

A NEW ALTIPLANIC SPECIES FROM CHILE:

LICNEREMAEUS ALTIPLANICUS N.SP. (ACARI: ORIBATIDA: LICNEREMAEIDAE)¹

UNA NUEVA ESPECIE ALTIPLÁNICA DE CHILE:

LICNEREMAEUS ALTIPLANICUS N.SP. (ACARI: ORIBATIDA: LICNEREMAEIDAE)

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RESUMEN

Se describe una nueva especie de ácaro Oribatida, encontrada en el suelo bajo plantas en cojín, en el altiplano chileno a 5.200 msnm: *Licneremaeus altiplanicus* n.sp. (Oribatida: Licneremaeidae).

PALABRAS CLAVE: Especie nueva, Ácaro Oribatida, Altiplano, Chile.

ABSTRACT

A new oribatid mite species is described, from the soil under cushion plants, at 5,200 mosl in the chilean altiplanic region: *Licneremaeus altiplanicus* n.sp. (Oribatida: Licneremaeidae).

KEY WORDS: New species, Oribatid mite, Altiplano, Chile.

INTRODUCTION

During an expedition to the altiplanic zone in the northernmost part of Chile (I Region), we took some soil samples under a cushion form plant, *Pycnophyllum brioides*, at 5,200 mosl; we found there several individuals of an oribatid species, that belonged to the family Licneremaeidae Grandjean, 1931. They were easily placed under the genus *Licneremaeus* Paoli 1908. The original genus was created for little species with flabelliform sensillus with *Notaspis licnophora* Michael as type and four other species from Italy. Then Berlese (1910) described *L. cesareus* also from

Italy; later Grandjean (1931) redefined the genus, leaving only two species, that is, the type (*L. licnophora*) from Europe and *L. discoidalis* Willmann, from Guatemala, in the same paper he described also a new species, *L. exornatus*, from Venezuela.

At present there are four *Licneremaeus* species described for the Neotropical region. The above cited *L. discoidalis* and *L. exornatus* plus *L. atypicus* Mahunka 1984, from Paraguay and *L. cubanus* Balogh et Mahunka 1980, from Sierra Maestra, Cuba (Balogh and Balogh, 1990). The *Licneremaeus* found by us was clearly a different from the above, in the absence of a translamellar ridge, by the rounded rostrum without tubercles and by the irregular notogastral surface, with bosses and valleys; the species is described in the following pages.

METHODS

Type locality: The collecting site was on the high andean belt of vegetation (Villagrán *et al.*, 1981), at the side of the road that goes from Putre to Alcérrecá, on a place at 5,200 mosl, on the western side of the Taapaca hill (Cerro Taapaca) (18° 06' S; 69° 30' W)

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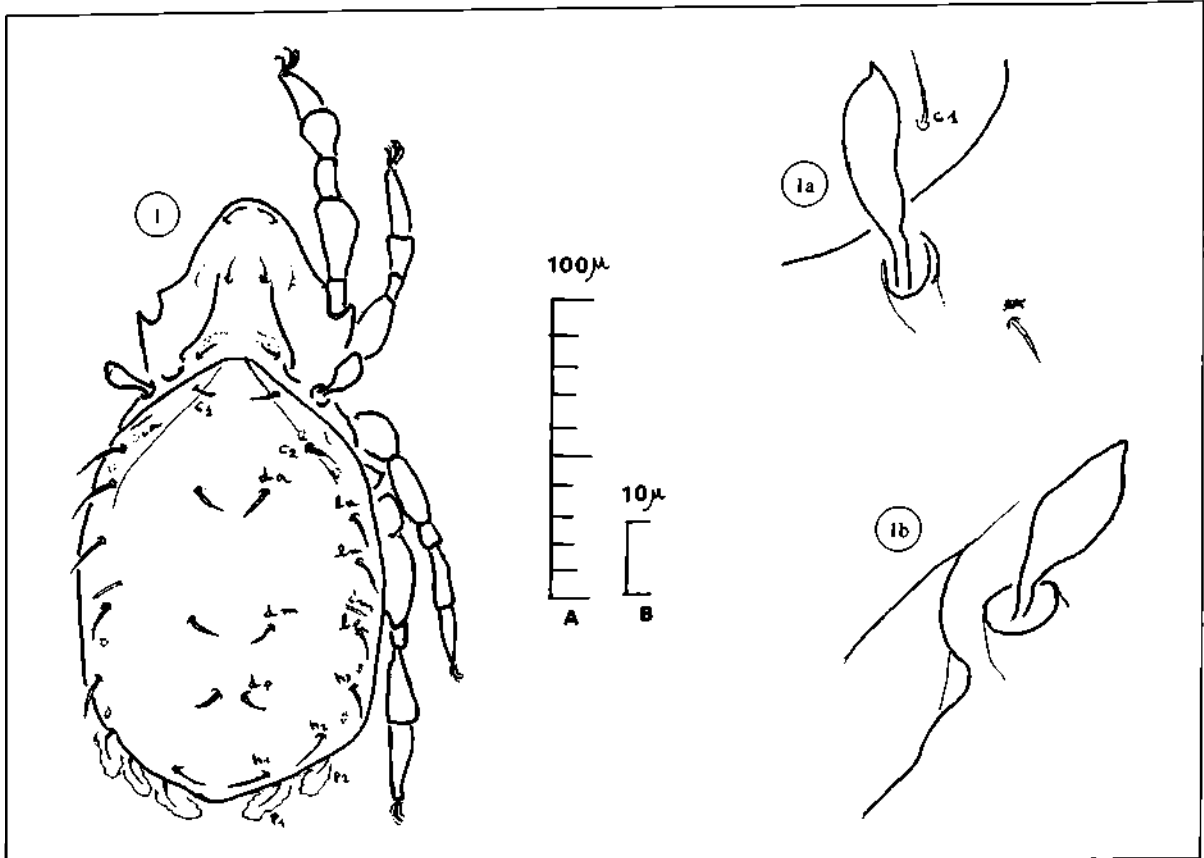


Figure 1. *Licneremaeus altiplanicus* n.sp. 1. Dorsal view, scale A.
Figures. 1a and 1b. Sensillus, scale B. ex = exostigmatic setae, c1 notogastral setae.

belonging to the "Nevados de Putre" mountains. A series of 6 soil samples was taken from under different cushions of *Pycnophyllum brioides*; they were put into plastic bags, and then taken to the laboratory. The oribatids were extracted from the soil samples by means of Berlese-Tullgren funnels, then separated from the soil particles under a binocular stereoscopic microscope. 10 individuals were found of this Licneremaeidae and three were mounted in lactic acid on concave slides, forming an open microscopic preparation. The detailed morphologic study was performed by means of a refracted light microscope (LEICA DMLB).

Deposit of type material: Holotype and a paratype in the Chilean Museum of Natural History. Eight paratypes in the author's collection: Laboratorio de Biología de Suelo, Instituto de Entomología, Santiago, Chile.

RESULTS

Licneremaeus altiplanicus n.sp.

Three females were studied as type material and one of them defined as a holotype; body length 200 μ ; body width 110 μ .

Prodorsum (Fig. 1)

The rostrum is rounded or oval, without tubercles or teeth. There are lamellae of the costulae type, extending from near the pseudostigma, obliquely, to the middle part of the prodorsum; there are no interlamella neither points or lines replacing it. In front of the anterior end of the lamella the surface of the prodorsum bends abruptly down to the rostrum. On the sagittal part of the prodorsum, near the dorsosejugal suture, there is a large pyramidal structure with its apex between the interlamellar hairs (*in*), a point that is more elevated than the rest of the prodorsum. The base of the rostral hairs (*ro*) are well separated from each other, and the hairs, curved to

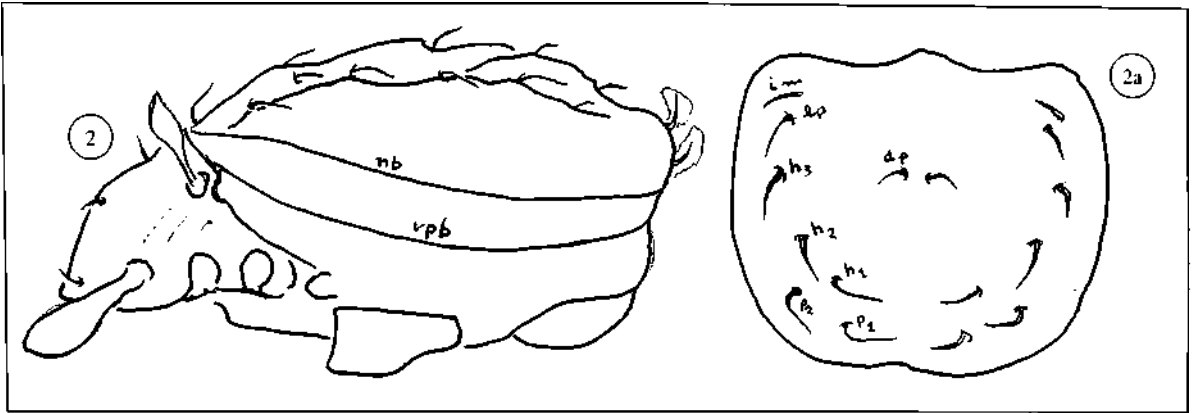


Figure 2. Lateral view, nb = notogastral board; vpb = ventral plate board, scale A.

Figure 2a. *Licneremaeus altiplanicus* n.sp. Pygidial view, scale A.

the sagittal plane; they are a little longer than the lamellar (*le*) and interlamellar (*in*) hairs; the lamellar hairs placed mediad of the anterior point of the

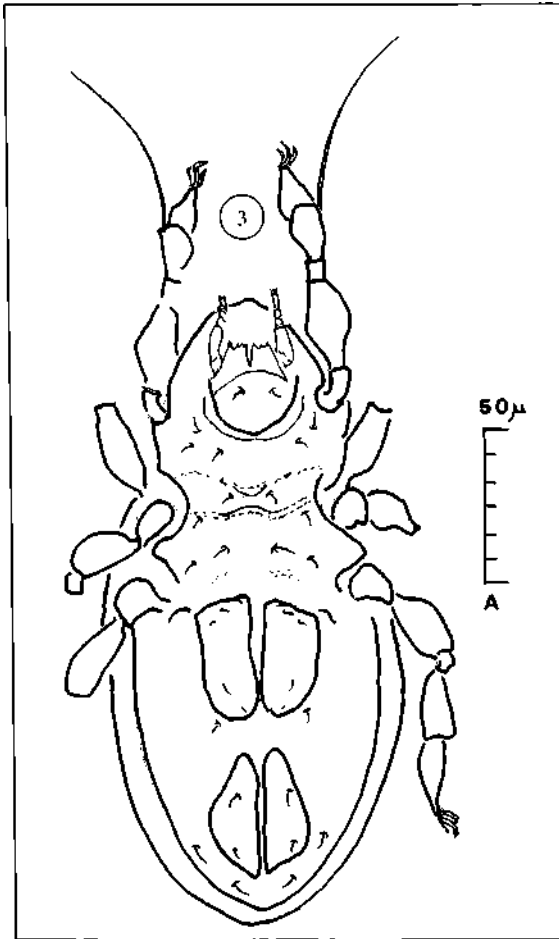


Figure 3. Ventral view, legs incomplete, without setae, scale A.

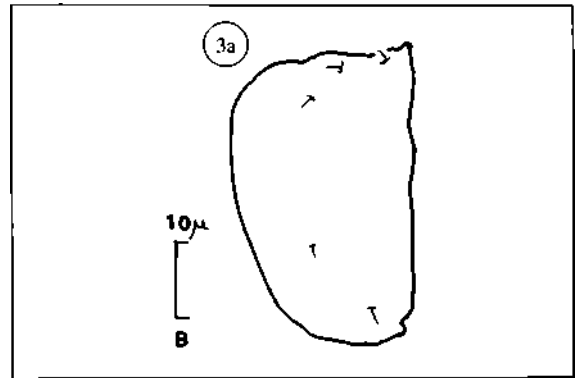


Figure 3a. Anal plate, scale B.

lamella and apart from it. Interlamellar hairs curved mediad, its origin near the base of the lamella. The *ro* and *le* hairs covered by a thick cerotegument. Sensillus form is as a large and irregular band, (flabelliform) nearly fusiform, and showing a little point at the extreme (Fig. 1a), they are covered by a diffuse cerotegument and, at least in the preparations, they are sometimes folded, looking as if they were narrower than they really are (Fig. 1b).

Notogaster

Totally covered by cerotegument with a granular structure, it covers also the lateral and pygidial hairs forming a thick cover, so they look much larger than they really are. The lateral parts of the notogaster are bent downwards in the lateral and posterior parts, forming an angle as a rounded bord, that in the anterior part becomes straight and converges from both sides to the prodorsal pyramidal structure; the true lateral bords converge also anteriorad forming a regular arch arriving almost over the top of this prodorsal structure.

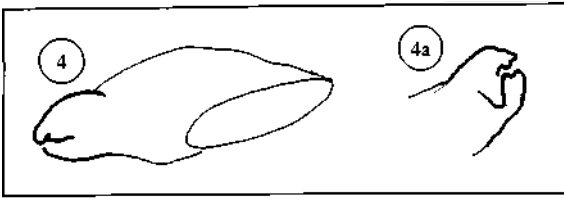


Figure 4 and 4a. Chelicera, scale B.

There are 13 pairs of notogastral hairs, as shown in the Fig. 1, the *ps3* hair is lacking (figure 2a). Setae are difficult to see because of the cerotegument, they are large setiform blades, a sample of which, with better resolution, can be seen in Fig. 6. The surface of the prodorsum under the cerotegument is smooth, rather plate with longitudinal valleys, but it is not regular, showing large depressions and bosses, the latter coinciding with the notogastral hairs (Fig. 2, dorsal profile, and figure 2a dorsal part is upside). There are 4, indistinct little area porosae, difficult to see.

Ventral side (Fig. 3)

Gnathosoma. The infracapitulum is diarthric, showing rutellum of pantelebasic type. The chelicerae are of the normal type, with the digitus fixus showing two teeth, situated in an irregular transversal position, and the digitus mobilis with one main tooth that can adjust between the teeth of the opposite section. (Fig. 4 and 4a). The palp have 5 articles, the hairs with the formulae (0-2-1-3), the tarsus shows the anteroculminar acanthoid parallelled with the ω solenidium; the ultimal and subultimal acanthoids are thick and short baculiform structures.

The epimeres show a transversal and arched band between the 2 and 3; a little arch can be seen also in the medial part between the 1 and 2 epimeres. The 3

and 4 are fused; the epimeral setae have the formula (3, 1, 2, 3). The epimeral region is ondulated and with some transversal furrows; one of them is anterior to the genital plate, it begins between the III and IV acetabula and traverses the whole zone from side to side; another character is a band that corresponds laterally to the third apodemes and shows a thicker zone in the medial part; still another character, just anterior to the latter, and only in the central part, is a concave thicker zone, opposing to the posterior band, but not touching it, as it were a kind of enantiophysis; between the concave thick zone and the posterior opposing thick band, is a lower and clear zone, as if it were possible for the body to bend in this place.

The genital plates are larger anteriorad and show 5 pairs of little and fine setae, very difficult to see (Fig. 3a). There is 1 pair of aggenital setae (*ag*). The anal plates are narrower anteriorad and show two setae (*an*); there are also two pairs of adanal setae (*ad*). Near the side of the anterior bord of the genital plates, there is a pair of structures resembling a lyrifissure, or a long sacculi. The surface of the ventral plate is smooth under a thin layer of cerotegument.

At the lateral side of the body there is a short pedotectum behind the coxa I, and a vertical discoidal ridge.

Legs

The general form of the legs can be seen in Fig. 5, all tarsi are tridactylous and heterodactylous. The legs hair formula is: I (1, 3, 1, 3 + 1s, 13 + 2s); II (1, 3, 1, 3, 11 + 1s); III (1, 2, 1, 4, 10), IV (1, 2, 1, 3, 7).

Tarsus I has two solenidia, as a long ceratiform $\omega 1$ and a much shorter baculiform $\omega 2$; near them, at their antiaxial side, a baculiform famulus as short as the fourth of the $\omega 1$ solenidium can be seen (Fig. 5a). The

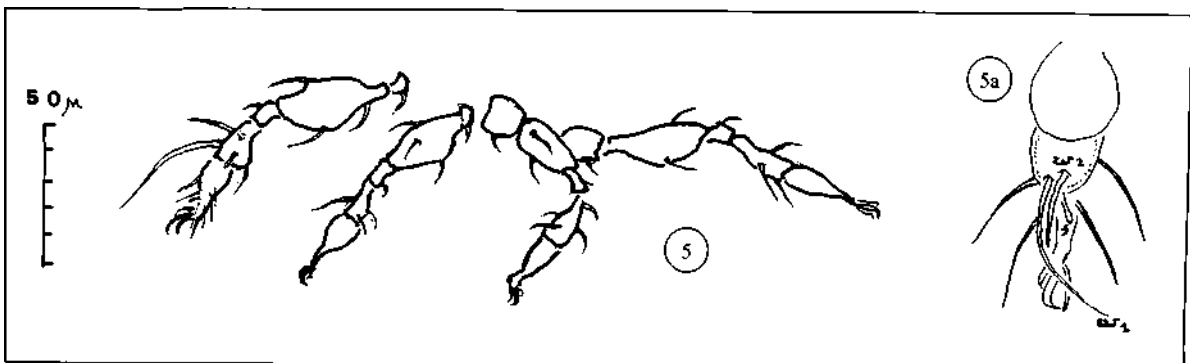


Figure 5. *Licneremaeus altiplanicus* n.sp. Legs I (left) to IV (right), tarsus whitout detailed setation.

Figure 5a. Dorsal view, tarsus I, detail of two solenidia and famulus, setae incomplete.

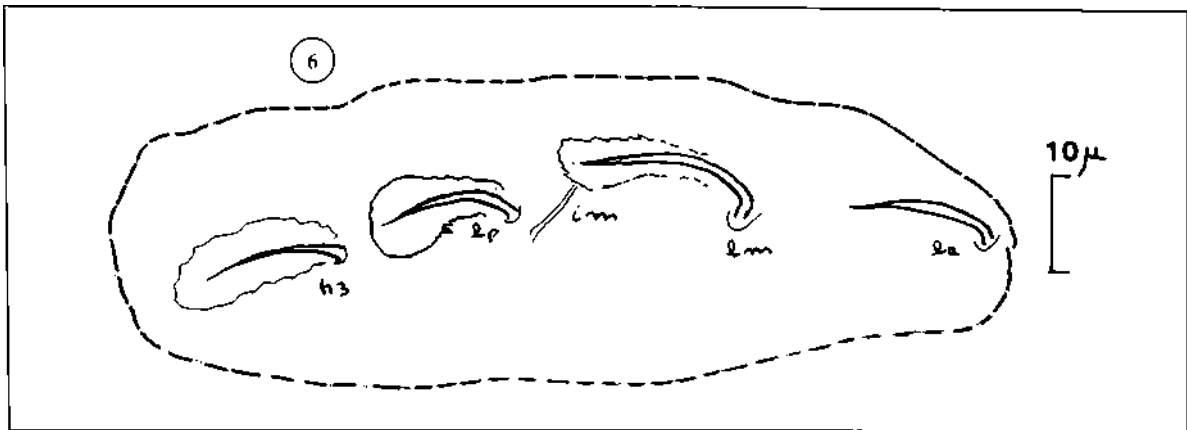


Figure 6. Detail four notogastral setae with better resolution.

Figure 6. *Licneremaeus altiplanicus* n.sp. Lateral view, notogastral setae: la, lm, lp and h₃.

setae are all pointed and setiform, including the fastigial, tectal, iteral, unguinal, antilateral, primiventral and the impaired s hair; the former four of these are long, forming a verticillium whose points reach to the level of the claws.

DISCUSSION AND CONCLUSIONS

There are four other neotropical species of *Licneremaeus* Paoli, all associated to tropical forest in Paraguay, Cuba, Antilles, Venezuela, namely *L. atypicus* Mahunka 1984, *L. cubanus* Balogh et Mahunka 1980, *L. discoidalis* Willmann 1930 and *L. exornatus* Grandjean 1931. The differences with *altiplanicus* are follows:

1. *L. altiplanicus* differs from all four by the cerotegument, that is thick but with a fine regular granular structure, it doesn't show any polygonal drawings as described in detail for the other four species.
2. *L. altiplanicus* has an irregular notogastral surface, with well visible valleys and bosses, the latter coinciding generally with the base of the setae; this character is not present in any other described species that show whether a smooth and regular notogastral surface, or little rounded depressions at the base of setae, as in *L. exornatus*.
3. Rostral setae are long, curved mediad as in *L. atypicus*, but unlike this species the rostrum is

rounded, without tubercles, also *le* and *in* setae are long, just a little shorter than the *ro*. The *ro* setae originate without a basal tubercle as *L. cubanus*, that has also "robust" and longer notogastral setae.

4. There is no translamellar ridge in the *L. altiplanicus* prodorsum, as show both *L. discoidalis* and *L. exornatus*.
5. *L. altiplanicus* shows 3 or 4, indistinct little area porosa. *L. atypicus* shows 4 pairs of well visible lateral pori.

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