

NOTES ON THE LARVAL DIET OF THE PAINTED LICHEN MOTH *HYPOPREPIA FUCOSA* HÜBNER
(ARCTIIDAE: LITHOSIINAE)

Additional key words: *Trentepohlia*, *Cladonia polycarpoides*, *Physcia millegrana*, algal partners, algivory.

It is well known that the caterpillars of the subfamily Lithosiinae (Arctiidae), or lichen moths, feed on lichens. They are suspected of being primarily algivores, feeding on algae, either free-living, or as a lichen symbiont (T. McCabe pers. com., Rawlins 1984 and pers. com.). For most species, even the most basic information on the larval diet is lacking or is poorly documented (N. Jacobson pers. com., P. Opler pers. com., J. Rawlins 1984 and pers. com.). Reports of food sources for this subfamily consist primarily of generalizations such as “lichens,” “algae,” “mosses,” or the plants that the larvae were observed on (Tietz 1952, 1972, Forbes 1954, Covell 1984, Rawlins 1984, McCabe 1991, Wagner et al. 1997, Robinson et al. 2001, D. Schweitzer pers. com.). Identification of host taxa species, or even to genus, is rarely reported. In this note we describe our observations of feeding by *Hypoprepia fucosa* Hübner and identify an algal host and two lichens ingested in captivity. We also identify the algal partners of the lichens. We are aware of only one other unpublished account that identifies a specific lichen or algal host for this species: a report by T. McCabe (pers. com.) of *H. fucosa* feeding on the free-living algae *Protococcus viridis* C. A. Agardh.

On 10 July 2001 we observed *H. fucosa* feeding on a free-living alga in the genus *Trentepohlia*. The species could not be determined with confidence, but may have been *T. aurea* Mart. given the strong orange pigmentation (P. DePriest pers. com.). The alga was growing on a concrete fireplace at a campsite located in a mature mixed-oak forest, Plumstead Township, Bucks County, Pennsylvania. The forest canopy consisted of white oak (*Quercus alba* L.), red oak (*Quercus rubra* L.), sugar maple (*Acer saccharum* Marsh.) and chestnut oak (*Quercus prinus* L.). The caterpillar was observed feeding on the algae for about one hour beginning at 2130 h before it and the alga was collected for subsequent identification.

The caterpillar was first observed about one hour after torrential rainfall associated with strong thunderstorms had passed through the area. The temperature was near 24°C and the air was humid. The caterpillar was contained within a small glass jar with no available food source for approximately 24 hours, then transferred to a small plastic insect cage lined with a 0.4 cm deep layer of garden soil. The caterpillar was then supplied with two lichens obtained from

the trunks of a red maple (*Acer rubrum* L.) and a red oak from a suburban yard in East Brunswick, Middlesex County, New Jersey. The caterpillar readily accepted these food sources and fed on both intermittently for the next three days before succumbing to a braconid wasp parasite (D. Wagner pers. com.). No preference for either lichen was apparent. The lichen collected on the red maple was *Cladonia polycarpoides* Nyl. and the lichen from the red oak was *Physcia millegrana* Degel. Algal partners of *C. polycarpoides* are from the *Trebouxia irregularis* (Hildreth et Ahmadjian) group (*T. irregularis*, *T. glomerata*, *T. pyriformis*, *T. excentrica*, *T. magna*), and for *P. millegrana*, from the *Trebouxia impressa* (Ahmadjian) Archibald group (*T. impressa*, *T. gelatinosa*) (P. DePriest pers. com.).

While feeding on the algal host and the lichens in captivity, the caterpillar used a scraping motion that may have gleaned algae from the substrate or removed the fungal component to obtain the lichen cortex with algae (J. Rawlins pers. com.). Rawlins (pers. com.) and McCabe (pers. com.) have suggested that *H. fucosa* and many other lithosiines are algal feeders, and Rawlins (pers. com.) has successfully reared more than 40 species of lithosiines from more than 20 genera worldwide on free algae growing on bark, twigs, and leaves of woody plants, often intermixed with lichens, small fungi, sooty molds, and mosses. Many reports of lithosiines feeding on lichens, mosses, or other substrates may be incidental to ingestion of algae growing mixed with these materials (McCabe 1991 and pers. com., J. Rawlins pers. com.), but the relationship between many species and algivory requires additional investigation. Our observations seem to support an algal larval diet for *H. fucosa*, and we hope add to understanding of lithosiine algivory.

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MEGATHYMUS YUCCAE IN KENTUCKY (HESPERIIDAE, MEGATHYMINAE)

Additional key words: *Yucca* Giant-Skipper, *Yucca filamentosa*.

On 11 April 2001 the third author discovered a colony of *Yucca* Giant-Skippers, *Megathymus yuccae* (Boisduval & Leconte) (Megathymidae), in southeastern Calloway County, Kentucky, approximately 22 km (13.5 mi) east-south-east of Murray in the western part of the state. At least 8–10 individuals were observed, two or three of which were females, obvious because of their larger overall size and thicker abdomens. Males were observed flying about in pursuit of one another—apparently defending territories—and perching on the ground and vegetation. One male specimen was collected and photos were taken of several individuals, including a mating pair. A second mated pair also was observed, and on one occasion three males were observed simultaneously in pursuit of a single female.

The *Yucca* Giant-Skippers were found amidst a



FIG. 1. *Yucca* Giant-Skipper, *Megathymus yuccae*, Calloway Co., Kentucky, 13 April 2001; photo by Loran D. Gibson.

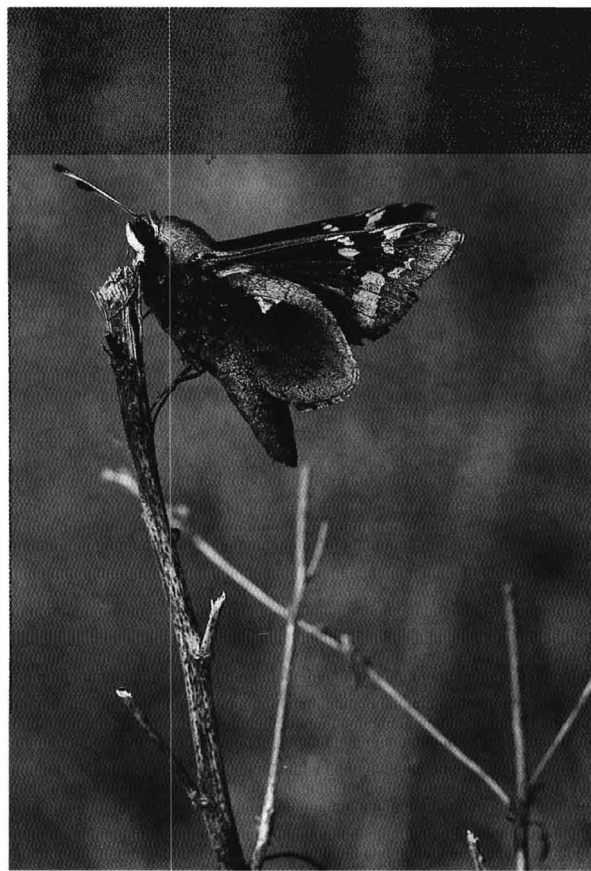


FIG. 2. Underside of the *Yucca* Giant-Skipper, *Megathymus yuccae*, Calloway Co., Kentucky, 13 April 2001; photo by Loran D. Gibson.