

# USE OF *CLEOME SPINOSA* AS A LARVAL FOODPLANT BY *PIERIS RAPAE* (LEPIDOPTERA: PIERIDAE)

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**ABSTRACT.**— *Pieris rapae* (Linnaeus) is reported using the cultivated annual, *Cleome spinosa* (Capparidaceae), as a larval foodplant in southern Ontario, Canada.

**KEY WORDS:** *Ascia*, Canada, Capparidaceae, Cruciferae, hostplants, Ontario, Nearctic, North America.

In the Regional Municipality of Ottawa-Carleton, Ontario, Canada, we have observed the cabbage white, *Pieris rapae* (Linnaeus), ovipositing on *Cleome spinosa* L. (Capparidaceae), and also found larvae feeding on this plant. During 1996, we obtained eggs and larvae and reared them to adults on *Cleome spinosa*. The pupae emerged in 7 days to normal adults. Consequently, the tropical American annual, *C. spinosa*, may be regarded as a desirable foodplant of *P. rapae*. Although the western native, *C. serrulata*, is reported as a larval foodplant of *P. rapae* and other *Pieris* sp., there is no previous report of the utilization of *C. spinosa* by a species of *Pieris* (Scott, 1986). However, *C. spinosa* has been reported as a foodplant of the tropical and subtropical southern white, *Ascia monusta* (Cramer).

In northeastern North America, *Cleome spinosa* is a frequently used garden annual, commonly planted with petunias and marigolds. Although *Hesperis matronalis* and *Lunaria annua* (Cruciferae) are available for hobbyist gardens, "modern" gardens are deficient in foodplants containing mustard oils that are used by *P. rapae*. Like most other garden annuals, *C. spinosa* grows continuously and is available throughout the growing season. New growth enables plants to sustain a substantial amount of herbivory

without conspicuous effect on floral display. The potentially relatively nutritious *Cleome spinosa* plants (due to fertilization, e.g., Myers, 1985) and the predator depauperate environment (due to annual removal of cover) in annual gardens, may provide a particularly beneficial environment for *P. rapae*. The use of annual flower beds and *C. spinosa* is of interest with regard to an understanding of the habits of *P. rapae* that have contributed to its success as a colonizing species (see Chew, 1995).

## LITERATURE CITED

**Chew, F. S.**

1995. From weeds to crops: changing habitats of pierid butterflies (Lepidoptera: Pieridae). *J. Lepid. Soc.* (Los Angeles), 49:285-303.

**Myers, J. H.**

1985. Effect of physiological condition of hostplant on the ovipositional choice of the cabbage white butterfly, *Pieris rapae*. *J. Anim. Ecol.* (Oxford), 54:193-204.

**Scott, J. A.**

1986. *The Butterflies of North America*. Stanford: Stanford Univ. Pr. 583pp, 64 pl.