N O T E

Verification of the Presence of Male and Oviparous Morphs of the Cotton Aphid in Mid-South Cotton (*Gossypium hirsutum* L.)[1]

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The cotton aphid, *Aphis gossypii* Glover, is reported to reproduce only parthenogenetically year-round in the cotton belt of the U.S., with all offspring being viviparous females (Sartor, C. et al., 1976. Cotton scouting manual, Miss. State. Ext. Serv. Publ. No. 988; Davidson, R. & Lyon, W., 1979. Insect Pests of Farm, Garden, and Orchard, 7th Ed. Wiley, New York. p. 203). This is stated as due to relatively mild winter temperatures in the South, compared to the northern latitudes of the U.S.

A 5.3 ha field of 'DES 119' cotton located on the Delta Branch Experiment Station in Stoneville, MS was sampled post-season for aphid morphs present. The cotton had been defoliated in September and harvested during October 1988, and typical regrowth of leaves occurred during November. Diurnal temperatures in Stoneville for November ranged from 10.6°C to 27.2°C, with an average of 19.1°C; nocturnal temperatures ranged from 0°C to 18.3°C, with an average of 6.7°C.

Twenty samples of 1 leaf each containing aphids were collected randomly from the field on 20 November 1988. Leaves were brought to the laboratory where the largest aphids were removed and preserved in 80% alcohol. Species and sex verification were provided by the second author.

Samples from the cotton consisted of 4 oviparae, 2 males, and 1 winged female of *A. gossypii.* One male and one ovipara have been returned to the laboratory at Stoneville. The other specimens have been deposited as voucher specimens in the National Collection at Beltsville, MD.

A check of the Aphididae portion of the National Collection of Insects housed at Beltsville, MD resulted in the discovery of the following sexuales of *A. gossypii:* 1 male, strawberry, 18 Oct. 1949, Greenbush, MA; 5 oviparae, sweet clover, 15 Dec. 1955, greenhouse, Manhattan, KS; 1 male and 1 ovipara, rose of Sharon, 9 Nov. 1962, Washington, DC; 2 males and 2 oviparae, rose of Sharon, 10 Nov. 1964, Washington, DC; 2 males, catalpa leaves, 9 Oct. 1969, Albuquerque, NM. All of these males are winged and have 6-segmented antennae, with numerous secondary

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sensoria on segments III, IV, and V; all of the oviparae are wingless, with swollen hind tibia, and have 5-segmented antennae which lack secondary sensoria.

Implications of sexual reproduction in *A. gossypii,* rather than exclusive production of genetically identical clones, could be of importance in studies of current insecticide resistance problems seen with *A. gossypii* in Mid-South cotton (O'Brien, P. et al., Insect. Acar. Tests, in press). The presence of males in the fall could allow genetic factors for insecticide resistance to be mixed through sexual recombination, rather than simply carried over to the next growing season essentially unchanged. Additionally, the combined presence of males and oviparae, rather than solely year-round parthenogenetic viviparae, as previously reported, provides new information as to life stage(s) of overwintering *A. gossypii* in cotton in the Mid-South, i.e., the egg stage is very likely present during the cooler months of the year.