– 22. — crassa n. sp.
– 23. *Peduncolozetes minutus* n. sp.
– 23a. — — tip of pseudostigmatic organ.
– 24. *Tutorozetes termophilus* n. gen. n. sp.
– 24a. — — propodosoma in a lateral view.
– 24b. — — ventral side.
– 25. *Magellozetes clathratus* n. sp.
– 26. *Ceratozetes gracilis* (Mich.).
– 27. — *mediocris* Berl.
– 28. — *bicornis* n. sp.
– 29. *Ceratozetes hamobatoides* n. sp.
– 30. *Onychobates nidicola* n. gen. n. sp.
– 30a. — — propodosoma in lateral view.
– 30b. — — ventral side.
– 30c. — — Tibia and Tarsus IV.
– 30d. — — Tibia and Tarsus I.
– 31. *Anellozetes longicaulis* n. sp.
– 31a. — — propodosoma in oblique lateral view.
– 32. — *intermedius* n. sp.
– 32a. — — pseudostigmatic organ.
– 32b. — — ventral side
– 33. — *luteus* n. sp.
– 34. *Campbellobates latohumeralis* n. sp.
– 34a. — — propodosoma in lateral view.
– 34b. — — ventral side
– 34c. — — Leg I.
– 34d. — — Leg III.
– 35. — *occultus* n. sp.
– 35a. — — ventral side.
– 36. — *aureus* n. sp.
– 36a. — — ventral side.
– 37. *Punctoribates punctum* (C. L. Koch).
– 38. — *manzanoensis* Ham.
– 39. *Magnobates flagellifer* n. gen. n. sp.
– 39a. — — ventral side.
– 39b. — — Tibia and Tarsus II.
– 40. *Baloghobates nudus* n. gen. n. sp.
– 40a. — — ventral side.
– 40b. — — Femur and Genu I.
– 40c. — — Leg II.
– 41. — *parvoglobosus* n. sp.
– 41a. — — propodosoma in lateral view.
– 42. *Zealandobates grandis* Ramsay.
– 42a. — — hair of hysterosoma.
– 42b. — — ventral side.
– 42c. — — Leg I.

Fig. 43. *Setobates medius* n. sp.
– 43a. — — pseudostigmatic organ.
– 43b. — — ventral side.
– 43c. — — dorsal edge of Tarsus I.
– 44. — *minor* n. sp.
– 45. — *discors* n. sp.
– 46. *Granjeanobates novazealandicus* n. sp.
– 46a. — — propodosoma in lateral view.
– 46b. — — pseudostigmatic organ with surroundings.
– 46c. — — ventral side.
– 47. *Scheloribates crassus* n. sp.
– 47a. — — propodosoma in lateral veiw.
– 47b. — — ventral side.
– 48. — *anzacensis* n. sp.
– 48a. — — ventral side.
– 49. — *pacificus* n. sp.
– 49a. — — ventral side.
– 50. — *keriensis* n. sp.
– 50a. — — ventral side.
– 51. — *zealandicus* n. sp.
– 51a. — — ventral side.
– 52. — *conjuges* n. sp.
– 52a. — — ventral side.
– 53. — *aequalis* n. sp.
– 54. *Rostrozetes foveolatus* Sell.
– 55. *Peloribates fragilis* n. sp.
– 55a. — — pseudostigmatic organ.
– 56. — *magnisetosus* Ramsay.
– 57. *Incabates angustus* n. sp.
– 57a. — — ventral side.
– 58. *Subphauloppia dentonyx* n. gen. n. sp.
– 58a. — — propodosoma in lateral view.
– 58b. — — ventral side.
– 58c. — — Tibia and Tarsus I (not all the distal hairs of the tarsus are figured).
– 59. *Paraphauloppia novazealandica* n. gen. n. sp.
– 59a. — — ventral side.
– 60. *Crassoribatula maculosa* n. gen. n. sp.
– 60a. — — propodosoma in lateral view.
– 60b. — — ventral side.
– 60c. — — Tibia and Tarsus I.
– 61. *Zygoribatula novazealandica* n. sp.
– 61a. — — pseudostigmatic organ.
– 62. *Ingella bullager* n. gen. n. sp.
– 62a. — — propodosoma in lateral view.
– 62b. — — ventral side.
– 62c. — — Leg I.
– 63. *Liebstadia similis* (Mich.).
– 63a. — — variation of the shoulder.
– 63b. — — variation of the shoulder.

Fig. 64. *Maculobates luteomarginatus* n. sp.
– 64a. — — propodosoma in lateral view.
– 64b. — — ventral side.
– 65. — *magnus* n. sp.
– 65a. — — pseudostigma.
– 65b. — — propodosoma in lateral view.
– 65c. — — ventral side.
– 66. — *vulgaris* n. sp.
– 66a. — — propodosoma in lateral view.
– 66b. — — ventral side.
– 67. — *luteus* n. sp.
– 67a. — — ventral side.
– 68. — *longus* n. sp.
– 69. — *longipilosus* n. sp.
– 69a. — — propodosoma in lateral view.
– 69b. — — ventral side.
– 70. — *minor* n. sp.
– 70a. — — propodosoma in lateral view.
– 70b. — — ventral side.
– 71.? — *acutissimus* n. sp.
– 71a. — — propodosoma in lateral view.
– 71b. — — ventral side.
– 72. *Totobates ovalis* n. sp.
– 72a. — — propodosoma in lateral view.
– 72b. — — ventral side.
– 73. — *latus* n. sp.
– 74. — *antarcticus* Wallw.
– 74a. — — propodosoma in lateral view.
– 74b. — — ventral side.
– 75. — *minimus* n. sp.
– 75a. — — propodosoma in lateral view.
– 75b. — — ventral side.
– 76. — *macroonyx* n. sp.
– 76a. — — propodosoma in lateral view.
– 76b. — — ventral side.
– 76c. — — sketch of Tarsus II.
– 77. *Totobates communis* n. sp.
– 77a. — — propodosoma in lateral view.
– 77b. — — ventral side.
– 78. *Angullozetes rostratus* n. gen. n. sp.
– 78a. — — propodosoma in dorsal view.
– 78b. — — propodosoma in lateral view.
– 78c. — — ventral side.
– 79. *Andacarus ligamentifer* n. sp.

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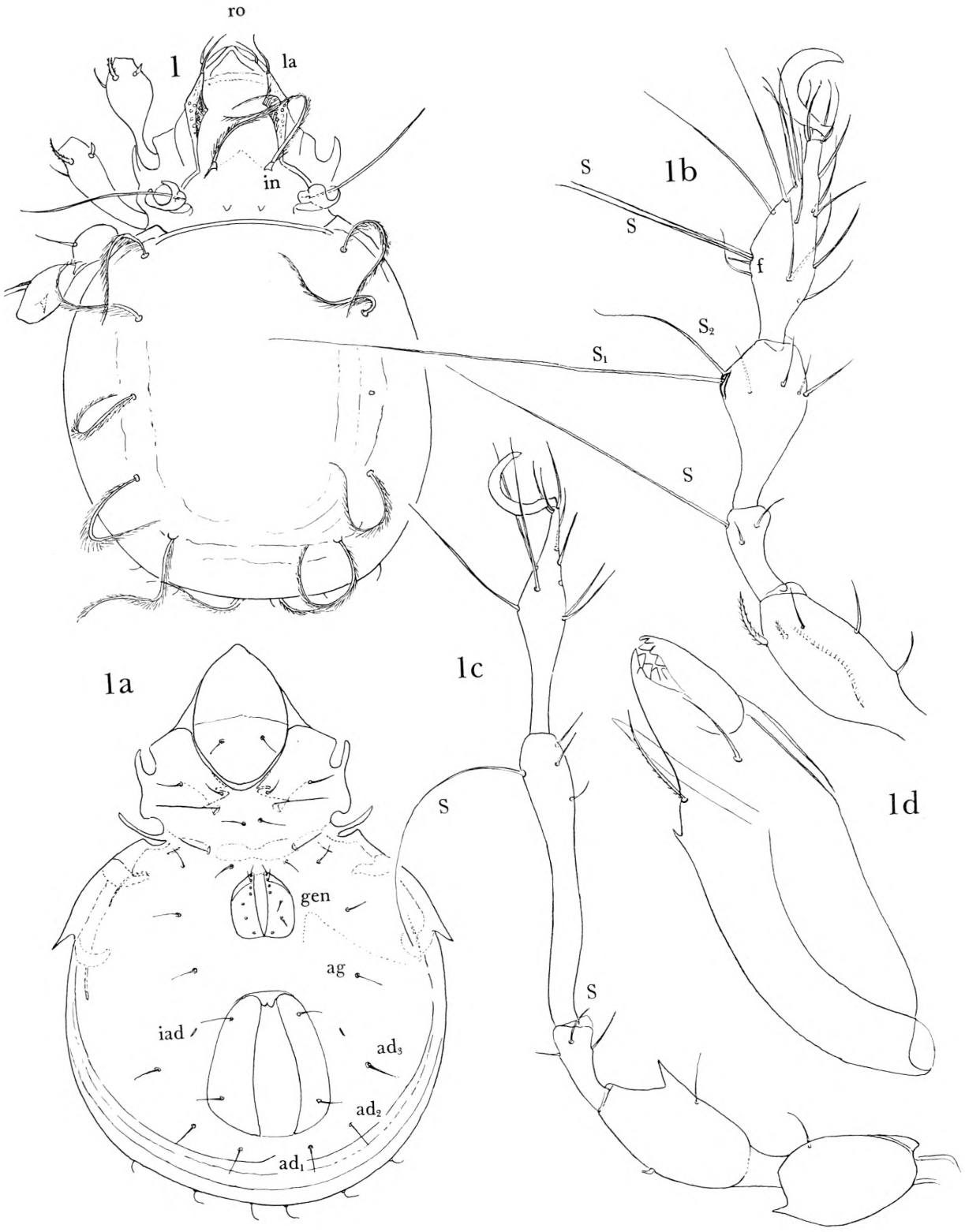
Færdig fra trykkeriet den 18. februar 1967.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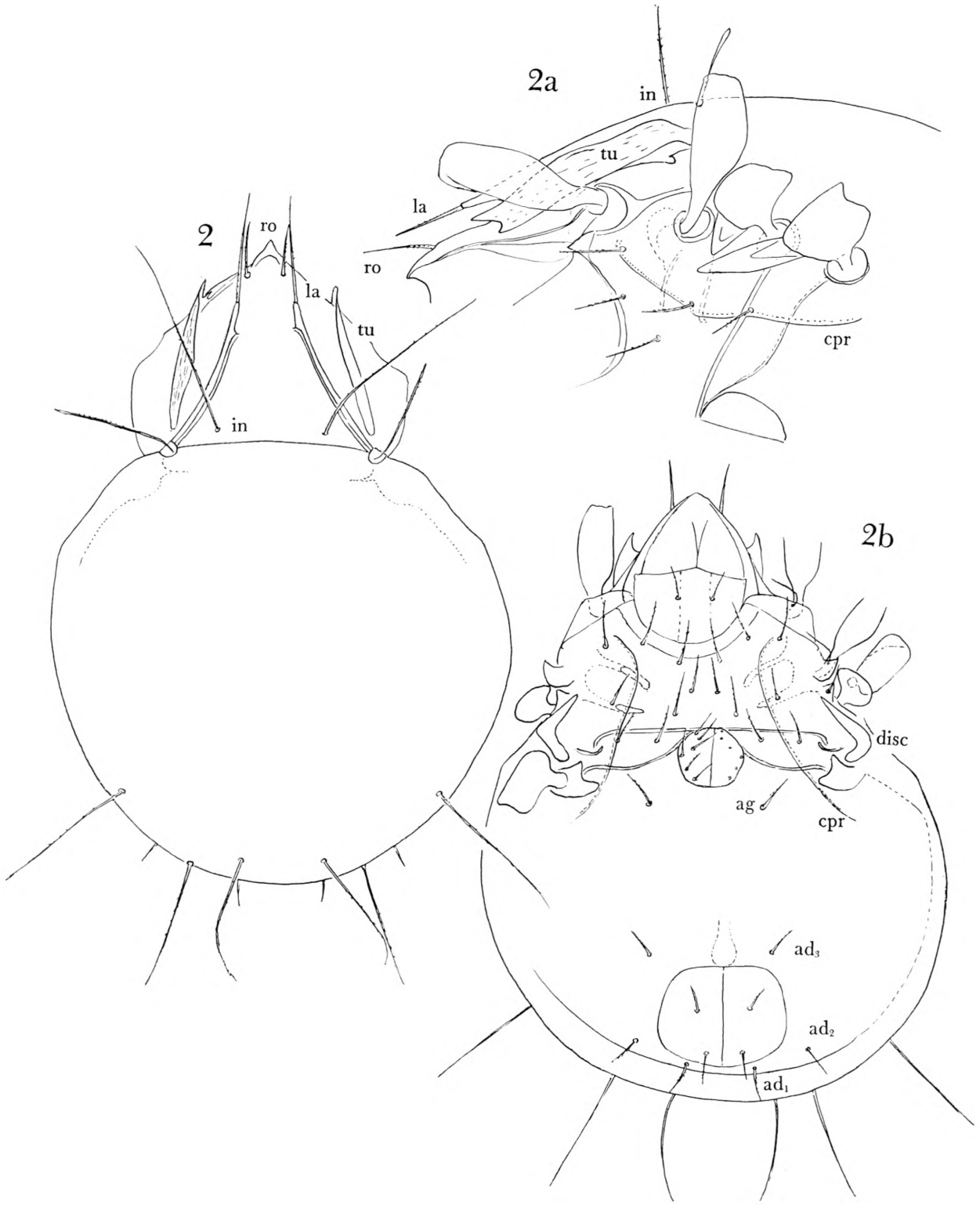
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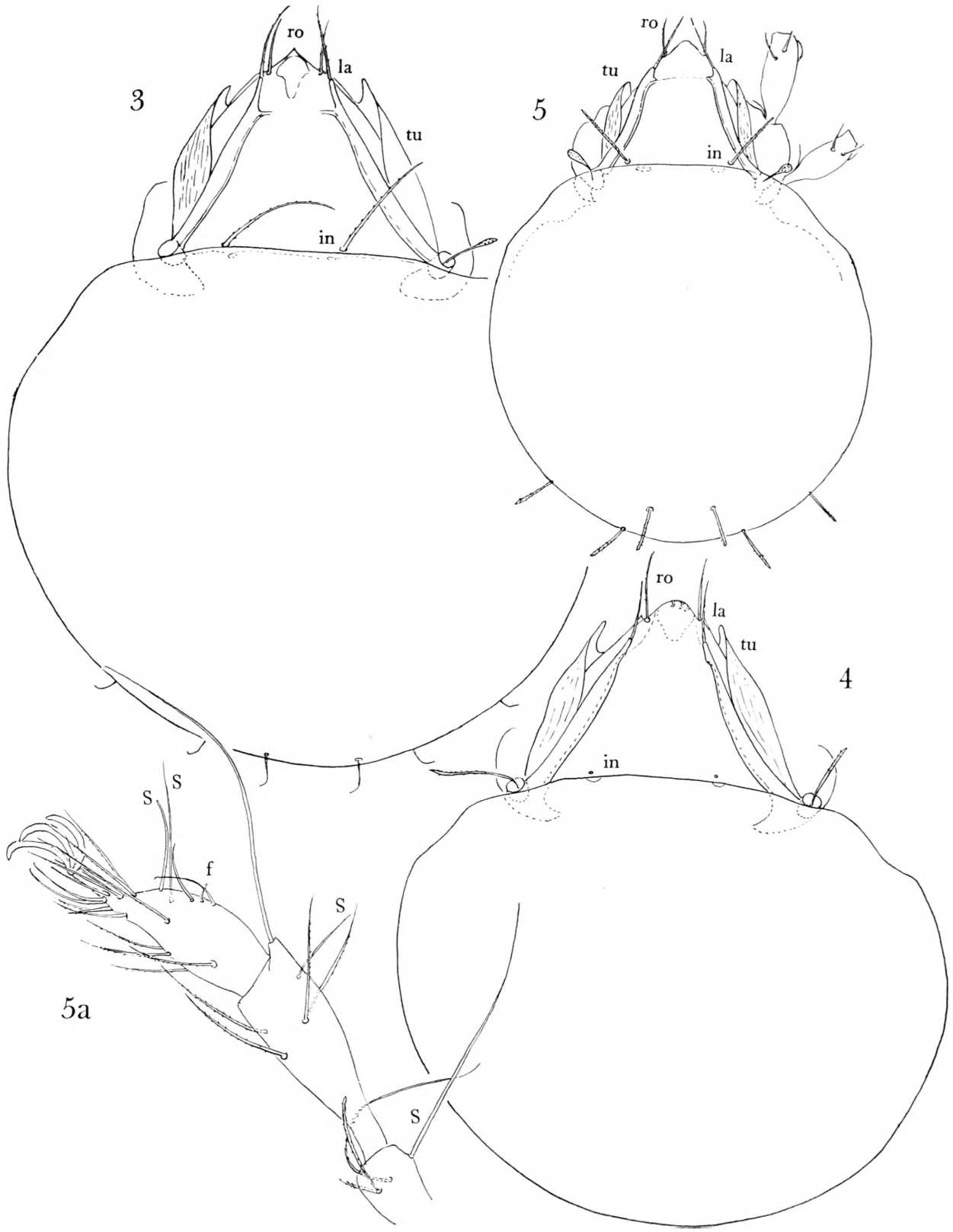
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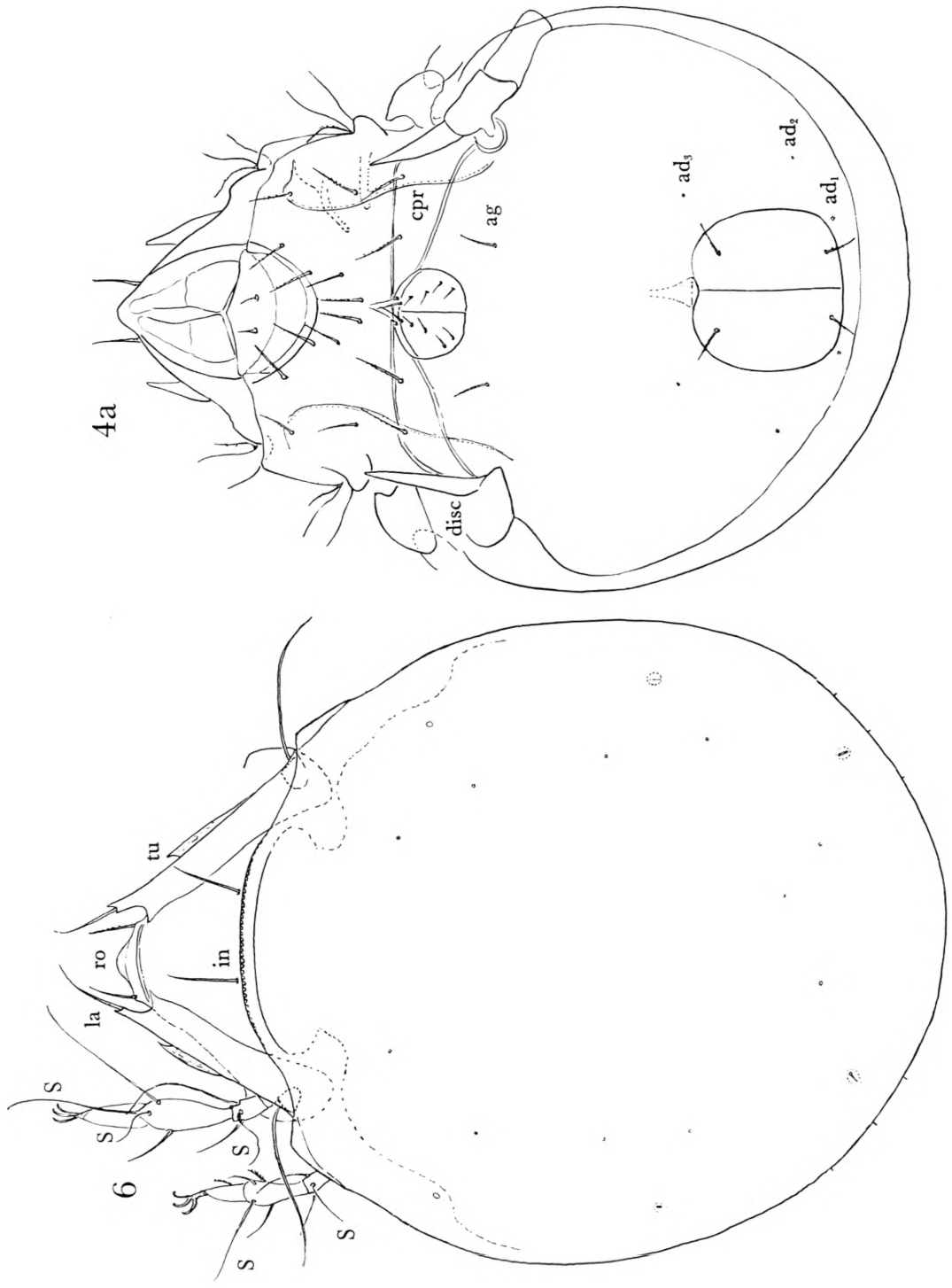
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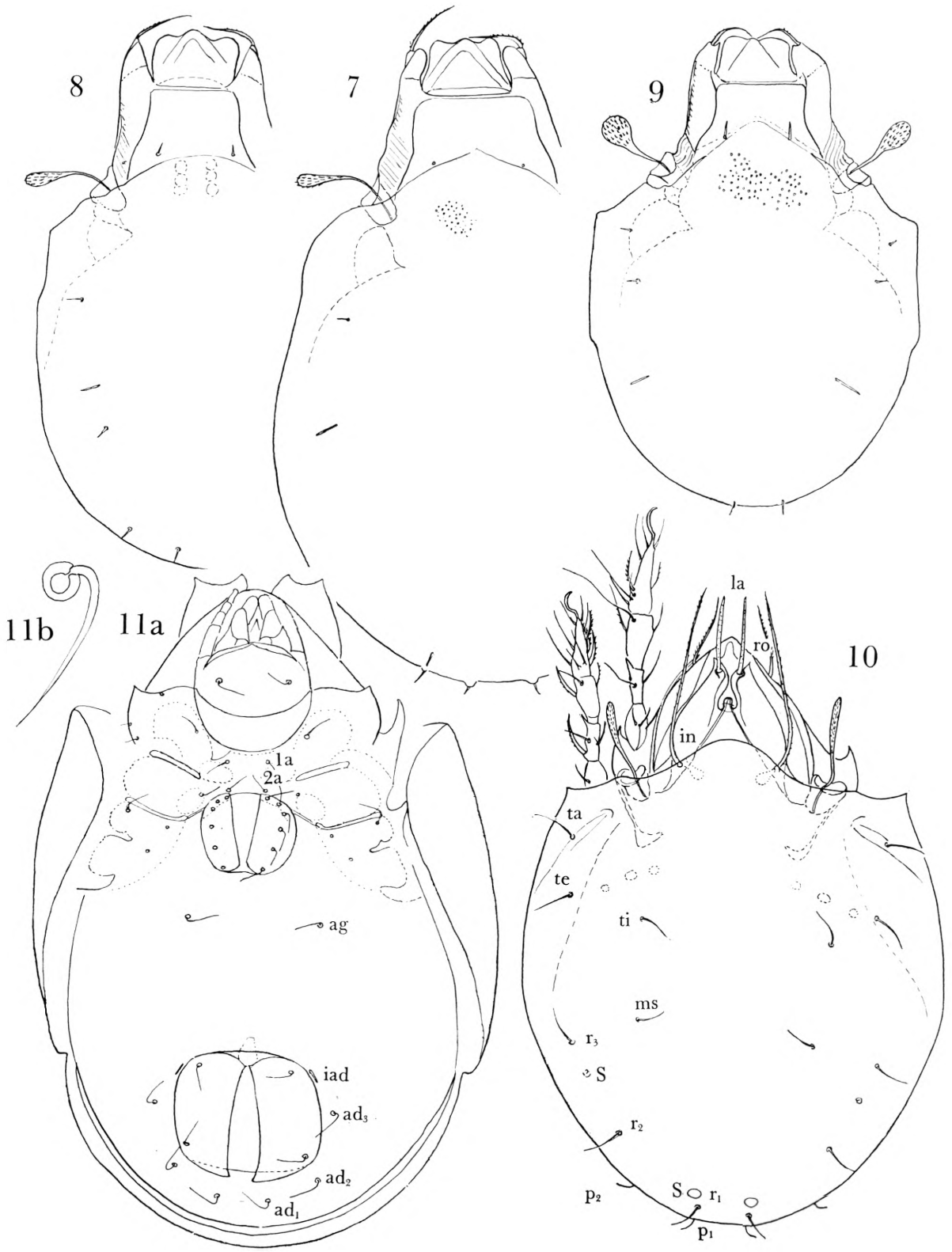
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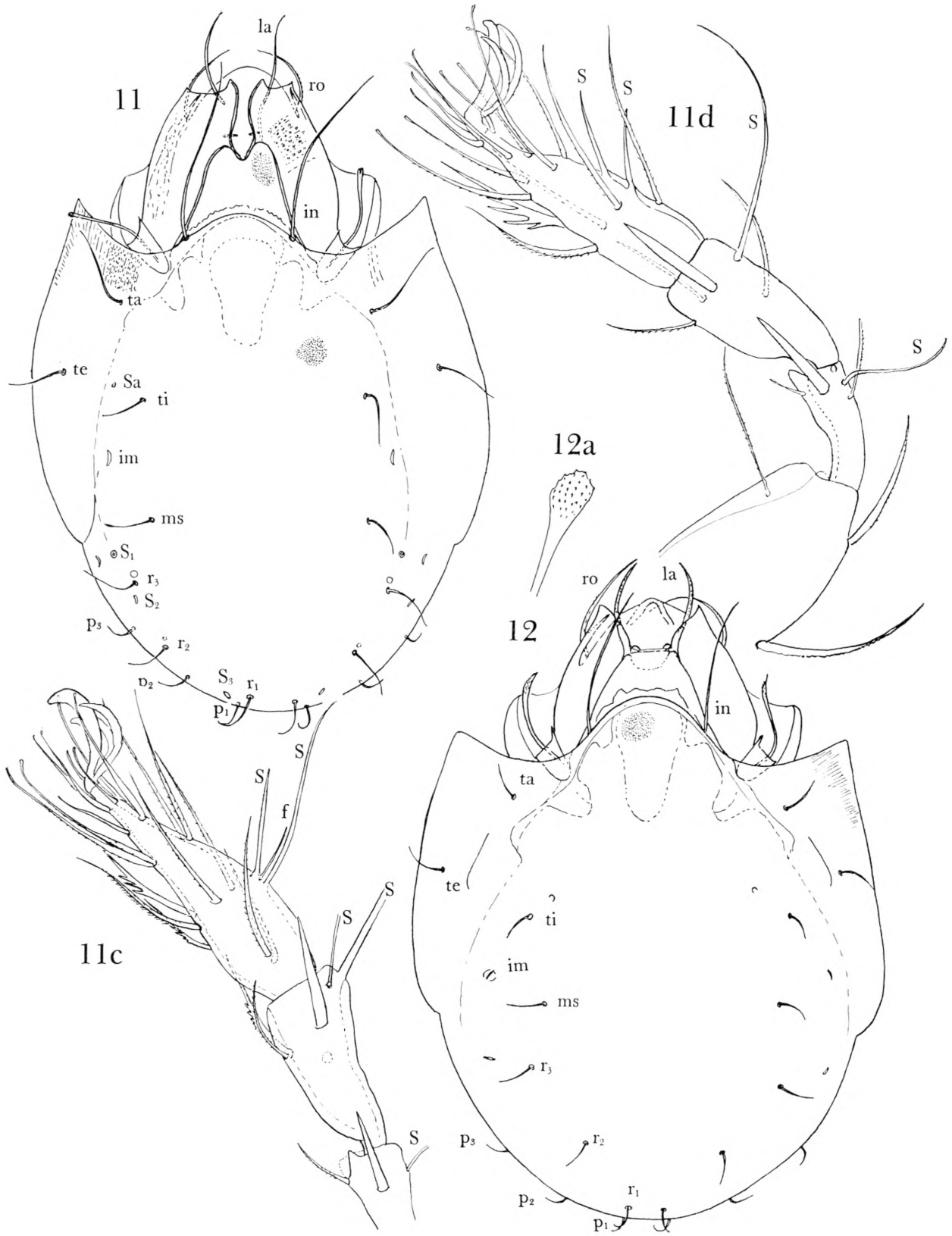
11
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12
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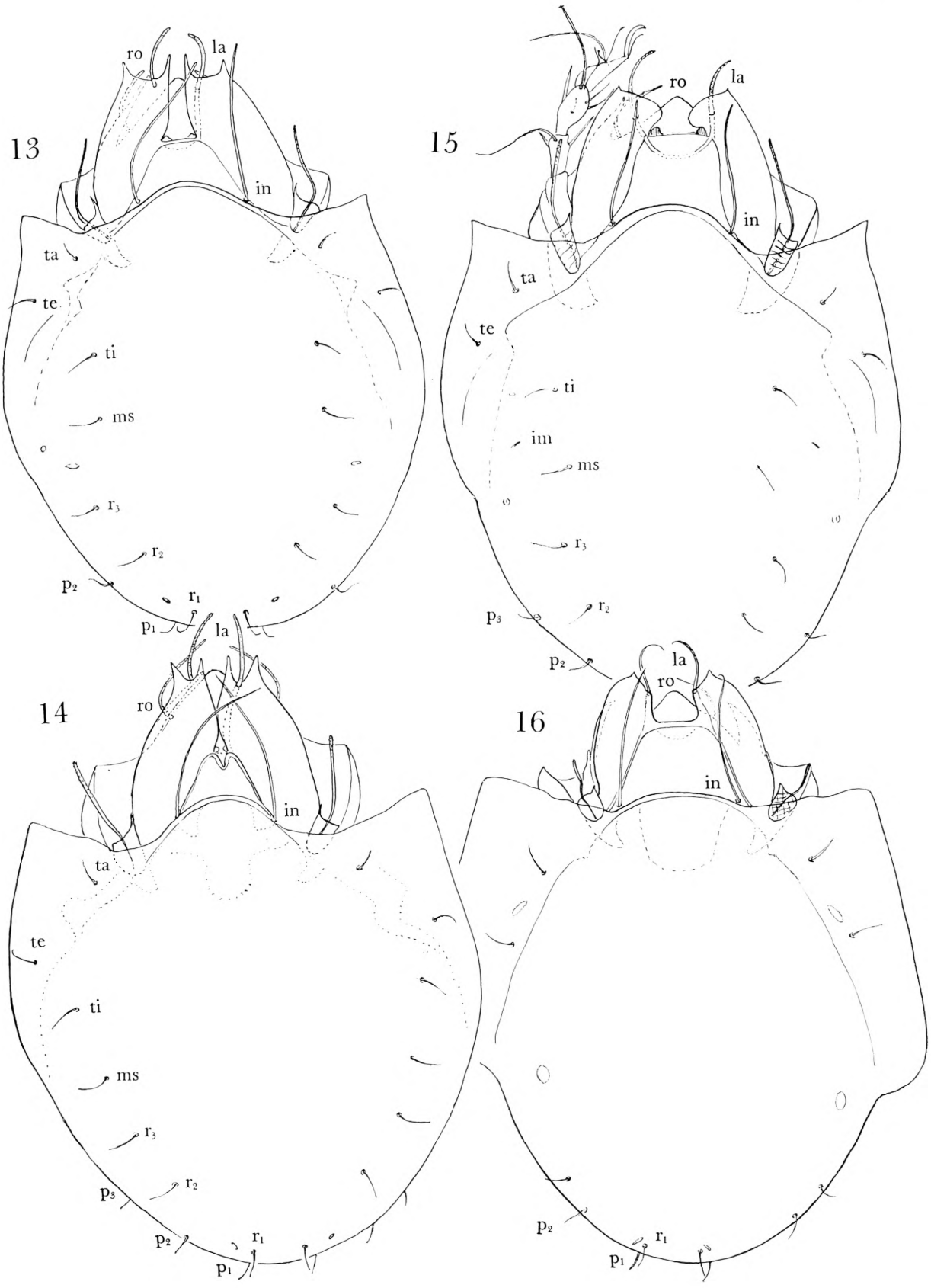
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15
ro
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16
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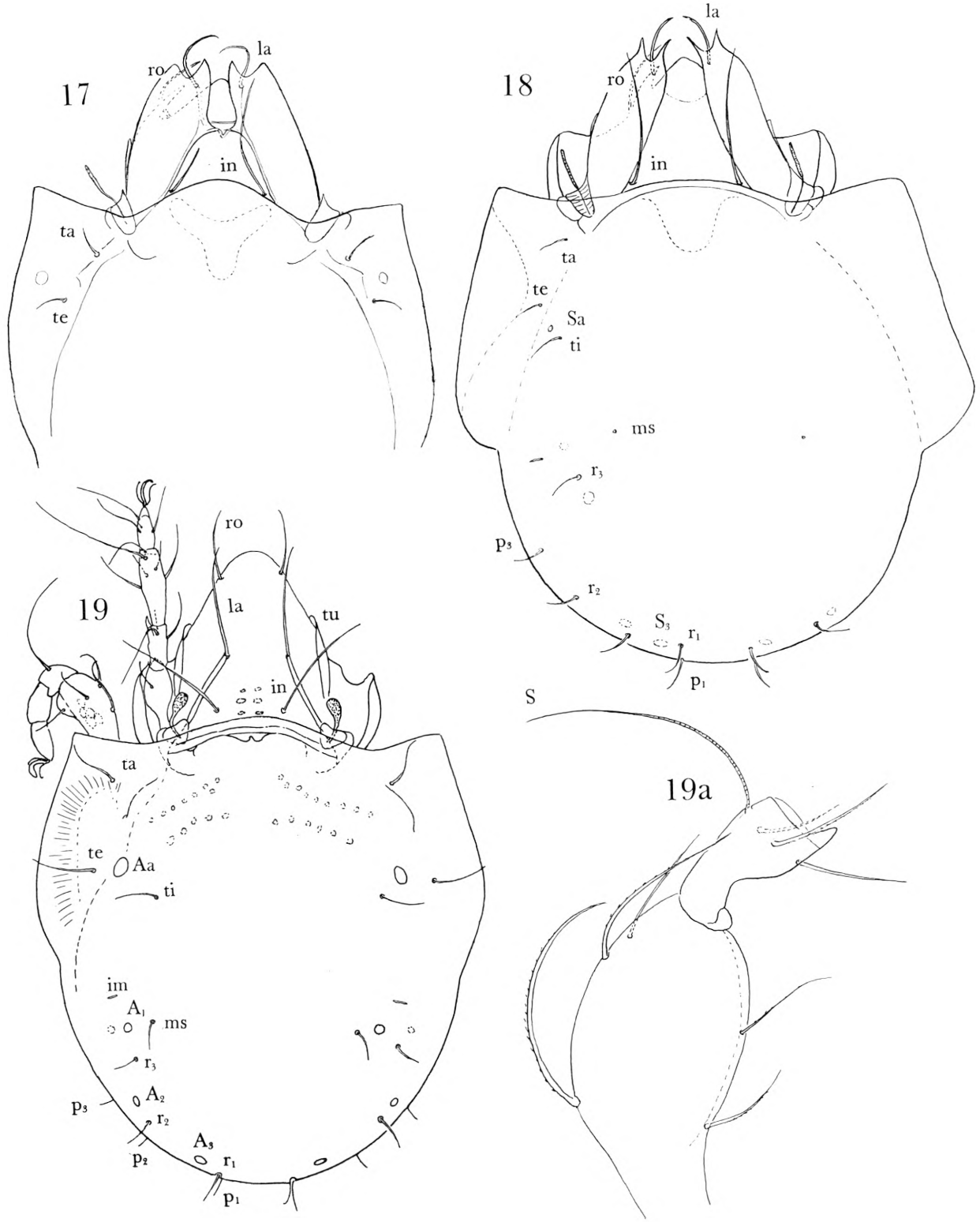
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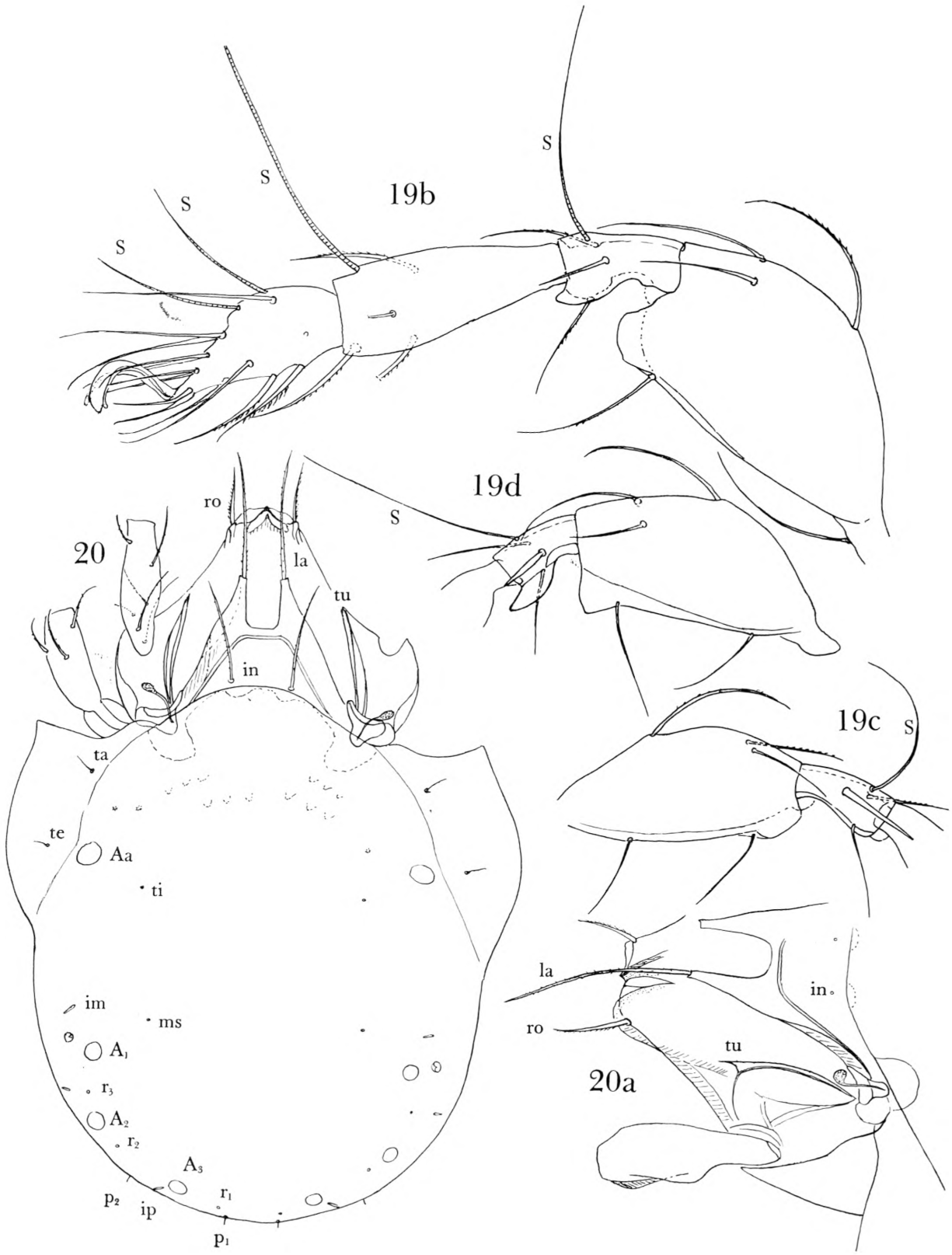
19a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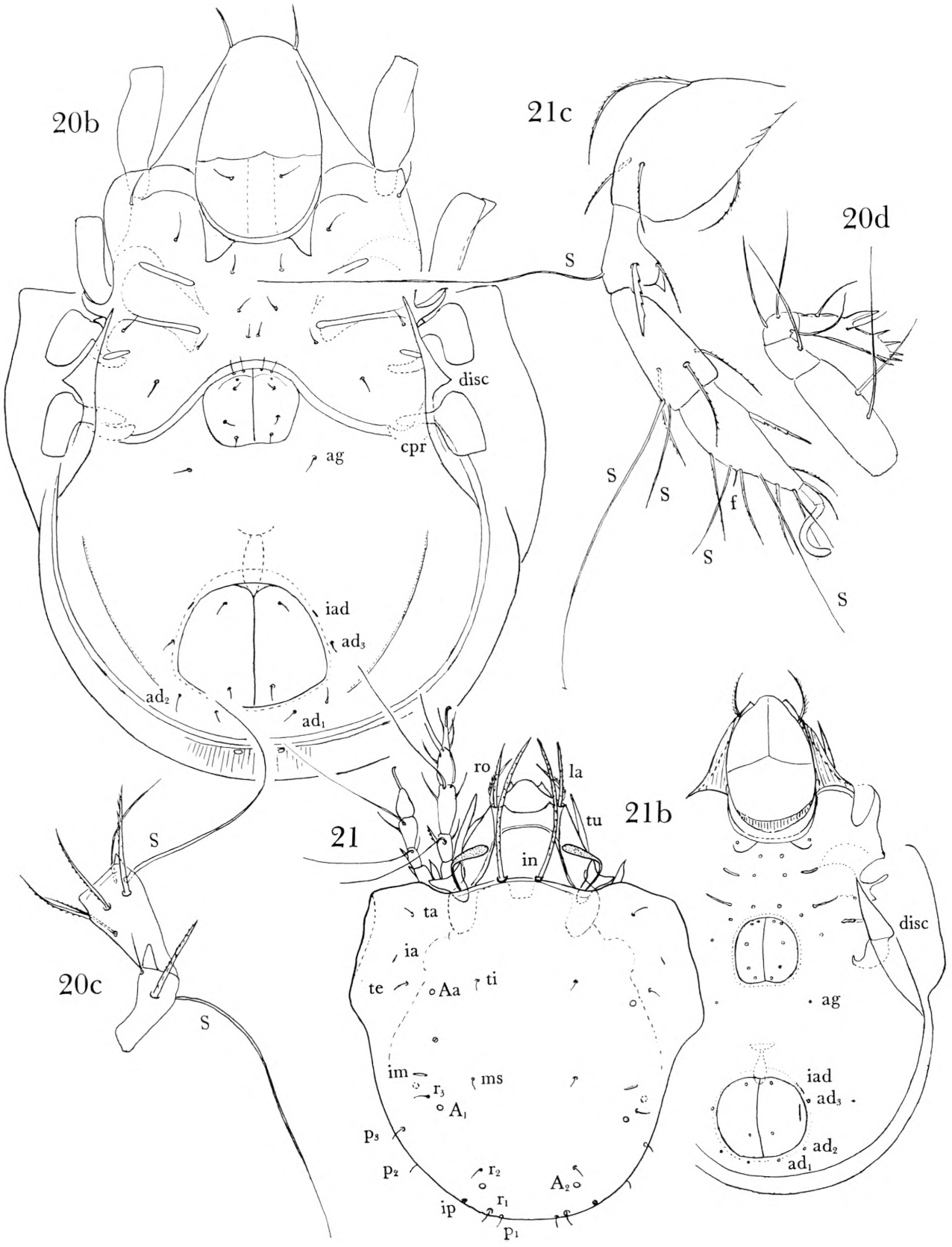
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21c
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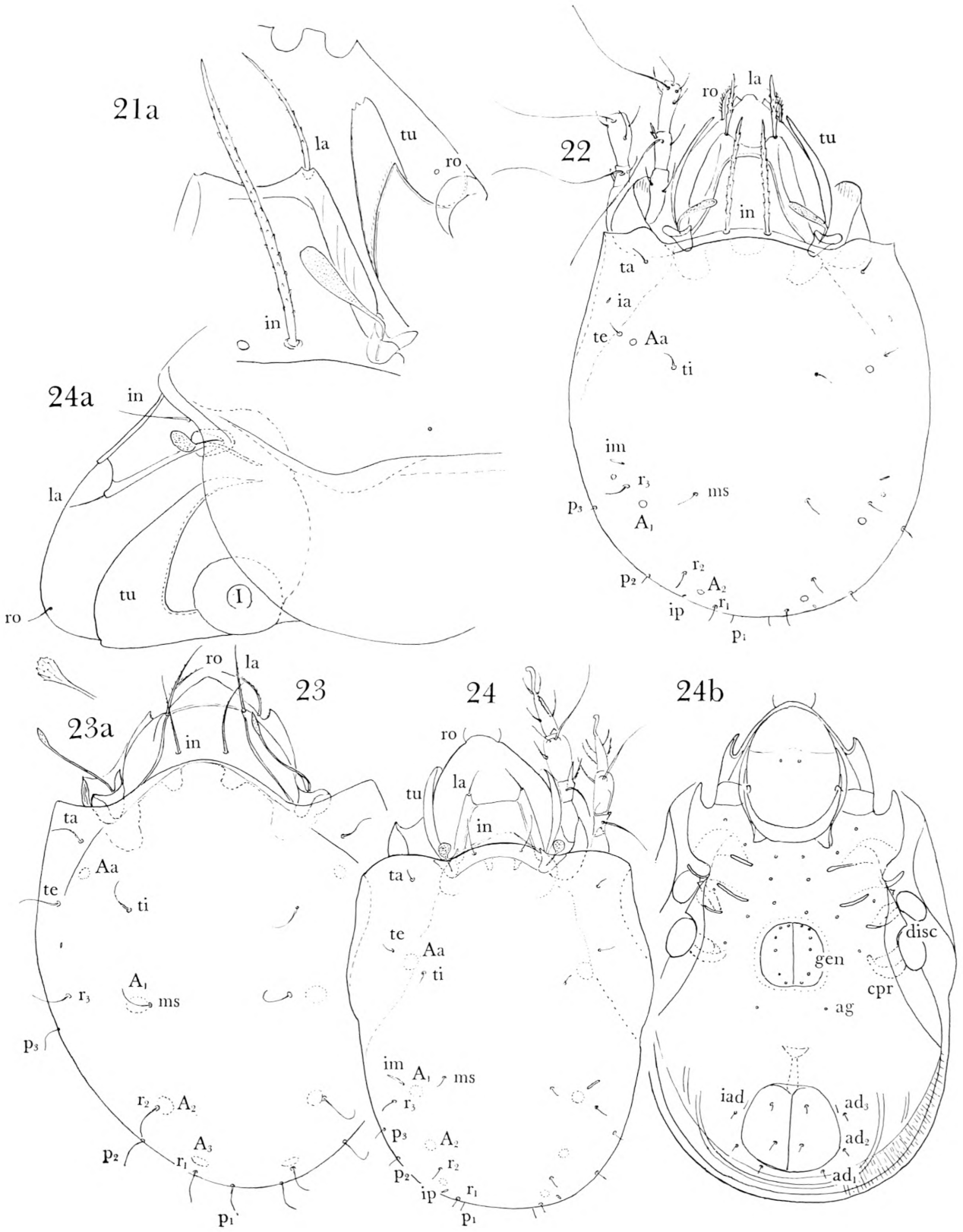
21a
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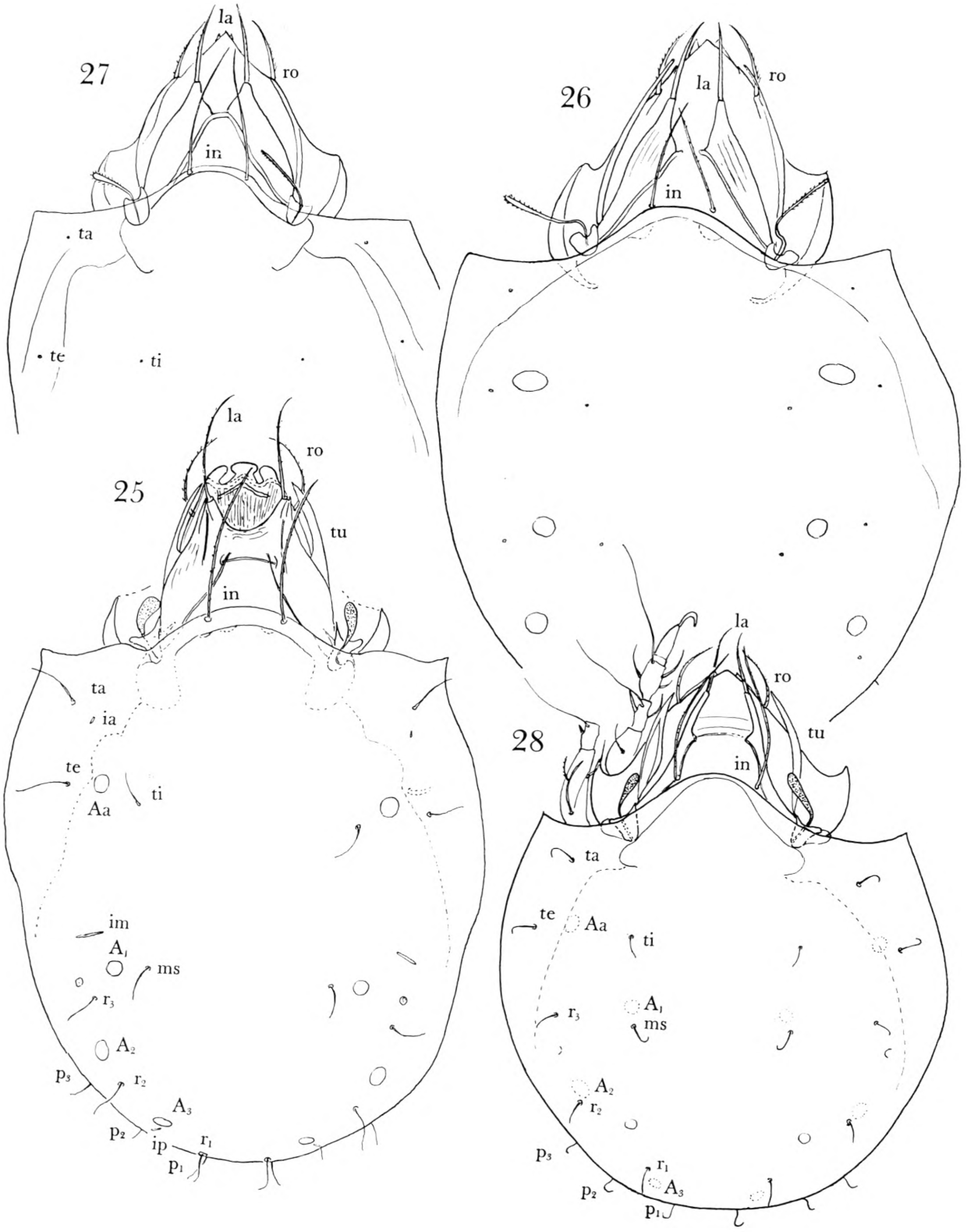
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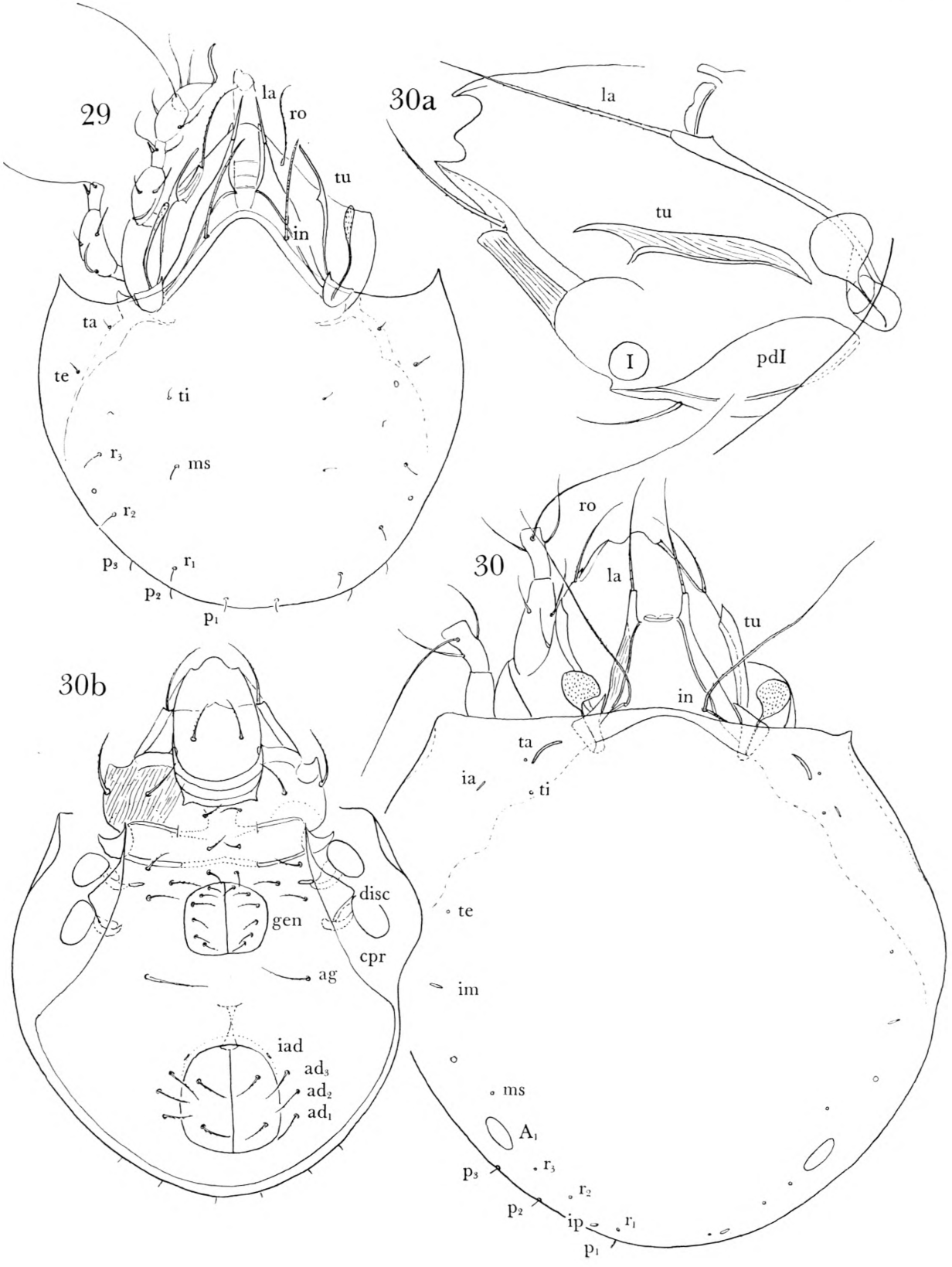
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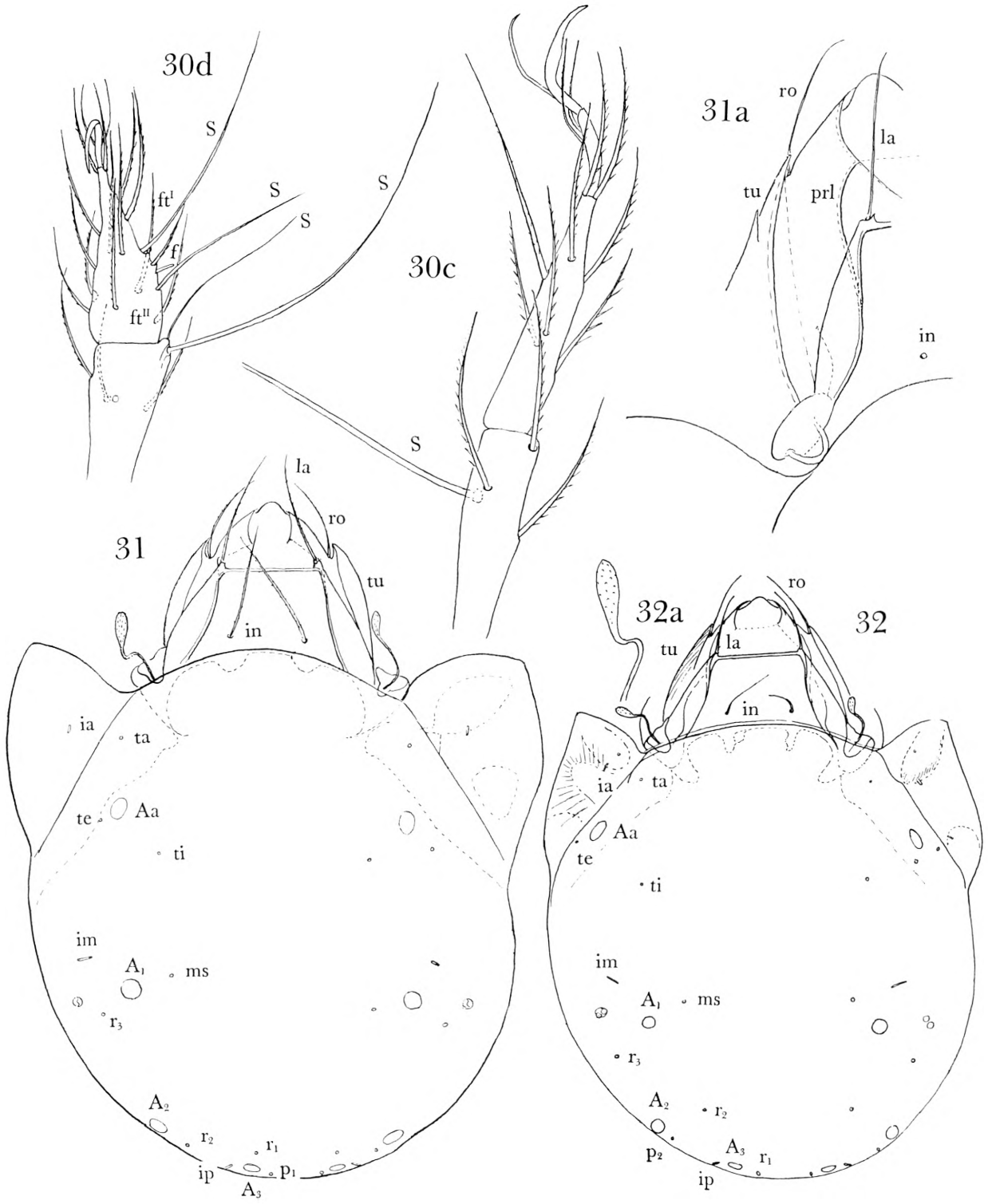
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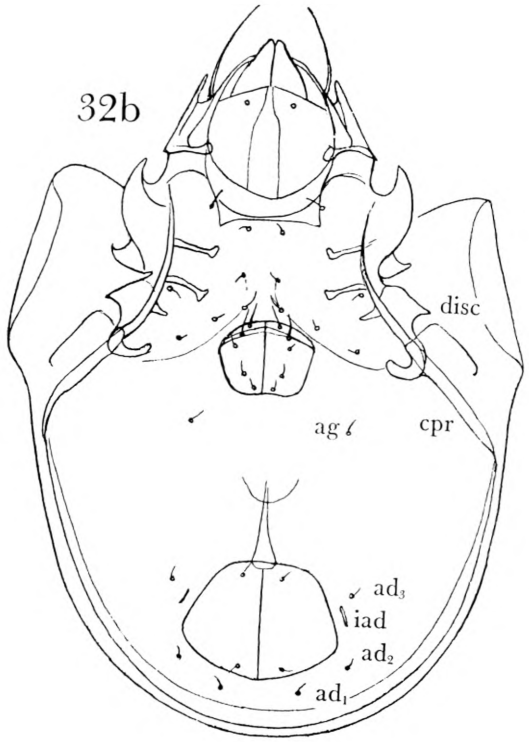
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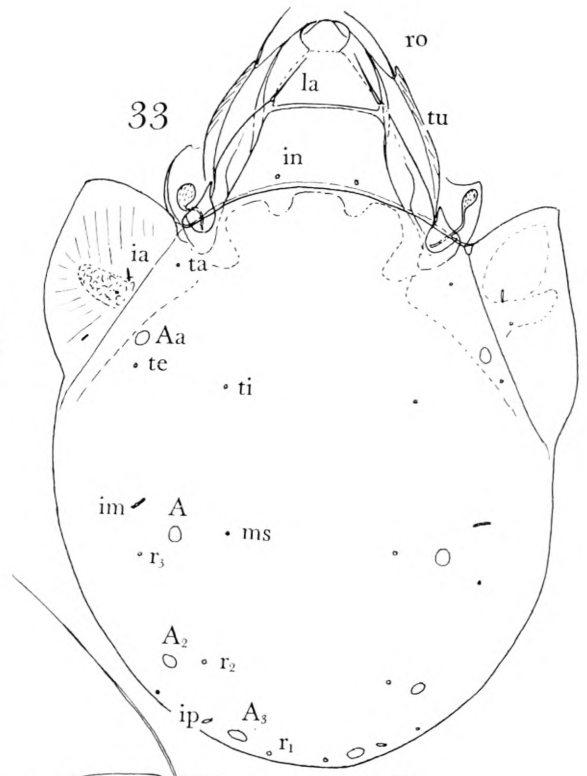
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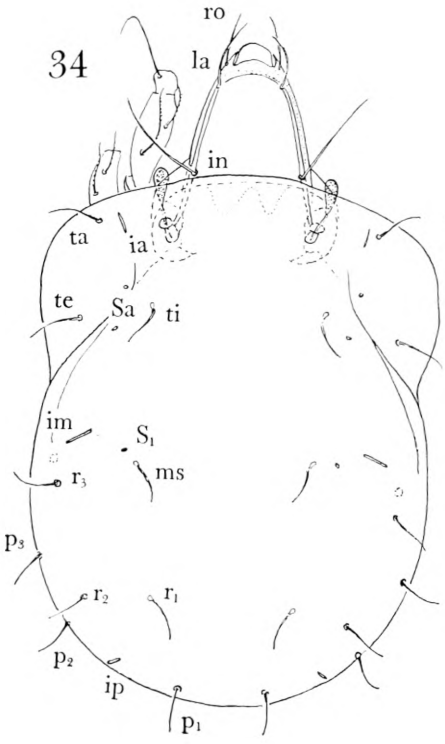
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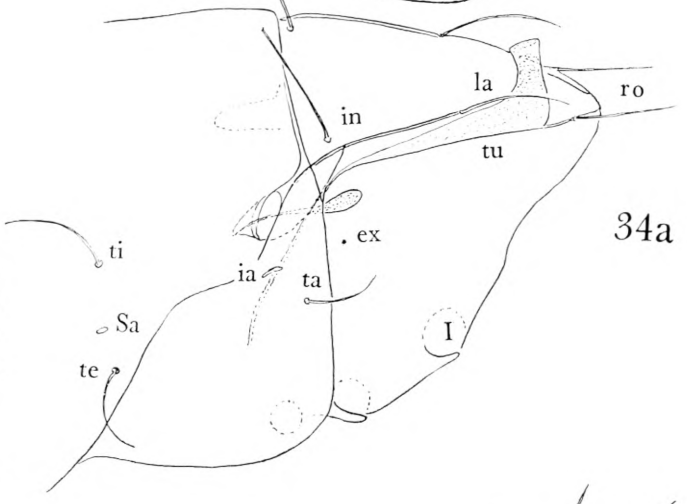
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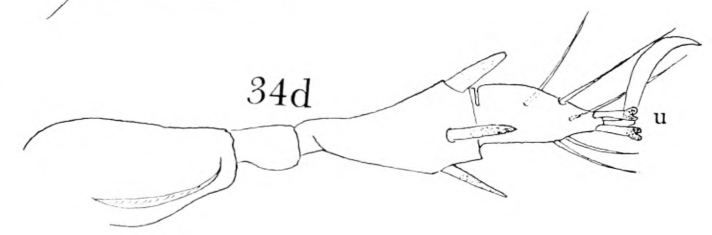
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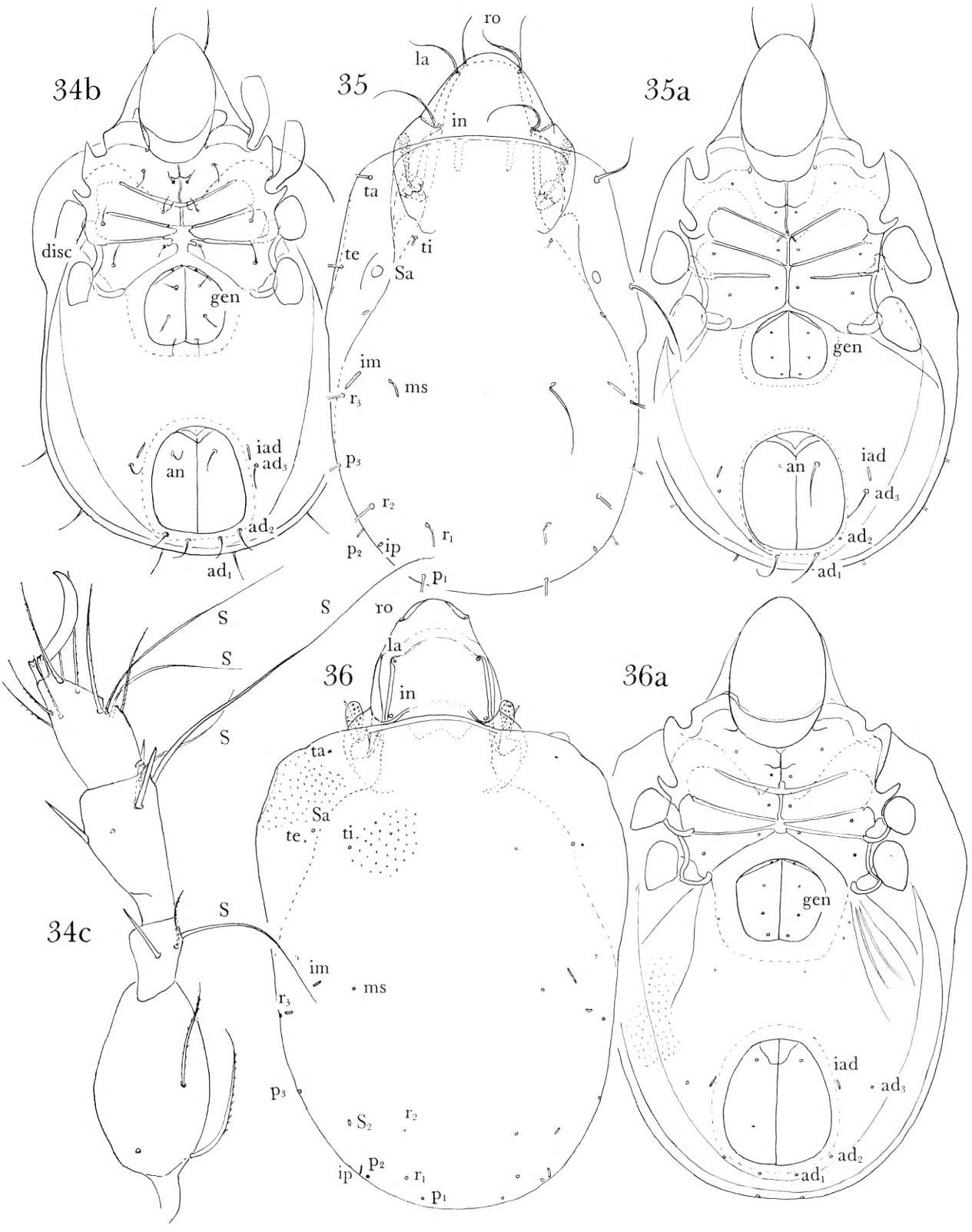
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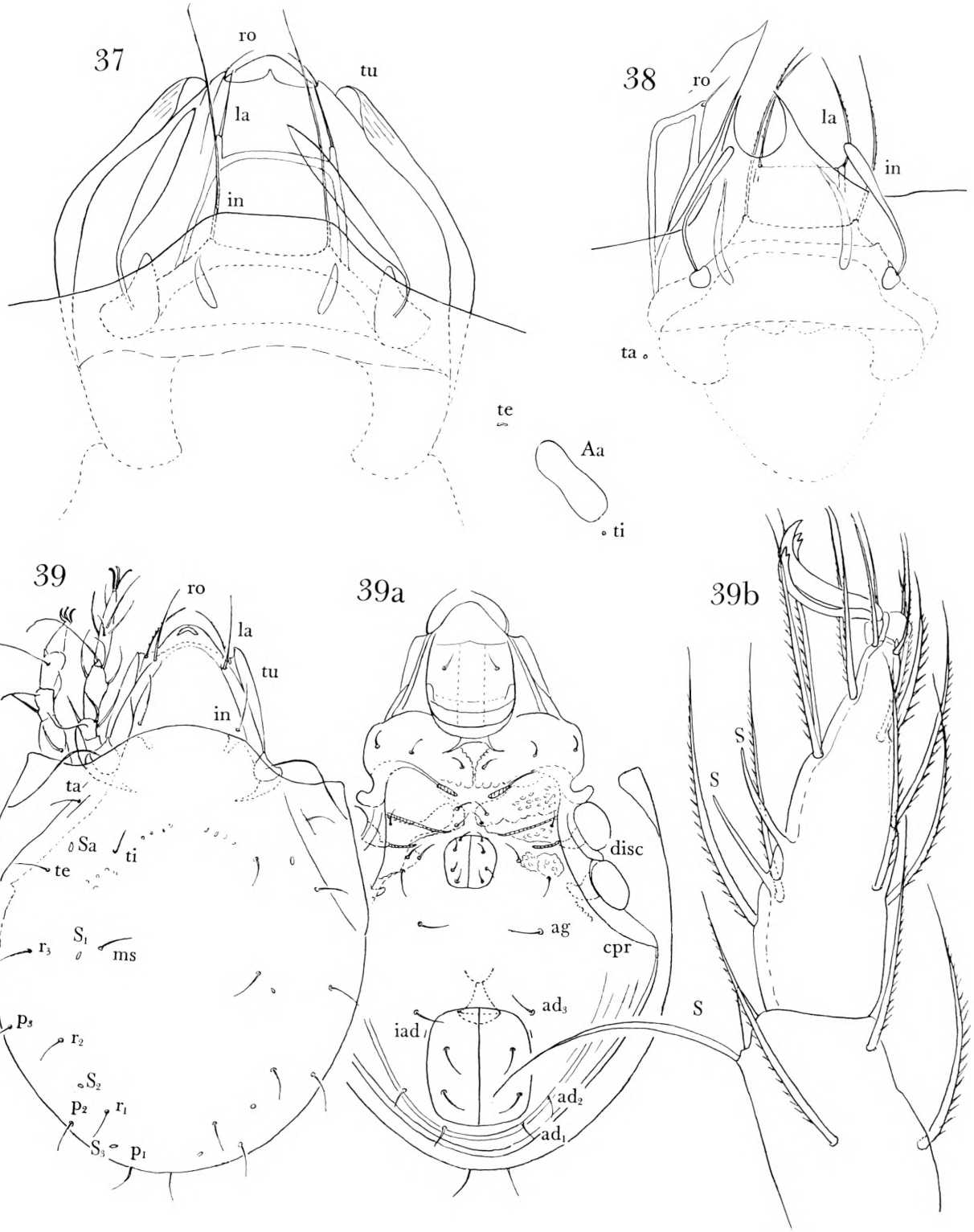
37
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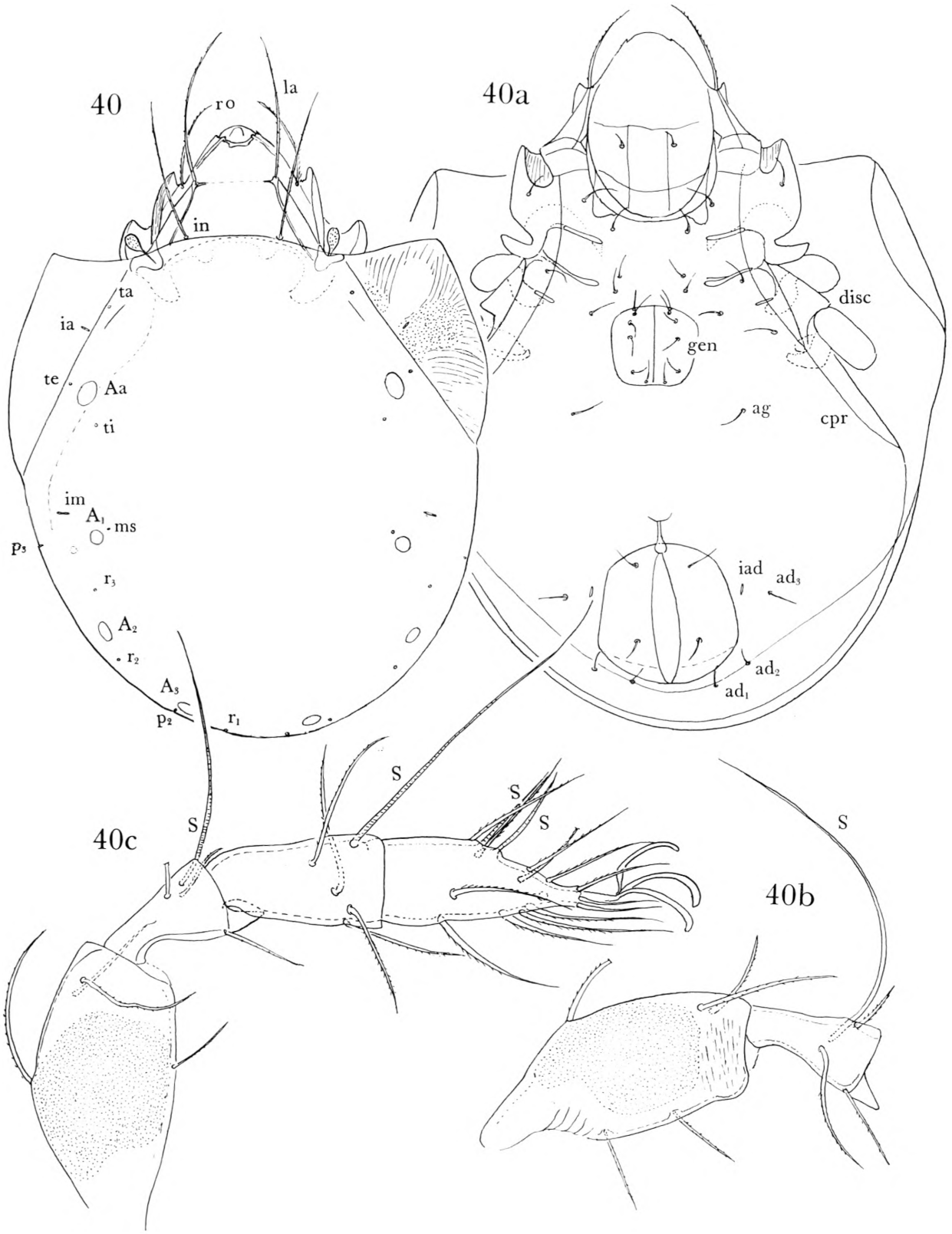
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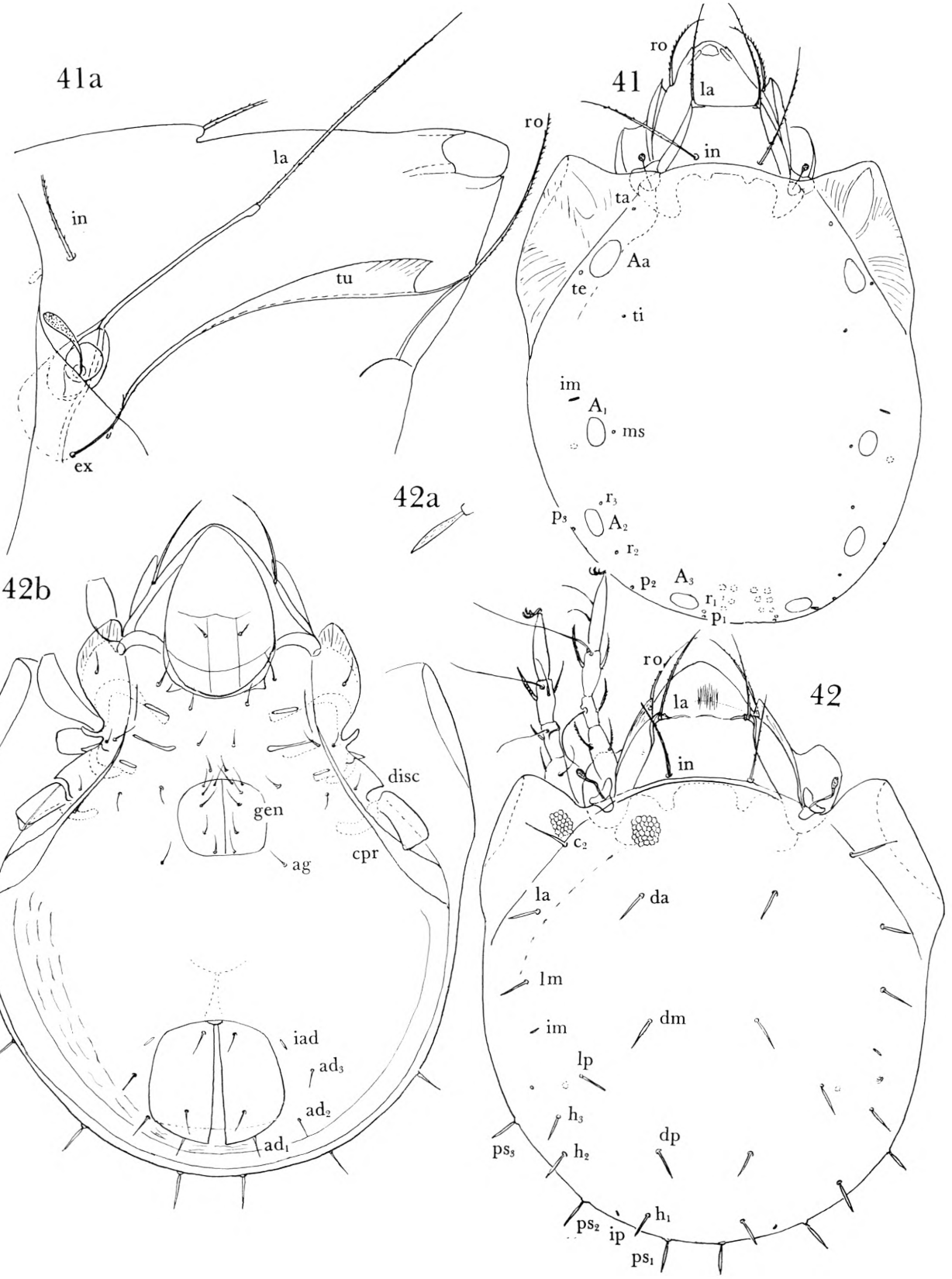
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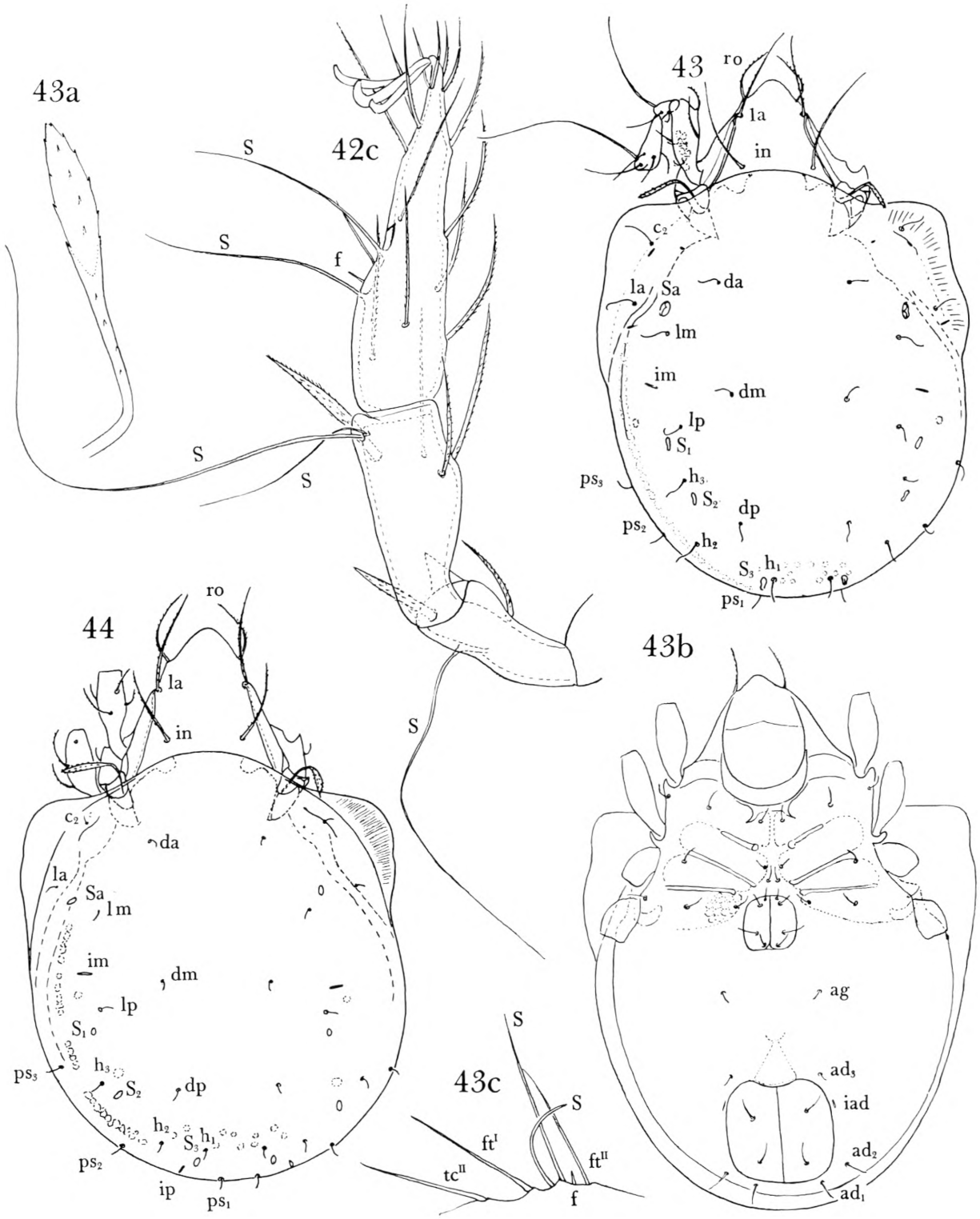
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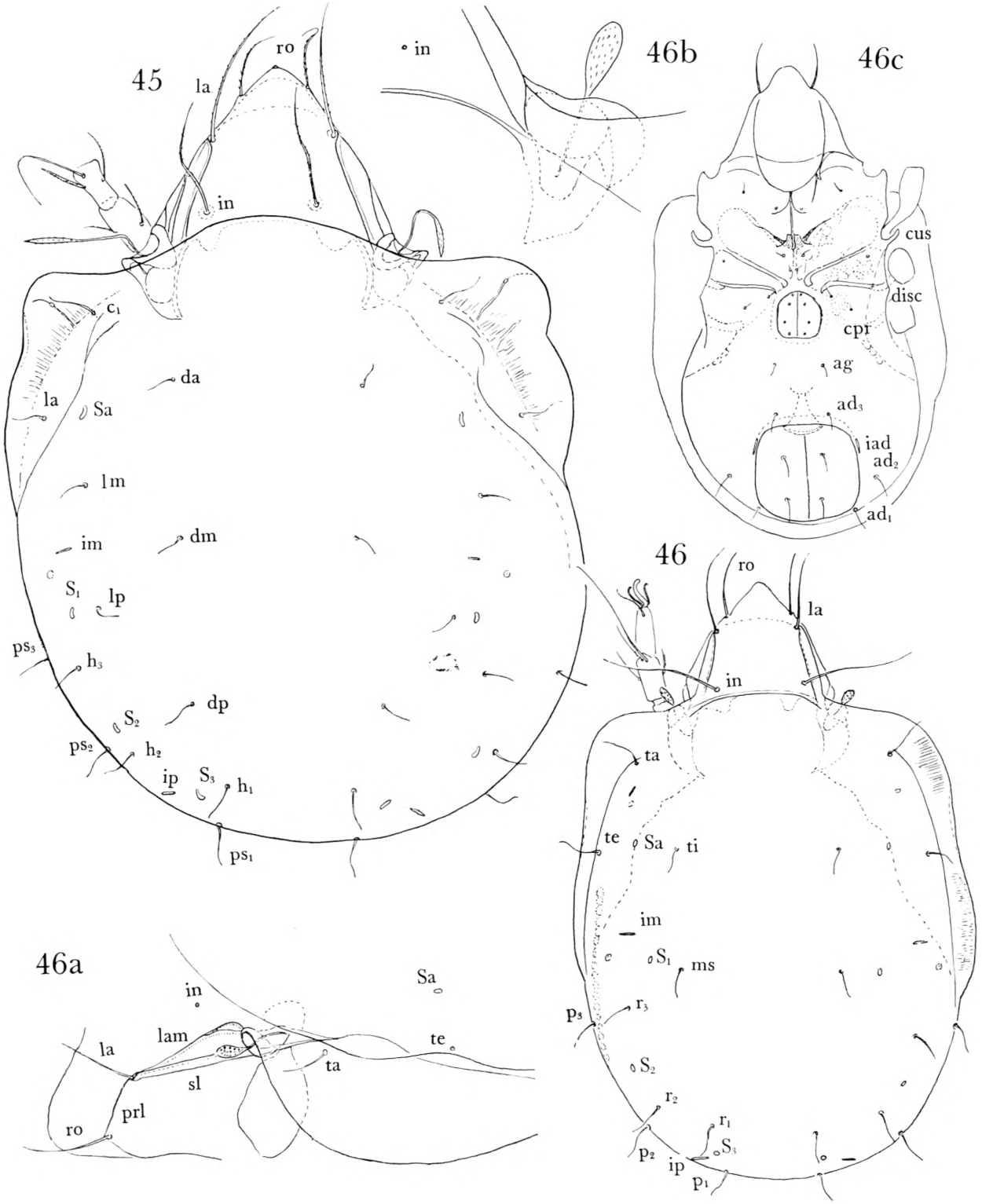
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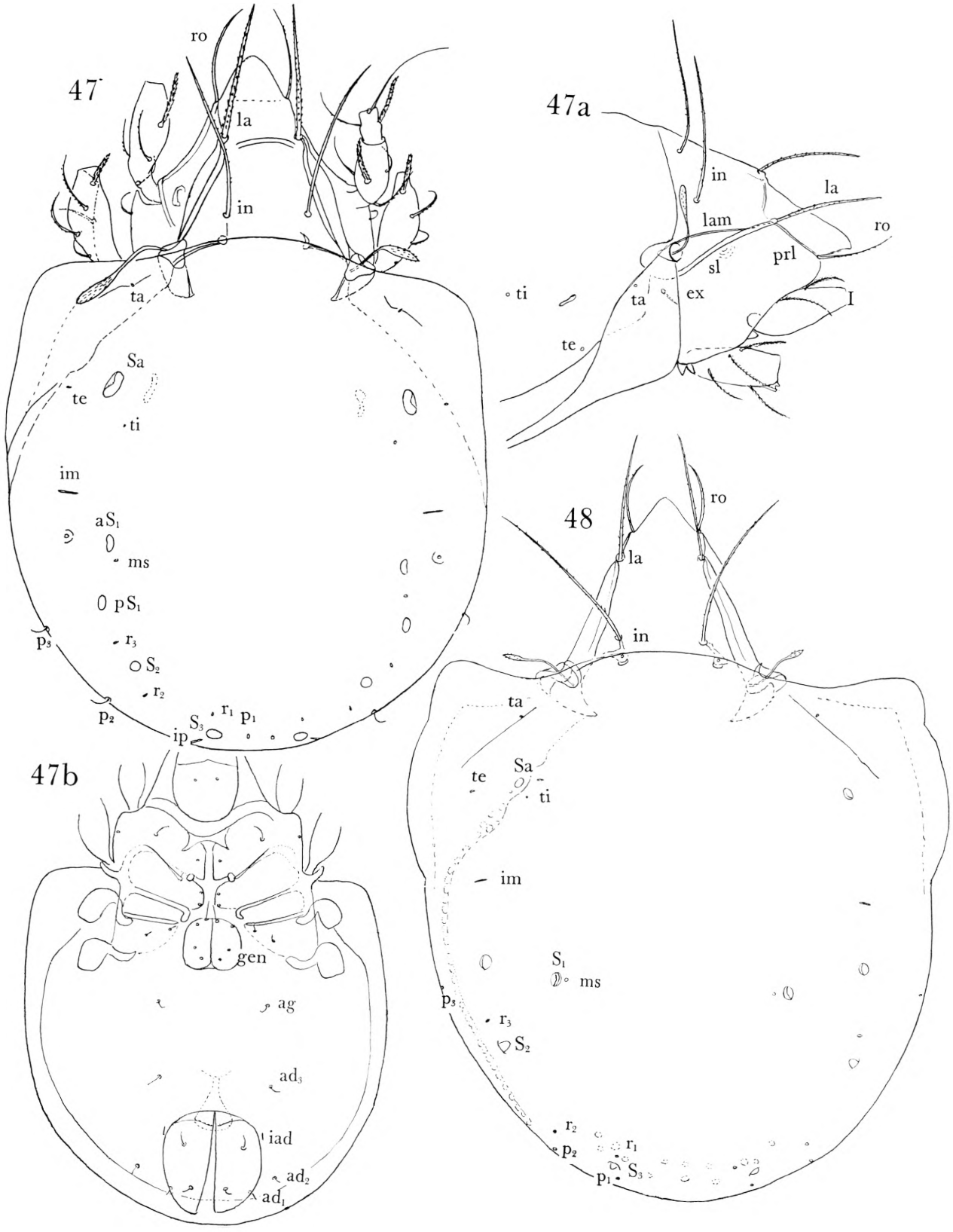
47
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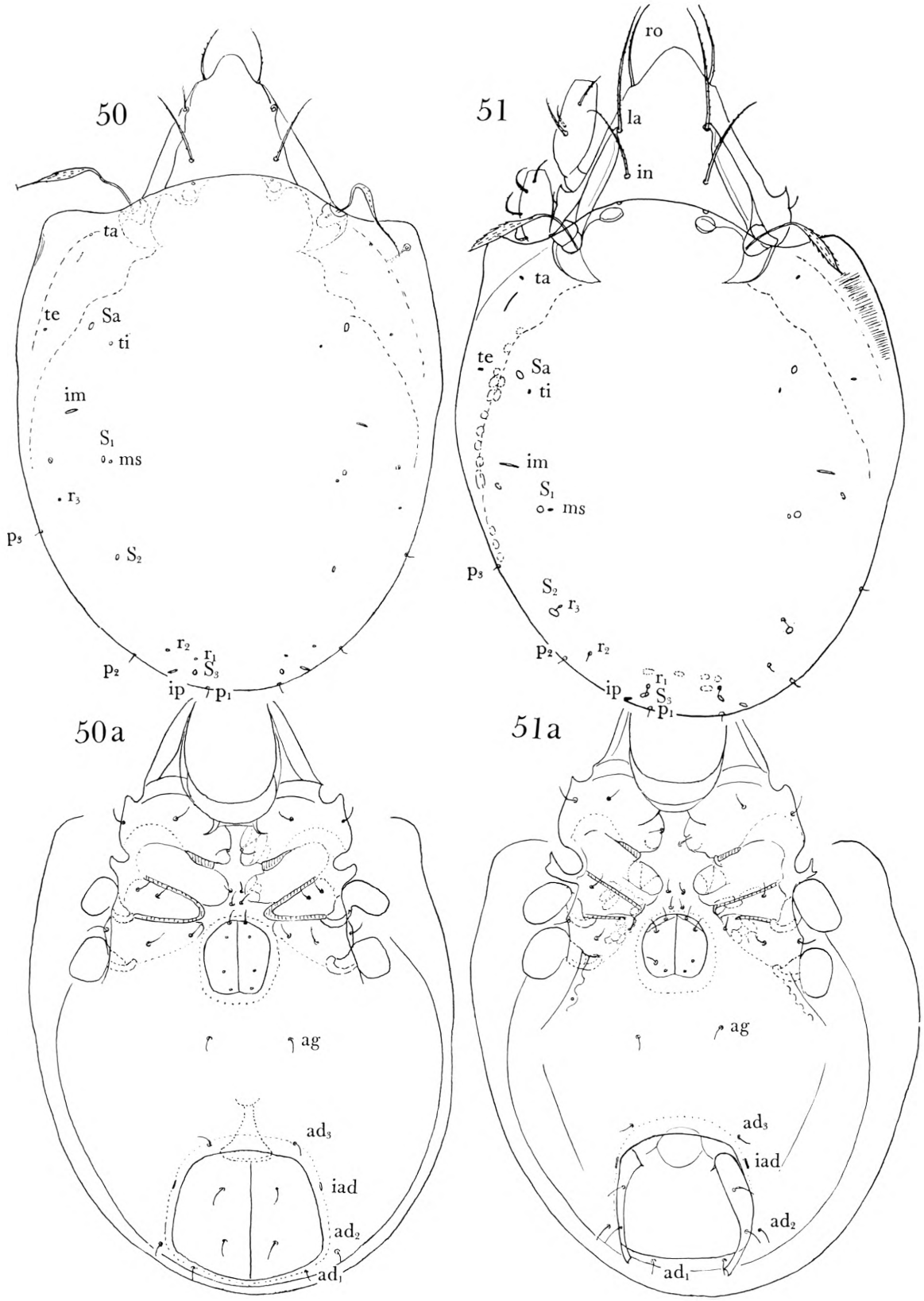
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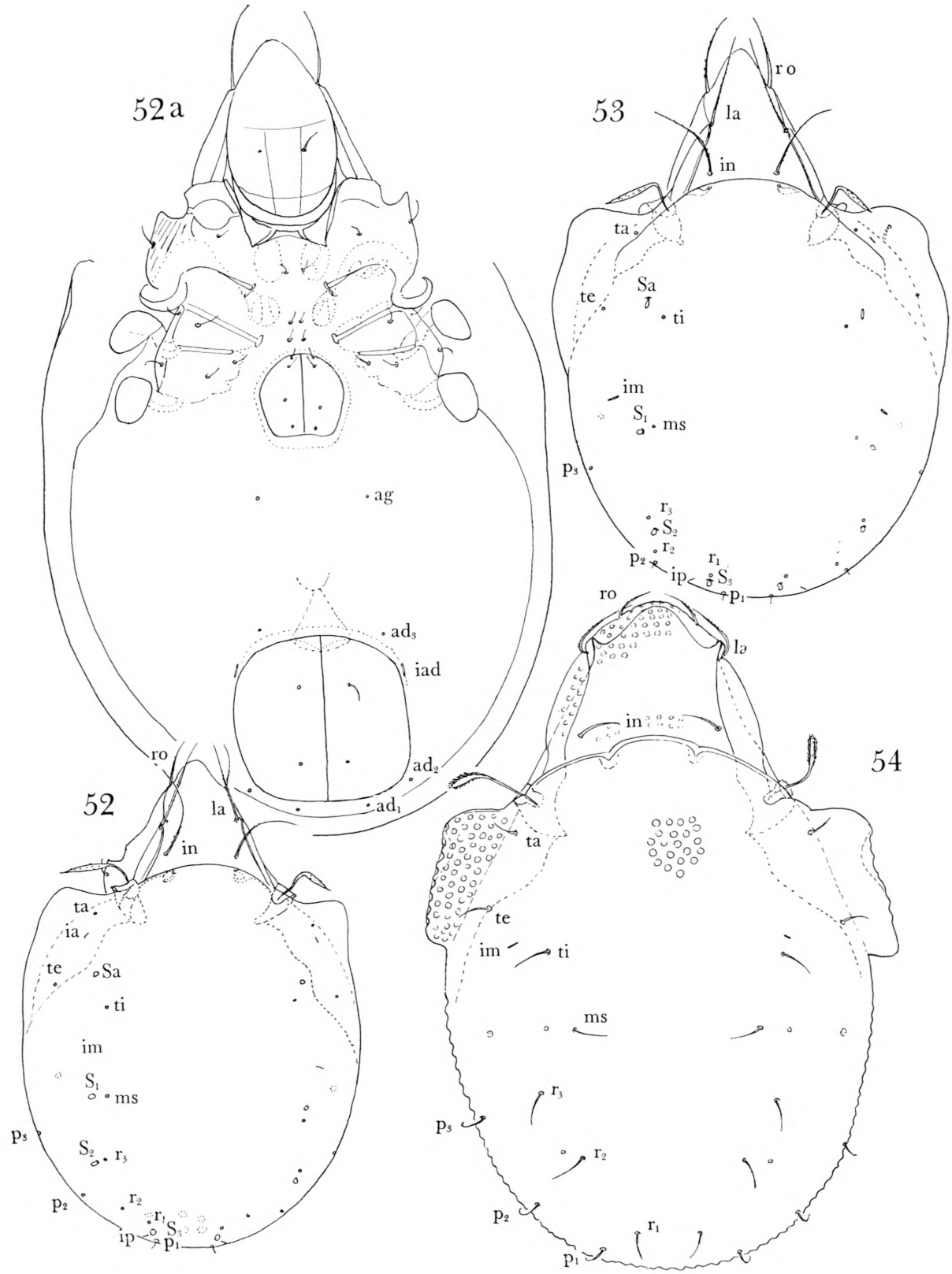
52a
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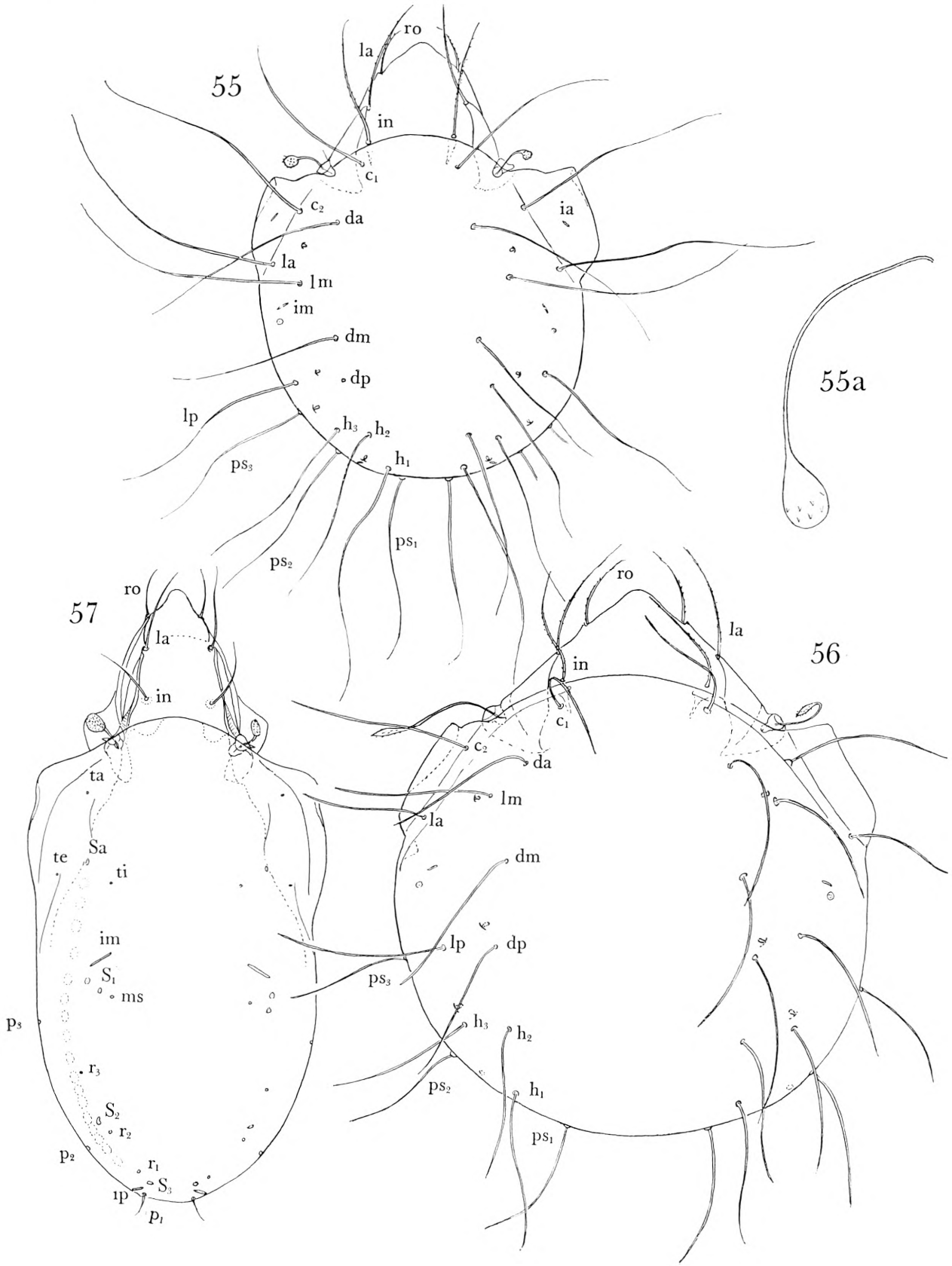
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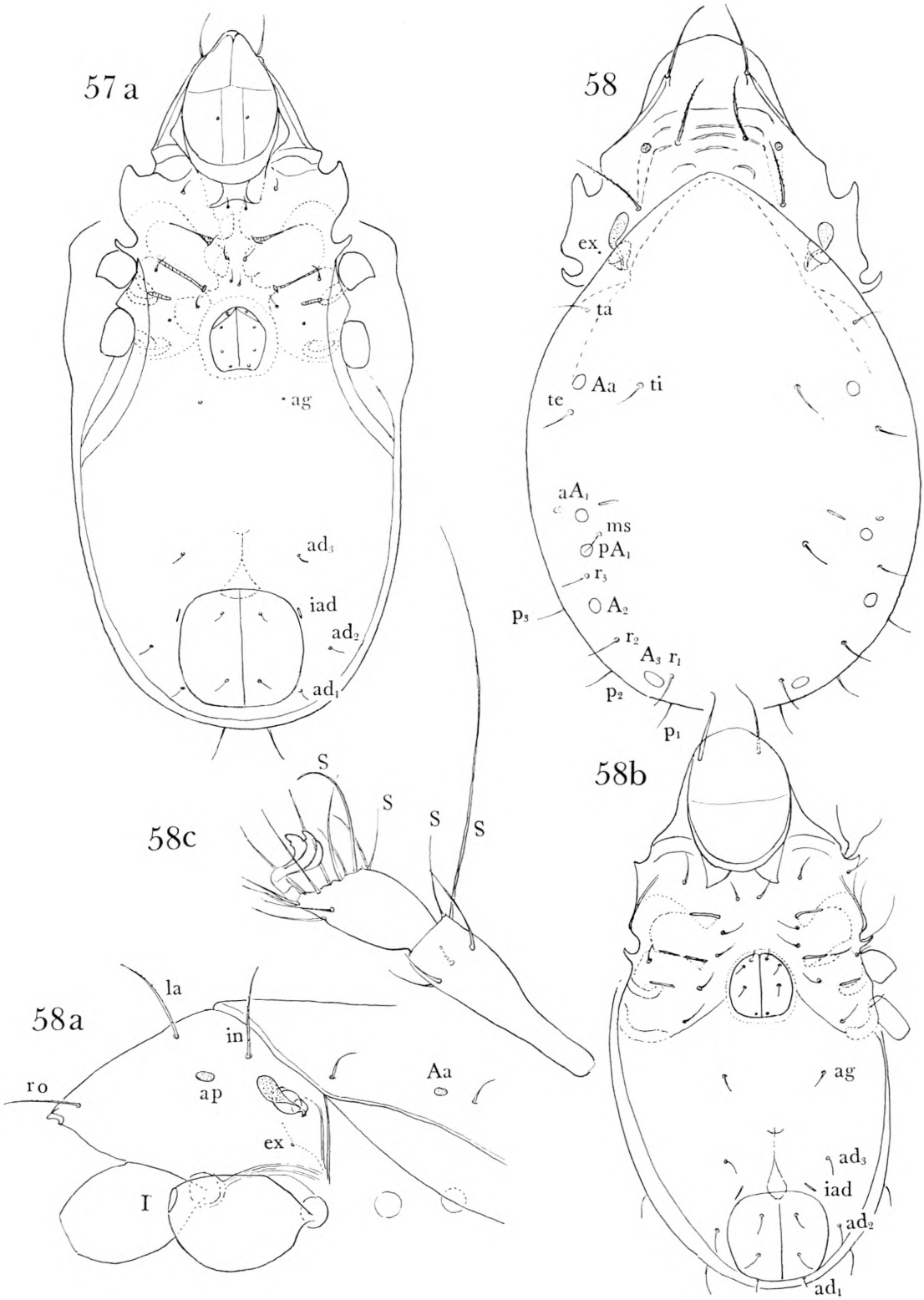
57 a
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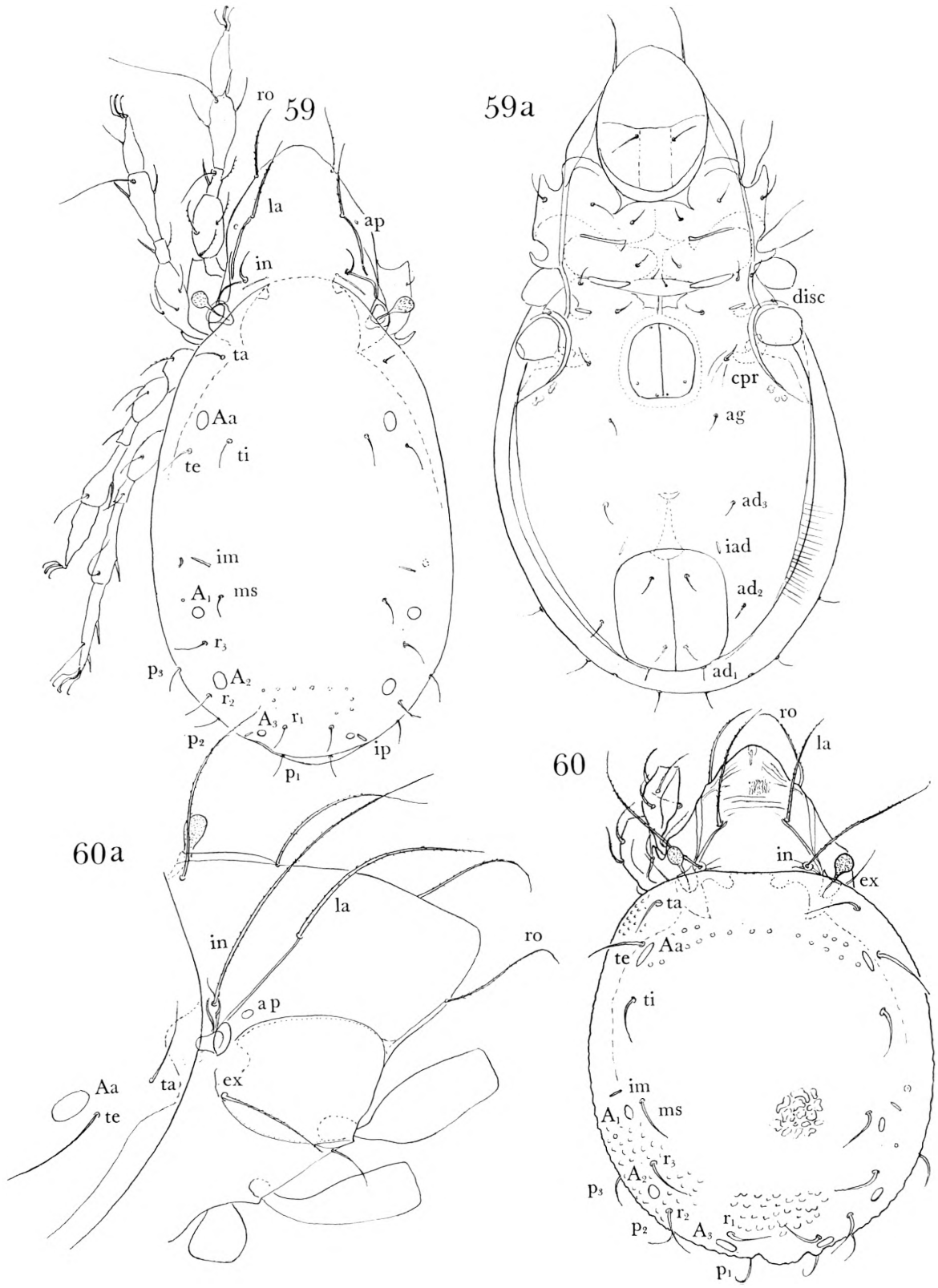
59
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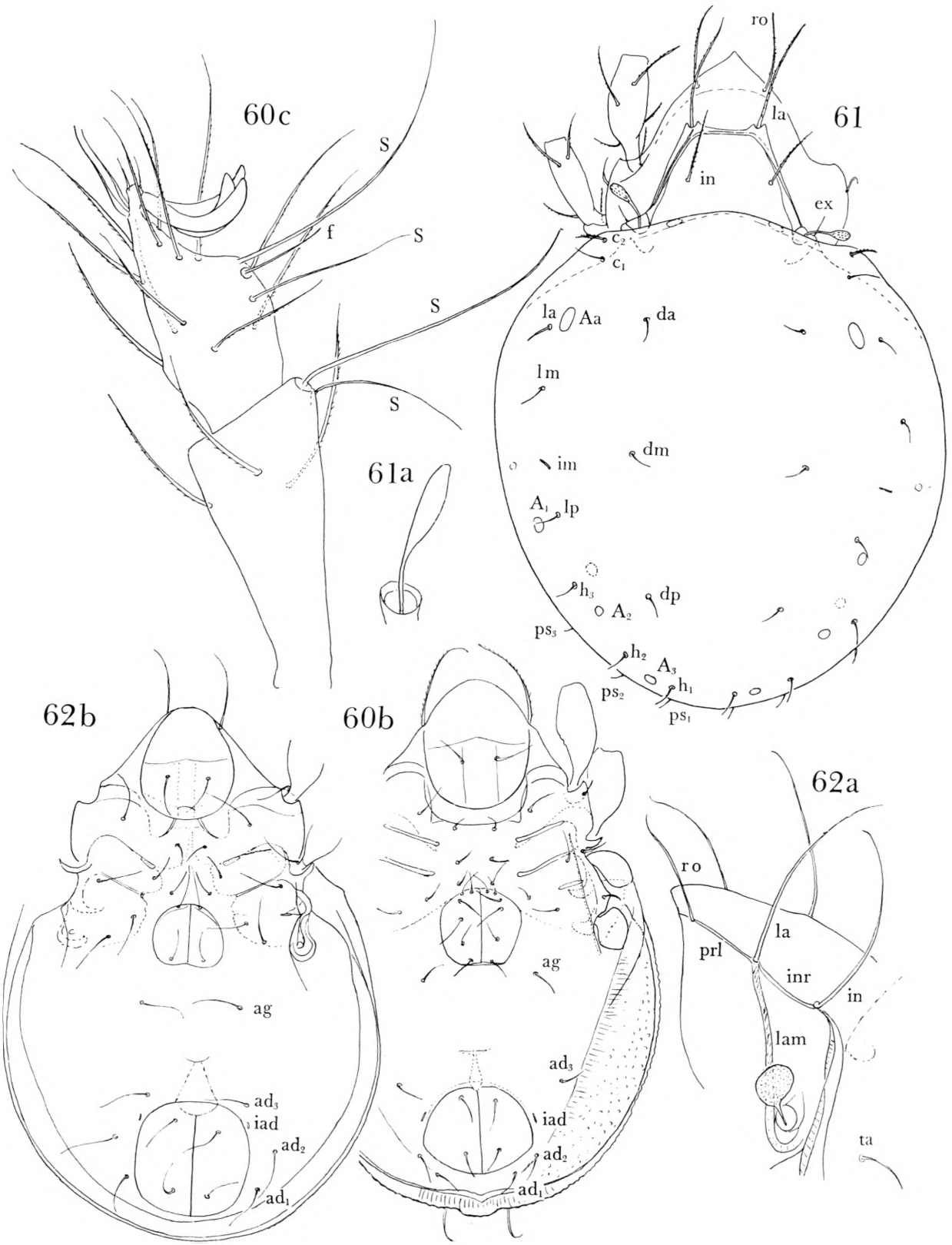
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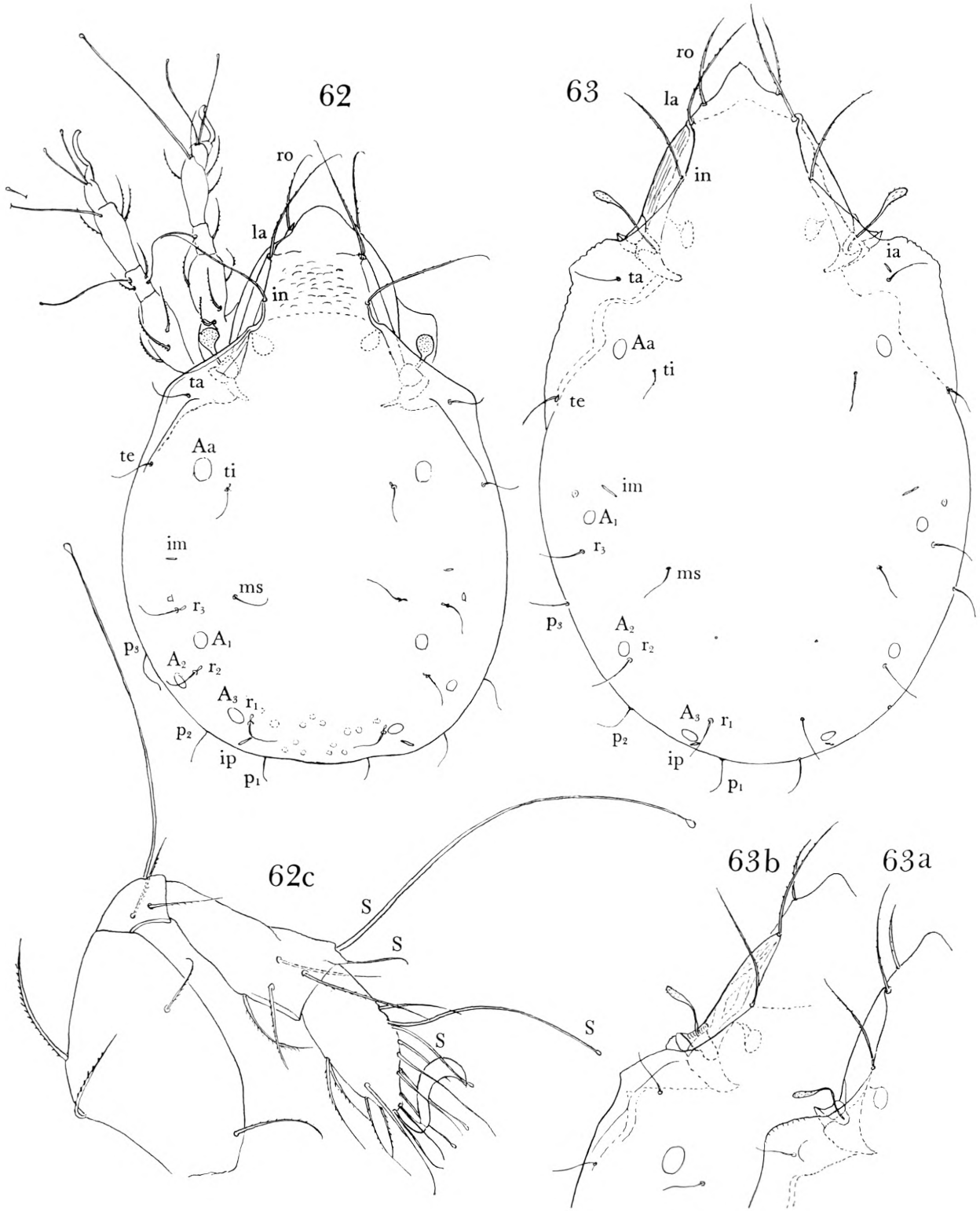
62
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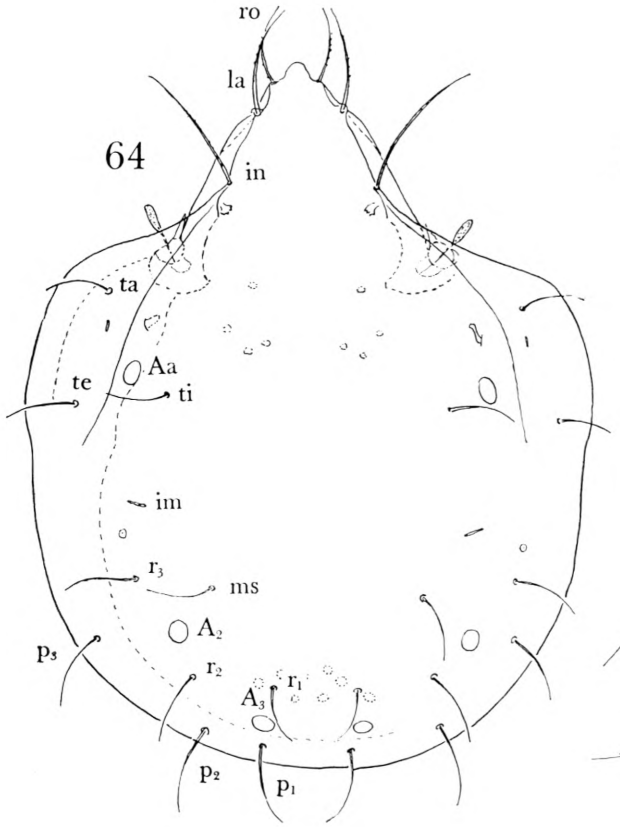
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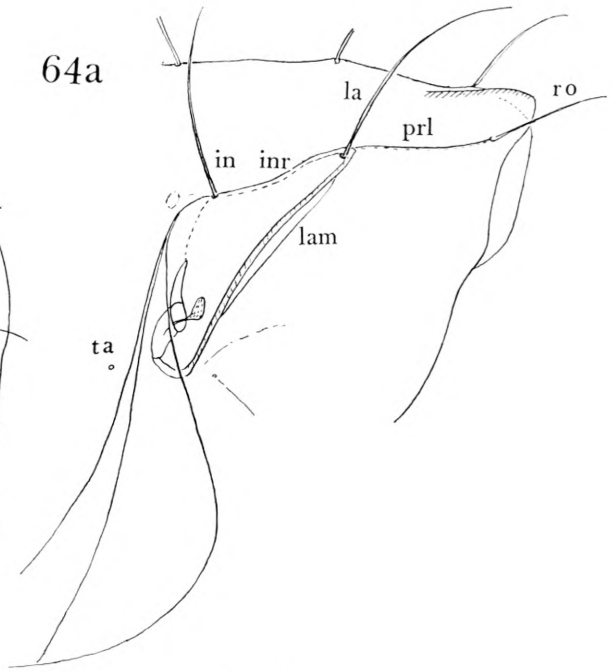
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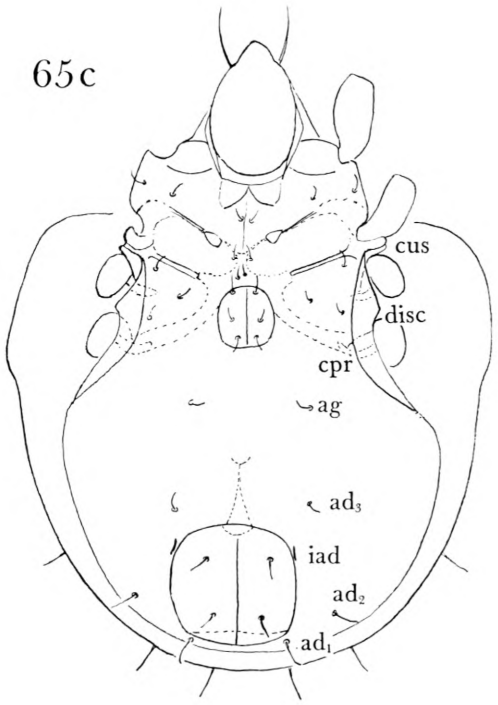
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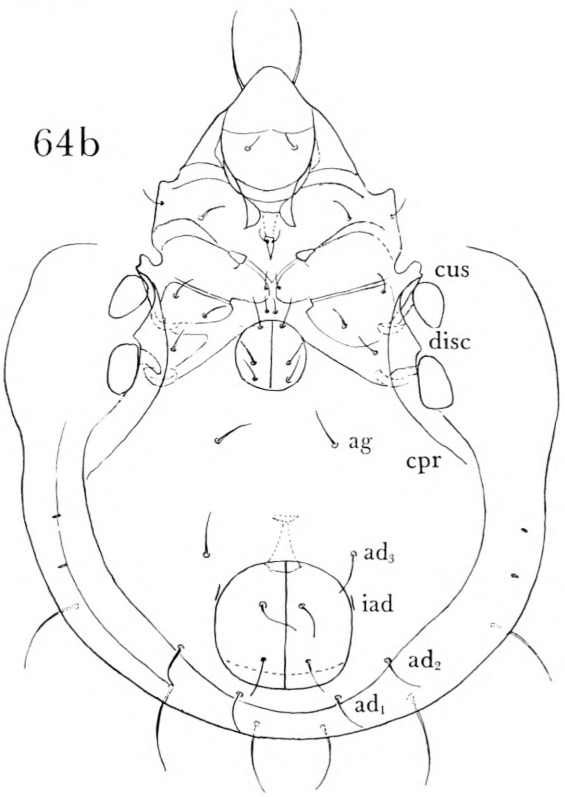
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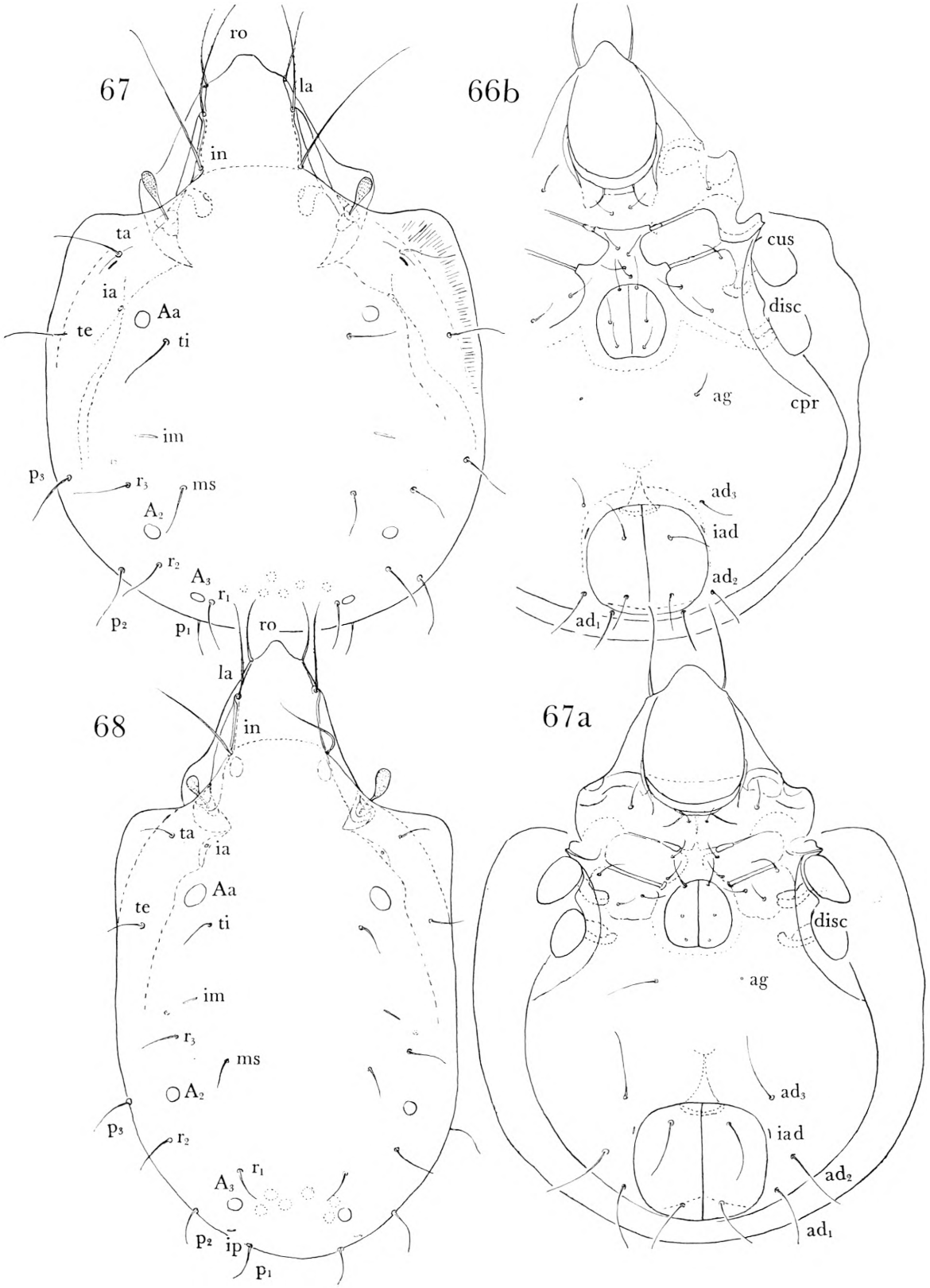
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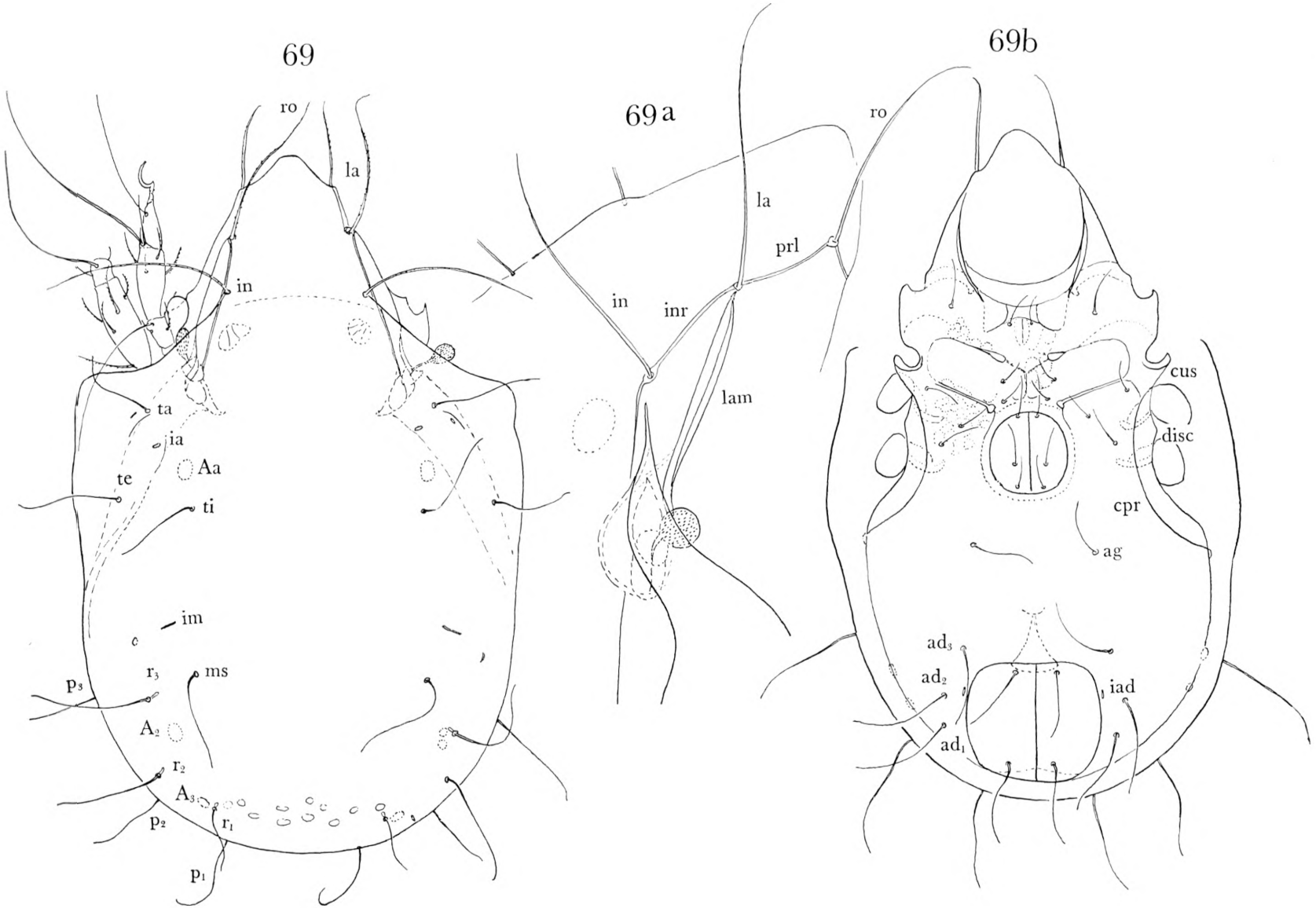
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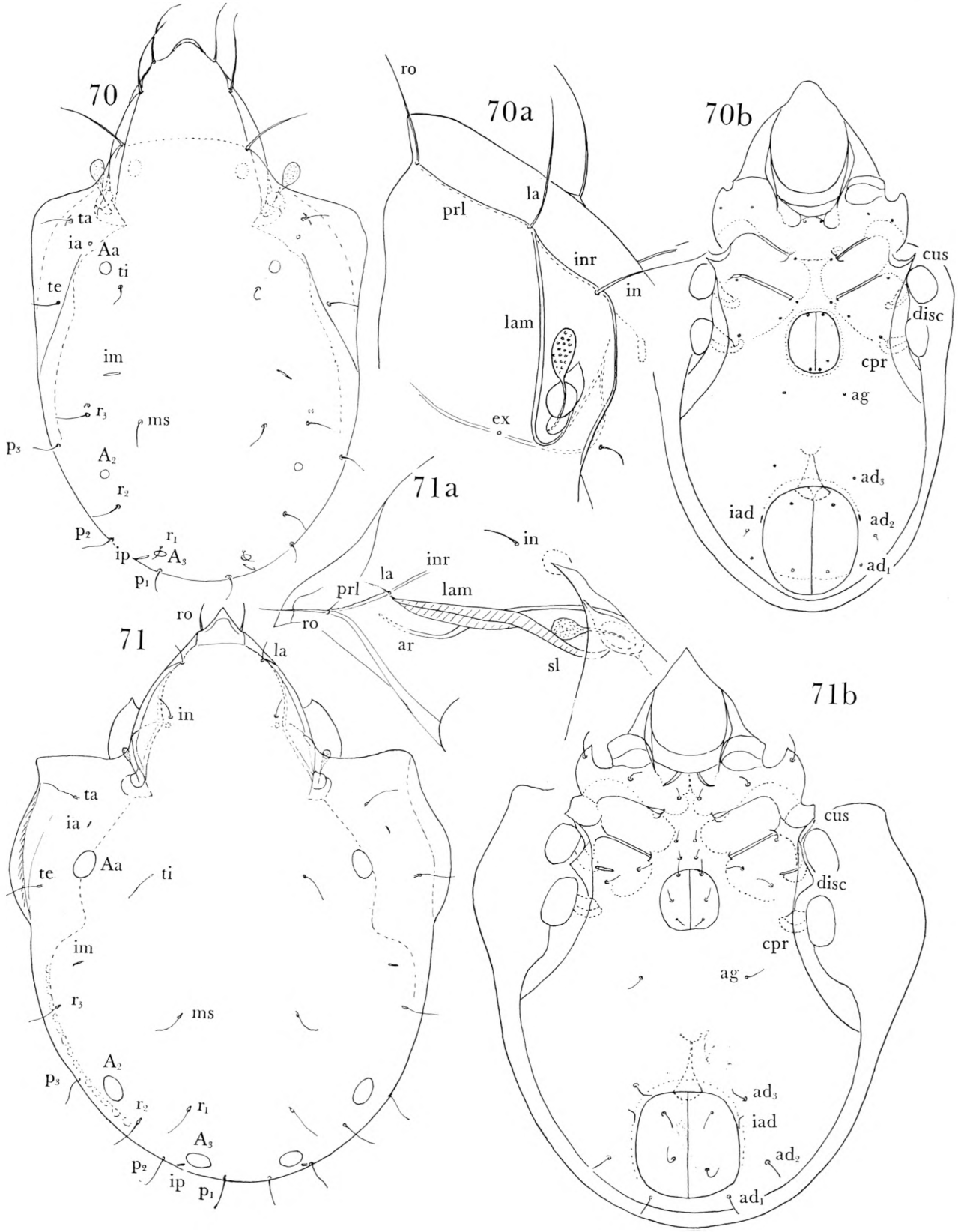
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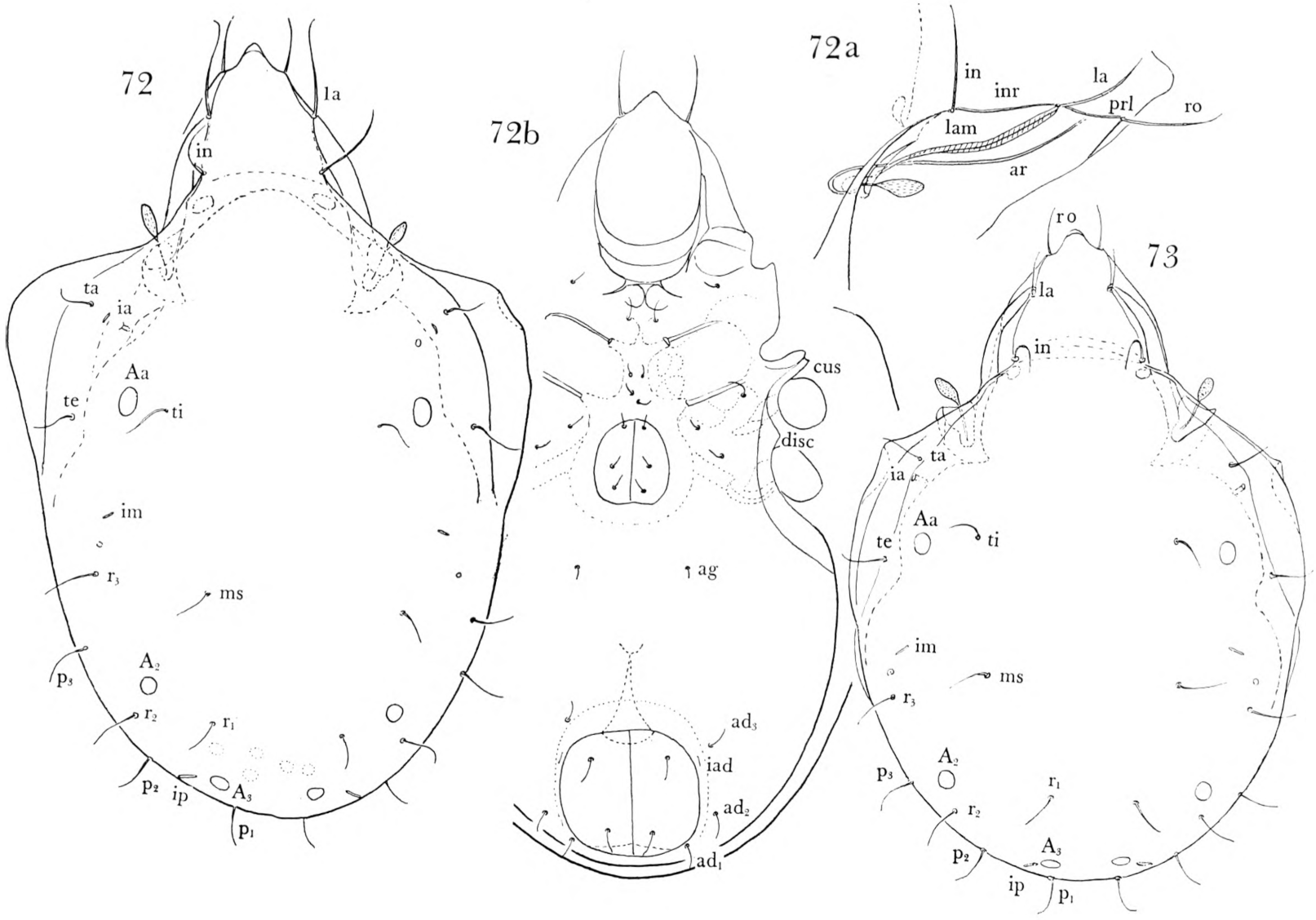
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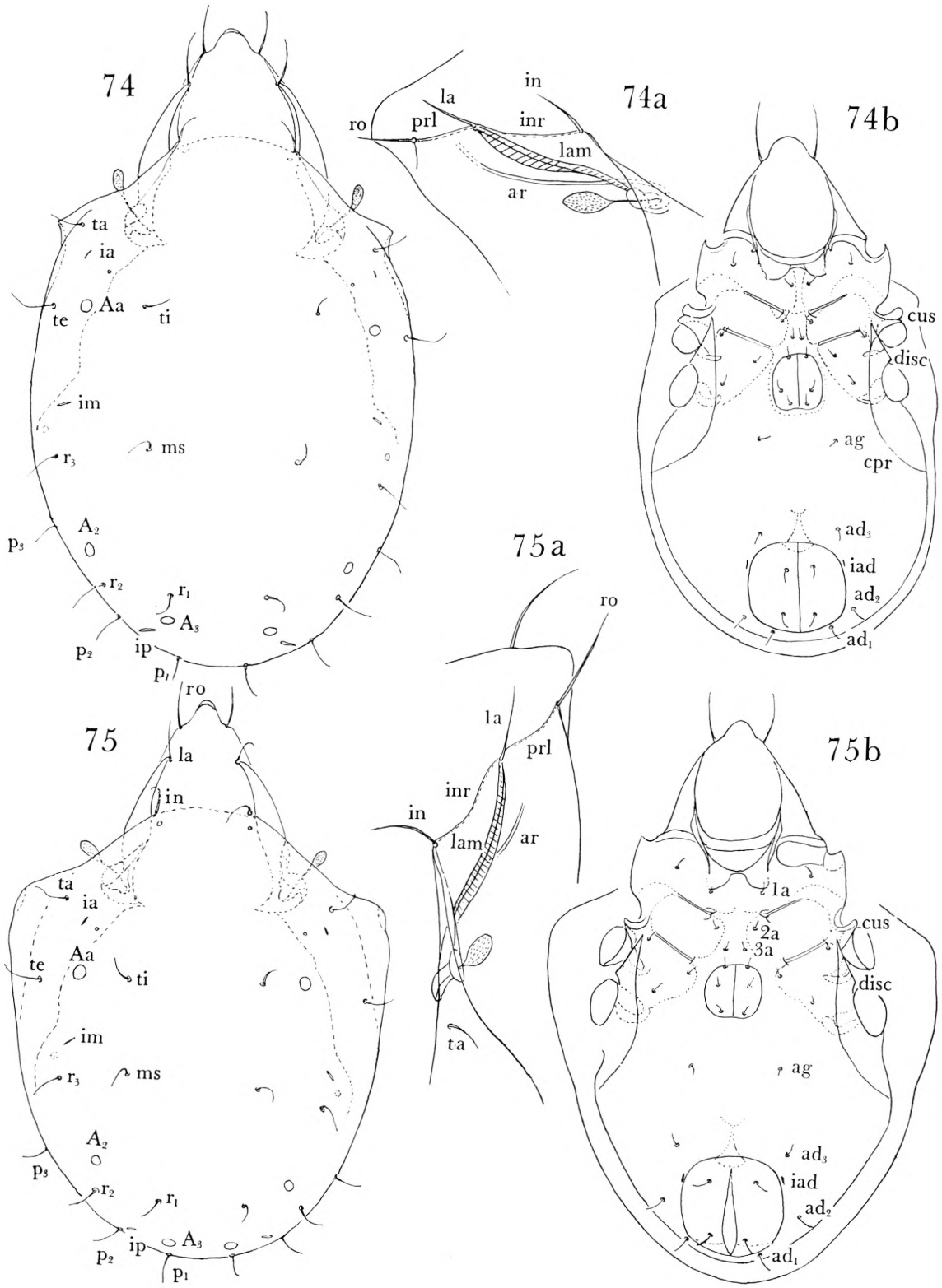
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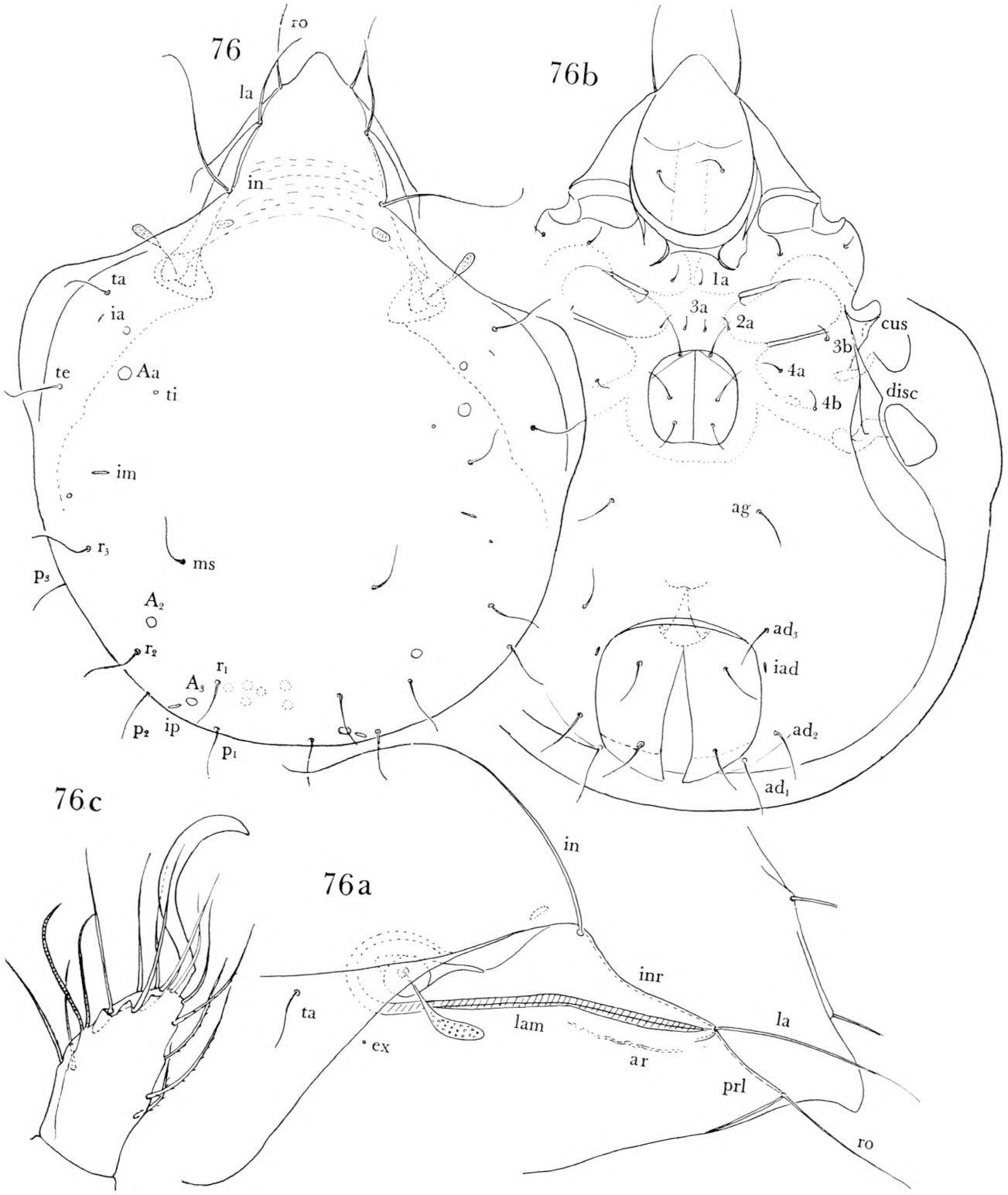
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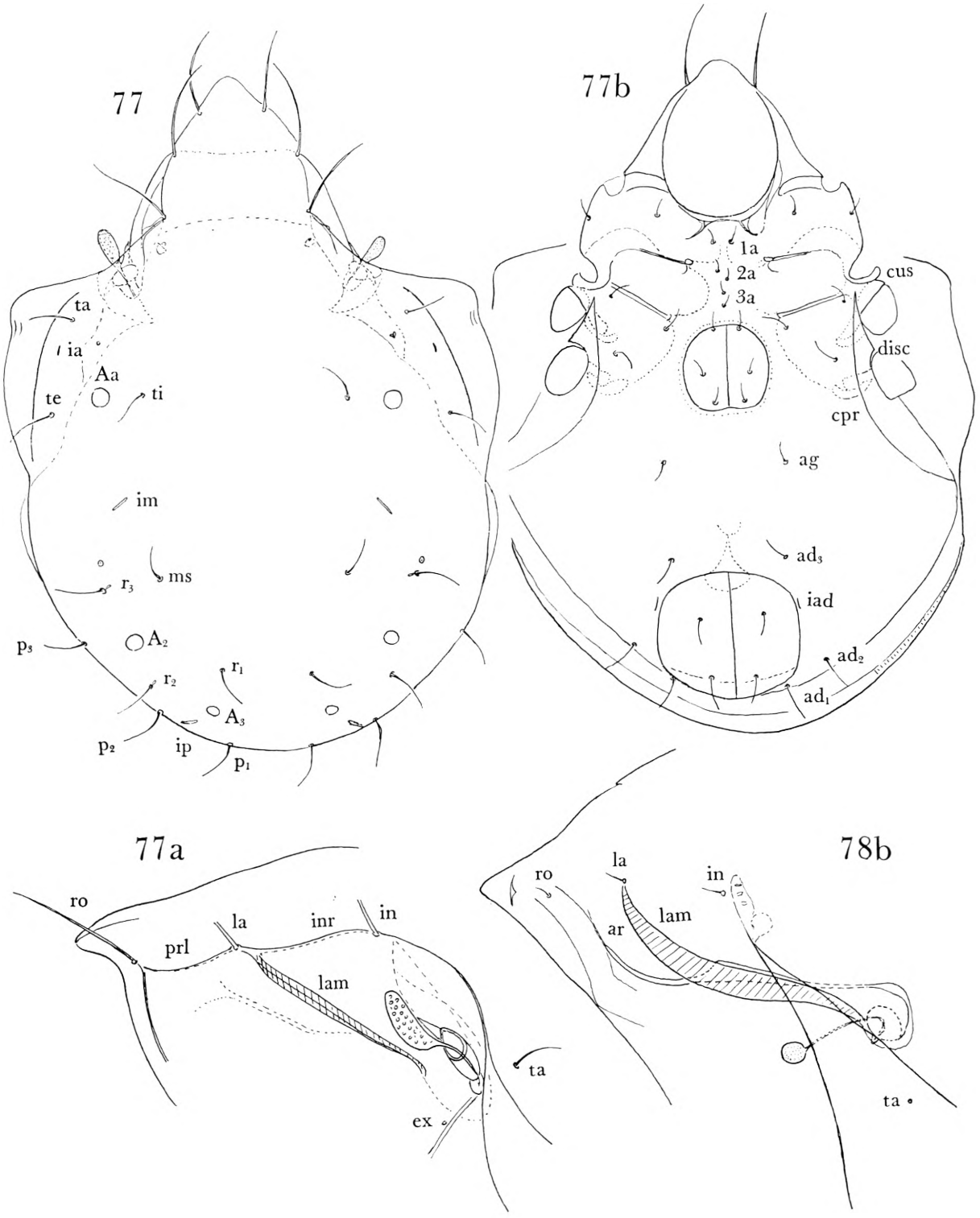
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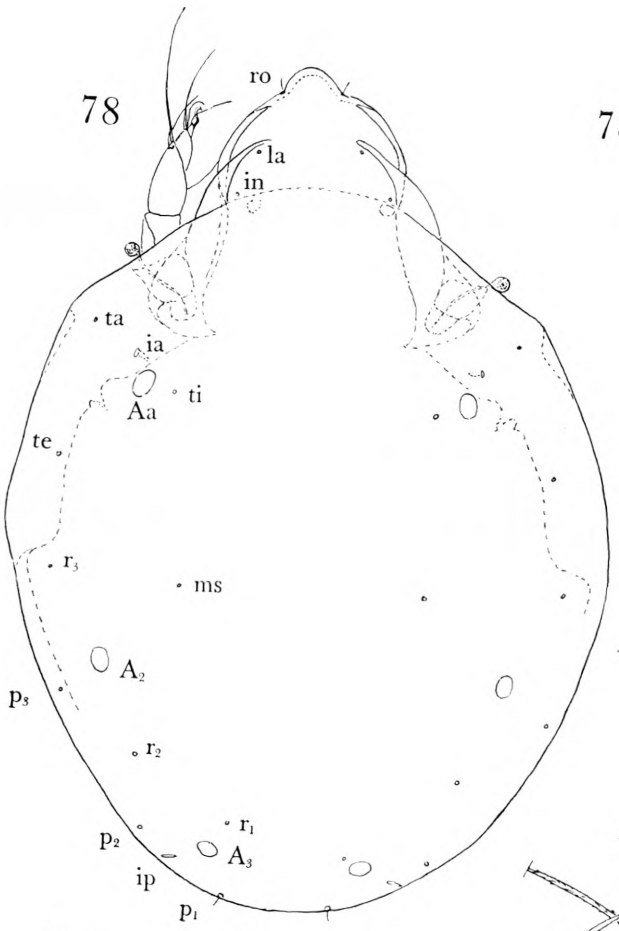
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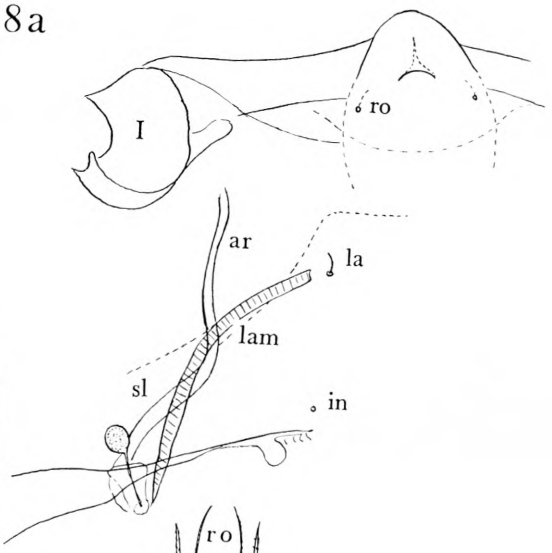
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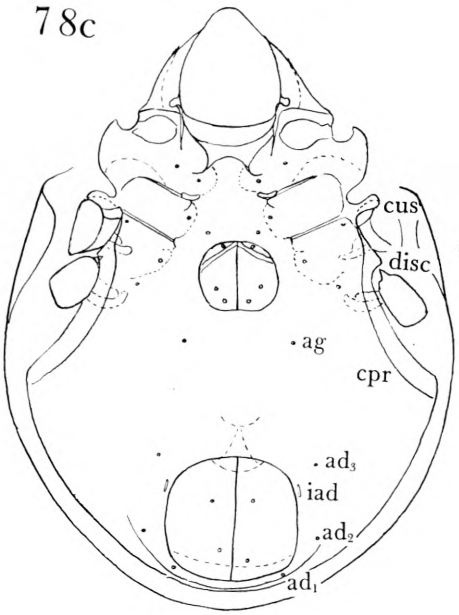
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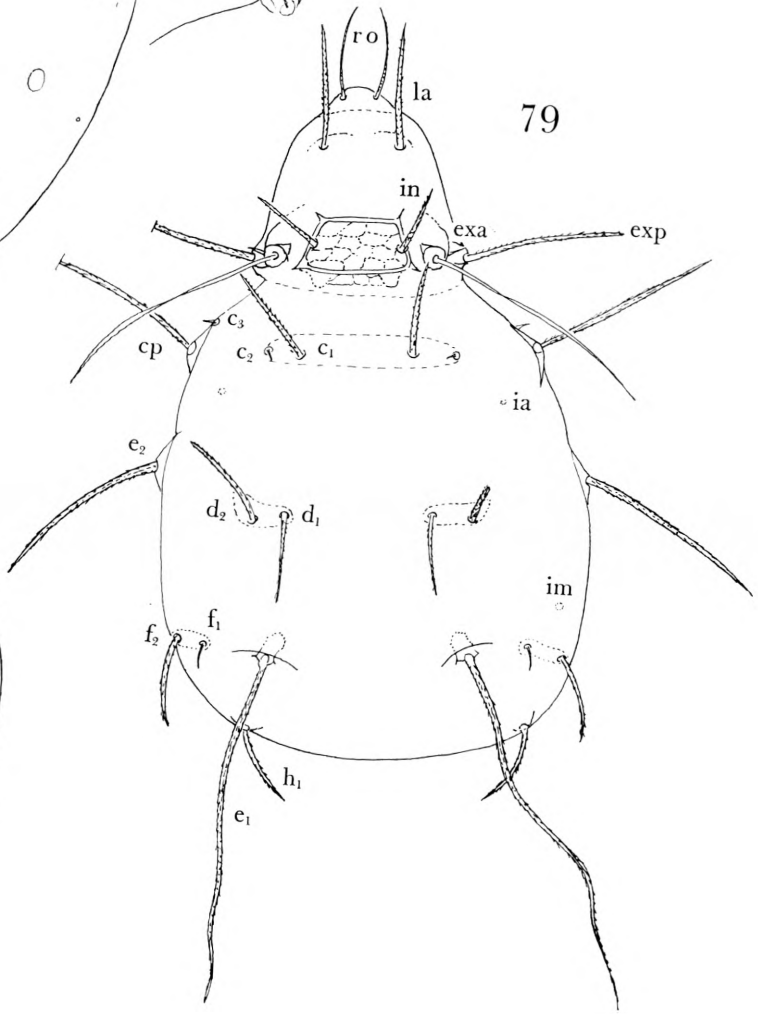
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