

A NEW SPECIES OF *CATOCALA* FROM THE SOUTHEAST UNITED STATES

VERNON A. BROU JR.

137 Jack Loyd Rd., Abita Springs, Louisiana 70420

ABSTRACT. *Catocala charlottae* is described from Louisiana and Florida, the type series consisting of 100 males and 64 females. The new species is differentiated from its most similar ally, *C. alabamae* Grote, mainly by genitalic characters. Adults and genitalia of both sexes of both species are illustrated.

Additional key words: Noctuidae, *Catocala charlottae*, *C. alabamae*, taxonomy, underwings.

The small-bodied underwing described here, *Catocala charlottae*, closely resembles *C. alabamae* Grote both superficially and in male genitalia. *Catocala charlottae* has been taken at the type locality in Louisiana, and at several Florida localities.

Louisiana *C. alabamae* are similar to those occurring through most of its known range. A lifesize color photo of the *C. alabamae* holotype in the British Museum (Natural History) was examined and it precisely matched Louisiana *C. alabamae*.

Catocala charlottae Brou, new species

(Figs. 1, 2, 5, 6)

Forewing length of males averaging 19.5 mm (18.5-21.2 mm, N = 54); of females, 20.9 mm (19.7-21.8 mm, N = 32). Forewing slate gray with distinct bold black antemedial line and anal dash. Most specimens have a bold medium brown broad line paralleling basal side of antemedial line, absent above R_1 . Same brown coloring evident between postmedial and subterminal line and especially noticeable as a distinct brown patch below anal dash. Brown spot at middle of costal margin above vein R_1 . Reniform and subreniform present, sometimes diffuse and indistinct. Forewing underside exhibiting a pale yellow postmedial band bordered on both sides with dark brown bands. Fringe dark with darker brown bars. Basal half of forewing stronger orange-yellow than outer half with fine black line on Cu_2 .

Hindwing above with black inner band and outer marginal band with connecting black-barred off-white fringe. Underside with yellow postmedial band bordered on both sides with dark brown bands. Yellow on costal half of hindwing pale, while that half along inner margin is bolder orange-yellow.

Male genitalia (Fig. 5) (N = 12). Cucular areas along costal margin of valva sickle shaped; mid-costal edge minimally squared, terminal edge finely serrated. Uncus semi-circular and acuminate.

Female genitalia (Fig. 6) (N = 10). Papillae anales elongated, strongly sclerotized. Posterior edge of lamella antevaginalis straight, abruptly angled inwardly to ostium bursae in a long narrow V-shape.

Flight period. At the type locality, specimens were taken at light and fermented bait from 30 April to 23 June, with peak occurrence on 22 May (N = 177). Specimens taken after the fourth week usually were worn and tattered.

Discussion. In Louisiana, *C. charlottae* appears on the wing about two weeks earlier than *C. alabamae*. In Louisiana, adult *C. alabamae* were taken from 13 May to 16 June (N = 38), with peak occurrence on 2 June.

Both Louisiana and Florida populations of *C. charlottae* are consistent in maculation



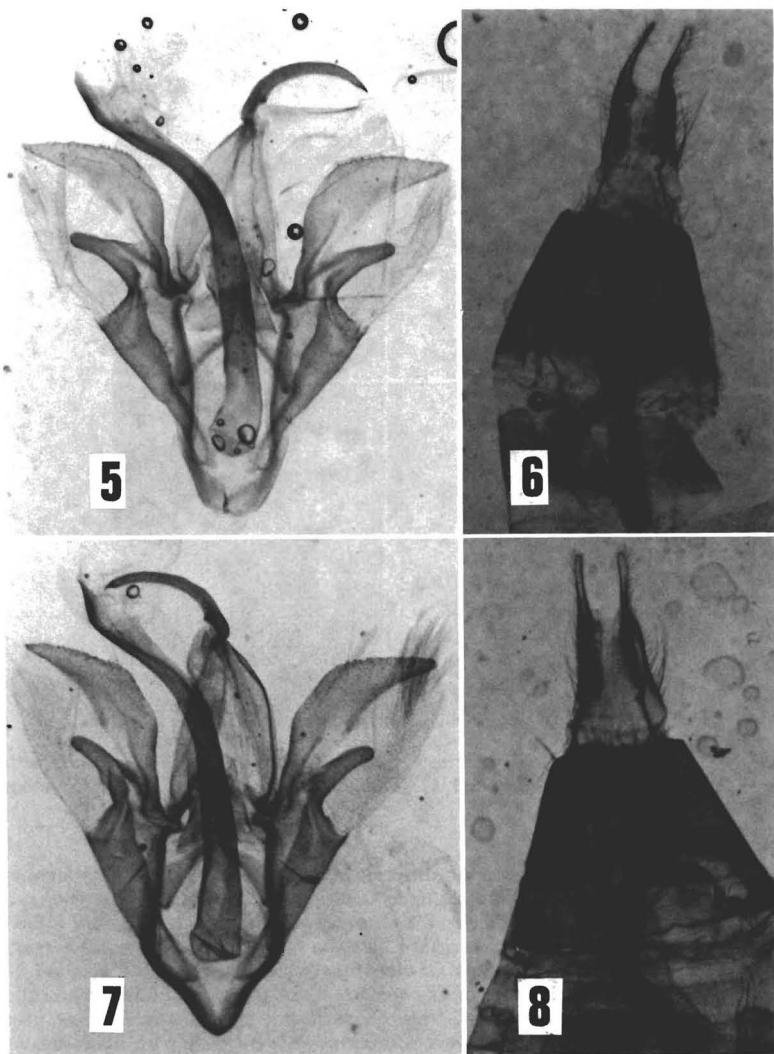
FIGS. 1–4. *Catocala* adults from the *C. charlottae* type locality. 1, *C. charlottae*, ♂ holotype; 2, *C. charlottae*, ♀ allotype; 3, *C. alabamiae*, ♂ coll. 13 May 1985; 4, *C. alabamiae*, ♀ coll. 10 June 1985.

and size; the only noticeable exterior difference is the slightly darker appearance of Florida specimens. Forewing lengths of male Louisiana *C. charlottae* ($N = 108$) average 7% larger than those of male Louisiana *alabamiae* which average 18.2 mm (16.6–19.5 mm, $N = 20$). Forewing lengths of female Louisiana *C. charlottae* ($N = 32$) average 9% larger than those of female Louisiana *C. alabamiae* which average 19.1 mm (17.9–20.1 mm, $N = 14$). The upper forewings of *C. charlottae* lack the overall blue-green suffusion present on *C. alabamiae*. Occasionally, fresh *C. charlottae* exhibit a few diffuse greenish scales around the reniform, but these are sometimes evident only with magnification.

Male genitalia of *C. charlottae* are similar to *C. alabamiae* ($N = 8$) except that the mid-costal margin is squared to a lesser degree in the former (Figs. 5, 7). Female genitalia of *C. charlottae* differ more noticeably from those of *C. alabamiae* ($N = 6$). In the latter, the posterior edge of the lamella antevaginalis is angled caudally approaching the midline and abruptly angled inwardly to ostium bursae in a wide V-shape (Fig. 8).

Since *C. charlottae* has been collected with typical *C. alabamiae* in both Louisiana and Florida localities, a distance of 660 miles (1062 km), it does not seem likely that the former is part of a phenotypic cline of the latter.

More than 30 *Catocala* species have been collected at the *C. charlottae* type locality. This habitat is a longleaf pine region, a gently rolling hilly area interspersed with flatwoods and sloughs. It is rich in diverse natural vegetation, the secondary growth being so dense that it is impenetrable except in slough areas. The *C. charlottae* larva may be a Rosaceae feeder. Four possible host species common at the type locality are *Prunus serotina* Ehrh., *Malus angustifolia* (Ait.), *Crataegus marshallii* Ellgeston, and *Aronia arbutifolia* (L.).



FIGS. 5-8. *Catocala* genitalia from the *C. charlottae* type locality. 5, *C. charlottae*, ♂ coll. 10 May 1986; 6, *C. charlottae*, ♀ coll. 15 May 1986; 7, *C. alabamiae*, ♂ coll. 2 June 1986; 8, *C. alabamiae*, ♀ coll. 3 June 1986.

Catocala alabamiae has the broader geographic range, occurring in Missouri, Texas, the southwestern States, the Gulf States, Tennessee, South Carolina, and Florida (Barnes & McDunnough 1918, Holland 1903:269, Sargent 1976:70, Covell 1984:315).

Types. Holotype ♂ (Fig. 1) 4.2 miles (6.7 km) NE Abita Springs, sec. 24, T6SR12E, St. Tammany Parish, Louisiana, 7 May 1985, V. A. Brou Jr.; allotype ♀ (Fig. 2) same data, 30 April 1985; Both in United States National Museum, Washington, D.C. Paratypes: same locality, 96 ♂, 56 ♀, 30 April to 23 June 1983-87; Jacksonville, Duval Co., Florida,

3 ♂, 5 ♀, 15 May to 7 June 1977–85; Seminole Jr. College, Seminole Co., Florida, 1 ♀, 21 May 1974; Sanford, Seminole Co., Florida, 1 ♀, 13 May 1985. Paratypes are deposited in the Florida State Collection of Arthropods, Gainesville; Louisiana State University, Baton Rouge; and the author's collection.

ACKNOWLEDGMENTS

I thank the following for assistance: H. D. Baggett, Gainesville, Florida; D. C. Ferguson, Systematic Entomology Laboratory, Agricultural Research Service, Washington, D.C.; H. A. Freeman, Garland, Texas; R. M. Gilmore, Winter Springs, Florida; E. L. Quinter, American Museum of Natural History, New York, New York; J. R. Slotten, Jacksonville, Florida; G. Strickland, Baton Rouge, Louisiana.

LITERATURE CITED

- BARNES, W. & J. McDUNNOUGH. 1918. Illustrations of the North American species of the genus *Catocala*. Mem. Am. Mus. Nat. Hist. (New Ser.) 3(1):1–47.
- COVELL, C. V. 1985. A field guide to the moths of eastern North America. Houghton Mifflin, Boston. 496 pp.
- HOLLAND, W. J. 1903. The moth book. Doubleday, Page & Co., New York. Reprinted 1968, Dover, New York. 479 pp.
- SARGENT, T. D. 1976. Legion of night: The underwing moths. Univ. Massachusetts Press, Amherst. 222 pp.

Received for publication 26 January 1987; accepted 10 February 1988.