

JOURNAL OF THE LEPIDOPTERISTS' SOCIETY

Volume 39

1985

Number 3

Journal of the Lepidopterists' Society
39(3), 1985, 151-155

A NEW SPECIES OF *TILDENIA* FROM ILLINOIS (GELECHIIDAE)

RONALD W. HODGES

Systematic Entomology Laboratory, USDA, % U.S. National Museum of Natural History,
MRC 168, Washington, D.C. 20560

ABSTRACT. *Tildenia georgei* Hodges, new species, is described from Illinois. The larvae are leaf miners on *Physalis heterophylla* var. *ambigua*. An illustrated identification key to adults of the four nearctic species of *Tildenia* is presented.

A new species of *Tildenia* was discovered in southern Illinois by Paul Gross while he was conducting research on insects associated with *Physalis heterophylla* var. *ambigua* (Gray) Rydberg (Solanaceae). Reared adults were sent to me for identification. The moths proved to be an undescribed species that is closely related to *Tildenia glochinella* (Zeller) and *Tildenia inconspicuell*a (Murtfeldt) and indistinguishable from them in maculation and other external features. *Tildenia georgei* Hodges is described to permit discussion of it and related species.

Tildenia georgei, new species

Description. A small, dark, gray-brown moth. Upper surface as in Fig. 1. **Head:** Haustellum with pale yellow scales basally; maxillary palpus pale yellow; labial palpus upturned, extending to vertex, scales of lateral surface dark gray, individual scales terminally margined with very pale gray, mesal surface pale yellowish gray, scales darker on third segment; third segment slightly shorter than second segment, apex acute; frons and vertex pale yellowish gray, scales with yellow and purple reflections, scales anterad of eyes dark gray before pale gray apices, scales on occiput pale yellowish gray basally and apically, dark gray before apex; antennal shaft with alternate scale rows pale yellow and dark gray, apex pale yellow. **Forewing:** Length, 3.3-4.7 mm; upper surface mottled pale gray, dark gray, pale yellow, and pale yellowish orange, a row of yellowish-orange scales on fold from near base to $\frac{3}{4}$ length of fold, fringe shades of gray; undersurface nearly uniformly dark gray on membrane, fringe pale yellowish gray at membrane, mottled gray elsewhere. **Hindwing:** Membrane evenly gray, fringe yellowish gray basally becoming darker beyond base; male without row of long scales from costal margin of dorsal surface. **Foreleg:** Scales on anterolateral surface nearly uniformly dark gray, tipped with very pale gray, apex of each tarsomere mainly pale gray. **Midleg:** Much as for foreleg, coxa paler, yellowish gray. **Hindleg:** Coxa mainly pale yellow with shining



FIG. 1. *Tildenia georgei*, new species, paratype male.

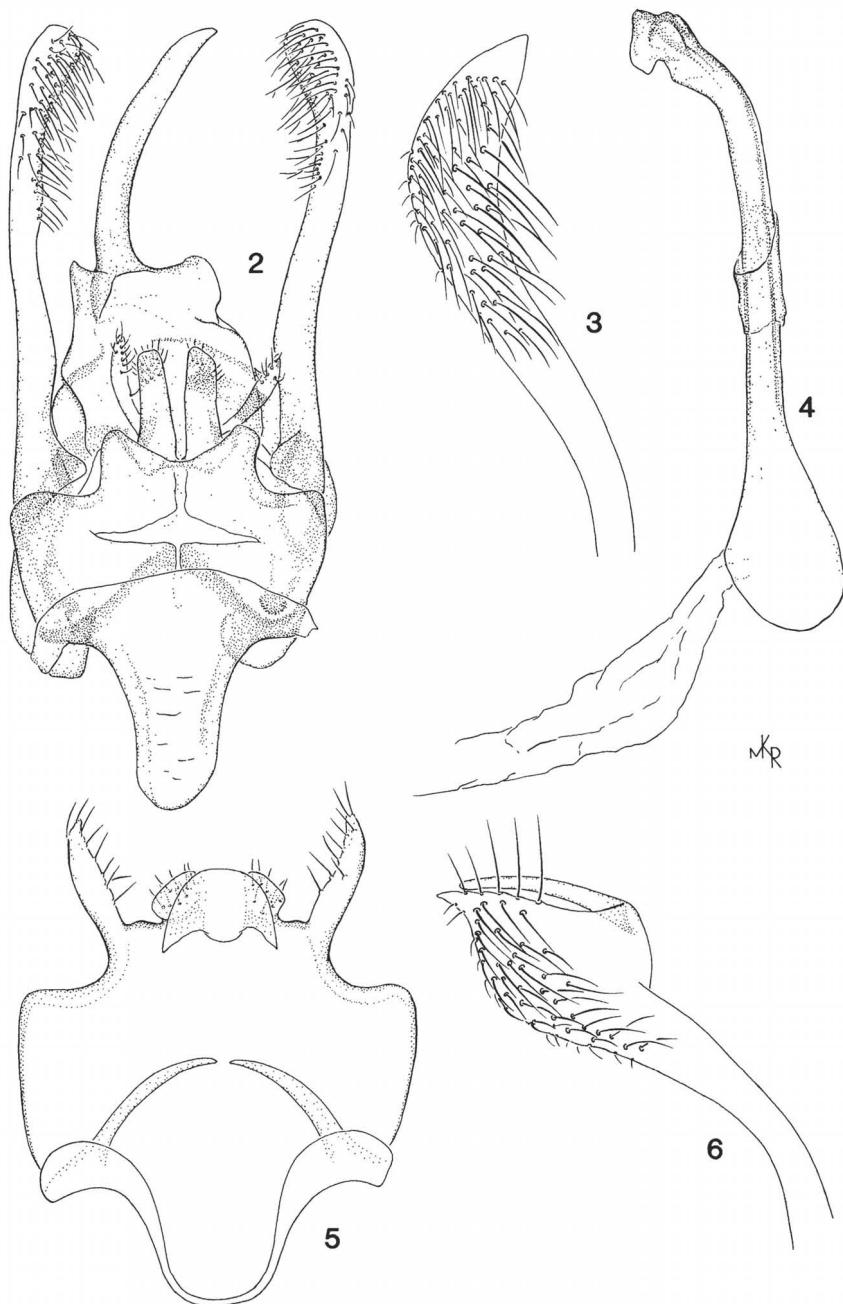
reflections; femur pale yellow dorsally, becoming darker ventrally, all scales tipped with pale gray; tibia pale yellow basally and dorsally, mottled gray and pale yellow elsewhere, lateral spurs dark gray, scales narrowly margined with pale gray; tarsus mainly gray, apex of each tarsomere pale yellowish gray. **Abdomen:** Shining dark gray dorsally, distal row of scales on each segment paler than preceding scales; ventral surface pale yellowish gray medially, some mainly gray scales laterally. **Male genitalia:** As in Figs. 2, 4. **Female genitalia:** As in Fig. 7. **Larva:** Leaf miner on *Physalis heterophylla* var. *ambigua* (Gray) Rydberg.

Types. Holotype: Male. Illinois, Mason County, Sand Ridge State Forest; collected 16 August 1982, emerged 7 September 1982; leg. Paul Gross. **Paratypes:** 6 males, 6 females. Same data as for holotype (1 male, 1 female). Same locality and data as for holotype except collected on 3 September 1979 (5 males, 5 females). All specimens are in the collection of the U.S. National Museum of Natural History.

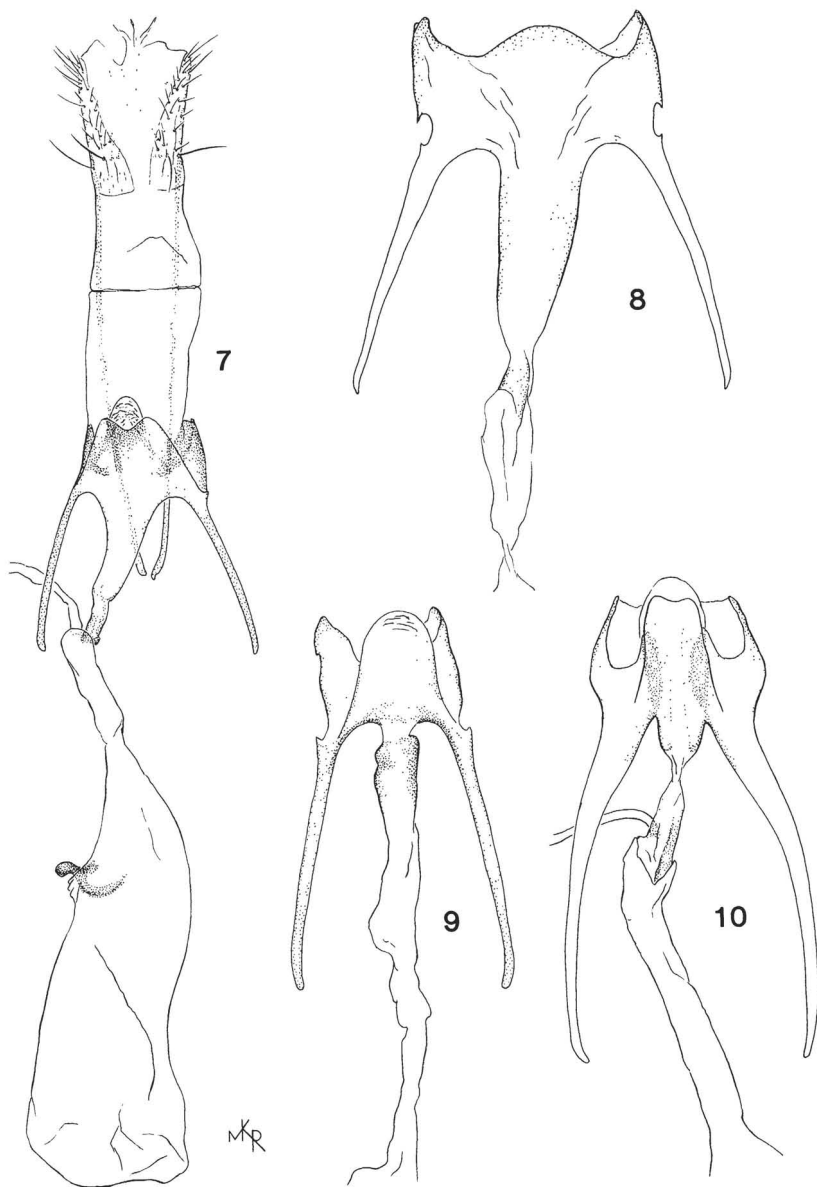
Remarks. *Tildenia georgei* is very similar in appearance to *inconspicuella*, *glochinnella*, and *Keiferia lycopersicella* (Walsingham). Males can be distinguished by their lack of a row of long scales on the costal margin of the dorsal surface of the hindwing. Distinguishing characters are in the genitalia of both sexes and are indicated in the key. The genitalia must be examined for specific and generic determination.

Key to Adults of Nearctic *Tildenia* Species

1. Males 2
- Females 5
2. Apex of valva with long, slender, medially directed lobe (Fig. 6) *altisolani* (Keifer) 3
- Apex of valva without such a lobe 3
3. Saccus shorter than lateral width of vinculum, broadly rounded (Fig. 5) *glochinnella*
- Saccus longer than lateral width of vinculum, lateral margins nearly parallel before narrowly rounded apex (Fig. 2) 4
4. Valva with apex slender, extending to narrowly acute tip (Fig. 3); pair of annular lobes posterolaterad of aedeagus small, lightly sclerotized *inconspicuella*
- Valva with apex broadly acute (Fig. 2); pair of annular lobes posterolaterad of aedeagus well developed, prominent *georgei*



FIGS. 2-6. *Tildenia* spp., male genitalia: 2, 4, *T. georgei*; 3, *T. inconspicua*, apex of left valva; 5, *T. glochinella*, saccus and ventral view of vinculum; 6, *T. altisolani*, apex of right valva.



FIGS. 7-10. *Tildenia* spp., female genitalia: 7, *T. georgei*; 8, *T. inconspicuella*, apophyses anteriores and base of bursa copulatrix; 9, *T. glochinella*, apophyses anteriores and base of bursa copulatrix; 10, *T. altisolani*, apophyses anteriores and base of bursa copulatrix.

5. Ductus bursae heavily sclerotized basally, projecting anteriorly as a cone or cylinder beyond the margin of apophyses anteriores (Fig. 8) **6**
- Ductus bursae membranous basally (Fig. 9) *glochinella*
6. Ductus bursae heavily sclerotized basolaterally, sclerotized part projecting anteriorly less than $\frac{1}{8}$ length of apophyses anteriores (Fig. 10) *altisolani*
- Ductus bursae heavily sclerotized basally, sclerotized part projecting anteriorly more than $\frac{1}{2}$ length of apophyses anteriores (Fig. 7) **7**
7. Heavily sclerotized base of ductus bursae nearly cylindrical (Fig. 8) *inconspicuella*
- Heavily sclerotized base of ductus bursae conical, curved to the left anteriorly (Fig. 7) *georgei*

Other species of *Tildenia* are known in North America. They too are superficially similar and to date can be distinguished by characters of the male and female genitalia only. Most of them are from Arizona, but this may reflect entomologists' collecting, not the moths' distribution. I anticipate treating them in a subsequent fascicle of *The Moths of America North of Mexico*.

This species is named for George Gross, father of Paul Gross.

ACKNOWLEDGMENTS

I thank Molly K. Ryan for the line drawings that illustrate this paper, Douglas C. Ferguson for the photograph of the adult and review of the manuscript, and J. F. Gates Clarke and W. W. Wirth for review of the manuscript.