throughout the year, but it is not clear if the dates represent collection of larvae or emergence of adults. Specimens in HDOA have been reared from *Leucaena lanceolata* S. Watson, carnation (*Dianthus caryophyllus* L.), amaranth (*Amaranthus* sp.), rose (*Rosa* sp.), and fiddlewood.

We thank B. Kumashiro (HDOA) and G. Staples (BPBM) for providing foodplant information. M. Filbert prepared the drawings and D. Preston prepared the photograph. This note is a by-product of the Hawaiian Terrestrial Invertebrate Survey pilot project funded by the John D. and Catherine T. MacArthur Foundation.

References

Atkins, **E**.**L**., **Jr**., **M**.**H**. **Frost**, **Jr**., **L**.**D**. **Anderson & A**.**S**. **Deal**. 1957. The "omnivorous leaf roller," *Platynota stultana* Wlshm., on cotton in California: nomenclature, life history, and bionomics (Lepidoptera, Tortricidae). *Ann. Entomol. Soc. Am*. **50**: 251–59.

Kimball, **C**.**P**. 1965. The Lepidoptera of Florida. *Arthropods of Florida and neighboring lands* **1**: 1–363.

Mackay, **M**.**R**. 1962. Larvae of the North American Tortricinae (Lepidoptera: Tortricidae). *Can. Entomol. Suppl*. **28**: 1–182.

Powell, **J**.**A**. 1983. Expanding geographical and ecological range of *Platynota stultana* in California (Lepidoptera: Tortricidae). *Pan-Pac. Entomol*. **59**: 233–39.

Usingeriessa onyxalis (Dyar) (Lepidoptera: Crambidae: Nymphulinae), a Moth With Presumably Aquatic Larvae, Newly Recorded From Hawaii, With a Synopsis of Hawaiian Nymphulinae

EUGENE G. MUNROE[1] (3093 Barlow Crescent, R.R.1, Dunrobin, Ontario, K0A 1T0, Canada)

The Nymphulinae, a subfamily of crambid moths, mostly with aquatic larvae, are widespread in tropical and temperate countries (Klima 1937, Lange 1956a). They are not native in Pacific Islands between Samoa in the west and Cocos in the east ("*Aulacodes*" *eupselias* Meyrick, described from the Marquesas, is actually a spilomeline pyraustine [Munroe 1991]). However, 2 non-indigenous species have been recorded from Hawaii. These are *Parapoynx fluctuosalis* (Zeller), a pantropical species associated with the culture of rice and other aquatic plants, first recorded by Butler (1879), but possibly introduced much earlier; and *Synclita obliteralis* (Walker), an eastern North American species that feeds on various aquatic plants, but especially *Lemna*, collected by D.T. Fullaway in 1942 and recorded by Williams (1944). *Synclita obliteralis* was perhaps introduced with aquarium stock. Both species are figured and described by Zimmerman (1958).

The purpose of this paper is to record and characterize a third nymphuline, *Usingeriessa onyxalis* (Hampson 1897: 149). Its type locality is Teapa, Tabasco, Mexico and it was originally described in *Cataclysta* Hübner. It has as a junior synonym *U. cancellalis* (Dyar 1917: 77) (type locality USA: Texas: Devil's River), originally described in *Elophila* Hübner. The species is native to southern Texas, Mexico, and Central America.

1. Research Associate, Department of Natural Sciences, Bishop Museum, Honolulu, Hawaii.

The moth of *U. onyxalis* (Fig. 1) is dark in color and superficially somewhat resembles that of *Synclita obliteralis*, but is distinguished easily by features of structure and color pattern (Table 1). *Parapoynx fluctuosalis*, is pale buff in color, with dark bands parallel to the termen, and is therefore unlikely to be confused with *U. onyxalis* or *S. obliteralis*.

The early stages of *U. onyxalis* are unknown, but the species belongs to the tribe Argyractini, in which the known larvae have segmental clusters of usually unbranched, hemolymph-filled gills. In proposing this tribe, Lange (1956a) hypothesized that the larvae all feed on algae and live under webs on rocks in rapidly flowing or other highly oxygenated waters, as is true of the *Petrophila* [= *Parargyractis*] species known to him (Lange 1956b). However, subsequent work has shown that larvae of *Eoparargyractis plevie* (Dyar) feed on leaves of submerged rosette plants in lakes (Fiance & Moeller 1977), that those of *Eoparargyractis floridalis* Lange and *Neargyractis slossonalis* (Dyar) live among and feed on submerged roots of a wide variety of plants in both flowing and standing water (Habeck 1988), and that larvae of "*Argyractis*" *subornata* Hampson and "*Argyractis*" *drumalis* (Dyar) feed on lateral roots of waterhyacinth and waterlettuce respectively (Forno 1983, Dray *et al.* 1989, Habeck & Solis 1994). The life history of *Usingeriessa onyxalis* is therefore conjectural, though the early stages are almost certainly aquatic.

Usingeriessa onyxalis was first taken on Kauai in 1975, and has been collected there several times since. It has been found on Oahu in 1978 and subsequently. The detailed records are as follows (all specimens in Bishop Museum):

The species was no doubt introduced from the American mainland with aquatic plants, but until more is known of its biology we cannot profitably speculate on the detailed method of introduction.

Material examined. KAUAI: Mahanaloa, 600m, 3 Sept. 1975 [no collector recorded], 1M; Kipu, 1 July, 2, 14 Dec. 1983, 9 Jan. 1984, J.C.E. Riotte, 4F; Lawai Valley, ca. 20 m, Pacific Tropical Botanic Garden, 7–9 Sept. 1988, S.E. Miller, 1M, 2F. OAHU: Waianae Mts, Waianae Kai Valley, 300 m, in tunnel entrance, 18 March 1978 [no collector recorded], 1 M; Honolulu, 7 Nov. 1978, F.G. Howarth, 1 F; Halawa Valley, 220m, 10 Sept. 1983, light, F.G. Howarth 1F; Halawa Valley, ca. 210 m, 30 Sept. 1992, mercury vapor light, S.E. Miller & D. Preston, 1F.

References

Butler, **A**.**G**. 1879. On heterocerous Lepidoptera collected in the Hawaiian Islands by the Rev. T. Blackburn. *Entomol. Mon. Mag*. **15**: 269–73.

Dray, **F**.**A**., **T**.**D**. **Center & D**.**H**. **Habeck**. 1989. Immature stages of the aquatic moth *Petrophila drumalis* (Lepidoptera: Pyralidae, Nymphulinae) from *Pistia stratiotes* (waterlettuce). *Fla. Entomol*. **72**: 711–14.

Dyar, **H**.**G**. 1917. Notes on North American Nymphulinae. *Insecutor Inscitiae Menstruus* **5**: 75–79.

Fiance, **S**.**B**. & **R**.**E**. **Moeller**. 1977. Immature stages and ecological observations of *Eoparargyractis plevie* (Pyralidae: Nymphulinae). *J. Lepidopt. Soc*. **31**: 81–88.

Forno, **I**.**W**. 1983. Life history and biology of a waterhyacinth moth, *Argyractis subornata* (Lepidoptera: Pyralidae, Nymphulinae). *Ann. Entomol. Soc. Am*. **76**: 624–27.

Habeck, **D**.**H**. 1988. *Neargyractis slossonalis* (Lepidoptera: Pyralidae, Nymphulinae): larval description and biological notes. *Fla. Entomol*. **71**: 588–92.

———. **& M**.**A**. **Soli**s. 1994. Transfer of *Petrophila drumalis* (Dyar) to *Argyractis* based

on immature and adult characters with a larval descriptions of *Argyractis subornata* (Hampson) (Lepidoptera: Crambidae: Nymphulinae). *Proc. Entomol. Soc. Wash.* **96**: 726–34.

Hampson, **G**.**F**. 1897. On the classification of two subfamilies of moths of the family Pyralidae: the Hydrocampinae and the Scoparianae. *Trans. Entomol. Soc. Lond.* **1897**: 127–240.

Klima, **A**. 1937. Pyralididae: Subfam.: Scopariinae et Nymphulinae, p. 1–226. *In* Bryk, A., *Lepidopterorum Catalogus*. Pars 84. W. Junk Verlag, 'sGravenhage.

Lange, **W**.**H**., **Jr**. 1956a. A generic revision of the aquatic moths of North America: (Lepidoptera: Pyralidae, Nymphulinae). *Wasmann J. Biol*. **14**: 59–144.

———. 1956b. Aquatic Lepidoptera, p. 271–88. *In* Usinger, R.L., ed., *Aquatic insects of California.* University of California Press, Berkeley.

Munroe, **E**. 1991. Transfer of *Aulacodes eupselias* Meyrick to Pyraustinae, with notes on the genus *Marasmia* Lederer and on cataclystiform wing patterns in the family Crambidae (Lepidoptera: Pyraloidea). *Bishop Mus. Occas. Pap*. **31**: 122–30.

Williams, **F**.**X**. 1944. Biological studies in Hawaiian water-loving insects. *Proc. Hawaii. Entomol. Soc*. **12**: 180–85, pls. 10, 11.

Zimmerman, **E**.**C**. 1958. Lepidoptera: Pyraloidea. *Insects of Hawaii*. **8**, [xii] + 456 p.

Table 1. **Comparison of selected characters of *Usingeriessa onyxalis* (Hampson) and *Synclita obliteralis* (Walker)**

Character	*U. onyxalis*	*S. obliteralis*
Labial palpus third segment:	long, acuminate, extending high over frons	short, peglike, extending only midway up frons
Forewing termen:	straight	convex
Forewing apex:	sharp	rounded
Sharply defined triangular fuscous subapical patch on costa:	present	absent
Hind wing M2 and M3:	fused	separate
Hind wing termen with row of distinct black spots separated by shining metallic areas:	yes	no
Uncus:	triangular	fingerlike
Costa of valve:	concave before apex	convex before apex
Apical area of valve:	a few long recurved setae present	specialized setae absent

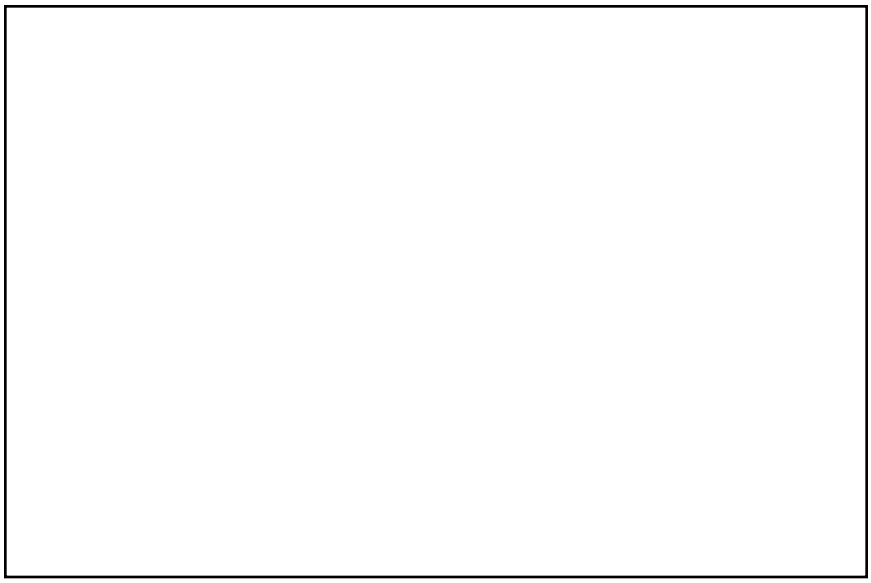

Fig. **1**. *Usingeriessa onyxalis* (Hampson), female. Hawaiian Islands: Kauai: Kipu, 9 January 1984, J.C.E. Riotte (BPBM). Photograph by David Preston.

New Heteroptera and Odonata (Insecta) Records and Range Extensions in the Hawaiian Islands

DAN A. POLHEMUS (Department of Natural Sciences, Bishop Museum, P. O. Box 19000A, Honolulu, Hawaii, 96817, USA)

The following represent new state or island records for Heteroptera and Odonata species in the state of Hawaii. Voucher specimens of all species treated are in the Bishop Museum unless otherwise noted.

Heteroptera: Miridae

Coridromius variegatus (Montrouzier) **New state record**

On French Frigate Shoals, this species was extremely abundant on flowering *Chenopodium oahuense*.

Material examined. HAWAII: Along Saddle Road, 15 mi SE Waimea, 1675 m, 27 January 1992 (D.A. Polhemus & D.J. Preston), on *Chenopodium oahuense*. MOLOKAI: Waikolu Stream below Molokai water tunnel intake, 200 m, 21 February 1992 (Polhemus), in malaise trap set over stream. OAHU: Barber's Point, 5 ft (1.5 m), 2 November 1992 (W.D. Perreira)(W.D. Perreira Collection). FRENCH FRIGATE SHOALS: Tern Island, 28 March to 1 April 1994, ex. *Chenopodium oahuense* (A. Asquith) (U.S. Fish & Wildlife Service Collection).