STELIDOTA GEMINATA (SAY) INFESTATIONS OF STRAWBERRIES (COLEOPTERA:NITIDULIDAE)[1,2]

W.A. Connell[3]

ABSTRACT: Reports of *Stelidota geminata* (Say) infestations in strawberries date from the 1950's, but prior to that this fruit was harvested commercially at an earlier stage of maturity, before becoming attractive to this beetle.

Known reports of infestations of strawberry fruit by the strawberry sap beetle, *Stelidota geminata* (Say), date from the 1950's. The Cooperative Economic Insect Report, listed infestations in Wisconsin 1954, 1962, Virginia 1958, Maryland 1964 and Michigan 1966, 1967, 1968, 1970, 1971 (USDA 1954-71). Unfortunately these are not quantitative records, nevertheless they indicate that this beetle became abundant enough to attract attention. Some other records of *S. geminata* infesting strawberries are from specimens sent to the USDA Insect Identification Laboratory. These are: Delaware 1952, 1976, Florida 1959, Maryland 1959, 1961, 1966, 1977, Virginia 1961, Arkansas 1961, Michigan 1963, Georgia 1969, Indiana 1974, and Ohio 1977. Again these records give only a vague idea of population densities. *S. geminata* occurs in the United States from New Hampshire to Florida and west to Wisconsin, Iowa and Texas. It also is present in California. Its range includes part of adjacent Canada (Weiss and Williams, 1978). Southward the range extends through Central America and the West Indies into Brazil.

Say (1825) described this beetle from eastern North America. The strawberry also is a native species, so it is unlikely that *S. geminata* developed a sudden fondness for strawberries in the early 1950's. It should be noted that the strawberry provides one of the earliest fruits available to this beetle each year, as this may have a bearing on the occurrence of outbreaks. *S. geminata* adults are attracted to ripe, overripe and injured fruits of a great many plants, some of which were listed by Weber and Connell (1975). However such fruit is attacked only when on or near the ground. For instance they invade apple, peach and citrus fruit only when these have fallen to the ground, but they damage the fruit of low-growing species as they ripen and while yet on the plant. Among these are

[1]Received November 13, 1979.

[2]Published as Miscellaneous Paper 876 with the approval of the Director of the Delaware Agricultural Experiment Station. Publication 483 of the Department of Entomology and Applied Ecology. September 1979.

[3]Entomology and Applied Ecology, University of Delaware, Newark, DE 19711.

strawberries and mayapples (the fruit of *Podophyllum peltatum* L., a prominent ground cover plant of eastern deciduous forests).

In Delaware and neighboring states there is a possible relationship between a change in strawberry harvesting methods and the reports of infestations of this crop. Prior to the 1950's strawberries were picked by hired laborers, often migrants. They were trained to gather only sound fruit in the early stages of ripening, so that it would ripen after it reached market, 2 or more days later. Such fruit is not attractive to *S. geminata* unless damaged mechanically or by diseases, such as brown rot. Rising labor costs made this method of harvesting strawberry fruit unprofitable. The few acres of the crop surviving into and after the 1950's were so-called "pick-your-own" operations. Buyers picking berries for their own use tend to select red-ripe fruit. These are quite attractive to *S. geninata.* Such a berry may appear to be perfect, but when picked and the blossom end examined, there may be a small dark brown beetle abandoning a hole in which it has been feeding. The buyer-picker discards such contaminated berries, becomes frustrated if this happens frequently, sometimes complains to the owner, or to his employee at the check-out stand, and departs in search of a planting without beetles. The beetles seldom reach the check-out stand, because any disturbance initiates escape and concealment movements. Few beetles reach the picking boxes and nearly all of those soon escape.

S. geminata adults are rarely captured in traps used for collecting flying insects, an observation that suggests they fly only to a limited extent. They are essentially ground dwelling beetles with almost cryptic behavior. They enter the fruit substrate from the underside where it is in contact with the ground. If disturbance results in exposure, they somewhat awkwardly, but rather quickly move to hide again.

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