

## Redescription of the Mexican soft scale insect *Toumeyella sallei* (SIGNORET, 1874), comb.n. (Insecta: Hemiptera: Coccidae)

T. Kondo\* & M.L. Williams\*\*

### Abstract

*Neolecanium sallei* is redescribed and transferred to the genus *Toumeyella* as *T. sallei* (SIGNORET, 1874), comb.n. Morphological notes and its affinity with *T. mirabilis* (COCKERELL, 1895) are discussed.

**Key words.** Coccidae, *Lecanium sallei*, Mexico

### Zusammenfassung

*Neolecanium sallei* wird wiederbeschrieben und als *T. sallei* (SIGNORET, 1874) comb.n. in die Gattung *Toumeyella* gestellt. Anmerkungen zur Morphologie sowie die Verwandtschaft zu *T. mirabilis* (COCKERELL, 1895) werden besprochen.

### Introduction

The following description was made from a single specimen deposited in the Naturhistorisches Museum, Vienna, and labelled as holotype. The insect was preserved as a pinned specimen and in poor condition, with most of the mid ventral area missing.

We divided the holotype into dorsal and ventral areas, and because of its large size, it was slide mounted onto 6 slides in order to study the microscopic dermal structures.

### *Toumeyella sallei* (SIGNORET), comb.n. (Fig. 1A - Q)

*Lecanium sallei* SIGNORET, 1874: 410.

*Neolecanium sallei* (SIGNORET): COCKERELL 1902: 451.

**Material studied: holotype**, female (pinned specimen), Mexico, det. Signoret, with a second label written as holotype, slide mounted by Kondo, T., August 2002, 1 specimen, slide mounted on 6 slides labelled: holotype, VMNH-001-2002A-F, Naturhistorisches Museum, Vienna.

### Description of adult female:

Unmounted material. "A species of monstrous size, which was collected in Mexico on an undetermined plant, and donated by M. Sallé. Its size is 2 cm long by 1.5 cm wide

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and 0.5 cm high. The insect is brownish with some pale shading, a bit yellow. It is rugose on the sides" (translation from SIGNORET 1847).

Slide mounted specimen elongate oval, 2.2 cm long, 1.8 cm wide.

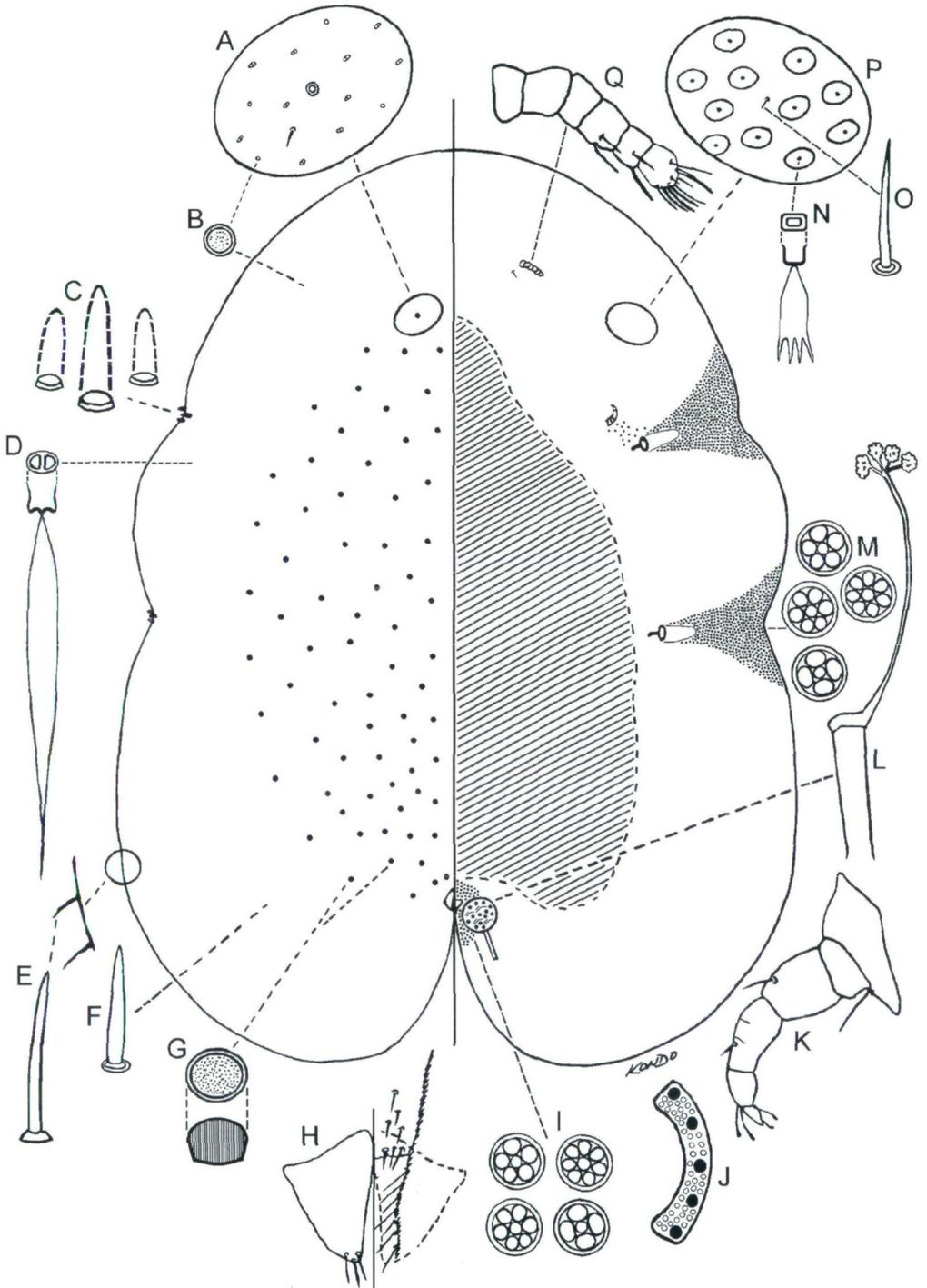
**Dorsum:** Dorsal derm membranous, only slightly sclerotized. Enlargement of dorsum shown in Fig. 1A. Dorsal body setae (Fig. 1F) sharply spinose, 11 - 19  $\mu\text{m}$  long, scattered over dorsum. Preopercular pores (Fig. 1G) oval to elongate oval, conical, numerous, variable in size, 4.4 - 8.8  $\mu\text{m}$  wide, uniformly spread over mid-dorsum, absent around margin. Simple disc pores (Fig. 1B) 3.6 - 4.4  $\mu\text{m}$  wide, scattered evenly over dorsum. Submarginal tubercles absent. Dorsal microducts (Fig. 1D) bilocular, with a long filament, about 2.7 - 3.6  $\mu\text{m}$  wide, scattered evenly throughout dorsum. Anal plates (Fig. 1H) each triangular in shape, 286 - 307  $\mu\text{m}$  long, 183 - 189  $\mu\text{m}$  wide; anterolateral margin 194 - 226  $\mu\text{m}$  long, posterolateral margin 243 - 253  $\mu\text{m}$  long. Each plate with 3 dorsal setae, and with 7 ventral subapical setae; anal fold with about 14 fringe setae. Derm around anal plates only slightly sclerotized, but not forming a sclerotized crescent. Anal cleft extending about 1/5 of body length from posterior margin. Anal ring (Fig. 1J) with 10 setae, and numerous translucent wax pores.

**Margin:** Margins smooth, slightly more sclerotized than dorsum. Marginal setae (Fig. 1E) sharply spinose, straight or slightly bent, 15 - 21  $\mu\text{m}$  long, arranged in a single row around margin. Spiracular cleft present, well developed. Number of marginal setae between spiracular clefts not determined, but based on density on other areas probably surpassing 10 in number. Spiracular setae (Fig. 1C) missing, but sockets of spiracular setae present, indicating presence of 3 spiracular setae per spiracular cleft, median socket of greatest diameter, indicating that median spiracular setae largest. Eyespots not detected.

**Venter:** "Despite its size we have seen neither antennae nor legs, which this specimen has very probably accidentally lost" (translation from SIGNORET 1874). Most of the mid-ventral area of the insect is missing, thus it was impossible to study the morphology of the abdominal region, mid-thorax and mouthparts which are represented by a shading in Figure 1. However one antenna and a prothoracic leg were found and illustrated. The following description of the venter is based on what little was left from the venter.

Derm membranous. Ventral body setae (Fig. 1O) sharply spinose, 15 - 23  $\mu\text{m}$  long. One row of submarginal setae, similar to other ventral body setae (not illustrated). One inter-antennal seta detected next to antennae, but probably more than one associated with each antenna. Antennae (Fig. 1Q) 6-segmented, small, about 150  $\mu\text{m}$  long. Legs (Fig. 1K) reduced, only one prothoracic leg found, total length including claw about 190  $\mu\text{m}$ . Tarsus and claw each with pair of slender and knobbed digitules; claw simple. Ventral microducts (Fig. 1N) numerous, 2.7 - 3.6  $\mu\text{m}$  wide, each found in small areolation (Fig. 1P), scattered evenly throughout venter. Spiracles large, derm anterior to spiracular opening sunken in membranous pocket, mostly devoid of spiracular pores, spiracular

Fig. 1: *Toumeyella sallei*, adult female: (A) enlargement of dorsal derm, (B) simple disc pore, (C) spiracular setae, (D) dorsal microduct, (E) marginal setae, (F) dorsal seta, (G) preopercular pore, (H) anal plate, (I) perivulvar pores, (J) anal ring (right half), (K) leg, (L) ventral tubular duct, (M) spiracular pores, (N) ventral microduct, (O) ventral seta, (P) enlargement of ventral derm, (Q) antenna.



peritremes 221 - 259  $\mu\text{m}$  wide. Spiracular pores (Fig. 1M) similar to perivulvar pores, 4 - 7 locular, mostly 5-locular, 4.4 - 6.2  $\mu\text{m}$  wide, numerous. Spiracular pore band widest at body margin where it is about 30 - 50 pores wide. Ventral tubular ducts (Fig. 1L) abundant on perivulvar region, but exact distribution not possible to study because of missing ventral area. Perivulvar pores (Fig. 1I) with 4 - 7 loculi, mostly 5 locular, 4.4 - 6.2  $\mu\text{m}$  wide, same size as spiracular pores, abundant around vulvar area, exact distribution not possible to trace because of missing ventral derm.

**Distribution:** Neotropical Region: Mexico.

**Host plants:** unknown.

### Discussion

*Neolecanium* PARROTT, 1901, is here considered as a synonym of *Toumeyella* COCKERELL, 1895, and thus *Neolecanium sallei* is here transferred to *Toumeyella* as *Toumeyella sallei* comb.n. *Toumeyella sallei* is a typical member of the genus *Toumeyella*. Some of the characteristics of *Toumeyella* are the presence of preopercular pores near anal plates on dorsum, presence of ventral tubular ducts around the perivulvar area, spiracular and perivulvar pores 5-locular, often mixed with multilocular pores, reduced legs and antennae, and the lack of eyes and dorsal submarginal tubercles (WILLIAMS & KOSZTARAB 1972). Members of the genus *Toumeyella* are commonly found closely associated with tending ants, however, no ant association is mentioned in the original description of *L. sallei*.

The above description remains incomplete and young adult females are critically needed to better understand the present species. *Toumeyella sallei* may appear closest to the North American species *T. mirabilis* (COCKERELL) by the similar distribution of spiracular pores, which are widely spread around the margins of the spiracular cleft, but it differs in the number of spiracular setae. *Toumeyella mirabilis* has an unusual number of 0 - 1 spiracular setae per spiracular cleft, while *T. sallei* has the common number of 3 spiracular setae per spiracular cleft. Furthermore, *T. mirabilis* has 6 - 20 setae on the surface of each anal plate (HODGSON 1994), whereas there are only 3 setae at the apex of each anal plate in *T. sallei*.

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