

sent to Dr. H. G. Dyar as possibly *A. vittata*, but his opinion was that they were neither "true *vittata*" nor "true *phalerata*."

From *naïs* this form is separated easily, notwithstanding the extraordinary resemblance of some of the aberrative forms of both sexes, by the costal black line of the former.

The great majority of *A. phalerata* have a broad and well-developed $\geq$ mark reaching from costal edge to inner margin and the normal longitudinal stripes are not subject to notable change. In three broods of this southern form there were not a dozen with a $\geq$ mark and then it was of slender design, never reaching the costa, but the upper arm forming a hook.

Arctia vittata Fabr., is a more robust moth. The abdomen of the female is nearly black, the hind wings red or yellow with a broad marginal band. The males of "*vittata*" have an incomplete $\geq$ mark, rarely reaching the costa, the marginal band on secondaries is mostly broken up into spots. A singular (perhaps atavistic) aberrative form of *vittata* occurred throughout a whole brood (Long Island); all the males having a complete, diaphanous, marginal band on secondaries, destitute of scales, only edged above with dull blackish.

EXPLANATION OF PLATE XI.

Arctia radians WALKER.

Numbers 1 to 16 include all the varieties of the males.

1, 2, 3 are individuals of the typical form. 4 to 11 show the gradual breaking up of the marginal band and development of longitudinal stripes.

12 to 16 are the rare forms with most complete $\geq$ mark.

16, with almost immaculate hind wings showing the incapacity to complete the $\geq$ mark; rather tending to widen the longitudinal bands.

17, is the normal female form. (The specimen from which this figure has been taken does not have a black costa.) 18, 19, 20 and 21 are examples deviating from the normal forms.

NOTES ON NORTH AMERICAN TINEINA.

(PLATE XII.)

BY AUGUST BUSCK,

U. S. Department of Agriculture, Washington, D. C.

Helice Chambers.

Chambers characterized this genus (Can. Ent., V, 188) with *palidochrella* Chambers, as type, thus:

This genus and the species on which I have founded it approaches *Trypanisma* Clemens, *Gelechia difficilisella* and more remotely *Agnippe* and *Evippe*. Wings horizontal in repose, primaries lanceolate; the costal attains the margin before the middle; the subcostal sends to the costal margin two branches before the end of the cell, one from the end, another behind it and becomes furcate before the tip, delivering a branch to each margin. Cell narrow, closed by a short oblique and faint discal vein. The median sends a branch to the dorsal margin and becomes furcate behind it. Submedian furcate at base. Secondaries narrower than the primaries, apex long and sharply pointed with the posterior margin suddenly and deeply incised beneath it and the anal angle rounded; costa emarginate from the middle to the apex. The costal vein attains the margin about the middle. Subcostal straight, attaining the margin just before the tip. Median dividing into three branches. Cell unclosed. * * * Tongue scaled, longer than the anterior coxæ. Maxillary palpi small, but distinct under the lens; labial palpi long, slender, overarching the vertex, with the third joint almost acicular and longer than the two others united; the second joint is laterally slightly compressed and slightly thickened towards its apex. Antennæ simple, about two thirds as long as the wings. Head and face smooth. Vertex short and face scarcely retreating."

This characterization would necessarily, as Chambers says, make *Helice* a Gelechiid genus.

Several times later Chambers compared *Helice* with the narrow-winged Gelechiid genera *Trypanisma* Clemens, *Evippe* Chambers and *Agnippe* Chambers, and in one place (Can. Ent., V, 230) he emphasized the family character in separating it from *Eidothea* Chambers, stating that "the hind wing is even more excised beneath the tip" than in that genus. Again (Can. Ent., VII, 106) he says:

"*Sinoë* and *Helice* and *Agnippe* resemble *Laverna* in having raised tufts of scales on their wings" and (Can. Ent., IX, 231-232).* "This species (*Helice pallidochrella*) will be considered—and is—a *Gelechia* in the wide sense—the sense in which it is a convenient receptacle for every species that cannot be better disposed of. And as I had previously described a very different species as *G. pallidochrella*.† I suggest for this species the specific name *gleditschiella*."‡

Thus, far in the definition and comprehension of this genus, Chambers was not only right, but unusually clear and full in his characterization.

* This reference was evidently overlooked by Lord Walsingham when he wrote his article in 1882. (Trans. Amer. Ent. Soc., pp. 188-189.)

† This species, described as *Depressaria pallidochrella* (Can. Ent., IV, 126) and mentioned (l. c., 129 and 147; Bull. Geo. Surv., IV, 138; Smith's List Lep. Bor. Amer., No. 5272) is an entirely different thing and belongs in the genus *Gnorimoschema* Busck. (Proc. U. S. Nat. Mus., XXV, 1902.)

‡ This change of name is inadmissible when *Helice* is retained as a good genus and the type must be known under the original name *pallidochrella*.

But the trouble came when he sent out his "types." Then he mixed up his Gelechiid species with a most singularly similar Elachistid.

One of these latter, sent to Miss Murtfeldt as *Helice pallidochrella*, was before Lord Walsingham, when he wrote in 1882 (Trans. Am. Ent. Soc., X, 188):*

"This is evidently the species described by Mr. Chambers under the above name (*Helice pallidochrella*), but some mistake has undoubtedly been made in the original description. Chambers writes of his genus *Helice* (Can. Ent., V, 188) 'secondaries narrower than the primaries; apex long and sharply pointed, with the posterior margin suddenly and deeply incised beneath it and the anal angle rounded.' In Can. Ent., VII, 106, Mr. Chambers states that '*Sinož*, *Helice* and *Agnippe* resemble *Laverna* in having raised tufts of scales on their wings.'

The specimen before me (Mr. Chambers' own specimen from Miss Murtfeldt's collection), has the hind wing narrow and evenly attenuated from near the base, not incised below the apex and it has no signs of any raised tufts of scales on the forewings. Mr. Chambers probably placed it in the genus *Gelechia* under the name of *Gelechia gleditschiella* (Index, p. 144), having regard to the description which he had given of the form of the hind wings; but lacking this character it is not a true *Gelechia*."

Another of these supposed types was sent to the U. S. National Museum, where it is now supplied with Chambers' handwritten label and the regular red museum type label No. 454. This is like the specimen which Lord Walsingham had before him, has evenly attenuated hind wings, not excised below apex and it has no trace of raised scale tufts on the fore wing. It is an Elachistid.

Two other specimens, received by Miss Murtfeldt from Chambers, and now in Professor Fernald's collection, are also this same Elachistid, wrongly labeled *Helice pallidochrella*, and one other such Elachistid is in the National Museum, determined by Lord Walsingham and labeled in his handwriting: *Helice pallidochrella*.

With all this evidence and with the actual acknowledgement of fault by Chambers himself in his reply to Lord Walsingham † I had made up my mind that Lord Walsingham was right in saying that

* This specimen with Lord Walsingham's blue label, No. 727, is now in the collection of Professor Fernald, where—through his kindness—I had the opportunity to examine it carefully in May, 1900.

† "The defect in the description of the hind wing, to which Lord Walsingham calls attention, may exist and may have been caused (as I have known similar mistakes in other cases) by a slight fold or wrinkle under the tip. I have an indistinct recollection that I observed something of this in this species" (Chambers, Can. Ent., XV, 95, 1883).

Chambers had made a mistake in his original description, the more so as not only does the specific description of *Helice pallidochrella* fit those "types," but even the description of the venation might be construed so as to fit very nearly, as will be seen by comparing it with my delineation, made from the U. S. National Museum type no. 454 (Pl. XII, Fig. 2).

Happily I had the opportunity in May, 1900, to go to the Museum of Comparative Zoölogy at Cambridge, Mass., for the purpose of studying Chambers' and Zeller's types. There I found twenty-four specimens, labeled in Chambers' handwriting: *Helice pallidochrella*.

Of these, which all seem to be alike superficially, fifteen are true Gelechiidæ and unquestionably represent Chambers' *Helice pallidochrella*. The others are the same as the "types" in the United States National Museum and Professor Fernald's (Miss Murtfeldt's) collection and represent an undescribed Elachistid species, forming a new genus, erected for it below.

The genus *Helice* then must be retained as a good genus in the family Gelechiidæ with the following interesting venation: Fore wing: 11 veins, 5 absent, 7 and 8 out of 6, 3 and 4 stalked. Hind wing under I, apex produced, termen emarginate, anal angle rounded, 6 veins, 5 and 6 absent, 3 and 4 stalked. (Plate XII, Fig. 1.)

True types of this are found only in the Cambridge Museum and in the United States National Museum (type no. 6257), which has obtained one through the courtesy of Mr. Samuel Henshaw. The supposed types in Professor Fernald's collection and in Cambridge may be regarded as cotypes of a new genus and species, *Cacelice permolestella*, described below, the type of which is in the United States National Museum (No. 454), hitherto supposed to represent Chambers' species.

An examination of the figures 1 and 2 on Plate XII will explain the very natural confusion of these strangely similar insects, belonging to two different families. A similarity, so marked as to tempt the student to infer one being a development from or another sex of the other, while they in reality have an entirely different origin. The similarity may be a result of common surroundings, food plants, enemies, or other more subtle reasons.

Nothing definitely is known of the larval history of these two species, but Chambers found them on honey locust (*Gleditschia tri-canthos*) and supposed that his species fed in some way on this tree,

possibly in the seed pods. It is likely that both species will be found to have a common food plant.

In J. B. Smith's list of Lepidoptera of Boreal America, Professor Riley placed *pallidochrella* as a synonym of *glandiferella* Zeller = *sella* Chambers (No. 5302) at the same time repeating *pallidochrella* as a separate species under No. 5439.

There is no apparent reason for this synonymy from the entirely different descriptions, the less so, as Chambers, when he pronounced *sella* Chambers a synonym of *glandiferella* Zeller (Can. Ent., IX, 14) right below gives some notes on *pallidochrella*, without mentioning the resemblance. That there is a slight general resemblance is true, but that is all, and the two are generically different.

This is also remarked upon by Lord Walsingham (Proc. Zoo. Soc. Lond., 72, 1897), and there he adds:

"Although it is obvious that *pallidochrella* is closely allied to *glandiferella*, I am not quite convinced, that it is synonymous with it."

It is evident that Lord Walsingham must have had some additional knowledge of *Helice* Chambers at this time, as the statement is in direct contradiction to his earlier opinion quoted above.

Cacelice, gen. nov. (Elachistidæ.)

Type: *permolestella* Busck. Antennæ four-fifths, rather stout, simple; labial palpi long, smooth, recurved, pointed, terminal joint as long as second.

Fore wings elongate ovate, pointed; 10 veins, 3 and 4 stalked, 5 absent, 6 and 7 stalked, embracing apex, 8 absent, 16 furcate at base. Hind wings narrow, lanceolate, pointed; 6 veins, 5 and 6 absent, cell open between 7 and the stalked veins 3 and 4, 7 subobsolete towards base. Posterior tibiæ with sparse, long hairs above.

Cacelice permolestella, sp. nov. (Pl. XII, Fig. 2.)

Helice pallidochrella WALSINGHAM, Trans. Amer. Ent. Soc. Phil., X, 188, 1882.

Antennæ dark purplish-brown, nearly black, with a longitudinal line of silvery white dots in front, one on each joint; first joint long purplish-white.* Labial palpi purplish-white, dusted with dark fuscous. Head, thorax and fore wings light reddish-gray, minutely dusted with dark purplish fuscous scales. Near base is an inconspicuous, small, dark, bronzy brown, costal dot.† At basal third is a large transverse dark bronzy-brown costal spot, reaching down across the fold;‡ at about the apical third is a smaller concolorous costal spot and the tip of the wing has the dark scales collected into ill-defined transverse spots or streaks. Cilia reddish-gray,

* This same ornamentation is found in *Helice pallidochrella*.

† Also found in *Helice pallidochrella*, but not mentioned by Chambers

‡ This spot is narrower and more pointed than the corresponding costal spot in *Helice pallidochrella*.

dusted with dark scales. Hind wings shining, dark fuscous; cilia a shade lighter. Legs silvery, strongly shaded on the outside with dark purple. Alar expanse 10 mm.*

Habitat: Kentucky. Collector, V. T. Chambers. United States National Museum type No. 454, formerly supposed to be the type of *Helice pallidochrella*.

✓ **Eumeyrickia**, gen. nov. (Cecophoridæ.) (Pl. XII, Fig. 3).

Type: *Chætochilus trimaculellus* Fitch.

Antennæ a little more than half as long as fore wings, evenly ciliated, 1, throughout except the basal joint, which is long and smooth, without pecten. Labial palpi as in the genus *Ypsolophus*, second joint with a long dense projecting pointed tuft beneath, terminal joint erect, slender, pointed, markedly longer than second joint. Head somewhat loosely scaled. Fore wings three times as long as broad, apex pointed, termen oblique; 12 veins, 7 and 8 stalked, 7 to termen just below apex, 2 from before angle of cell. Hind wings ovate, nearly 1; venation typically cecophorid, 8 veins: 3 and 4 connate, 6 and 7 parallel. Hind tibiæ rough haired. Both males and females winged; female with protruding horny ovipositor.

This interesting genus is named in honor of Dr. Edward Meyrick, of England, the authority on the Cecophoridæ, who has most liberally extended his help to the author through a long series of highly prized letters.

I sent him a specimen and delineation of the present species, asking him whether it might be placed in any of his numerous Australian cecophorid genera. In his answer he says:

"I have no hesitation in regarding this as a new genus of Cecophoridæ. It is allied, I think, generally to the *Pleurota* group and in my tabulation would come near *Atheropla*, but I think it not really very near to any genus that I know; from those with most similar characters it differs by the absence of antennal pecten and also particularly by the terminal joint of palpi being longer than the second, which is quite exceptional in the Cecophoridæ."

Eumeyrickia trimaculella Fitch.

Chætochilus trimaculella FITCH, Rep. Nox. Ins., II, 233, 1856.

Ypsolophus trimaculellus CHAMBERS, Bull. Geo. Surv., IV, 167, 1878; RILEY, Smith, List Lep. Bor. Am., No. 5532, 1891.

Anarsia? albapulvella CHAMBERS, Can. Ent., VII, 147, 1875.

Chimabache? haustellat WALSINGHAM, Trans. Am. Ent. Soc. Phila., X, 173, 1882; RILEY, Smith List Lep. Bor. Am., No. 5209, 1891.

Fortunately I have been able to study the types of all three authors. Fitch's type in good condition and with his own large label attached is in the collection of the U. S. National Museum. Cham-

* *Helice pallidochrella* is slightly larger, 10.5-11 mm; Chambers' measure, 1/3 inch, is too small.

bers' unique type was deposited in the Belanger collection, Université Laval, Quebec, Canada, and through the kindness of the present curator, Rev. Dr. C. E. Dionne, I secured last year this together with all others of Chambers' types found there, with his original labels attached. It is now in the U. S. National Museum under the type number 5768. Finally I have studied Lord Walsingham's type in the collection of Professor Fernald and through his kindness secured for the National Museum one specimen, identical with the type and from the same locality, Orono, Maine.

Without these good opportunities I hardly should have been able to make out this synonymy, but once it is known, it is easily substantiated by the three careful descriptions.

Besides the types I have seen other specimens from the following localities: Pennsylvania, New York, Maine and eastern Canada.

Babaiaxa, gen. nov. (Pl. XII, Fig. 4.)

Type: *Psecadia deliella* Fernald.

Antennæ three fourths, simple, slightly pubescent, basal joint without pecten. Labial palpi slender, smooth, curved, reaching vertex, terminal joint pointed, half as long as second joint. Tongue stout, basal part scaled; face, head and thorax smooth. Fore wings elongate, three times as long as broad, costal and dorsal edges nearly straight, parallel, apex obtusely pointed. 12 veins, 7 and 8 stalked to costa, rest separate, 1b furcate at base. Hind wings as broad as fore wings, elongate-ovate; 8 veins, vein 8 is connected at the end of the cell with 7 by an oblique cross vein and basal part of vein 7 is obsolete, so that the upper side of the cell is formed not as usual by the subcostal vein (7), but by the costal vein (8), and the cell thus actually emits 7 veins; veins 7 and 6 are parallel, 5 nearest to 6, 3 and 4 connate, internal veins [folds] to below 7 and to 6. Hind tibiae rough-haired above, middle and terminal spurs well developed.

The very peculiar venation of the hind wing is, so far as I know, unique in the Tineina, to which group this genus surely belongs, and does not conform with the present definitions of any of the families, except it be the Gelechiidæ.

I am quite uncertain about the true relationship of this form and record its characters mainly in order to learn the opinions of other workers.

Babaiaxa deliella Fernald.

Psecadia deliella FERNALD, Can. Ent., XXIII, 29, 1891; RILEY, Smith, List Lep. Bor. Amer., No. 5235, 1891.

I have examined the type of this striking species in Professor Fernald's collection. The U. S. National Museum possesses speci-

men, determined by Professor Fernald and also fine specimens, collected by Mr. E. A. Schwarz.

Habitat: Texas.

Blastobasis Zeller.

As remarked by Lord Walsingham (Proc. Zoo. Soc. Lond., 91, 1897) the species placed in this genus in American lists do not conform with the type species (*phycidella* Zeller) in neuration.

There is one exception to this, namely *sciaphiella* Zeller, which together with *Blastobasis guilandinæ* Busck (Proc. U. S. Nat. Museum, XXXIII, 234, Plate I, Fig. 9, 1900), are the species at present described from this continent, which properly belong in *Blastobasis*.

I have, however, other bred species of *Blastobasis*; but as Lord Walsingham has a monograph of this group nearly ready, I shall not at present describe them. Until this monograph appears, the other supposed species of *Blastobasis* may temporarily be placed in Clemens's genus *Holcocera*, to which most of the species truly belong.

To the latter genus should also be transferred the "fringed-wing applebud moth," *Nothris? maligemmella* Murtfeldt (Mo. Agr. Exp. Sta. Bull., No. 42, 1898) a type of which (No. 4017), received from Mr. J. M. Stedman, is in the National Museum. It is possible that this on further study will be found synonymous with one of the previously described species. Fig. 5 on Plate XII is a delineation of the venation of this species made from the type.

Martyringa, gen nov. (Yponomeutidæ.) (Plate XII, Fig. 6.)

Type: *Egoconia latipennis* Walsingham.

Antennæ stout, compressed, with the lower edge serrate. Labial palpi long, recurved; second joint slightly thickened and slightly rough beneath; terminal joint as long as second, slender pointed. Maxillary palpi small, porrected. Tongue well developed, scaled in its entire length. Face, head and thorax smooth. Fore wings elongated, more than three times as long as broad, apex rounded; 11 veins, 2 and 3 stalked, 5 absent, 8 and 9 out of 7 to termen just below apex. Hind wings as broad as fore wings, 7 veins; 4 absent, 3 and 5 connate, 6 and 7 parallel. Posterior tibiæ smooth.

This striking venation alone easily separates this genus from any described American one and I am unable to find any exotic genus like it. Among the American genera it comes nearest, though not very near, *Yponomeuta* Latreille.

Martyringa latipennis Walsingham.

Egoconia latipennis WALSINGHAM, Trans. Amer. Ent. Soc. Phila., X, 190, 1882; RILEY, Smith, List Lep. Bor. Am., No. 5578, 1891.

This species was described from a single specimen in poor condition in the collection of the Philadelphia Academy of Nat. Sciences, which I have examined.

Mr. J. H. Durrant writes me that Lord Walsingham now has two specimens in his collection from North Carolina (Morrison).

In the U. S. National Museum is one good specimen, collected by Mr. F. C. Pratt at Travilah, Md., in July.

***Plutella* (?) *multimaculella* Chambers.** (Plate XII, Fig. 8.)

Gelechia? *multimaculella* CHAMBERS, Bull. U. S. Geo. Surv., IV, 89, 1878; HAGEN, Papilio, IV, 99, 1884; RILEY, Smith List, Lep. Bor. Am., No. 5414, 1891.

This insect is not a *Plutella* and is only placed temporarily in this genus. It will form a new genus in the Yponomeutidæ, but I prefer to obtain more ample material before establishing such.

My object in treating this and some of the other species mentioned in this paper, at this time is merely to get rid of them from the Gelechiidæ and place them at least in the family to which they belong, until special study of that family can dispose of them finally.

This in order that they can be included in Dr. Dyar's forthcoming Catalogue of North American Lepidoptera.

Gelechia? *multimaculella* Chambers, has the following venation: Fore wings 11 veins; one of the dorsal veins (5?) absent; 8 and 9 out of 7, 7 to costa.

Hind wings 7 veins, 4 absent 5 and 6 stalked, 7 parallel with 6.

The labial palpi are smooth, both joints broad and flattened, terminal joint not pointed, shorter than second joint and erect.

***Mompha* *sexnotella* Chambers.** (Plate XII, Fig. 7.)

Gelechia *sexnotella* CHAMBERS, Bull. U. S. Geol. Surv., IV, 88, 1878; HAGEN, Papilio, IV, 99, 1884; RILEY, Smith, List Lep. Bor. Am., No. 5482, 1891.

The unique type of this species is found in good condition and with Chambers' handwritten label on the pin in the Cambridge Museum of Comparative Zoölogy, where I studied it carefully in 1900.

It agrees well with Chambers' specific description, but it is an Elachistid and may provisionally at least be included in *Mompha* Hübner, though it differs from Meyrick's definition of this genus in having veins 6 and 7 of hind wings stalked.

In the National Museum is a series of this species, bred from galls on *Trichostema dichotomum* from Georgiana, Florida. Similar galls

on the same plant are recorded in the notes of the Insectary, U. S. Department of Agriculture, from Virginia and Pennsylvania.

Cosmoptryx floridanella *Beutenmüller*.

C. nigrapunctella BUSCK.

Since describing this species I have seen several other specimens in various states of preservation and have more carefully examined Mr. Beutenmüller's type, United States National Museum type No. 496.

There is no doubt that it is the same species as *nigrapunctella*, the type of which is a perfect, fresh and glossy specimen, while *floridanella* was described from a flown and faded one.

Marmara *Clemens*.

While correcting my own mistakes I take the opportunity to call attention to a fault in my delineation of the wing of this genus (Proc. U. S. Nat. Mus., XXIII, Plate 1, Fig. 14, 1900), which through some unexplainable carelessness shows one costal vein more than it should, and more than my explanation of the venation on page 246 would indicate. This latter is correct.

Proleucoptera, gen. nov. (Tineidæ.)

Type: Leucoptera smilaciella Busck.

In the description of the above species (Journ. New York Ent. Soc., VIII, 244-246, 1900), I pointed out that its wing venation does not agree with that of the genus *Leucoptera*, but that it was included in this genus on account of its evident close relation to it in general characters and its identical life mode, larva and cocoon.

Dr. Edward Meyrick, to whom I have sent cotypes of nearly all species described by me, and who has favored me with kind criticism or remarks on all such, wrote me a year ago, the following comment on this species which I quote in full with his permission.

"I am clearly of opinion that this (*Leucoptera smilaciella*) Busck should not be included in *Leucoptera*, but should form a new genus. It differs from *Leucoptera* in having the whole crown of the head tufted with rough hairs, whereas in *Leucoptera* the head is quite smooth and glossy, with only the back of the crown sometimes rough; and in possessing distinct, short, drooping palpi, whereas in *Leucoptera* these are obsolete.

"These characters are constant in the European and Australian species of *Leucoptera*.

"In the Australian and Malayan genus *Crobylophora* Meyrick, the head and palpi are quite as in your species and it would go there better than in *Leucoptera* (the

superficial characters of all three genera are very similar, viz., the white coloring, metallic tornal spot and radiated dark and yellow apical markings). But the venation of *Crobylophora* is very similar to that of *Leucoptera*, whereas your species possesses several additional veins in the fore wing, giving it quite a different aspect and showing that it is really a much earlier type and very interesting as probably approaching the ancestral form of both *Crobylophora* and *Leucoptera*. I think, then, that it would be a mistake to include it in either of these genera." (Letter of February 11, 1901.)

I agree thoroughly with Dr. Meyrick's view and propose the name *Proleucoptera* for this genus with *smilaciella* Busck as the type and with the following characters.

Face smooth, head tufted; antennæ 4/5, basal joint enlarged and concave beneath to form a well-developed eye-cap. Labial palpi short, but distinct, drooping.*

Maxillary palpi absent; posterior tibiæ hairy. Fore wings elongate-ovate, apex produced, pointed, but heavy scaling makes the wing appear broad and truncate. 10 veins, all separate, 1 δ furcate at base, 4 absent, 7 to costa, 8 absent. Hind wings narrow, lanceolate; cilia 4; 6 veins, 3 and 4 absent, cell open between 2 and 5. (See Fig. 6, Pl. IX, Jour. N. Y. Ent. Soc., Vol. VIII, 1900.)

A very interesting help to the understanding of the relationship between these genera is found in Chambers' *Cemiostoma albella*, a large series of which are in the U. S. National Museum, bred by Dr. Dyar and myself from leaf mines on cottonwood collected by Dr. Dyar in Colorado.

This insect, a specimen of which Stainton examined thirty years ago and which he unhesitatingly placed as congeneric with the superficially very similar European species of *Leucoptera*, forms a connecting link between *Proleucoptera* and *Crobylophora*. It has the characters of the head exactly like *Proleucoptera*, in which genus it should be placed (it is specifically difficult to separate from *smilaciella*), but the venation presents some specialization approaching the younger genera. Vein 11 is nearly obsolete, represented only by a slight process from the subcostal vein and a faint thickening of the membrane; vein 6 is emitted from 7 to termen and both veins 4 and 5 are absent; 1 δ furcate at base; transverse vein, as in *smilaciella*, very indistinct especially between 7 and 9.

I would state that the two species of *Leucoptera* from Florida described by me, namely, *L. erythrinella* and *L. guettardella* (Proc. U. S. Nat. Mus., XXIII, 239-40) are true *Leucoptera*, conforming in every detail with the genus.

* They were overlooked in the description of the species.

EXPLANATION OF PLATE XII.

- Fig. 1. Venation of *Helice pallidochrella* CHAMBERS.
 " 2. " " *Cacelice permolestella* BUSCK.
 " 3. " " *Eumeyrickia trimaculella* FITCH.
 " 4. " " *Babaiaxa deliella* FERNALD.
 " 5. " " *Holcocera maligemmella* MURTFELDT.
 " 6. " " *Martyringa latipennis* WALSINGHAM.
 " 7. " " *Mompha sexnotella* CHAMBERS.
 " 8. " " (*Plutella*) *multimaculella* CHAMBERS.

TWO NEW GENERA OF BUNÆININE AFRICAN MOTHS.

BY A. S. PACKARD.

The two genera here proposed are founded on species heretofore referred to the genus *Nudaurelia*. This latter genus is an African one, and was originally separated by Rothschild from the Asiatic and Australian genus *Antheræa*, with which the species were by the older authors confounded. As regards the adult or imaginal stages the Bunæinæ of the Ethiopian realm are convergent types closely mimicking the genuine Saturniidæ. Their larvæ are very spiny, and their subterranean pupæ, with their large cremasters, are sphingicampid in form and structure.

Acanthocampa, gen. nov.

Saturnia WESTWOOD, Proc. Zool. Soc. London, 1849, p. 41.

Antheræa WALKER, Cat. Lep. Het. Br. Mus., v, p. 1241. 1855.

Nudaurelia ROTHSCILD, Novitates Zool., p. 41. 1895; Sonthonnax, Annales Lab. d'Études Soie, x, p. 24, 1900-1901.

Imago.—♂ and ♀. Head in front moderately wide, narrowing slightly toward the palpi; squamation not shaggy as in *Thyella*, but moderately close. Palpi depressed, reaching beyond the front, though they are short and small; the terminal hairs are long and are confused with those of the face; end of the palpi rather broad, the hairs uneven, so that the third joint can not be distinguished; when denuded (Fig. 4) they are seen to be small, 3-jointed, the second joint nearly twice as long as the first, and the third button-shaped, no longer than thick. Antennæ of ♂ sub-plumose, with 35 joints; well bipectinated nearly to the subfiliform tip, of which only the last six joints bear minute vestigial pectinations; the other pectinations are long, slender, only a little shorter than in *Thyella*, with long dense ciliæ.* Antennæ of ♀

* "The male antennæ are 35-jointed with fifty-six rays on each side, the rays rather long; the two basal rays of each joint are obliquely porrected, so that the rays form four series instead of all being on the same plane" (Westwood).



Busck, August. 1902. "Notes on North American Tineina." *Journal of the New York Entomological Society* 10, 89–100.

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