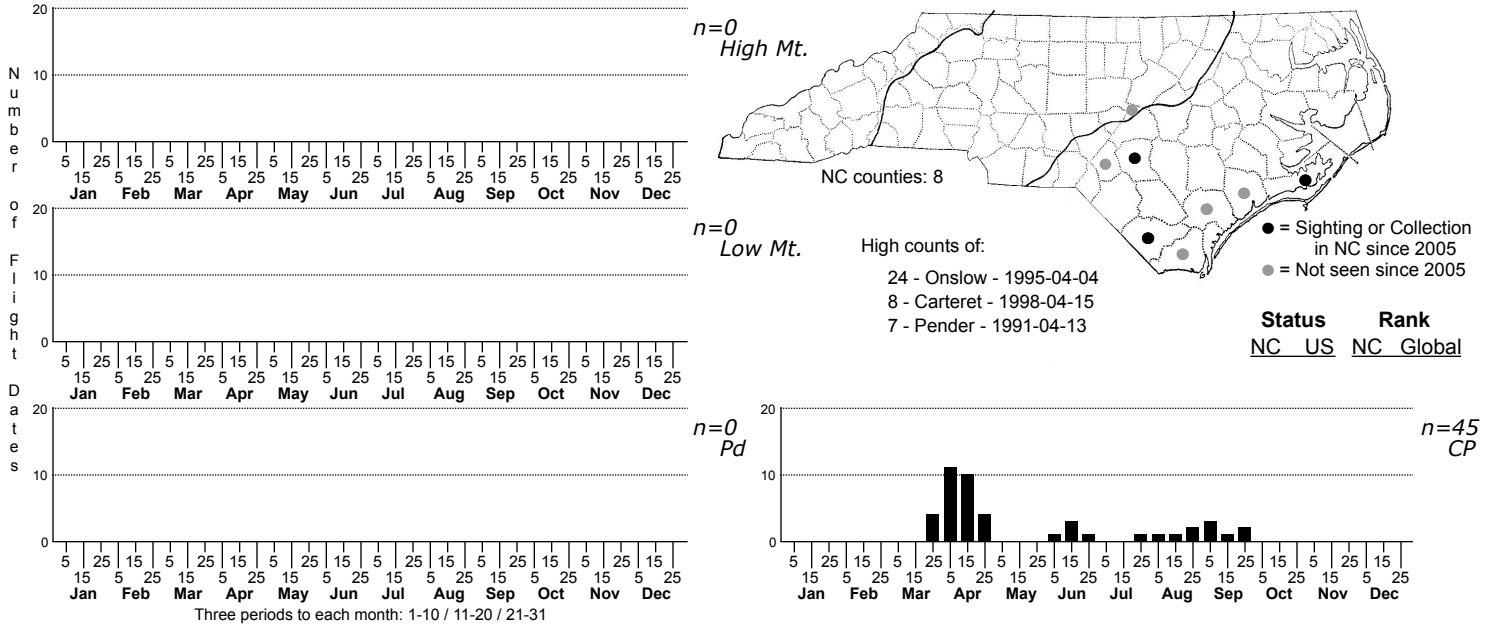
Agrotis buchholzi Buchholz's Dart



FAMILY: Noctuidae SUBFAMILY: Noctuinae TRIBE: Noctuini
TAXONOMIC_COMMENTS: One of 23 species in this genus that occur in North America (Lafontaine and Schmidt, 2010) -- 24 if Agrotis carolina is considered separate from A. buchholzi. Seven have been recorded in North Carolina.

FIELD GUIDE DESCRIPTIONS:
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Forbes (1954); Lafontaine (2004); Schweitzer and McCabe (2004); Schweitzer et al. (2011)
TECHNICAL DESCRIPTION, IMMATURE STAGES: Lafontaine (2004); Schweitzer and McCabe (2004)

ID COMMENTS: Agrotis buchholzi is a medium sized noctuid moth; wingspans average about 1.25" (3 cm), which are smaller than in most other species of Agrotis. Most specimens of A. buchholzi are fairly dark, purplish brown over the forewings and thorax (Forbes, 1954). In North Carolina, some individuals possess a bluish rather than purplish cast, due to extensive white scaling. In either case, the color of the body and forewings contrast sharply with the head, which is an ochre or rust orange; in unworn specimens, this combination of colors should be sufficient to identify the species. Also distinctive is the presence of two dart-shaped marks on the upper forewing, both projecting outward from the antemedian line. The claviform spot forms the uppermost of these marks. In North Carolina specimens, this spot is usually filled with black and projects nearly halfway beneath the orbicular spot. respect); in some specimens in North Carolina, as well as in the New Jersey specimens examined by Forbes, the claviform is present as an outline only. The lower of the two dart marks is formed by a sharp outward bend of the antemedian line itself; this mark is filled with the ground color but is otherwise similar in size and shape to the claviform mark above it. As described by Forbes, the orbicular is a somewhat horizontal, pale ellipse, usually with a dark center. The reniform is less conspicuous than the orbicular, being filled with the ground color rather than the lighter scales present in the orbicular; as is true for the orbicular, the center is often darker. In North Carolina specimens, the space between the orbicular and reniform is often black; some specimens may also have a patch of black located on the proximal side of the orbicular. The median area is often paler than the ground color, becoming extensively shaded with white in some specimens. A dark, narrow median shade extends from the reniform to the inner margin. In the specimens examined by Forbes, the postmedian and other outer lines were too obscure to describe. In North Carolina specimens, these markings are usually quite well marked. The postmedian is thin, black, and strongly scalloped; the points of the scallops are tipped with light and dark scales. The subterminal is also prominent, at least in some specimens, and forms a somewhat wider and more sinuous dark band than the median shade. The terminal area is usually pale, particularly in the apical area, as noted by Forbes. In contrast to the forewing, the hindwing is nearly devoid of markings and is colored a nearly smooth fuscous-gray, becoming only slightly darker towards the edge of the wing. A darker gray terminal line is often present, and in fresh specimens the fringe is bicolored in light and dark gray. Little if any sexual dimorphism is present in the color patterns just described.

DISTRIBUTION: Restricted to the southern half of the Coastal Plain, including the Fall-line Sandhills and Outer Coastal Plain

FLIGHT COMMENT: In North Carolina there are three adult flight periods: March 1-April 13, June 10-28, and September 9-10.

HABITAT: Completely restricted to frequently burned Longleaf Pine habitats in North Carolina. In the outer Coastal Plain, it occurs in fairly wet to mesic savannas and flatwoods, in association with Common Pyxie-moss (Pyxidanthera barbulata). In the Fall-line Sandhills, it occurs in xeric sand ridge habitats in association with Sandhills Pixie-moss (P. barbulata var. brevifolia).

FOOD: Larvae feed primarily or exclusively on pyxie-moss, including both Common Pyxie-moss (Pyxidanthera barbulata and Sandhills Pyxie-moss (P. barbulata var. brevifolia) (Hall et al., 1999; Schweitzer et al., 2011). Although larvae of A. buchholzi have not been reared or observed in the wild, all of our collections for this species come from traps set up in or near patches of Pyxidanthera. The same is true for populations in New Jersey, where further confirmation of this host plant was obtained in a larval rearing study conducted by Schweitzer and McCabe (2004).

OBSERVATION_METHODS: Comes well to blacklights. Although we do not have any North Carolina records from other sources, Schweitzer and McCabe (2004) noted that A. buchholzi comes to bait and also commonly visits flowers.

NATURAL HERITAGE PROGRAM RANKS: G2 S2S3

STATE PROTECTION: Listed as Significantly Rare by the Natural Heritage Program and as Federal Species of Concern by the Raleigh office of USFWS. These statuses do not confer any legal protection, however, although permits are required to collect it on state parks and other public lands.

COMMENTS: This species is a strong habitat specialist that depends on frequent fires to maintain populations of its host plant. It also appears to be affected by habitat fragmentation, being absent from small, isolated areas of habitat that still possess populations of Pyxidanthera. Habitat loss due to conversion to pine plantations, agriculture, and development is the primary threat to this species. In unconverted habitats, the succession to shrubby or densely wooded habitats that occurs when fires are suppressed leads to the loss of the host plant for this species: Pyxidanthera is highly intolerant of shading and is very sensitive to loss of frequent fire. Pyxidanthera is probably also destroyed in areas that are frequently raked to harvest pine straw. Resistance to at least light fires is indicated by the abundance of this species in early spring in areas that have been burned just a few weeks prior to emergence during the dormant season (Hall, pers. obs.). Survival of hot fires that occur when fuel has accumulated is less certain; recolonization from unburned refugia may be necessary in such cases. Management recommendations include use of frequent but light prescribed burns. Within any one preserve, divide habitat suitable for this species into three or more burn units and do not burn adjacent units during the same season. Allow a sufficient interval between burns to permit recolonization of recently burned sites.