

***Akermes colombiensis* sp.n., adult female**

Diagnosis. The adult female of this species can be diagnosed by the following combination of characters: (i) discoidal pores abundant and often touching each other on area anterior to anal plates, with several scattered on mid-dorsum, fused pores often present; (ii) sclerotic crescent present around anal plates, crescent not incorporating discoidal pores; (iii) anal plates with 7-15 setae on dorsal surface; (iv) marginal setae sharply spinose and/or with apex gradually or abruptly tapering to a point; (v) spiracular setae 3 in number, found submarginally on dorsal surface; (vi) legs and antennae greatly reduced, with segmentation poorly defined; (vii) multilocular disc-pores (spiracular and perivulvar pores) with 4 - 7 loculi, mostly 5-locular; (viii) ventral tubular ducts absent.

Description. Adult female (Fig. 1)

Unmounted material. Fully grown insects highly convex, shiny, derm rugose, strongly sclerotized, particularly around anal plates. Color highly variable, ranging from pale weak yellow, ferruginous, ochre, orange-to reddish-brown, often mottled with dark brown. Young adult females normally ochre, with a narrow dark line running longitudinally across mid-dorsum, sclerotic crescent around anal plates reddish-brown to dark in color. The insects were found tended by arboreal ants, covered by ant cartons, or exposed on tree trunk, twigs and fruits of host.

Mounted material. Body outline oval to elongate oval, 2.4-4.3 mm long, 2.0-3.8 mm wide (n = 41).

Dorsum. Derm membranous (magnification of derm shown in figure 1A), becoming heavily sclerotized at maturity, occasionally with granular dermal patches (Fig. 1G). Dorsal setae (Fig. 1F) length 8.5-15 μ m, slender, sharply spinose, often missing or undetected. Submarginal tubercles absent. Discoidal pores (Fig. 1H) 6.4-15 μ m wide, convex, invaginated, abundant and often touching, or almost touching on area anterior to anal plates, several scattered on mid-dorsum. Simple disc-pores (Fig. 1D) 2.7-3.6 μ m wide, scattered evenly throughout dorsum. Dorsal microducts (Fig. 1E) appearing bilocular under high magnification, width of duct rim 2.7-3.6 μ m. A narrow sclerotic crescent present around anal plates. Anal plates (Fig. 1I) each triangular, 149-164 μ m long, 81-96 μ m wide, anterolateral margin 117-128 μ m long, posterolateral margin 102-115 μ m long, with 8-15 setae on dorsal surface and with about 4 ventral subapical setae. Anal ring (Fig. 1J) with 10 setae. Anal cleft extending about 1/5 of body length. Eyes absent.

Margin. Margins smooth. Marginal setae (Fig. 1B) sharply spinose, with apex gradually or abruptly tapering to a point, 10-25 μ m long, with about 8-25 setae on

body margin between anterior and posterior spiracular setae. Spiracular setae (Fig. 1C) conical, or bluntly spinose, often bifurcate or trifurcate, much thicker than marginal setae, present in a group of 3 on dorsal submargin, all subequal in length, or often median seta longest, each setae 12-45 μ m long. Spiracular clefts shallow, showing slight sclerotization.

Venter. Ventral setae (Fig. 1M) sharply spinose, straight or slightly bent, 8.6-13 μ m long, those anterior to vulvar region on last abdominal segments longer, 21-43 μ m long. Antennae (Fig. 1P) short, 36-76 μ m long, segmentation often not discernible, about 2-5 segmented. Legs (Fig. 1L) greatly reduced, about size of spiracular peritreme, segments mostly indistinct, total length 54-107 μ m, without tibio-tarsal sclerotization, tarsal and claw digitules spiniform, claw without a denticle. Spiracles relatively large; anterior peritreme 75-90 μ m wide, posterior peritreme 81-94 μ m wide. Spiracular pores (Fig. 1O) with 3-7 loculi, mostly 5-locular, each 5.3-6.2 μ m wide, found in a band from area around each spiracle towards spiracular setae on dorsal submargin. Perivulvar pores (Fig. 1K) similar to spiracular pores, predominantly 5-locular, 6.2-7.1 μ m wide. Clypeolabral shield 189-216 μ m wide. Ventral microducts (Fig. 1N) scattered evenly throughout venter, width of duct rim 2.7-3.6 μ m. Ventral tubular ducts usually absent, rarely present in some specimens (see section on morphological variation).

***Akermes colombiensis* sp.n., first instar nymph (Fig. 2)**

Diagnosis. The first-instar nymphs of *Akermes colombiensis* sp.n. are characterized by the following combination of characters: (i) antennae 5-segmented; (ii) spiracular pores 4-locular; (iii) ventral submedian setae 3 pairs; (iv) claw with a denticle; (v) spiracular setae 3 in number, with median spiracular setae longest; (vi) a pair of dorsal setae present on head region; (vii) dorsal microducts appearing bilocular under high magnification, positioned submarginally and in 2 submedian longitudinal rows, with a pair of additional microducts between submarginal and submedian rows on area of mid-thoracic region; and (viii) a simple disc pore present near each dorsal microduct.

Description. First-instar nymph

Unmounted material. First- and second-instar nymphs elongate oval, light yellow in color, with area of spiracular furrows often of a whitish or lighter color, anal plates usually darker than surrounding derm, often of an orange color.

Mounted material. First-instar nymphs elongate oval, 4.15-4.69 mm long, 2.56-3.13 mm wide (n = 27).

Dorsum. Derm membranous, roughly delineated by membranous folds. One pair of dorsal setae on head region (Fig. 2B)

present, often broken off or undetectable. A pair of trilocular pores (Fig. 2A) present on head region. Simple disc pores (Fig. 2F) present, duct rim about 1.8 μ m wide, often hard to detect or indiscernible in specimens over treated with potassium hydroxide. Bilocular microducts (Fig. 2E) 3.6-4.4 μ m wide. Anal plates each triangular, 60-64 μ m long, 21-26 μ m wide. Number of setae on each plate 4, including long apical setae. Anal ring (Fig. 2G) with 6 setae. Eyes present, located about same level as antennal scape.

Margin. Marginal outline smooth. Marginal setae (Fig. 2C) sharply spinose, with straight or bent tips, 13-20 μ m long. Total number of marginal setae 32: 8 anteriorly between eyes, 2 between each eye and anterior spiracular setae, 2 between anterior and posterior spiracular setae, and 8 on posterior end of body (between posterior spiracular setae and abdominal apex). Spiracular setae (Fig. 2D) numbering 3, bluntly or sharply spinose, median spiracular setae longest, 15-19 μ m long, lateral spiracular setae shorter, 4.3-6.4 μ m long.

Venter. Derm membranous. Six inner and 7 outer submarginal setae (Fig. 2H) on each side of abdominal margins, 1 on each side between anterior and posterior spiracle, and 1 ventral cephalic seta (Fig. 2L). Antennae 5-segmented, total length 119-139 μ m. Interantennal setae 1 pair. Legs well developed, trochanter + femur 68-77 μ m long, tibia + tarsus (claw not included) 79-85 μ m long. Microctenidia at tibial apex present. Prothoracic tarsal digitules dissimilar: 1 knobbed, 1 spiniform; mesothoracic and metathoracic tarsal digitules similar, knobbed. Claw (Fig. 2I) with a denticle, claw digitules knobbed, one thicker than other. Spiracular peritremes 7.1-8.9 μ m wide. Spiracular pores (Fig. 2J) with 4 loculi, numbering 3 on anterior spiracular furrow, and 4 on posterior spiracular furrow. Clypeolabral shield 66-68 μ m wide. Ventral microducts (Fig. 2K) present, duct rim about 1.8 μ m wide, numbering 8 on each side of body, 6 between inner and outer submarginal setae in the abdominal region, 1 between anterior and posterior spiracle, and 1 present near base of antennal scape.

Morphological variation. Specimens from guava (*Psidium guajava*) collected in Cali are morphologically identical to the type specimens collected in El Topacio on Melastomataceae. Specimens from Buga collected on avocado (*Persea americana*) and aguacatillo (*Ocotea* sp.) also closely match the morphology of the types, except that a few specimens from these hosts have 1-2 ventral tubular ducts on the vulvar region. (Ventral tubular ducts are always absent in the other species of *Akermes*). Scales collected on guava at the Juan Maria Cespedes Botanical Garden in Tulúa, usually have fewer and slightly smaller discoidal pores, a highly irregular body outline, and more pronounced granular dermal patches. No differences were found between first-instar nymphs from any locality.

