

Dialeurodes kirkaldyi (Kotinsky), in Florida

(Homoptera: Aleyrodidae: Aleyrodinae)¹

Ru Nguyen² and Avas B. Hamon³

SYNONYMY: *Aleyrodes kirkaldyi* Kotinsky 1907

INTRODUCTION: *Dialeurodes kirkaldyi* (Kotinsky), a minor pest of citrus, was described from Hawaii by Kotinsky and first found in North America at the U.S. Naval Base, Key West, Florida in 1972, on *Morinda citrifolia* L.

DESCRIPTION: Adults are very small, gnat-like with a light orange body. The wings are yellowish, and antennae are seven-segmented. Female length from vertex to tip of ovipositor is 1.12mm. Male length from vertex to tip of clasper is 0.85mm. The immature stage (Fig. 1) is flat, elliptical in shape, yellowish-green in color with a longitudinal brown median area. The margin at the tracheal furrow is smooth. The first abdominal setae (Fig. 2) are present. The inner margin of the vasiform orifice is strongly toothed, median tubercle is absent. Three nymphal stages and one "pupal" stage occur in the life cycle. Pupa is about 1.25mm by 0.95mm. Egg is tiny (0.18mm long, 0.096mm wide), elliptical elongate in shape and yellowish when oviposited, surface smooth, stalk attached near the middle.



Figure 1. Immature stage of *Dialeurodes kirkaldyi*.

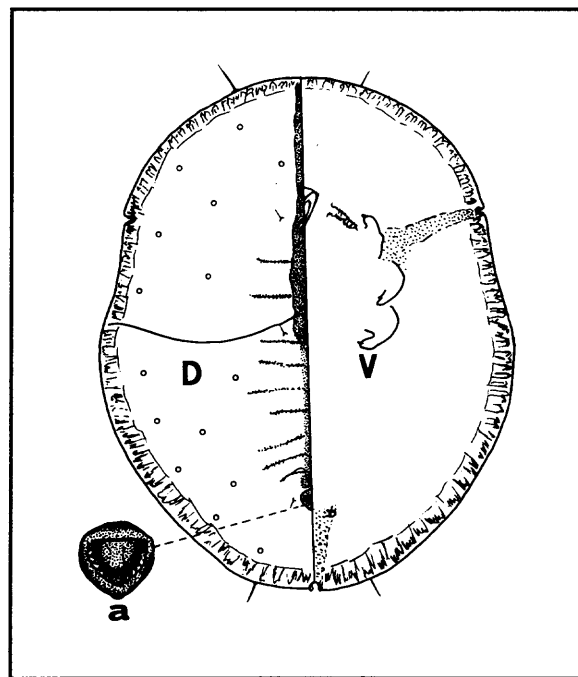


Figure 2. Line drawing of *D. kirkaldyi* pupal case: a. vasiform orifice; v. ventral surface; d. dorsal surface.

¹Contribution No. 720, Bureau of Entomology

^{2,3}Biological Scientist and Taxonomic Entomologist, Division of Plant Industry, P.O. Box 1269, Gainesville, FL 32602

DIAGNOSIS: The immature stage of *D. kirkaldyi* is similar to *D. citri* and *D. citrifolii*, but the former has a brown longitudinal medial area. It is very difficult to separate the species using adult stages under field conditions.

DISTRIBUTION: *D. kirkaldyi* occurs in Africa (Ivory Coast, Lebanon, Ghana, Egypt), Asia (Burma, China, Malaysia, Philippines, India, Pakistan, Japan, Syria, Taiwan), Central America, West Indies (Cuba, Jamaica, Trinidad), South America (British Guiana), North America (USA: Texas, Florida, Hawaii), and Australia.

HOSTS: *D. kirkaldyi* has been found on: *Allamanda neriifolia* Hook, *Beaumontia grandifolia* (Roxb.) Wallich, *Citrus sinensis* (L.) Osbeck, *Citrus* spp., *Clerodendrum fragrans* (Vent.) R.Br., *Croton* sp., *Gardenia* sp., *Hiptage benghalensis* (L.) Kurz, *Jasminum nitidum* Stan., *J. grandiflorum* L., *J. sambac* (L.) Ait., *Lagerstroemia nitida* L., *Morinda citrifolia* L., *Plumeria rubra* L., *Premna integrifolia* L., *Tabernaemontana* sp., *Trachelospermum jasminoides* (Lindl.) Lem.

NATURAL ENEMIES: *Encarsia protransvena* Viggiani is a parasitoid of *D. kirkaldyi*. Recently *E. protransvena* was also reared from *D. citrifolii* collected in Miami and Bradenton (Florida) by Ru Nguyen, F. D. Bennett, and H. Frank in 1985 and identified by Prof. Gennaro Viggiani in 1988.

REFERENCES:

- Corbett, G. H. 1935. Malayan Aleurodidae. Fed. Malay States Mus. Jour. 17:722-852.
- Habib, A. and F. A. Farag. 1970. Studies on nine common Aleurodids of Egypt. Bull. Soc. Entomol. Egypt. 54:1-41.
- Kotinsky, J. 1907. Aleyrodidae of Hawaii and Fiji with descriptions of new species. Board Comm. Agri. Forest. Hawaii. Bull. 2:93-103.
- Paulson, G. S., and B. R. Kumashiro. 1985. Hawaiian Aleyrodidae. Proc. Hawaii. Entomol. Soc. 25:103-24.
- Quaintance, A. L., and A. C. Baker. 1917. A contribution to our knowledge of the whiteflies of the subfamily Aleyrodinae (Aleyrodidae). Proc. U.S. Nat. Mus. 51:335-445.
- Russell, L. M. 1964. *Dialeurodes kirkaldyi* (Kontinsky), a whitefly new to the United States (Homoptera: Aleyrodidae). Florida Entomol. 47:1-4.
- Viggiani, G. 1985. Notes of a few Aphelinidae, with description of five new species of *Encarsia* Foerster (Hymenoptera: Chalcidoidea). Boll. Lab. Entomol. Agra. Silvestri. Portici. 42:81-94.