First Report of *Eumaeus childrenae* (Lepidoptera: Lycaenidae) Feeding on the Imported Ornamental *Cycas revoluta* (Cycadales: Cycadaceae) in Mexico

Luis A. Rodríguez-del-Bosque* and Enrique Rosales-Robles

Instituto Nacional de Investigaciones Forestales, Agrícola y Pecuarias. Campo Experimental Río Bravo, Río Bravo, Tam., México 88900

Cycads (Cycadales) occur in most subtropical and tropical areas of the world. These long-lived, primitive gymnosperms are found in South and Central America, Mexico, the Caribbean, southeastern United States, Australia, Melanesia, Micronesia, Japan, China, southeast Asia, India, Sri Lanka, Madagascar, and southern and tropical Africa. More than 300 species of extant cycads have been described in three families: Cycadaceae, Stangeriaceae, and Zamiaceae (Donaldson 2003, Hill et al. 2004). Because of their ornamental value, many cycads have been decreasing in numbers and risk extinction because of intense collection from their natural habitats. *Zamia* in the New World, *Cycas* in Asia, and *Encephalartos* in Africa are the most threatened genera (Donaldson 2003).

Mexico is the country with the second-most diversity of cycads in the world. Fifty-five species in the genera *Ceratozamia*, *Dioon*, and *Zamia* of the family Zamiaceae are found in Mexico. During the 1980s, large numbers of cycads were illegally collected in Mexico for commercialization. Currently, cycads and other native plants are protected by Mexican and international laws. Propagation of native cycads by rural nurseries has enabled an alternative conservation strategy for the last two decades (Vovides 2000, Vovides et al. 2010). However, the sago palm, *Cycas revoluta* Thunb. (Cycadaceae), native to southern Japan, has become the most preferred cycad in home gardens, landscapes, and nurseries in Mexico (Moreno et al. 2014).

Beetles, flies, hemipterans, and lepidopterans attack cycads (Ehrlich and Raven 1964, Jones 1993, Howard et al. 1999, Marler and Muniappan 2006). Among lepidopterans, the genus *Eumaeus* (Lycaenidae: Theclinae) includes six neotropical species distributed from southern Florida to South America (Lamas 2004). *Eumaeus* larvae feeding on cycads take up and sequester toxic alkaloids (cycasin and macrozamin) that larvae, pupae and adults use for chemical defense against predators (Rothschild et al. 1986, Bowers and Larin 1989, Jones 1993, Castillo-Guevara and Rico-Gray 2002).


*Corresponding author: rodriquez.luis@inifap.gob.mx*