

SCAPHYTOPIUS IN FLORIDA

(HOMOPTERA: CICADELLIDAE)<sup>1</sup>

Carol A. Musgrave<sup>2</sup>

INTRODUCTION: The leafhopper genus Scaphytopius contains the majority of the 150 species described thus far in the tribe Scaphytopiini. With one exception, the Scaphytopiini are known from only the New World; the exception, Japananus hyalinus (Osborn), may owe its general distribution in the Orient, southern Canada, and the U. S. to importation of ornamental Japanese maples (Osborn 1900).

The purposes of this circular are to provide a general description of these leafhoppers for preliminary identification in the field and an annotated list of the 17 species found in Florida. Supplementary notes are provided for the 2 Florida species with potential economic significance: S. acutus acutus (Say) and S. magdalensis (Provancher).

GENERAL DESCRIPTION OF SCAPHYTOPIUS: The Scaphytopiini are readily distinguished from other deltocephaline leafhoppers by the broadly expanded genae (cheeks, fig. 1a) that extend dorsally behind the compound eyes, and the flat, triangular crown that is always narrower than the pronotum. In the genus Scaphytopius the anterior edge of the forewing has numerous recurved veinlets most of which are only pigmented lines (fig. 1b). All adult Scaphytopius are heavily spotted (irrorate) with dull olive, brown, or black. A few species have scattered, milky spots on the forewings. Some individuals may have a reddish brown dorsum and/or face. Just below the ocelli of species with white or yellow faces there is usually a V-shaped marking called the sharksmouth (Hepner 1947, fig. 1c); this marking is obscure or absent in species with brown or black faces.

Adult females usually are slightly larger than males of the same species. Mean body lengths for Florida species of Scaphytopius range from 3.4 mm for female S. insolitus Hepner (3.0 mm for males) to 5.0 for female S. elegans (Van Duzee) (4.7 mm for males).

Neither color nor external morphology are adequate for species determinations; internal genitalia of males provide the only useful series of characters for such identification. Neither the adult females nor the spindle-shaped nymphs (fig. 2) can be identified positively to species.

HOSTS: From what little is known about Scaphytopius hosts, these leafhoppers prefer dicots. At least 2 species have limited host preferences: S. elegans occurs on various oaks, Quercus spp., and S. rubellus feeds and reproduces on sweetgum, Liquidambar styraciflua L. The most extensive host records are available for plant pathogen vectors in the S. acutus complex. These leaf-

<sup>1/</sup> Contribution No. 452, Bureau of Entomology, Division of Plant Industry.

<sup>2/</sup> Assistant Professor, Department of Entomology & Nematology, University of Florida, Gainesville, FL 32611.

hoppers have been collected from a wide variety of wild and cultivated hosts including Potentilla fruticosa L., chokecherry, strawberries, peaches, and other stone fruit (Rosaceae): alfalfa, various species of clover (Leguminosae); asters (Compositae); blueberries and kinnikinnic (Ericaceae). Scaphytopius acutus delongi also reproduces on citrus (Rutaceae) in the San Joaquin Valley of California (Oldfield and Kaloostian, in press).

SURVEY AND DETECTION: Sweeping or beating host plants with a sturdy net is the simplest and most effective method to capture adults and nymphs. Rice and Jones (1972) used yellow sticky traps to monitor populations of adult "S. delongi" and other potential leafhopper vectors of Western X-disease of peach in California.

CHECKLIST OF SCAPHYTOPIUS OF FLORIDA: Specimens of most species listed below have been seen from many sites around Florida. Information on distribution and supplementary notes on these species are included:

- 1) Scaphytopius elegans (Van Duzee) - Florida, Texas, Utah, New Mexico, Arizona, and California. Common on oak, Quercus spp.
- 2) S. abbreviatus (DeLong) - commonly collected in southeastern U.S.: entire face covered by numerous tiny brown spots.
- 3) S. acutus acutus (Say) (fig. 3) - common species in North America east of 95° Longitude (Musgrave 1975). Dorsum spotted with white and various shades of brown; face yellow with sharksmouth.  
This and 3 other members of acutus complex transmit 7 plant pathogens: citrus stubborn (Oldfield and Kaloostian, in press), aster yellows, Eastern X-disease, Western X-disease, alfalfa witches' broom, clover phyllody, and little cherry (Nielson 1968).
- 4) S. albifrons Hepner - a species with a plain pale yellow or white face known from Texas and Florida.
- 5) S. amplinotus Hepner - known from Florida and Georgia.
- 6) S. andromus (Ball) - known only from Florida.
- 7) S. argutus (DeLong) - closely resembles S. acutus acutus; argutus is relatively common in the southeastern and south central U.S.
- 8) S. brunneus Hepner - a species having a plain yellow face known only from Florida.
- 9) S. cinereus (Osborn and Ball) - small (4.2 mm) olive green and brown species known from numerous grassy areas from Minnesota to Texas eastward.
- 10) S. frontalis (Van Duzee) - dorsum almost black, face yellow, usually with sharksmouth; numerous sites in U. S. east of Rocky Mountains.
- 11) S. insolitus Hepner - very small (3.0 and 3.4 mm) distinctly reddish brown species known only from type specimens taken near Sanford, Florida.
- 12) S. magdalensis (Provancher) - face nearly covered by small brown spots; numerous sites in North America east of Rocky Mountains; known vector of blueberry stunt in northeastern U.S. (Nielson 1968).
- 13) S. rubellus (Sanders and DeLong) - large (4.8 mm), reddish brown species with dark brown face; sharksmouth obscure or absent. Known from sweetgum, Liquidambar styraciflua in the eastern U.S.

- 14) S. scriptus meridianus Hepner - face covered with numerous brown spots; known from Florida, Georgia, and Louisiana.
- 15) S. slossonae (Van Duzee) - a small (4.2 mm), yellowish brown species with head more than twice as long as wide; known from Florida and Louisiana.
- 16) S. triangularis DeLong - a species with a solid dark brown face, the sharksmouth is usually obscure or absent. Eastern and central U.S.; Florida north to Maryland and west to Kansas.
- 17) S. verecundus (Van Duzee) - a reddish brown species with a mottled brown face; Florida north to North Carolina, west to Mississippi.

LITERATURE CITED:

- Hepner, L. W. 1947. A revision of the tribe Scaphytopiini (Homoptera, Cicadellidae) in America north of Mexico. Kansas Univ. Sci. Bull. 31: 413-541.
- Musgrave, C. A. 1975. Taxonomy of the Scaphytopius (Cloanthanus) acutus complex (Homoptera: Cicadellidae). Ann. Ent. Soc. America 68(3)434-8.
- Nielson, M. W. 1968. The leafhopper vectors of phytopathogenic viruses (Homoptera, Cicadellidae): taxonomy, biology, and virus transmission. U.S. Dept. Agric. Tech. Bull. 1382:1-386.
- Oldfield, G. N., and G. H. Kaloostian. 1978. Vectors and host range of the citrus stubborn disease pathogen, Spiroplasma citri. Plant Prot. Bull. (Taiwan) 21: (in press).
- Osborn, H. 1900. A neglected Platymetopius. Ent. News 11:501-2.
- Rice, R. E., and R. A. Jones. 1972. Leafhopper vectors of Western X-disease pathogen: collections in central California. Environ. Ent. 1(6):726-30.

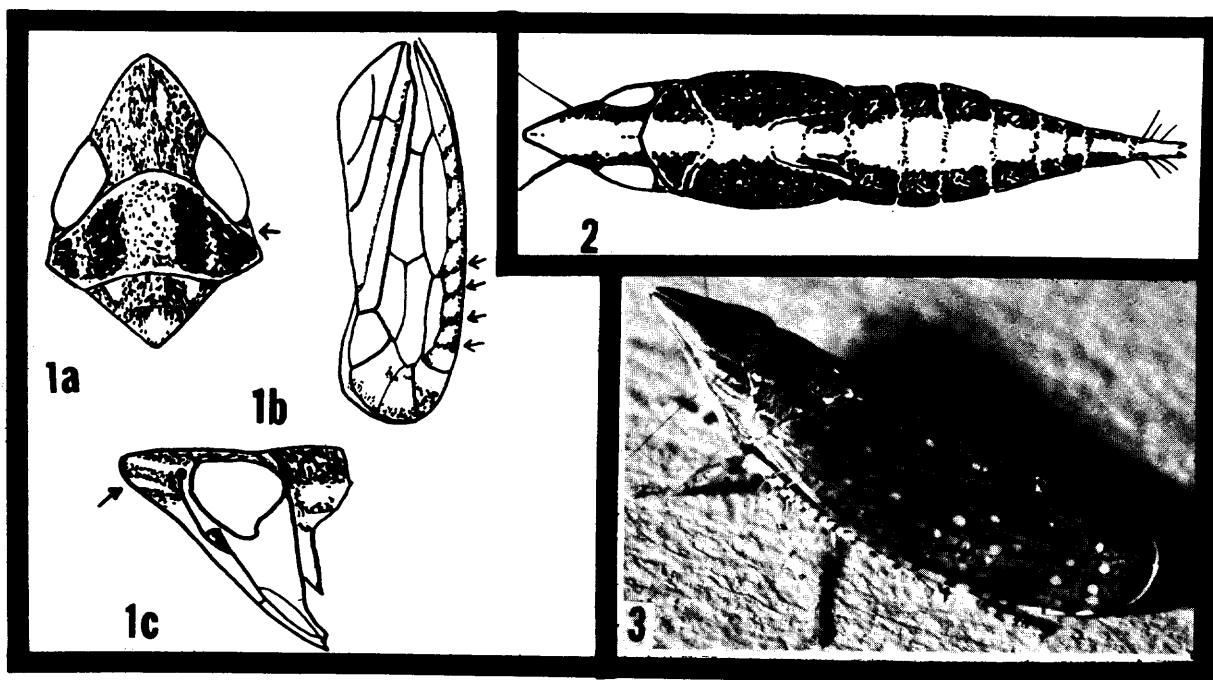


Fig. 1-3. Scaphytopius acutus acutus (Say): 1a)Dorsal view of head with genae visible; 1b)Forewing with recurved veinlets; 1c)Lateral view of head with sharksmouth visible; 2)Fifth instar; 3)Adult female.