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## FIRST RECORD OF *DARAPSA MYRON* (SPHINGIDAE) FROM THAILAND

**Additional key words:** hawkmoth, *Polyalthea,* Annonaceae, introductions.

While rearing swallowtail larvae (Papilionidae) from *Polyalthea longifolia* Benth. (Annonaceae) in Banglamphu, Bangkok, Thailand, sphingid larvae were collected inadvertently along with host material, and placed in a polythene bag (12 December 1991). The sealed bag was taken to England, where upon opening revealed two sphingid prepupae. Following successful pupation, two male moths emerged (Fig. 1)—one on 29 December 1991 and the other on 5 January 1992. The specimens were taken to The Natural History Museum, London, England, for identification. The genitalia of one specimen (BM sphingid slide #488) were dissected. They proved to be identical to those of the American species *Darapsa myron* (Cramer). A male from Eagle Lake, Texas, was dissected (BM sphingid slide #489) for comparison, and the identification was confirmed. Both specimens from Bangkok and their pupal cases are deposited in the collection of The Natural History Museum.

During more than five years of field work and research on the Sphingidae of Thailand, we have never encountered *D. myron*. Furthermore, R. D. Kennett, who has been surveying the sphingids of Bangkok for several years, has not recorded this species either. We therefore suspect that *D. myron* has arrived in Thailand recently. The origin of the Bangkok colonists is unclear. Although Sphingidae frequently are bred in North America and Europe by collectors, we are unaware of anyone who is rearing them in Thailand. In addition, *D. myron* is unlikely to warrant such attention because it is not a particularly attractive species. We therefore conclude that *D. myron* was introduced into Thailand inadvertently. A possible source of introduction may have been a gravid female that was captured in the cargo hold of an aircraft leaving the United States and released upon arrival at Don Muang Airport in Bangkok. Alternatively, eggs or larvae may have been present on plant material imported from the United States that subsequently was transported to a flower market near Banglamphu. Regardless of its means of arrival, unless we accept the unlikely hypothesis that the larvae were discovered only one generation following the species' arrival, we conclude that *D. myron* is breeding successfully in Bangkok.

In North America, *D. myron* feeds on Vitaceae and Caprifoliaceae (Hodges 1971).

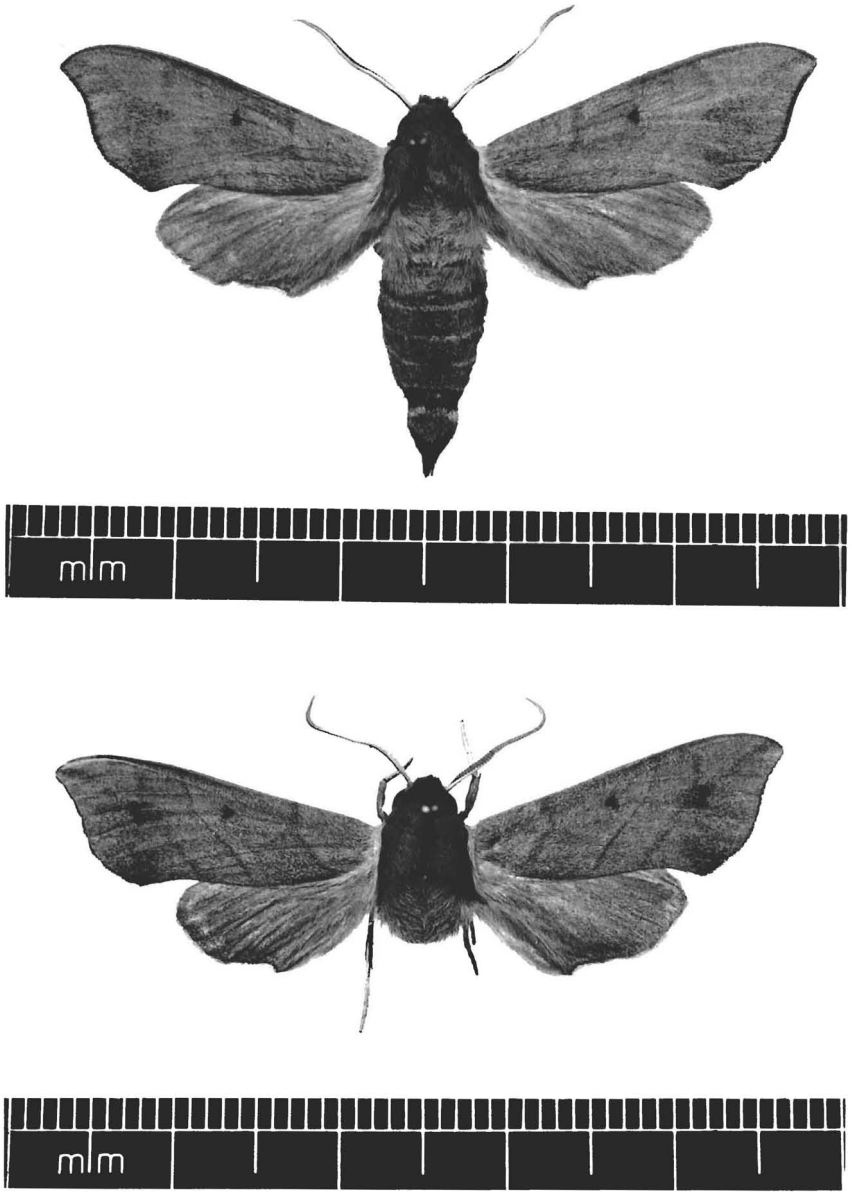


FIG. 1. Males of *Darapsa myron* from Bangkok.

Annonaceae are not closely related to either of these families, and therefore, *Polyalthea* is an unusual hostplant record. The two moths are dwarfs, being only two-thirds the size of typical specimens. This may be because *Polyalthea* is a suboptimal larval food plant, or because of the unnatural rearing conditions. Although smaller than typical *D. myron*,

the genitalia of the dissected male are identical to those of the Texas male and probably were capable of normal function.

What is the fate of *D. myron* in Thailand? *Polyalthea* was introduced to Thailand from India. It is grown widely as an ornamental in most towns and cities and along many major highways throughout Thailand. If *D. myron* can develop successfully on this host, there is no reason why the moth could not expand its range from Bangkok to encompass most of Thailand and perhaps beyond. Alternatively, *D. myron* may encounter native Vitaceae or Caprifoliaceae that it may be capable of using as a larval host plant.

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# LONG-RANGE DISPERSAL AND FAUNAL RESPONSIVENESS TO CLIMATIC CHANGE: A NOTE ON THE IMPORTANCE OF EXTRALIMITAL RECORDS

**Additional key words:** distribution, *Nathalis iole*, *Phoebis sennae*, drought, El Niño.

On 27 June 1992 I collected a female *Nathalis iole* (Bdv.) (Pieridae) at Donner Pass, Nevada Co., California (2100 m). This was the second *N. iole* I had seen in the northern Sierra Nevada in 21 years of almost constant field work. Such extralimital records—the proverbial "strays" far from their normal ranges—can be found in almost all regional faunas. Although memorable to the individual collector, such records are typically not considered important. I would argue that in the context of global climatic change, such records are *biologically* important.

Because of its Mediterranean climate, California precipitation is tallied by "water year" (July 1–June 30), not calendar year. West of the Sierra-Cascade axis most of the precipitation falls from November to April. Mediterranean climates are geologically young and inherently unstable, with very high variance in precipitation on several time scales (Axelrod 1973, Major 1977, Fritts and Gordon 1980). 1992 was the sixth year of "drought" (as recognized by state and Federal agencies concerned with water management) in California. Although the intensity of "drought" and the definition of the term are subject to interpretation, biological indicators of drought stress were abundant. Levels of conifer morbidity and mortality in the Sierra Nevada reached 30–50% by late 1992, with firs (*Abies*, Pinaceae) particularly affected. Even with dramatically increased precipitation in winter 1992–93, the composition of Sierran vegetation already had been altered both qualitatively and quantitatively in ways which will persist for decades. We know from palynological, dendrochronological, and pedological data that such climatically-induced perturbations have occurred repeatedly since the end of the Pleistocene throughout the mid-latitudes of the Northern Hemisphere, including the Sierra Nevada (R. Byrne pers. comm.). These have resulted in reconfiguration of the species mixes defining "communities," as well as the altitudinal distributions of species and species assemblages.