

A NEW SUBSPECIES OF *ORGYIA LEUCOSTIGMA*
(LYMANTRIIDAE) FROM SABLE ISLAND, NOVA SCOTIA

KENNETH NEIL

Dept. of Biology, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4J1

ABSTRACT. A new subspecies of *Orgyia leucostigma* (J. E. Smith) from Sable Island, Nova Scotia is figured and described.

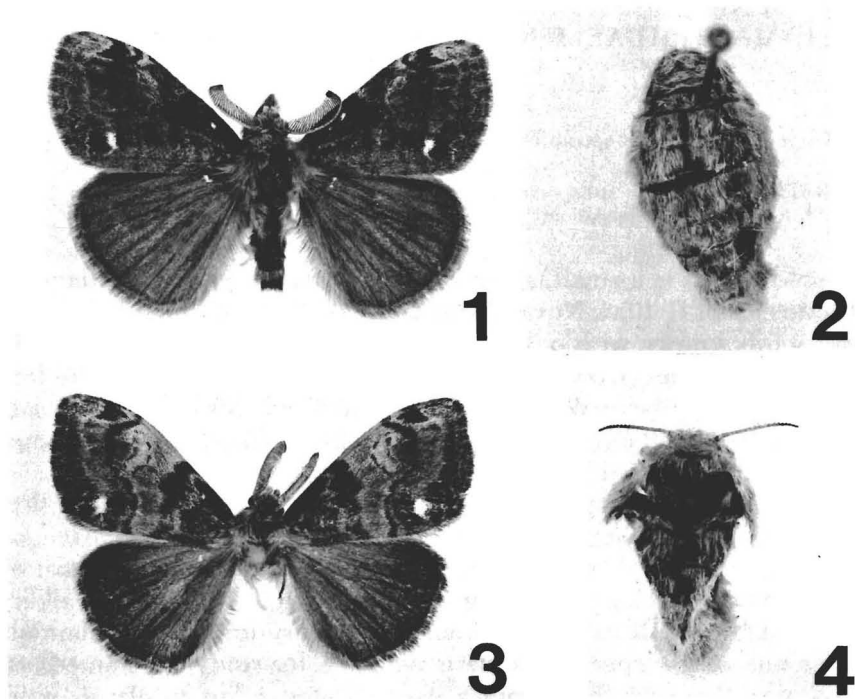
Sable Island is a small, sandy, crescent-shaped island located 150 mi due east of Halifax, Nova Scotia. Until 1975, the Lepidoptera fauna was poorly known with only 23 species (Noctuoidea) listed as occurring on the island (Howden, 1970). Extensive collecting over the last three years by Barry Wright of the Nova Scotia Museum increased this number to 58 (Neil, 1977), adding much to the local knowledge of the Lepidoptera of the island.

One of the more interesting captures taken during the course of this study was a small series of seemingly aberrant male *Orgyia leucostigma* (J. E. Smith) collected in 1976. These specimens had most of the brownish-black ground color of *O. leucostigma plagiata* (Walker) replaced by a dull rusty brown and were very indistinctly marked. Since only a few specimens were available for study, no immediate work was done on them, and a concentrated effort to obtain wild specimens and egg masses for breeding purposes was made in 1977. Numerous specimens subsequently reared under laboratory conditions were similar to the wild specimens collected on the island. It then became evident that this form is genetically different and represents an undescribed subspecies endemic to Sable Island, as mentioned by Ferguson (1978), who also illustrated a male of this subspecies (1978: 85, pl. A, Fig. 13).

Orgyia leucostigma plagiata is known with certainty from only Nova Scotia, Prince Edward Island, and New Brunswick, and represents a Pleistocene relict endemic to the Gulf of St. Lawrence region (Ferguson, 1978). The larvae are extremely general feeders, having been recorded from almost every kind of tree and shrub, and are regarded as a serious pest in Nova Scotia, especially on balsam fir trees.

Orgyia leucostigma sablensis Neil, new subspecies

Description. Male: Upperside of forewing dull rusty brown. Markings and lines as in *plagiata* but generally much more diffuse and indistinct. Median space rusty brown with varying amounts of blackish scales from anterior apex of discal spot to above second anal vein. Light grey of median area found in *plagiata* generally absent, or if present, reduced to a small patch at costa. Basal third of forewing also rusty brown with the darker brown shades of *plagiata* reduced to a small patch at costa. Discal dot



FIGS. 1-4. *Orgyia* spp. 1, *O. leucostigma sablensis* ♂, holotype; 2, *O. leucostigma sablensis* ♀, allotype; 3, *O. leucostigma plagiata* ♂, Lunenburg, Nova Scotia, 21 Aug. 1976, B. Wright; 4, *O. leucostigma plagiata* ♀, McNabs Island, Halifax Co., Nova Scotia, 5 Sept. 1905, J. Perrin.

obscure and indistinct. Antemedial line very diffuse, lighter brown in color than surrounding basal area. Outer third of forewing also rusty brown with a variable amount of blackish scaling present distad of postmedial line. Dark color narrow at apex widening substantially at tornus. Dark brown spot immediately distad of postmedial line reduced or obsolete. Medial and postmedial lines present but diffuse. Fringe concolorous.

Upperside of hindwing solid rusty brown with fringe concolorous or slightly lighter.

Underside of both wings rusty brown, somewhat lighter along the posterior margin of the forewing. A darker brown postmedial line and discal dot present on both fore- and hindwings of some specimens.

Vestiture with coloration as in ground of wings. No visible differences from *plagiata* in antennae, palpi, or vestiture of head and body.

Length of forewing: holotype male, 14 mm; of male paratypes, 10-15.5 mm.

Female. Small wing pads present. Coloration of body pale grey, almost white both dorsally and laterally. Antennae, palpi, and other external structures as in *plagiata*. Vestiture also as in *plagiata*.

Male and female genitalia. Identical to those of *plagiata*.

Types. **Holotype:** ♂, Meteorological Station, Sable Island, Nova Scotia, 11 Sept. 1977, B. Wright (Fig. 1). **Allotype:** ♀, Main Station, Sable Island, Nova Scotia, 26 July 1976, B. Wright (Fig. 2), reared ex larvae on Bayberry (*Myrica pensylvanica* Loisel), emerged 10 Aug. 1977. **Paratypes:** 2 ♂, West Light, Sable Island, Nova Scotia, 3 Aug.

1976, B. Wright; ♂, same data as above, but taken 6 Aug. 1976; 3 ♂, same data as allotype, emerged 10 and 13 Aug. 1976; 17 ♂, 98 ♀, same data as holotype, but collected on 10 Sept. 1977, reared ex ova on artificial medium (Shorey and Hale, 1965), emerged 6–20 Mar. 1978. Holotype and allotype have been deposited in the Canadian National Collection. Paratypes have been deposited in the collections of the U.S. National Museum, Nova Scotia Museum, and the K. Neil collection.

Distribution. The type locality represents the entire known distribution of *sablensis*.

Early stages. Larvae structurally identical to those of *plagiata* found on mainland Nova Scotia, but with a tendency to differ in color. A large proportion of the larvae, as many as 35–40%, resemble those of *Orgyia leucostigma intermedia* Fitch of the eastern United States, in having red heads, a grey dorsolateral band, blackish areas of the body much reduced, and whitish tufts. This type of larva is quite rare on mainland Nova Scotia and comprises only about 1% of the population (Ferguson, *ibid.*).

Foodplants. A general feeder, like other subspecies of *leucostigma*. Larvae collected from blueberry and cranberry (*Vaccinium* sp.), iris (*Iris versicolor* L.), bayberry (*Myrica pensylvanica* Loisel), rose (*Rosa* sp.), and several species of grasses and sedges.

Remarks. *Sablensis* is the first endemic moth to be recorded from Sable Island. This subspecies also represents a Pleistocene relict that survived glaciation on Sable Island and has since evolved into this unique insular subspecies. The flight period corresponds to that of mainland *plagiata* with adults occurring from late July to mid-September.

ACKNOWLEDGMENTS

I thank Barry Wright of the Nova Scotia Museum for his numerous comments and suggestions made during the preparation of this paper and for his review of the final manuscript, and D. C. Ferguson of the Systematic Entomology Laboratory, U.S. Dept. of Agriculture, Washington, D.C. for his review of the final manuscript, and Mary Primrose of Dalhousie University for photographing the types.

LITERATURE CITED

- FERGUSON, D. C. 1955. The Lepidoptera of Nova Scotia: (Macrolepidoptera): Nova Scotia Mus. Sci. Bull. 2: 214 p.
- . 1978. In Dominick, R. B. et al. 1978. The moths of America north of Mexico, Fasc. 22.2, Noctuoidea (in part): Lymantriidae.
- HOWDEN, H. F., MARTIN, J. E. H., BOUSFIELD, E. L., & D. E. MCALLISTER. 1970. Fauna of Sable Island and its zoogeographical affinities—a compendium. Nat. Mus. Natl. Sci. Publ. Zool. No. 4: 1–45.
- NEIL, K. A. 1977. An Annotated List of the Macrolepidoptera of Sable Island. Proc. N.S. Inst. Sci. 28: 41–46.
- SHOREY, H. H. & R. L. HALE. 1965. Mass-rearing of the larvae of nine noctuid species on a single artificial medium. J. Econ. Ent. 58: 522–524.