

A NEW SPECIES OF *AGROTIS* OCHS. (NOCTUIDAE) FROM SABLE ISLAND, NOVA SCOTIA

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ABSTRACT. A new species of *Agrotis* Ochs. from Sable Island, Nova Scotia is figured and described.

Recent biological surveys of Sable Island, Nova Scotia by the staff of the Nova Scotia Museum have added much to the local knowledge of the Lepidoptera of the island. One of the more interesting captures taken during these studies was a small series of pale *Agrotis* Ochs. resembling *Agrotis volubilis* Harv. and *Agrotis stigmosa* Morr. (formerly *Agrotis volubilis* f. *stigmosa* Morr.). Subsequent investigation of these specimens plus additional material collected by the staff of the Biosystematics Research Institute, Ottawa, during the summer of 1967 showed that they represented an undescribed species with distinguishing characters in the female genitalia.

Agrotis volubilis occurs from Newfoundland (Morris, 1980) and Nova Scotia (Ferguson, 1954) south to North Carolina, west to the Pacific (Forbes, 1954). *Agrotis stigmosa* occurs from Massachusetts west to North Dakota (Ahmandi, 1979). The early stages and host plants of *A. stigmosa* are unknown. The larva of *A. volubilis* has been reared from *Achillea millefolium* L. (McCabe, 1981).

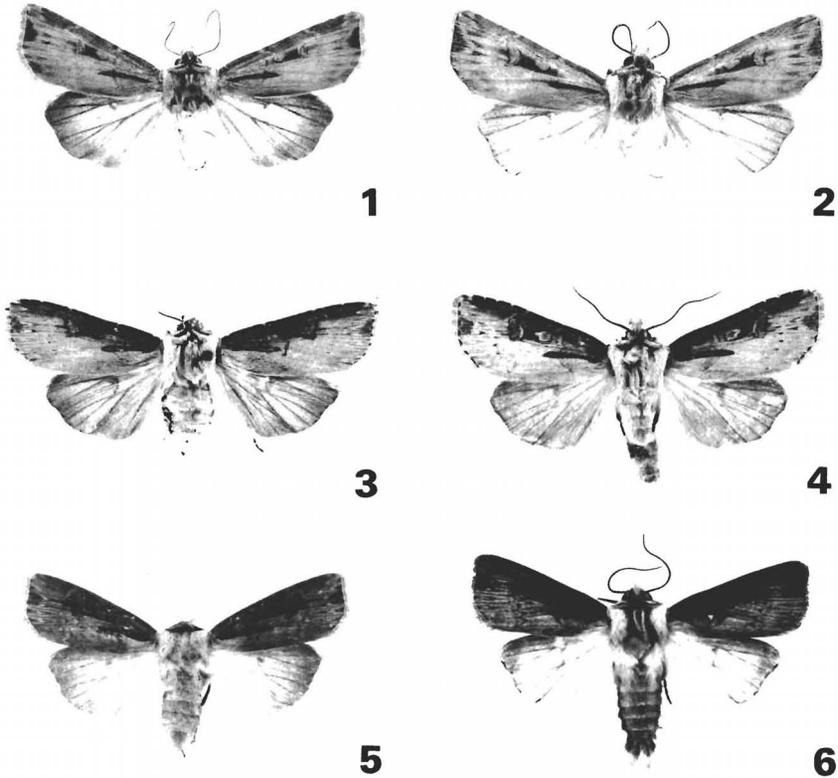
***Agrotis arenarius*, new species**

Description. Upperside of forewing overall much lighter and with lines and markings less distinct than in *volubilis* and *stigmosa*. Ground of forewing light sandy brown. Costal area slightly darker with some light-grey scaling along R and Cu. A dark "W"-shaped patch present in terminal area opposite cell. Subterminal area with a series of dark, elongate, "V"-shaped marks between the veins. Reniform and orbicular spots concolorous with costa, overlain with light-grey scales and brown annuli. Reniform outlined on inner and outer edges with a narrow band of black scales. Orbicular with a similar outline on posterior half. Area between reniform and orbicular and on outer edge of reniform darker. Basal dash and claviform spot fused, outlined with black and filled with dark brown. Postmedial and antemedial lines present but faint and indistinct, most readily visible as light-brown patches at costa. Fringe concolorous.

Upperside of hind wing lighter in male, mainly dirty white with a fuscous border. Hind wing of female more suffused with fuscous overall. Veins and discal spot in both sexes delineated with darker brown scales. Fringe white.

Underside of forewing with markings as in *stigmosa* and *volubilis* but much lighter, lacking the brownish shades present in those species. Ground of undersides light sandy brown. A darker shade present in cell extending from base to postmedial line. Subterminal and postmedial lines darker and distinct. Discal spot blackish.

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FIGS. 1-6. *Agrotis* spp.: **1**, *A. arenarius* ♀, holotype; **2**, *A. arenarius* ♂, allotype; **3**, *A. stigmosa* ♀, Chatham Lab., Light Trap, 28 May 1935; **4**, *A. stigmosa* ♂, Brooklyn, Long Island, New York, 13 May 1903; **5**, *A. volubilis* ♀, Kentville, King's Co., Nova Scotia, 24 May 1979; **6**, *A. volubilis* ♂, Sheffield Farm near Canning, King's Co., Nova Scotia, 10 June 1980. All about $\times 2$.

Underside of hind wing dirty white. Costal area darker. Discal spot blackish.

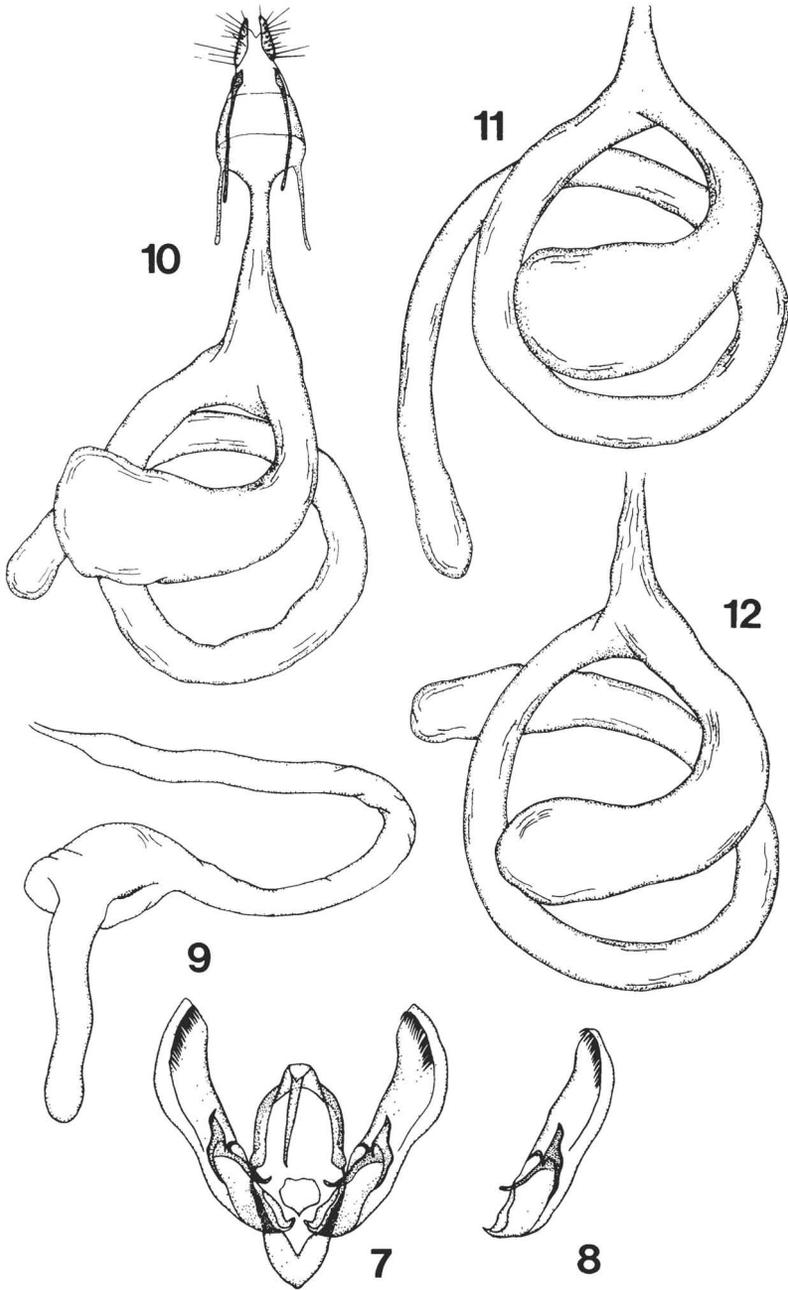
Vestiture of head and body as in *stigmosa* and *volubilis*. No visible differences in antennae, palpi, or other external structures.

Length of forewing: males, 13.8-17.7 mm; females, 16.7-18.5 mm; holotype female, 18.3 mm; allotype male, 17.2 mm. Mean wing length: male paratypes (10), 17.44 mm; female paratypes (6), 17.83 mm.

Male genitalia (Figs. 7-9). Identical to those of *Stigmosa* and *volubilis*. In some specimens of *arenarius* the valve is more convex apically, but this is a variable character and cannot be used to separate *arenarius* from *stigmosa* and/or *volubilis*.

Female genitalia (Fig. 10). Appendix bursae shorter in *arenarius* than in both *stigmosa* (Fig. 12) and *volubilis* (Fig. 11). Female genitalia otherwise similar.

Types. HOLOTYPE: ♀, Henry House, Sable Island, Nova Scotia, 2 July 1980, E. Quinter (Fig. 1). ALLOTYPE: ♂, Same data as holotype but taken 4 July (Fig. 2). PARATYPES: 1 ♂, 1 ♀, same data as holotype but taken 3 July 1980; 1 ♂, 1 ♀, same data as



FIGS. 7-12. Genitalia of *Agrotis* spp.: **7**, *A. arenarius* ♂, allotype, aedeagus omitted; **8**, *A. arenarius* ♂, right valve of paratype, Sable Island, Nova Scotia; **9**, *A. arenarius* ♂, aedeagus of allotype; **10**, *A. arenarius* ♀, holotype; **11**, *A. volubilis* ♀, Sheffield Farm, King's Co., Nova Scotia; **12**, *A. stigmosa* ♀, Chatham Lab., Light Trap.

holotype; 2 ♂♂, same data as allotype; 4 ♂♂, 2 ♀♀, same data as holotype, 3 ♂♂, 1 ♀, Meteorological Station, Sable Island, Nova Scotia, 15 July 1977, B. Wright; 1 ♀, West Light, Sable Island, Nova Scotia, 25 July 1976, B. Wright. Holotype and allotype have been deposited in the American Museum of Natural History collection. Paratypes have been deposited in the Canadian National Collection, Nova Scotia Museum, and the K. Neil collection.

Distribution. This species is known only from Sable Island, Nova Scotia.

Early stages. Unknown, but appears to be associated with *Ammophila breviligulata* Fern., as adults have been taken most commonly where the grass is most abundant on Sable Island.

REMARKS

Arenarius represents the second endemic moth to be recorded from Sable Island, the first being *Orgyia leucostigma sablensis* Neil and like that species, represents a Pleistocene relict which survived glaciation on the offshore refugium of which Sable Island is the last trace. Adults have been taken from early June until late July.

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