

Article XIV.—NOTES ON WEST INDIAN SYNTOMIDÆ AND
ARCTIIDÆ (LEPIDOPTERA)¹.

BY WM. T. M. FORBES.

I.

The following records add to the distribution of the species as recorded in Hampson's Catalogue of the Lepidoptera Phalænæ:

Eunomia columbina (F.). Maricao, Porto Rico, Jan. 23, 1914. A single female disagrees markedly with Hampson's description and Hübner's figure of the male, and approaches *rubropunctata* Butl. Base of abdomen, largely red beneath, the terminal segments with paired subventral red spots of which the last is the largest. Dorsal white band on second segment, and red band on third segment broadly interrupted in the middle. Lateral red band continuous, as in *E. rubropunctata*, but narrower, and extending dorsad in long teeth on 4th and 5th segments. End of abdomen with a white dorsal spot. Border of fore wing only 1 mm. broad at vein 3, without any white lines or red scales above.

Nyridela chalciope (Hübner). Guantanamo, Cuba; Sanchez, Santo Domingo, June 15–18; Kingston, Jamaica; Near Troy, Jamaica, May 15, 1913, at night. (See below.)

Cosmosoma auge (L.). North of Vinales, Cuba, Sept.

Æthria rubipectus Schaus. La Vega, Sanchez and San Lorenzo, Santo Domingo, May to July.

Napata chalybea (Hübner). "Honduras, Edwards." The locality is surprising, but it is so given in the original Edwards catalogue.

Lymire edwardsi (Grote), *Lymire candida* n. sp. and *Lymire senescens* n. sp. (See below.)

Empyreuma pugione (L.). Santo Domingo. I believe this specimen represents practically the typical form.

Empyreuma affinis Roth. Santiago, Cuba, Dec. 7; New Providence, Bahamas, Nov. 12; "Sierra Leone", doubtless in error, but the specimen seems to belong to this species.

Empyreuma affinis haytiensis Roth. Sanchez, Apr. 22, Sept. 16; San Lorenzo, May 27–29, June 24–26, Santo Domingo.

Empyreuma anassa n. n. (See below.)

¹ The specimens referred to in these notes are all in the Collection of the American Museum of Natural History.

Correbidia bicolor (H.-S.). North of Vinales, Cuba, Sept.

Opharus bimaculata (Dewitz). Montego Bay, Jamaica, May 5-13, Balaclava, Jamaica, April 24, at night.

Ecpantheria albicornis Grote. In series from Cuba, the male, as Grote's figure suggests, turns out to have broadly pectinate antennæ, and makes the species really subgenerically distinct.

II.

The genus *Utetheisa* has always been more or less a source of dispute, as the species seem to run to such a variety of forms in one place, while remaining constant in another. Under the conditions it seemed that structural characters, and especially the genitalia would throw some light on the matter; and a series of specimens were prepared of the various nominal American forms (lacking *U. galapagensis*) and of *Utetheisa pulchella* (L.) and *semara* Moore, from the Old World, for comparison. The two latter species are practically identical in markings. It turned out that while the Old World species had strikingly marked structural characters in every case, the Americans were identical within the range of individual variation. This would be evidence that there is only one, locally variable, American species. Another piece of evidence is that the species, as represented in the Museum, shows every imaginable intergrading form, with one exception; and that exception is between *ornatrix* var. *stretchii* and *venusta* (*speciosa*), apparently because the pink color of the hind wing is inherited in a Mendelian way. Another noticeable point is that the forms, while intergrading completely when viewed geographically, are nevertheless sharply marked as to each of several characters, and that material from a given station will show a limited number of forms, indicating with a good deal of probability that these characters are inherited in a Mendelian way; and the existence of nearly every possible combination of characters would show that they are independent, more or less completely, of each other. Thus the hind wing is either white (*ornatrix stretchii*) or pink (*venusta*, *bella*). The few exceptions come from Porto Rico. They are *stretchii* which in other characters also is a combination of typical *ornatrix* and *venusta*. It is not unlikely that they represent the heterozygous condition for this character. The black spotting and extent of ground color of the fore wing also show a sharp separation into two classes, independent of each other — as various Porto-Rican specimens show, as well as the Jamaican form with cream-white fore wings — and also independent of the color of the hind wings. The color of the fore wing and the black marking of the hind wing (accompanied by sexual dimorphism in that the extreme dark forms occur

only or mainly in the female) show more complex conditions; yet even here certain phases (supposed to characterize typical *bella*, *venusta*, and the two sexes of *ornatrix* in the case of the hind wing) are dominant. *Ornatrix* is as old a name as any, and has the advantage over *bella* of page priority and of more correct classification, so it will stand as the specific name for the whole complex. The other names would be applied somewhat differently, according to whether the locality (races) or the type of markings were taken as a criterion. Perhaps it would be best to use them as applying only to specimens of the typical forms from the type regions, namely:

U. ornatrix ornatrix (L.). Ranging from Santo Domingo in certain stations, through the Antilles, South and Central America to Texas. Fore wing with restricted pink ground, restricted black spotting; hind wing white, with extended black markings, differing strongly in the sexes. The variation is slight on the mainland; as we approach Cuba *venusta* characters appear, apparently quite independently of each other.

U. ornatrix stretchii Butler. Porto Rico; rarer on Hayti and St. Thomas. Fore wing with extended pink ground and spottings; hind wing like *ornatrix*. This is a combination of *ornatrix* and *venusta* characters, but shows a tendency to be restricted to certain stations. Intergrades are proportionately common.

U. ornatrix venusta (Dalman). Jamaica. Fore wing pink, either in the extended (typical) or restricted phase; hind wing pink with black markings restricted, typically to an extreme. In Jamaica this occurs pure, and the form with pale fore wing is not rare; the only other variation is in the width of border of the hind wing, which rarely is as wide as the narrowest *ornatrix ornatrix*. In Cuba and Santo Domingo the typical form is accompanied with intergrades to *bella*, and the phase with pale fore wing seems never to occur.

U. ornatrix bella (L.). United States and Bahamas. Fore wing yellow or orange, contrasting with the pink hind wing, black spotting extended hind wing with intermediate amount of black. Normal variation is moderate except in Cuba, where the fore wing becomes pink; but aberrant forms show the characters normal to all the other forms in isolated condition. For instance: *terminalis* seems to be *bella*, plus the restriction factors of *ornatrix*; *nova* is *bella* carrying yellow, but in its lack of differentiation between fore and hind wing resembling *venusta*. Specimens from Staten Island, N. Y., in W. T. Davis' collection show the exact combination of characters that reappear in *stretchii*, and if not mongrels with a stray *ornatrix* imported from the south, indicate an interesting parallel variation. Their normal genitalia rule out *pulchella* as a factor, though superficially they suggest it even more strongly than *ornatrix*.

The three figures will bring home the strongly marked character of the Old World species. Fig. 1 would do as well for *bella*, *stretchii* or *venusta* as for typical *ornatrix*.

Material from the following localities has been before me:

U. pulchella from Europe, India and Australia.

U. semara from Java.

U. elata (Fabr.) from Madagascar.

U. ornatrix ornatrix from Texas; Mazatlan and Jalapa, Mexico; Petuc, Honduras; Cauca Valley, Columbia; Peru; Venezuela; Tumutumari, British Guiana; Barbados; Dominica; St. Christopher; Antigua; St.

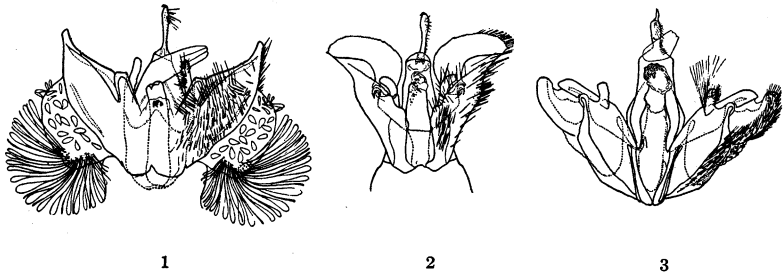


Fig. 1. *Uteltheisa ornatrix* L. Porto Rico. Cat. No. 21693.
 Fig. 2. *Uteltheisa pulchella* L. India. Cat. No. 21689.
 Fig. 3. *Uteltheisa semara* Moore. Java. Cat. No. 21706.

Thomas; eleven localities in Porto Rico; and Puerto Plata, Santo Domingo.

U. ornatrix stretchii from St. Thomas, Porto Rico and Sanchez, Santo Domingo.

U. ornatrix venusta from various points in Jamaica.

U. ornatrix in a range of forms, resembling *venusta* or between it and *bella*, from various points in Cuba and Santo Domingo.

U. ornatrix bella in long series from Massachusetts to Florida and Alabama, also from New Providence, Bahama Islands.

III.

In Hampson's Catalogue the name of *Empyreuma pugione* (as of Linnaeus) is applied to the form from Jamaica. A series of thirteen fine specimens in the Museum collection show that while the Jamaica form is a good species the Linnæan name will not fit, aside from the incorrect locality. His description reads:

S. cærulescenti-atra albopunctata, alis rubris margine postico fusco. Habitat in insula S. Thomæ, L. Spengler. Corpus magnitudine S. Filipendulæ, atrum, subcærulescens. Thorax punctis albis sparsis. Abdomen un-

trinque ordine duplici punctorum alborum. Antennæ utraque extremitate angustiores, subpectinatæ, apice rubræ. Alæ rubræ, immaculatæ, postico tantum margines nigricantes. Pedes nigri.

In the locality, white-dotted thorax and abdomen, red fore wings, and size this agrees with the *affinis* group, and contrasts strongly with the Jamaican form. So I would propose a new name for the latter:

Empyreuma anassa n. sp.

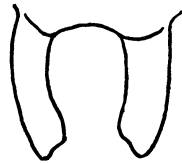
Head and thorax iridescent bronzy black; abdomen more brilliant blue-black, no white dots. Abdomen with a large shining subdorsal bluish white streak on third segment, rarely forming a band across the dorsum, followed by similar progressively smaller spots on one or more segments. Lateral dots minute or absent. Subventral spots sometimes present near base and on sixth segment. Fore wing deep purple shading into blue, black on outer margin. Extreme base of wing black. Costa above radius and base of inner margin scarlet. Veins distinctly dark. Hind wing scarlet, border broad, as in *E. affinis*. Underside scarlet and blue-black, marked as in *E. affinis*.

The much more brilliant coloring with purple-iridescent fore wings, pale silver-blue spots on the sides of the distinctly bluer abdomen, solid black thorax, and pinker hind wing is distinctive. The white subdorsal and subventral spots do not seem as safe. Expanse 47–52 mm. in the material before me. Type male near Troy, June 12, paratypes Montego Bay, Mar. 5, 10; Kingston, Mar. 31, and others with less complete data. The sexes do not seem to differ.

It should be noted that *Zygæna lichas* Fabr. does not belong to this



4



5

Fig. 4. *Empyreuma affinis* Roth. Cat. No. 21698.—Uncus.

Fig. 5. *Empyreuma anassa* Forbes. Paratype. Cat. No. 21699.—Uncus.

group at all, but is from Arabia, and to judge by its description probably a true Syntomis. The name which applies to a West Indian Form is *Sphinx lichas* Cramer, from St. Thomas, which is very likely a strict synonym of *pugione*. So far as I can find out neither *sanguinosa* Martyn nor *sanguinea* Roth. have ever been published, even by a brief description; as Hampson cites *sanguinosa* to *lichas*, they may be synonyms of *pugione*.

Summary.

- pugione* L. St. Thomas, Santo Domingo.
 = *lichas* Cr., *nec.* Fabr.
 = *lichas* Hamp., in part,
 = *sanguinosa* Martyn (?), unpublished.
 which is *sanguinea* Roth. undescribed.
affinis Roth. Cuba; Bahamas;
 race *portoricensis* Roth., Porto Rico;
 race *haytiensis* Roth., Hayti and Santo Domingo.
anassa Forbes
 = *pugione* Auct., *nec.* L.

IV.

A good series of *Lymire* from the West Indies changes the appearance of the *edwardsi* group somewhat radically. Including the two races or species described below the genus may be analyzed as follows:

- Fore wing black, thorax wholly orange,.....*metamelas*.
 Fore wing and thorax brown,
 Neck concolorous,.....*strigivenia*.
 Neck fulvous,.....*fulvicollis*.
 Fore wing gray or white, thorax concolorous,
 Fore wing gray, vertex yellow,.....*edwardsi*.
 Fore wing white, vertex black,.....*candida*.
 Fore wing gray or white, thorax concolorous behind, with yellow collar,
 Abdomen yellow below,.....*melanocephala*.
 Abdomen white below,
 Expanse 25 mm.; dorsal half fore wing shaded with gray,....*senescens*.
 Expanse 40 mm.; dorsal gray band entirely below fold,
 except near outer margin,.....*albipennis*.

L. edwardsi (Grote). A specimen from Sanchez, Santo Domingo, June 13-18, 1915, and two from El Valle, Santo Domingo, May 2-8, 1916, are exactly like the types and series in the Museum collection from Florida.

***Lymire candida* n. sp.**

Head green-black, with a few paler scales outlining the tuft on the vertex. Palpi black, the front of the second joint whitish, basal joint yellow. Thorax white, a small blackish spot in the middle just behind the collar, ventral half of prothorax and fore coxæ yellow, but shoulders and remainder of under side white. Fore and middle legs dark gray on outer side, hind legs very pale pearl gray. First three segments of abdomen with fine smoky gray hair above, the terminal half clothed with scales, peacock-blue; under side and terminal tuft of male white.

Fore wings white above, hind wings pale pearl gray, nearly transparent except toward margins; middle portion of fore wing and costa of hind wing below shaded with gray. 40 mm. Type male, Sanchez, Santo Domingo, Nov. 26, 1915; paratypes, Sanchez, June and Nov.-Dec. and San Lorenzo, Santo Domingo, June, July 10; 1915.

L. melanocephala Walker. Twelve males and a female from near Troy, Jamaica, May 12-23, agree essentially with Walker's and Hampson's descriptions. The sexes are alike, and in both the end of the abdomen is yellow, above as well as below.

L. albipennis (Herrich-Schäffer). Three males and two females from Matanzas, and a male from Tanamo, Cuba, represent this species. Hampson's figure and description differ in a few points, and may have been drawn up from rubbed specimens. The first segment of the palpus only is yellow, the second gray and white, as implied by Herrick-Schäffer. The collar has a large green-black dorsal spot, and the dorsal edge of the patagia is green-black, except on one specimen in which they are paler gray.

***Lymire senescens* n. sp.**

This dwarf form seems to represent *L. albipennis* rather than *edwardsi* or *candida*, on Porto Rico; the lack of a form of this type from Hispaniola is unexplained, but not improbably one may be discovered in this little known island.

Head blackish, shading into pale gray on occiput; palpi blackish; basal segment yellow, second segment broadly white in front, and narrowly yellow along the inner front edge. Collar, loose hair below collar and fore coxæ yellow, the rest of thorax and abdomen gray above and white below. Terminal half of abdomen with peacock-blue sheen. Abdominal tuft partly white above. Legs white, fore legs dark gray in front, the middle femora with some gray, but tibiae wholly white. Fore wings white above vein 2, light gray below, with a slight violet tint in the freshest specimens. Hind wings slightly duller gray, the basal half becoming translucent white except on the veins, as usual. Wings below mouse gray, except along costal edge of fore wing. 23-26 mm. Type and a paratype male are from Coamo Springs, Porto Rico, Jan. 6-10, 1915; another paratype male is from Naguabo, P. R., March 7-9, 1914. The female is unknown, but will probably be similar, with the abdomen wholly blackish and blue above, as in *L. albipennis* and *L. candida*.

V.

The Museum series of *Nyridela chalciope*, coming from the vicinity of the type locality, all show yellow antennæ as figured by Hübner. If the antennal character is sound they are distinct from *N. acroxantha*. On the other hand I can distinguish *N. xanthocera* only by its slightly larger average size and possibly a slight difference in genitalia which is more likely to be racial than specific.

