Allotype description of the male scale Sclerococcus chilensis (Homoptera: Coccoidea: Asterolecaniidae)

by

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Descriptions of species in the genus Sclerosococcus are primarily based on the female morphology (McKenzie 1958, Lambdin 1980). The lack of descriptions for males is attributed to their brief seasonal appearances (lasting only a few hours) and their small size that makes collection of adult specimens difficult. As a result, adequate descriptions for only a few males of Asterolecaniidae are available for comparisons. Of those species where males are known, most descriptions are of the tests or general morphological aspects (Russell, 1941). The most comprehensive descriptions for adult males in the family were provided for Asterolecanium proteae (Giliomee 1968) and for two species of Grammococcus (Miller and Lambdin 1978).

The genus Sclerosococcus contains 4 species known from the Neotropical Region where they feed on bromelid hosts. Until now, no reference was made as to the existence of males of the species. My objective was to provide a description of the adult male of this rare species to better define the taxa.

Measurements and illustration were made by microscopic examination of the allotype male. Terminology used to describe the external morphology, with few exceptions, was adapted from Theron (1958). All measurements are presented in micrometers.

Sclerosococcus chilensis Lambdin
Adult Male (Fig. 1)

Type-Locality. Chile.

Type-Material. Allotype adult male on slide with encircled Holotype adult female deposited in U.S. National Museum of Natural History, Washington, D.C. Slide with following data: Chile (coll. at San Francisco, CA, No. 15451), 5 Jul. 1938, R. D. Clemens coll.

General body appearance (Fig. 1.): Elongate, tapering toward posterior end; slide mounted specimen 1560u long, 320u wide at mesothorax.

Head: Triangular, midcranial (mcr), postoccipital (por), and postocular (pocr) ridges well developed. Midcranial ridge barlike, restricted to venter and without lateral arms, 65 long. Median crest wide. Postoccipital ridge bifid laterally, 86 long. Gena (g) represented by bulging membranous area of margin. Preocular ridge (procr) heavily sclerotized, c-shaped, positioned anteriolateral to dorsal simple eye and articulated with scape (scp). Postocular ridge (pocr) originates behind dorsal simple eye (dse) and extends ventrad to posterior region laterad of cranial apophysis (ca). Dorsal simple eyes (dse) 30 in diameter and 68 apart. Ventral simple eyes (vse) 28 in diameter and 16 apart; tubercular ocelli (o) present. All setae on head row of 4 ventral (mcr) and 4 dorsal (dhs) pairs of setae associated with midcranial ridge; 2 pairs of interocular setae (ios) anterior to ventral simple eyes and associated with last midcranial seta forming a curved submedial row; a pair of postoccipital setae on or near postoccipital ridge near bification, and a pair of genal setae (gs) on each side near fold. Antennae 10-segment: I=30, II=48, III=60, IV=57, V=64, VI=46, VII=45-60, VIII=31, IX=36,51, X=45,51 long respectively.

Thorax: Prothorax with reduced sclerotization; pronotal ridge (prnr) not discernible and pronotal sclerites absent; pleural ridge (plr_1) well developed, articulates with coxa; prosternum (stn_1) represented by narrow median ridge bifid posteriorly.

Mesothorax most developed region of thorax; represented dorsally by 3 major areas: (1) prescutum (prsc) heavily sclerotized, rectangular, delimited posteriorly by prescutal suture that extends anteriolaterally into the the c-shaped prescutal ridges and fuses anteriorly with mesoprephragma, 70 long, 82 wide; (2) scutum (sct) represented by narrow membranous strip between prescutum and scutellum (scl) that extends laterad of these structures into submargin where anteriolateral area joins the prealare (pra); (3) scutellum (scl) rectangular, connects with postalare by oblique rodlike structures, triangular membranous area between scutellum and postnotum (pn_2). Triangular plate not distinguishable, postnotal apophyses (pna) well developed on mesopostphragma. Setal arrangement on each side: a small medial seta near margin on prescutal ridge; a lateral seta on anteriolateral margin of scutum near prealar (pra), a seta on anteriolateral margin near scutellum, a submedial seta on scutellum, and a pair on tegular bulge (teg).

Basisternum (stn_2) heavily sclerotized with furca (f). Mesopleural ridge (plr_2) extends from coxa obliquely to base of wing process. Mesothoracic spiracle (sp) on submargin, 30 long, 14 wide, atrial opening 7 in diameter; no pores associated with spiracles.

Metathoracic sclerotization lacking except for the much reduced pleural ridge (plr_3). Basisternal area difficult to distinguish, represented by weakly sclerotized, transverse marginal ridge (mr_3) that fades out medially. Spiracles similar to those on mesothorax. A pair of minute setae in submedial area.

Wings and hamulohalterae absent. Legs similar in shape, 5-segmented; legs increase in size anteriorly to posteriorly as follows: prothoracic 511, mesothoracic 590, and metathoracic 723 long respectively. Tarsi apparently 2-segmented. Claw well-developed, 18-21 long, without denticle. Legs with numberous setae; 2 types present, hairlike predominant. Tarsal and claw digitules (dgt) present, ca. 25 long.

Abdomen membranous, tapering posteriorly, with long sclerotized aedeagus (aed). Segmentation distinct. Dorsally, segment I with a pair of submarginal and submedial setae, but segment II through

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VII with 2 pairs in each area; segments V and VI with a marginal seta on each side, setae needlelike, 8 (5-12) long. Ventrally, fused segments I-II with a submedial seta, segments III-VI with a pair of tacklike setae, 3 (3-5) long. Segement VII with ca. 12 pores (mp) on submargin: 1 trilocular, 8 quadralocular, and 3 quinquelocular. Pregenital segment VIII without setae. Anal orifice (an) on dorsum of IX segment, 18 in diameter. A pair of setae (gts) on venter ca. 23 long, and on dorsum 40 long. Aedeagus (aed) 576 long, consists of penial sheath (ps) and style (st), latter 486 long; no setae or sensilla on the penial sheath.

Discussion

The general morphology of the male is consistent with that for species of the lecanoid group. Although this coccid has some primitive traits (eg. the retention of multilocular pores in clusters on the 7th abdominal segment), it is distinguished by many specialized features, notably the elongated aedeagus, lack of wings and hamuhalters, and well-developed thoracic region. The aedeagus of **S. chilensis** is longer and more narrow (length/width ratio 6.4) than those recorded for species of **Grammococcus** (0.8-1.0). The head differs by having a distinct postoccipital ridge as opposed to dorsal sclerites and by having lateral ocelli. Setae are present on the thoracic segments of **S. chilensis** but absent on **A. proteae, G. adetocorymbus,** and **G. corymbus.** In addition, **S. chilensis** is distinguished by segmental setae on abdomen in eight longitudinal rows on dorsum and four longitudinal rows on venter.

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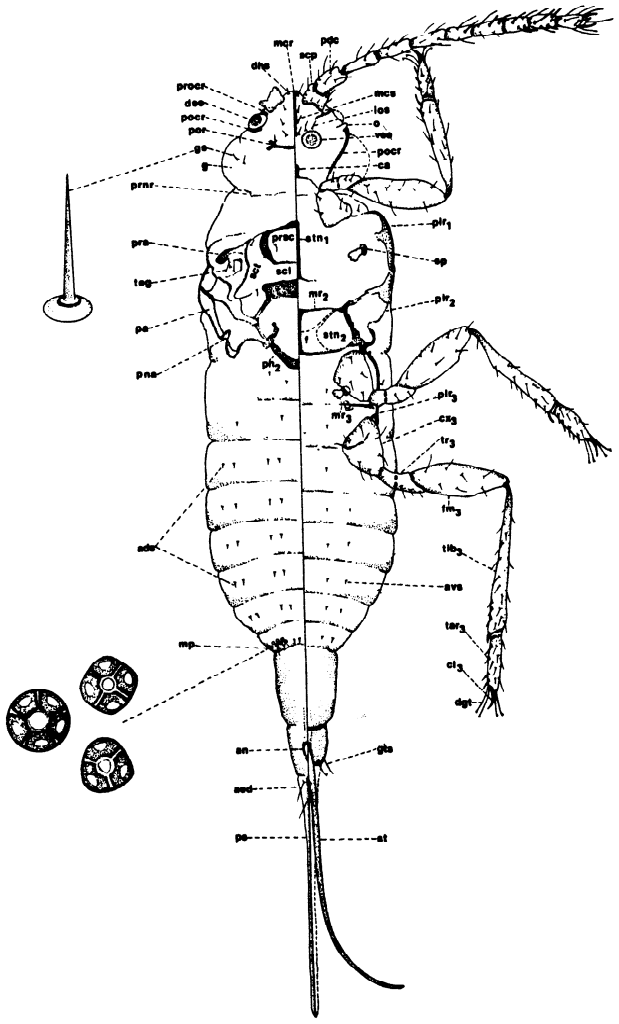

Sclerococcus chilensis: Dorsoventral view of the adult male.