

**Article VII.—NOTES ON AND DESCRIPTIONS OF NEW  
FORMS OF CATOCALA.**

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The notes on species of *Catocala* presented in this paper are the results of some of my studies on the species of that genus, and are published here in advance of my forthcoming monograph on the genus *Catocala* of America, north of Mexico.

***Catocala jair* Strecker.**

*Catocala jair* STRECKER, Ent. News. Vol. VIII, 1897, p. 116.

Two beautiful examples of *Catocala jair* from the Indian River district of Florida, are in the collection of Mr. Jacob Doll. In these specimens the basal area of the fore wings is dark smoky brown black and the median space brown, covered with blue gray scales. The reniform is indistinct, and the subreniform is round, whitish and ringed with black. From about the middle of the costa, is a black shade running obliquely to the middle of the transverse posterior line, where it is more pronounced.

The space between the transverse posterior and subterminal lines is brown. The terminal space is brown, rather densely covered with blue white scales with a brown black dash from below the apex to opposite the prominent angle of the transverse posterior line. The basal line is short and black. The transverse anterior line is black, very slightly dentate and oblique. The posterior transverse line is very much less dentated than in *Catocala amica*, with the teeth opposite the reniform very short and rounded; the rest of the line is slightly wavy. The terminal line is black and slightly dentate. The hind wings are similar in color to those of *Catocala amica*, with the fringes brown, white at the apex, while in *amica* they are brown tipped or cut with whitish.

This species is closely related to *C. amica*, but differs by having the fore wings broader, more pointed at the apex, and the transverse lines less dentate.

***Catocala amica* Hübner.**

*Ephesia amica* HÜBNER, Zutr. Exot. Schmett., 1818, p. 14, fig. 57 (upper side) and 58 (under side).

*Catocala lineella* GROTE, Trans. Am. Ent. Soc., Vol. IV, 1872, p. 18.

Hübner's figure of *Catocala amica* is the gray form with distinct dark transverse lines and without the black shade from the costa to the reni-

form and thence to below the apex on the outer margin on the fore wings. The anal black spot on the hind wings above is very minute, and the black spot in the yellow field on the hind wings beneath is wanting. The type locality is Florida.

An example of *C. amica* in the collection of the American Museum of Natural History agrees very well with Hübner's figure, and it is the same as Grote's variety *lineella*. Butler also states (Entomologist, Vol. XXV, 1892, p. 214) that he is unable to separate *Allotria* (= *Catocala*) *lineella* Grote from *C. amica* Hübner.

***Catocala amica* var. *androphila* Guen.**

*Catocala androphila* GUENÉE, Hist. Nat. Spec. Gen. Lepid., Tom VII, Noct. III, 1852, p. 84; GROTE, Trans. Am. Ent. Soc., Vol. IV, 1872, p. 18.

The description of *Catocala androphila* by Guenée applies to the form of *Catocala amica* in which the fore wings are pale gray with the lines fine and not very evident. A more or less distinct black median shade on the costa above the reniform is continued beneath it, running upward to the external margin below the apex.

***Catocala cordelia* Hy. Edw.**

*Noctua amasia* ABBOTT & SMITH, Nat. Hist. Lepid. Ga., Vol. II, 1797, p. 179, pl. 90 (upper figure).

*Catocala cordelia* HY. EDWARDS, Bull. Brooklyn Ent. Soc., Vol. III, 1880, p. 59.

The figure of *Catocala amasia* in the copy of Abbott and Smith in the American Museum of Natural History, agrees in color and markings with the species described as *Catocala cordelia* by Hy. Edwards. The name *amasia* of Abbott and Smith is preoccupied for a European species described by Esper (Schmett. Europa, Tom. IV, 1786, pl. exciv, figs. 1, 2) and therefore *cordelia* should be used instead. Professor French's figure 1, (Can. Ent., Vol. XXXIV, p. 97) is *Catocala sancta* Hulst and not *C. amasia* A. & S.; and his figure 2 is *C. cordelia*; and figure 3 is what I consider to be *C. amasia* (= *cordelia*).

***Catocala whitneyi* Dodge.**

*Catocala whitneyi* DODGE, Can. Ent., Vol. VI, 1874, p. 125; *ibid.*, Vol. XXXVI, 1904, p. 116; GROTE, Bull. Buff. Soc. Nat. Sci., Vol. II, 1875, p. 222; Can. Ent., Vol. IX, 1877, p. 169; Papilio, Vol. I, 1881, p. 163; FRENCH, Synop. Catocala Illinois, 1881, p. 9; Can. Ent., Vol. XXXIV, 1902, pp. 34 and 96; ANGUS, Papilio, Vol. IV, 1884, p. 37; SNOW, Trans. Kansas Acad. Sci., Vol. VII, 1881, p. 104; G. M. & E. A. DODGE, Can. Ent., Vol. XXXVI, 1904, p. 116.

*Catocala nuptialis* var. *whitneyi*, Check List Lepid. Brooklyn Ent. Soc. 1882, p. 19.

*Catocala abbreviatella* var. *whitneyi* HULST, Bull. Brooklyn Ent. Soc., Vol. VII, 1884, p. 39.

I fully agree with Messrs. Dodge, Grote, French, and Angus in considering *Catocala whitneyi* a valid species and not a variety of *C. nuptialis* Walker, or *C. abbreviatella* Grote, as placed by certain writers.

The types of *whitneyi* were unfortunately destroyed by fire, as I am informed by Mr. Dodge, and the specimen in the Grote Collection in the British Museum, supposed to be the type is not one of the specimens from which the description was made. The species, however, is well known and easily recognized from the good description published by Mr. Dodge. There are two forms of *C. whitneyi*, one with light grayish, and the other with dark blackish, fore wings. Messrs. G. M. and E. A. Dodge who have taken *whitneyi* in numbers inform me that it is not found on tree trunks, like many species of *Catocalæ*, but is to be found in open fields, particularly around haystacks.

#### ***Catocala allusa* Hulst.**

*Catocala allusa* HULST, Bull. Brooklyn Ent. Soc., Vol. VII, 1884, p. 45.

*Catocala frenchii* POLING, Can. Ent., Vol. XXXIII, 1901, p. 125.

The type of *C. allusa* Hulst is a female in the E. L. Graef collection, Brooklyn Institute of Arts and Sciences, and it is identical with *C. frenchii* Poling, there being no differences in color and markings whatever. A male example of *allusa* is also in the collection of Mr. Jacob Doll, which is somewhat darker in the color of the fore wings than the type form.

Habitat: Washington (Graef Coll.); New Westminster, B. C. (Poling Coll.), and Colorado (Doll Coll.).

#### ***Catocala ultronia* Hübner.**

*Eumecis ultronia* HÜBNER, Zuträge Exot. Schmett., 1823, p. 26, fig. 347 (upper side) and fig. 348 (under side).

*Catocala ultronia* var. *mopsa* HY. EDWARDS, Bull. Brooklyn Ent. Soc., Vol. III, 1880, p. 58.

The form of *Catocala ultronia* figured by Hübner has the fore wings rich brown, with a darker shade from the base to near the middle, and one beyond the reniform to the margin of the wings. It is the same as the variety *mopsa* Hy. Edwards. The type locality of *ultronia* is Pennsylvania.

#### ***Catocala violenta* Hy. Edw.**

*Catocala violenta* HY. EDWARDS, Bull. Brooklyn Ent. Soc., Vol. III, 1880, p. 58.

*Catocala chiricahua* POLING, Can. Ent., Vol. XXXIII, 1901, p. 127.

In the Bulletin of the American Museum of Natural History, Volume XIX, 1903, p. 507, I stated that *C. chiricahua* looked suspiciously like the female *C. violenta* and that it was probably the same. Mr. Doll informs me that he is also of this opinion, and his specimens which he considers

the females of *C. violenta* agree with *C. chiricahua*. According to Dr. Henry Skinner, *C. violenta* flies early in the evening among the tree tops making it very difficult to capture with the net.

***Catocala eldoradensis* Beuten.**

The species described as *Catocala mariana* Hy. Edwards, MSS. by Strecker, in his Lepidoptera Rhopalocera and Heterocera, 1874, p. 99, is synonymous with *Catocala californica* and the species described subsequently as *Catocala mariana* by Hy. Edwards in his Pacific Coast Lepidoptera, no. 14, 1875, p. 33, is an entirely different looking insect. The name *mariana* cannot be employed for the latter and a new name is required. I propose for it *Catocala eldoradensis*. The name *C. mariana* also comes in conflict with the European *Catocala mariana* Rambur (Cat. Syst. And. 1858, taf. ix, fig. 4).

***Catocala pura* Hulst.**

*Larva:* Head rather small, 3½ mm. high, and of equal width; slightly bilobed, flattened in front, with a polished setaceous tubercle on each lobe a little below the apex; color whitish, with reddish brown reticulated lines, those on the face not reaching the mouth parts at the sides and the frontal triangular piece; on each side is an irregular, narrow, black line, disconnected at the summit and running downward to the upper ocelli. The triangular frontal piece is white and narrowly margined with black. Ocelli black. Antennæ and palpi white. Mandibles white margined with black. Body whitish, sprinkled with numerous brownish dots, not contrasting; piliferous spots whitish, not conspicuous and prominent; eighth segment with a transverse fold-like ridge, on and behind which the dots are somewhat more numerous; eleventh segment somewhat elevated. Lateral fringes white. Underside white with a small reddish patch between each pair of thoracic feet, and a large red brown patch on each of the remaining segments, except the last. Thoracic feet white. Abdominal legs white with a few brownish dots; last pair with a short, elongated black mark at the middle, anteriorly. Anal legs white with a few brown dots. Length, 68 mm.

Food-plant: Cottonwood (*Populus fremonti*).

Described from a single inflated specimen, kindly placed at my disposal by Mr. Jacob Doll, the Curator of insects in the Brooklyn Institute. A number of larvæ of *Catocala pura* were collected by Mr. Doll, in the Beaver Valley, Utah, from which he reared a series of specimens, varying from the type form with uniform grayish white fore wings, to forms more or less covered with black scales or shades, to almost uniform dark gray examples, proving that *C. pura* is a very variable species.

***Catocala amatrix* Hübner.**

*Lamprosia amatrix* HÜBNER, Samml. Exot. Schmett., Bd. II, 1806, Lep. IV, Noct. III, Semigeomet. VIII, Bleph. B. Coccinæ, 2, figs. 3 (upper side) and 4 (under side).

*Catocala nurus* WALKER, List Lepid. Ins. Brit. Mus., Pt. XII, 1857, p. 1195.

*Catocala selecta* WALKER, List. Lepid. Ins. Brit. Mus., Pt. XII, 1857, p. 1197.

Hübner's figure of *Catocala amatrix* is the form with a broad dark brown basal streak on the fore wings and another similar streak from the reniform to the outer margin below the apex. Walker's *Catocala nurus* is the same as Hübner's species. The name *amatrix* was heretofore applied to the form with pale brown fore wings without the brown shades which Walker described as *Catocala selecta*. The species will have to stand as follows:

*Catocala amatrix* Hübner (dark form).

Syn. *C. nurus* Walker

Var. *selecta* Walker (pale form).

***Catocala delilah* var. *calphurnia* Hy. Edw.**

*Catocala calphurnia* HY. EDWARDS, Bull. Brooklyn Ent. Soc., Vol. III, 1880, p. 59.

The type of this form is a female in the collection of the late Dr. James Bailey, Albany, New York, and was examined by me.

The specimen looks suspiciously like an exotic species allied to the European *Catocala nymphaea* Esper or it is an undersized aberration of *Catocala delilah*. The fore wings are almost uniform dark brown with a very slight greenish tint and the transverse lines and marks are quite indistinct. The transverse anterior line is oblique and almost even. The transverse posterior line with the dentations as in *delilah*. In the hind wings the yellow central area is very narrow and the basal area is black with a slight yellow field at the extreme base. The outer margin is very broad, black, with the fringes yellow, cut with brown. The apex is yellow. Expanse 54 mm.

*Habitat*: Kansas.

***Catocala parta* var. *petulans* Hulst.**

This variety was described from a small specimen evidently bred from an under-fed larva. It differs from *C. parta* only by being smaller and paler in color. It is not worthy of a name.

***Catocala ilia* Cramer.**

*Noctua ilia* CRAMER, Pap. Exot., Tom. I, 1779, pl. xxxiii, p. 53, figs. C. B.

Cramer's figure of *Catocala ilia* is the dark brown form with the reniform dark and ringed with white; a few white marks on the costa, a white shade on the transverse anterior and posterior lines, and whitish subterminal line. The black band on the hind wing reaches the inner margin.

**Catocala ilia** var. **conspicua** *Worthington*.

*Catocala uxor* GUENÉE, Hist. Nat. Ins. Spec. Gen. Lepid., Tom. VII, Noct. Tom III, 1852, p. 92.

*Catocala ilia* var. *conspicua* WORTHINGTON, Papilio, Vol. I, 1881, p. 40.

*Catocala ilia* var. *duplicata* WORTHINGTON, Papilio, Vol. I, 1881, p. 40.

*Catocala albomacula* BUTLER, The Entomol., Vol. XXV, 1892, p. 284.

The name *uxor* Guenee (1852), is preoccupied by *Catocala uxor* Hübner (Samml. Europ. Schmett., Lepid. IV, Noct. 3, fig. 328), a European species (= *elocata* Esp.), and therefore cannot be used as a name for a variety of *Catocala ilia*. Butler (1892) mentions *Catocala albomacula* Edw. as being the form of *ilia* with the reniform spot wholly white; but I have been unable to find a description of *C. albomacula* by Edward, and the name *conspicua* Worthington will have to be used until that point is settled.

**Catocala nubilis** *Hübner*.

*Parthenos nubilis* HÜBNER, Samml. Exot. Schmett., Bd. II, 1806, Lepid. IV, Noct. III, Semigeom. Bleph. C. Flav. 2, fig. 3 (upper side) and 4 (under side).

Hübner's figure of *Parthenos nubilis* is the form with almost uniform dark gray brown fore wings, marked with white on the transverse posterior line at the costa, the reniform spot partly ringed with white, but very faintly so, and with slight indications of a few indistinct whitish dots in the subterminal space.

**Catocala nubilis** var. **fasciata**, var. nov.

In this form the median space between the transverse anterior and posterior or subterminal lines is more or less clouded or covered with white.

**Catocala angusi** *Grote*.

*Catocala angusi* GROTE, Can. Ent., Vol. VIII, 1876, p. 231; Bull. Buff. Soc. Nat. Sci., Vol. III, 1877, p. 188, pl. V, fig. 1; ANGUS, Papilio, Vol. IV, 1884, p. 36.

This species was described by Grote from specimens sent to him by James Angus, bred from larvæ collected at West Farms, New York City. Grote's description incorporates three distinct forms of *C. angusi*, as already pointed out by James Angus (Papilio, IV, p. 36). In the Angus Collection is a fine series of *C. angusi*, including a type male. This type is the form with plain gray fore wings with a black mark at the lower angle of the transverse posterior line at the inner margin, and I propose that this form be considered the type of *C. angusi*. It is the one figured by Grote in the Bulletin of the Buffalo Society of Natural Sciences, Vol. III, pl. V, fig. 1.

**Catocala angusi** var. **edna**, var. nov.

*Catocala angusi* GROTE (in part), Can. Ent., Vol. VIII, 1876, p. 331; Bull. Buff. Soc. Nat. Sci., Vol. III, 1877, p. 188, pl. v, fig. 2; ANGUS, Papilio, Vol. IV, 1884, p. 36 (form B).

This is the form figured by Grote (Bull. Buff. Soc. Nat. Sci., Vol. III, 1877, pl. V, fig. 2) which has on the fore wings a distinct, rather broad streak in the middle, running from the base across the anterior transverse line to the subreniform mark. Otherwise it is like the type form.

Habitat: West Farms, New York City.

Described from ten specimens in the Angus Collection, American Museum of Natural History.

***Catocala angusi* var. *lucetta* Hy. Edwards.**

*Catocala residua* var. *lucetta* Hy. Edwards, FRENCH, Synop. *Catocala* Illinois, III, 1881, p. 4.

*Catocala angusi* ANGUS, Papilio, Vol. IV, 1884, p. 36 (var. b).

*Catocala angusi* var. *lucetta* HULST, Bull. Brooklyn Ent. Soc., Vol. VII, 1884, p. 55.

*Catocala febilis* HOLLAND, Moth Book, 1903, p. 262, pl. XXXI, fig. 11.

Two types from Carbondale, Illinois, collected by G. H. French, are in the Hy. Edwards Collection in the American Museum of Natural History and are labeled *Catocala residua* var. *lucetta* Hy. Edw. In the Angus Collection are twelve fine specimens of the same variety bred from larvæ the same as those producing the type form of *C. angusi* and variety *edna*.

*Lucetta* is the form with a very broad black shade on the fore wing; it commences at the base and runs to the outer margin below the apex. The band is, as a rule, more or less interrupted by the reniform and subreniform.

***Catocala judith* Strk.**

*Catocala judith* STRECKER, Lepid. Rhop. Het., 1874, p. 95, pl. xi, fig. 5 (Aug. 1874).

*Catocala levettei* GROTE, Trans. Am. Ent. Soc. Vol. V, 1874, p. 95 (Sept. 1874).

*Catocala orba* KUSNEZOV, Rev. Russe d' Entomol., Vol. III, 1893, pp. 166-168, figs.

The male and female types of *Catocala judith* Strecker are in the Angus Collection, and the species described as *Catocala orba* is without a doubt the same as *judith*. The published figure of *C. orba* corresponds exactly with the specimens of *C. judith* in our collection.

***Catocala staudingeri* Beuten.**

*Catocala aspasia* STAUDINGER, Iris, Vol. IX, 1896, p. 400.

The name *Catocala aspasia* used by Staudinger for a species from Maradin, Turkey in Asia, is preoccupied by *Catocala aspasia* Strecker, (Lepid. Rhop. Het., 1874, p. 94) and I propose for it *Catocala staudingeri*.