
THREE NEW SCALE INSECTS FROM OHIO.

J. G. SANDERS.

ORTHEZIA SOLIDAGINIS, n. sp. Pl. VIII. Figs. 57-63.

Adult female: Length (including marsupium), 6mm.; width, 2.5mm. Body covered completely by white waxy secretion in four series; two inner series composed of eight pairs of lamellae extending laterally from median line with tips turned backward and upward, gradually increasing in length to the sixth, then rapidly decreasing; the ninth pair joined at tips forming a ring around anal orifice. The two lateral series are each composed of ten lamellae, all turning backward except the first on either side. The second and third lateral lamellae are subequal, the others increasing in length to the long subequal eighth and ninth, reaching midway on the marsupium; the tenth pair are very short and inconspicuous. A lamella extends downward between the antennae to the ventral surface. The marsupium is fluted on the dorsal surface, plain ventrally and gradually narrowed and elevated posteriorly.

Body, antennae and legs dark reddish-brown. Antennae 8-jointed bearing scattered hairs and with distal ends of joints enlarged; the fusoid eighth joint with a terminal spine and with distal half black. Formula - 3, 8, (4, 5, 2,) 6, (7, 1). Length of joints in μ : (1) 135, (2) 150, (3) 205, (4) 150,

(5) 150, (6) 140, (7) 135, (8) 180. Legs large and strong, rather spiny with femur and tibia of almost exactly equal length and with tarsus more than half the length of the tibia; large claw with three or four denticles and a pair of short flattened digitules. The body is thickly covered with tubules about 20μ long, and small derm-orifices. The anal ring is elliptical, bearing six hairs and a narrow chitinous band on each side of the orifice, and is thickly dotted.

Immature stage: Length, 3mm.; width, 2mm. Completely covered above by four series of waxy lamellae. The two median series consist of eleven short thick lamellae; the 11th pair being very small and the anterior pair protruding forward over the head in a bilobed manner. The first four lateral lamellae are similar to those of the adult, the 5th and 6th pairs are short, and the apparently fused 7th and 8th are again longer, giving the insect a rectangular appearance. The 9th lamellae from either side are fused, forming a single long lamella projecting posteriorly on the median line.

On the ventral surface there are 12 short, broad subequal lamellae on each side around the margin of the body, and the entire surface has an armadillo appearance on account of the short, plate-like lamellae. This stage has 7-jointed antennae. Formula: 7, 3, 2, 4, (5, 1,) 6. (1) 75, (2) 87, (3) 120, (4) 81, (5) 75, (6) 72, (7) 141. The distal half of the 8th joint is black.

Larval stage: With 6-jointed antennae and two series of large cottony lamellae on the dorsal surface.

REMARKS: The author has found only five adults, near Port Clinton, Ottawa county, Ohio, July 5, 1903. The immature forms have been collected at Port Clinton, Columbus and Georgesville.

Concerning this species, Prof. Cockerell says: "*Orthezia solidaginis* is no doubt part of what has been called '*americana*,' but since '*americana*' was never properly described, it is all right to give a name to your insect. The species one first thinks of comparing it with are *O. urticae* (which might have been introduced from Europe) and *O. graminis* (which gets as far East as Kansas). *O. solidaginis* differs superficially from both; from *urticae* by the triangular outline of the mass of dorsal lamellae (in *urticae* it is oval); from *graminis* by the very long posterior lamellae, overlapping the ovisac."

CHIONASPIS SYLVATICA, n. sp. Pl. VIII. Figs. 64, 65.

Scale of female: Length, 1.5–2mm., somewhat convex, very irregular in shape, sometimes elongated and rounded posteriorly, and sometimes decidedly broadened and truncated posteriorly, giving it a deltoid shape; dirty-white to light-buff in color. First exuvia persistent, buff; second exuvia, brown.

Scale of male: Length, .6–1mm., white, strongly tri-carinate with parallel sides. Exuvia very small, delicate, semi-transparent, covering about one-fifth of the scale. Commonly found on the leaves of the host, causing pale spots at the point of attachment.

Female: Oval in outline, with 3rd, 4th and 5th segments anterior from the pygidium prominent. Median lobes fused to near the tip, diverging widely to rounded tips, then truncated obliquely toward the second lobes; serrate or crenate on lateral margins. Inner lobule of second lobes serrate, produced on inner margin to a rounded tip; outer lobule reduced, triangular, sharp-pointed, entire. Third lobe slightly produced, serrate. On the median line, a chitinous band extends anteriorly to base of median lobes, expanding to a bulb-like thickening. Chitinous bands extend obliquely toward this from outer margins. Second lobes slightly thickened on inner margins. The gland-spines are arranged as follows: 1, 1, 1, 1-2, 4-6; the first short and blunt. Second row of dorsal pores represented by 1-2 in anterior group; 3rd row by 3-4 in anterior and 4-5 in posterior group; 4th row by 3-5 in anterior and 5-7 in posterior group. Median group of circumgenital gland-orifices, 7-10; anterior lateral, 15-26; posterior lateral, 14-18.

REMARKS: The writer has found this scale on *Nyssa sylvatica* at four widely separated locations in southeastern Ohio—Sugar Grove, Fairfield county; Newark, Licking county; Somerset, Perry county; Quaker City, Guernsey county.

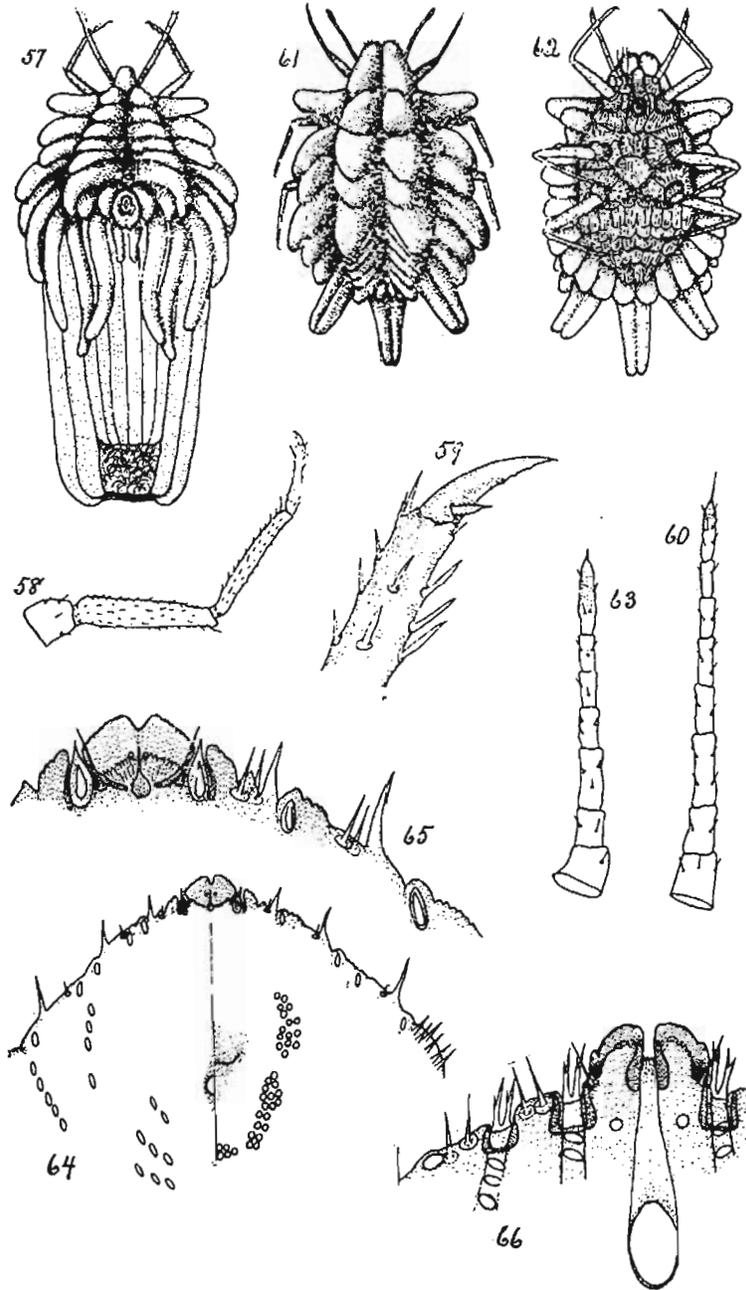
Prof. R. A. Cooley has kindly examined this species and pronounced it a valid one.

ASPIDIOTUS PICEUS, n. sp. Pl. VIII. Fig. 66.

Scale of female: 1.8-2mm. in diameter, flat, often subelliptical to oval, with subcentral exuviae; black shading to dark gray toward margin, having the appearance of pitch covered with dust. The raised, shiny black, deciduous first exuvia is surrounded by an indistinct ring-like depression. When rubbed the second orange exuvia appears. The young scales appear not unlike the young male scales of *A. perniciosus*. When removed a white patch is left.

Scale of male: Elliptical, 1mm. in length, black, with a distinct ring-like depression surrounding the lustrous black exuvia, the posterior flap shading to gray.

Female: With one pair of lobes, well developed, prominent, broad, notched midway on lateral margin, with outer corners well-rounded off toward inner angle. Inner margin parallel, not close, bounded by large chitinous processes, which extend somewhat reduced in density around the outer margin to a denser process at outer base of lobe. Second and third lobes rudimentary, sometimes with inner angle of second lobe slightly developed. Interlobular incisions broad and deep, bounded by elongated chitinous processes, the inner usually the larger. There are two perforations anterior to median lobes on a level with the base of chitinous processes of first incision. Between the median and second, and second and third lobes are pairs of di-pointed spine-like plates, two-thirds of length of median lobes. On the dorsal surface there is a spine on each of the second and third lobes, and on the ventral surface each lobe bears a spine on the lateral margin laterad of dorsal spine, also spines one-third and two-thirds of distance to penultimate segment. First row of dorsal pores (between first and second lobes) of 2;



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2nd row of about 6; 3rd row, 5-6; 4th row (near margin) of 3-4 orifices. Four or five groups of *circumgenital gland-orifices*, the median sometimes wanting; median, 0-3; anterior lateral, 15-23, averaging 18; posterior lateral, 6-14, averaging 9. Anal orifice very large, removed from margin by about three lengths of median lobes.

REMARKS: Found very abundantly on young *Liriodendron tulipifera*, at Painesville, Lake county, Ohio, July 21, 1903. This species differs from *A. osborni*, its nearest species, by the jet-black exuviae, the very large anal orifice, and the numerous circumgenital gland-orifices.

EXPLANATION OF PLATE VIII.

Figures 57-63—*Orthezia solidaginis*. Fig. 57—Adult female. Fig. 58—Cephalic leg. Fig. 59—Tarsus and claw. Fig. 60—Antenna of adult female. Fig. 61—Dorsal view of immature form. Fig. 62—Ventral view of immature form. Fig. 63—Antenna of immature form. Fig. 64—Pygidium of female of *Chionaspis sylvatica*. Fig. 65—Enlarged view of lobes. Fig. 66—Part of pygidium of female of *Aspidiotus piceus*.