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ORANGE TORTRIX, "*ARGYROTAENIA CITRANA*": A WESTERN SPECIES NOT IN FLORIDA (LEPIDOPTERA: TORTRICIDAE)

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The orange tortrix, *Argyrotaenia citrana* (Fernald), a citrus pest from California, is not known east of citrus regions of Arizona and has never been in Florida. A number of published reports maintain the erroneous observation that this species has or does occur in Florida as a pest on citrus, including recent papers by Bullock et al. (1997) and Razowski (2000). Reports of this pest in Florida have a major impact on citrus exports for the state, thus these erroneous reports can cause great economic havoc and need to be corrected. These reports are all based on early misidentifications of Florida specimens. All reported records of *A. citrana* in Florida have been checked and specimens examined, and all such reports have been verified to actually pertain to a native Florida species, *Argyrotaenia ivana* (Fernald), the ivana tortrix.

Orange tortrix only occurs along the Pacific Coast as far north as Washington and into southern Arizona, feeding on various plants such as apple and apricot trees in the north. One extraneous record for the species is also known from Michigan (Powell, pers. comm.), but this may be in error or only a specimen transported east with apple trees. The common name is misleading, since the main hostplants are not orange trees. However, in contrast to its usual use of northern fruit trees as larval host, in California and southern Arizona it also sometimes causes damage to citrus leaves as an alternate host, thus providing the reason for the common name misnomer, "orange tortrix". Weires and Reidl (1991) have given perhaps the best overall status report on this minor pest of citrus in recent years, also noting the above distribution and with no mention of Florida. Recent DNA studies (Landry et al. 1999), however, confirm that *A. citrana* is part of a complex of named forms and related species that should all refer to a single western species with the senior name of *Argyrotaenia franciscana* (Walsingham).

In Florida, the first report of what was called "orange tortrix" appears to be by Thompson (1939) in a short citrus pest summary in the 1938 Annual Report of the Florida Dept. of Agriculture. Numerous groves were damaged in 1938 in Florida (the exact locations are not stated and presumably in various commercial or experimental citrus groves) by a leafroller identified as the orange tortrix, *A. citrana*. Thompson (1939) does not state who made this identification.

Freeman (1944, 1958) made a complete study of the genus *Argyrotaenia*, including available specimens in major museums such as the Smithsonian Institution (USNM), in Washington, DC, and made no mention of orange tortrix in Florida. If Thompson had sent specimens to the USNM for identification, then Freeman would have found voucher specimens in the collections there during his later studies. The Florida State Collection of Arthropods (FSCA), Gainesville, Florida, which maintains the Florida collection of insects and also has all voucher specimens from the University of Florida and the Florida Dept. of Agriculture and Consumer Services, has no specimens dated 1938 that Thompson may have taken as samples. The Division of Plant Industry (DPI), which houses the FSCA collections and maintains all agricultural insect records for Florida, also has no card records for any identifications from 1938 for this species. One can only assume from this that Thompson, or someone else unfamiliar with Tortricidae, made the incorrect determination of the Florida specimens as the same as orange tortrix found in California.

The orange tortrix and the ivana tortrix appear similar superficially, so untrained observers would easily mistake one for the other. However, careful study of specimens, including genitalic characters, easily distinguishes the two species. While *A. citrana* may now be part of *A. francsicana*, both named species are western North American and differ from *A. ivana*.

Over the years, other specimens from Florida have been misidentified as orange tortrix in various unpublished citrus pest reports: all such records with DPI identification data and the accompanying FSCA specimens have been checked and all actually refer to the ivana tortrix. The erroneous records were all repeated in published works (Kimball 1965), and further repeated in citrus reports over the years. Bullock et al. (1997), while reporting on minor citrus feeding by two other *Argyrotaenia* species in Florida, also repeated the old reports of the presence of orange tortrix in Florida. Even a recent tortricid catalog (Razowski 2000) maintains the old error and again erroneously gives orange tortrix a distribution that includes Florida.

My own studies on the Florida Lepidoptera long ago showed that orange tortrix was not present in Florida, and this was indicated whenever any suspect orange tortrix were written about for Florida in agricultural reports. Likewise, it is noted in the new catalog of Florida Lepidoptera (Heppner 2003). The correct information on ivana tortrix in Florida also was published recently in a short note (Heppner 2001) to clarify

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this fact, and the present paper further publicizes the fact that orange tortrix does not occur in Florida and never has.

Summary

Orange tortrix, known as *Argyrotaenia citrana* (Fernald) but now thought to be part of the western North American species *A. franciscana* (Walsingham), is noted to have never been recorded from Florida. All previous reports of this species for Florida are erroneous and actually refer to a similar species native to Florida, *Argyrotaenia ivana* (Fernald), the ivana tortrix.

Contribution No. 940, Entomology Section, Bur. Ent. Nema. Plant Path., Div. Plant Industry, Florida Dept. Agric. & Consumer Serv., Gainesville, FL.

References Cited

BULLOCK, R. C., E. E. KILLER, AND R. R. PELOSI. 1997. Population dynamics and citrus fruit damage by two species of leafroller, *Argyrotaenia amatana* and *Argyrotaenia kimballi* (Lepidoptera: Tortricidae). Proc. Florida St. Hort. Soc. 110: 27-32.

FREEMAN, T. N. 1944. A review of the North American species of the genus *Argyrotaenia* Stephens (Lepidoptera, Tortricidae). Scientific Agric. 25: 81-94.

FREEMAN, T. N. 1958. The Archipinae of North America (Lepidoptera: Tortricidae). Canadian Entomol., Suppl. 7: 1-89.

HEPPNER, J. B. 2001. *Argyrotaenia citrana* not in Florida. Lepidoptera News 2000(3): 6.

HEPPNER, J. B. 2003. Lepidoptera of Florida. Part 1. Introduction and Catalog. *In* Arthropods of Florida and Neighboring Land Areas. Vol. 17. Florida Dept. Agric., Gainesville. 670 pp, 55 pl.

KIMBALL, C. P. 1965. The Lepidoptera of Florida: an annotated checklist. *In* Arthropods of Florida and Neighboring Land Areas. Vol. 1. Florida Dept. Agric., Gainesville. 363 pp, 26 pl.

LANDRY, B., J. A. POWELL, AND F. A. H. SPERLING. 1999. Systematics of the *Argyrotaenia franciscana* (Lepidoptera: Tortricidae) species group: evidence from mitochondrial DNA. Ann. Ent. Soc. America 92: 40-46.

RAZOWSKI, J. 2000.Catalogue of the species of Tortricidae. Part VI: Nearctic Chlidanotinae and Tortricinae (Lepidoptera: Tortricidae). SHILAP Revta. Lepid. 28: 5-62.

THOMPSON, W. L. 1939. Orange tortrix, *Tortrix citrana* Fernald and coccid moth, *Laitilia* [sic] *coccidivora* Comstock. Florida Agric. Exp. Station, Ann. Rep. 1938:147.

WEIRES, R., AND H. REIDL. 1991. Other tortricids on pome and stone fruits. North American species, pp. 413-434. *In* P. S. van der Geest and H. H. Evenhuis, [eds.], Tortricid Pests: Their Biology, Natural Enemies and Control. Elsevier, Amsterdam.

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