

**A new Genus and Species of Elachistidae Mining Lonicera Leaves
in Hawaii (Lepidoptera)**

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In July 1949 a microlepidopterous leafminer which proved to be new to the Hawaiian fauna, was discovered by C. E. Pemberton in the leaves of Japanese honeysuckle, *Lonicera japonica*, which were brought in by Miss Wilhelmina Tenney from her residence at Makiki Heights, Honolulu. Dr. O. H. Swezey traced it to the family Elachistidae but literature was not available to go further with its identity, and it was sent to us at the British Museum (Natural History) for study. We have concluded that the moth represents not only a new species, but also a new genus. It is a foreign insect which has accidentally been introduced into Hawaii, but we can supply no information as to its original home. Nothing like it is in the British Museum, and J. F. G. Clarke reports that it is not represented in the U. S. National Museum. In a paper following this report, Dr. Swezey discusses the interesting habits and life history of the new moth.

Swezeyula, new genus

Head short, smooth-scaled, but with erectile hair-scales beneath the broad, smooth scales, and when the hair-scales are erected they displace the broad scales and the head appears very rough and quite different than when in repose; proboscis reduced, slightly shorter than labial palpi, scaled only at base; labial palpi slender, porrect or drooping, twice as long as vertical diameter of an eye, apical segment slender, awl-shaped, pointed, two-thirds to nearly as long as penultimate segment (measured on specimen); antenna a little more than one-half length of forewing, scape with a dense basal pecten of many, stiff hair-like scales, antennal insertion contiguous to upper margin of eye.

Forewing ovate-lanceolate, about four times as long as broad (excluding fringes); 1a absent, 1b forked at base, 1c present, 5 absent, 6 out of 7 at about middle, 7 to costa, 8 absent, 11 terminating on costa opposite a point between origins of 10 and 9 on genotype, medial stem faintly indicated in cell.

Hindwing at its broadest part (excluding fringes) about one-half breadth of forewing, narrowly lanceolate, costal margin slightly concave beyond middle, posterior margin convex; 1a, 1b, 1c present, but these may be weak or incomplete, 5 absent, 6 out of 7 at about middle, medial stem

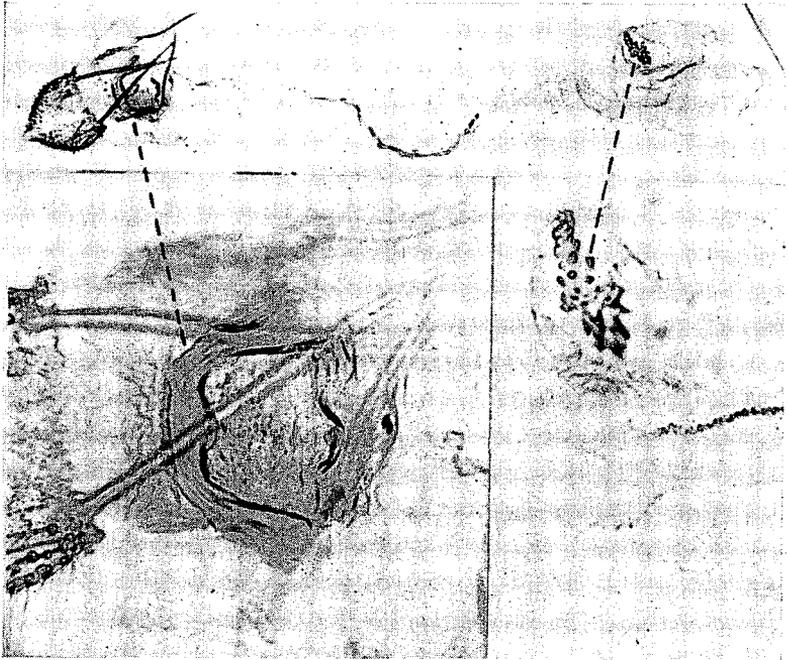


Figure 2.

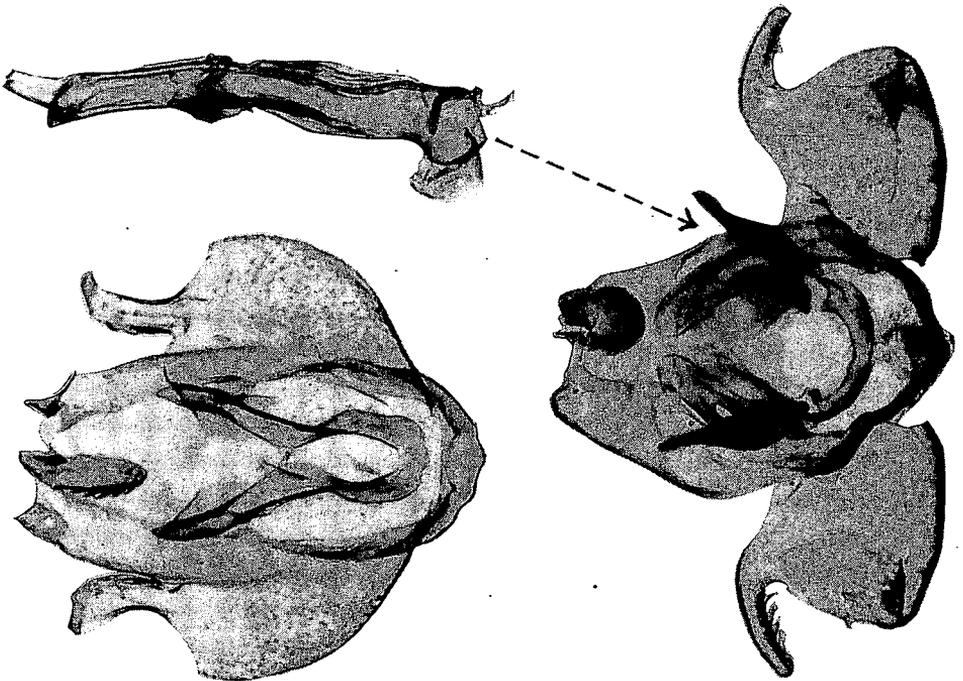


Figure 1.

close to 7, faintly indicated in apical part of cell which is closed; longest fringes two and one-half times as long as greatest breadth of hindwing.

Thorax and abdomen smooth-scaled, without tufts.

Posterior tibiae with long hairs on both dorsal and ventral edges; first pair of spurs arising at between one-fourth and one-third from base, outer spur only about one-half length of inner spur on genotype.

Male genitalia: uncus absent; socii reduced; gnathos a subcircular, spinulose knob; valvae broad, dorsal apex of each produced as a finger-like process; sacculus present; lobes of anellus strongly developed in form of finger-like processes; aedeagus with manica, without cornuti.

Female genitalia: genital plate well defined, more or less horseshoe-shaped, with arms directed cephalad; ovipositor lobes broad; ductus bursa long, slender; bursa copulatrix subspherical, signum transverse, denticulate in genotype.

Genotype: *Swezeyula loniceræ*, new species.

Swezeyula appears to be a close ally of *Perittia* Stainton, 1854, a genus now containing several species recorded from Europe, Algeria and the Canary Islands. It is probable, however, that only the genotype belongs to the genus. Examination of *Perittia cedronellæ* Walsingham, *lavandulæ* Walsingham, and *calpella* Walsingham, 1908, from the Canary Islands and Gibraltar, shows that they belong to a different, probably new, genus. Further study of the group is necessary. The genotype, and only species occurring in England, *Perittia oleæ* (Haworth, 1828) (= *oleella* Stephens, 1834, and *obscuripunctella* Stainton, 1848) also feeds on *Lonicera*. In the forewing of *Swezeyula* vein 6 arises from about the middle of 7, but in *Perittia* its origin is much nearer the base of 7. The proboscis of *Perittia* is longer than the labial palpi, and it is thick and squamose for a distance greater than the length of the palpi, but on *Swezeyula* it is shorter than the palpi and squamose only at extreme base. The antennae of *Perittia* are inserted at a distance above the eyes (a bare space is distinctly defined between the eye and antenna), but on *Swezeyula* the antennal insertions are contiguous to the eyes. *Perittia* does not have the erectile hair-scales on the head which are present on *Swezeyula*. The illustrations (Figs. 1 and 2) show the characteristics of the genitalia of *Perittia* and *Swezeyula*.

From a brief investigation of the *Perittia* group of genera, it is apparent that the section is in need of critical study and revision. As noted above, the Canary Island species now in the genus must be removed. Another genus examined was *Scirtopoda* Wocke, 1876 (genotype *herrichiella* Herich-Schaeffer), and it was found that the included species *saltratricella* Fischer von Roslerstamm (as determined in the British Museum) not only is not a *Scirtopoda*, but it belongs to the family Heliozelidae—not

Figure 1.—Features of male genitalia. Top left, *Perittia oleæ* (Haworth), from Dorset, England, 0.55 mm. across. Top right, aedeagus of *Swezeyula loniceræ*, new species, length 0.55 mm. Bottom, *Swezeyula loniceræ*, new species, 0.8 mm. from tip to tip.

Figure 2.—Details of female genitalia of *Swezeyula loniceræ*. Entire genitalia (overall length 2 mm.) on right, with enlargements of genital plate and signum on left.

Elachistidae where it now stands. *Scirtopoda* is also closely allied to *Perittia* and *Swezeyula*, but may be separated (in genotype) by veins 3-4 in hindwing being connate. From the literature it appeared that *Perittia* and *Onceroptilia* Braun, 1948, were synonymous, but J. F. Gates Clarke has compared material at the U. S. National Museum for us, and states that in his opinion the names belong to two allied but distinct genera.

It gives us much pleasure to dedicate this new genus to Dr. O. H. Swezey, who has done so much to advance our knowledge of the Hawaiian Lepidoptera.

Swezeyula loniceræ, new species (Figs. 3, 4 and 5)

A gray-appearing species with two small but outstanding dark spots on forewings. Head basically with cream, or grayish cream-colored scales intermixed with fuscous scales, some of the cream scales are tipped with fuscous. Antenna with scape colored as head; segments to about middle alternating pale and dark, but the contrast not great, gray beyond middle; scales prostrate to about middle, thence usually slanting erect to apex and giving a roughed-up appearance to apical half in both sexes, but usually more pronounced in male. Labial palpus with creamy white ground color, often with grayish cast, inner side paler, outer side with more scales fuscous-tipped and usually conspicuously darker than inner side.

Pronotum and tegulae colored as head, or more grayish fuscous. Legs mostly dark fuscous flecked, or intermixed, with cream-colored scales on outer sides and pale cream on inner sides, but hind legs with less dark color than middle and fore pairs, femora on some examples mostly pale, tarsal segments pale-tipped; long hairs of hind legs pale, similar to fringe of hind wings; [fore leg—femur, 21, tibia, 17.5 (spurs subequal in length, 6 units long, inserted at distal third), first tarsal segment 16, remainder of tarsus 15; middle leg—femur 25, tibia 28 (spurs inserted at apex, inner one 14, outer one 12), first tarsal segment 18, remainder of tarsus 19; hind leg—femur 28, tibia 48 (upper pair of spurs inserted just basad of basal third, outer spur 14, inner spur 27; outer apical spur 12, inner apical spur 16), first tarsal segment 23, remainder of tarsus].

Forewings almost uniformly clothed above with grayish cream-colored, fuscous-tipped scales, the gray-fuscous color predominating and giving the insect a gray appearance under low magnification, the pale and dark scales giving a characteristic flecked, or "salt and pepper" appearance to entire wing, but with a small, dark, fuscous or black spot just basad of middle of wing on plical fold and a similar spot at apex of cell; hindwings only slightly paler than forewings, cilia uniformly dark gray; undersides of wings much as upper sides, but without the two dark spots on forewings.

Abdominal scales cream, grayish and fuscous, without maculae; paler cream beneath, more fuscous on dorsum.

Male genitalia: socii reduced to low, rounded, pilose papillae; gnathos almost round as seen from behind or beneath, barbed with short, strong spines; valva broad, short, with dorsal apex much produced and curved ventrad, deeply excavate beneath, thus giving apex a curved, finger-like shape, apical area setose; sacculus with about its apical half produced as a free, triangular flap, inner side of flap and opposite area of valva, setose; sides of tegumen broad, tapering to socii; anellus produced at each side into a heavily sclerotized, elongated prong which is broad basad, tapering to about middle, thence produced as a long, slender, finger-like process; juxta a transversely elongated, narrow plate; vinculum unevenly rounded, very broadly triangular ventrad, only slightly thickened medio-ventrally; aedeagus five times as long as breadth of extreme base, but ten times as long as subapical breadth, cylindrical, slightly arcuate, sinuate; transtilla membranous.

Female genitalia: ostium small, funnel-like; genital plate strongly sclerotized, inner edge slightly triangularly produced cephalad at middle; ovipositor lobes broad, tapering abruptly to a shortly-produced point, clothed with numerous long hairs; apophyses very slender, tapering to fine points, anterior pair about three-fourths as long as posterior pair, posterior pair slightly longer than ovipositor lobes (measure ovipositor lobes on chord from origin of apophyses to apex), anterior apophyses each originating

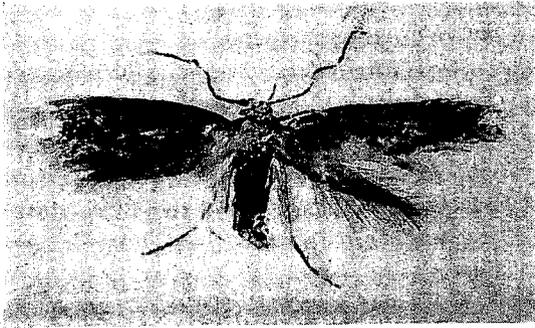


Figure 3.—Adult of *Swezeyula lonicerae*; expanse 8.5 mm.

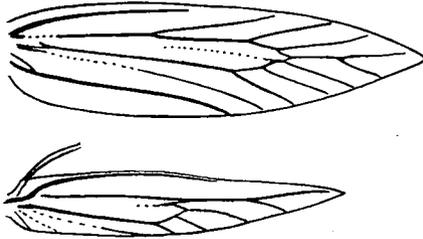


Figure 4.—*Swezeyula lonicerae*, venation of fore and hind wings.

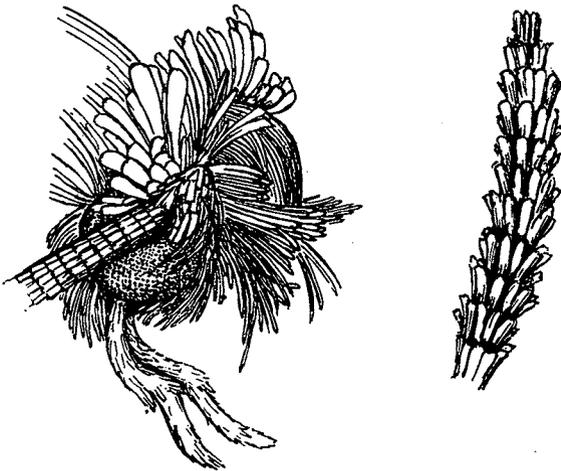


Figure 5.—*Swezeyula lonicerae*. Left, lateral aspect of head with scales erected; right, apical antennal segments showing rough scaling.

from the outer corners of a dorsal plate which is not as heavily sclerotized as genital plate, this plate-like area transverse, not quite twice as broad as long, and subequal in length to an anterior apophysis.

Expanse of forewings: 8 to 9 mm.

Holotype male, allotype female and a series of paratypes, reared from mines in the leaves of *Lonicera japonica* from Honolulu, Hawaii, by O. H. Swezey and J. S. Rosa, September through December 1949. The holotype and allotype will be deposited in the U. S. National Museum, and paratypes will be placed in the collections of the Experiment Station Hawaiian Sugar Planters' Association and the British Museum (Natural History).