

A new species of *Copablepharon* (Lepidoptera: Noctuidae) from British Columbia and Washington

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ABSTRACT

A new species of *Copablepharon*, known from sandy ocean beaches in Washington and British Columbia, is described. Larvae feed on yellow sand verbena (*Abronia latifolia* Eschsch.) (Nyctaginaceae). This is the first report of a species of the genus *Copablepharon* from west of the Cascade Mountains.

Key words. *Copablepharon*, Noctuidae, *Ammophila arenaria*, *Abronia latifolia*, sand dunes.

INTRODUCTION

Recent study of the noctuid fauna of northwestern Washington and southwestern British Columbia has shown that several species previously known from beaches farther south in Oregon and California occur on similar beaches in our area. *Lasionycta wyatti* (B. and Benj.), *Euxoa wilsoni* (Grt.), *Trichoclea edwardsii* Sm., *Apamea maxima* (Dyar), and *Agrotis gravis* Grt. are restricted to sandy ocean beaches, usually with foreshore dunes. Each of these species occurs on suitable beaches on the Strait of Juan de Fuca and the Gulf of Georgia. In addition to these species, a new species of *Copablepharon* has been found on unstable foreshore dunes at Deception Pass, WA, and at Saanichton, B.C.

Copablepharon fuscum new species

Description

Adult. Males and females similar. Eyes round. Frons smooth. Antennae ciliate, dorsal surface with white scales; scape white with small patch of golden brown scales dorsally. Palpi white, second segment with a small patch of gray scales dorsally. All tibiae with stout setae. Head and thorax golden brown, base of thoracic collar and edges of tegulae paler. Forewing length 17-19 mm. Forewing ground colour golden brown, slightly darker than thorax; trailing margin darker gray-brown; costa and anal margin white; medial vein and M1 edged posteriorly with a pale yellow line, this line edged posteriorly within discal cell with a black line which follows vein M2 to within 2 mm of margin; a diffuse black line follows vein R5 to within 2 mm of margin; a second pale yellow line borders the cubital vein and vein CuA2; postmedian line a series of black dots on veins; fringe concolourous with forewing basally, white to pale gray-brown distally. Hindwing dark gray-brown, fading to very light gray or white basally; fringe white in distal half, dark gray-brown basally. Undersurface of wings predominantly dark gray,

light gray on hindwing base and along forewing costa, vein M2 distal to cell and anal margin.

Male genitalia: Uncus curved, thin, tapered distally. Tegumen broad with penicillus lobes. Juxta broad, flat. Clavi long, cylindrical, slightly expanded distally. Valve 4X as long as wide, rounded distally, widest distal to sacculus due to triangular process of ventral margin; corona present; sacculus 2/5X length of valve; clasper as long as valve width, parallel to dorsal valve, broadest at base, tip curved slightly dorsad, basal sclerite strong, joined to clasper proper at 90° angle; digitus very short. Aedoeagus 3X as long as wide with a long, thin extension onto inner curve of coiled vesica; inflated vesica spirals 360° ventrad and leftward to project distal to tip of aedoeagus, distal vesica bulbous, median diverticulum finger-like with a single spine-like cornutus at apex.

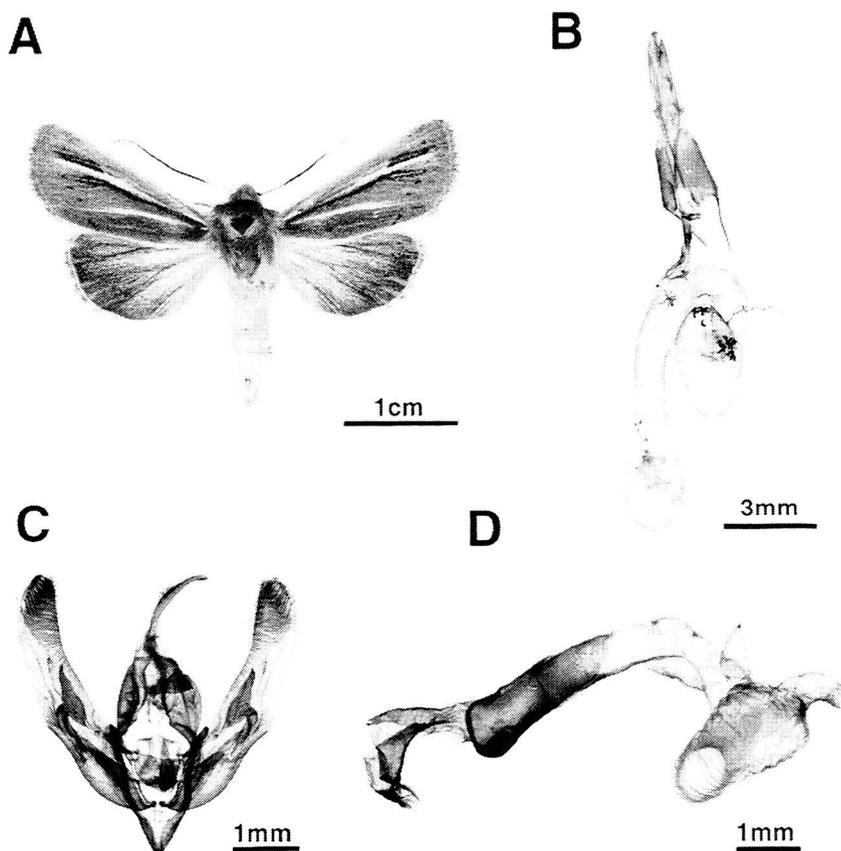


Figure 1. *Copablepharon fuscum*: A. holotype male; B. female genitalia; C. male genital capsule; D. aedoeagus and everted vesica.

Female genitalia: Ovipositor lobes elongate, cone-shaped, covered with long and short setae; ductus bursae very lightly sclerotized, joined to posterior corpus bursae; bursa copulatrix bisaccate, without signa; corpus bursae straight, 4X as long as narrow, swollen anteriorly; appendix bursae joined to right side of posterior corpus bursae, curved 360° ventrad, its distal end swollen and fiddlehead-shaped; ductus seminalis joined to right side of distal appendix bursae.

Type specimens

Holotype male: USA, Washington, Island County, Deception Pass State Park, 26 May,

1995, Troubridge and Crabo in the Canadian National Collection (CNC). Paratypes (16 males, 18 females): 15 males, 15 females, same data as holotype; 1 female, 1 July, 1994, Saanichton, B.C., Troubridge; 1 male, 2 females, 1 July, 1995, Saanichton, B.C., Troubridge. Paratypes to be deposited in the CNC, American Museum of Natural History, and United States National Museum.

Derivation of the name

The specific epithet is derived from the Latin word *fuscus*, which means dark or swarthy. This refers to the wing colour, which is unusually dark for the genus.

Diagnosis

Adults of *C. fuscum* are easily separated from all other species in the genus by their dark colour and the presence of the contrasting yellow and black forewing lines. It is the only species with a predominantly gray underside to both forewing and hindwing -the ventral forewing of other species may be dark, but their ventral hindwing is white or off-white. Structurally, *C. fuscum* is most closely related to *C. absidum* (Harv.). The male and female genitalia are nearly identical to those of *C. absidum*, but the clasper of *C. fuscum* is wider (ca. 0.16 mm near tip vs. 0.12mm in *C. absidum*) and is rounded distally, while that of *C. absidum* is slightly pointed.

Distribution

Copablepharon fuscum is known from unstable foreshore dunes at Saanichton, B.C., and Deception Pass State Park, WA. The foodplant is found on uncollected ocean beaches on the Southern Gulf Islands, B.C., the San Juan Islands, WA, the west coast of Vancouver Island, and the Queen Charlotte Islands, B.C., as well as on open ocean beaches in Washington, Oregon, and California. The introduced European beachgrass, *Ammophila arenaria* (L.) (Gramineae), has stabilized most of the dune habitat on the Pacific Coast, supplanting the native beach vegetation. It is not known if *C. fuscum* occurs or once occurred at these other localities.

DISCUSSION

Copablepharon fuscum is found associated with yellow sand verbena, *Abronia latifolia* Eschsch. Eggs are laid on the inflorescence and larvae feed at night by chewing through the leaf epidermis and mining the fleshy leaf interior. During the day the larvae burrow in the sand. The presence of the larvae can be easily determined by the characteristic feeding damage resulting in large blisters on the leaves of the foodplant.

As with many other beach noctuids, the flight period of *C. fuscum* is very long. In 1995, adults were observed from mid May until late July.

Where it occurs, *C. fuscum* can be relatively abundant. It was the most common noctuid at Deception Pass, WA, in late May and June, 1995.

Copablepharon fuscum is the only member of the genus known from west of the Cascade Mountains, a region known for its wet climate. Other members of this genus occur in more arid regions, including interior British Columbia and the Columbia Basin. Most species are associated with well-drained soils, especially sand. Both of the known localities for *C. fuscum* lie within a rain shadow, with annual precipitation of about 60-80 cm. In contrast, the coast of Oregon receives at least 180 cm. annually (Franklin and Dyrness, 1988). This may explain the limited distribution of this species, although it could also be an artifact of lack of collecting in suitable habitats.

Copablepharon fuscum and the other beach noctuids are restricted to sandy ocean

beaches and are a unique feature of this habitat. Although these species can be locally abundant, they are known from a few localities in the inland coastal region of Washington and British Columbia. The destruction of the dune ecosystem by invading European beachgrass, development or intensive recreational use of their high value ocean-front habitat could threaten their existence in our area.

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REFERENCE

Franklin, J.F. and C. T. Dyrness. 1988. Natural Vegetation of Oregon and Washington. Oregon State University Press.