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RESULTS OBTAINED FROM A SEARCH FOR THE TYPE OF NOCTUA LINN., AND CONCLUSIONS AS TO TYPES OF HUEBNERIAN NOCTUID GENERA REPRESENTED IN THE NORTH AMERICAN FAUNA.

BY A. RADCLIFFE GROTE, A.M.

(*Read January 3, 1902.*)

In view of the preparation of a general Catalogue of North American Lepidoptera, I have been asked to give the types of Hübnerian Noctuid genera. It is essential that systematists state the type of the generic title they use, and their work will be lasting in proportion as its literary basis has been proved. The scientific edifice will stand when the bricks are sound. A catalogue which employs the true, historically ascertained generic types has the advantage of possessing a permanent framework, even if later on the position of the objects designated be altered. And by using correct names a great advantage is secured to collectors and to literature. In my studies of the North American Noctuids for the

past forty years, I have had occasion to investigate the subject. The results, as to the types of our genera, are given by me in 1874, in the *Bull. Buff. Soc. N. Sciences*, and in the two following years in the *Buffalo Check List;* in 1895 in the *Abh. Naturw. Verein*, Bremen, also in the pages of the *Entomologist's Record*, London, England, Vol. vi, 27 *et seq.;* in 1900 in the *Can. Entomologist*, 209; also in publications of the *Rœmer Museum* and in these PROCEEDINGS.

In the present paper I have brought together the historical evidence as to the types of certain leading generic titles, often, perhaps commonly, used in a perverted sense, or given with a wrong authority. I have also investigated the question of the use of Noctua as a generic title in the Lepidoptera. I could not have attempted this latter without the kind aid of Mr. Jno. Hartley Durrant, of Thetford, England. The type here ascertained is *pronuba*. The name Noctua is first used by Klein in 1753 for a genus of Mollusca. Linné introduced it then, in 1758, into the Lepidoptera in his combined term Phalæna Noctua. Fabricius follows with Noctua as a generic term in 1775, 1776–77, and claims the authorship. For those who reject any limitation for the application of the law of priority, its use in 1753 will prevent its being later employed in a different group of animals. It was not used in the Birds until 1809 by Savigny, a fact to which Boisduval drew attention in 1829.

In my late List (1895) of the North American Noctuids, I gave the ascertained types; what very few corrections have been found necessary are here made. The concluding portion of this List, embracing the Catocalinæ and Hypeninæ, is not yet published. The unemployed terms in the Verzeichniss of Hübner need not be considered in the American Catalogue. They may be neglected until such time when the faunæ of Europe and America be so minutely compared, that subjective opinion can seize upon the smallest character for generic differentiation. As a rule, Hübner's genera in the Verzeichniss are of mixed contents, and I believe all having present application have been noticed by me.

In conclusion, I must thank Mr. Louis B. Prout, of London, England, and Mr. J. D. Alfken, of Bremen, for bibliographical assistance.

NOCTUA.

LINNÉ, *Syst. Naturæ*, ed. x, Holmiæ (Salvii), 1758, Phalæna Noctua.

The "Phalænæ" (496 footnote) are divided into seven groups, of which the "Noctuæ"—antennis setaceis, nec pectinatis—form the second. Linné gives the foot-structure of the larva of his "Phalæna Noctua" (497 footnote), so it seems reasonable, in a selection of the type, that this should be sought among the species whose larvæ he described. These are: Phalæna Noctua strix, fagi, bucephala, humuli, dominula, fuliginosa, iacobææ, quadra (this would be, however, excluded by Linné's nota bene), pacta, pronuba, gamma (not a "possible type" from Linné's remark—Durrant *i. l.*), festucæ, meticulosa, psi, chi, aceris, umbratica, exsoleta, verbasci, brassicæ, rumicis, oxyacanthæ, oleracea, pisi, atriplicis, præcox, triplasia, pyramidea, typica, delphinii, citrago.

If we date the commencement of our nomenclature from Linné's tenth edition, the type of "Phalæna Noctua" should then be one of these. GEOFFROY makes no use whatever of Phalæna Noctua or of Noctua, simply using Phalæna with unnamed subdivisions (Durrant *i. l.*). The earliest restriction of the species of Phalæna Noctua brought to my notice is: *Poda, Ins. Mus. Græc.*, 88–91, 1761. The species there cited from Linné are: Noctua iacobææ, quadra (not a "possible type," *vide ante*), dominula, pacta (Poda, 90: this is not Linné's species, but is *nupta* Linné, therefore the name has no effect), pronuba, gamma (not a "possible type"), exclamationis (excluded, since Linné did not describe the larva), ? secalis.

Of these species iacobææ is made the type of Hipocrita Hübn., 1806, dominula of Callimorpha Latr., 1810, and there would remain *pronuba* as the type of Noctua; exclamationis being congeneric with segetum, taken as type of Agrotis Hübn., 1806, and secalis being cited with a query. This latter is the same as didyma Esp., made the type of Apamea Ochs., 1816, through Duponchel, 1829. Before following the subsequent fate of pronuba, we will examine Linné's own restriction of his term Phalæna Noctua, which has given rise to the idea that the type of Noctua falls within the limits of Schrank's genus Catocala, the type of which I have shown to be fraxini, through Hübner's restriction in the Verzeichniss. This type covers our modern use of Catocala Schrank, 1802, which should in no case be disturbed.

LINNÉ, *Mus. Ludov. Ulr. Reginæ*, Holmiæ, 1764.

In this work Linné gives the following species: Phalæna Noctua strix, punctigerata, fulvia, ornatrix, heliconia, rubricollis (removed now to Bombyx, so that this species is excluded), fraxini, pellex. It is probable, from this restriction, the idea has arisen (communicated to me in letters) that fraxini was the type of Noctua, because rubricollis and fraxini are the only two of these species included by Linné in the Fauna Svecica, 1761, as Mr. Durrant writes me. Linné now, in 1764, excludes rubricollis, thus restricting the type to fraxini. But, since fraxini was not included by Poda in 1761, "this can be at once disregarded as of no effect."

CROTCH, *Cist. Ent.*, i, 61, 1872, writes:

Noctua—N. sponsa Lamark (1801). Cuvier and Latreille (1805) concur in this, but afterward Latreille (1810) selected N. pronuba as his type. With this selection the writer would be here agreed, and it remains to be seen what has been since done with *pronuba*.

TRIPHÆNA.

1816. OCHSENH., *Schm. Eur.*, iv, 69.

Interjecta, subsequa, comes (orbona), prosequa, consequa, linogrisea, pronuba, fimbria, ianthina (ianthe, domiduca).

1816. HUEBNER, *Verzeichniss*, 221.

Interjecta, subsequa, comes, consequa, pronuba.

1829. DUPONCHEL, *Hist. Nat. Lep. Noct.*, Tom. iv, Pt. 2, 71.

Gives pronuba as the type of Triphæna. Therefore Noctua Linn., in the Lepidoptera, and Triphæna Ochs. would be synonymous, having same type. Mr. Meyrick (1895) uses Triphæna to the exclusion of this type. And this opens up the question as to the validity of the genus, which the type-seeker is not called upon to answer in the first instance. If *pronuba*, as being type of Noctua, could not be taken as type of Triphæna, then Mr. Meyrick's use of the latter term may be correct. This question does not seem necessary to answer for the North American Catalogue.

I now follow the use of *Noctua* by authors subsequent to Linné.

FABRICIUS, *Systema Entomologiæ*, Flensburgi et Lipsiæ, 1775.

In this work 122 species are enumerated under Noctua, pp. 590–619.

FABRICIUS, *Genera Insectoruu. . . . Mantissa specierum,* Chilonii.

There is no date on title-page, but the Preface is dated Kiliæ, Dec. 26, 1776. This work is not given by Staudinger and Rebel, p. xviii, but is cited for viminalis with the date 1777. Fabricius quotes it, in 1781, as "Gen. Ins. Mant." It contains only six species under Noctua, but these are all new and constitute no restriction of those given previously. They are as follows:

(1) p. 282, Noctua boleti. This is Scardia boleti, a Tineid.

(2) p. 282, Noctua virescens. This appears to be the earliest description of the North American Noctuid Chloridea virescens Westw. ex Fab. and is neglected in the Washington Catalogue, 1893.

(3) p. 283, Noctua roboris. I cannot find this citation in Standinger and Rebel. Reference is made to Roesel, I, tab. 50, and the insect there depicted may be Dryobota roboris B., Cat. I, No. 1821.

(4) p. 283, Noctua monilis. This appears to be the earliest description of the North American Noctuid Hypsoropha monilis Hübn. ex Fab., with a wrong locality, "Anglia."

(5) p. 283, Noctua lanceolata. The habitat is given as Germany. I cannot find the citation in Staudinger and Rebel.

(6) p. 284, Noctua viminalis. This is Cleoceris viminalis, referred incorrectly in the Catalogue, No. 1560, to Bombycia. The type of Bombycia Hübn., 1806, is B. or.

FABRICIUS, *Species Insectorum,* Hamburgi et Kilonii, II, 1781.

In this work 150 species are enumerated under Noctua, pp. 209–241. The six of the Gen. Ins. Mant. are included.

FABRICIUS, *Mantissa Insectorum,* Hafniæ, II, 1787.

In this work 309 species are enumerated under Noctua, pp. 135–184, and those previously described appear to be all carried forward.

In his *Genera Insectorum,* 1776, Fabricius cites "Phalæna Linn. Geoff." as equivalent to his genus Noctua, of which he evidently considers himself the author. Fabricius restricts Phalæna (p. 164, *l. c.*) to the Geometrids, using the term in a generic sense and citing Linn. Geoff. as authority. Following his own precedent he should here have applied Linné's term Geometra. Linné's "Phalænæ," 1758, is evidently employed in a comprehensive sense, embracing all the seven groups: Bombyces, Noctuæ, etc. I have

made no search after the type of Noctua, Fabricius. It is evident he took the name from Linné, whether he credit it to him or not.

OCHSENHEIMER, *Schmetterlinge Europa's*, Vol. iv, 1816.

Ochsenheimer has no genus Noctua; pronuba is included by him in his genus Triphæna, with other yellow-winged Agrotids, differing in structure. On page viii, Ochsenheimer cites by its full title the Tentamen of Hübner, and says, literally: dieses Blatt kam mir erst lange nach dem Abdrucke des dritten Bandes zu Gesichte, daher konnte ich früher nichts davon aufnehmen. Already in 1876 I have shown that Hagen misquoted Ochsenheimer (*vide Buffalo Check List* and *Can. Ent.*), who in reality borrowed generic names and ideas from Hübner's Tentamen and properly gives him credit. Later writers, who are here so greatly indebted to their predecessors, could profitably take example.

Ochsenheimer's groupings of the Noctuids must be considered as expressing his idea of their affinities, because on page ix he says that he only catalogues and describes what he could compare in nature, not relying upon descriptions or figures, and that his systematic list is at the same time the catalogue of his collection. He gives no descriptions of his genera, any more than Hübner in the Tentamen.

BOISDUVAL, *Europæorum Lepidopterorum Index Methodicus*.

Dated on title-page 1829, but the Preface is dated Sept. 30, 1828. The work has priority over Duponchel's volume, March, 1829, or Curtis, May, 1829. "Noctua mihi," p. 63, contains names of some 70 species; Boisduval cites "Agrotis et Noctua Treits." and "Agrotis et Graphiphora Ochs." as synonymous. The type of Agrotis Hübn., 1806, segetum, is included. "*Triphæna* Ochs. Treitsch.," p. 68, contains 7 species, among them pronuba, designated by Duponchel as type.

After Fabricius, the responsibility for the use of Noctua mainly rests with Boisduval. I cannot find that Hübner ever used the term in a generic sense.

BOISDUVAL, *Genera et Index Methodicus*.

Dated on title-page and in Preface 1840.

"*Triphæna* Treits. Boisd." contains 8 species, among them Duponchel's type.

Opigena Boisd., 1840, monotypic for polygona.

Chersotis Boisd., 1840, with 8 species.

"*Noctua* Treits.," sagittifera and 18 other species.

Spœlotis Boisd., 1840, for augur and 22 other species.

"*Agrotis* Ochs. Tr.," agricola and 36 other species, including *exclamationis*, designated by Duponchel in 1829 as the type of Noctua, but erroneously so, since this is taken by *Agrotis*, 1806, being congeneric with segetum. It is also excluded by Durrant as being unknown in the larval stage to Linné.

SPEYER, in the second edition of Dr. Schenckel's *Schmetterlingssammler.*

Undated, Mainz, C. G. Kunze. Has a genus "Tryphæna," as used by Ochsenheimer and Boisduval, and employs Opigena for polygona. In late editions, undated, of his popular book, "Schmetterlingskunde," Speyer continues to use *Tryphœna* (Triphæna) in Hübner's sense, and includes pronuba in its second section. These authors, therefore, regarded *Triphœna* as a distinct genus from *Agrotis*. Since I have not found in the N. Am. Noctuid fauna the precise structural equivalent of *pronuba*, it may not be necessary for the American Catalogue to use either *Triphœna* or *Noctua*. Agrotis gilvipennis *Grote*, referred by me in 1890 to *Triphœna*, belongs, I believe, having no specimen at present, to *Lampra*. It remains for the systematist to decide what species, other than *pronuba*, can be taken as type of *Triphœna*. Duponchel's type, *pronuba*, can remain, if my view that Noctua is untenable obtains.

LEDERER, *Noctuiden Europa's*, Wien, 1857.

Lederer has no genus Noctua, the species here regarded as typical being referred to one of the sections of Agrotis. Lederer divides the numerous species of Agrotis primarily upon secondary sexual characters, the male genitalia. Already, in 1874, I had proposed to divide the species into two chief groups—those species which had all the tibiæ spinose and those in which the middle and hind tibiæ alone are armed (*Bull. Buf. S. N. S.*, 11). Subsequently, in the *Canadian Entomologist*, I proposed a further addition, including the genus *Carneades*. This classification of mine gives three principal divisions for the North American species:

Front smooth, fore tibiæ unarmed: *Epilectra*, *Lampra* Hübn.
Front smooth, fore tibiæ armed: *Triphœna* O., *Agrotis* Hübn.
Front tuberculate, fore tibiæ armed: *Carneades* Grote.

Lederer makes, I believe, some structural misstatements. He gives the male antennæ of linogrisea as "pyramidal zähnig." This species is the type and sole species of *Epilectra*. Its diagnosis should read: Thoracic vestiture scaly; male antennæ simply brush-like, nearly naked; fore tibiæ unarmed; front smooth. The eyes, as in all these structures, naked. Lederer further gives agathina as having the fore tibiæ armed and triangulum unarmed, whereas the reverse appears to be the case. In depuncta the thoracic vestiture seems scaly, whereas Lederer places it in a section where this is hairy. Neither *Epilectra* or *Triphæna* (Noctua L.) need apparently affect the American Catalogue. The species referred in the "Revision" to Noctua belong to *Amathes*. Lederer's neglect of Hübner and his uncritical use of several generic names has increased the confusion, which is the more to be regretted since his structural observations are usually so valuable.

To sum up: There seems no use in disturbing Duponchel's type, *pronuba*, for Triphæna, until it is settled whether the term *Noctua* Linné can be employed. I conclude that the historically indicated type of *Phalæna Noctua* Linné is *pronuba*, and that the term *Noctua* cannot be used in the Lepidoptera because preoccupied by Klein in the Mollusca in 1753. The earliest plural form I find, which could be used, outside of Noctuæ, for the family is Apatelæ Hübner, 1806, and the family type would be Apatela aceris. The name Agrotidæ, H.-S., based on Agrotes Hübn., 1806, which latter occurs on the same page, is a more appropriate title for the whole group in Lederer's sense. Lederer himself gives no scientific title to the group. In the present case, if we exclude the term Noctua, there can be no doubt that the leading genera of the group are: Apatela, Agrotis, Hadena, Cucullia, Plusia and Catocala. Three of these belong to Schrank, 1802, and three to Hübner, 1806. Hübner's names have the preference for a family title, because he employs also the plural form, with the evident intention of using them for comprehensive groups, an intention he carries out ten years later, in 1816, in the *Verzeichniss*.

Taking the opposite conclusion, that Noctua Linn. is a valid generic title, its type being *pronuba*, then the question comes up: Is *pronuba* congeneric with *Agrotis segetum?* If so, then *Agrotis* falls before *Noctua* Linn. Meigen (1832) includes 155 species under Noctua, with Hadena, Orthosia, etc., as subgenera. His subgenus *Noctua* contains baja, candelisequa, brunnea, festiva, rhombsidea,

gothica (!), C. nigrum, triangulum, flammatra, musiva, plecta, punicea. He remarks: der Rücken hat einen Schopf. In the main this seems to be the group intended by Prof. J. B. Smith as *Noctua*, but it cannot include either pronuba or segetum. Meigen places the latter correctly under the subgenus Agrotis, but classifies *pronuba* under the distinct genus "Tryphæna" section A, which he characterizes as having the third palpal joint reduced, hardly noticeable. It does not seem as though subjective opinion would ever rest content with the reference of *pronuba* as congeneric with *segetum*, and therefore the question of the genus *Noctua* need not affect the North American Catalogue.

At the present time the study of the Noctuids in America is suffering under the evil duplication of specific names and a reckless disregard of the historically indicated types of the generic titles. In this connection may I ask how Noctua comes to be applied to the group in Prof. Smith's Revision, except by a kind of restriction? For Linné's original Phalæna Noctua contains insects belonging to several distinct families and only by some sort of literary precedent has it come to designate Owlet Moths or Noctuids. The same sort of historical research, only carried out with more exactness, reveals the types I must insist upon for certain genera. And, unless it can be shown, in any special instance, that I have erred (the study has often proved intricate), it will be clearly to the advantage of science that my results be adopted in the new N. Am. Catalogue. I now give here references I have made and the types which they reveal:

MAMESTRA.

1816. OCHSENH., *Schm. Eur.*, iv, 76.

Pisi, splendens, oleracea, suasa, aliena, abjecta, chenopodii, albicolon, brassicæ, furva, persicariæ.

1816. HUEBNER, *Verz.*, 214.

Pisi, unaminis, leucophæa. Under this restriction *pisi* became type, since Hübner's two other species are not included originally.

(March) 1829. DUPONCHEL, *Hist. Nat. Lep. Noct.*, T. iv, Pt. 2, 71.

Designates brassicæ as type, but this restriction of Mamestra is no longer possible since Hübner's action in the Verzeichniss. Hübner must have taken this generic name from Ochsenheimer,

1816; hence this part of the Verzeichniss must be of later issue, probably 1822, but at any rate earlier than Duponchel.

1874. GROTE, *Bull. Buff. S. N. Sci.*, 12.

Lists the N. Am. species and takes *pisi* as type. This accords in a general way with the modern definition of Mamestra: Hadenoid forms with hairy eyes, the non-extruded ovipositor and different larval habit separating them from Hadena (type cucubali) Schrank non Lederer (= Dianthœcia Boisd.). I list the North American species of Dianthœcia, for which name Hadena Schrank must now be substituted, and give the characters in Rev. Check List, N. Am. Noct., 1890, 13 (Bremen, Homeyer & Meyer).

HADENA.

1802. SCHRANK, *Fauna Boica*, II, 2, 158.

Refers to this genus the species of his families M. and N. These species are: typica, atriplicis, pisi, oleracea, chenopodii, præcox, xanthographa, piniperda, deaurata, referred to family M, and meticulosa, lucipara, cucubali, referred to family N. One of these twelve Noctuids must then be the type of the name of Hadena. According to modern views species 1, 2, 8, 10 and 11 are monotypic, 3–5 are Mamestrians, 6–7 Agrotids. The contents are much mixed, referable to nine genera.

1816. OCHSENH., *Schm. Eur.*, iv, 70.

Excludes all the species of Schrank's family M, but includes all of N, among his 29 species of Hadena. The mixture is now more frightful than it was at first. The three original species of Hadena—meticulosa, lucipara and cucubuli—are, however, included, and one of these three must now be the type. It is noticeable, however, although species with hairy and naked eyes are indifferently cited, that all the species of Dianthœcia are included by Ochsenheimer.

1816. HUEBNER, *Verzeichniss*, 216.

This part of the *Verzeichniss* is of later date than Ochsenheimer's volume. Hübner includes under his genus Hadena only two of Schrank's original species, typica and cucubali. The first is excluded by Ochsenheimer's first restriction in 1816, and moreover became the type of Nænia Stephens in 1829. Cucubali becomes, therefore, the type of the genus Hadena, and is to be looked upon

as the original "Trübeule." It is unnecessary, having found the type, to follow the fortunes of Hadena further. It was used improperly by Lederer for a large genus of naked-eyed species separable from Mamestra on this character.

1895. GROTE, *Ent. Record*, vi, 78.

Designates cucubali as type of Hadena, and states that *Dianthœcia* Boisduval, will probably prove synonymous.

XYLENA.

1806. HUEBNER, *Tent.*, 1.

Lythoxylea (lithoxylea) sole species and therefore type.

1816. OCHSENH., *Schm. Eur.*, iv, 85.

Vetusta, exoleta, conformis, lapidea, rizolitha, petrificata, conspicillaris, patris, spinifera, scolopacina, rurea, hepatica, polyodon, lateritia, lithoxylea, petroriza, pulla, cassinea, nubeculosa, pinastri (scabriuscula), rectilinea, ramosa, lithoriza, hyperici, perspicillaris, platyptera, antyrrhini, linariæ, opalina, delphinii. Ochsenheimer quotes Hübner and spells the genus as he does, Xylena. This is the worst of Ochsenheimer's mixtures and, while enlarging Hübner's genus, the beginning of all subsequent confusion in applying this generic title. This abuse is still being perpetuated, although I gave again the type in 1876. Later writers than Ochsenheimer take out the Lithophanoid forms (Fam. A in part, petrificata, etc.), and use for them a genus "Xylina Ochs. or Tr.," whereas Ochsenheimer has no generic term so spelled. They then reject the Hadenoid forms (Fam. B in part), which include Hübner's type lithoxy, lea, instead of the reverse. Hübner himself, in the *Verzeichniss*- refers lithoxylea to the same group as petrificata, and the truth seems to be that, perhaps up to Stephens, the generic types I now give to Xylena and Lithophane were thought congeneric or nearly allied. The genus Xylophasia Stephens is a synonym of Xylena Hübner, having the same type.

(1828) 1829. BOISD., *Eur. Lep. Ind. Meth.*, 86.

Cites "Xylina Tr. and Xylena Ochs.," and suppresses Ochsenheimer's reference to Hübner for the term.

(March) 1829. DUPONCHEL, *Hist. Nat. Lep.*, iv, Pt. 2, 72.

Gives vetusta as type, but this is impossible.

1876. GROTE, *Buff. Check List Noct.*, 37.

Restores Hübner's type and spelling, and gives Hadena (Lederer nec Schrank) as identical. The type of Schrank's genus was not then ascertained.

I show, in 1874, that the modern genus "Xylina" must be called Lithophane Hübn., 1816, with the type socia (petrificata)—a far more appropriate name.

The American species referred to Hadena, Lederer nec Schrank, should be catalogued under the following genera: Xylena Hübn. (=Xylophasia Steph.), type lithoxylea; Helioscota Grote, type miselioides; Oligia Hübn. (nec Grote, Smith), type strigilis; Pseudanarta Grote, type flava (crocea); Monodes Guen. (=Oligia Auct. nec Hübn.), type nucicolor (paginata). A very good notice of the species of Monodes will be found in *Entom. Am.*, Vol. v, p. 145, under the name Oligia. It may be said of all these genera, what is there said of Monodes, that they are not "strongly characterized." They have in common naked eyes, unarmed tibiæ, smooth clypeus and hadeniform cut of wing. Xylena may have a strong character in the thoracic shield of the larva. The species belonging to these genera vary from being robust, hairy and tufted down to slighter, scaly and smoother forms. To Xylena belong species like lignicolor, auranticolor, genialis, cristata, vulgaris, verbascoides, cuculliiformis, hulsti, vultuosa, sputatrix (I do not acknowledge this to be Walker's dubitans), devastatrix, occidens, arctica, violacea, Bridghami, apamiformis, lateritia, suffusea, remissa; to Helioscota: miselioides, marina, chlorostigma, mactata, modica, diversicolor. From want of space and material I do not carry these references further here.

APAMEA.

I proposed at one time to take Ochsenheimer's nictitans as type of Apamea, it is his first species; this nictitans is not the Gortyna nictitans L. of Lederer, but is nictitans Esp., a variety of secalis L.=didyma Esp.=oculea Guen. (*Cat. Staud. and Rebel*, p. 175). My reference was correct, for this species had become type of Apamea through Duponchel in 1829. The similarity of the name led me, however, to mistake Ochsenheimer's species for nictitans Bkh. (given by Lederer as of Linné) =chrysographa Hübn. (*Cat. Staud. and Rebel*, p. 186), which latter is the type of Hydrœcia Guen., as shown by me in these pages and elsewhere. It is

probable we have N. Am. species congeneric with didyma (secalis L.), but at this writing I cannot indicate them. Lederer's restriction of Apamea to testacea, which I followed in 1895, should not be accepted; this is the true type of Luperina Boisd. (see Grote, *Can. Ent.*, 1900, 211). Boisduval, in 1829, refers both nictitans (chrysographa) and nictitans (didyma) to Apamea.

PSEUDANARTA.

1878. GROTE, *Bull. U. S. Geol. Surv.*, 178.

Crocea (flava), sole species given and therefore type.

1882. GROTE, *New Check List*, New York, 27.

Flava, var. crocea, singula, flavidens, aurea. The name, without citation, is credited to Hy. Edwards, under the mistaken idea, derived from correspondence, this author had used it. *Pseudanarta* was originally proposed by Grote in letters to Hy. Edwards for this author's *Anarta crocea.*

1889. J. B. SMITH, *Ent. Am.*, v, 175.

Falcata, aurea, flava (crocea), singula, flavidens. The genus is credited to Hy. Edwards and the citation: "Proc. Cal. Ac. Sci., Vol. 6, p. 133, 1875," is supplied. But this page contains the original description of *Anarta crocea*, and the name Pseudanarta does not occur in any of the communications of Hy. Edwards to the California Academy: "Pacific Coast Lepidoptera, Nos. 1 to 22," all published. This erroneous citation is twice repeated in the Washington Catalogue, 148, 1893.

1895. GROTE, *Abh. Naturw. Ver. Bremen*, xiv, 37.

Flava, var. crocea, singula, flavidens. The genus is limited to these three species; falcata and aurea are excluded, owing to Prof. J. B. Smith's remark on their tibial structure in 1893.

COPANARTA.

1895. GROTE, *Abh. Naturw. Ver. Bremen*, xiv, 70.

Aurea, falcata, aterrima; aurea specified as type.

PLUSIA.

1806. HUEBNER, *Tent.*, 2.

Chrysitis, sole species and therefore type. This name is erroneously given to Ochsenheimer, who however cites Hübner's Tenta-

men and includes his type. Lederer in 1857 cites Plusia Fabr., but I can find no such genus in Fabricius and the name should be restored to Hübner. Chrysoptera Latr., 1825, is said to be preoccupied. It is used by Meigen in 1832 for concha, deaurata and moneta alone.

The names and types of the subgenera of Plusia are given by me in these PROCEEDINGS, 417 (1895). Typical N. Am. species of Plusia are: derea, dereoides, balluca, metallica (lenzi, scapularis).

GRAPHIPHORA.

1806. HUEBNER, *Tent.*, 1.

Gothica, sole species and therefore type.

1816. OCHSENH., *Schm. Eur.*, iv, 68.

Ravida and sixteen other species belonging to Agrotis in sensu Lederer, excluding Hübner's type, though taking the name from Tentamen. The confusion now commences in European literature. The genus is used for Agrotidians, with which gothica was originally held as allied, until the type is made also the type of Tæniocampa, Guenée, which must fall.

1816. HUEBNER, *Verzeichniss*, 220.

Has no genus, but a Stirps Graphiphoræ, which comprises numerous genera, mostly of Agrotidians, among them Episema, which he takes from Ochsenheimer, including gothica. No examination had been made then of the structure of the eyes and legs; pattern and size seemed at that time to warrant the juxtaposition of Tæniocampids and Agrotidians (still difficult to separate, *e. g.*, Pachnobia and Metalepsis). But the original sense of Graphiphora must be restored. Boisduval, in 1829, refers "Graphiphora Ochs." as a synonym of Noctua and Agrotis, and includes its type gothica (*l. c.*, 67) as structurally identical. This proves the accuracy of the statement given above as to the views prevalent at the beginning of the last century.

1875–76. GROTE, *Buffalo Check List*, 13, 37.

Gives the North American species, referred to Tæniocampa, to Graphiphora, and designates gothica as type. Repeats this in 1895, *Entom. Record*, 29, and last Check List, *Abh. Brem. Nat. Ver.*, xiv, and now "finally" insists.

PROC. AMER. PHILOS. SOC. XLI. 168. B. PRINTED MARCH 18, 1902.

XANTHIA.

1806. HUEBNER, *Tentamen*, 1.

Fulvago (puleacea), sole species and therefore type.

1816. OCHSENHEIMER, *Schm. Eur.*, iv, 82.

Luteago and sixteen other species. Cites Hübner, but includes his type under Cosmia. The similar endings of the names of the yellow autumnal species, in *ago*, may have helped to increase the confusion in their application which prevails in early European literature. Hübner's erroneous use of "fulvago" may have led to his generic title being misapplied. Species of Citria and Orthosia are constantly referred in America to Xanthia, which term should be kept in the North American Catalogue for paleacea alone, specimens of which I described under the name of infumata, not knowing the European species, now believed to be identical with our own. Enargia Hübn. Verz. has paleacea also for type and falls before Xanthia.

COSMIA.

1806. HUEBNER, *Tentamen*, 1.

Affinis, sole species and therefore type.

1816. OCHSENH., *Schm. Eur.*, iv, 84.

Fulvago (W. V. Hübner = paleacea), gilvago, abluta, trapezina, diffinis, affinis and pyralina. Cites Hübner's Tentamen and includes his type of Cosmia. The genus should be restored to Hübner, but has no place in our American Catalogues. Ochsenheimer corrects Hübner's erroneous application of "fulvago."

AMPHIPYRA.

1816. OCHSENH., *Schm. Eur.*, 70.

Tragopoginis, tetra, livida, cinnamomea, pyramidea, perflua, spectrum.

1829. BOISD., *Eur. Lep. Index Meth.*, 68.

Uses it for the same species. The first six species belonged since 1806 to Pyrophyla (r. Pyrophila), and the type of Amphipyra is spectrum. The genus is not represented in America. Our species belong to Pyrophyla Hübn., 1806, type pyramidea.

ACONTIA.

1816. OCHSENH., *Schm. Eur.*, iv, 91.

Malvæ, aprica, caloris, titania, solaris, luctuosa.

1816. HUEBNER, *Verzeichniss*, 257.

Malvæ, sole species and henceforth the type.

1895. GROTE, *Entom. Record*, 79.

Designates malvæ as type through Hübner's restriction. This part of Hübner's *Verzeichniss* is of later issue than Ochsenheimer's volume, from which Hübner takes such genera as *Acronicta*, *Mamestra*, *Triphæna*, etc. The genus Acontia should not be used by the American Catalogue, as it is confined to Europe. Our species belong to *Tarache*.

TARACHE.

1816. HUEBNER, *Verzeichniss*, 261.

Caloris (caffraria), solaris, insolatrix (ined.), aprica, opalina.

1874. GROTE, *Bull. B. S. N. S.*, 36.

Designates aprica as type.

ERASTRIA.

1806. HUEBNER, *Tentamen*, 2.

Amataria, sole species and therefore type. This is a genus of Geometrids and the name is erroneously applied by Ochsenheimer to a genus of Noctuids. Its use should be avoided by every careful and unprejudiced person in the Noctuids for this very good reason.

EUSTROTIA.

1816. HUEBNER, *Verzeichniss*, 253.

Unca, sole species and therefore type. The North American Noctuids referred to Erastria belong to this genus, which is used in the Catalogue of 1874, *Bull. Buff. S. N. S.*, 37, and subsequently. The change back to Erastria in the Washington Catalogue is inexcusable.

EUCLIDIA.

1806. HUEBNER, *Tentamen*, 2.

Glyphica, sole species and therefore type.

1816. OCHSENHEIMER, *Schm. Eur.*, iv, 96.

Monogramma, glyphica, triquetra, mi. Cites Hübner's *Tentamen* for name and includes his type. Ochsenheimer gives no generic description, and yet he is constantly cited as author. Hübner's property should be restored to him.

LITOGNATHA.

1873. GROTE, *Bull. Buff. Soc. N. S.*, 85.

Nubilifascia, sole species and therefore type.

1895. GROTE, *Proc. Am. Phil. Soc.*, 429.

Nubilifascia, cribrumalis. This generic name is referred in the Washington Catalogue to Hormisa Walker, but Walker's original specimen over this label we saw in 1867, and it was a specimen of Epizeuxis æmula. This determination is supported by the text of Walker's description of the genus Hormisa, which agrees with Epizeuxis and absolutely contradicts Litognatha. Litognatha should be restored.

ZANCLOGNATHA.

1857. LEDERER, *Noct. Eur.*, 211.

Tarsiplumalis, tarsicrinalis and others.

1895. GROTE, *Proc. Am. Phil. Soc.*, 424.

Tarsiplumalis, tarsipennalis and others. Tarsiplumalis may be taken as type, as stated in Buffalo Bulletin, 1874.

ROEMER MUSEUM, November, 1901.

A MODERN DELAWARE TALE.

BY J. DYNELEY PRINCE, PH.D.

(*Read January 3, 1902.*)

The chief differences between the two ancient dialects of the Lenâpe, viz., the Unami-Unalachtigo and the Minsi, have been pointed out by the late Dr. Brinton (*The Lenâpe and their Legends*, pp. 91ff.). Both these varieties of Delaware speech are still in use in a modern form—the Unami-Unalachtigo by the descendants of the Delawares who now occupy lands in Indian Territory, in the