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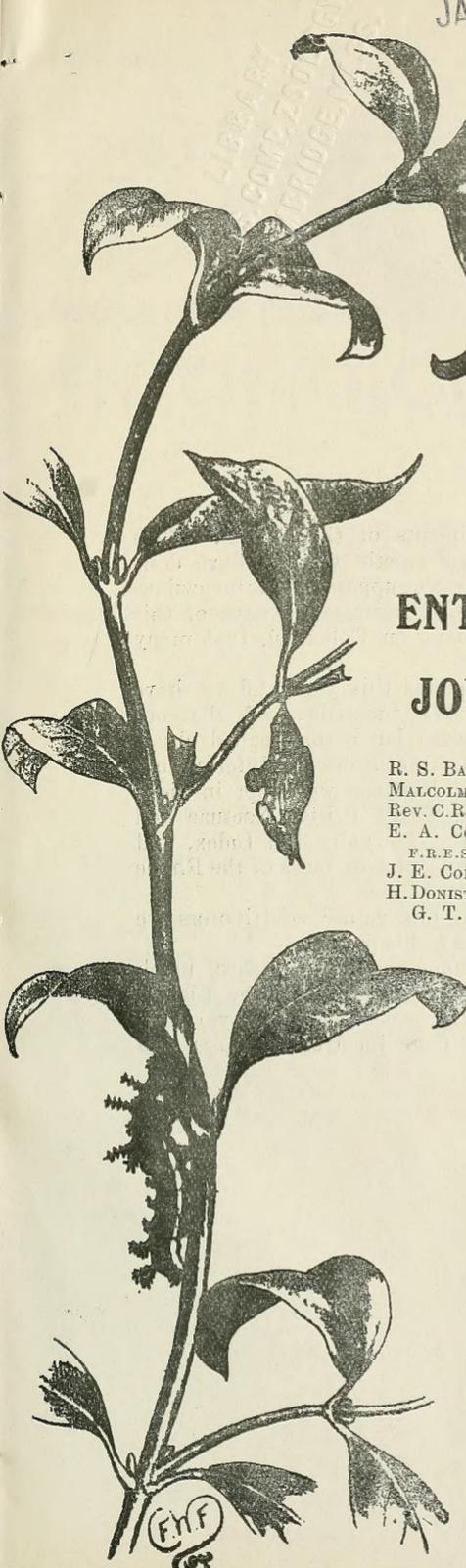


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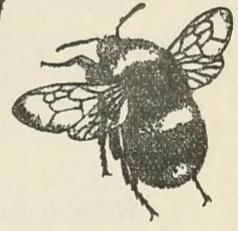
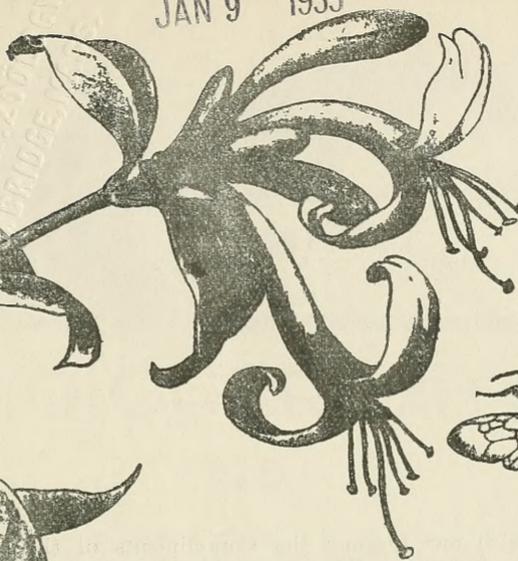
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We wish our Readers the Compliments of the Season. This Season has not been a bad one and the energetic workers have done well on the whole. The workers are few we suppose for our magazines get only a limited number of records. In the early days of this magazine so great was the quantity of notes on Collecting that many got almost out of date before publication.

We have been fortunate as regards plates this year and we have two or three already in view for 1935. Will subscribers note that not only is a subscription to our coffers needed but entomological observations too are badly needed, especially Current Notes and Information.

Our sub-title "Journal of Variation" has been well kept in view. The first volume of the Supplement to Tutt's British Noctuae and their Variation is completed all but the Appendix and Index, and Dr. Verity has continued to deal with the Butterfly races of the Rhone Valley, each month.

Owing to the generous help of one of our valued contributors we were able to give our readers eight plates to his paper.

We have felt obliged to take up some amount of space, much against our desire, on the question of Nomenclature, as the List of names for our British Butterflies recently issued by the Royal Ent. Soc. was thought by many to be founded on incorrect premises and thus only of temporary use.—Hy.J.T.

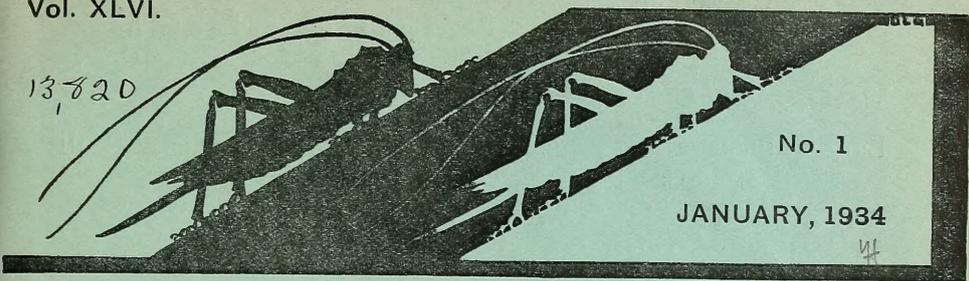
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By HENRY J. TURNER, F.R.E.S., F.R.H.S., Editorial Secretary.

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JANUARY 15TH, 1934.

Entomological Notes of the Season 1933 in the North of Ireland.

By THOMAS GREER.

The past season here has been remarkable for the long spell of fine dry weather that has prevailed from early May until well into October. In many districts there is at the present time a water famine, and many local farmers are now carting water from the nearest stream or river for their flocks. As is usual in a dry season sugar was of little use, but by working various flowers; snowberry in June; marsh grasses and ragweed in July and August; I managed to gather a useful collection of *Noctuae*.

On 20th March *Melitaea aurinia* larvae had left their winter nests, in the meadow here, and were basking in the fitful sunshine; *Alsophila* (*Anisopteryx*) *aescularia* came to light on 22nd March. An outing to a neighbouring bog on 2nd April for *Amphysa prodromana* was unsuccessful owing to the high wind, but larvae of *M. aurinia* were found in a new locality.

On 6th April on another bog several *A. prodromana* were netted flying in the afternoon sun over a mixed growth of heather and *Potentilla reptans*. *Xylocampa areola* appeared at sallows on 4th April together with *Taeniocampa munda*, *T. gracilis*, *T. gothica* and *T. stabilis*.

Pieris napi was first observed on 19th April and in both broods several completely banded (from apex of fore-wing to inner marginal spot) forms occurred. *Euchloë cardamines* was abundant, several nice forms were captured, including a ♂ without discal spot on forewing; ♂ with the orange blotch edged internally with black scales, these black scales extending from the discal spot to inner margin of forewing; form *umbrosa*, Culot; another ♂ with the orange blotch extensively clouded with black scales. During the month of May the following Geometers were more or less common at dusk; *Coenotephria derivata*, *Xanthorhoe spadicearia*, *X. ferrugata*, *Ochyria designata*, and *Lampropteryx suffumata*; *X. ferrugata* being in this district much less common than *X. spadicearia*. *Bapta temerata* was beaten out of black-thorn hedges in the day-time, and *Chiasmia clathrata* was abundant and variable, flying in the sunshine in damp meadows. In these same

meadows, towards the end of the month *M. aurinia* was about in small numbers, but was much more abundant during June, when several dark forms were captured.

About this time, an expedition to Slieve Gallion, a mountain some miles from here, especially for *Hadena glauca*, had poor results as far as *glauca* was concerned, only a few worn and faded examples being seen at a sallow bush which was still in bloom. On the way home, in a little ravine, on the mountain side a number of *Dysstroma truncata*, *Calostigia salicata* and *Hydriomena ruberata*, were netted flying to the lamp. Early in June *Perizoma affinitata* and *P. flavofasciata* were abundant on a high sandy bank at Killymoon where *Lychnis diurna* grows in great masses; the latter species flew freely in the sun in the afternoon, but *P. affinitata* did not appear on the wing until dusk. A fresh looking example of *Pyrameis atalanta* was sunning itself on the bracken fronds; and several *Mesoleuca albicillata* were observed at rest on tree trunks.

About the middle of the month *Adscita statices* was flying in scores in damp meadows; several of the steel-bluish-green type form were netted; at dusk in the same meadows *Miana arcuosa* was common, and *Dianthoecia conspersa*, *D. cucubali*, and one *Hecatera serena* were captured at *Lychnis flos-cuculi*.

On the bogs, and marshy meadows nearby in North Armagh on 18th June, *M. aurinia* was flying in numbers and *Hemaris tityus* was common at the Lousewort (*Pedicularis*), but mostly in worn condition, several *Argyrolepis baumanniana* were disturbed from the scabious and captured. At the edge of a small lake *Hydrelia uncula* occurred commonly among the sedges along with *Bactra furfuvana*; *Penthina corticana*, and *Sericoris urticana* in numbers were beaten out of birch scrub. But the best catch of the day was an example of *Hipocrita (Euchelia) jacobaeae* having the costal stripe on forewing joined to the apical spot.

Large numbers of moths mostly common Noctuae were attracted to the snowberry flowers at dusk; the following being observed: *Xylophasia rurea* various forms, *Apamea gemina*, with f. *remissa*, *A. basilinea*, *Miana fasciuncula*, *Grammesia trigrammica*, *Rusina tenebrosa*, *Agrotis segetis*, *A. exclamationis*, *Noctua plecta*, *N. festiva*, *N. rubi*, *Dianthoecia cucubali*, *Hadena dentina*, *H. thalassina*, *Abrostola triplasia*, *Plusia festucae*, and *P. pulchrina*.

Sugar was tried on several nights but produced only a few *Apamea unanimitis*, and *Miana fasciuncula*. *Eumorpha (Chaerocampa) elpenor* and *D. conspersa* visited the flowers of *Hesperis matronalis* in the garden, and a nice series of *Boarmia lichenaria* was captured at dusk. In a meadow here (Milton) at the end of this month, *Eupithecia palustraria*, and *Heterognomon icterana*, were observed, the latter in some numbers was disturbed from the coarse grass and rushes, and in the evening *Campaea margaritata*, *Boarmia repandata*, *Ptychopoda biselata*, *P. aversata*, and *Zanthognatha grisealis* were taken.

On 6th July at Lough Fea *Orambus margaritellus* was out in numbers, and sugar was fairly successful, the following being observed or taken, *Noctua festiva*, some nice red forms, *N. brunnea*, *Hadena pisi*, *Xylophasia monoglypha*, dark forms, and *Hadena adusta*. *Semasia woerberiana* was common on 8th July on some apple-trees in the garden and several *Zanthognatha tarsipennis* were netted flying along an ivy

covered wall. At grasses in wet places and ditches the following species were observed or taken, *Noctua umbrosa*, *N. angur*, *Thyatira derasa* and *T. batis*, *Leucania comma*, *L. impura*, *L. pallens*, *Apamea secalis*, in endless variety, *A. ophiogramma*, *Miana literosa*, and *Mania typica*; the Geometers were represented by *Lygris testata*, *Dysstroma citrata*, *Calostigia pectinitaria*, *Perizoma alchemillata*, and *Hydriomena furcata*; *Xanthorhoë munitata*, which occurred in similar localities (quite lowland) near Stewartstown does not seem to be present here. On 2nd August a sandy area on the shore of Lough Neagh near Newport Trench was visited; *Agrotis vestigialis* turned up in some numbers at ragweed, a dark brown form; the following also occurred *Agrotis tritici*, abundant; *Miana bicoloria*, and *M. literosa*, were also common; other species present were *Apamea secalis*, *Noctua xanthographa*, *Triphaena comes*, *Hydraecia crinanensis*, *Cerigo matura*, and *Amphipyra tragopogonis*. A few days later *A. vestigialis* was noted again on the sands at the mouth of the Ballinderry river. Although Kane in his "Catalogue of the Lepidoptera of Ireland" does not mention a single inland locality, this species is found all along the western shore of Lough Neagh wherever there are sandy areas, from Washing Bay in Co. Tyrone in the south, to Toome in Co. Antrim in the north. On 4th August at Killycolpy Wood, Lough Neagh, *Penthina marginana* and *Semasia populana* were netted in a rough meadow.

Beating mixed hedges at Milton on 8th August produced *Dictyopteryx (Acalla) holmiana*, *Rhacodia emargana (caudana)*, with forms *griseana* and *fuscana*; *Peronea schalleriana*, *P. sparsana*, *P. variegana*, with form *argentana*, *P. latifasciana*, in the forms *comparana* and *perplexana*, and *Teras (Aleimona) contaminana*. On 11th August at the Magilligan sands, Co Derry: *Satyrus semele*, *Epinéphèle jurtina*, ssp. *iernes*, a small form, *Polyommatus icarus*, were all more or less abundant; and from *Rosa spinosissima* numerous examples of *Spilonota incarnatana* were beaten out; larvae of *Homaeosoma cretacella* were found in their webs on Ragweed.

Pyrameis atalanta and *Vanessa io* first appeared at *Buddleia* in the garden on 14th August and *P. cardui* on the 15th at Scabious. During the month all three species were more abundant in this district than they have been for many years. *P. atalanta* was the most numerous, outnumbering *V. io* and *P. cardui* by about six to one. Curiously enough *P. cardui* did not visit the *Buddleia*, although it was common enough on the scabious in rough meadows close by. By the end of the month *cardui* had almost vanished, but *atalanta* was to be seen about until the end of October at flowers in the garden, and ivy bloom. At Killymoon at various times heather bloom was examined at dusk with a lamp, *Agrotis agathina* and *Noctua glareosa* turning up in small numbers, but nothing else of note.

On 29th August a single *Denteronomos alniaria* was taken at rest on the frame of a street lamp at 2.30 a.m. s.t. in Cookstown; and a ♂ *Colias croceus* was observed flying rapidly down the main street at 11.30 a.m.; another ♂ was seen in a bog on the Dungannon road.

About this time 1st September, there was an invasion of *Herse (Sphinx) convolvuli* in the district; a number mostly taken at rest were brought here for identification and several were also observed flying around *Nicotiana* in the garden at dusk.

Pararge megera made a welcome appearance after an apparent absence of many years.

Numbers of *Nomophila noctuella*, and *Scopula ferrugalis* in less abundance, frequented the rough meadows in which *P. cardui* had been so common during the preceding month.

Ennomos quercinaria, a local and uncommon moth in this district was found at rest on an ivy leaf on 16th September.

During October *Calocampa vetusta*, in the form *brunnea* was common at ivy bloom.

Second broods of *Plusia festucae* in August, and *P. chrysitis* in September have occurred, and larvae of *Pieris brassicae* are (28th November) feeding in the open.

Collecting Butterflies in Orissa (Bihar and Orissa), India.

By W. M. CRAWFORD, F.R.E.S.

Sambalpur, which was my headquarters from February, 1911, to March, 1915, is the chief town of the district of the same name. The district is the only one of the five British districts forming the Orissa division, which lies far inland. The others are either on the coast or close to it. Most of my collecting was done at Sambalpur or in the district, but in 1913 I took a long tour down the river Mahanaddi to Cuttack, visiting a number of Native States on the way. In June of that year I had visited the mountainous region of Meghasini in the Mourbhanj State, the highest point of which reaches 3823 feet above sea level.

The main crop of the district is rice, which implies a damp climate. A large part of the valley of the Mahanaddi, on the banks of which the town of Sambalpur is situated, is within the 500 foot contour, but there are many small hill ranges, chiefly on the outskirts of the district, which rise to 1000 ft. or 1500 ft.

The spot where some of the best and most uncommon butterflies were caught, was at the highest point of a small wooded hill within the limits of the civil station of Sambalpur. My butterfly-boy discovered the place, and there, standing on the top of a rock beside a tree on the very summit of the hill, and with a long handle fastened to his net, he caught the insects which settled on the tree or flew about it. Many of these I had never seen in my garden down by the river bank, nor anywhere else in the district.

Orissa is a very interesting collecting ground, as it is the meeting place of both northern and southern forms. I have tried to indicate this division in the following list. Those butterflies which belong to a species or race chiefly found in places to the north of Sambalpur have been marked with the letter N. On the other hand those whose principal range is in South India have been given the letter S. Those without either of these letters are butterflies which extend over the whole of India, or at any rate both north and south of Orissa.

In the short visit I was able to pay to Meghasini, the high mountain in Mourbhanj, I caught no less than six species which had not previously been found south of the Himalayas.

These are *Troides helena*, L. ssp. *cerberus*, Fldr., *Papilio paris*, L. *paris*, *P. chaon*, Wstwd. *chaon*, *Zetides doson*, Fldr. ssp. *axion*, Fldr.

Apatura parisatis, Wstwd. *parisatis* and *Diagora persimilis*, Wstwd. *persimilis*. It seems likely that a longer opportunity of exploring its possibilities would have resulted in still more Himalayan forms being found.

When we consider that the Meghasini mountains are some 400 miles from the nearest point of the Himalaya range with the wide Gangetic plain lying between, it seems likely that their Himalayan butterfly fauna goes back to a far distant time and is not the result of the later migrations. I have unfortunately not enough material to show any local races.

The names in the following list are as given in Brigadier W. H. Evans' "Identification of Indian Butterflies," Second Edition.

PAPILIONIDAE.

1. *Troides helena*, L. ssp. *cerberus*, Fldr.—I only secured one male of this species on the top of Meghasini mountain, and later a friend sent me a female, unfortunately very damaged, from the same place. The male has a complete series of black spots on the yellow area of the hindwing and was described by Captain (now Brigadier) W. H. Evans as an aberration (v. *Journal, Bombay Natural History Society*, Vol. XXII., p. 770). N.

2. *Tros hector*, L.—Found more commonly at Puri on the coast, but also in Sambalpur.

3. *T. aristolochiae*, F. *aristolochiae*.—Common, especially in gardens.

4. *Chilasa clytia*, L. *clytia*.—Fairly common in both the typical brown form and the dimorphic form *dissimilis*, L. I bred a number from larvae found on a small bush in my garden.

5. *Papilio polymnestor*, Cr. *polymnestor*.—Common both in the plains and on Meghasini mountain. N.

6. *P. paris*, L. *paris*.—I got this also on Meghasini most of these are marked rather like the southern *tamlana*, but in size are true *paris*. N.

7. *P. crino*, F.—Common in Sambalpur. S.

8. *P. chaon*, Wstwd. *chaon*.—Another of the Meghasini captures. N.

9. *P. polytes*, L. ssp. *romulus*, Cr.—Common with three forms of females.

10. *P. demoleus*, L. *demoleus*.—Very common.

11. *Pathysa nomius*, Esp. *nomius*.—Fairly common. Found larvae on a big *Polyalthia longifolia* tree in my compound and bred out several.

12. *P. antiphates*, Cr. ssp. *pompilius*, F.—Found it very plentiful on Meghasini, swarms of them settling on a muddy swamp that probably partook of the nature of a "salt-lick," as the butterflies seemed half intoxicated. N.

13. *Zetides sarpedon*, L. *sarpedon*.—Also very numerous on Meghasini along with the previous butterfly. N.

14. *Z. doson*, Fldr. ssp. *axion*, Fldr.—Found both on Meghasini and Sambalpur. N.

PIERIDAE.

15. *Leptosia nina*, F. (*xiphia*, F.).—Not common.

16. *Delias eucharis*, Drury.—Very common.

17. *Belenois mesentina*, Cr. *mesentina*.—Fairly common. I got several very small specimens, both male and female.
18. *Cepora (Huphina) nerissa*, F. ssp. *evagete*, Cr.—Common. Unlike most butterflies, the females of this species, especially in the dry season form, are frequently smaller than the males. S.
19. *Appias indra*, Mr. *indra*.—Two from Meghasini. N.
20. *A. libythea*, F. *libythea*.—I only obtained a single female—of wet season form—in Sambalpur. S.
21. *Catopsilia crocale*, Cr.—Very common.
22. *C. pomona*, F.—Also very common, likewise its female variety *catilla*, Gr.
23. *C. pyranthe*, L. *minna*, Herbst.—Common.
24. *C. florella*, F. ssp. *gnoma*, F.*—Common.
25. *Eurema (Terias) libythea*, F.—Common.
26. *E. laeta*, Bdv. *laeta*.—Fairly common, both in W.S.F. *venata*, Mr. and D.S.F. *laeta*, Bdv. S.
27. *E. blanda*, Bdv. ssp. *silhetana*, Wall.—I got three on Meghasini.
28. *E. hecabe*, L. ssp. *simulata*, Mr.—Very common everywhere. S.
29. *Ixias marianne*, Cr.—I only got 5 ♂s and 1 ♀ in the Ranpur and Nayagarh Feudatory States.
30. *I. pyrene*, L. ssp. *frequens*, Btlr.—Also got in the Nayagarh State. S.
31. *Hebomoia glaucippe*, L. *glaucippe*.—Only one specimen caught, on January 27th, at Bijepur in the Sambalpur district, in the open plain west of the river. N.
32. *Pareronia valeria*, Cr. ssp. *hippia*, F.—Common. This pale blue butterfly (male) is very pretty in the sunlight, and the females are wonderful mimics of Danaid butterflies of the black and white kinds.

DANAIDAE.

33. *Danais aglea*, Cr. *aglea*.—Caught two on Meghasini and one at Tikrapara in the Angul district. S.
34. *D. limniace*, Cr. ssp. *mutina*, Fruh.—Very common.
35. *D. plexippus*, L.—Also very common.
36. *D. chrysippus*, L.—Probably the commonest butterfly. I did not come across any specimen of the *alcippoides* or *dorippus* forms.
37. *Euploea mulciber*, Cr. ssp. *kalinga*, Doh.—One male obtained in Narsinghpur State in September, but unfortunately in poor condition. S.
38. *E. core*, Cr. *core*.—Very common. S.

SATYRIDAE.

39. *Mycalasis anaxias*, Hew. ssp. *aemate*, Fruh.—I caught three specimens on Meghasini. N.
40. *M. perseus*, Fb. ssp. *typhlus*, Fruh.—Common in both dry and wet season forms. I got one female (dry season) with the ocelli marked on the underside by prominent white spots instead of the usual black spots. N.
41. *M. mineus*, L. ssp. *polydecta*, Cr.—Also common. N.

* Seitz gives *gnoma* as the dry season form of *pyranthe*.—Hy.J.T.

42. *Lethe europa*, Fb. ssp. *ragalva*, Fruh.—Not uncommon. S.
 43. *L. rohria*, Fb. *rohria*.—Three males caught on Meghasini, one in April and two in May. N.
 44. *Ypthima asterope*, Klug. ssp. *malvatta*, Mr.—Common.
 45. *Y. ceylonica*, Hew.—These were only found in Nayagarh and Ranpur States, which I visited in September. S.
 46. *Y. hubneri*, Kirby, *hubneri*.—Very common.
 47. *Y. avanta*, Mr. ssp. *singala*, Fldr.—A single male taken in Sambalpur. S.
 48. *Y. baldus*, F. ssp. *madrasa*, Evans.—Very common. S.
 49. *Orsotriaena medus*, Fb. *medus*.—Very common, especially in dry season form. N.
 50. *Melanitis leda*, L. ssp. *ismene*, Cr.—Also very common, and again especially in the dry season form, which shows an immense variety in the markings of the underside.
 51. *Elymnias hypermnestra*, Hb. ssp. *undularis*, Drury.—Fairly common. N.

NYMPHALIDAE.

52. *Charaxes polyxena*, Cr. ssp. *imna*, Btlr.—A large series of males was obtained in Sambalpur, but only a single female. The wet season males have a noticeably broader black marginal band on the upper forewing and also show a definitely longer and more pointed tail to the hindwing than do the dry season specimens. I have not found in these latter the tawny markings on the border of the upper forewing, which Evans, in his "Identification of Indian Butterflies" gives as a feature of the dry season form. My only specimen showing such markings is a very small one (span only 68mm.) caught in July, when one would naturally expect a wet season form. S.

53. *C. fabius*, Fb. *fabius*.—Found very commonly, though females were scarce.

(To be continued.)

SCIENTIFIC NOTES AND OBSERVATIONS.

TORTRIX POSTVITTANA, WALKER, IN ENGLAND.—In view of Mr. Bainbrigge Fletcher's note on this species (*antea* p. 165) it may be of interest to recall that a previous specimen was reared in 1927 by Mr. Hodson of Reading University from a larva he had obtained in a box of New Zealand apples. This occurrence was recorded in a report on insect pests in 1925-1927 (Ministry of Agriculture, Miscellaneous Publication No. 62). The species is evidently one that would not prove a desirable addition to the British fauna but, it would seem difficult to take any steps to guard against this contingency, since larvae might be imported with almost any form of merchandise from Australia and New Zealand.—J. C. F. FRYER, F.R.E.S., Harpenden.

CACOEZIA PRONUBANA, HB.—With reference to Mr. Bainbrigge Fletcher's note on the distribution of this species (*antea* p. 164), it is perhaps worth pointing out that the insect is a serious glasshouse pest and that its spread is likely to have been assisted by the distribution of greenhouse plants. It is, moreover, possible that its establishment under glass has allowed the species to persist in areas in which

otherwise it could have effected but temporary settlements. Of the plants attacked, carnations suffer most seriously and in consequence the insect is known in Germany as the "Nelkenwickler"; species of *Cytisus* are also very liable to injury, but the pest is so polyphagous that any list of its foodplants would be a long one. In spite of the ease with which the insect may be conveyed from place to place on plants, it seems doubtful whether the first invasion of the more northern countries of Europe was due to this means. Rather, there would seem to have been a migration northwards at the beginning of the present century, somewhat of the same character as took place with *Plusia moneta*.—ID.

NOTES ON COLLECTING, etc.

ENTOMOLOGICAL NOTES FROM Co. DUBLIN.—I spent a fortnight at Kingstown during the latter half of last August. Unfortunately I had little time for collecting. In a disused quarry at the back of Dalkey town I found a few butterflies flying such as, *Pyrameis cardui*, *Pararge megera*, *P. aegeria*, *Rumicia (Chrysophanus) phlaeas*, *Polyommatus icarus*, etc. A bed of *Pulicaria* growing in damp ground proved a great attraction to these species as well as to *Pieris brassicae* and *P. napi*. At Glenageary station, while waiting for a train, I saw a couple of *Macroglossum stellatarum*, one or two *Pyrameis cardui*, *Vanessa io* and several *Aglais urticae*, also a few *R. phlaeas* and *P. icarus* at flowers of valerian. *M. stellatarum* was also seen at Blackrock in a garden.

On 29th August I went out to Howth Head which dominates Dublin Bay. It was a lovely summer's day and there were plenty of butterflies about. I never remember seeing *Pyrameis atalanta* in such abundance anywhere and all in the pink of condition. A few *Colias croceus* were flying and I secured one, a female. Mr. Stelfox of the Dublin Museum told me that "Clouded Yellows" had been seen frequently this summer on the Dublin coast.—L. H. BONAPARTE WYSE, Shoreham-by-Sea.

COLIAS HYALE, ETC., IN WEST SUSSEX.—I captured a fine male specimen of *Colias hyale* on the Downs behind Shoreham on 4th August. Shortly after on the same ground I took a female *C. croceus*. From then onwards *C. croceus* occurred there but rather sparingly, until October 5th, but I did not see any more *C. hyale*. In 1928 *C. croceus* was very abundant here and some nice specimens of var. ♀ *helice* were secured.

On 21st July I collected around Lancing Clump and netted a specimen of *Polyommata c-album*, which was the first time I had seen it in these parts. However, on 11th September I met with a second near Old Shoreham on the flowers of *Pulicaria*, unfortunately torn though otherwise quite fresh. A third was seen on *Buddleia* in Shoreham town. *Pyrameis atalanta* and *Aglais urticae* were both very common here this summer and *P. cardui* less so, while a large colony of the larvae of *Vanessa io* was located at Lancing and one or two imagines reared.

The Blues were much in evidence on the Downs, *Agriades coridon* outnumbering all other species. *A. bellaryus* however, has become scarce in the last few years in a certain locality where it was once

plentiful. *Macroglossum stellatarum* was observed hovering over the flowers of valerian in gardens in Bungalow Town throughout the summer and autumn until 7th November.—Id.

HERSE CONVULVULI AND MANDUCA ATRÓPOS.—I found a larva of the convolvulus hawkmoth near Hove. It went down directly it was given a pot of earth. This was at the end of August. It emerged on the 28th September, having been kept in a warm garage. In the same district at the foot of the Downs at Hove seven "death's heads" (*M. atropos*) larvae were found on potatoes. They were nearly full fed and early in September two emerged quite naturally, but one was a cripple and the other worse than that as it died half way through, and one only half pupated and also died. The remaining four I left while I went away for a fortnight and on my return forced them with damp heat with the result that three perfect specimens and one cripple emerged. This was between 23rd and 28th of October. I had a very battered specimen brought me at the end of October quite useless and was told that it flew into a cottage. It was thought to be a bat and was laid out with a piece of wood: needless to say, it was not the sort of thing to set up. A friend of mine at Basset near Southampton told me that he had seen quite a dozen "convolvulus hawks" in his garden at the tobacco plants and other flowers just before dusk, but did not take any.—G. L. THYNNE, 34, Carlisle Rd., Hove, Sussex.

CACOEZIA PRONUBANA IN THE ISLE OF WIGHT.—As a record of the spreading range of this Tortricid it may be interesting to note that I boxed a specimen off a shop window in Newport, Isle of Wight on 30th of September, 1933.—H. G. JEFFREYS, Newport.

PHRYXUS LIVORNICA IN WILTSHIRE.—A "striped hawk" moth was caught in the kitchen of St. Patrick's, Littleton Panel, nr. Devises, Wilts. at 8 p.m. on 19th Nov. It is a perfect specimen. In 1909 at Voerspoed near Kronstad in the Orange Free State, S. Africa, the vine on the house was literally stripped by the larvae of this species; I could have obtained hundreds.—J. B. FRAGLEY, The Rookery, Cosham, Wilts.

COLLECTING ON THE DORSET COAST IN JUNE, 1931.—In 1931 I spent a fortnight commencing 14th June at West Bexington a small hamlet on the coast about a mile west of Abbotsbury. The coast line is devoid of marram grass and sand, but consists of deep shingle. There is a very pretty stretch of thrift and a fair smattering of *Silene*. There is also a small stream bordering the shore, fringed with *Phragmites* and a long stretch of *Umbelliferae*, the blossoms of which latter proved most attractive to Noctuae, which were so keen that they remained quite undisturbed by the light of the lamp. The country around consists of undulating grass land devoid of trees but with an abundance of hawthorn hedges.

The following are the species taken; the letter C. denotes common.

Phryxus livornica, 2.—One flying over *Silene* and one at rest on hawthorn, during the day, the latter much the worse for heavy rain. *Theretra porcellus*.—One at valerian blossom in the garden of the house where we stayed. *Porthesia similis (auriflua)*, C.—Larvae on hawthorn.

Lachneis lanestris.—Several colonies of larvae on hawthorn. *Eutricha quercifolia*.—A larva found by my wife on hawthorn at Sayre, a neighbouring village. *Diloba caeruleocephala*, C.—Larvae on hawthorn. *Leucania straminea*.—Larvae on *Phragmites*. *Mamestra sordida* and *Apamea gemina*.—Both at blossoms of *Umbelliferae*. *Miana strigilis*. *Grammesia trigrammica*. *Caradrina quadripunctata*.—One on *Umbelliferae* blossoms. *Agrotis exclamationis*.—Abundant on Umbels. *Dianthoecia carpophaga*.—Flying over Silene. *Euplexia lucipara*.—On the Umbels. *Hadena dentina*. *Pyrrhia umbra* (*marginata*).—One at flowerheads. *Acontia luctuosa*. C.—Along the shore to the eastward darting about in the sunshine amongst the thrift, I took some fine varieties. *Ematurga atomaria*.—In company with *A. luctuosa*. *Timandra amata*. *Ortholitha cervinata*. C.—The larvae.—C. Q. PARSONS, (Capt.), "Alma Marceau," Seaway Lane, Torquay.

AGROTIS SIMULANS IN BERKSHIRE.—I find no mention of this species occurring in Berks. in South's *Moths of the British Isles*, Series II. Dr. J. C. Rohan kindly gave me a single specimen which came to his electric light at Cholsey near Wallingford this summer.—G. S. ROBERTSON, M.D., Storrington, Sussex.

MELANIC VAR. OF CARPOCAPSA JULIANA.—A melanic specimen was bred from acorns gathered in Dulwich Wood, S.E. London, amongst several of the type, none of which were darker than normal.—Id.

MIGRATION OF INSECTS.—*The Western Morning News* of 27th November contains a long and very full record of the occurrence of rare butterflies and moths in the West of England in the year 1933 by Commander S. T. Stidston of Ashburton. It includes details of spread of *Polygonia c-album* in the West, more than 30 were seen as late as 15th Sept.; the repeated noting of *Pyrameis cardui* at the lighthouses; records of *P. atalanta* on 21st of Feb. and an immigration from the sea on 11th of March; *Colias croceus* as very plentiful; *C. hyale*; *Manduca atropos* as plentiful in some places; numerous examples of *Herse convolvuli*; a *Phryxus livornica*; while *Plusia gamma* and *Macroglossum stellatarum* were in less numbers than usual. The most notable record perhaps, was the capture of *Anosia pleuippus* once more in this country.

Our correspondent Mr. C. Nicholson of Tresillian contributes a report on Cornwall, which includes numerous records of the occurrence of *A. pleuippus* (seen); the abnormal number of *Pieris brassicae* in Cornwall; records of most species mentioned in the previous report; and the occurrence of *Leucania vitellina*, *L. l-album*, and *Laphyma* (*Caradrina*) *exigua*.

CURRENT NOTES AND SHORT NOTICES.

A meeting of the Entomological Club was held at the Junior Carlton Club, Pall Mall, London, on 31st October, 1933, Mr. H. Willoughby-Ellis in the Chair. *Members present* in addition to the Chairman:—Mr. Robert Adkin, Mr. H. Donisthorpe, Prof. E. B. Poulton, Mr. Jas. E. Collin, Dr. H. Eltringham, Mr. W. J. Kaye. *Visitors present*:—Mr. H. E. Andrewes, Major E. E. Austen, Dr.

K. G. Blair, Dr. Malcolm Burr, Prof. G. D. Hale Carpenter, Mr. H. M. Edelsten, Brig. W. H. Evans, Mr. J. C. F. Fryer, Sir Guy A. K. Marshall, Dr. S. A. Neave, Capt. N. D. Riley, Dr. Hugh Scott, Mr. W. Rait Smith, Mr. W. H. T. Tams, Mr. Colbran J. Wainwright. The members were received by the Chairman in the Card Room at 6.30 p.m., and during the *Conversazione* Prof. Poulton exhibited specimens of two Acridians from the South of France—*Oedipoda germanica*, Charp., taken by Mr. J. A. Simés on a country of grey rock, and *O. coerulescens*, L. taken by him on red porphyry. The colour and pattern exposed at rest bore a remarkable resemblance to the environment of each species. Dinner was served at 8 o'clock on the historic round table in the Parliamentary Library, and an enjoyable evening was spent. The party broke up shortly after 11 o'clock.—H.W.-E.

Lambillionea continues to issue the admirable photographs of aberrations and forms of European Lepidoptera. Among the species illustrated during the first half of the current year are *Diacrisia sannio* 2; *Melitaea athalia* 6; *Colias electo-croceus-fieldii* 18; *Limenitis populi* 2; *Brenthis dia* 1; *B. ino* 2; *B. pales* 1; *B. selene* 3; *B. euphrosyne* 1; *Pyrameis atalanta* 4; *Melanargia galathea* 3; *Epinephele jurina* 1; *Satyris briseis* 1; and *Diloba caeruleocephala* 1. The matter contained in this magazine is concerned with items so closely connected with this country that most of it personally appeals to British lepidopterists. The series of plates issued monthly during the past few years are an acquisition to students interested in variation.

The Nominations for the Council of the Royal Entomological Society are as follow—*President*, Dr. S. A. Neave, M.A. *Treasurer*, A. F. Hemming. *Secretary*, *A. W. McKenny-Hughes. *Council*, Prof. Balfour-Browne; Sir T. Hudson Beare, D.Sc.; *Prof. G. D. Hale Carpenter; *L. Collenette; Brigadier W. H. Evans; Dr. Karl Jordan, F.R.S.; R. W. Lloyd; Miss C. Longfield; Sir Guy A. K. Marshall, F.R.S.; Prof. E. B. Poulton, M.A., F.R.S.; N. D. Riley, F.Z.S.; *W. H. Thorpe, M.A.; V. B. Wigglesworth, M.A.; *Dr. C. B. Williams, M.A. Those marked with an asterisk are new members of Council.

The *Trans. Carlisle. N.H.S.* Vol. V. referred to a short time ago has reached us and is quite as interesting as we anticipated. In fact the Short History of the Society is an admirable record of the progress in usefulness, in a peculiar locality of particular interest in the comparison of its fauna with that of other areas.

The Officers and Council of the South London Entomological Society nominated for the ensuing year are:—*President*: T. R. Eagles; *Vice-Presidents*: C. G. M. de Worms, M.A., F.C.S., F.R.E.S., etc., and E. E. Syms, F.R.E.S.; *Hon. Treasurer*: A. E. Tonge, F.R.E.S.; *Hon. Librarian*: E. E. Syms, F.R.E.S.; *Hon. Curator*: S. R. Ashby, F.R.E.S.; *Hon. Secretaries*: S. N. A. Jacobs, and Hy. J. Turner, F.R.E.S.; *Hon. Lanternist*: J. H. Adkin; *Hon. Editor of Proceedings*: Hy. J. Turner, F.R.E.S., F.R.H.S.; *Council*: H. W. Andrews, F.R.E.S., C. N. Hawkins, F.R.E.S., M. Niblett, S. Wakely, T. H. L. Grosvenor, F.R.E.S., R. W. Attwood, F. J. Coulson, H. G. Denvil, P. Bainbrigge-Fletcher, M.Sc., F.R.E.S., etc. and J. A. Downes. The Annual Meeting takes place on January 25th when the retiring President, Mr. C. G. M. de Worms will read the Annual Address after the Presentation of the Council's Report of the year's doings.

The Syllabus of the London N.H.S. just to hand, for the ensuing six months, announces four indoor meetings and two field meetings of the Entomological Section and in addition two indoor meetings and five field meetings to be spent in the study of plant galls. The remaining fixtures deal with Botany, Archaeology, Rambles and Ornithology.

REVIEWS AND NOTICES OF BOOKS.

No 4. of Vol. I of the *Journal of the Entomological Society of the S. of England* recently came to hand. It consists of some 46 Notes of varying length by 22 writers in 36 pp. with one plate. 16 Notes are concerned with Diptera and 15 with Lepidoptera. The remainder deal with biological items and the records of occurrence of species in the less known and less worked Orders, Odonata, Plecoptera, Ephemeroptera, Neuroptera, Trichoptera, etc. Many of the items would, if published in our magazines for which they are eminently suitable, certainly have a more distributed circulation, and be more useful and more readily referred to by working entomologists in all parts of the country. This leads us to another point. Among the splendid work being achieved by the trained and well experienced entomologists of the Society what is being done for the "tyros" as Stainton called the younger inexperienced followers of the net and pin? There seems little educational work such as has been carried out for over 60 years by that wonderfully successful and popular body the South London Entomological and N. H. Society; at any rate we have no record of the "tyro" nor do we hear of him. It is upon the enthusiasm of the younger men and their continued support of the Society that the future can be assured.

INFORMATION WANTED.—The Notes on the Noctuae will shortly deal with the species which have been kept together under the genus name *Caradrina*. These species are so similarly obscure, that is the five which are found in Britain, that most entomologists find considerable difficulty in distinguishing one species from the other. Guenée said of this group "It is composed almost entirely of European species, of which the greater part have been very long, I should say, too long, known, for there exists such a confusion that their synonymy is almost inextricable. The English authors have increased this difficulty by creating a crowd of species, so badly characterised that I have not been able to classify them even as constant varieties." *Noct. V. 235 (1852)*.

Included in the *Caradrinidae* so called in Tutt's time were *Grammesia trigrammica*, so long known as *trilinea*, the "excessively rare" *Hydrilla palustris*; the extremely local *Acosmetia caliginosa* and the very rare with us, cosmopolitan "army worm" *Laphygma exigua*. The first has been almost drowned with varietal names, of the other four one would be pleased to know something of the variation.

Caradrina superstes was included by Tutt in his *British Noctuae* on the strength of Sligo specimens he judged to be that species, but subsequent examination of their genitalia has nullified this.—
HY. J. TURNER.

All MS. and EDITORIAL MATTER should be sent and all PROOFS returned to HY. J. TURNER, "Latemar," 25, West Drive, Cheam.

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. HY. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—*S. Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—*J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.*

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—*R. C. L. Perkins, 4, Thurlstone Road, Newton Abbot.*

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of *D.oo.* pupae of *X. gilvago*, *D. caesia*. *A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.*

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—*C. Zacher, Erfurt, Weimar, Street 13, Germany.*

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucernea*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. *Harold B. Williams, Woodcote, 36, Manor Gate Road, Kingston Surrey.*

Duplicates.—A large number of species of European and Palaearctic Rhopalocera and Heterocera.

Desiderata.—All British species especially those illustrating characteristics of an island fauna. *Dr. Lor. Kolb, München 54, Dachauer-str. 409, Germany, and Franz Daniel, München, Bayer-str. 77, Germany.*

Desiderata.—Living larvae or pupae of *Lasiocampa quercus*. Also set specimens of same species taken before 1910 in Devon or Cornwall.

Duplicates.—*Pavonia*, set specimens or living stock: *Monacha*, ova: *ochroleuca*, *griseola*, *advenaria*, *juniperata*, *thetis*, etc.—*J. A. Downes, 5, Trinity Road, Wimbledon.*

URGENT.—Wanted English (Cumberland) *Erebria epiphron*. Adequate exchange will be made in European Lepidoptera.—*B. C. S. Warren, 14, Avenue de l'Eglise Anglaise, Lausanne, Switzerland.*

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with English collectors and beg to send list of duplicates.—*J. Soffner, Trautenau (Bezirksbehörde), Bohemia, Tschechoslowakische Republik.*

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. January 17th (Ann.), February 7th.

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. January 25th (Ann.), February 8th.—*Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.*

The London Natural History Society.—Meetings first four Tuesdays in the month at 6.30 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. Visitors admitted by ticket which may be obtained through Members, or from the Hon. Sec. A. B. Hornblower, 91, Queen's Road, Buckhurst Hill, Essex.

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IMPORTANT

TO ENTOMOLOGICAL SOCIETIES and MUSEUMS.

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The Entomologist's Record and Journal of Variation.

(Vols. I-XXXVI.)

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GENUS *Acronycta* and its allies.—Variation of *Smerinthus tiliae*, 3 coloured plates—Differentiation of *Melitaea athalia*, *parthenie*, and *aurelia*—The Doubleday collection—Parthenogenesis—Paper on *Taeniocampidae*—Phylloxera—Practical Hints (many)—Parallel Variation in Coleoptera—Origin of *Argynnis paphia* var. *valesina*—Work for the Winter—Temperature and Variation—Synonymic notes—Retrospect of a Lepidopterist for 1890—Lifehistories of *Agrotis pyrophila*, *Epunda lichenea*, *Heliophobus hispidus*—Captures at light—Aberdeenshire notes, etc., etc., 360 pp.

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THE VASCULUM

A quarterly journal of Natural History, etc., chiefly for the Northern Counties

EDITED BY

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LEPIDOPTERA AT MAURIN, BASSES-ALPES, FRANCE.

(Addenda)

By W. PARKINSON CURTIS, F.R.E.S.

Colours are by reference to "Ridgway Color Standards,"

Melitaea phoebe, Knoch. ab. *deleta*, Verity.

A fine ♂ captured by W. P. C. in a meadow on the banks of the River Ubaye immediately below Point de la Font Sancté. Expanse 47 mm.

I should incline to refer this specimen to ab. *deleta*, Verity, *Ent. Rec.* XXXI. p. 184 (1919)*. It is true that Dr. Verity calls this a form, but it is fairly obvious from the context that it is a colour variation of a class that most of us call an aberration. It is also true that Dr. Verity named *deleta* from specimens of the race *tusca*, Verity.

I have a list of 74 names conferred on this species and seeing that I hold the opinion that aberrations, if named at all, should only have a class name and that that class name should be applied to every variation of that class no matter from what species derived, I see no point in adding another name to the burden this unfortunate species carries.

Whilst on the subject of names I observe with regret that *caucasica*, Stdgr. has been changed to *causasicola*, Vrty. and *alataunica*, Wagner, to *wagneri*, Wnukowsky, the sole ground being that these highly significant and appropriate names have also been used for the parallel races of other species.†

Why not a rule that every race of every species should bear the name of its headquarters so that the names should be informing: the present system of fancy names has no defensible logical basis. I am also unable to see the sense of a separate name for each brood: why not *phoebe* gen. I., *phoebe* gen. II. and *phoebe* gen. III. or at most *phoebe vernalis*, *phoebe aestivalis*, *phoebe autumnalis*, although the numerical method is the better since some species have their second brood in the summer and some in the autumn? It is a little difficult to say what race my aberration belongs to; Captain A. F. Hemming, who examined my specimen and confirmed my determination, expressed the view that the *phoebe* of the Barcelonette region had a strong tendency to go light in the markings.

The specimens that I got at Maurin are some quite typical, others are *alternans*, Seitz, others *cinxiodes*, Muschamp, some possibly might be referable to *galliaemontium*, Vrty. and Dr. Verity himself. *l.c* p. 182 admits that the races do not form groups corresponding to their distribution.

UPPER SURFACE.—Forewing. Ground colour almost uniform of a tone halfway between Orange-rufous and Xanthine-orange.

The white costal edge which is usually so slightly developed is very marked and continuous from close to the base right round to the terminal cilia: the space between the subcostal and the costa but slightly marked with dark scales: the basal black marks normal as

* *sterlineata*, Turati, XXIV. Nat. Sic. 1919, p. 21, pl. 2, fig. 12.

† We quite agree with these remarks on these senseless lepidopterological gymnastics.—Hv.J.T., G.W. and E.A.C.

are the two, one in the cell, and one above vein 1, that form the median band; discoidal, reniform, rather small, rather lightly outlined: postmedial series of spots almost absent, the usual large quadrate spot of the series above vein 1, represented by a small lunule, the next above by about four dark scales those above three and four just indicated. The next series distally is a little more in evidence being moderately well developed, costally and dorsally but evanescent between 3 and 6, even so it is but a shadow of its usual self: the submarginal series is obsolescent, the spot above 1 is absent, the next two are fairly well marked, the rest of the series is linear with the slightest thickening on the nervures: between the submarginal series and the submarginal arcuate marks the wing is Xanthine-orange the marginal lunules or arcuate marks are well developed and solid divided from the marginal line by a fairly well indicated line of white scales which are best marked between 3 and 4 and 6 and the apex; cilia very strongly marked black and white. Hindwing ground-colour as in forewing but with the Xanthine-orange better developed between the cell and the second row of spots and between the submarginal row and the marginal lunulate markings rendering the wing a little less level in colour than the forewing; the basal and cellular dark marks are nearly normal but the first row of spots distad the cell is drawn out distally in little pear-shaped excrescences, these little excrescences being in fact all there is left of the second row of spots; the third row is about normal for width, but the dark scaling is reduced by about 50% so that the row is rather nebulous, the submarginal row represents the same condition in an even more pronounced degree; marginal lunules well-developed and solid separated from the well-developed marginal line by a strong semation of xanthine scales; cilia very pure white and very shining. This whiteness is positive and not merely a matter of contrast, it is much more pronounced than in any other of my specimens either from Digne, Maurin, or Portugal.

UNDER SURFACE.—Forewing. Xanthine-orange; costa strongly Citron-yellow (pl. XVI.) markings in and below cell and the discoidal normal; postmedial series absent save for black points above 4, 5, 6, and 10 those in cellules 4, 5, and 6 being placed on elongate Citron-yellow marks; the next series is indicated by a small spot above 1 and two lunules above 5 and 6. The space distad the position usually occupied by this row is almost wholly Citron-yellow; the submarginal series is represented by a single small lunule above 2; marginal lunules finely marked; marginal line very discontinuous; cilia white chequered on the nervures which last are only very slightly marked with dark scales here and there.

Hindwing ground Citron-yellow; usually the space between the first set of black marks and the base of the wing is Pyrine-yellow, but in this specimen it is uniform with the rest of the ground; cellule one is entirely Pyrine-yellow and of the three black marks usually found therein only the centre one is present; cellule 1a has the basal third Xanthine-orange, there is a black spot at the base which is connected by a fine black line running below vein 1b with the indication of the usual double postmedial series; the extreme base of cellule 1b is Pyrine-yellow, then follows a strongly marked black spot, this is arcuate filling the angle where vein 2 rises and enclosing a conspicuous spot of the ground, this black mark continues outward till it joins the

double post-medial series, in so doing enclosing a spot of Xanthine-orange, but being separated from vein 2 by the ground colour; the cell has a tiny spot of Pyrine-yellow at the base, this is followed by a solid black blotch then by a patch of Xanthine-orange and the cell is closed by a solid black blotch with no central pale mark as is usual; cellule 2 has a small patch of Xanthine-yellow at the base followed by a tiny black mark; cellules, 3, 4, 5, and 6 have small black marks at the base, that in 4 being separated from the cell by a spot of Xanthine-yellow; cellule 7 has a basal black spot followed by an area of citron-yellow which encloses another black spot and is distally bounded by the normal first black spot the whole being connected by a fine black line running under vein 8, this is followed by a patch of Xanthine-orange and then by a black line; cellule 8 contains four black marks of which one, the outermost, has a tiny black mark in cellule 7 below it. It will thus be seen that the usual post-medial double line has the proximal part but little developed and the distal member almost wholly obsolete.

In normal *phoebe* the sub-marginal decoration consists of a series of fulvous marks which are placed on spots of Ochreous-yellow being bounded proximally by a double line of dark arches one set directed basad and the other distad, the crowns of the arches being in contact; distally bounded by another line composed of a series of dark arches directed distad, the springing of the arches almost resting on the marginal lunules; of this design there is hardly a trace above vein 7; the internal arched line is reduced to a blur of dark scales along the proximal edge of the set directed distad which set is very narrowly developed. The Xanthine-orange spots are placed on a Light-cadmium ground which is a little restricted in area and the external set of arches is so reduced that it is only traceable in cellules 3, 4, and 6; the marginal lunules are well developed as are the marginal spots at the ends of the nervures, but the black terminal line is very broken, the cilia are very brilliantly white. This gives the hindwing a general appearance of having a fulvous base with a slight internal dark edging followed by pale marginal band with small dark lunules; an entirely different impression to that produced on the eye by a normal underside; in fact the appearance is reminiscent of a pale *Biblia*. Specimen No. 23052 in mus. Curtis.

(To be continued)

The Geometers of Storrington, W. Sussex.

By G. S. ROBERTSON, M.D.

[The names in this paper have been corrected to the original prior names as published in this magazine in 1925-6 as a Supplement on the basis of L. B. Prout's work in Seitz Palaearctic Geometers.—H.J.T.]

The District includes about five miles in any direction from Storrington on the North side of the South Downs.

As Mr. A. J. Wightman has furnished lists and notes on the Butterflies and Noctuae of the Pulborough District, which nearly coincides with this area, I propose commencing with the *Geometrinae*, and hope to include the others in later numbers, with a few of the "Micros." Most of my collecting has, of necessity, had to be done alone, very few collectors living in the area; hence many common

species have to be omitted, which probably are here, and others, which I have found scarce, may be common if properly worked in suitable spots.

Pseudoterpna pruinata: locally common on heaths. *Hipparchus papilionaria*: generally distributed; some years locally very common. *Hemistola chrysoprasaria (vernaria)*: on the downs. *Comibaena pustulata*: scarce, local. *Iodis lactearia*: common. *Hemithea aestivaria (strigata)*: common. *Ptychopoda sylvestraria (straminata)*: scarce on heaths. *P. fuscovenosa (interjectaria)*: f. common. *P. subsericeata*: local, scarce. *P. aversata*: abundant, banded form scarce. *P. biselata*: common. *P. dimidiata*: common. *P. trigeminata*: scarce. *Acidalia virgulata*: common. *A. ornata*: on downs. *A. floslactata (remutata)*: very common in woods. *A. marginepunctata*: on downs. *A. imitaria*: locally common. *P. emarginata*: very local, but fairly common. *Calothysanis amata*: generally common. *Cosymbia porata*: scarce. *C. punctaria*: scarce. *C. linearia*: not common. *C. annulata*: not common. *C. pendularia*: very common. *Ortholitha clavaria (cervinata)*: generally distributed, common locally. *O. chenopodiata (limitata)*: abundant. *O. bipunctaria*: very common on downs. *Odezia atrata*: local. *Anaitis plagiata* and *A. efformata*: both occur. *Chesias legatella (spartiata)*: generally distributed, f. common. *Nethopteryx polycommata*: v. local, but common in one spot. *N. carpinata*: not common. *Acasis viretata*: not common. *Lobophora halterata*: locally common. *Operophtera brumata*: abundant everywhere. *O. fagata (boreata)*: locally abundant in birch woods, slight variation. *Triphosa dubitata*: fairly common, generally distributed. *Philereme transversata (rhamnata)*: local. *Euphyia silaceata*: well distributed, f. common.; ab. *insulata* is the usual form. *Lygris testata*: v. common. *L. pyraliata*: very common. *Cidaria fulvata*: local and scarce. *C. corylata*: fairly common. *C. truncata*: common, ab. *comma-notata* and dark forms occur. *C. citrata (immanata)*: common. *C. miata*: not common. *Thera obeliscata*: c. in pine woods. *Lampropteryx suffumata*: local, not common. *C. unidentaria*: c.ev. *C. ferrugata*: c.ev. *C. designata*: common. *Calostigia pectinitaria (viridaria)*: usually abundant. *C. multistrigaria*: local. *C. didymata*: c. generally distributed. *Oporinia dilutata*: pale and dark forms are both common. *Xanthorhoë montanata*: abt. *X. fluctuata*: abt. *Epirrhoë galiata*: common on downs. *E. rivata*: local. *E. alternata (sociata)*: abt. *Euphyia unangulata*: scarce, well distributed. *Cidaria bicolorata*: fairly common. *Melanthia procellata*: fairly common on downs. *Perizoma affinitata*: very common. *P. alchemillata*: common locally. *P. flavofasciata (decolorata)*: Common, well distributed. *P. bifasciata*: common as larvae, a few imagines come to light. *Euphyia bilineata*: abt. *Hydriomena furcata (sordidata)*: common, variable. *H. coeruleata (impluviata)*: not common. *Earophila badiata*: v. common. *Coenotephria derivata (nigrofasciaria)*: f. common. *Euchoeca nebulata (obliterata)*: not common. *Asthenia albulata (candidata)*: abt. *Hydreliia flammeolaria (luteata)*: scarce.

(To be continued.)

Cornish Notes, 1933.

By CHARLES NICHOLSON.

Last year will long be remembered for its unusual spell of hot dry weather, the disastrous effects of which on the water supply of many parts of the country are still in evidence in dried up wells and springs and abnormal lowness of reservoirs and rivers. Even Cornwall has not escaped altogether and the recent rains have not been copious enough to go very far towards making up the deficiency of from 9 to 12 inches in different parts of the county on an average total of about 45 inches. The sunshine record is well up and is the highest on record, but here again there is some variation in locality.

Popular belief regards hot sunny weather as favourable to insect life and, of course, it is, provided there are suitable cool rainy spells to break the monotony at frequent intervals. But in 1933 there was too much of the hot sun and not enough of the cool rain to bring about the best conditions for insects in general and other wild life, and hereabouts at any rate birds found the conditions very trying on account of the comparative scarcity of insects and other small creatures, such as worms, slugs, snails, etc. It will be very interesting if readers will send notes about other districts so that comparisons may be made between different parts of the country.

The first item of interest in my diary for 1933 is the observation of a "queen" of *Bombus terrestris* sucking nectar from flowers of a small arbutus bush in the garden at 3.30 p.m. on 6th January. The prevailing winds about that date were westerly and several of the days were sunny with temperatures in the late forties and early fifties at mid-day. The arbutus naturally flowers over a long period from autumn to spring and this same bush is well out now with a fair number of more or less ripe fruits showing, although it is only 4 feet in height. The bee must have been roused from hibernation by the mild spell and it is to be hoped that she got back into a snug retreat early in the evening, for there was a frost that night that might have been too much for her. When these winter sleepers are disturbed in this way it is very often fatal to them unless, as in this case, they can find nourishment to compensate for their untimely activity. "Queen" wasps, for instance, usually succumb, and I believe hibernating butterflies also.*

March saw *Gonepteryx rhamni* on the wing, males being seen in the garden on several dates in that month, April and May; and I was gratified to find one nearly fullfed larva and traces of others on young buckthorns (*R. catharticus*) in the garden in July but none on the two *R. frangula*. The former species does not occur in Cornwall, but the latter is sparingly distributed, and scarce about here. It follows, therefore, that all the *rhamni* hereabouts have fed up entirely on *frangula*, (as *catharticus* is not cultivated as a rule and probably my nine seedlings are the only ones in the county), so the females were evidently attracted by the strange (to them) species

* Since writing the above paragraph I find that all the arbutus fruits have disappeared—probably eaten by birds or mice during the cold spell in mid-December. These fruits were, of course, the result of the 1931 flowers, the arbutus being one of those shrubs that bear this year's flowers and last year's fruits at the same time.—C.N.

rather than to the other with which they were familiar! I saw no females in the spring, but one was seen in the garden on the 24th and again on the 25th August, probably the same specimen.

The three common "Whites" were in about normal numbers in the spring, but *brassicæ* and *rapæ* were abundant in the second brood, whilst *napi* was scarce, and I saw nothing that I could consider a third brood of any of them. In the west of Cornwall *brassicæ* larvae amounted to a plague, and whole fields of broccoli and other cabbages were eaten to rags in some places.

There is no doubt whatever that 1933 was a "Clouded Yellow Year" in the S.W. of England. *Colias croceus* was everywhere, though not in phenomenal numbers anywhere, so far as I have been able to gather. Here we have seen an odd specimen or two nearly every year since we came in September 1928, but last year we saw one or two at least every other day on an average in the garden, and wherever I went I saw one or more in other localities including one in the middle of Truro city on 15th Sept. The greatest number seen in one day in the garden was 5, but as I did not catch them I cannot say, of course, how many of these and the others we saw were different individuals. The first I saw (2) were on Goonhillee Downs, Lizard, on 1st August; on 23rd October, a male and a female were in the garden and I boxed this female and confined her in a glass cylinder over a pot of white clover for eggs, but the weather thereafter was very unpropitious, both in temperature and sunshine, and although I fed her with honey water and she lived for nearly a fortnight I saw no eggs. The last specimen seen in the garden was on 16th Nov. which seems very late for this species. One var. *helice* on 23rd September passed within a yard of me in the garden. I may add that a few *croceus* were seen on Round Island, Scilly, by the lighthouse keeper on 23rd September and scores during the first fortnight of October, which suggests a late brood. I have not seen or heard of *C. hyale* having been seen in the county.

Aglais urticae has been commoner than in recent years, but not quite so common as in 1932. I saw it first at Ladock on 27th March, near Tresillian village on 15th May and in the garden on 20th June. Others were seen on odd dates at different places in July and August, but in September it was seen on every suitable day in the garden on the flowers of *Eupatorium weinmannianum*, a South American evergreen shrubby relative of our hemp agrimony and equally attractive to insects. Neither *Vanessa io*, nor *Pyrameis atalanta*, nor *P. cardui*, has been as common as in 1932, but all of them have been in evidence on the *Eupatorium*, or elsewhere in the garden, and I saw two *cardui* on sunflowers ("Miss Mellish") in a neighbour's garden on 12th October. I have never seen *atalanta* on these small perennial sunflowers, but it used to be very fond of the big annual ones in our Hale End garden in S.W. Essex. The first *io* was seen on 27th March and not again until 24th July; the first *cardui* on the latter date and not again until 5th Sept. *Atalanta* was first seen on 28th May in the garden and this was worn. On 4th June my wife called my attention to 6 specimens that were flying about around our *Buddleia globosa* and *Olearia stellulata*. These specimens were rather worn and chipped and were frisking about on and off the flowers, and frequently going around in pairs in the courting flight, then separating and settling again on the flowers.

All were invisible next day and subsequently and I have no doubt that these 6 and probably the odd one on 28th May were part of an immigrant swarm that was passing through this district. I saw another very worn one at St. Ewe on 24th July and a fine and obviously freshly emerged one on Goonhillely Downs on 1st August after which date fresh ones were seen at Tresillian and elsewhere. A correspondent, Dr. Hankin, reported that in his garden at Newquay he saw about 20 on veronica on 19th Sept. "arrived since yesterday" and the Round Island lighthouse keeper reported that scores were seen there between 8th and 12th Sept. and hundreds during the first fortnight of October, all in fine condition and seemed to be going chiefly south. "Since about 16th Oct. they all seem to have gone."

P. cardui. A few were seen on Round Island between 8th and 12th Sept., and Dr. Hankin saw about a score on veronica (with the *atalanta* as above reported) on 19th Sept. "arrived during the last few days"; but during the first fortnight of Oct. hundreds were seen on Round Island (with the *atalanta* as above) going chiefly south.

If these *atalanta* and *cardui* really left this country, then they must have gone on to the N.W. of Spain if they continued south, as there is no land between.

Rumicia phlaeas, usually scarce here, has been fairly common especially in this garden, where it has shown great partiality for the *Eupatorium* flowers, on which there were actually 4 specimens at once on 29th Sept. I put many out of the verandah also during that month. First seen near Tresillian Village on 15th Mar.; last in garden 17th Oct.

Pararge megera has been commoner than usually hereabouts and I have put specimens out of the verandah frequently and several times a day.

Herse convolvuli. Not at all frequent this year, but a fine male was seen fluttering under the verandah roof on 6th Sept. and put to rest on one of the posts, where it remained until it flew off in the evening.

Macroglossum stellatarum. Dozens seen by the Round Island lightkeeper on 15th May and undoubtedly part of an immigration. One in the garden here on 22nd May and another on 13th June. I also saw one visiting rhododendron flowers on 4th June, but the most interesting observations were two specimens in perfectly fresh condition in our verandah on 9th Aug. (9.20 p.m.) and 10th Aug. (8.20 p.m.) respectively. This is surely unusually late in the day for this species even during "Summer Time." Previous to this I have not seen it on the wing later than about 5 in the afternoon, flying over heather near Wendron in this county.

Plusia gamma has not been much in evidence in the county in 1933 from all accounts. First seen here on 4th June, next on 12th Sept. and a few on other days during that month and Oct., the last on the 23rd.

Nomophila noctuella. First seen 4th June (rather worn) in garden; several at St. Ewe (very worn) on 24th July. A perfectly fresh one in the verandah on 12th Sept., and two other fine specimens in the garden on 13th and 15th Sept. respectively.

Undoubtedly the feature of 1933 was the number of specimens (29) of *Danaus plexippus* reported, as seen or captured in these islands. Of

these Cornwall claims 7, although it is not at all certain that all the records refer to different individuals, as may be suspected by the dates and localities:—Penhale Pt., midway between Perrenporth and Newquay 9th Sept. Bude 12th September, female, taken. Lizard Head 20th Sept. also 27th and 29th Sept., probably the same individual in all three cases, or at any rate the last two. St. Mawes 1st Oct. Ruan Minor, near Lizard 15th Oct. on veronica blossom. I have what I believe to be a complete list of the records of the occurrence of this fine butterfly in the British Isles from 1876 to the present time, and the total of records is now 78.

The fact that an overwhelming majority of the specimens were seen at or near coast towns suggests the probability of their having been brought over from America by trading and other vessels, perhaps in their potato lockers (see *Entomologist*, 1921, p. 145); but as most of the specimens were seen in the southern counties it is possible that some of them found their way here from the Azores or Canary Islands. That any number of them came across the Atlantic on their own wings alone is highly improbable, and the scarcity of records from Ireland, and entire absence of any from Scotland, seems to show that even if such an occurrence were possible, it cannot have been frequent.

Collecting Butterflies in Orissa (Bihar and Orissa), India.

By W. M. CRAWFORD, F.R.E.S.

54. *Eriboea athamas*, Dry. ssp. *agrarius*, Swinh.—Common, those with one and those with two pale pre-apical spots on forewing being of about equal frequency. S.

55. *E. eudamippus*, Dbldy.—A single specimen (male) was given me by a friend, who had caught it on Meghasini in April. The forewing cell is almost wholly black, so that the specimen approaches *nigrobasis*, Lathy, from North Burma. N.

56. *Apatura parisatis*, Wstwd. *parisatis*.—Also from Meghasini in April. N.

57. *Euripus consimilis*, Wstwd. ssp. *meridionalis*, W.-M.—A single male from Mourbhanj State, caught by my collector in October. S.

58. *Diagora persimilis*, Wstwd. *persimilis*.—Only one male from Meghasini mountain, smaller in size than my Himalayan specimens. I managed to net a second one, but it unfortunately escaped. N.

59. *Euthalia lepidea*, Bilr. ssp. *miyana*, Fruh.—Rare, but I got one female in Sambalpur and one male and one female in Mourbhanj. S.

60. *E. garuda*, Mr. ssp. *anagama*, Fruh.—Fairly common. N.

61. *E. lubentina*, Cr. ssp. *indica*, Fruh.—Males very common, but females rare. N.

62. *E. nais*, Forst.—Common, more especially on jungle paths.

63. *Limenitis procris*, Cr. *procris*.—Rather uncommon. N.

64. *Pantoporia selenophora*, Koll. ssp. *kanara*, Evans.—A single female obtained from Mourbhanj. S.

65. *P. perius*, L.—Common.

66. *Neptis columella*, Cr. ssp. *ophiana*, Mr.—Only three specimens caught. N.

67. *N. jumbah*, Mr. *jumbah*.—Two (male and female) from Mourbhanj State.

68. *N. hylas*, L., *varmona*, Mr.—Very common.
69. *N. nandina*, Mr., ssp. *hampsoni*, Mr.—Caught several in Sambalpur. S.
70. *N. hordonia*, Stoll. *hordonia*.—Found in Sambalpur and many of the Native States, but not commonly.
71. *Cyrestis thyodamas*, Bdv., *thyodamas*.—A few got in Mourbhanj State and also saw some on Mailagiri mountain in Pal Lahara State. N.
72. *Hypolimnas misippus*, L.—Common. I got, in Sambalpur, two of the "very rare" ♀ form *inaria*, Cr.
73. *H. bolina*, L.—Very common. There is a wide variation especially in the males. I have specimens with the discal spots on the upperside quite white with but little blue round the edges and the underside bands also very broad white, and I have another male with the upperside spots wholly blue without any speck of white and the underside almost uniformly brown. There are endless variations between these two extremes.
74. *Kallima inachus*, Bdv. *inachus*.—I obtained several in Mourbhanj State. N.
75. *Precis hierta*, Fb. *hierta*.—Common. S.
76. *P. orithya*, L. ssp. *swinhoei*, Butlr.—Also common. S.
77. *P. lemonias*, L. ssp. *vaisya*, Fruh.—Very common. I have a specimen of dry season form quite rosy below. S.
78. *P. almana*, L. *almana*.—Very common in both wet and dry season forms.
79. *P. atlites*, L.—Uncommon.
80. *P. iphita*, Cr. ssp. *pluviatalis*, Fruh.—A few caught, both of wet and dry season forms. S.
81. *Vanessa cardui*, L.—Obtained nine specimens (1 in November, 4 in December, 3 in February and 1 in March.)
82. *Symbrenthia hippoclus*, Hb. ssp. *khasiana*, Mr.—One caught on Meghasini in June and others seen.
83. *Atella phalanta*, Drury.—Very common.
84. *Issoria sinha*, Koll. *sinha*.—Caught three in June on Meghasini and three more were sent to me by a friend from the same place. N.
85. *Ergolis ariadne*, L. ssp. *indica*, Mr.—Common. S.
86. *E. merione*, Cr. ssp. *tapestrina*, Mr.—Common. N.
87. *Telchinia violae*, Fab.—Very common.

ERYCINIDAE.

88. *Libythea myrrha*, Godt. ssp. *carma*, Fruh.—A single specimen caught on Meghasini in May. S.
89. *Abisara echerius*, Stoll. ssp. *suffusa*, Mr.—Fairly common. N.

(To be continued.)

NOTES ON COLLECTING, etc.

PHRYXUS LIVORNICA.—A male specimen of this moth was caught on Southampton Common on 10th Nov., 1933, and brought to me in excellent condition.—H. G. HARRIS (M.D.), Southampton.

CURRENT NOTES AND SHORT NOTICES.

We wish to acknowledge a rather unusually large number of communications for publication including (1) Remarks on the Noctuae observed during 1933 in the Pulborough district by Mr. Wightman. (2) The completion of the article on Maurin in the French Alps by Mr. Parkinson-Curtis, illustrated by eight plates. (3) List of captures with short notes around Storrington, Sussex, by Dr. G. Robertson. (4) The conclusion of the Notes on the Rhopalocera obtained around Orissa, India, by Mr. W. M. Crawford. (5) Collecting in Donegal, Ireland, by Canon G. Foster. (6) It is hoped to conclude the Revision of the 1st volume of Tutt's British Noctuae by the end of the year. (7) A study of the Rhopalocera of the Rhone Valley, a summary of the observations of the many workers who have stayed in this Alpine region, by Dr. Roger Verity (as a Supplement). (8) Signor Querci will probably send us further notes on the various broods of *Pieris rapae*. (9) An account of his visit in search of Lepidoptera to Jaca, Spain, by Mr. Wm. Fassnidge. (10) Descriptions of the aberrations of British Lepidoptera which have been recorded in Holland but have not yet been noted in the British Isles, by Herr B. J. Lempke. (11) Description of Paraneuroptera from Peru by Mr. W. D. Hincks. (12) Further interesting Notes from Cornwall by Mr. Nicholson. (13) Descriptions of the Larvae of Indian Rhopalocera by Dr. D. V. Sevastopulo. (14) Occasional Notes on Lepidoptera in Sussex and Ireland by Mr. Bonaparte-Wyse. (15) An Account of the Rhopalocera of the Cottian Alps and Turin in June-July, 1933, by Rev. E. B. Ashby. (16) Mr. Bainbrigge Fletcher will probably send us a series of Notes on the Micro-lepidoptera of the West Country centred around Stroud, Glos. (17) A further list of captures made at Salonika by Dr. G. Robertson. (18) An Account of Unusual Captures at Hawthorn and other blossoms, by Mr. H. Donisthorpe. (19) Mr. Sivier-Smith will send us his Collecting Notes. (20) There will be Reviews of new books and notes on the more or less current magazines. (21) Mr. Donisthorpe's Notes on Ants and their associates will be continued as well as the progress of his investigation of the old oak Forest of Windsor. May we ask all those who have notes of current interest to send them on for our "Current Notes" columns. But above all we urge our readers to add to the list of subscribers. At present we are just about able to make both ends meet. It would be gratifying all round to obtain further support so that an additional four pages could be added, if not every month, at least frequently.

The Annual Contribution to *Minen-Herbarium* has come to hand. It is now issued directly from its author and compiler, Dr. M. Hering, Berlin, N.4. Invaliden str. 43. The present issue consists as usual of three portfolios each containing examples of the mines of 20 leaf-miners of the Insect Orders, Lepidoptera, Diptera, Hymenoptera, and Coleoptera. Two of these portfolios are devoted to subjects obtained in Spain. We congratulate Dr. Hering in being able to find sufficient subjects for this work, which must entail not only the preparation, mounting, labelling, etc., but must be preceded by endless visits to country areas in search of subjects. As the work progresses this last will be more difficult, naturally the commoner species are first met with, for the more uncommon and rare species search will

be more difficult and less successful. So far in the past five years 300 species have been dealt with, and for the lepidopterist and dipterist there is a mass of practical information which will ever be useful for reference. Each folded sheet has the name and family of the host plant, the name, family and order of the insect and the locality whence the specimen was obtained.

A Meeting of the Entomological Club was held at the Hotel Parisien, South Kensington, on 13th Dec. 1933, Mr. Horace Donisthorpe in the Chair. *Members Present* in addition to the Chairman:—Mr. Robert Adkin, Mr. Jas. E. Collin, Mr. W. J. Kaye. *Visitors Present*:—Major E. E. Austen, Dr. K. G. Blair, Capt. de Aulâ Donisthorpe, Mr. C. G. Leman, Dr. C. Tate Regan, Capt. N. D. Riley, Mr. W. H. T. Tams. The members and visitors were received by the Chairman at 7 o'clock. The Chairman exhibited specimens of *Tychus ibericus*, Motsch., a beetle new to Britain, taken in Windsor Forest 20th May, 1933; *Tychus niger*, Pk., ♂ and ♀; and *Tychus niger*, Pk. var. *dichrous*, ♂ and ♀ (from the Collection of the late Mr. E. C. Rye). The latter had been originally introduced as *Tychus ibericus*.) Dinner was served at 7.30 p.m., and a very entertaining evening was spent.—H.W.E.

Our colleague Mr. Donisthorpe has placed his practical and unique collection of Coleoptera in the British Museum and with it also the results of his special study of ants with their associates. This most important collection will now be available for consultation by all biological students.

The January Meeting of the famous Entomological Club, The Verrall Supper, was a fine success for no less than 165 met at the Holborn Restaurant on 16th Jan. and spent a most enjoyable evening.

The S. London Entomological Society is extremely indebted to Dr. Joy for the donation of his fine almost complete collection of Coleoptera which in a short while will be available for consultation by the members of the Society. This Society now has very perfect collections of British Lepidoptera (Macro and Micro), European Rhopalocera, British Coleoptera, Paraneuroptera, and a large proportional of the more widely spread species of other orders of insects. The Society meets twice a month and these collections are available on these occasions for consultation, whereas the national collections can only be consulted at times when most of our collectors are engaged.

RE NOTES ON BRITISH NOCTUAE.—My kind correspondent Prof. M. Draudt of Darmstadt writes me that the aedeagus of his example of *andalusica* agree exactly with the result found by Mr. Tams. Brig.-Gen. B. H. H. Cooke kindly points out a printer's error on p. 309 of 'Brit. Noct. and their Varieties,' (Jan. no.). The *andalusica* taken by him was in June not in July as printed. He also records another example taken by himself at Albarracin on 6th June 1929. He calls my attention to a statement made by M. Rondou in his recently issued Catalogue of the Pyrenean Lepidoptera, that the *argillacea* found at Gedre is of an extremely deep brown and considered to answer to the form *gedrensis*, Schawerda. One would like to know whether this very dark insect is a *barrettii-andalusica* and not a *luteago* under which Rondou and Schawerda both place it.—Hy.J.T.

Nomenclature.

When I took over the acting editorship of the *Ent. Record* I found that the Nomenclature used in Lepidoptera was a jumble of names without any plan or uniformity. Often in one volume the same insect would appear under several different specific names and the genera were hopelessly misapplied. Names were often taken from popular works of no pretention to correctness or science, inferior "book-maker's" products. This superficial nomenclature was more prevalent in the Butterflies and became much intensified with the advent, at the end of the century, of the yearly collecting expeditions to the favoured localities of the Alps of Central Europe. The appearance of the 3rd edition of Staudinger's *Catalog* in 1901 helped to stabilize specific names to a great extent and also many of the generic names. But in some cases, the genus *Lycaena* for instance, Staudinger included 110 species without indication of the grouping obvious to all who had studied the species therein.

Gradually the task of stabilizing the names used for our British and Continental Lepidoptera was attempted. A copy of South's *Entomologist* List interleaved was revised gradually (I still use it) with the works of Bethune-Baker, Chapman, Tutt, and others before me. Priority names and spelling were gradually introduced entailing heavy work in altering MSS. and thereby, no doubt, often incurring the unexpressed "cusses" of the "diehards" for their pet names. In practice no assertion of a prior name has been adopted until reasonable time has elapsed for verification.

In continuation of this policy, in 1925-6, this magazine issued as a Supplement, *A List of British Geometers*, which contained the prior names of both species and genera, the work of L. B. Prout as published in the 3rd volume of Seitz *Palaeartic Lepidoptera*, with subsequent corrections by him, and containing the results of his study of the world Geometrid fauna. This was as near to a stabilization as can reasonably be expected.

Unfortunately this cannot be done with the Noctuae with any feeling of stability. Although Hampson of the British Museum studied this group as a world whole, the basis of his work was on illogical and unaccepted general principles, both in his spelling and classification. Great reliance was placed by him on the neurulation and but little if any on other structural characters, nor were obvious biological characteristics taken into account. One is able to get but little advance on the 1901 Staudinger *Catalog*, except in the specific alteration of the position of a species here and there as *barrettii* from *Luperina* to *Dianthoecia*, or of a genus as *Metachrostis* for *Bryophila*.

As for the Butterflies, the gymnastics which has gone on and is still going on, is most disconcerting. No one accepts what anyone else has done and we still get such mangled spelling as *megaera*, *typhon*, *corydon*, instead of the original names *megea*, *tiphon*, *coridon*; and *thauomas* for *flava*, *astrarche* for *medon*, *adonis* for *thetis*, etc., etc. As to the genera of our butterflies stability seems as far off as ever. Apparently even our National Nomenclature Committee avoids this task, and individual attempts would, if accepted, directly reverse some of the work already done by experts working in concert in the past. This Committee consists of some of the most reliable and experienced entomologists in the country and their decisions would, we feel, obtain the recognition of even those who are prone to have their own pet ideas as to this subject.—Hy.J.T.

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. Hy. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—S. *Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—R. C. L. Perkins, 4, Thurlestone Road, Newton Abbot.

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of D.oo. pupae of X. *gilvago*, D. *caesia*. A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—C. Zacher, Erfurt, Weimar, Street 13, Germany.

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyle*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucernea*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. Harold B. Williams, Woodcote, 36, Manorgate Road, Kingston Surrey.

Duplicates.—A large number of species of European and Palaearctic *Rhopalocera* and *Heterocera*.

Desiderata.—All British species especially those illustrating characteristics of an island fauna. Dr. Lor. Kolb, München 54, Dachauer-str. 409, Germany, and Franz Daniel, München, Bayer-str. 77, Germany.

Desiderata.—Living larvae or pupae of *Lasiocampa quercus*. Also set specimens of same species taken before 1910 in Devon or Cornwall.

Duplicates.—*Pavonia*, set specimens or living stock: *Monacha*, ova: *ochroleuca*, *griseola*, *advenaria*, *juniperata*, *thetis*, etc.—J. A. Downes, 5, Trinity Road, Wimbledon.

URGENT.—Wanted English (Cumberland) *Erebia epiphron*. Adequate exchange will be made in European Lepidoptera.—B. C. S. Warren, 14, Avenue de l'Eglise Anglaise, Lausanne, Switzerland.

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with English collectors and beg to send list of duplicates.—J. Soffner, Trautenau (Bezirksbehörde), Bohemia, Tschechoslowakische Republik.

WANTED.—Papered Lepidoptera and Coleoptera of all species wanted in exchange for papered insects, some rare, from Japan.—P. Siviter Smith, Pebworth, Stratford-on-Avon.

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. March 7th, 21st.

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. February 22nd, March 8th, 22nd.—Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.

The London Natural History Society.—Meetings first four Tuesdays in the month at 6.30 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. Visitors admitted by ticket which may be obtained through Members, or from the Hon. Sec. A. B. Hornblower, 91, Queen's Road, Buckhurst Hill, Essex.

Wanted to exchange: *Argynnis selene* var. *rinaldus*, *thalia*, and *marphisa* (all black) and other butterflies and moths from Tschechoslowakei for English butterflies (or for cash).

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LEPIDOPTERA AT MAURIN, BASSES-ALPES, FRANCE.

(Addenda)

By W. PARKINSON CURTIS, F.R.E.S.

Lycaena argus, L. ab. *demaculata*, Strand = *paucipuncta*, Courv., I have used this name as it appears in the Catalogue of Monsr. Lhomme. The species intended is that frequently called *argyrognomon*, Bergstr. and not *argus*, L. = *aegon*, Schiff., although I personally agree with Tutt, Verity, Haworth, Stephens, Curtis, Seitz, and a number of other authors of weight that to call *argyrognomon* by the name of *argus* is incorrect. However as long as it is understood that *argyrognomon* is referred to no confusion need be occasioned.

This specimen fell to the net of W. Fassnidge and is a ♂ in good order. At first we were inclined to refer it to *aegon*, Schiff. I have however examined the legs very carefully and the fore tarsi (one of which I have mounted as a microscope slide) the colour of the upperside and the very narrow dark brown margin induce me to refer it without doubt to the above.

The upperside calls for no further comment except that the cilia are a very dull white.

The normal underside tone of the species in the valley is greyish olive. This specimen is a little darker than deep olive-grey. This has the effect by contrast of rendering the basal blue scaling inconspicuous, which feature is accentuated by the fact that the scaling is itself less blue and duller than usual. In addition the customary pale ringing of the underside is so nearly unicolorous with the ground that it is but little in evidence on the forewing and but slightly traceable on the hindwing. The discal spot of the forewing is rather large and rounder than usual, the postdiscal row of spots is moderately well developed, the uppermost being small and the lowest merely forming two distinct spots. It presents one peculiar feature that recalls *aegon* and is not evident in any specimen of *argyrognomon* that I possess; the fourth and fifth spots counting from above are displaced basad so that the lower spots instead of being in a straight line form a short sharp angle which is still further accentuated by the lower double spot which is obliquely directed toward the tornus. It was this feature which made us incline to refer the specimen to *aegon*. Normal *argyrognomon* has a marginal series of orange spots edged basally and distally with dark brown, each spot being placed on a light spot of ground colour. All that is left of this is four hardly perceptible dull smudges above veins 2, 3, 4, and 5, growing progressively smaller from the tornus upward.

On the hindwing the two spots basad the discoidal are very weakly marked and entirely devoid of pale rings. The large single costal spot is nearly normal as is the discoidal though the latter is obscured with grey hairs like scales. The post discal series is obsolescent. The spots above veins 1 and 2 are the merest specks, those above four and five are very small, and there is the smallest speck above 6. The marginal decoration is very much reduced; the normal zinc-orange is degraded to a pale mikado-brown and is barely traceable, except in the spot above vein 2. Of the blue scaling there are 7 scales each side of vein 1 and nine above vein 2, and even they are more aluminium-grey than blue; the light internal lunules are just perceptible; the black

arcuate marks are fuscous slightly developed and ill-defined; the external dark spots being the same tone and in the same condition. The terminal series of spots on the nervures are fuscous but of normal size. A well pronounced black terminal line.

— Fringes rather whiter than in normal *ar'gyrognomon* and with a strong admixture of dark brown in the basal half of those of the forewing another feature that is usually more evident in *aegon* than in this species.

Sex ♂. Expanse 30m. In mus. Fassnidge (Note W. F. does not number his specimens).

On the system of Prof. Courvoisier this specimen should be called *paucipuncta*; on the other hand it also seems to comply with the diagnosis of *damaculata*, Strand, referred to by H. Rowland-Brown *Ent.*, 1918, p. 77 where he writes ab. *damaculata* "in which the red-gold spots on the underside of both wings have completely disappeared." Unfortunately Strand's paper is in a language, which I do not understand and Brown's above quoted extract makes no reference to the spotting, but as obsolescence of spotting so usually proceeds from the base distad, and the terminal border is the character that is usually the most persistent and often shows little reduction in extreme *caeca*, or *obsoleta* forms, one may perhaps safely assume that Strand's *damaculata* showed reduction in all underside ornamentation. Rowland-Brown, *op. cit.* p. 78, states that the two most interesting ♂ aberrations in his collection are both from high mountain localities. One being from Gavarnie, Hautes Pyrenees at 5000 ft., and the other from Campolungo at 7500 ft. W.F.'s specimen came from the neighbourhood of Lac Prarourt at about 8000 ft.

Rowland-Brown's specimen from Campolungo is described by him (*l.c.*) as follows "on the underside the forewings are unspotted with the exception of the discoidal, and faintly marked obsolescent median spots; the whole wing area is dun-coloured" (Note I do not know what dun-colour is when used for precise description, but mouse-grey or deep-mouse-grey covers the colour as applied to flies or cows, so evidently Brown's specimen is very close to W.F.'s in colour). The reduction of spots is not so pronounced on the hindwings, and the whitish band has disappeared." This last evidently refers to the sagittate white markings which frequently precede the ornamental border and which show a reduction corresponding to reduction of the annular ringing of the spots. This reduction is very marked in W.F.'s example. It does not seem to be usual in *obsoleta* forms; of the 36 *obsoleta* spread over 3 species in my own collection all still retain the white sagittate markings except one *coridon*, Poda, and as the entire disc in that specimen is snow white it is impossible to differentiate them.

Aberrations so rarely occur in identical form that it is not surprising if a specimen exhibits characters forming the features of other specimens which have received aberrational names, I think that W.F.'s specimen may be classed *paucipuncta* + *damaculata*.

Ortholitha octodurensis, Favre ab. **cinnamonea**, nov. ab.

A ♂ in good order taken by W. F. Although this aberration is strictly a melanic aberration, the general tone being many degrees more dusky than the forma typica, yet to my eye the most striking

peculiarity is the strong suffusion of the basal and terminal areas with an orange cinnamon tone, although this is in part an optical illusion due to contrast, yet the insect has at a casual glance the appearance of having the two areas mentioned of that colour, suffused with the grey and with a strong blue grey median band and costa. A close examination under a lens of moderate power, however, shows that the real colour is a soft onion-skin-pink, which owing to the glossiness of the scales and the admixture with grey scaling looks brighter than it really is. Head, tegulae, patagia, thorax, abdomen are deep neutral grey with a slight slaty admixture; the tegulae and vertex at bases of the antennae and the abdomen especially posteriorly being rather paler than the thorax. A normal specimen has three fasciae at the base of the wing; the first an ill-developed one, mainly marked by a cluster of dark scales at the base of the cell, followed by a pair of usually well marked denticulated lines from costa to dorsum with the teeth directed distad on the nervures. Of this coloration in the specimen under review it is impossible to trace any part, the whole area being softly suffused with neutral-grey with a slightly hoary silkiness; this neutral-grey fades away into the onion-skin-pink without any line of demarcation. Normally the area following this up to the medial line is grey with 3 or 4 ill-defined dentate lines mainly distinguishable only on the costa and dorsum; in this specimen except for the costa, which is deep neutral grey to just below the subcostal, the area is onion-skin-pink with a suffusion of grey scales, the latter being more numerous dorsally. The discoidal in the typical form is a very variable feature, but it is usually distinguishable as two spots. In this specimen it consists of a well marked but indifferently defined elongated lamp-black spot. It is just possible to make out the median line and the post-median, both being lamp-black where visible, the latter being the easier to trace as the lamp-black is developed as somewhat pronounced spots on the nervures; the area between the two lines, which is normally occupied by three fairly well defined blackish lines on a pale ground, is wholly deep neutral-grey with the nervures of a slightly warmer and more brownish tone, but not pronouncedly so, and the costal area very dark and cold in tone. The terminal area is almost wholly devoid of markings, and is onion-skin-pink suffused with grey, the subterminal line represented by obscure points on the nervures and the nervures themselves being enveloped in dark grey at the termen. There is no trace of the terminal dark line which is such a pronounced feature in the forma typica; dorsal and terminal cilia very dark neutral-grey. Hindwings silky neutral-grey, a slight darkish terminal line, the cilia darker than the ground but not as dark as in the forewing. Underside a uniform neutral-grey like the upperside of the hindwings, but not so silky, a fine dark grey terminal line, a shining ochreous line at the base of the cilia basally a little darker than the wings, costa of forewings narrowly suffused with deep neutral-grey.

W. F. does not number his specimens, but I have attached a type label in my own handwriting.

The specimen hardly photographs well; a hand coloured drawing would be the only satisfactory illustration.

I should include under the name given, all specimens of *octodurensis* showing this curious cinnamon tone, which is so unlike the colouring of itself or close allies.

Pyrausta cingulalis, L. ab. **bicingulalis**, nov. ab.

This is a very interesting form of this species which Mr. Meyrick tells me is new to him; it seems to come close to the form *vittalis*, De La Harpe. Faune des Lep. Suisses. *Memoires de la Soc. Helvetique* p. 33 (1864) of which the author says "size little larger than *cingulalis* forewing slightly more elongated slightly excavated at the extremity, transverse band is wider, of a white slightly sullied or slightly reddish." The specimens of *cingulalis* obtained on Font Sancté comply with the above, save that the band is ivory white and very brilliant, evidently the high development of the median band is a character coupled with elevation, as De La Harpe says he got his specimens in the High Alps, but does not add the elevation. Our specimens had beside this highly developed median band a second white antemedial band of variable development. I have chosen specimen No. 23588 in mus. Curtis as the type, as this shows the band most distinctly. The band is more extended toward the costa, but narrower than the basal band of *anguinalis* and occupies the same position exactly. One would be inclined to infer that this band is an atavistic character either reappearing, or never wholly lost. W. F. in 1933 obtained a similar form in some numbers at Jaca in Spain, but although the Jaca specimens show the antemedial band quite well, the median band is typical and not as markedly developed as in the ab. under discussion.

(To be continued.)

Collecting Butterflies in Orissa (Bihar and Orissa), India.

By W. M. CRAWFORD, F.R.E.S.

(Continued from p. 21.)

LYCAENIDAE.

90. *Poritia hewitsoni*, Mr., ssp. *hewitsoni*.—A pair was obtained from Mourbhanj State in the month of October.

91. *Spalgis epius*, Wstw., ssp. *epius*.—I got a few specimens in Sambalpur and also in Nayagarh State, but the insect was not common.

92. *Talicauda nyseus*, Guér., ssp. *nyseus*.—A few were got in the Puri district and the neighbouring Ranpur and Narsinghpur States. S.

93. *Castalius rosimon*, Fb., ssp. *rosimon*.—Very common.

94. *C. caleta*, Hew., ssp. *decidia*, Hew.—Fairly common. I got one specimen of typical *interrupta*, Nice., form in Sambalpur.

95. *C. elna*, Hew., ssp. *noliteia*, Fruh.—Four found on Meghasini and one in Narsinghpur State. N.

96. *Tarucus theophrastus*, Fb., ssp. *callinara*, Butlr.—Very common. (Has been given specific rank by some authors.—H.J.T.)

97. *T. nigra*, BB.—One male and four females obtained.

98. *T. nara*, Koll.—Two males and five females. (These three *Tarucus* have kindly been verified for me by Brigadier Evans.)

99. *Syntarucus plinius*, F.—Fairly common.

100. *Neopithecops zalmora*, Butlr.—One, got in Sambalpur and three in Ranpur State.

101. *Everes parrhasius*, F.—Common (probably a ssp. *E. argiades*, H.J.T.) S.

102. *Megisba malaya*, Horsf. ssp. *thwaitesi*, Mr.—A single specimen from Mourbhanj State.
103. *Lycaenopsis puspa*, Horsf. ssp. *gisca*, Fruh.—Common.
104. *Chilades lains*, Cr. ssp. *lains*.—Very common.
105. *Zizeeria trochilus*, Fr. ssp. *putli*, Koll.—Very common, in short grass.
106. *Z. maha*, Koll. ssp. *ossa*, Swin.—Common. (Not in Seitz Indo-Malay, but in the Palaearctic Volume.—H.J.T.) S.
107. *Z. lysimon*, Hüb.—Common.
108. *Z. gaika*, Trimen.—Common.
109. *Z. otis*, Fb. ssp. *decreta*, Btlr.—Common. S.
110. *Euchrysops cnejus*, F.—Very common.
111. *E. pandava*, Horsf. ssp. *pandava*. Rather less common.
112. *Lycaenesthes lycaenina*, Fldr. ssp. *lycaenina*.—Very few caught. S.
113. *Catachrysops strabo*, F.—Common.
114. *Lampides boeticus*, L.—Also common.
115. *Jamides bochus*, Cr. ssp. *bochus*.—Fairly common.
116. *J. celeno*, Cr. ssp. *celeno*.—Very common.
117. *Nacaduba kurava*, ssp. *canaraica*, Toxopeus.—Only two or three caught. S. (Not in Seitz.—H.J.T.)
118. *N. nora*, Fldr. ssp. *nora* (= *ardates*, Mr.). Not common either.
119. *Curetis thetis*, Drury.—Fairly common.
120. *C. acuta*, Dree. ssp. *dentata*, Mr.—Fairly common. (In Seitz *dentata* is put as a form of *bulis*, Dbldy. and *acuta* is not given.—H.J.T.)
121. *Iraota timoleon*, Stoll. ssp. *timoleon*.—Males very common, but females rare. A series, taken through the different months of the year, shows an interesting increase in the white markings on the underside as the rainy season approaches and a gradual return to a darker underside with the setting in again of the drier and colder weather. N.
122. *Horsfieldia anita*, Hew. ssp. *dina*, Fruh.—Common. (Seitz has *narada*, Hrsf. as the species: ssp. *anita*, Hew. (= *narada*, Nice.): and ssp. *dina*, Fruh.—H.J.T.)
123. *Amblypodia hewitsoni*, BB.—Common.
124. *A. amantes*, Hew. ssp. *amantes*.—Common. I did not find any other species of this very large genus. *A. hewitsoni* is now merged by Evans in *alemon*, de N.
125. *Surendra quercetorum*, Mr. ssp. *biplagiata*, Btlr.—Only a few caught. S.
126. *Loxura atymnus*, Cr. ssp. *continentalis*, Fruh.—Not common.
127. *Spindasis vulcanus*, Fb. ssp. *vulcanus*.—Very common.
128. *S. ictis*, Hew. ssp. *ictis*.—Fairly common.
129. *S. elima*, Mr. ssp. *elima*.—Fairly common. (Seitz puts these 3 species in *Aphnaeus*—H.J.T.)
130. *Zezius chrysomallus*, Hüb.—This very local butterfly was caught in considerable numbers on a small hill close to Sambalpur town. I didn't find it anywhere else. S.
131. *Pratapa blanka*, Nic. ssp. *sudica*, Evans.—I got only one specimen, a female, now in the British Museum collection. S. (Seitz puts *blanka*=*argentea*, Aur. a form of *Camena lucida*, Fb.—H.J.T.)

132. *Tajuria jehana*, Mr.—Only two males and two females obtained.
133. *T. cippus*, Fb. ssp. *cippus*.—Fairly common.
134. *Rathinda amor*, Fb.—Also fairly common.
135. *Chliaria othona*, Hew.—Two males obtained in Mourbhanj.
136. *Zeltus etolus*, Fb.—Uncommon.
137. *Dendoryx epijarbas*, Mr. ssp. *epijarbas*.—Rare, only two specimens having been got. S.
138. *Virachola isocrates*, F.—Very common.
139. *Rapala varuna*, Hrsf. ssp. *orseis*, Hew.—Taken very sparingly.
- N.
140. *R. schistacea*, Mr.—Only a few obtained.
141. *R. pheretimus*, Hew. ssp. *petosiris*, Hew.—Only four males and one female secured. N. (Seitz puts *petosiris* as a true species.—H.J.T.)
142. *R. melampus*, Cr.—Very common, females being almost as common as males.

(To be concluded.)

Noctuae in 1933.

By A. J. WIGHTMAN, F.R.E.S.

The imagines of *Xylina semibrunea* which had been wintered as described *Ent. Rec.*, July, 1932, page 98, were kept under constant observation, yet no pairing was ever noted, and by mid April the last of the males had died and a number of the females were so worn and dilapidated that I decided that if there were to be ova they had probably been deposited, and so turned out and most carefully examined the containers without finding more than seven ova (freshly laid). These had been placed on the extreme top edge of the wooden frame of the outer box. I liberated all the sickly insects and removed 3 that appeared lively to a smaller wooden box with a glass lid. On the morning of 30th of April I noticed that a good many ova had been deposited during the preceding night around the top edge of the box, all within one inch of the top and it was apparent that the moths had gone round and round ovipositing with their heads close to the glass. The following day the number of ova had greatly increased and one female was dead.

Upon a count of the ova I found there were nearly 700 and as this was all I had any use for I released the two surviving insects which had been in captivity since the previous October or November. The ova, which seemed to me to be extremely small for the size of the perfect insect, when freshly laid were dull white, with a waxy appearance but turned red in the course of 4 or 5 days. Having distributed ova among friends wishing to rear the species and having about 250 left I decided to attempt to rear them myself in the hope of getting forms darker or paler than that which is usual among wild taken specimens.

The first larva emerged on 13th May, and within a week all had appeared, the percentage of infertile ova proving to be very small. Given young shoots of ash these larvae were $\frac{5}{8}$ in. long in 14 days. They began to go down on 9th June and were soon all under ground. On examination of the tough earthen cocoons, which reminded one

very much of those of the *Cucullia*, they were found to contain only resting larvae until late July. Pupation commenced and was complete in the early days of August, those larvae whose cocoons had been tampered with pupating quite safely.

The first imago appeared on 10th August, and from that date until mid September 185 fine and perfect moths emerged. The mortality in the larval stage was perhaps 5% and in the pupal stage rather less, the loss from 250 ova to 185 moths being in most part due to my having given larvae away. All the imagines are rather larger than wild-taken specimens, but there is not a single individual the colour or marking of which cause it to appear different from its brethren, and I must conclude that *semibrunnea* is as constant as its congener *socia* is variable.

The fact, that so many ova were deposited in so short a time and some while after the last male had died, disposes, once and for all, of the story I have heard more than once, that in this species and its allies the female moth needs to be kept with a number of males as she is only able to produce a few fertile ova from a pairing and the males die after pairing; why I have previously failed to induce this species to lay, I cannot say. I have treated the captive moths in just this way for years, and only once before had ova and then only about a dozen. The reason this larva is seldom beaten is no doubt largely due to its almost uncanny ability to resist being shaken and jarred from its food, indeed when dislodged it will as often as not get a fresh hold in falling. I did not find it shy of daylight and beyond doubt these larvae spend all their lives up among the branches of the ash trees, which is certainly the natural food.

Aporophyla lutulenta, Bkh.

In my 1928 notes (*Ent. Record*, page 88, June, 1929), I commented on the fact that Warren-Seitz (*Pal. Noc.* Vol. III., Par. I.) applied the varietal names *lüneburgensis*, *sedi*, etc. to forms of *lutulenta*, very different indeed from the forms of that species to which Tutt (*Brit. Noc.* III., 56, etc.) had applied them, and Mr. H. J. Turner added a note in which he shows that Tutt is right and Seitz very much at sea in his letter-press on this species.

Since that date I have carefully examined Seitz figs. of *lutulenta* plate 30, *a* 5 and 6, *b* 1 2 3 4 5, and find them to be rather misleading to say the least of it. *a* 5 and 6 can be accepted as good enough figs. of typical *lutulenta* ♂ and ♀, but figs. *b* 1 and 2 said to represent ♂ and ♀ form *consimilis*, Steph. are certainly both ♂ insects and both cannot therefore represent this form. Fig. *b* 3 said to represent *tripuncta*, Frr., is little different from his fig. *a* 5, typical ♂ *lutulenta*, although in his text he says this form (*tripuncta*, Frr.) is very distinct, and his figs. *b* 4 and 5, called *lüneburgensis*, Frr. ♂ and ♀ both have ♀ antennae. He accepts this form as *lüneburgensis* on the strength of a specimen in existence so labelled by Freyer himself (so 'tis said) in defiance of Freyer's own description of his *lüneburgensis* as "black, very slight purplish tinge, the basal, elbowed and subterminal lines darker, an angulated narrow central shade very dark and quite black." There can, I think, be little doubt but that these Seitz figs. *b* 4 and 5 plate 30 represent *sedi*, Gn. they are certainly good figs. of the Scotch, Irish

and Manx form, which Tutt treated as *sedii*, Gn. although lacking the bright contrasting shadings of fresh examples. When I wrote these 1928 notes I was not aware of an article in *Ent. Record*, XI. 155-158 by the Revd. Burrows, in which he sums up what had been done by Tutt, *Brit. Noc.* III. page 56, etc., and describes three new forms from Mucking specimens.

He insists that these new forms are brownish and yet in his descriptions calls them ashy-grey and I am satisfied that two of these forms are identical with the Pulborough forms Nos. 5, 6 and 7 of my list which I described as Mouse-grey and pale ashy-grey. For when these Pulborough insects are compared for colour with *sedii*, Gn., from Scotland and Isle of Man, it is seen that they are a warmer grey, which could be described as a browner and less silvery grey than that form. It therefore follows that the forms bred from Pulborough larvae are correctly named as follows:—1. *lüneburgensis*, Frr., 2. *lutulenta*, 3. *tripuncta*, Frr., 4. *consimilis*, Steph., 5. trans. *consimilis ad approximata*, Burrows, 6. *approximata*, Burrows, 7. *cinerea*, Burrows.

In addition to these forms, I possess two others which do not occur here in Sussex. One which agrees well in colour with Seitz figs. b 4 and 5 from the Isle of Man=*sedii*, Gn., and two specimens from Hoy taken by McArthur, which are much more strongly marked and definitely silvery-white lined=*albidilinea*, Tutt. Seitz' suggestion that *albidilinea*, Tutt, *sedii*, Gn. and *lüneburgensis*, Frr., may all be the same form, is therefore very wide of the mark indeed.

(To be concluded.)

Unusual Captures at Hawthorn and other Blossoms.

By HORACE DONISTHORPE, F.Z.S., F.R.E.S., etc.

As is well known the blossoms of hawthorn (and also other trees) are very attractive to insects, especially beetles, some species of which are only to be captured by beating the trees when in flower. The following list, however, consists of species, which are not usually found in this way, and in some cases it is very surprising that they should have occurred there at all. These records are all from Windsor Forest; unless otherwise stated they were all taken by beating hawthorn.

CARABIDÆ:—*Amara similata*, Gyll., 21.v.33. Usually found on paths and roads, under stones, in cut grass, etc.

STAPHYLINIDÆ:—*Tachyporus solutus*, Er., 30.v.29. Usually occurs in moss, dead leaves, roots of willows in marshy places, etc. *T. humerosus*, Er., 23.v.29, and *T. brunneus*, F., 28.v.29. Similar habitats to *solutus*. *Quedius mesomelinus*, Marsh., 21.v.33. Occurs in moss, fungi, haystack refuse, under bark, etc., *Q. maurus*, Sahlb., 17 and 18.v.33. Usually under bark. *Bledius longulus*, Er. ! 19.v.33. Occurs in sand-pits, sandy places in cliffs, etc., in underground burrows. *Lesteva longelytrata*, Goez., 19.v.27. Usually found in moss on stones in streams, etc.

PHALACRIDÆ:—*Olibrus corticalis*, Pz., 18.v.33. Usually by sweeping "groundsel" etc.

EROTYLIDÆ:—*Dacne humeralis*, F., beating birch, 31.viii.33. It occurs in fungus on trees.

NTIDULIDAE:—*Omosita discoidea*, F., two specimens 1.vi.30. Usually found in carrion, old bones, decayed fungi, etc. *Ips quadriguttatus*, F., 28 and 29.v.29; 6.v.33. Occurs at sap, "cossus" trees, in fungi, etc.

Rhizophagus depressus, F., beating *Prunus* blossoms 6.iv.33. Occurs under bark, and in burrows of *Hylastes*, etc. *R. perforatus*, Er., 17.v.33. Occurs under bark, at sap, etc.

LATHRIDIDAE:—*Lathridius lardarius*, DeG., 17.v.33. Occurs in hot beds, vegetable refuse, by sweeping, etc.

CRYPTOPHAGIDAE:—*Telmatophilus caricis*, Ol., six specimens 28.v.29. Occurs in stems of *Typha*, often by sweeping reeds etc., around ponds. *Cryptophagus lycoperdina*, Hbst., beating Elderberry blossoms 20.vi.33. Lives in the common "Earth Ball" (*Scleroderma vulgare*). *C. pubescens*, Stm., beating Honeysuckle 15.viii.33; lives in wasps' nests in the ground; occasionally by sweeping. *C. scanicus*, L., 27.v.29. Occurs in vegetable refuse, fungi, carrion, etc. *Atomaria linearis*, Steph., 21.v.33. Occurs in moss, haystack refuse, by sweeping, etc.

SCAPHIDIIDAE:—*Scaphidium 4-maculatum*, Ol., 19.v.33. Lives at the damp bottoms of wood-stacks, in rotten stumps, and fungoid growths.

MYCETOPHAGIDAE:—*Mycetophagus 4-pustulatus*, L., 17.v.33. Occurs in fungus on trees and stumps.

BYRRHIDAE:—*Byrrhus fasciatus*, F., 8.v.28. Is found in sandy places, on roads, etc.

SCARABAEIDAE:—*Aphodius granarius*, L., 31.v.32. Occurs in dung, vegetable refuse, etc.

EUCNEMIDAE:—*Throsus carinifrons*, Bonv., 29.v.31. Found by sweeping in woods, especially "evening sweeping."

DASCILLIDAE:—*Cyphon padi*, L., by beating "Mountain Ash" blossoms, 19.v.27; *Prunus* blossoms, 6.iv.33. Usually by sweeping in marshy places, also in moss and flood refuse.

CURCULIONIDAE:—*Apion flavipes*, F., by beating "Crab Apple" blossoms, 11.iv.33. Occurs on white clover; common by sweeping, etc. *Sibinia potentillae*, Germ., 27.v.28. Occurs on *Spergula* and *Potentilla*, etc., in sandy places.

P.S.—On May 20th, 1920, I beat two specimens of *Calodera nigrita*, Man., off Scot's Pine trees in blossom at Freckenham. It occurs in moss and at the roots of herbage in marshy places.

Trypeta (Orellia) winthemi, Mg. An Addition to the List of British Trypetidae.

By M. NIBLETT.

On 15th August, 1932, on Ranmore Common, Surrey, I gathered a few flower-heads of *Carduus crispus*, L. (Wetted Thistle), with some whitish Trypetid larvae in them; in June, 1933, four flies emerged as follows: 3rd June, ♂; 7th, ♂, ♀; 11th, ♀. I submitted these to Mr. J. E. Collin, F.R.E.S., who informs me that they are *Trypeta winthemi*, Mg., and who drew my attention to the following points in connection with them: "It is very near *T. flores-centiae*, L., but may be known primarily by its pale costal stigma; there are slight differences in the wing markings, and the cross veins are rather closer together."

I should like to take this opportunity of thanking Mr. Collin for his help in determining this species. The larva is yellowish-white, it constructs a very slight cocoon of pappus-hairs, and pupates sometime in May in the flower-head, forming a yellow-brown puparium.

Frauenfeld recorded this species from *U. crispus*, and Loew doubtfully from *Cnicus palustris*, L. (Marsh Plume Thistle). I can find no record of its occurrence in Britain, and Mr. Collin informed me that he had not seen a British specimen.

NOTES ON COLLECTING, etc.

EARLY APPEARANCE OF *AGLAIS URTICAE*, L.—On 3rd March at about 12.30, when taking a little walk in the sunshine, a specimen of the small Tortoiseshell was observed in the Upper Richmond Rd., Putney, flying about and settling on some fruit in front of a green-grocer's shop. This would no doubt be a hibernated specimen, and though perhaps not a very early record, it may be worth publishing as occurring in the town of Putney itself.—HORACE DONISTHORPE.

[An *Aglais urticae* was flying about in the garden here at Stroud on Friday, 9th March.—T.B.-F.]

SOME LEPIDOPTERA FROM SALONICA.—A few insects I captured during and after the late War were put in a box and lost until recently. I am indebted to Capt. Riley and Mr. Tams for their identification. *Tarucus telicanus*, *Tarucus balkanica*, *Caenonympha pamphilus* f. *lyllus*, *Epinephele jurtina* f. *hispulla*, *Polyommatus icarus*, *Lamaera glabellaria*, Heeger, *Ocnogyna parasita*, Hübn. males came very commonly to light on January 1st 1919. W. F. Kirby (*European Butterflies and Moths*, page 107) states that it appears in March and April. *Cucullia chamomillae*, Schiff., *Euxoa spinifera*, Hübn., *Euxoa radius*, Haw., *Celama chlamidulalis*, Hübn., *Cidaria obstipata*, Fabr., early spring of 1919.—GEO. S. ROBERTSON (M.D.), Storrington. Dec. 21st., 1933.

[This is really an addition to Dr. Robertson's note on Salonica captures published in the *Ent. Record* of 1918 page 186.—HY.J.T.]

CURRENT NOTES AND SHORT NOTICES.

In *Lambillionea* for August to December last are plates IX-XII which contain figures of *Colias hyale* ab. *alba*, Derenne, a pure white form; and ab. *atava*, Reutti., an entirely black form; *Pontia daphidice*, ab. *nitschei*, Gornik, in which the discal compound spot of the forewing has the semi-detached upper portion obsolescent; *Euchloë cardamines*, ab. *dispila*, Raynor, the forewings below have the usual spot grey-black; ab. *meridionalis*, Vrty., in which the design on the under surface is much reduced but considerably powdered with black. *Argynnis adippe* (*egdippe*) ab. *callista*, Cab., has the black markings enlarged and squared; *Papilio machaon*, a beautiful melanic form without any traces of the usual marginal light markings; four *Abraxas sylvata* of different forms; and a curious *Diacrisia lutea* (*lubricipeda*) in which the apical half of the R. hindwing was suffused with black.

The following 3 new aberrations are described in the October number of *Lambillionea*. (1) *Euchloë cardamines*, ab. *pulverulenta*, in which the hindwings below are covered by green-yellow dots without any black coloration; ab. *bilineata* in which the additional spot below the discoidal shown in ab. *despila* is elongated; and *Aglais urticae*, ab. *ochrea*, in which the usual red of the hindwing is replaced by yellow.

Those who are interested in *Wicken Fen* should get a most instructive guide, published by the National Trust for Places of Historic Interest or Natural Beauty. It contains a description of the various sections of the Fen, a historic account, and much information on the Flora and Fauna. There are numerous illustrations with several maps. The price is one shilling and should be in the hands of every entomologist and botanist who takes advantage of the facilities afforded by the Trust for visiting this wonderful and unique collecting area of the British Isles.

Two further parts of the *Supplement to the Palaearctic Macrolepidoptera* of Seitz have just come to hand. Part 45 consists of three sheets of letterpress of Vol. II dealing with the Bombyces, etc. The additions to the genus *Zygaena* are concluded, a few additions to the *Syntomidae* and the commencement of the additions to the *Arctiidae*. By the bye, I think that now the *Syntomidae* are called *Amatidae*. The British species have been dealt with already and this part gives the additions to the more eastern and southern species of which we know but little. Part 46 consists of a further section of 2 sheets of the Noctuae by Dr. M. Draudt in Vol. III. Among British species are *Rhyacia castanea*, 2 additions, *R. angur*, 2 new forms; *R. praecox*, 1; *Eurois prasina*, 5; *E. occulta*, 8; *Cedestis rubricosa*, 1; *C. sobrina*, 1; *Naenia typica*, 2; *Triphaena pronuba*, 5; *T. fimbria*, 4; *T. interjecta*, 1; *T. janthina*, 3; *T. orbona*, 3; *T. comes*, 1; *Eueretagrotis agathina*, 2; thus ending the *Agrotinae*. There follow 2 new forms of *Bavathra brassicae*; and several of *Scotogramma trifolii*. A plate of over 50 figures is included, striking in its softness of texture.

Of the continuation of the main volume there have recently appeared 4 parts. Vol. VIII. *American Geometers*, by L. B. Prout consisted of one sheet, and 2 plates of 149 figures of mainly green coloured species. Vol. X. a sheet of preface and 5 plates of the *Bombyces*, etc., of the *Indo-Australian Fauna*, now nearing conclusion. Vol. XII. 3 sheets of *Indo-Malay Geometers*, of which group very little has previously been known, in a collective sense.

The well-known Society of enthusiastic Entomologists, which is centred in and around Southampton, is again to change its name, from The Entomological Society of the South of England to THE SOCIETY FOR BRITISH ENTOMOLOGY, with the aim of getting every student of our British insect Fauna to join its ranks. The enthusiasm and energy for real entomological work, with which a considerable section of its present members are so imbued, is quite phenomenal. An extension such as contemplated will ensure that the Journal the Society publishes will reach a general circulation in due course. We have been informed, too, that there are members of the Society who definitely place their knowledge and experience at the service of the juniors, and encourage the real entomological work the outcome of organized collecting.

We have received from the Ministry of Agriculture and Fisheries a bound volume of *Leaflets on Insect Pests of Farm and Garden Crops*,

comprising some three dozen pamphlets issued during the last few years, mostly with adequate figures and plates. Many figures are "much enlarged" so as to look very formidable, but in most cases the actual size is given. Usually too, a picture of the destruction effected by the stage of the insect upon the plant structure is furnished, and perhaps is much more useful than that of the pest itself. The insect often is small, and obscure by reason of its protective resemblance, whereas the results of the working of the pest cannot usually be hidden, and increase rapidly in conspicuous appearance. The destructive stages of moths, beetles, flies, plant-bugs, spiders, millepedes, centipedes, slugs, snails, thrips, eelworms, etc. are all dealt with under various headings. Usually the leaflet begins with a few general remarks, then comes a detail description of the species in its various stages, imago, larva and pupa, and when and how it exists in the off season from attacks. The damage is described and the direction and methods of attack, the signs of the presence of the pest when internal, such as in the root, and economic importance of dealing drastically with the trouble. Where natural checks and enemies are available their incidence is fully dealt with, such as the introduction of parasites; and of course the possibility and methods of effective artificial control are thoroughly explained. We have been promised copies of the leaflet concerning the "Colorado beetle" with its coloured plate for a subsequent number. This volume can be obtained from H.M. Stationery Office or through any bookseller for 1s. 6d. "postage extra" and is well worth the cost for the amount of matter it contains and for the interest it should excite in non-entomological enquirers.

Nomenclature.

In Nomenclature the outstanding event of the month was the sudden appearance on Feb. 23rd of a *List of the British Butterflies* "in the name and by the authority of the Royal Entomological Society." We welcomed its appearance with the hope that now we might have the genus difficulty fixed, but, when we looked down the list and the references to the bases upon which the selection of names were made, we were aghast. Priority is stated to be the key-note, but again and again this principle is disregarded by literary gymnastics, and the Index was a complete dud. Apparently the List was compiled in a great hurry, an opinion that was confirmed, for a few days subsequently to its issue, two pages were reprinted and sent out. We stated some time ago, we *must* use any list, however imperfect it may be, coming from our highest responsible authority. One does not like to feel compelled to spell names wrongly or to use genus names in a sense different from the sense they have been shown to denote on the best of historic evidence. They are sure to be condemned wholesale by continental authorities. In a later issue we propose to give the List and compare it with the List issued by the late J. W. Tutt, the work of his many helpers including Mr. Bethune-Baker and the Rev. George Wheeler, and also to comment on the numerous errors of ignore-ance.

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should
be sent to Mr. H. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—S. *Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—J. W. *Woolhouse*, Hill
House, *Frances Street, Chesham, Bucks.*

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list
sent.—R. C. L. *Perkins*, 4, *Thurlestone Road, Newton Abbot.*

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of *D. oo. pupae* of *X. gilvago*, *D. caesia*. A. J. *Wightman*, "Aurago,"
Bromfields, Pulborough, Sussex.

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of
British Isles.—C. *Zacher* Erfurt, *Weimar, Street 13, Germany.*

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety,
Doubledayaria, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*,
Lucerneae, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens*
Putrescens, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v.*
flavescens, *Liturata v. nigrofulvata*. *Harold B. Williams*, *Woodcote, 36, Manorgate Road,*
Kingston Surrey.

Duplicates.—A large number of species of European and Palaearctic *Rhopalocera*
and *Heterocera*.

Desiderata.—All British species especially those illustrating characteristics of an
island fauna. Dr. *Lor. Kolb*, *München 54, Dachauer-str. 409, Germany*, and *Franz*
Daniel, *München, Bayer-str. 77, Germany.*

Desiderata.—Living larvae or pupae of *Lasiocampa quercus*. Also set specimens of
same species taken before 1910 in Devon or Cornwall.

Duplicates.—*Pavonia*, set specimens or living stock: *Monacha*, ova: *ochroleuca*,
griseola, *advenaria*, *juniperata*, *thetis*, etc.—J. A. *Downes*, 5, *Trinity Road, Wimbledon.*

URGENT.—Wanted English (Cumberland) *Erebica epiphron*. Adequate exchange
will be made in European Lepidoptera.—B. C. S. *Warren*, 14, *Avenue de l'Eglise*
Anglaise, Lausanne, Switzerland.

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with
English collectors and beg to send list of duplicates.—J. *Sofner*, *Trautenau (Bezirksbehörde),*
Bohemia, Tschechoslovakische Republik.

WANTED.—Papered Lepidoptera and Coleoptera of all species wanted in exchange for
papered insects, some rare, from Japan.—P. *Siviter Smith*, *Pebworth, Stratford-on-Avon.*

Duplicates.—Well set British Lepidoptera all in perfect condition about 200 species.

Desiderata.—Living larvae: please send list of species obtainable.—A. *Lester*, 2,
Pembury Road, London, N.17.

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7.
8 p.m. March 21st, April 4th.

The South London Entomological and Natural History Society, *Hibernia*
Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m.
March 22nd, April 12th.—Hon. Secretary, S. N. A. *Jacobs*, "Ditchling," *Hayes*
Lane, Bromley, Kent.

The London Natural History Society.—Meetings first four Tuesdays in the
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LEPIDOPTERA AT MAURIN, BASSES-ALPES, FRANCE.

(Addenda)

By W. PARKINSON CURTIS, F.R.E.S.

Zygaena trifolii, Esp. ab. **nigerrima** nov. ab.

I should have preferred to call this *nigra*, unfortunately this name has already been applied to a North African race of *trifolii* which has a comparatively slight claim to the name and would have been better characterized by a geographical name.

This aberration seems to be the logical development of ab. *obscura*, Tutt, *Nat. Hist. Brit. Lep.* Vol. I., p. 487 (1899) = *nigricans*, Oberthür, *Bull. Soc. Ent. France*, 1907, p. 221, fig. = *trifolii*, ab. *obscura*, Oberthür *Lep. Comp.* Vol. III., pl. xxviii., fig. 164 (1910) which is obviously (see Oberthür *l.c.* Vol. IV., page 491) a figure taken from the specimen described by Tutt. The specimen figured as *obscura* in the *E.M.M.*, Ser. II., Vol. XXII., plate III., fig. 1 (1911) would appear to be a step on the road to melanism further than the type itself as a comparison of the figures will show, and it is not, as Oberthür's figure was, taken from the type itself but from a bred specimen, it is however very near indeed. I think Mr. Knight has got the *Zygaenid* richness of colour in his figure much better than Monsieur Culot has in his. The duck-green reflections in Mr. Knight's figure are approximately the same here as they are in my specimen. My specimen does not show any of the brownish tone referred to by Oberthür in *Bull. Soc. Ent. France, l.c.* a translation of which latter description is as follows:

"Ground of the upper wings and the margin of the hindwings remains a steely blue rather greenish and shining, whilst the spots on the forewings and the ground of the hindwings are a brown black very dark and more matt."

My specimen, taken in the lower part of the valley on the banks of R. Ubaye, is, I should think, the maximum possible development in a melanic direction and when I saw it on the wing I thought it was a dark specimen of *Syntomis phegea*, L. and finding it a *Zygaena* thought it a species I was unacquainted with, until Messrs. Fassnidge and Burras saw it and said no European species presented the facies and Fassnidge and I referred it to *trifolii*. Burras thinks the elevation too great and thinks *transalpina* would be nearer the mark.

Antennae, legs, tegulae, patagia, thorax, and abdomen the deepest black with hardly a trace of bluish slate-black reflections.

Forewings, glossy metallic dull greenish-black No. 2, reflections at some angles cupreous, at other angles duck-green, cilia at certain angles duck-green, spotting normal, velvety matt surfaced, at some angles dead black almost indistinguishable, at other angles a very deep Indulin-blue.

Hindwings match the forewing spotting but are not quite as velvety, the metallic blue terminal band of *forma typica* being distinguishable at certain angles by a duck-green reflection; cilia as in forewings. Underside black with Indulin-blue reflections slightly developed, the upper side spotting as matt patches; the cilia and borders with duck green reflections.

Type specimen, No. 23587, in mus. Curtis.

Mesographa itysalis, Wlk. race **maurinalis**, nov. race.

The position and identity of these specimens is not quite as satisfactorily settled as I could wish, for want of sufficient Asiatic material.

It will simplify matters I think, if I first deal with material. Mr. N. Filipjev of Leningrad sent me two *Mesographe costalis*, Ev. ♂ and ♀—compared by him with Eversmann's types and he also sent me a photograph of the type and co-type. These unfortunately are not suitable for reproduction.

Herr Otto Bang-Haas one ♀ *Mesographe hilaralis*, Christ. compared with type.

These two gentlemen have also kindly endeavoured to get more material unsuccessfully, though Mr. N. Filipjev has put me into communication with three lepidopterists in Siberia, who may ultimately be able to procure material. Professor J. McDunnough of Ottawa very kindly sent me *M. itysalis*, Wlk., and 2 *M. radiosalis*, Mösch. Herr Otto Bang-Haas has very kindly compared one of the *radiosalis* with Moschler's type in his possession and pronounces it to be in agreement with the type, whilst the U.S. Museum at Washington sent me 4 *itysalis*, Wlk.

Mr. Fassnidge and I obtained 14 *maurinalis*, two I sent to Mr. Meyrick, one I gave to the Brit. Museum, four I have retained but I think they will ultimately reach the latter place.

Mr. Fassnidge has 7, two of which he will let me have to send to Leningrad as an exchange for the material obtained thence. Of *itysalis*, Wlk., there are 5 in the B.M.

A small ♂ labelled Labrador ex Frey's collection.

Type of *variegata*, Wlk., ♂ bred from clover; a crippled undersized specimen from St. Martin's Fall Quebec.

Type of *itysalis*, Wlk. ♂ also undersized from St. Martin's Falls Quebec.

Type of *turmalis*, Grote. ♂ from Rio Colorado; very dark rather worn.

One specimen of *itysalis* ex-Walsingham collection labelled West U.S.A. 89-93 Camp 43-45, this last being the only presentable specimen in the B.M. series.

Three Asiatic specimens standing under various labels in the B.M. collection, which seemed referable here, did not prove helpful. Three specimens standing under *amatina*, Butler, in the B.M. all from Chili, one the type of *indistincta*, Butler, one the type of *melanosticta*, Butler and a co-type, all three most certainly nothing to do with *amatina*, Butler.

Mr. W. H. T. Tams has mounted the genitalia of one of my *maurinalis* and of the three Asiatic specimens which did not prove helpful, but felt that in the absence of "control" material it was unwise to attempt to use the genitalia of the three types standing under *itysalis*.

LITERATURE:—The following references have a distinct bearing on the problem.

Botys costalis, Edward Eversmann, "Mittheilung uber Einige neue Falter Russland's," *Bull. Soc. Imp. Naturalistes Mosc.* (1852) p. 166, No. 15.

Botys hilaralis, H. Christoph. "Neue Lepidopteren des Amurgebietes" *Op. Cit.* (1881) p. 23, No. 70.

Botys sedakowialis, E. Eversmann, *Op. Cit.* (1852) p. 166. (Note

the description of *costalis* is by comparison with this species in part).

Scoparia itysalis, Francis Walker, *Lep. Ins. in B.M.* Vol. XVII. p. 852, No. 38 (1859).

Scoparia variegata, Francis Walker, *Op. Cit.*

Botys hyperborealis, H. B. Möschler. "Beitrag zur Schmetterlinge Fauna von Labrador," *Stett. Ent. Zeit.* (1874) and *op. cit.* Vol. 44, p. 123 (1883) (by a typographical error printed *hyperborealis*) by O. Staudinger. *Deut. Ent. Zeit. Iris* 3a. Dresden V. 1892. "Lepidopteren des Kentei Gebirges."

Botis turmalis, A. R. Grote. *Can. Ent.* Vol. XIII. (1881) p. 33.

Pionea costalis, Ev. var. *hilaralis*, Chr., *hyperborealis*, Moschler; var. *alaicalis*, and var. *brunnealis*, Von Furst A. Caradja. "Beitrag zur Kenntniss der geographischen Verbreitung der Pyraliden und Tortriciden des europäischen Faunengebietes, nebst Beschreibung neuer Formen." *Deut. Ent. Zeit. Iris* XXX. 1-88 (i. May 1916) Dresden page 33-34.

Prince Caradja *op. cit.* p. 33, refers to var. *hofmanni*, Krulikowski *Bull. Mosc.* 1904 p. 23 pl. II., Fig. 6. There is something wrong with the reference for neither the Registrar of the Royal Ent. Soc. who has obligingly tried to find it, nor I, can trace the reference.

Phlyctaenia tillialis, Dyar. *Proc. U. S. Nat. Mus.* XXVII. No. 1376, p. 916 (1904).

Phlyctaenia itysalis, Dyar. *loc. cit.*

Botys radiosalis, H.B., Möschler. *op. cit.* vol. 44, p. 123 (1883).

Phlyctaenis itysalis, Barnes and McDunnough. *Nat. Hist. Lep. N. America*, Vol. XI. page 214. (1914).

RELATIONSHIP:—Prince Caradja arranges the above as follows:—

<i>P. hyperborealis</i>	Moschl.	Labrador.
(a) forma <i>similissima</i> .		Sajan.
var. <i>hofmanni</i> , Krul. (trans).		
(b) <i>costalis</i> , Ev. var. <i>hilaralis</i> , Christ.		Siberia or m. Kentei (trans).
(c) var. <i>alaicalis</i> , Car.		Alai.
(d) forma <i>brunnealis</i> , Car.		Juldus.

The result of my investigations and in the light of material from Maurin leads me to suppose that the relationship which will ultimately be proved to exist will be the following:—

<i>Mesographe costalis</i> , Eversman.		Irkutsk district. Siberia or. etm. Kentei.
= <i>hilaralis</i> , Christ.		
= <i>hyperborealis</i> , Stgr. nec Moschler		
(a) forma <i>similissima</i> , Car.		Sajan.
? = <i>hofmanni</i> , Krul.		
(b) var. <i>alaicalis</i> , Car.		Alai.
(i.) forma (? var. or ab.) <i>brunnealis</i> , Car.		Juldus.
<i>Mesographe itysalis</i> , Wlk.		} N. America.
(a) race <i>itysalis</i> , Wlk.		
= <i>hyperborealis</i> , Moschler nec. Stgr.)		
= <i>variegata</i> , Wlk.		
= <i>turmalis</i> , Grote.		
= <i>tillialais</i> , Dyar.		

- (b) race *maurinalis*, Curtis Alps of France.
 (c) ? race *indistincta*, Butler Chili.
 = *melanosticta*, Butler.

(The last I add with some diffidence but the relationship is distinct and I feel that this species stands to *itysalis*, Wlk. in the same relation as *costalis*, Ev. does to *itysalis*).

Mesographa radiosalis, Mosehler—North America.

I think at present it is best to keep this apart for reasons hereafter stated.

Dr. Staudinger the late Herr Bang-Haas and Herr Otto Bang-Haas are quite clear that *costalis*, Ev. = *hilaralis*, Christ. Dr. Staudinger *loc. cit.* put it beyond doubt that his *hyperborealis* from Kentei = *hilaralis*, Christ. (and it is therefore not *hyperborealis*, Mosch.) though I should be quite prepared to hear that *hyperborealis*, Stgr. from Kentei = *brunnealis*, Caradja. Since Mosehler's *hyperborealis* is from Labrador, it = *itysalis*, Wlk. which antedates it by 15 years. *Variiegata*, Wlk. and *turmalis*, Grote are quite obviously conspecific with the type of *itysalis* and with Frey's specimen from Labrador, which Frey has only labelled *Pyralis* sp.

Caradja writes of *hyperborealis*, Mosch. "mir im natura unbekannt." Obviously he like me was embarrassed for want of material, at the same time I feel that I am better off than he in that respect, as I have seen over 3 dozen specimens from divers localities in both hemispheres. *Radiosalis*, Mosch. is, Prof. McDunnough considers, identical in structure with *itysalis* and only differs in colour (but see a distinction as to cornuti), moreover, it is taken flying with *itysalis*. Herr Otto Bang-Haas has compared one of Prof. McDunnough's *radiosalis*, Mösch. with the type in his possession and it agrees with it.

As Dr. Dyar's description of *tillialis* is so imprecise and full of *lacunae* as Messrs. Barnes and McDunnough *loc. cit.* point out there is nothing to distinguish it from *itysalis*. Since on his own admission Dr. Dyar had seen *itysalis*, his failure to get any tangible distinctions is the less excusable. The type is No. 7829 in the U.S. Nat. Museum and if the specimen can still be traced it would be interesting to have it compared with Walker's type and other authentic material. Messrs. Barnes and McDunnough hesitate to sink *tillialis*, but as matters at present stand this seems to be the just and proper course and for the purposes of this description I sink it to *itysalis*.

The differences in this little assemblage are so much a matter of degree, that I feel the most serviceable mode of defining the Alpine race is by comparing it with the *costalis*, Ev. and *hilaralis*, Christ. before me, and with the American specimens standing as *itysalis*, Wlk. that I have access to. This method is I am afraid a more lengthy business than a straight description, but I trust more precise.

(1) *Genitalia*.—I have mounted 2 *maurinalis*, one compressed, one not; 3 *itysalis*, one compressed, one not, one lateral; one *radiosalis* and one *costalis*, the latter two both compressed.

Unfortunately I compressed my only ♂ *costalis*, Ev. before Mr. W. H. T. Tams pointed out to me, and, I realized the advantage of a greater depth of balsam, and the comparison is between compressed mounts. I have however, exercised as much care in comparing to eliminate any appearance, which seemed to be due only to distortion,

as I could, and have checked where I could with uncompressed mounts.

The uncus in all specimens terminates in a flat knob covered on the dorsal surface with coarse hair directed backward, giving the appearance of a comet with a short tail. In *costalis* these hairs are shorter and more regular than in *maurinalis*, whilst the knob-like end is perfectly circular in outline in *costalis*, it is inclined to come to a point in *maurinalis*, *radiosalis* and *itysalis*. The uncus is comparatively longer and slighter in *costalis* than that in *maurinalis*, and that notwithstanding that *maurinalis* is much the larger insect. The lateral mount, as also an inspection of the uncus in a fair depth of fluid without compression, shows that the terminal knob is in reality much the form of a cobra's head with the crestal lobes expanded, being really vertically shallow, but horizontally extended. This unfortunately is not very obvious in compressed mounts since one gets only a plan view and not an elevation. A lateral mount of *itysalis* shows distinctly that the uncus is shorter than *costalis* comparatively, but I cannot see anything tangibly different in the uncus of *itysalis*, *radiosalis* and *maurinalis*.

In all there is a large membraneous tubular structure below the uncus, which seems to be a subscaphium, but it is so soft and impalpable that I cannot place any reliance on its development as a guide.

In all species the harpes are long and sickle-shaped with the upper edge strongly chitinized, more so in *costalis* and *radiosalis* than in *maurinalis*, and much more so than in *itysalis*.

The lower edge of the base of the harpe however is also chitinized to a greater extent than the rest of the harpe, but in *costalis* is expanded so that the lower curve basally assumes a semi-circular shape. This is so in a lesser degree in *radiosalis*.

In *maurinalis* the expansion is so slight as to break the regularity of the curve but little. In *itysalis* this lower edge is irregular, and instead of an evenly flowing curve, there is a tendency to form decided angles where the direction changes; in one mount this is very marked.

I am not however inclined to trust this as a character of taxonomic value since, although it is borne out by the material before me, there seems to be a tendency to individual variability in this respect, and a long series of mounts might show that the individual variability overlapped.

At the base of the harpes rises a short free lobe. This rises a little nearer the upper edge than the lower edge. It is a rather fragile structure and requires careful demonstration. It appears to be capable of considerable free movement. In all my mounts of *itysalis*, *radiosalis* and *maurinalis* this process is directed downwards, in *costalis* it is directed distad—I thought at first that this was a very marked character, but found that compression exaggerates the downward tendency in *maurinalis* very much, and this coupled with the freedom of movement might easily lead to self deception, as the lobe is quite capable of turning over upon itself and this exaggerates the downward direction, it is necessary therefore to be careful not to distort this lobe in mounting. However, I am satisfied that its direction differs in the two species and I am satisfied that the hook at the end is more sudden and pronounced in

costalis than in the other three, though my mount of *radiosalis* shows a slightly higher development than *itysalis* and *maurinalis*, without in any way reaching the stage of development attained in *costalis*.

The terminal end of the harpe shows some variation. In the *radiosalis* before me, it is squarely truncate with well rounded corners, in one of the *itysalis* the upper angle is rounded and thereafter the edge falls away at an angle of about 60° to form an obtuse angle with the lower edge; in two others there is a much nearer approach to the conditions shown by the cited *radiosalis*; in both compressed and uncompressed mounts of *maurinalis* this angularity is very evident, especially in the uncompressed mount, whilst in *costalis* this character is midway between the *radiosalis* and the *itysalis*.

The penis in *costalis* has 6 cornuti of which 5 is very slender and 6 is evanescent. The penis is long, slight, and but little dilated basally.

The penis in *maurinalis* has 7 cornuti, that nearest the base not as strong as the first one in *costalis*, the next 3 stronger, the last 3 becoming progressively shorter, the 7th being very short but very strong. The penis is slightly dilated at the base and this pertains in both compressed and uncompressed mounts.

Radiosalis has 5 cornuti and a much dilated base, and of the 5 cornuti the 1st is short, the next three well developed, and the 5th quite strong and not very short.

Itysalis has 5 cornuti, the first very long and strong, and the other 4 becoming progressively smaller; and *itysalis* appears to have just distad the cornuti a slight elongated hairy pad somewhat similar to that found in certain *Zygaenidae*.

The genitalia give the clearest distinction between *costalis* and *maurinalis* that I have so far been able to appreciate, hence I place them first.

(2) SIZE. Eversmann *l.c.* says "smaller than *prunalis*, Tr." That species runs 21 to 24mm. the 3 *costalis* before me are 22 to 24mm. *Itysalis*, Wlk. *l.c.* Walker says "10 lines" that is about 22mm. but Walker's type is undersized. Grote *l.c.* says 27mm. and this is right for the type of *turmalis* and for the Walsingham specimen. Caradja *l.c.* says 27mm. for his *alaicalis*. *Maurinalis* runs from 32mm. to 33.5mm. the latter being a ♀, it is therefore a much larger insect than *costalis* and larger than *itysalis*. *Radiosalis* is the same size as *itysalis*.

(3) SHAPE OF WING. It is perhaps unwise to base an inference on 3 specimens, but the 3 *costalis* before me vary but little in shape. The *itysalis* in the B.M. vary a great deal, as do *maurinalis* slightly. However, Frey's specimen, Grote's *turmalis* and the Walsingham specimen are very much closer in shape to *maurinalis* than the type of *itysalis* or the *costalis*. Certain of the American and European specimens show a tendency to have an excavation in the costa just opposite the end of the cell; as this is sometimes only present on one side and seems usually unsymmetrical, it is evidently in the nature of recurrent malformation, but it is curious that there is no sign of it in the 3 Asiatic *costalis*. The 8 *itysalis* and 2 *radiosalis*, which were sent me from America and were captured wild, do not show this malformation.

In *maurinalis* the costa springs away from the thorax with a slight curve and then runs straight as far as the reniform, after which the costa is slightly down curved. The apex is nearly right angled and

the termen nearly straight, just the slightest bit curved, a little more so in the ♀ than in the ♂ as far as vein 2 where it curves to the tornus, which is very obtuse.

The dorsum is in some specimens nearly straight, but is usually downcurved below the discoidal. The point is more pronounced in *costalis* than in *maurinalis*. The nett result is that *maurinalis* has a wing which is nearly a right angled triangle with the costa as hypotenuse.

The American examples have the wings the same shape as *maurinalis* but less ample, as compared with *costalis*, more truly triangular. The hindwings have a somewhat rounded apex, a termen evenly but not strongly curved as far as vein 2, after that strongly curved to the tornus, the tornal angle more acute in the ♀ than in the ♂, so that she has relatively a longer dorsum than he. The two *radiosalis* before me show a slight tendency to reverse curvature of the termen between 4 and 6.

(To be continued)

Noctuae in 1933.

By A. J. WIGHTMAN, F.R.E.S.

(Continued.)

Abrostola tripartita, Huf.—Although some hundreds of this species emerged from the larvae collected last autumn, all are exactly alike. Evidently the dark form *urticae*, Hb. only occurs in certain localities; all reared are referable to the type form.

Nonagria neurica, Hb.—A few specimens were bred from wild larvae, and if these are a true guide to the form percentage occurring in the colony this year, the black ab. *nigra*, mihi. not noted at all when the species was discovered in 1908 nor the following fifteen years, has now almost entirely replaced the ab. *fusca*, Edelsten and ab. *rufescens*, Edelsten, which are now of great rarity. But the typical form is still fully 50%. The ab. *rufescens* always was rather rare, and probably the form *fusca* was an intermediate stage between the type and ab. *nigra* and has automatically disappeared, or almost disappeared, with the establishment of the black form. This appearance of a black form is especially interesting in view of the fact that the allied *N. dissoluta*, Scht. has colonies in which only the pale ab. *arundineta* occurs. In fact the blackish typical form seems always to have been very local, although about 50% in some places. It seems to me probable, that the reddish forms are the first stage in deviation from the pale forms, and it would be interesting to know if definitely red forms of *dissoluta* occur in localities from which the blackish type is absent.

Coenobia rufa, Haw.—I again bred a considerable number of this species from wild pupae and beyond doubt this insect is a very close ally indeed of the *Nonagrias* (*neurica*, *dissoluta*, *geminipuncta*, *algae* and *sparganii*). I failed as on all previous occasions to get any form other than the deep reddish from typical form and must conclude that forms *despecta*, Gey.-Hb., *palescens*, Tutt and *fusca*, Bankes, are absent from this locality (Pulborough).

Xanthia gilvago, Esp.—This species is evidently very scarce in West

Sussex. I worked a number of localities for the larvae in the spring, but from some 200 larvae beaten from Wych Elm only 4 produced *gilvago*, all the rest producing *Amathes circumcellaris*. These *gilvago* are of the usual British form *suffusa*, Pt., incidentally I noted that *Strymon (Thecla) w-album* has a fairly wide area of distribution in West Sussex but is apparently nowhere plentiful.

Notes on List of Generic Names of British Butterflies.

By L. G. HIGGINS, F.R.E.S.

The appearance of an official list of generic names of the British Butterflies, accompanied by a check list of species, issued with all the authority of the Royal Entomological Society and compiled by a sub-committee working in the British Museum, is an event of no little importance. It is a welcome step towards securing accuracy and uniformity in Nomenclature, and it is unfortunate that the list was apparently rather hastily compiled, and in several instances the accuracy of the conclusions is at least open to argument. If the List is to fulfil its object, it must be accepted and used by all. It is scarcely fair to expect this unless all sides of the questions are reviewed, if only with the object of disposing of alternative solutions to the many problems.

While an adequate discussion is included in most cases where the choice of a name is determined by the individual opinion of the authors, there are certain questions of fact, which seem to merit more attention, the absence of which must provoke criticism. In the first place the genera of Billberg (*Enum. Ins.* 1820) are included without comment. These names were published entirely without a description, but the list of species following is presumably accepted by the authors of the official List as an "indication" within the meaning of article 25a of the Code. The interpretation of the word "indication" is defined in the first of the "Opinions" rendered by the International Nomenclature Committee, as 1. a bibliographic reference, or 2. a definite citation of an earlier name for which a new name is proposed, or 3. the citation of a type species. In my opinion it is at least doubtful whether Billberg gave an adequate "indication" as construed by the above Opinion.

In the next place, the specification of types of the following three important genera will scarcely be accepted by many entomologists.

Genus 4. SATYRUS, Latreille. 1810.

The correct generic type appears to be "le Satyre" of Geoffroy and of the early French authors. This is *P. maera*, Linn. = *Pap. satyrus*, Retzius 1783, which therefore becomes type by absolute tautonomy under Article 30d.

Genus 9. ARGYNNIS, Fabricius. 1807.

Latreille in 1810 specified *paphia* and *Melitaea cinxia*. Of these only *paphia* was included in the original genus by Fabricius. The compilers of the new List do not accept Latreille's specifications where more than one species is cited. In this case the correct type of *Argynnis* would be *aglaia* specified by Curtis in 1830 (*Brit. Ent.*)

It is I think unfortunate that the subcommittee did not take the opportunity of defining a little more clearly the limitations of the definition of types in Latreille's *Considérations générales* under Opinion 11 of the Code. In the above instance if *Melitaea cinxia* is not to be taken as included under *Argynnis* it must become a specification of the type of *Melitaea*, F.

Genus II. MELITAEA, Fabricius. 1807.

The type was specified as *athalia (leucippe)* by Dalman in 1816. This is in order since *maturna*, Fab. = *athalia*, Rott. et auct., which is therefore a species originally included in the genus. The identity of Fabrician *maturna* is sufficiently clear from the description of the larva given in the *Mantissa Insectorum* and from the figures cited in the *Entomologia Systematica*.

With regard to the specific names introduced no doubt *hyperanthus* is a misprint for *hyperantus*, which is correct. The author of *Papilio flava* 1763 is Pontoppidan and not Brunniche, at any rate I cannot find the name in the works of the latter author. It is extremely doubtful whether *Papilio sylvestris*, Poda should be identified with *linea*, W.V. In my opinion it is either *comma*, L. or *sylvanus*, Esp. and it has been so identified by all previous authors. The description is scarcely sufficient to distinguish between these two, but the fact that the silver spots on the under surface of the hindwings are not mentioned suggests *sylvanus*, as does the very word *sylvestris*, as this insect is much more likely to occur in woodland surroundings. The adoption of this name would overcome the difficulty of finding a substitute for the preoccupied *sylvanus* of Esper, and it is far more suitable than the *venata* of Bremer and Gray, which is doubtfully conspecific with our British skipper.

NOTES ON COLLECTING, etc.

UNUSUAL SECOND BROODS IN 1933.—*Minoa murinata*, L. (*euphorbiata*, Schiff.). From eggs laid on 4th June by a female taken in Surrey I bred a single female on 19th August.

Theva cognata, Thnbg. A larva beaten from juniper near Ballater in September pupated on 24th October and the imago emerged on 18th November. June is the usual date for larvae in this district and moths appear about the middle of July.—E. A. COCKAYNE, 116, Westbourne Terrace, W.2.

A NOTE FROM TANGIER.—The weather is cold. We have seen on the wing only *Anthocharis belemia*, *Pieris rapae*, and *Rumiccia phlaeas*. At night no moth has come to light.—O. QUERCI, February, 1934.

A NOTE FROM PORTUGAL.—My collection of *Pieris rapae* is a wonderful one. I believe that in Europe it is not possible to get a similar one. Last year I took some thousand specimens in winter, but later I found only 18 in six months and the females laid very few eggs; the larvae were idle and preferred rather to die than eat. In the summer of 1933 I obtained but

a single pupa of *P. rapae* and the life-cycle was 45 days, instead of 18 to 26, as with the American form. American females of *P. rapae* would not mate with the Portuguese males in spite of many attempts.—O. QUEROI, March, 1934.

Nomenclature. The List.

By Hx. J. TURNER, F.R.E.S., F.R.H.S.

It is noted—(1) That the British National Committee on Entomological Nomenclature is completely ignored. (2) That the List was issued hurriedly in the absence abroad of Dr. K. Jordan, whose knowledge and experience in nomenclatorial matters are sound and dependable and whose advice would have satisfied much of the strong objection and criticism of the List which has reached us. (3) The ridiculous and dependent position taken up in appealing to the zoologists for a favourable recognition of the List. (Hence the List cannot become final until those who are ignorant of entomological literature and matters have given their assent to it.) (4) In such an important issue a rough draft of the List should have been circulated to all those lepidopterists known to have interested themselves in the nomenclature of British Lepidoptera, for their remarks and suggestions, before it was issued as a final product.

In the *Systema Naturae* (1758) of Linnaeus, the author, in Lepidoptera, did not use Binomial Nomenclature except in the case of *Sphinx*.

He writes *Papilio Eques priamus*, *Papilio Heliconius apollo*, *Papilio Danaus anacardi*, *Papilio Nymphalis io*, *Papilio Plebejus* cupido*, *Papilio Barbarus bates*, etc., etc.

{ *Sphinx ocellatus*
 { *Phalaena Bombyx atlas* }

He called these six divisions Phalanges (Phalanx).

Looking at these six names, to us they cannot be binomial but trinomial. In reality the name *Papilio* denoted the whole section of Butterflies and was not used in the sense we now call a genus.

The six names *Eques*, *Heliconius*, *Danaus*, *Nymphalis*, *Plebeius*, and *Barbarus* were from the modern point of view the generic names and occupy that position next above the species name.

In fact it was not until 1761 in the *Fn. Suecica* that Linnaeus used the name *Papilio* in the true generic sense at the same time using the above six "phalanx" names in a higher classificatory sense. In fact he reversed his action of 1758.

Hence *Papilio* as a genus name should date from 1761 and not from 1758.

It has been customary throughout the ages to ignore the above facts.

The order of the names does not concern our present purpose and we have re-arranged the names of the List issued under the auspices of the late J. W. Tutt and his fellow workers, in the order of the new List.

* The Latin is rightly spelled *Plebeius* = common. I believe that the *i* and *j* were used indiscriminately for the soft vowel sound in the 18th century.

Anosia, Hb. *archippus*, L. becomes *Danaus*, Kluk. *plexippus*, L.

Papilio plexippus, Linn., 1758, is misleading and incorrect, and should be *Papilio Danaus plexippus*, Linn., 1758. Had the date been that of the *Fauna Suecica* it would have been quoted correctly. Linnaeus is misquoted thus throughout.

The name *plexippus* was discussed by N. D. Riley (1928 *Trans. Ent. Soc. Lond.*, p. 454), but from his omission to consider *erippus*, Cr., he was apparently ignorant of the very full and able investigation by Dr. Buckell, given in the *Ent. Rec. and Jr. of Variation*, Vol. V., p. 1 (1894), which concludes as follows:—

"1.—The balance of argument is against the claim that the American insect is the *plexippus* of Linnaeus." [Linnaeus in 1758, *Sys. Nat.*, and in all his subsequent works, persists in his statement that the forewings have a *white fascia* like *chrysippus*.]

"2.—The earliest name given to that species was *erippus*, Cram., and if the law of priority is to be pedantically adhered to, this is the trivial name that must be adopted."

"3.—The Fabrician name, *archippus*, is that by which the species has been most widely known, and as changes in accustomed nomenclature are to be deprecated, and as, moreover, *erippus*, Cram., is a varietal form found in Brazil, *archippus* should be retained as the trivial name of the species, and *erippus* used as the name of the variety."

It is quite evident that this last conclusion is quite *ultra vires*. That the prior name is *erippus* if that insect be conspecific. If not then another name must be found. Although we have always followed the multitude and called the American insect *plexippus*. But we do think that it should be legalised, if used, by being entered into the "reservanda" list.

As to the generic name *Danaus*, Kluk was not the author. It was used as a phalanx (genus?) name by Linnaeus. If it be necessary to register Kluk as a reviser surely one should acknowledge the original author; such as *Danaus*, Linn. (Kluk) for example.

As to *Anosia* as a generic name I note that it is not until recently that the priority rule has been strictly applied to genera.

The List gives a reference for *Danaus* "1933, *Entomologist*, Vol. 66, p. 282." I fail to find it there!!

All the Linnaean specific names are quoted erroneously as binomials instead of trinomials.

Pararge, Hb. *egeria*, L. becomes *Pararge*, Hb. *aegeria*, L. and

Pararge, Hb. *megaera*, L. becomes *Pararge*, Hb. *megeera*, L.

The official rectification of errors we pointed out years ago. Why these errors were made is an enigma. The spelling in Linnaeus is plain enough.

Melampias, Hb. *epiphron*, Knoch. becomes *Erebia*, Dalm. *epiphron*, Knoch.

Erebia, Dalm. *aethiops*, Esp. remains *Erebia*, Dalm. *aethiops*, Esp.

There does not seem any necessity to retain *Melampias*, and it is rightly dropped.

Melanargia, Meig. *galatea*, L. becomes *Satyrus*, Latr. *galathea*, L.

Another inexplicable error of spelling, officially rectified here.

As to *Satyrus*, it is not available according to the Zoologists' Rules having been used in Mammalia (teste Scudder). An absolutely

unnecessary and pedantic use of the Rule. *Arge*, Hb. has been used, but rejected as being used in Hymenoptera. In this case the Rule is needed as confusion may arise and thus *Arge* must fall. In the case of *Satyrus* there is no chance of confusion arising, hence *Satyrus* appears correct. But some unbending advocate for "rule above convention" will surely cause trouble in the future and it may prove impolitic to use it.

No doubt everyone is sorry to lose *Melanargia*, a fine descriptive name for a very "homogeneous group."

(To be continued.)

The Colorado Beetle.

Readers of this journal are no doubt already aware that the notorious Colorado Beetle has again been discovered in England and that the Ministry of Agriculture is taking drastic measures in an attempt to secure its eradication. With the continued spread of the pest in France and its approach to the northern coasts of that country, occasional outbreaks in Great Britain must, unfortunately, be anticipated. If such outbreaks can be detected at an early stage, their suppression should be possible, but on the other hand the task of eradicating a well established colony is certain to be difficult and may even prove insuperable. Early detection is thus the crux of the whole matter, and in this the collaboration of the general public, and especially of those members who have entomological knowledge, will be of the utmost value. The Editors of this journal have, therefore, very kindly agreed to include with this issue a copy of the Ministry's leaflet dealing with the pest, and to insert this note asking entomologists to keep a watch for the insect.

The leaflet, for obvious reasons, is written for the general public and not for entomologists, most of whom are already familiar with the appearance and life history of the beetle. The coloured plate, however, may prove useful to readers of this journal to show to those who have no knowledge of the appearance of the pest; in this connection experience suggests that the points for special emphasis are: (1) the "fore and aft" stripes on the elytra, (2) the size of the beetle, and (3) the fact that the insect attacks the foliage and not the tubers themselves. Further copies of the leaflet can be obtained on application to the Ministry of Agriculture and Fisheries, 10, Whitehall Place, S.W.1.

Finally, a brief reference may be made to the loss that would be caused by the permanent establishment of the Colorado Beetle in Great Britain, a point about which there is still some misunderstanding. Where the pest is numerous it is necessary to spray all potato crops with an arsenical insecticide at least three times during the growing season, and the cost of this spraying would form an additional charge on production, that would partly perhaps, largely, be reflected in the price of potatoes to the consumer. At present England, as compared with some other countries, is fortunate in the less frequent spraying that is necessary to grow a good crop of potatoes, and it is therefore in the interests of all to prevent the establishment of the beetle and so retain this advantage for as long as possible.—J. C. F. FRYER, Director, Plant Pathological Laboratory, Ministry of Agriculture.

MINISTRY OF AGRICULTURE AND FISHERIES.

The Colorado Beetle.*

The Colorado Beetle is a dangerous foreign potato pest, which in spite of all precautions has twice appeared in this country. If it is allowed to establish itself, potato growers will be faced with heavy expenses in spraying, and it is therefore of the utmost importance that all growers should know what the insect looks like and how to deal with it when found.

Appearance of Pest.—The pest, when first discovered, may be in the beetle stage or it may be a grub; the coloured picture shows both beetles and grubs *life size*. Any *striped* beetle resembling that shown on the picture should be regarded with suspicion, as should any red or reddish-yellow grub *that is found feeding upon potato leaves*.

What to do.—The Colorado Beetle Order of 1933 requires the occupier of any land in or on which the Colorado Beetle exists or is suspected to exist to give notice in writing to the Ministry with all practicable speed. If, therefore, suspected Colorado Beetles or grubs are discovered, specimens should be placed in a tin box† with a piece of potato leaf, and the box should be sent at once to the Ministry of Agriculture, 10, Whitehall Place, London, S.W.1, with a letter stating the exact place where the insects were caught and the name and address of the finder. No other steps should be taken until instructions are received from the Ministry.

What NOT to do.—The Colorado Beetle Order of 1933 prohibits the keeping of any live Colorado Beetles and the spraying or other treatment, except under authority from the Ministry, of any crop infested or suspected of being infested with the Colorado Beetle. It is, therefore, especially important that, until instructions have been given by the Ministry's Inspectors, the crop should *not* be sprayed or interfered with in any way, as this is likely to cause the beetles to spread. Apart from the specimens sent to the Ministry, no beetles or grubs should be removed. The object of all these measures is to keep the insect confined to as small an area as possible, so that it may be eradicated without loss of time.

How the Insect Lives.—The Colorado Beetle spends the winter deeply buried in the soil—at a depth of 10-12 in. in average soils. In late spring or early summer it works its way to the surface and flies in search of potato crops,

* *Leptinotarsa decemlineata*, Say.

† Holes should not be punched in the box.

travelling if necessary for distances of several miles. On reaching a crop, the beetles feed upon the potato leaves and the females lay clusters of eggs on the leaves, the majority being attached to the underside. In a few days the eggs hatch into grubs, which also feed upon the potato leaves. After about three weeks the grubs are full grown, and descend into the soil where they turn into pupae. Ten to fifteen days later they undergo a further and final change into adult beetles. Towards the end of July and during August, these beetles burrow up to the surface, feed, and if the weather is warm, lay eggs that produce a further generation of beetles before the haulm dies off in the autumn. As summer draws to a close, the beetles burrow down again into the soil and stay there for the winter. The effect upon the potato crop depends upon the number of beetles and grubs present; when there are many, the haulm is completely stripped of leaves and no tubers worth digging are formed.

Some Points of Interest.—A characteristic of the Colorado Beetle is its adaptability to different climatic conditions, as is shown by the fact that it occurs almost throughout the North American continent, in climates that range from sub-tropical to cold and from wet to dry. On six occasions it has established itself in Germany and has with difficulty been stamped out. In 1901 it effected a settlement at Tilbury but drastic measures secured its eradication in 1902. About 1920 the pest founded a colony near Bordeaux in France and since then has been spreading northwards, destroying the potato crops wheresoever it has been neglected. Finally, in the autumn of 1933 a small outbreak was discovered in England, again at Tilbury, and drastic measures to meet the situation were at once put into force. These facts show that the beetle is only too likely to settle in England if it is given the chance. If it became established, potato growers would be faced with considerable additional expense in spraying, and therefore no efforts should be spared to prevent such a misfortune. With this end in view, it is of the utmost importance that any beetles which may arrive should be detected *before they have had time to multiply*, since otherwise eradication will prove a lengthy, if not an impossible task.

10, Whitehall Place, London, S.W.1. *January, 1934.*

LONDON: 1934

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COLORADO BEETLE: Attacked potato haulm, showing two egg clusters, grubs and adult beetle; and (left) adult beetle, pupa and grub (all natural size).

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LEPIDOPTERA AT MAURIN, BASSES-ALPES, FRANCE.

(Addenda)

By W. PARKINSON CURTIS, F.R.E.S.

COLORATION AND MARKINGS.

The markings in the *Pyralidae* seem to have no common denominator, but in the assemblage under consideration the pattern is best described by assuming the common basis to be, (i) a basal line, (ii) an antemedial line, (iii) a discoidal, (iv) a reniform, (v) a median shade, (vi) a post-medial line, (vii) a prae-subterminal shade, (viii) a marginal row of points. No. v. is perhaps miscalled; where sufficiently developed to be clearly demarked, it commences as a wide suffusion between reniform and post-medial line, narrows and passes below the the reniform as far as the space between the discoidal and reniform, and thence expands toward the dorsum, where it is usually wide and fairly distinct. All the species are matt surfaced, not glossy. The general tone is materially different.

Costalis is predominantly a chalky white. Eversmann emphasizes "the whole wings." Christoph. in his description of *hilaralis* speaks of them as chalky, the photographs of the *costalis* type bear this out as do the three specimens before me.

In *maurinalis* the tone is predominantly pinker, being very near a pale pinkish-buff in the forewings, and a very pale cartridge-buff in the hindwings.

In *itysalis* the tone is yellower and colder being degraded ivory-white with a raw-sienna tinge.

In only one of the *itysalis* before me is this cold tone in the least relieved by a warmth and then the tone is a warm yellowish rather than pinkish.

In *radiosalis* the tone is a very cold dove-grey with the markings of a sepia tone. This pinky tone pervades the dark markings of *maurinalis* as well, so that *costalis* appears to be marked vandyke or sepia in the dark tones and honey-yellow in the paler tones. *Maurinalis* with burnt-umber or warm-sepia in the dark tones, and light ochraceous-salmon or light vinaceous-cinnamon in the paler tones, whilst *itysalis* is a cold-sepia and raw-umber in the dark tones, and a raw-sienna in the light tones and *radiosalis* even colder.

Maurinalis is consequently much the most pleasing to the eye. All these have some grey blue scaling of the Russian Blue (XLII) hue, this is much stronger in *maurinalis* than in the others. On analysis the whole colour effect of all species is based on these three tones.

There is one proviso that I should like to make here, lest others may think I have overlooked it, that I do not consider mere hue has always a real taxonomic value, and the characters that have such value will always be a matter of debate, but I do feel that the hue coupled with the structural differences shewn by my material and the compulsory want of syngamy due to distribution (except with *itysalis* and *radiosalis*) render it wise to treat this assemblage, as I have done, until better information and longer study show my conclusions to be erroneous.

(i.) BASAL LINE.

Costalis: A dark brown costal mark directed toward tornus rarely reaching below sub-costal.

Maurinalis: A similar mark reaching subcostal and sometimes submedian, occasionally extended further by a sementation of brown scales normally standing on a light ochraceous suffusion.

Itysalis: Usually so ill-developed as to be merely a dark mark on the subcostal; sementation of scales and suffusion not traceable.

Radiosalis: The two before me shew the minimum development of a slight mark on the costa and a slight spot below the subcostal.

(ii.) ANTEMEDIAL LINE.

Costalis: A few black scales on the costa and sub-costal and a few more toward the dorsum.

Maurinalis: Usually easily traceable from costa to dorsum—starts as a strong dark mark on costa, then its course is marked by dark scales obliquely from costa to vein 2 where it is angled sharply distad incurved to 1b and again excurved to 1a with a strongish dark mark on tornus.

Itysalis: Similarly developed to *maurinalis*.

Radiosalis: Similar to *maurinalis* but not so well developed, but yet better developed than in *costalis*.

(iii.) DISCOIDAL.

Costalis: Shaped like an hour glass vertically compressed, central dark dot with pale ring, the four projections above and below which give the hour glass shape dark scaling; clearly detached from the ground; annular mark very pale blue and very clear.

Maurinalis: Shape and coloration similar to *costalis*, not clearly detached from ground; inclined to be suffused; outlines often obscured by scattered dark scales; annular mark very dark Russian Blue.

Itysalis: Shape and coloration similar to *costalis*, development very variable; clearly detached from ground; little inclined to be suffused; outlines rarely obscured except in the very darkest specimens; less blue and less strong in tone of blue than *maurinalis*.

Radiosalis: Similar to *itysalis* clearly detached from ground; blue difficult to trace; almost unicolorous with dove grey ground.

(iv.) RENIFORM.

Costalis: Larger than discoidal; hour-glass shaped after the same pattern as discoidal and effect produced in the same way; the ear shape picked out in pale blue and very clear; centre dark; outer dark ring well detached from ground.

Maurinalis: Shape and coloration similar to *costalis* more heavily marked; blue much darker and very obscure not easy to trace; outer dark ring suffused and obscured by half tone and odd black scales.

Itysalis: Shape and coloration similar to *costalis* more heavily marked especially so in dark specimens similar to the type of *turmalis*; blue usually paler but slightly developed as a rule; markings not obscured as in *maurinalis* by the half tones.

Radiosalis: Shape and coloration similar to *costalis*, but relatively small, not being very markedly larger than the discoidal; the blue fairly well developed but dull in tone; outer ring clearly marked not obscured by the half tone.

(v.) MEDIAN SHADE.

Costalis: Very slightly developed between reniform and postmedial; only traceable to dorsum in one specimen and in the photograph of the type.

Maurinalis: Well developed as a rule between reniform and postmedial, traceable below reniform in all specimens but one, in 50% carried to the dorsum; consists of the half tone with a semation of dark scales which are often most marked on the dorsum even extending basad to the antemedial line and distad to the post-medial line.

Itysalis: Not much more developed than in *costalis*, in only one out of 13 specimens examined reaching dorsum, wholly of the half tone, semation of dark scales obsolete or obsolescent; in the type of *tormalis* notwithstanding the development of the costal streak almost wholly so.

Radiosalis: This shade is not traceable as a separate entity as the wing space from the base to beyond the reniform is almost uniform hair brown with a few grey scales and a few scattered dark ones.

(vi.) POSTMEDIAL LINE.

Costalis: A series of dark dots in the interneural spaces outwardly curved from costa to vein 3 then oblique to dorsum immediately below reniform; enclosed in pale lunules with their vertices terminad; separated by the darker veins; rarely well developed, usually obsolescent; darkening of the veins hardly traceable.

Moschler *l.c.* says these spots stand on the nervures but they do not unless one renders the wing transparent with something like benzine or toluol; it is very easy to make this error as the interneural folds are easier to trace than the nervures and the wings are heavily scaled.

Maurinalis: Usually well developed one or more and sometimes all of the dark marks lunular enabling the line to be clearly traced; darkening of the veins very decided; markings often produced basad by a few dark scales.

Itysalis: Very variable; usually ill-developed, often hardly traceable as *e.g.* in type of *tormalis* which only has two dots opposite the end of the cell; in one specimen from Toulmin Co., California however, it is developed as a continuous line of arcuate markings.

Radiosalis: Consists of fairly well developed lunules of dark scaling standing on a ground of light gull grey.

(vii.) PRAESUBTERMINAL SHADE.

Costalis: This is of the half tone shade; is usually well developed occupying the whole space between the pale lunules of the postmedial and the margin most strongly marked between 2 and 6.

Maurinalis: Save for being a little softer at the edges and not so harshly marked presents no differential features.

Itysalis: Similar to *maurinalis*, but often carrying a series of lunular dark marks sometimes highly developed.

Radiosalis: Similar in extent to *costalis* very even in tone divided by the dull grey nervures.

(To be concluded.)

**Polychrosis littoralis subsp. annetensis, n.ssp. A new form of a
Micro-lepidopteron.**

By H_y. J. TURNER, F.R.E.S., F.R.H.S.

Dr. H. Douglas Smart, F.R.E.S. asked me to identify a few micro-lepidoptera for him. Among them was a couple of Tortrices from Annet Island in the Scillies, which had been obtained flying in abundance over *Armeria* and heath. I could not place them to any species, which I knew, and went to the British Museum (Natural History) where after considerable research Mr. Stringer was convinced by close examination and structure that they must be a form of the fairly common coast frequenting species *Polychrosis (Sericoris) littoralis*, Wstwd. (Curt.). The insects are small in size for this species, and apparently of a uniform reddish brown tinge and in some lights show reddish fasciae alternating with grey fasciae when examined with a lens.

Meyrick says:—"Forewings elongate, narrow, ochreous, or pale greyish ochreous, sometimes rosy tinged; costal edge whitish, strigulated or spotted brownish; marking ochreous brownish, or ferruginous; basal patch with edge more or less obtusely angulated, usually black-marked towards dorsum; central fascia narrow, sometimes partially black-marked, posterior edge often angulated; a fasciate blotch before termen connected with apex and tornus." This however only denotes the typical form and allows for no variation.

Dr. Smart has since very kindly sent me a short series for my collection.

A male was submitted to Mr. F. N. Pierce for examination and he kindly confirmed the identification remarking "The genitalia show no difference from those of *littoralis*. They are identical. I think there is no doubt it is this species, the genitalia are rather marked and could not be confounded with any other species known to me."

This new form is so strikingly different that I think it may be given subspecific status, and I have named it **annetensis** from the locality in which it appears apparently exclusively and in considerable numbers. There is much variation in the general tone of the coloration from "ochreous or pale greyish ochreous" through shades of brown, tinged with slight reddish, to conspicuously dark blackish brown which might well be termed **annetensis-nigrescens** signifying that the aberrative form name applies only to the subspecies and not to the ordinary specific form, which hitherto has been found to be most invariable.

To be codifically accurate the authority should be *littoralis*, Westw., and not Curtis, who only gave the species a name without any description. It was first described and figured by Westwood in *British Moths*, II. p. 143, pl. 88, f. 13 (1845). The name came first in Curtis *Guide*, a bare list of species.

It being the exclusive and predominant form of the species in the restricted area of the Scilly Islands, it can reasonably be called a "subspecies" and not simply a "race."

Notes on Collecting in Norfolk in 1932 and 1933.

By CAPT. C. Q. PARSONS.

Commencing on the 7th July 1932 I spent a week at a hotel overlooking the Hunstanton Golf Course.

At Valerian blossom in the garden I took *Theretra porcellus*, which was common though worn, also *Neuvia reticulata* (3), *Hecatera serena*, *Plusia festucae* (1), *P. moneta*, *P. iota* and *P. chrysitis*. On the 10th moths swarmed at the electric light in my bedroom, *Cosmotriche potatoaria* was abundant, *Agrotis corticea*, *Mamestra albicolon* worn, *M. persicariae*, *H. serena*, *Leucania comma* and *Lygris mellinata* Fb. (*associata*, Bork.), were also amongst the numbers.

Sugaring the Marram Grass did not meet with much success, except for *Miana strigilis* and one or two *Leucania litoralis*. *Agrotis ripae*, unfortunately was nearly over, but by the light of a petrol lamp I got *Tapinostola elymi* in beautiful condition; this latter species being common and the hunting more exciting than the time spent sugaring the Marram grass.

On the 14th I moved to Brancaster Staithe staying in most comfortable cottage rooms kept by a Mrs. Peel, about a mile from Brancaster golf course and marshes. In the latter in its typical form *Acidalia emutaria* was common.

On the night of the 21st I paid a visit to Scolt Head going over in a rowing boat, manned by one of the villagers, as it is divided from the main land by over a mile of salt marsh and at high tide this is practically covered by the sea, and therefore the only feasible way of reaching this occasional island.

I took a petrol lamp and worked a small hillock, a perfect mass of ragwort. *C. potatoaria* was in great profusion also *Cerigo matura*, of which I took one specimen in the act of growing its wings. *A. vestigialis* and *A. tritici* were fairly common: one solitary privet bush attracted a ♀ *Pericallia syringaria*. Ova obtained from an almost typical *Arctia caja* produced some specimens with a predominance of brown in the forewings, and one with the underwings much paler than the type.

On the 21st July, 1933, I again stayed at Brancaster Staithe. A visit to the marshes at Brancaster on the 1st August yielded a perfect specimen of *Nonagria dissoluta* var. *arundineta*, some very pretty saltern forms of what I take to be *Hydroecia paludis* and several *Coenobia rufa*. The next night at Holme-next-the-sea *Calamia phragmitidis* was plentiful on the reeds beside the road leading across the golf course. Light attracted a lovely *Charaas graminis* and a very diminutive *Hydroecia micacea*.

On the 8th Aug. an excursion to Scolt Head revealed the ragwort completely parched owing to the drought; but sugaring the marrams produced several nice forms of *A. tritici* and *Hadena chenopodii* in varying shades, as well as *Lithosia complana*, *M. strigilis* and *C. matura*. The last species I kept for ova, which obliged without any persuasion. The larvae were full fed in November, the colour fading. Early in January I made slight excavations in the breeding cage and unearthed a caterpillar. I don't know if in their natural state, when they become fullfed in the spring, whether they remain some time before changing or not.

I only took one *A. cursoria* during my stay, at light. Caterpillar hunting whilst in Norfolk in 1933 was distinctly unprofitable (in 1932 I did not pay much attention to it) with the exception of a full fed caterpillar of *Deilephila galii*, already losing its colour, given me by a caddy found on the Brancaster golf course. Unfortunately at the time I didn't recognise it, and did not trouble to ask the exact spot where it was found. It was only on reaching home that I discovered its identity. Under considerable persuasion from my wife, as being of a pessimistic disposition I argued any remaining larvae would have already burrowed, we spent some time the following day searching but without even finding any traces, a rather hopeless task as the links are a mile in length and we were obliged to keep to either edge. A further search on the course itself after dark proved equally unprofitable.

At Holme there are some hundred poplar trees varying from about 6 to 14 feet in height; careful inspection revealed few traces of larvae and only one *Ennomos alniaria*, which emerged in due course; a rather unusual foodplant I thought. On an old established poplar in Hunstanton I found one *Acrionicta megacephala*.

The larvae of *A. ripae* were prolific on the sand-hills. One pepper coloured geometer caterpillar found on marram grass, which in confinement transferred to coarse grasses, must I think have been *Aspitates ochrearia (citraria)*.

Hunting on the birches on Sandringham heath only resulted in *Drepana falcataria* and *Cosymbia (Ephyra) pendularia*.

Collecting Butterflies in Orissa (Bihar and Orissa), India.

By W. M. CRAWFORD, F.R.E.S.

(Concluded from page 30.)

HESPERIIDAE.

I did not know much about these while I was collecting in Orissa, largely owing to my having no books describing them. No great effort was, therefore, made to form a complete collection. I cannot say to what extent particular species were common or otherwise, but the following is a list of the species obtained.

143. *Hasora vitta*, Btlr. ssp. *indica*, Evans. (Seitz says "hardly separable as a species form from *alexis*, Fb."—H.J.T.) N.

144. *H. taminatus*, Hb. ssp. *taminatus*. (Seitz places this as a form of *alexis*, Fb. misspelling it *laminatus*.—H.J.T.) S.

145. *H. alexis*, Fb., ssp. *alexis*.

146. *Badamia exclamationis*, Fab.

147. *Celaenorhinus leucocera*, Koll. ssp. *leucocera*.

148. *Tagiades obscurus*, Mab. ssp. or race *athos*, Pl. (Seitz treats *athos* as a synonym of *obscurus*.—H.J.T.)

149. *T. atticus*, ssp. *hasiana*, Mr. (*T. atticus* is not named in Seitz where *hasiana* is placed as a subsp. of *T. ravi*.—H.J.T.) N.

150. *Coladenia indrani*, Mr. N.

151. *Odontoptilum angulata*, Flür., race or ssp. *sura*, Wr. (Seitz puts *sura* as a synonym.—H.J.T.)

152. *Caprona (Abaratha) ransonnettii*, Fldr., f. *ransonnettii*. Wet season form.

153. *C. ransonnetii*, Fldr., f. *taylorii*, de N. Dry season form.
 154. *C. ransonnetii*, Fldr., f. *lanka*, Ev. Dry season dimorphic form. Brigadier Evans has kindly distinguished these *Caprona* for me, but says they are confusing and that he hopes to work out the genus before long. S.
 155. *C. agama*, Fldr. (*syrichtus*, Fldr.), ssp. *pelias*, Fruh.
 156. *Syrichtus* (*Hesperia*) *galba*, F.
 157. *Suastus gremius*, Fb., ssp. *gremius*.
 158. *Udaspes folus*, Cr.
 159. *Notocrypta paralysos*, W.-M. ssp. *alysia*, Evans.
 160. *Gangara thyrasis*, Fb., ssp. *thyrasis*.
 161. *Halpe egena* ssp. *ceylonica*, Mr. (Seitz places this as a subspecies of *H. morei*, Wtsn.—H.J.T.) S.
 162. *Taractrocera moevius*, Fb., race or ssp. *sagara*, Mr. (Seitz places *sagara* as a synonym.—H.J.T.)
 163. *Padraona pseudomoesa*, Mr., ssp. *pseudomoesa*. S.
 164. *Astycus pythias*, Mab., ssp. *bambusae*, Mr. (Seitz calls this species *Telicota bambusae* ssp. *pythias*.—H.J.T.)
 165. *Baoris mathias*, Fb., ssp. *mathias*.
 166. *B. guttatus*, Brem., ssp. *bada*, Mr.
 167. *B. zelleri*, ssp. *cinnara*, Wallace. (Seitz calls this genus *Parnara*, does not introduce *zelleri*, but places *cinnara* as a synonym of *bada*.—H.J.T.)

Donegal in 1933.

By REV. CANON FOSTER, B.D.

This past season I got a few days at Churchill, Co. Donegal, early in April and thereby was able to explore the sallow and willow-bushes. But the results were rather disappointing as nothing strange was to be found. Among the Geometers there were *Nothopteryx* (*Lobophora*) *carpinata*, Bkh., and *Calostigia* (*Malenydris*) *multistrigaria*, Haw., of the normal type. The Noctuae were quite ordinary, *Xylocampa areola*, Esp., *Calocampa exoleta*, L., and *C. vetusta*, Hb., also *Xylina* (*Lithophane*) *socia*, Rott., and *Scopelosoma satellitia*, L. *Pachnobia rubricosa*, F. was in great abundance. The Taeniocampids were *T. gothica*, L., in good variety, *T. stabilis*, View., *T. incerta*, Hufn., and *T. gracilis*, F., a few *Orrhodia vaccinii*, L., still lingered on as also *Scoliopteryx libatrix*, L. The last few days of July and all August I returned to Churchill and worked mostly around Gartan Lake, but also had days at Glenveagh, Dunlewy, Coluber River, and the upper part of Gweebarra River. I had explored Gartan last year, but my results this year were considerably varied. This may have been due to the season as the hot weather seemed to have the effect of rushing things out and then chasing them off prematurely. At any rate the Tortrices were very scarce compared with last year except for *Eucosma* (*Grapholitha*) *ramella*, L., and a few of the more generally distributed and commoner species.

A curious find was *Agrotis praecox*, L., one specimen of which fell into the beating sheet out of a fir tree growing in the heather up the

Brown Mountain near Gartan. At the same time 3 or 4 *Cleoceris* (*Polia*) *viminalis*, F., and one very worn *Noctua triangulum*, Hufn., were caught in the same way. *C. viminalis* is quite scarce in Ireland, but around Gartan last season it appeared again several times both on ragweed and heather blossom by night. In these ways 7 or 8 were taken all of the normal type. It is difficult to sugar in the Free State since you cannot get treacle without a permit from the police authorities. Treacle is one of the principal ingredients used in making 'poteen' hence the ban placed upon its sale. You may be able to get it through a baker, who gets it for use in bread making; but at Churchill we were far from bakeries. It was necessary therefore for night work to fall back upon natural baits, namely heather and ragweed.

As a rule ragweed takes you along from the middle of July well into September and bell heather followed by ling later still. But the extraordinary weather of last year made a change so that the ragweed was nearly over by the middle of August and the heather barely lasted out to the end of the month. There was no natural bait therefore to depend on in the end of August and until the ivy came in. The ripe blackberries were not much of a draw this season, no doubt from lack of sufficient moisture. However there were some interesting insects both on the heather and the ragweed. *Noctua dahlia*, Hb., was in great profusion, in good condition and endless variety including v. *perfusca*, *N. castanea*, Esp., also appeared, one specimen of large size and of a rich red. In fact as it sat on the heather I mistook it at first for *Triphaena orbona*, Fab. *Calymnia trapezina*, L., was unusually abundant for Ireland, and as already mentioned so was *C. viminalis*. *Noctua glaveosa*, Esp., usually put in an appearance, and at the beginning of the month, *Naenia typica*, L. The *Hydroecia* group were out nearly every night, over 40 were taken which varied greatly. They were also abundant sometimes in the day time and could be taken on scabious flowers or on ragweed by day. Among the Geometers the most interesting were *Epione repandaria* (*Euchlaena apiciaria*, Schiff.) and *Oporinia autumnata*, Bork., the former fairly common, the latter scarce. *Ellopia* (*Metrocampa*) *fasciaria* (*prosapiaria*), L., was still to be beaten out of pines in the beginning of August. In certain spots out upon the mountains *Celaena haworthii*, Curt., was abundant, but it was very hard to capture, especially so in good condition. The beating sheet was very profitable this last season, though a considerable number of the larvae captured are still unnamed and others remain doubtful. Eight or nine *Phaeosia dictaeoides*, Esp., were taken on birch, but they, I regret to say, were very small and all died off. *Demas coryli*, Linn., was quite abundant and *Notodonta ziczac*, L., *N. dromedarius*, L., *Lophopteryx camelina*, L., and *Drepana lacertinaria*, L., were as frequent as ever; and *Hylophila prasinana*, L., also turned up. 6 or 7 *Cidaria miata*, L., emerged from the pupa during September, as did one *Cosymbia pendularia*, Cl., in May from last year's gleanings. All these were from birch. *Orgyia antiqua*, L., was very abundant both in the larval stage as well as the perfect insect, more so than I had ever found it in Ireland. *Eulype hastata*, L., was locally abundant in *Myrica* tips along with *Argyroproce dinidiana*, Sodof. Very small *Cosmotriche potatoria*, L., larvae were abundant locally on various low growing plants sunning themselves. But as it was the first time I had met

them in Ireland I failed to recognise them and tried birch as a food with fatal results! *Hadena pisi*, L., was innumerable on all sorts of low growing vegetation as also was *Aconicta psi*, L., and *A. rumicis*, L. I had a fairly good emergence of *Pygaera pigra*, Hufn., from last year and forebore to take it this past season. It was difficult to find time to tend properly the numerous larvae taken and also in a strange country to secure boxes fit to house them, then there was the trouble in getting all these boxes through the customs at the Frontier. My setting boards contained in an old arrowroot cardboard box caused much suspicion and had to be carefully opened before being passed as non-contraband.

CURRENT NOTES AND SHORT NOTICES.

May we remind our readers, especially those near any of our ports and near Tilbury in particular, to look out for the "Colorado Beetle," figured in our last number (April).

From that indefatigable worker Count Turati we have received several further contributions on Entomology. (1) A report on the Lepidoptera met with in the Expedition made in 1929 to the Coracorum area of the Western Himalayas, with descriptions of new forms, Palaearctic area. (2) Further Notes on particular species from the Coracorum area with a plate of new *Parnassius* forms; and (3) Notes on some species of *Noctuidae* by Dr. U. Rocci and himself.

A further set of collected leaflets published by the Ministry of Agriculture and Fisheries have reached our table. It consists of 27 pamphlets dealing with the *Insect Pests of Fruit Trees*, most of which are illustrated. As regards numbers of species Moths and *Aphididae* seem to predominate, seconded by Coleoptera and Sawflies; then come the Red Spider, the Pear Midge, Mites, Scale and 2 species of Capsid bug. Details of all life-histories are given with illustrations of the depredations, and particular reference is made to the time and appearance of the earlier stages when preventative measures are more effective as a rule. These leaflets are continually being revised and supplemented as knowledge of these pests advances, and new methods of control are advocated.

Surely it is quite premature to use the suggested List of Butterflies issued by the Royal Entomological Society without some liaison between the old and new. We pick up that excellent little paper the *Vasculum* and we read "*Coenonympha tullia*," "*Ochlodes venata septentrionalis*," etc., names which convey no meaning whatever to the average lover in nature. Not one in a hundred, especially the young, have opportunities even to find out what these phrases mean if they had the time. Even specialists cannot keep all these drastic changes in mind. We ourselves are not quite sure what the latter phrase means without reference to the 3/6 pamphlet.

A NOMENCLATURE NOTE.—*Le Satyre* of Geoffroy (*Hist. Ins.* II., pp. 50-52) is ascribed by him to *Papilio moera* of Linn., *Syst. Nat.* (ed. X.).

Foureroy (*Ent. Paris*, II., 240) quotes it as *Papilio moera*. Geoffroy's species, however, is obviously really *megea*, Linn., as indicated by Werneburg (*Beitr. Schmett.* I. 299, 1864). Higgins' statement that "*maera*, Linn. is *Le Satyre* of Geoffroy," is therefore incorrect.

Whether *Satyrus* was *validly* used in Mammalia (presumably for *Simia satyrus*) I do not know.

Argynnis, Fb. 1807. This was dealt with by Barnes and Lindsey (*Ann. Ent. Soc. America*, XV., 91, 1922). As *cinxia* was not originally included in *Argynnis* by Fabricius (who quoted it under *Melitaea* [*Illig. Mag.* VI. 285]) it was not a possible type for *Argynnis*, of which *paphia* is type.

Dalman (*Vet. Akad. Handb.* XXXVII. 57-66, 1816) cited *adippe* as type of *Argynnis*, but this was not specified by Fabricius and so was also ineligible as genotype of *Argynnis*. Fabricius, it may be noted, stated that *Argynnis* included 41 species, but actually only mentioned seven.—T.B.F. 9.iv.34.

We are very pleased to see that our good friend Dr. Walther Horn is again able to issue from the Deutsch. Entomolog. Institut, Berlin-Dahlem, a periodical of Morphological and Taxonomic Entomology. The admirable work which has been carried on in the past had adequate publication in their Magazine for many years and it was to be regretted that it had to be relinquished. The excellent work has gone on in spite of adverse conditions and now it must be very gratifying to our friend to be able to publish the records which have been piling up meanwhile. Under the designation *Arbeit über morphologische und taxonomische Entomologie aus Berlin-Dahlem*, Band. 1, No. 1, we have a series of 10 articles with 3 plates and numerous text figures included in 90 pages. We wish it all success.

Nomenclature. The List.

By Hy. J. TURNER, F.R.E.S., F.R.H.S.

Hipparchia, Fab. *semele*, L., becomes *Eumenis*, Hb. *semele*, L.

Hipparchia is undoubtedly wrong and *Eumenis*, Hb. the only available name.

Epinephele, Hb. *janira*, L. becomes *Maniola*, Schrank. *jurtina*, L.

Epinephele, Hb. is quite in order, but being used in fishes, is discarded by application of the Zoologists' Rules. This unnecessary misuse is sickening. There is no chance of confusion. At last *jurtina* is officially established in place of *janira*.

Epinephele, Hb. *tithonus*, L. becomes *Maniola*, Schrnk. *tithonus*, L.

Although it is quite legitimate to use *Pyrtonia*, Hb. in this species if thought necessary.

Coenonympha, Hb. *pamphilus*, L. remains *Coenonympha*, Hb. *pamphilus*, L.

Coenonympha, Hb. *tiphon*, Rott. becomes *Coenonympha*, Hb. *tullia*, Muller.

For some time we have been of opinion that *tullia*, Mull. was the prior name, but hesitated to use it.

Enodia, Hb. *hyperanthus*, L. becomes *Aphantopus*, Wlglg. *hyperanthus*, L.

An error which a correspondent many years ago pointed out and which we have also pointed out *ad nauseam*, is still repeated. Linnaeus wrote *hyperantus* (*Sys. Nat.* p. 471 *Papilio Danaus hyperantus*, 1758).

It would seem that *Hipparchia* must be the genus here. It is a simple matter. In 1807 Fab. *Ill. Mag.* VI. established *Hipparchia* naming 7 species out of 119 he had previously called *Papilio Satyrus* (i), in 1815, Leach. *Edin. Ency.* p. 717 as first reviser uses *Hipparchia* for *galathea*, *hyperantus* and *tithonus* adding others not mentioned by Fabricius although all included in his 1793 *Ent. Syst.* Of these 3 original species, *tithonus* was removed to another genus in 1810, and *galathea* to another in 1820, thus leaving *hyperantus* alone for *Hipparchia*. Scudder pointed this out as far back as 1875 showing that Wallengren's action in 1855 was invalid. Again we have been following the multitude and used *Aphantopus* in an error—which the List continues.

Brenthis, Hb. *selene*, Schiff. becomes *Argynnis*, Fab. *selene*, Schiff.

Brenthis, Hb. *euphrosyne*, L. becomes *Argynnis*, Fab. *euphrosyne*, L.

Divergent views are acknowledged as valid as to the use of *Brenthis* for a section of the genus *Argynnis* (*sensu lato*). The structural differences have been well set out by Spangberg and others, which justify such a course. Previously to that Doubleday and Westwood suggested the division of the Argynnids, etc.

Argynnis, Fb. *lathonia*, L. remains *Argynnis*, Fb. *lathonia*, L.

It is acknowledged that the use of *Issoria*, Hb., is perfectly valid if thought necessary.

Argynnis, Fb., *aglaia*, L., remains *Argynnis*, Fb. *aglaia*, L.

Argynnis, Fb., *adippe*, L. becomes *Argynnis*, Fb. *cydippe*, L.

This latter was accepted by the British Nomenclature Committee, but since that acceptance we seem to recall that *adippe* is correct, but we are unable to turn up the reference.

Considerable gymnastics are displayed over the name *Argynnis*, which one has no room to repeat here. Suffice to say it is proposed to beg the zoologists to give leave to retain it.

Dryas, Hb. *paphia*, L. becomes *Argynnis*, Fb. *paphia*, L.

Dryas, Hb., was a name in the much debated *Tentamen* of Hübner. In spite of the able demonstration of Mr. Bethune-Baker of the validity of this publication it was turned down by the zoologists, hence the name *Dryas* has been dropped.

Under the Rules of Entomological Nomenclature published by the British National Committee on Entomological Nomenclature all the generic names in the *Tentamen* would be valid as being published "with an indication." Under the old Zoological Rules they would not be valid as there is no description accompanying them.

Melitaea, Fab. *aurinia*, Rott. becomes *Euphydryas*, Scud. *aurinia*, Rott.

It must have been apparent to British entomologists that *aurinia* stands quite apart from the other two species which have always been associated with it, in these islands. To those whose knowledge extended to the N. American fauna it must often have been suggested that *aurinia* much more resembled the American *phaeton* by its variegated facies, etc., than the species *athalia* and *cinxia*.

Melitaea, Fb., *cinxia*, L. remains *Melitaea*, Fb. *cinxia*, L.

Melitaea, Fb. *athalia*, Rott. remains *Melitaea*, Fb. *athalia*, Rott.

Pyrameis, Hb. *atalanta*, L. becomes *Vanessa*, Fb. *atalanta*, L.

Pyrameis, Hb. *cardui*, L. becomes *Vanessa*, Fb. *cardui*, L.

Cynthia, Fb. is really the prior name but owing to the wide-spread confusion which would accrue with the change the zoologists are to be

asked for permission to place the name *Vanessa* on the conservanda basis. *Pyrameis*, Hb., is dropped without comment. Scudder had already (1875) pointed this out.

Aglais, Hb. *urticae*, L. becomes *Aglais*, Dalm. *urticae*, L.

Apparently Hb. was placed as the author of *Aglais* in error.

(To be continued.)

REVIEWS AND NOTICES OF BOOKS.

Creation's Doom (a translation), by Desiderius Papp. Messrs. Jarrold, Ltd., Publishers. London. 12s. 6d.—We have just read from cover to cover this most remarkable book. In it the author summarises the extraordinary advances made in our knowledge by astronomers, physicists, chemists and biologists during the present century, and develops the tendencies exhibited in the past evolutionary history to a forecast of what the future of mankind and of the earth may be in the eons of time to come. Our dependence on the sun's power, light, heat and radio-activity for our origin and life is stressed throughout the book. "By strict scientific deduction" the author ventures to show the evolutionary results on humans of the future, a million or so years hence. Titanic creatures, with organs as immeasurably superior to ours as we are to the so-called lower animals, which will "exploit the interior of the earth, dart into space with the force of a rocket, and with senses appreciative of delicate etherial disturbances" such as can only be dreamt of in the present age. But the author adds that mankind's fall and the earth's doom must inevitably come by "inexorable natural power." The signs of Decay and Death are apparent everywhere; in the Sky, the Drama of past Life on the Earth, the Coal Age, the Dragon Age, the Giant Age; in spite of the life-giving influences of the Sun. Perfected, or rather developed, man is pictured as being toothless and bald and has passed his reproduction on to the retort in the laboratory, owing to his necessity "to succumb to the senility of his species, to the spermatic weakness of man, and to the barrenness of woman." Thus is envisaged "the slow extinction of a senile species, the descent into death of a once virile but now feebly pulsating race," billions of years hence. Much has been made of possible catastrophic occurrences to our Earth by scare-mongering writers. The author has exploited these to the full with harrowing details, but only to finally prove the super-extreme improbability of such eventualities. The fate of the Human Race will occur in no such way, but will fade away billions of years hence, when the sun is burning out and reduced to red rays alone, under the influence of which no warm-blooded creature can live. Then will the cold-blooded Insect become dominant for long ages. An Age of Insect Life. Until the sun has burnt lower still, Colossal Insects will rule the earth, and when their reign is over, Giant Amoebae will carry on until even the influence of the sun's red rays no longer exists and everlasting icy night prevails. More than a dozen figures illustrate the text adequately but the 8 plates are a virile expression of extreme sensational advertisement of the improbable and practically impossible catastrophes foreboded by scaremongers. The book is a wonderful exploitation of scientific facts.—Hy.J.T.

All MS. and EDITORIAL MATTER should be sent and all PROOFS returned to H. J. TURNER, "Latemar," 25, West Drive, Cheam.

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. H. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—S. *Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—R. C. L. Perkins, 4, Thurlstone Road, Newton Abbot.

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of *D. o.* pupae of *X. gilvago*, *D. caesia*. A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—C. Zacher Erfurt, Weimar, Street 13, Germany.

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucernea*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. Harold B. Williams, Woodcote, 36, Manorgate Road, Kingston Surrey.

Duplicates.—A large number of species of European and Palaearctic Rhopalocera and Heterocera.

Desiderata.—All British species especially those illustrating characteristics of an island fauna. Dr. Lor. Kolb, München 54, Dachauer-str. 409, Germany, and Franz Daniel, München, Bayer-str. 77, Germany.

Desiderata.—Living larvae or pupae of *Lasiocampa quercus*. Also set specimens of same species taken before 1910 in Devon or Cornwall.

Duplicates.—*Pavonia*, set specimens or living stock: *Monacha*, ova: *ochroleuca*, *griseola*, *advenaria*, *juniperata*, *thetis*, etc.—J. A. Downes, 5, Trinity Road, Wimbledon.

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with English collectors and beg to send list of duplicates.—J. Soffner, Trautenau (Bezirksbehörde), Bohemia, Tschechoslowakische Republik.

WANTED.—Papered Lepidoptera and Coleoptera of all species wanted in exchange for papered insects, some rare, from Japan.—P. Siviter Smith, Pebworth, Stratsford-on-Avon.

Duplicates.—Well set British Lepidoptera all in perfect condition about 200 species.

Desiderata.—Living larvae: please send list of species obtainable.—A. Lester, 2, Pembury Road, London, N.17.

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. June 6th.

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. May 24th, June 14th.—Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.

The London Natural History Society.—Meetings first four Tuesdays in the month at 6.30 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. Visitors admitted by ticket which may be obtained through Members, or from the Hon. Sec. A. B. Hornblower, 91, Queen's Road, Buckhurst Hill, Essex.

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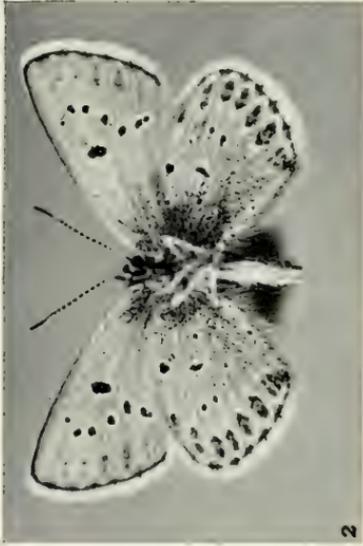
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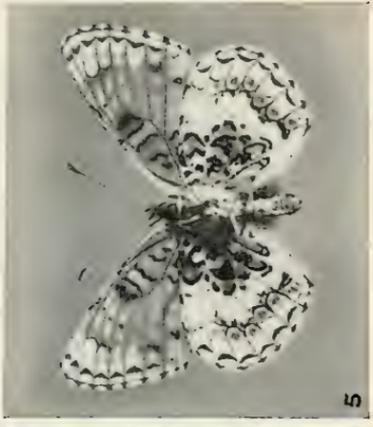
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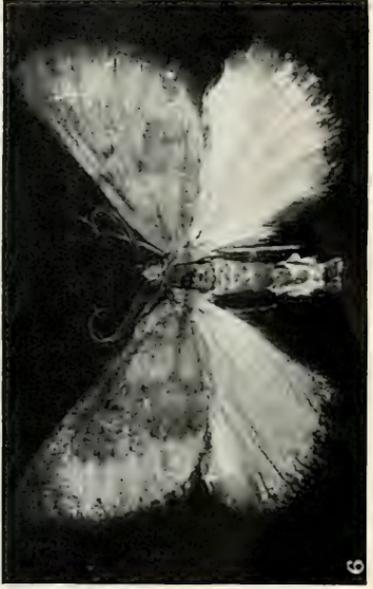
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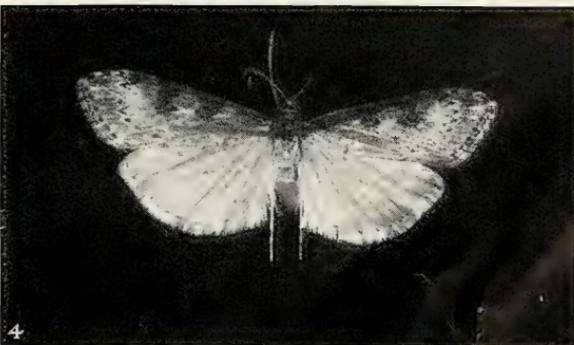
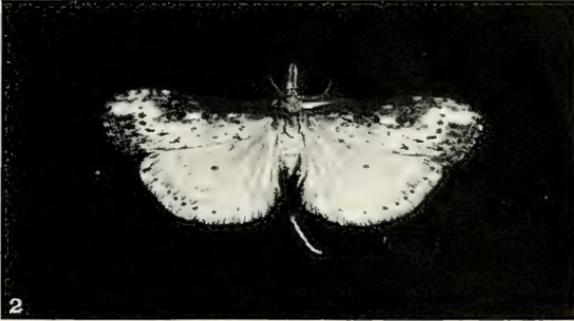
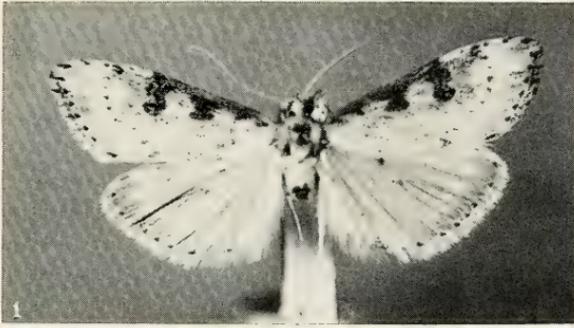


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4

1. *Pyrausta cinctulalis*, L. *forma bicinctulalis*, Curtis, type. x2.
 2. *L. atyrogonon*, Bergstr. *forma maculata*, Strand. x2.
 3. *Zygacna trifolii*, Esp. *ab. nigerrima*, Curtis, type. Nat. size.
 4 & 5. *Melitae a phoebe*, Knock *ab. delata*, Verity. Upper and undersides, nat. size.
 6. *Ortholika octodurensis*, Favre. *ab. cinnamomea*, Curtis. Type x2.



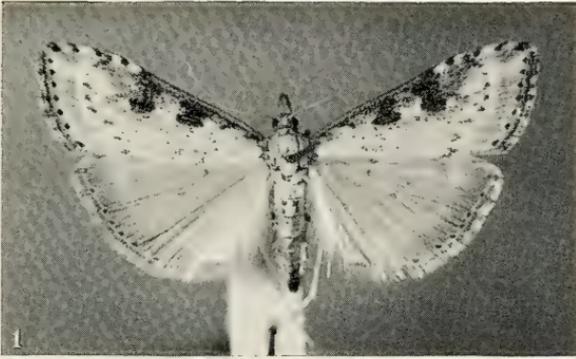
Males of *Mesographe*. Uppersides x2.

1. *itysalis*, Wlk. race *maurinalis*, Curtis. type.
2. *itysalis*, Wlk. race *itysalis*, Wlk.
3. *costalis*, Eversmann. Metatype.
4. *radiosalis*, Möschler. Metatype.



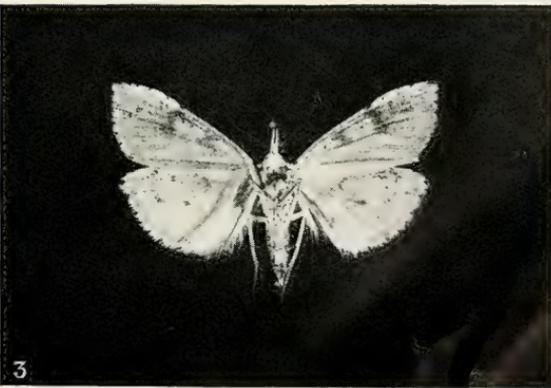
Male undersides of *Mesographa*. x2.

1. *itysalis*, Wlk. race *maurinalis*, Curtis. type.
2. *itysalis*, Wlk. race *itysalis*, Wlk.
3. *costalis*, Eversmann. Metatype.
4. *radiosalis*, Möschler. Metatype.



Females of *Mesographe*. Uppersides x2.

1. *itysalis*, Wlk. race *maurinalis*, Curtis. Gynatype.
2. *itysalis*, Wlk. race *itysalis*, Wlk.
3. *costalis*, Eversmann. Metatype.
4. *costalis*, Ev. var. *hilaralis*, Christ. Metatype.



Female undersides of *Mesographe*. x2.

1. *itysalis*, Wlk. race *maurinalis*, Curtis. Gynatype.
2. *itysalis*, Wlk. race *itysalis*, Wlk.
3. *costalis*, Eversmann. Metatype.



1



2



3



4



5



6

Male genitalia of *Mesographe* x12.

1. *itysalis*, Wilk. race *maurinalis*, Curtis. Type compressed.
2. *itysalis*, Wilk. race *maurinalis*, Curtis. Cotype not compressed.
3. *radiosalis*, Möscher. compressed.
4. *costalis*, Ev. compressed.
5. *itysalis*, Wilk. race *itysalis*, Wilk. compressed.
6. *itysalis*, Wilk. race *itysalis*, Wilk. Lateral view uncompressed, left valve removed.



1. *M. itysalis*, Wlk. race *itysalis*, Wlk.



2. *M. radiosalis*, Mösch.

The entire x25

LEPIDOPTERA AT MAURIN, BASSES-ALPES, FRANCE.

(Addenda)

By W. PARKINSON CURTIS, F.R.E.S.

(viii.) MARGINAL ROW OF POINTS—seven in number.

These stand at the end of the nervures and not between them as Christoph *l.c.* states.

Costalis: Not strongly developed, that at the end of vein 1 linear and weak.

Maurinalis: Very pronounced that on the tornus at the end of vein 1 very strong.

Itysalis: Similar to *maurinalis*.

Radiosalis: Similar to *maurinalis*.

All four have the costa more or less darkened as far as the reniform; this however seems to be a very variable and not very reliable feature. The darkening is produced in several ways in the *costalis* before me; it is a mixture of the half tone and full tone browns the latter predominating and it hardly invades the cell. In the *maurinalis* it is a mixture of the half tone and full tone browns the latter usually predominating and especially so on the nervures, but it also sometimes has a generous admixture of the Russian blue, which makes it still more obscure and dark. In the *itysalis* it is formed in the same way but is usually devoid of the bluish intermixture.

This costal suffusion is in *maurinalis*, sometimes also in *itysalis* (e.g. type of *turmalis*), so strongly developed that it invades the cell and obscures the stigmata, which judging by Moschler's description was also the case with his type of *hyperborealis*. All four have a dark apical costal mark, and three others (besides the dark point where the post medial line rises) between that and the reniform, these marks being least well developed in *costalis*.

The tegulae are the pale tone in *radiosalis* and the half tone in the other species and the thorax matches the hindwings but the patagia are the half tone in *maurinalis*, *itysalis* and *radiosalis* and white in *costalis*.

The abdomen matches the ground of the hindwings and in the ♂ has the anal tuft of the half tone, in the ♀ of *maurinalis* the anal tuft is the dark toned brown, in *costalis* but little darker than the abdomen. In *itysalis* and *radiosalis* the half tone. In *maurinalis* the abdomen appears to be ringed with dark color but this is an optical illusion produced by the edges of the annuli and the dark line of the intersegmental divisions. In *itysalis* and *radiosalis* however the distal end of each segment is distinctly light ringed.

One of the *maurinalis* has dorsolateral dark markings on 5, 6, and 7 of the abdomen.

Costalis and *itysalis* seem to have dark spiracular spots on the abdomen.

Maurinalis has a spiracular line of dark brown expanded into spots on the spiracles and two strong dark brown ventral lines only broken by the white fringe of the distal edge of the annuli. The ♀ however has the last two segments much suffused below. Undersides of the four present just the same class of difference of degree rather than of the radical design, that the upper sides exhibit.

Costalis below retains the chalky white ground but it is silky below

and not matt. It is dusted over with the halftone brown, this dusting being most pronounced in the forewing; the less there is of it the more pronouncedly it is collected on the interneural folds of the forewing and the nervures of the hindwing. The darkening of the costa is but little in evidence, being narrowly confined to the front edges; the discoidal and reniform are however very decidedly in evidence but suffused and are the full tone brown.

The dark points on the costa and on the nervures are developed and it is possible to trace the postmedial line, with two vestigial lines each side all rising from one or other of the costal dark marks. There is no great contrast between the basal and distal halves of the wing.

The hindwing coloration repeats the upperside in a shadowy fashion but the dark margin is narrower.

The one ♂ is much dusker below than two ♀♀, being so generally suffused with the half tones in forewing as to render the lines but slightly traceable.

The hindwing shows a very material costal darkening which is barely traceable in the ♀♀.

The *itysalis* undersides show the postmedial line clearly and the usual dark markings (they are distinct), but the basal half of the wing and the pale praesubterminal area are unicolorous.

Radiosalis is similar to *itysalis*.

Maurinalis is very distinctly marked below but like *costalis* is silky below. The forewing and the hindwings as far as vein 7 are a pale tone of the half tone brown. Forewing with base of cell darkened costally with a sprinkling of dark scales *stigmata* well developed post medial line strong and continuous. Hindwing with dark scaling on subcostal and costal, postmedial line strongly developed the darker specimen having this carried up the dorsal fold and also having the margin darkened as well. The costal and marginal dark marks very strongly detached and conspicuous.

I should therefore keep *costalis* apart on the ground of its white wings, small size, genital structure and number of cornuti. *Itysalis* with its medium size, genital structure, and number of cornuti and cold tone; making *maurinalis* a race distinguished by large size, warm colour and structure of cornuti. *Radiosalis* by itself for its grey colour and peculiar cornuti.

HABITS.

W. F. and I took 14 specimens at the lamps. They were obtained at three stations, one behind the Hotel Bertrand at, say, 5900 feet; the second about a kilometre down the valley and a few hundred feet lower; the third just above La Barge about another kilometre further down and probably another 100 feet lower. We did not kick any up during the day, or disturb them out of thickets as seems to have been the case with several of the known specimens of *costalis*. I suggested an encrusted saxifrage of the *marginata* type as a probable food plant. We never saw it at rest in the day time. It just arrived quietly on the sheet, neither very early nor very late, and sat down without any fuss and rarely moved. It sits flatter than *Mesographa forficalis*. Leaving Mr. Burras out of account as he does not take *Pyralis*, three lamps got 15 specimens and never more than one each per night, so it is not common. It looks narrow when at rest owing to its dark

costa. Walker's type and the type of *variegata* are both alleged to have been bred from clover.

Prof. J. McDunnough of Ottawa *in litt*, tells me "as I know *itysalis* it occurs at moderate elevations through the Rockies and the coast ranges of British Columbia and is even found on Vancouver near sea level. At Nordegg, Alberta, where I made extensive collections, I found both it and *radiosalis*, Mosch., occurring together and on making slides of the ♂ genitalia, I can find no distinction between these two. The species seem to have a variety of food plants. In Colorado I once bred it from Lupine, and some specimens in our collection are labelled as having been bred on Vancouver Island from Saxifrage."

LOCALITIES.

Maurinalis at Maurin, and there appear to be single specimens standing as *costalis* recorded, one from Mont Pelvoux and one from Madonna da Finisterre. I have given the range of *costalis* and its varieties above.

Itysalis and *radiosalis* from practically the whole of North America but apparently retreating upward as one goes South. Its Northward limit unascertained.

Type No. 23592. Gynatype 23593. Cotypes 23594 and 23595 in mus. Curtis.

Heliothela praealliensis, Frey.

I am unable for want of material to deal with this fully. The French Entomologists identified the specimens we took as *atralis*. Hb.

It is quite understandable that they do not apply Frey's description correctly because that description fits better true *atralis*, Hb., than it does *praealliensis*, Frey, that we took and the specimens from Larche in the British Museum. The explanation is that Frey's type in the British Museum is an extremely dark ♀ with very little trace of the white patch on the costa that is present in our specimens, but a closer examination of our specimens and the specimens from Larche in conjunction with the type shows they are conspecific, whilst the shape of *atralis*, Hb., and its light build are decidedly different from those of our specimens. I accordingly stand by my determination, until I get a sufficiently long series of the species of this group of *Pyralis* to enable me to do some dissection.

This is the last of our experience at Maurin, which both W. F. and I hope to visit again, and it only remains for me to perform the pleasurable duty of thanking those collaborators without whose help this part of the results must perforce have been very sketchy. I have to tender my sincerest thanks to Mr. N. Filipjev for Asiatic material compared with type and for photographs; Herr Bang-Haas for Asiatic material comparisons with types and helpful correspondence; Mr. W. H. T. Tams for advice, assistance and valuable introductions to other workers; Professor McDunnough for authenticated specimens of *itysalis* and *radiosalis* and information and the U.S. National Museum and particularly Mr. Carl Heinrich for material and further valuable information.

The Geometers of Storrington, W. Sussex.

By G. S. ROBERTSON, M.D.

(Continued from p. 16.)

Eupithecia (Tephroclystia) tenuiata, Hb.—Local. *E. haworthiata*, Dbldy. (*isogrammaria*, H.-S.).—Abundant on the Downs. *E. linariata*, Fb.—Locally common. *E. pulchellata*, Steph.—Common everywhere. *E. irriguata*, Hb.—Local and scarce. *E. exiguata*, Hb.—Fairly common. *E. valerianata*, Hb.—Very local, but in plenty there. *E. venosata*, Fb.—On the Downs. *E. centaureata*, Schiff. (*oblongata*, Thnbg.).—Common everywhere. *E. trisignaria*, H.-S.—Local. *E. satyrata*, Hb.—Not common. *E. tripunctaria*, H.-S. (*albipunctata*, Haw.).—Well distributed; common. *E. absinthiata*, Clrek.—Common. *E. goossensiata*, Mab. (*minutata*, Dbldy.).—Local. *E. vulgata*, Haw.—Abundant. *E. castigata*, Hb.—Abundant. *E. icterata*, Vill. (*subfulvata*, Haw.).—Common. *E. succenturiata*, L.—Fairly common. *E. indigata*, Hb.—Local; not common. *E. pimpinellata*, Hb.—On Downs. *E. nanata*, Hb.—Common everywhere on heaths. *E. abbreviata*, Steph.—Common. *E. sobrinata*, Hb.—On the Downs. *Gymnoscelis pumilata*, Hb.—Very common. *Chloroclystis coronata*, Hb.—Common. *C. rectangularata*, L.—common.

(To be continued.)

Dutch Forms of Lepidoptera described in Holland.

By B. J. LEMPKE.

Up to the present the study of the variation in Lepidoptera has been much neglected in Holland. So it is not to be wondered that the number of aberrations described in Dutch magazines, etc., is limited. Yet there are some, and as most descriptions are in Dutch and as most of our Lepidoptera are also met with in England, I think it useful to give a complete list of them. The descriptions are to be found in:

- 1°. *Tijdschrift voor Entomologie*.
- 2°. *Entomologische Berichten*, published by the Dutch Entomological Society.
- 3°. *Bouwstoffen voor eene Fauna van Nederland* (= Materials for a Fauna of Holland).
- 4°. *Onze Flinders* by D. TER HAAR (1899-1904). This book is about the same as that of R. SOUTH for England.
- 5°. Sepp, *Nederlandsche Insecten*.

As most of the forms have been described more than once, I shall at the same time discuss the synonymy of them.

1. *Pieris rapae*, L., ab. *flava*, ter Haar, *Onze Flinders*, p. 3, 1899 or 1900. "Only found with the ♀, which has a pale butter-yellow ground-colour."

This is, as far as I can trace, the oldest name for the pale yellow form of the female in Holland, and of course also in other countries. The female is clearly dimorphic. One form, the typical one, is whitish, the other, which occurs in all broods, is the pale yellow form, with underside of hindwings and tip of forewings often of a deeper yellow than the former. Synonyms: *flavicans*, Kroul, 1901; *flavida*, Petersen, 1902; *flavescens*, Röber, 1907; *crocea*, Verity, 1911. For

the extremely rare sulphur yellow form the name *novangliae*, Scudder, 1872 (*aurea*, Rolfe, *Entom.*, IX. p. 199, 1876) can be used.

2. *Colias electo*, L., subsp. *croceus*, Fourcr., ab. ♀ *basisuffusa*, Lempke, *Ent. Ber.*, VIII., p. 392, 1932. "Orange ♀ with strongly suffused base." A new name for ab. *suffusa*, Tutt, 1896, nec Cockerell, 1889.

3. Ab. *rufomaculata*, Lempke, l.c., p. 134, "The double silver spot wholly suffused with carmine red."

4. *Vanessa io*, L., ab. *fulva*, Oudms., *Tijdschr. v. Ent.*, Vol. 48, p. 6, pl. 2, fig. 4, 1905. "The purplish red brown ground colour is wholly replaced by a faded ruddy colour, as if the animals were strongly bleached." The figure is a very good one.

5. *Brenthis selene*, Schiff., ab. *thaliades*, ter Haar, *Onze Flinders*, p. 27, 1900. "An aberration in which the black markings on the upper side coalesce more or less."

The description is insufficient. I take the ab. to be a synonym of ab. *transversa*, Tutt, *Brit. Butt.*, p. 295, 1896.

6. *Coenonympha pamphilus*, L., ab. *pallida*, Oudms., *Tijdschr. v. Ent.*, Vol. 48, p. 6, pl. 4, fig. 14, 1905. "The ground colour is quite another than in the type, viz., very pale yellow and this colour has replaced the normal colour everywhere."

As I have already stated in *Lamb.*, 1931, p. 66, this is a synonym of *pallida*, Tutt, *Brit. Butt.*, p. 422, 1896. The extreme whitish-yellow ab. is ab. *albescens*, Robs. and Gardner, 1886 = *eburnea*, Habich, 1897 = *albula*, Strand, 1902. (Oudemans' figure is not very pale yellow, but only pale yellow. It represents the intermediate form, which is not at all as rare as *albescens*, and which is correctly described by Tutt as "pale yellowish tawny.")

7. *Chrysophanus hippothoë*, L., ab. *eurybina*, ter Haar, *Tijdschr. v. Ent.*, vol. 48, p. 204, 1905. "♂. The transverse line on the forewings fails or is very indistinct. The blue reflection fails; otherwise the upper side is quite as in the type. ♀. The upper side is almost quite unicolorous black-brown, with the exception of the cell which is powdered with red-brown on both sides of the median point, and of the band along the hind margin on fore- and hindwings. The under-side is in both sexes as in the type."

As I have already stated in *Lamb.*, 1931, p. 16, the ♂ is of little importance, but the ♀ is a very fine suffused form, and is figured by ter Haar, *op. cit.*, Vol. 43, pl. 14, fig. 5 and 6.

8. *Chrysophanus hippothoë*, L., ab. *groningana*, ter Haar, *op. cit.*, Vol. 43, p. 242, 1901. "This form is distinguished by the presence of violet-blue linear points in the cells before the antemarginal band, just as *R. phlaeas* shows this rather regularly."

Synonyms: *caeruleopuncta*, Trti. et Vty, 1910; *cyanographa*, Cabeau, 1920.

9. *Loweia dorilis*, Hufn., ab. *crantsi*, ter Haar, *op. cit.*, Vol. 43, p. 237, pl. 14, fig. 2, 1901. "Characterised by the presence of violet-blue points before the red marginal macules on the upper side of the hindwings."

Synonym: *purpureopunctata*, Wheeler, *Butt. Switz.*, p. 17, 1903.

10. *Loweia dorilis*, Hufn., ab. *ugeni*, ter Haar, l.c., p. 237, pl. 14, fig. 3, 1901. "The red-brown ground colour on the upperside of the forewings is replaced by pale yellow, with which the rows of points

clearly contrast, whereas the bronzy-green suffusion at the base also clearly comes forth. The red-brown band along the hind margin of the posterior wings, which encloses the black points, is also pale yellow."

The name falls as a synonym of *ab. albicans*, Fuchs, *Jahrb. Nass. Ver.*, vol. 42, p. 193, 1889.

(To be concluded.)

Some Notes on British Trypetidae.

By M. NIBLETT.

The following notes are compiled from observations made by me during the past few years, and refer mainly to Trypetids reared from the larval stage, with the addition of a few records of captured insects.

The localities where both larvae and imagines were taken were nearly all in the county of Surrey, and include Ranmore Common, Boxhill, Epsom Common, Epsom Downs, Banstead, and Kingswood.

The majority of the species referred to are moderately common, but I thought that perhaps some particulars of their food-plants and times of emergence might prove of some interest.

Urophora cardui, L.—The larvae of this handsome fly inhabit the swellings to be found upon the stems of *Cnicus arvensis*, L. (Creeping Plume Thistle). I have found the galled stems from mid-July onwards, and have had the fly emerge during June and early July of the year following. The galls I find are usually plentiful where the thistles grow in damp situations, and much less so in drier places. The fly I have taken occasionally in July by sweeping thistles. The larvae are at times heavily parasitized by Chalcids.

U. stylata, Fab.—This species is the cause of hard woody galls in the flower-heads of *Carduus nutans*, L. (Musk Thistle), and *Cnicus lanceolatus*, Scop. (Spear Plume Thistle). The larvae I have found from July onwards, the flies emerging in the following June, with occasional specimens during July. Odd specimens of the fly I have swept from thistles and mixed herbage during July.

U. solstitialis, L.—This is another gall-causing species, the hard woody galls are to be found abundantly as a rule, in the flower-heads of *Centaurea nigra*, L. (Black Knapweed), wherever this plant grows. The earliest date I have found the larvae is July 6th, when the galls were beginning to form. I have had the flies emerge in May, June, July and August, the majority coming out in June. I have swept them in some numbers from *C. nigra* during July and August, and on a number of occasions from *Achillea millefolium*, L. (Yarrow). Several species of Chalcids parasitize the larvae, but the flies always seem abundant.

U. quadrifasciata, Mg.—The larvae of this species feed in the flower-heads of *Centaurea nigra*, L. The statements made by numerous writers that it forms a hard woody gall, does not agree with my observations. I have certainly bred it from flower-heads containing galls, but these have definitely been the galls of *U. solstitialis*. I have not found it occur in any numbers, having bred about 30 from several thousand flower-heads. The flies emerged chiefly in June, with occasional specimens in May and July. On only one occasion have I swept the fly, this was towards the end of July upon Epsom Common,

when it literally swarmed, every sweep of the net over patches of *C. nigra* gathering in at least half a dozen. I could have taken scores from the area in which it occurred.

Anomoea (Phagocarpus) antica, Wied. (*permundus*, Her.).—The larvae of this species live in the fruits of *Crataegus monogyna*, Jacq. (Hawthorn); from a number of these fruits gathered in September, the larvae emerged in early November and pupated, the flies emerging from 25th May to 3rd June of the following year. Perris stated that the larvae pupated in the fruit, while Handlirsch claimed that they pupated in the earth, the latter statement agreeing with my own observations.

Trypeta (Chaetostomella) onotrophes, Lw.—The larvae of this species live in the flower-heads of various Composites. I have bred the flies from *Serratula tinctoria*, L. (Sawwort), an unrecorded host-plant; *Cnicus palustris*, L. (Marsh Plume Thistle); and *Centaurea nigra*, L.; the latter plant appears to be its favourite host. The larvae may be found in the heads from early autumn until some time in May; they are sometimes to be found among the pappus-hairs and sometimes below the receptacle; they pupate in the head, and I have had the flies emerge from 11th May to 5th July. I have swept this species from *C. nigra*, *C. palustris*, *Arctium majus*, L. (Burdock), and mixed Composites in July and August.

Trypeta (Terellia) serratulæ, L.—This species I have bred from the flower-heads of *Carduus nutans*, L., and *Cnicus lanceolatus*, Scop. I have not found it occur in any numbers, having bred less than a dozen from some hundreds of heads of these thistles, all these emerging in mid-June. I have also swept occasional specimens from *C. nutans*.

Trypeta (Orellia) colon, Mg.—The larvae live in the flower-heads of *Centaurea scabiosa*, L. (Large Knapweed), in which they pupate, enclosing themselves in cocoons formed of pappus-hairs. The larvae seem to vary somewhat in colour, white to pinkish being most general, though with some there is a distinct yellowish tinge. Some of the larvae seem to prefer the space below the receptacle to pupate in, while others remain above it. The majority of the flies I have bred have emerged in June from flower-heads gathered in August of the preceding year, and onwards, but from a few heads gathered on 19th July with larvae in them, a ♂ of this species emerged on 10th August suggesting the possibility of two broods in a year.

Trypeta (Orellia) florescentiæ, L. (*ruficauda*, Fab.).—The larvae of this species judging from my own observations appear to be confined entirely to the flower-heads of *Cnicus palustris*, L. The larvae are white, pupate in the heads, the flies emerging during June. I should not say that this is an abundant species, many hundreds of thistle-heads examined by me during autumn and winter disclosing only about a dozen larvae. I have swept occasional flies from *C. palustris* in July and August and odd specimens from *C. arvensis*.

Trypeta (Orellia) tussilaginis, Fab.—On 3rd March, 1932, while examining a number of flower-heads of *Arctium majus*, L., I observed that some of the seeds were rather stout. I removed the end of one and found that it contained a Trypetid larva, from a number of these seeds there emerged in the following June 6 ♂♂ and 8 ♀♀ of *tussilaginis*. *A. majus* has been recorded as a host plant of this species, but I can find no record of the larvae living in the achenes. I have swept a few flies of this species from mixed Composites in July.

Trypeta (Ceriocera) cornuta, Fab. (*ceratocera*, Hend.).—This species I have bred on a few occasions from flower-heads of *Centaurea scabiosa*, L., all the flies emerging in June. The larvae live and pupate in the heads.

Tephritis (Xyphosia) miliaria, Schk.—The larvae of this species may be found chiefly in the flower-heads of *Cnicus arvensis*, L. in which they pupate, forming a cocoon of pappus-hairs. I have found the larvae in the heads from July onwards, the flies emerging in the following June. The larvae also may be found at times in the flower-heads of *C. palustris*, L., and upon one occasion I had a fly emerge in September, from *Arctium majus*, L., an unrecorded host-plant, a very unusual time for this species to emerge, suggesting a second brood. The flies I have swept from *C. arvensis*, *C. palustris*, and *A. majus*, during July and August, it being quite a common species in the areas I have worked.

Tephritis bardanae, Schk.—The larvae of this species live in the flower-heads of *Arctium majus*, L., not causing a gall, as has been repeatedly stated. I have examined numerous heads after the flies have emerged; the black puparia appear to be either in, or between the achenes, and are cemented together into a solid mass which has, I presume, been taken to be the gall, but I can find no signs of hypertrophy. The larvae may be found in the heads in July, August, and September, the flies emerging in the latter two months. I have never found anything but empty puparia in the heads after the end of September.

Tephritis hyoscyami, L.—The larvae of this species live in the flower-heads of *Carduus crispus*, L. (Wetted Thistle), in which they pupate. I have found them during July and August. The larvae are white, the puparia black, and the flies emerge during August.

Tephritis vespertina, Lw.—This species is probably double-brooded. The larvae live in the flower-heads of *Hypochoeris radicata*, L. (Long-rooted Cat's-ear). I have found the heads in early June with very young larvae and pupae, the flies emerging from the latter on 7th July; in early July with larvae and pupae, the flies emerging later in the month; at the end of July with pupae, the flies emerging from these in the first week of August. I have repeatedly examined the flower-heads in August but have never found any larvae in them.

Sphenella marginata, Fall.—This species I have had emerge freely from the swollen flower-heads of *Senecio vulgaris*, L. (Groundsel), all the flies emerging in August. A few I have bred from *S. aquaticus*, L. (Marsh Ragwort), these emerging in mid-September. I have also bred them from flower-heads of *S. jacobea*, L. (Common Ragwort), during September. The larvae of this species are at times heavily parasitized by a Braconid, *Microbracon variator*, Nees.

Ensina sonchi, L.—I have bred this Trypetid from the flower-heads of *Tragopogon pratensis*, L. (Goatsbeard), in August; from *Leontodon hispidum*, L. (Rough Hawkbit), in July; from *Hypochoeris radicata*, L., an unrecorded host-plant, in August; and from *Sonchus arvensis*, (Corn Sow-thistle), in the same month. I have also swept it from mixed Composites during July.

Gonioglossum wiedemanni, Mg.—The larvae of this species live singly in the berries of *Bryonia dioica*, L. (White Bryony); a number of these berries containing nearly full-fed larvae were collected on 11th August, on the following day a number of the larvae left the

fruits and pupated. The larvae are deep yellow in colour, the puparium is yellow at first, turning to red-brown within 24 hours; the last larvae left the fruits on 9th September. On 18th September, several yellow Braconids, *Opius testaceus*, Wesm., emerged from the pupae. The flies emerged during June of the following year.

Carphotricha (Noeëta) pupillata, Fall.—The larvae of this species inhabit the flower-heads of several species of *Hieracium* which swell somewhat and fail to open. There appears to be a considerable variation in the times of emergence; flower-heads of *H. umbellatum*, L. (Umbellate Hawkweed), taken on 16th July, with larvae in them gave the flies on 20th July; while others taken a month later did not yield the fly until mid-May of the following year, these latter heads had empty puparia in them in addition to the larvae. A few heads were found at the beginning of November with larvae in them, from which 6 ♂♂, and 3 ♀♀, of *pupillata* emerged in early May. From another batch of the flower-heads taken on 17th August, with both larvae and pupae in them, the flies emerged as follows:—24th August, 3 ♂♂, 4 ♀♀; 1st September, 6 ♂♂, 14 ♀♀; 3rd May, 2 ♂♂; 12th to 20th May, 6 ♂♂, 10 ♀♀. I have swept a few specimens in July from mixed *Compositae* in localities, where I have never found any plants of *Hieracium*.

I should like to tender my thanks to Mr. H. W. Andrews, F.R.E.S. for kindly identifying some of the Trypetids for me, and to Mr. G. E. J. Nixon, B.A. for identifying the Braconids.

Rhopalocera in Austria.

By F. B. WELCH and A. E. WELCH.

During July, 1933, we visited the following places in Southern and Western Austria:—

1. Eisenkappel, Carinthia. This village is about 20 miles south-east of Klagenfurt from which it is reached by motor-bus, and lies at a height of some 2000 feet in a valley running north out of the Karawanken Mts., which separate Austria from Yugo-Slavia. These hills are rather barren limestone towards the top, but the valleys are well watered and fertile with spruce forests above. To the south is the Seeberg Pass, 3850 ft., the Yugo-Slav frontier. Cold overcast weather had been experienced in June and this continued throughout our stay, 3rd-12th July, so that the season was backward compared with our former visit, (*Ent. Rec.* Vol. XLV., new series, p. 1.).

2. Mallnitz, Carinthia. 13th-20th July. This village lies at 3800 ft. on the southern slopes of the Höhe Tauern, the range separating the Inn and its tributaries from the Drau system. It is very easily accessible, lying about two hours down the main Villach line, which branches off the Innsbruck-Salzburg line at Schwarzach. Our hotel, the Drei Gemen, was quite satisfactory and adequate English is spoken there. The country has the usual alpine vegetation; meadows in the bottom of the valleys, woods of spruce up to about 5200 ft., above which is moist moorland, running up to the snow and bare rock at 7000 ft. The weather during our stay was very mixed, only four days being fine.

3. Gaschurn, Vorarlberg. 22nd-31st July. The Vorarlberg is

cut off from the rest of Austria by the Arlberg and the north end of the Rhaetian Alps, while its streams drain into Lake Constance and thence into the Rhine. The country is therefore more akin to Northern Switzerland than to Austria, and this is also the case as regards the villagers, who are more efficient and much less attractive than typical Austrians. The country is much the same as at Mallnitz, except that it faces north-west and the valleys are more shut in. The weather was variable but predominantly bad. The localities referred to subsequently, (Ferbellen, Ganeu Alpe, Madlener Hutte, etc.) are alpine meadows and huts up the side valleys.

During our stay in these three places we saw the following:—

Spilothyrus (Carcharodus) althaeae, Hbn.—One at Eisenkappel.

Hesperia andromedae, Wall.—Mallnitz, 6000 ft., fresh.

H. cacaliae, Rmbr.—Several taken at Mallnitz and Gaschurn, 5500-6000 ft.

H. alveus, Hbn.—Common at Mallnitz at about 4000 ft. in the meadows.

H. serratulae, Rmbr.—Mallnitz, 5000 ft.

H. malvae, L.—Common at all places visited.

Nisoniades tages, L.—Very common everywhere.

Augiades sylvanus, Esp.—Very common everywhere.

Urbicola comma, L.—In the meadows around Gaschurn.

Adopaea lineola, Ochs.—A few at Gaschurn.

A. flava, Brn.—Generally common.

Carterocephalus palaemon, Pall.—Fairly common at all places in variable condition, 2000-4000 ft.

Heodes virgaureae, L.—At Eisenkappel the males were emerging around the village on 8th July, no females appearing before we left. The males are large and golden-red in colour, with relatively narrow black margins to the uppersides. The orange-red marginal spots on the underside of the hindwings are well developed, rather as in subsp. *balkanicola*. At Gaschurn the species is common and is presumably subsp. *juvara*, Fruh.

H. hippothoë, L.—Common at all places, the females at Eisenkappel showing wide variation as regards the ground colour of the uppersides, which range from copper to almost entirely suffused.

H. dorilis, Hufn.—Common. Var. *montana* was common on the Seeburg Pass at 3550 ft.

Rumicia phlaeas, L.—One specimen seen near Eisenkappel. This conforms with our previous experience in Austria, where the species never seems to occur in any abundance, but only as isolated specimens, at very varying altitudes, certainly from 2000 to 5000 ft.

Lycaena alcon, Schiff.—One fresh male at Eisenkappel, 6th July. Like specimens taken here on our previous visit, this was well above the normal size.

L. arion, L.—Common at all places visited, particularly at Mallnitz, where the normal unsuffused form was abundant in the meadows around the village. At Gaschurn f. *obscura*, Christ., occurred only in the valley, while the unsuffused form appeared in fresh condition above the trees at 5600 ft.

Cupido minima, Fussl.—Common at all places, rising from 2000 ft. at Eisenkappel to 5500 ft. at Mallnitz and Gaschurn.

C. lorquinii, H.-Schaff.—One fresh male taken at Mallnitz on 18th

July in a path through a wood at 4000 ft. The spots on the under-side are only lightly marked, the discal spot in 6 being absent.

Polyommatus semiargus, Rott.—Common at all places, those at Eisenkappel being large.

P. chiron, Rott. (*eumedon*, Esp.).—Common at Gaschurn between 3500 and 5400 ft.

P. coridon, Poda.—Only at Gaschurn, where it was common.

P. thetis, Rott. (*bellaryus*, Rott.).—Common at all places.

P. dorylas, Schiff. (*hylas*, Esp.).—Fresh specimens around Eisenkappel from 5th July.

P. icarus, Rott.—Common in the lower meadows everywhere.

P. eros, Ochs.—Males common at Mallnitz above 3800 ft. from 14th July on.

Plebeius (Aricia) medon, Esp. (*astrarche*, Bgstr.).—One at Mallnitz at 5200 ft.

P. orbitulus, Prun.—Common at Mallnitz from 20th July when they were just emerging at 5500 ft; also at similar heights above Gaschurn.

P. pheretes, Hbn.—Common at Mallnitz and Gaschurn; at the latter place specimens were taken as low as 4600 ft.

Scolitantides baton, Bgstr.—One male above Gaschurn at 5000 ft. From the dark blue ground colour of the upperside and the prominence of the discal spot, together with the geographical position of Gaschurn, we assume this is *baton* rather than *vicrama*.

S. orion, Pall.—One male on the Seeberg Pass near Eisenkappel at 3500 ft. in moderate condition.

Plebeius argus, L.—Fairly common at Eisenkappel and Gaschurn and abundant at Mallnitz where they were just emerging on 13th July.

Callophrys rubi, L.—Isolated worn specimens were seen at Eisenkappel, 2750 ft, and at Gaschurn, 5500 ft.

Hamearis lucina, L.—At Eisenkappel both new and very worn specimens.

Papilio podalirius, L.—Common at Eisenkappel and Gaschurn.

P. machaon, L.—Common at Eisenkappel and Gaschurn.

Parnassius apollo, L.—Common at Gaschurn at the Ganeu Alpe.

P. mnemosyne, L.—Rather worn at Eisenkappel.

Aporia crataegi, L.—Common at Eisenkappel and Gaschurn.

Pieris brassicae, L.—Common everywhere.

P. rapae, L.—Common at Eisenkappel and Gaschurn. At the latter place it occurred at the Madlener Hutte at 6000 ft.

P. napi, L.—Everywhere the usual second brood males, with females *trans ad bryoniae*, Ochs.; already quite worn at Eisenkappel at 2500 ft. but quite fresh at Mallnitz at 5000 ft.; none were of a yellowish tint.

Pontia callidice, Esp.—Two newly hatched females at Ferbellen near Gaschurn at about 5700 ft.

Euchloë cardamines, L.—Common at Eisenkappel.

Leptosia sinapis, L.—Usual summer forms at Eisenkappel and Gaschurn.

Colias phicomone, Esp.—At Gaschurn the males were common from 4800 ft. to 6000 ft.; one female was caught on 27th July.

C. palaeno, L.—At Gaschurn six males were taken 25th-27th July and three females on 26th-28th July. They were found from 5000 to 6500 ft. with *C. phicomone*.

C. hyale, L.—Common at Eisenkappel.

C. croceus, Four.—Common at Eisenkappel and Gaschurn.

Gonepteryx rhamni, L.—Very worn at Eisenkappel; found also at Gaschurn.

Dryas paphia, L.—One newly hatched at Gaschurn at 5000 ft. on 31st July.

Argynnis aglaja, L.—Fresh at Eisenkappel, 5th July.

A. niobe, ab. *eris*, Meig.—Males only at Eisenkappel and Gaschurn.

Issoria lathonia, L.—Fresh at Eisenkappel. Common everywhere of the 'post-lathonia' type.

Brenthis euphrosyne, L.—Common everywhere from 3800 to 6500 ft.

B. selene, Schiff.—At Gaschurn on the Ganeu Alpe at 5000 ft. and also at Ferbellen at 5700 ft.; very local.

B. amathusia, Esp.—Common at Gaschurn on the lower levels, 3-5000 ft.; of both sexes.

B. thore, Hb.—One from 5000 ft. at Gaschurn is very melanic with all the markings very blurred.

B. pales, Schiff.—At Mallnitz we took one female at 6000 ft. and at Gaschurn females and one male at 5700 ft.

Melitaea cynthia, Hb.—At Mallnitz both sexes were common at about 5500 ft. but were very local, all coming from one small area on the moors.

M. merope, Prunn.—Found at Mallnitz in the same area as the preceding; one was also taken at Gaschurn at Ferbellen, 5700 ft.

M. athalia, Rott.—From all three localities; those from Eisenkappel are somewhat different from the rest in that the central orange band, especially on the hindwings, is more strongly developed and wider than normal.

M. phoebe, Knoch.—One from Gaschurn.

M. dictynna, Esp.—Common at Eisenkappel on the plains at 2000 ft.; one specimen from Gaschurn on the plains.

Araschnia levana, L.—At Eisenkappel on 7th July we took one of the spring brood in the Ebriachtal, where two years before at the same date the summer brood was well out; this shows the lateness of the season.

Pyrameis cardui, L.—At Mallnitz and Gaschurn, one at the former place being taken at 6200 ft.

P. atalanta, L.—At the same places.

Euranessa antiopa, L.—Common and worn at Eisenkappel the first week in July.

Vanessa io, L.—At Eisenkappel.

Aglais urticae, L.—Common everywhere up to 6200 ft.

Eugonia polychloros, L.—Eisenkappel.

Polygonia c-album, L.—At Eisenkappel and Gaschurn.

Limenitis populi, L.—Fairly common at Eisenkappel.

L. camilla, Schiff.—Common at Eisenkappel.

Pararge maera, L.—Common everywhere.

P. megera, L.—Common everywhere.

P. aegeria, L.—Common at Eisenkappel.

Epinephele jurtina; L.—Common at Gaschurn. The females have the orange brown patch on the upper side of the forewing very ill-defined inwardly and extending towards the base; they are exactly like ones we possess from Macedonia.

Aphantopus hyperantus, L.—Common at Gaschurn.

Coenonympha arcania, L.—Only at Eisenkappel from 2-3500 ft.

C. satyrion, Esp.—At Mallnitz on the plains and up to 4700 ft. in the fir wood clearings both sexes. At Gaschurn both sexes were out at Ferbellen, 5200-5700 ft.

C. pauphilus, L.—At Eisenkappel common at 3500 ft. and at Mallnitz on the plains at 3800 ft.

Oeneis aello, Hb.—At Mallnitz the males were already worn but the females were just emerging from 5500 ft. up with *Erebia lappona* and other *Erebia*. At Gaschurn the males were taken very worn at the Madlener Hutte at 6200 ft. In a marsh there was a large dry stone in the middle of the water which was a favourite haunt of these insects and as soon as one was taken, another replaced it. This happened twice.

Erebia epiphron, Knoch.—Only at Gaschurn very localized on one boggy spot beyond Tavamont at 5500 ft.

E. melampus, Fssl.—At Mallnitz common up to 5300 ft. where one female was taken. At Gaschurn common from 3-5300 ft. including several females.

E. arete, Fabr.—At Mallnitz on 19th July at a certain spot we found this rare butterfly emerging freshly in quantities on a rough grassy slope covered with bilberries etc. amidst clumps of spruce. Two days previously there had been no trace of them. They ranged from 4750-5500 ft. This locality is about sixty five miles west of the well known spot on the Sau Alpe and I know of no record of captures in between but no doubt it could be found all along the southern slopes of the Tauern. The specimens (all males) differed from those we took two years ago on the Zirbitz Kogel, the Northern end of the Sau Alpe, in that the silver spots on the underside of the hindwings are generally reproduced on the upperside as a row of white spots. Those from the Zirbitz usually only show these white spots in the females.

E. eriphyle, Fr.—At Mallnitz they were taken occasionally at about 5300 ft. along with *pharte*, *gorge*, and *tyndarus*. At Gaschurn a few were taken about 3500 ft. below the Tubinger Hutte.

E. pharte, Hb.—At both Mallnitz and Gaschurn a rather feebly marked race was seen, males only, from 4500 to 6500 ft. In one spot however at Gaschurn above Parthenen a very fine female of var. *fasciata*, Spul. was taken.

E. manto, Esp.—At Mallnitz just appearing at 5500 ft. along with *gorge* and *tyndarus*. At Gaschurn they were taken very locally at the Ganeu Alpe. all males till 30th July when the first female was taken.

E. ceto, Hb.—At all three places up to 4000 ft., both sexes.

E. medusa, Fabr.—At Eisenkappel they were very abundant, very worn on the plain in the first week of July, still fairly fresh higher up.

E. oeme, Hb.—At Mallnitz very common up to 5700 ft. in the firwoods. Those lower down already very worn.

E. stygne, Ochs.—At Gaschurn very common of both sexes very locally at one spot beyond Tavamont.

E. nerine, Fr.—At Eisenkappel we took one newly hatched male on 11th July, presumably var. *loiblii*.

E. eurypale, Esp.—In Austria south of the Tauern the type seems to be a modification of *isarica*, Heyne. in the direction of *ocellaris*, Stgr.

Thus on the hindwing of the males the brown band tends to break up on the upper surface into brown spots. This type is found everywhere south of the Tauern; as one gets further west, the *ocellaris* element gets more predominant. At Eisenkappel real *ocellaris* seems unknown; in Mallnitz and at Heiligenblut it is found quite often, while at Lienz in Ost Tirol, *ocellaris* forms 50% of those seen. Var. *euryaloides*, Tengst., is taken and aberrations are common.

At Gaschurn the type is the usual *adyte*, Hb., though there are a few of an *isavica* facies, which would seem to show the boundary of *adyte*, on the North East passes somewhere along the Montafon valley.

E. ligea, L.—At Eisenkappel there is a fine large but feebly marked race, presumably var. *permagna*, Fruhst. At Gaschurn the usual strongly marked Swiss type prevails.

E. gorge, Esp.—At Mallnitz the males were beginning to appear about 20th July in the same locality as *manto* and *tyndarus* at 5500 ft. One is var. *triopes*, Splr., with white centred spots on both fore- and hindwings, the others are transitional to this, the usual Eastern type. At Gaschurn the same type was taken, newly hatching at Ferbellen.

E. tyndarus, Esp.—At Mallnitz newly hatching about 20th July; at Gaschurn the same.

E. lappona, Esp.—At Mallnitz and Gaschurn everywhere above the firwoods, of both sexes, up to 7300 ft.

In conclusion our thanks are due to Brig.-Gen. B. H. Cooke for kindly identifying various insects.

Nomenclature. The List.

By Hy. J. TURNER, F.R.E.S., F.R.H.S.

(Continued from page 60.)

Eugonia, Hb., *polychloros*, L. becomes *Nymphalis*, Kluk. *polychloros*, L.

Vanessa, Fb., *io*, L. becomes *Nymphalis*, Kluk. *io*, L.

Eucanessa, Scud., *antiopa*, L. becomes *Nymphalis*, Kluk. *antiopa*, L.

Poor old Linnaeus is gradually being ousted from his high position. *Nymphalis* was a Linnaean creation. The "discovery" of the author Kluk (1802) *Zwcz. Hist. nat. pocz. gospod.* seems to have caused a great deal of troublesome revolutionary gymnastics. It would have been far better to have cleared the way before revision by excluding any fresh authority to those which had hitherto been used in nomenclature (granted, a difficult matter). Without some such reservation we shall be liable to further "revision" when fresh "discoveries" are made, all naturally now very obscure publications.

Scudder gives more than a page in his *Historical Sketch* to the consideration of this name, but with, to say the least, doubtful results. In fact there always seemed a difficulty in the application of this name and for some 60 years it has been used but sparingly, if at all, by modern authors since Kirby, who used it in 1871 but abandoned it later.

In 1850 Stephens *Cat. Brit. Lep.* 12, uses *Eugonia* for *antiopa*, *polychloros* and *urticae*, thus restricting the choice of the type, and Grote's action in 1873 in choosing *c-aureum* is incorrect and *Eugonia* is apparently correct for those who wish to use a genus name for *polychloros*.

Polygonia, Hb. *c-album*, L. remains *Polygonia*, Hb. *c-album*, L.

Apatura, Fb. *iris*, L. remains *Apatura*, Fb. *iris*, L.

Limenitis, Fb. *sibylla*, L., becomes *Limenitis*, Fb. *camilla*, L.

(The correct spelling of *sibylla* should be *sibilla*.)

It was shown long ago that our British species was wrongly named and should be *camilla*, but, strangely, we all forebore to make the necessary change, just as we have done in other cases, e.g., *jurtina*, L. for *janira*, L.; *croceus*, Fr. for *edusa*, Fb. and possibly *electo*, L. for *croceus*, Fr.

Nemeobius, St. *lucina*, L. becomes *Hamearis*, Hb. *lucina*, L.

For some time we have used *Hamearis* in this magazine.

Lampides, Hb. *boeticus*, L. becomes *Cosmolyce*, Toxop. *boeticus*, L.

The founding of a new genus for *boeticus* is a natural development from our increase of specific knowledge. The highly specialized scale characters of *boeticus* are not found in any other species, hence the adoption of *Cosmolyce*, Toxop. It is a pity that Hemming's proposal of *Lampidella* could not stand, as it showed a liason with the former genus *Lampides*.

Cupido, Schrank *minima*, Fuess. becomes *Cupido*, Schrnk. *minimus*, Fuess.

Everes, Hb. *argiades*, Pall. remains *Everes*, Hb., *argiades*, Pall.

(To be continued)

CURRENT NOTES AND SHORT NOTICES.

Parts 47, 48, 49, 50 of the *Supplement* to Seitz Palaeartic Macrolepidoptera have just come to hand. The two first of these complete the Bombycid and Sphingid Section of the Supplement with the Index, Title-page, etc., and finishes the Sup. to Vol. II. Additional forms are added to the following species which occur in Britain as well as notes on other forms already dealt with in the main volume. *Arctia villica*, *Callimorpha dominula*, *Orgyia antiqua*, *Lymantria dispar*, *Porthesia similis*, *Malacosoma naustria*, *Gastropacha quercifolia* and *Odontes carmelita*. There are most interesting remarks about Nomenclature. After pointing out that the Index contains almost as many names as there are in that of the Main Volume, Dr. Seitz notes that the increase of names is due mainly, not to an increase of newly discovered species but to "the giving of names to any slight variation from the normal type." He further remarks that "This obsession of denominating such specimens and claiming the right of priority for the author of every new denomination, has become almost intolerable." "The inclusion and description of all these aberrations of the one Genus *Zygaena* comprises 73 pages and over 300 illustrations, i.e., one quarter of the entire Volume." We will quote Dr. Seitz further remarks in our next number.

AN UNEXPECTED RESULT.—The following item is culled from the Journal of the "Cactus and Succulent Society of America," recently issued. "*Cactoblastis cactorum*, the little imported American grub, that has reclaimed more than 3,000,000 acres of prickly pear infested land in North-eastern Australia, by the simple process of eating down the pear and killing the roots, is winning additional fame in some

districts as the slayer of the Queensland adder. The adder regarding the grub as a pest, eats* it and dies from its meal. It is passing with the pear at a surprising rate. One explanation is that the adder's motive for eating the *Cactoblastis* is not hunger, but revenge. The destruction of the prickly-pear cactus is robbing the snake of his shelter, and he regards the grub as a home wrecker."

ENTOMOLOGICAL CLUB, VERRALL SUPPER.—The Verrall Supper Meeting was held at the Holborn Restaurant on 16th January, 1934. A conversazione before supper was held in a large room specially provided for the purpose and gave ample opportunity for the meeting of friends and discussion of entomological and other subjects. Mr. Jas. E. Collin as usual was responsible for the organization of the meeting and must be heartily congratulated on the success of the gathering at which the record number of 166 attended. Supper was served at 7.30, Mr. Robert Adkin in the Chair. After the toast of the King the Chairman made reference to the memory of the founder of this meeting, Mr. G. H. Verrall, who was elected a member of the Entomological Club in 1887 and as time went on his meetings were so largely attended that at his death the function was continued in his memory. This reference was as usual received in silence, the guests standing. After supper groups of friends again congregated and this very successful meeting terminated about 11 o'clock.—H. WILLOUGHBY ELLIS, Hon. Secretary.

[The pressure on our space is so great that we are unable to give the List of those present.—H.J.T.]

By chance we went into the public Insect Gallery at the Natural History Museum (B.M.) where for the most part very excellent expositions of Insect Life and Variety are presented to the general public. There we found that our colleague Mr. H. Donisthorpe had been at work putting a little neglected corner into presentable condition. A small section has now been devoted to a display of Ant-life, and with the addition of descriptions, diagrams, dissections and specimens, a really serviceable and attractive collection has been staged in two of the large table-cases. Several cabinet drawers are devoted to selected examples of notable exotic species systematically arranged, and in the wall cases one finds larger exhibits of ants' nests, etc., now correctly named and located. The policy of the Museum authorities to get eminent specialists in the more difficult and less generally known branches of animal life to arrange and revise their treasures is very commendable and generally useful. We compliment Mr. Donisthorpe on the results of his work.

We have received small separates from Dr. H. Zerny and Furst A. Caradja, also various separates from Herr M. Draudt on *Noctuidae*, of which he is making an intensive study for Seitz *Supplement*, in place of the late Dr. A. Corti, whose death was a great loss to all who are interested in the *Agrotiidae* in particular.

* This reads like another case of "Newspaper Herpetology." What evidence is there that the viper eats the larvae of *Cactoblastis*? It seems to be unlikely.—T. B.-F.

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. H. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—S. *Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—R. C. L. Perkins, 4, Thurlstone Road, Newton Abbot.

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of D.oo. pupae of X. *gilvago*, D. *caesia*. A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—C. Zacher' Erfurt, Weimar, Street 13, Germany.

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurina*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucerina*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. Harold B. Williams, Woodcote, 36, Manorgate Road, Kingston Surrey.

Duplicates.—A large number of species of European and Palaearctic Rhopalocera and Heterocera.

Desiderata.—All British species especially those illustrating characteristics of an island fauna. Dr. Lor. Kolb, München 54, Dachauer-str. 409, Germany, and Franz Daniel, München, Bayer-str. 77, Germany.

Desiderata.—Living larvae or pupae of *Lasiocampa quercus*. Also set specimens of same species taken before 1910 in Devon or Cornwall.

Duplicates.—*Pavonia*, set specimens or living stock: *Monacha*, ova: *ochroleuca*, *griseola*, *advenaria*, *juniperata*, *thetis*, etc.—J. A. Downes, 5, Trinity Road, Wimbledon.

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with English collectors and beg to send list of duplicates.—J. Soffner, Trautenau (Bezirksbehörde), Bohemia, Tschechoslowakische Republik.

Duplicates.—Well set British Lepidoptera all in perfect condition about 200 species.

Desiderata.—Living larvae: please send list of species obtainable.—A. Lester, 2, Pembury Road, London, N.17.

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. October 3rd.

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. June 28th, July 12th.—Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.

The London Natural History Society.—Meetings first four Tuesdays in the month at 6.30 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. Visitors admitted by ticket which may be obtained through Members, or from the Hon. Sec. A. B. Hornblower, 91, Queen's Road, Buckhurst Hill, Essex.

URUGUAY. I want to sell Lepidoptera, Coleoptera, and other insects from this country and am seeking connections with collectors. H. SCHNEIDER, Correo Libertad, depto. San José, BUSCHENTAL, Rep. Uruguay.

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Odonata (Paraneuroptera) from Peru and Colombia.

By W. D. HINCKS, M.P.S., F.R.E.S.

I. AESHNIDAE.

The present note is the first of a series in which it is proposed to deal with a large collection of Odonata made in Peru and Colombia. The papers will appear in any order in which the material becomes fully worked out.

The splendid Odonata fauna of Central and South America has, of course, been the subject of a number of important memoirs during the present century of which Dr. Calvert's monumental work (1901-08) in the *Biologia Centrali Americana* series may be said to be the pioneer. A subsequent contribution by that author (1909) and a large paper by the late Dr. F. Ris (1918) have added much new and important information. More recently the late Mr. E. B. Williamson and his co-workers have published a series of very important and well written papers dealing with the region. In all of these, however, the Peruvian fauna is the least adequately treated though Ris (1918) contains a number of records from this country. As some of the species in my collection have not been recorded from Peru and as some of them are of more than ordinary interest it is hoped that a preliminary faunal list will prove useful.

Ris (1918) has dealt with a considerable number of Colombian species and gives a list of those then known to occur. My own material from Colombia is not very extensive but is derived from more southerly localities than that of Ris and contains several interesting additions to his list.

The material was collected—(1) Peru: Iquitos and Mishuyacu near Iquitos. (2) S. Antonio, Yumbatos and Balsapuerto in the Huallaga region of North Peru on or near the Rio Huallaga. (3) Colombia: Umbria and Florida in S.E. Colombia in the neighbourhood of the Upper Putumayo River.

All these localities are on the Atlantic watershed and the material studied may therefore be regarded as derived from the head-waters of the Amazon and offers useful data for comparison with the better known lower Amazon fauna.

The present notes relate to the *Aeshnidae*, the first family of which my material is fully worked out.

Aeshnidae.

1. *Coryphaeschna adnexa*, (Hagen) 1861.

Calvert, (1901-08) : 188 (*Aeshna*). [Mexico, Honduras, Colombia, Ecuador, Brazil, West Indies.]—Martin (1908-09) : 75-76 (*Aeschna*). [Mexico, Honduras, Ecuador, Amazons, Brazil, Cuba, Haiti.]—Ris (1918) : 170. [Mexico, Panama, Brazil.]

PERU: Mishuyacu. 1 ♂, 30.xii.30; 1 ♂, 20.iv.31.

Both specimens are much discoloured. A widely distributed species but apparently never taken in numbers. This appears to be the first record of specimens from Peru.

2. *Triacanthagyna ditzleri*, Williamson, 1923.

Williamson (E. B.) (1923) : 19-21. [Guatemala, Colombia, Venezuela, British Guiana, Dutch Guiana, Brazil.]

PERU: Mishuyacu. 1 ♂, 28.xii.30.

My single exponent of this interesting species is not in good condition but Mr. K. J. Morton inclines to the view that it is *T. ditzleri* with which I agree after a careful examination. Appears to be hitherto unrecorded from Peru.

Length of abd. (excl. apps.) 40mm., hindwing 35mm.

3. *Triacanthayna satyrus*, Martin, 1909.

Martin (1908-10) : 177-178 (in part)—Williamson (E.B.) (1923) : 25-26. [Costa Rica, Venezuela, British Guiana.]

PERU : Mishuyacu. 1♂, 13.xi.30; 1♂, 14.iii.31; Iquitos. 1♂, 8.vi.31.

Williamson points out that Martin mixed *T. septima* and *T. trifida* in his series of this species and in examining the type material cites the true *satyrus*, from Peru and Brazil. Besides Martin's specimens Williamson had only 3♂♂ and a doubtful ♀ before him when writing (1923).

The second and third of my specimens are very advanced and the wings are throughout suffused with brown. All three have the same measurements. Abd. 42mm., hindwing 42mm.

4. *Gynacantha tenuis*, Martin, 1909.

Martin (1908-09) : 175-176 (in part?). [Amazons, Peru, Surinam.]—Williamson (E.B.) (1923) : 28-30. [Colombia, Peru, Venezuela, Fr. Guiana.]

PERU : Mishuyacu 1♂ 1♀, 8.viii.30; 1♂, 21.v.31—Yumbatos. 1♂, ix.32.

Originally described by Martin from 2♂♂ and 3♀♀ in de Séllys' collection which Williamson suggests represents more than one species.

The female above recorded is probably correctly allocated to this species.

5. *Gynacantha auricularis*, Martin, 1909.

Martin (1908-09) : 176-177. [Surinam]—Williamson (E.B.) (1923) : 34-36. [Costa Rica, Venezuela, British Guiana, French Guiana, Brazil.]

PERU : Mishuyacu. 1♂, 28.ii.31.

Not, I believe, previously recorded from Peru. Closely allied to the next, *G. klagesi*, which is a smaller and more slender species.

6. *Gynacantha klagesi*, Williamson, 1923.

Williamson (E.B.) (1923) : 36-37. [French Guiana.]

PERU : Mishuyacu. 1♂, 10.vii.30; 2♂♂, 20.vii.30; 1♂, 22.vii.30; 1♀, 25.vii.30; 1♂, 27.vii.30; 1♂, 8.viii.30; 1♂, 2.iii.31; 1♂, 8.iii.31; 1♂, 8.iv.31; 1♂, 24.iv.31; 1♂, 10.v.31; 1♂, 14.v.31; 2♂♂, 28.v.31; 1♀, 2.vi.31. Iquitos 1♂, 17.v.31.

An interesting series of this little known species hitherto recorded from French Guiana and based on 2♂♂ 1♀.

Length abd. ♂, 46-47mm. ♀, 50-51mm. Hindwing ♂, 47-48mm. ♀, 51-52mm.

7. *Gynacantha nervosa*, (Rambur) 1842.

Calvert (1901-08) : 193. [Southern U.S., Mexico, Guatemala, Costa Rica, Panama, Colombia, Venezuela, Guiana, Brazil, Bolivia, W. Indies.]—Martin (1908-09) : 169-170. [South America, Cuba, Porto Rico.]—Williamson (E.B.) (1923) : 40-43. [California, Florida, Guatemala, Costa Rica, Canal zone, Colombia, Ecuador, Bolivia,

Venezuela, British Guiana, Dutch Guiana, French Guiana, Brazil, Trinidad, Cuba, Hayti, Jamaica.]

PERU: Mishuyacu. 1 ♂, 25.vi.30; 1 ♂, 20.vii.30; 1 ♂, 25.vii.30; 1 ♂, 29.vii.30; 7 ♂♂, 1.viii.30; 2 ♂♂ 1 ♀, 5.viii.30; 1 ♂ 1 ♀, 6.viii.30; 2 ♂♂, 7.viii.30; 1 ♂ 1 ♀, 8.viii.30; 1 ♂ 1 ♀, 15.viii.30; 1 ♂, 20.viii.30; 3 ♂♂, 28.viii.30; 1 ♀, 30.viii.30; 1 ♂, 2.ix.30; 1 ♂, 6.ix.30; 1 ♂, 20.ix.30; 4 ♂♂, 27.ix.30; 1 ♂, 28.v.31.

This is the most abundant Aeschnid in the material before me yet it appears to be hitherto unrecorded from Peru. As indicated by the records above it is a very widely distributed species from the Southern States to Brazil. It will be noticed that almost all my specimens were taken in July, August and September, the largest number being captured in August.

8. *Gynacantha litoralis*, Williamson, 1923 ?

Williamson (E. B.) (1923) : 44. [Dutch Guiana and Brazil ?]

PERU: Mishuyacu. 1 ♀, 27.ix.30—Yumbatos 1 ♀, xi.32.

I am doubtful of this determination as Williamson gives hardly any characters for the ♀ of his species. These examples appear to be very close to *G. nervosa*, indeed it was to this species that I originally referred them, but they differ in having the 3rd segment of the abdomen slightly constricted, with the lateral carinae distinctly approaching the ventral carinae at the level of the transverse carina. This character brings the specimens to *litoralis* in Williamson's key. The details given there were drawn from one of the aberrant specimens which Williamson doubtfully refers to this species. My examples agree with his in having two rows of cells between M_2 and Rs adjacent to the fork of Rs, as would specimens of *nervosa*. Williamson describes the wings of his Brazilian examples as uniformly brown tinged whilst mine have the subcostal space somewhat darkened basad with the costal and to a less extent the subcostal space brownish distad from the nodus. The constricted segment 3 precludes *croceipennis* which has been recorded from Peru and were it not for this character I would refer my specimens to *nervosa*.

Length of abd. ♀ 53-54mm. Hindwings ♀ 54mm.

9. *Gynacantha gracilis* (Burmeister), 1839.

Martin (1908-09) : 167-168 [S. America]—Williamson (E.B.) (1923) : 47-48. [Costa Rica, Ecuador, Bolivia, Venezuela, British Guiana, Dutch Guiana, Brazil.]

PERU: Iquitos, 1 ♀, 8.vi.31—Mishuyacu, 1 ♂, 6.viii.30; 1 ♂, 8.x.30; 1 ♂, 27.v.31.

These appear to be the first Peruvian records.

10. *Gynacantha membranalis*, Karsch, 1891.

Calvert (1901-08) : 194-195. [Panama, Colombia, Venezuela, Guiana, Ecuador, Peru, Brazil.—[Martin (1908-09) : 168-169. [Panama to the Amazons.]—Ris (1918) : 155. [Colombia, Ecuador, Venezuela, Brazil.]—Williamson (E.B.) (1923) : 48-50 [Costa Rica, Panama, Colombia, Bolivia, Peru, Venezuela, British Guiana, French Guiana, Brazil.]

COLOMBIA: Umbria, 1 ♂ 1 ♀, 1.xi.30; 1 ♂, 9.xi.30; 1 ♂, 11.xi.30; 1 ♂, 4.xii.30; 1 ♂, 14.xii.30; 1 ♂, 18.xii.30; 1 ♂, 31.xii.30; 3 ♂, 6.i.31; 2 ♂, 16.i.31.

PERU: Mishuyacu, 1 ♂, 10.iii.31; 1 ♂, 8.iv.31; 1 ♂, 14.v.31.

The following other *Gynacanthas* are recorded from Peru but are unrepresented in my material.

G. adela, Martin, 1909, *G. croceipennis*, Martin, 1909, and *G. interioris*, Williamson, 1923.

11. *Neuraeschna producta*, Kimmins, 1933.

Kimmins (1933): 226 [Peru].

PERU: Mishuyacu. 1 ♂, 22.viii.30; 1 ♂, 25.ix.30; 1 ♂, 8.x.30 (paratypes) 1 ♂, 20.ix.30; 1 ♂, 14.iv.31.

I had separated this interesting species as new when I heard from Mr. Kimmins that he was about to describe it from material from the same source as my own. I therefore sent him what material I had available which he incorporated in the paper above referred to. It is evidently closely allied to *N. harpya*, but is at once separated by the longer inferior anal appendage. The remarks of Williamson (1930) when describing his *N. mina* are of interest with regard to the habits of the genus, and his statement that all the known species are beautifully distinct in the form of the ♂ appendages, still holds good. Williamson says "very probably hardly a beginning has been made of our knowledge of the species of *Neuraeschna*."

12. *Staurophlebia reticulata*, Burmeister, 1839.

Calvert (1901-08) 178-9 [Honduras, Nicaragua, Panama, Venezuela, Guiana, Surinam, Brazil.]—Martin (1908-09): 210-211 [S. America]—Ris (1918): 156 [Panama, Ecuador, Guiana, Brazil, Argentine.]

COLOMBIA: Umbria. 2 ♂ ♂, 9.xi.30; 1 ♀, 19.xi.30; 1 ♂, 28.xi.30; 2 ♂ ♂, 27.xii.30; 1 ♂, 6.i.31; 1 ♂, 10.i.31.

PERU: Mishuyacu. 1 ♂, 18.viii.30; 2 ♂ ♂, 30.viii.30; 1 ♂, 5.xi.30; 1 ♂, 24.xi.30; 2 ♂ ♂, 29.ix.30; 5 ♂ ♂, 8.x.30; 1 ♂, 24.x.30; 2 ♂ ♂, 13.xi.30; 1 ♂, 28.xi.30; 1 ♂, 10.xii.30.

Yumbatos. 1 ♂, ix.32.

I cannot find this widely distributed, powerful dragonfly recorded from either Colombia or Peru.

13. *Staurophlebia gigantula*, Martin, 1909.

Martin (1908-09): 211. [S. America, particularly the Amazon region.]

PERU: Mishuyacu. 1 ♂, 20.viii.30; 1 ♂, 8.x.30; 3 ♂ ♂, 21.x.30; 1 ♂, 24.x.30; 1 ♂, 13.xi.30; 1 ♂, 6.xii.30; 1 ♂, 27.i.31; 1 ♂, 10.ii.31; 1 ♂, 14.ii.31.

These specimens constitute the first definite Peruvian record I am able to find. The species is closely allied to the preceding but is readily distinguished on sight by its smaller size.

Besides the above 13 species and the 3 additional *Gynacantha* mentioned, the 6 species under mentioned appear in the literature I have at hand as occurring in Peru.

Aeshna peralta, Ris (1918); *vigintipunctata*, Ris (1918); *diffinis*, Ramb. (1842); *brevifrons*, Hagen (1861); *intricata*, Martin (1909), and *Rhionaeschna marita*, Först. (1909).

In conclusion I should like to express my thanks to Mr. K. J. Morton for valuable assistance in naming several of the species herein included.

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The Cottian Alps and Turin in June-July, 1933.

By REV. E. B. ASHBY, F.R.E.S., F.Z.S.

I left London the night of June 18th and arrived at Oulx the following night at 9.16 p.m. Snow was falling in the Alps of Savoie and in the Mt. Cenis district en route and I experienced very cold weather in the Oulx district until 27th June, when the weather became fine and continued so for the remainder of the three and a half weeks I was there. I stayed all the time at the Albergo Commercio, an inn immediately by Oulx station. The motor-buses for the mountain resorts start by the station entrance.

I wish at the outset to express my thanks to Dr. Verity for the very interesting series of articles he has written, from time to time, in the pages of this magazine on the "Zygaenae, Grypocera and Rhopalocera of the Cottian Alps compared with other races," I have found these articles of immense interest, they represent an enormous amount of research, and they make our collections of infinitely greater interest.

1. STUPINIGI WOOD, TURIN. 800 ft.

I visited this old haunt of mine on June 20th and 26th. As a result of the two visits I took the following insects.

RHOPALOCERA.—*Brenthis dia*; *Argynnis cydippe*, var. *cleodoxa*, a few with the typical form; *A. aglaia*; *Strymon ilicis* var. *aesculi*, O., fresh; *S. w-album*, abundant, but rather worn; *Melitaea pseudathalia* race *celaduzza*, Fruh. with transitions to *melathalia*, Rocci.; *Plebeius argus* = *argyrognomon*, Berg., mostly worn; *Polygonia c-album*, abundant; *Melanargia galathea*, race *pedemontii*, Vty., abundant and

fresh; *Rumicia phlaeas*, abundant and fresh very dark and towards var. *eleus*; *Eugonia polychloros*, very fresh and appeared fairly common, settling to rest on the *Acacia italiana*; *Pieris daplidice*; *Aphantopus hyperantus*, race *maxima*, Vrtý.; *Lycænoptis argiolus*.

HETEROCERA.—*Nemotois scabiosella*, Scop.; *Leucoma* (*Stilpnotia*) *salicis*, L., extremely abundant in both sexes; *L. chrysorrhoea*; *Nygnia phaeorrhoea*; *Zygaena transalpina*, race *emendata*, Vrtý.; *Z. stoechadis*, race *dubia*, Stågr.; *Omphalophana anterrhini*, Hüb.; *Ectropis crepuscularia*, Hüb.; *Peronea boscana*, Fab.

DIPTERA.—*Ocyptera bicolor*, Oliv; *Chrysops caecutiens*; *Pangonius haustellatus*, F. (with reference to this fine Dipteron, will collectors remember that the Brit. Museum, S. Kensington, would be very glad of some specimens from Italy). The one specimen I caught on 26th June, was very fresh, and I found it settling on thistle blossoms in a large clearing in the heart of the wood, on the south side of the main road to Stupinigi Palace.

RHYNCOPTA.—*Lygaeus saxatilis*.

HYMENOPTERA.—*Rhogogaster punctulata*; Evaniidae, *Foenus assectator*, L. ♀

ORTHOPTERA.—*Blattella germanica*, L.

NEUROPTERA.—*Chrysopa perla*.

COLEOPTERA.—*Eosoma lusitanica*.

2. LAKES OF AVIGLIANA. Above 1108 ft.

On 22nd June, as the weather at Oulx was still too cold, I went down to Avigliana by train and walked out in about three quarters of an hour to the lakes of Avigliana and then taking the road which separates them and which leads to the best ground to the west of the second lake. Unfortunately there was little sun. I found the following insects.

RHOPALOCERA.—*Colias croceus*, Fourc.; *Coenonympha arcania*; *A. hyperantus*, race *rufilius*, Frbst.

COLEOPTERA.—*Rhagonycha fulva*, Scop.; *Leptura melanura*, L., *Colaspidea atrum*, Ol.; *Eosoma lusitanica*; *Oedemera flavipes*; *Haltica coryli*, Al.; *Cryptocephalus hypochaeridis*, L.; and *C. variegatus*, Fab.

NEUROPTERA.—*Panorpa communis*.

HYMENOPTERA.—*Halictus maculatus* ♀; *Prosopis confusa*, ♀ Nyl.; *Hylotoma cyanocrocea*.

HETEROCERA.—*Pryausta sanguinalis*, L.

3. CHIOMENTE. 2525 ft.

On 29th June I went by train after pranzo (déjeuner) from Oulx down the line to Chiomente. Arriving there I took the path which leads parallel to the line towards a bridge. Crossing the line underneath this bridge a steep ascent begins, and although I did not get very far, I am told there is good collecting for a long distance by following this road. Shortly after passing under the above bridge a path through cultivated land opens on right for some distance. Along this path I took some Burnet Moths which were flying in great number and in prime condition. The insects taken at Chiomente were:—

RHOPALOCERA.—*M. pseudathalia* race *celaduzza*, Fruh.; *M. galathea*, race *pedemontii*, Vrtv.; *Polyommatus escheri*, race *balestrei*, Frhst.; *P. (Cyaniris) semiargus*, race *montana*, M.D.

HETEROCERA.—*Larentia dotata*, L.; *Amphidasis betularia*, L., two specimens taken at rest on the walls of Chiomente station; *Zygaena stoechadis*, Bkh., with race *dubia*, Stdgr.; race *alpiumgigas*, Vrtv. (= *major*, Frey, nom. praeoce.); *Z. loniceræ*, Esp., race *alpium-gigas*, Vrtv.; *Z. trifolii*, Esp. Dr. Verity says this is probably *alpiumnana*, Vrtv. resembling superficially a form of *loniceræ*; *Z. scabiosæ* race *orion*, H.S.; *Z. transalpina* race *alpicola*, Vrtv. = *alpium*, B.; *Z. lavandulae* var. *consobrina*, and the typical race; *Syntomis phegea*.

COLEOPTERA.—*Molytes glabratus*, F.; *Rhizotrogus vernalis*, Brullé.

HYMENOPTERA.—*Halictus laevigatus*, K., ♀; *H. albipes* ♀; *Andrena nigroaenea*, Kirb. ♀; *Psithyrus rupestris*, Fab.; *Acanthomyops (Chthonolasius) umbratus*, Nyl., ♀; *Camponotus (Tanacmyrmex) aethiops*, Latr.

4. JOUVENCEAU.

There is an excellent collecting ground just above this village; leaving the roadtrack, and taking a path to left which runs parallel to a stream for some distance. Jouvenceau can be reached on foot through the main village of Oulx; ask the way and lunch should be carried if the whole day is given to this excursion. I ascended there on 30th June. After passing the first village there is a bridle-path on right, which shortens the walk and gives some shade, but is rough in places. I took the following insects.

RHOPALOCERA.—*Brenthis amathusia*, E. race *titania*, Esp.; *Issoria lathonia*, L., race *emiflorens*, Vrtv.; *Erebia ceto*, Hüb.; *Leptosia sinapis*, race *magna*, Vrtv., I Gen.; *Pararge maera*, L., race *herdonia*, Frhst.; *M. cinxia*, race *arelatia*, Frhst.; *P. (C.) semiargus*, race *montana*, M.D.; *M. pseudathalia* race *celaduzza*, Fruh. *M. aurelia* race *initatrix*, Vrtv. *M. dictynna*, race *subalpina*, Vrtv.; *Chrysophanus hippothoë*, race *eurybia*, O.; *Plebeius argus* race *philonomus*, Bergstr.; *Aricia medon*, E.; *Plebeius idas*, L. = *argyrognomon*, Bergstr.; *Heodes virgaureae*, race *inalpinus*, Vrtv., one very large male amongst others.

(To be concluded.)

Nomenclature. The List.

By Hy. J. TURNER, F.R.E.S., F.R.H.S.

(Continued from page 75.)

Plebeius, L. *aegon*, Schiff. becomes *Plebejus*, Kluk *argus*, L.

We now come to the main section of the Family which hitherto has been called the *Lycaenidae*. Whether this family name will stand in future depends upon the Zoologists' Code apparently.

The main genera have hitherto been *Plebeius*, L., *Polyommatus*, Latr. and *Lycaena*, Fb. These have become in modern times very unwieldy from the number of species included in each, in fact continental authorities, following Staudinger, had come to use *Lycaena* alone for these three groups; a convenient way of burking difficulties, but not at all satisfactory; e.g. Seitz Palaearctic Rhopalocera. Many genera were carved out from these three by those working on special

species or small groups, as did Tutt and his helpers. Then Mr. Bethune-Baker with his comprehensive knowledge of the "blues" of the world, took up the task of sorting out the Palaearctic species by gaining an intimate knowledge of their genitalia. As a result he placed the following species in the genus *Plebeius* (*sens. lat.*):—

aegon, (*argus*, L.) Schiff., *insularis*, Leech, *argyrognomon*, Bergstr. (*argus*, L.), *aegidion*, Meisn., *barine*, Leech, *tancredi*, Graes., *cleobis*, Brem., *eversmanni*, Stdgr., *grumi*, Stdgr., *lucifera*, Stdgr., *themis*, Gr.-Gr., *eurypilus*, Fr., *pylaon*, Fisch., *zephyrus*, Friv., *lycidas*, Trapp., *allardii*, Obthr., *ferghana*, Stdgr., *martini*, All., *standingeri*, Christ., *christophi*, Stdgr., *alaina*, Stdgr., *sieversi*, Christ., *hyrcana*, Led., *bellona*, Gr.-Gr., *alcedo*, Christ. (all the above *sens. strict.*) with *medon*, Hufn. and *donzelii*, Bdv. (part of the genus *Aricia*, R.L. of Tutt, etc.) with *orbitulus*, Prun., *pyrenaica*, Bdv., *aquilo*, Auriv., *elvira*, Ev., *aegragnus*, Christ., *ellisi*, Marsch., *pheretiades*, Ev. (the genus *Latiiorina*, of Tutt, etc.) with *pheretes*, Hb., *chrysopsis*, Gr.-Gr., *omphisa*, Mr., *felicis*, Obthr. (the genus *Albulina* of Tutt etc.). See *Ent. Record* 1914, p. 133, etc.

He further stated that he was unable to differentiate between the three last groups and the *Plebeius* (*sens. strict.*) group, and hence sinks them (*Aricia*, *Albulina* and *Latiiorina*).

Kirby, *Hand. Ord. Lep.* (1896) II. 87, points out that Cuvier *Tab. Elém d'Hist. Nat.* (1799). 591, fixed the type of *Plebeius* as *argus*, L. (*aegon*) though he only used the plural for *Plebeii*.

Our Nomenclators make a lot of capital out of this singular and plural business although there is nothing in it. The old entomologists were brought up on the Classic languages and aired their knowledge or ignorance at every opportunity and those who were not so trained perforce copied them.

Scudder rejects this action of Cuvier, see *Hist. Sketch* Pref. on quite untenable grounds.

The genus name *Plebeius* occurs in Linnaeus, *Syst. Nat.* 1758. *Plebejus* is only a fancy spelling: *j* was often used for *i* in old literature and savours of pedantry. Such gymnastics are condemned by the zoologists' code which is supposed to be followed.

We do not agree it is generally accepted that the correct specific name of the only British species of this genus is *argus*. The *argus-aegon* question has sickened one by its ineffective prolixity; Rev. G. Wheeler has shown in this magazine more than once that *aegon* must be the name of our British "silver-studded blue." Others, particularly Courvoisier, have championed the other side. The confusion of using the one name *argus* for two almost identical common species causes the utmost confusion which the use of *aegon* avoids. Seitz has made the best suggestion for the solution in Vol. I. p. 300, *Palaearctic Rhopalocera*. He says "From a practical point of view the simplest solution would be arrived at, if the names *aegon*, Schiff. (= *argus*, L.) and *argus*, Schiff. were employed for the two species." We would add that, to settle all further confusion, these names used in this application should be submitted for preservation, to prevent the utter confusion which has arisen from the misuse of the name *argus*, and which will continue if *argus* be accepted to replace *aegon*.

(To be continued)

NOTES ON COLLECTING, etc.

A correspondent of the *Times* reports the occurrence of a ♀ specimen of *Dicranura rivula* from Barra, an island of the Outer Hebrides, which emerged there from a wild gathered cocoon, on 23rd April. I believe there are no records of this species from the Orkneys or Shetlands, and have no definite knowledge of its previous occurrence in the Outer Hebrides. Sallow bushes grow there upon which the larvae would feed. The date of emergence is unusually early.—Hx.J.T.

DISTRIBUTION OF *EREBIA ARETE*.—On p. 73 ante the authors state that they have met with *Erebia arete* at Mallnitz about 65 miles west of its well known locality on the Sau Alp and are not aware of any record of captures between these two areas.

Our correspondent Herr Warnecke very kindly refers us to an article in the *Ent. Zeit.* (1920-1) pp. 77 etc. of vol. 34 where *E. arete* is reported as common generally in the Turracher Alpen, the upper part of the Gurk-tal, on the western boundary of Stiermark.

BUTTERFLIES AND ELEPHANTS.—The following observation is worth recording. It is by my friend Lt.-Colonel L. H. Bethell, who is not an entomologist, but an observant traveller. Apropos of the "saprophytic tendencies of the butterfly," he writes, "the same thing struck me, with the same amazement, that such a delicate thing could be such a foul feeder, in the jungles of the Assam hinterland. I had charge of a battalion of Gurkhas there; and, being jungle-stationed, part of my regimental fit-out was a team of nine pack-elephants, whose job it was to connect us with our ration-boxes on the river. They tramped a narrow path which we, for lack of a better, also used, leading up to the stockades. The elephant, as you know, when he defaecates, leaves a monumental piece of work. I never saw a butterfly in all those jungles normally, but every one of those colossal heaps (over which one had to step in the narrow path; there was no way round), was literally covered with myriads of butterflies, all shapes, sizes and brilliant colours, till you simply could not see what lay beneath. Where they came from, I've not the least idea; but the presence of foul feeding of that sort must have attracted them, in inconspicuous ones and twos, from every direction. Has a butterfly a sense of smell? It could not have been sight. Visibility in those dense rain-forests was normally about six feet, and not always that."—M.B.

CURRENT NOTES AND SHORT NOTICES.

Four further parts of the *Lepidopterorum Catalogus* have recently been issued. Part 58: continues the references to the *Saturniidae*, of the subfamilies Saturniinae and Ludiinae; Part 59: contains the *Notodontidae*; Part 60: continues the *Pieridae* by G. Talbot; Part 61: continues the *Geometridae* by L. B. Prout. As usual Mr. Prout's work is wonderfully complete; he has carefully noted even summarized reports of the meetings of Societies as published in magazines (See page 82 for a S. London Socy. reference). We cannot refrain from again pointing out the incorrect method of specific reference in the

Pieridae part. Butler did not write *vestalis vestalis* but *vestalis*, and if the first reviser wishes to double the name it certainly should be written *vestalis*, Btlr. *vestalis* (first reviser's name). Butler's name naturally included the species as a whole, whereas the first reviser who pointed out its comprehensiveness limited the inclusion to a specified form. It is also a pity that the format of this section differs from the whole of the rest of the Catalogue, in emphasizing the subspecies as species by heavy type. On p. 258 of this family are two references we have been unable to verify even in the B.M., viz., *aestiva* and *borealis* forms of *napi-oleracea*, names said to have been described in *The New England Farmer* by Harris in 1829, vol. VIII? (or VII). One finds *oleracea* in Vol. VII. p. 402 in this newspaper. Even Kirby does not give these names in his *System. Cat.* nor do they occur in Sherborn. The utility of these wonderful lists of references must be unlimited.

A meeting of the Entomological Club was held at Caracas, Ditton Hill, on 8th March, 1934, Mr. W. J. Kaye in the Chair. *Members Present* in addition to the Chairman:—Mr. Robert Adkin, Mr. Horace Donisthorpe, Prof. E. B. Poulton, Mr. H. Willoughby Ellis, Mr. Jas. E. Collin, and Dr. Harry Eltringham. *Visitors Present*:—Capt. N. D. Riley, Mr. C. N. Hughes, Mr. W. H. T. Tams, Maj. R. W. G. Hingston, and Mr. Frank A. Oldaker. The guests were received at 6.30 onwards by Mr., Mrs. and the Misses Kaye. The Chairman's comprehensive collections of Rhopalocera were on view. The house was decorated with some beautiful specimens of orchids of which the Chairman for many years has been a most successful grower. Supper was served at 8 o'clock and after a most enjoyable evening the guests dispersed at a late hour.—H. WILLOUGHBY-ELLIS.

Herr G. Warnecke of Kiel has sent us a reprint of his articles collected from the *Int. Ent. Zeit.* on the connection of Ants and *Lycaenidae*; in which he summarises all that is known of this curious and interesting relationship. He gives particulars of some 65 species of 24 *Lycaenid* genera, with 3 plates and several text figures. All references are given and Lists of the chief works on the subject. A very valuable summary.

The same author has also sent us a number of separates of the articles he has contributed to various magazines on entomological subjects during the past few years, containing numerous plates and text figures. They deal with the micro-lepidoptera of the middle Rhine area, an Arctic relic of Germany, Lepidoptera of S.W. Arabia, the distribution of *Lampides boeticus* in mid Europe, etc.

Wherever Sig. Orazio Querci stays he does a large amount of entomological research and his results are published locally. Some while ago we referred to his work on the Rhopalocera of Spain which was published in Barcelona. Now we have to record a compilation of the *Bibliography of the Rhopalocera of Portugal*, which was published at Lisbon in the *Arquivos do Museu Bocage*. It consists of 112 small quarto pages and deals with 117 species, giving the name with reference to figures, the original description and the distribution in Portugal, with occasional notes of interest. References are added to literature before Linnaeus, e.g., Mouffet, Ray, Aldrovandus, Petiver, Wilkes, Roesel, etc. Much of the distribution notes were obtained from Wattison's notes of 1928-9. Such a work is very useful to those who collect in Portugal. The

descriptions are all reproduced in the language in which they were originally made, often with an expanded description when the original is too brief for modern work.

COMMITTEE FOR THE PROTECTION OF BRITISH INSECTS.—An appeal is made to all Entomologists and others interested in the Protection of our Insect Fauna to subscribe to the Protection Fund of the above Committee. It is not the object of the Committee to restrict legitimate collecting for research purposes provided that a portion of the area to be protected can be kept as a sanctuary. These sanctuaries require looking after. A certain amount of mowing and thinning must be done consistent with the interests of the species to be protected, otherwise the sanctuaries become overgrown and the food-plants choked. In some cases it is necessary to provide a watcher during the breeding season and sometimes to contribute to the rent of the sanctuary. Donations and subscriptions should be sent to H. M. Edelsten, Hon. Secretary, Committee for the Protection of British Insects, Royal Entomological Society of London, 41, Queen's Gate, S.W.7.

Parts 49 and 50 of the *Supplement to Seitz Palaearctic Noctuae* are very important for British entomologists interested in variation. In the 3 sheets (24 pages) the variation of no less than 36 species occurring in Britain is considered. The species concerned are those in the genera *Polia*, *Harmodia*, *Aplecta*, *Tholera*, *Monima*, *Hyphilare*, *Sideritis*, etc. (our old *Dianthoecia*, *Hadena* in part, *Taeniocampa*, and *Leucania*), and considerably over 100 variations are dealt with. *Harmodia (Dianthoecia) caesia*, *Monima (Taeniocampa) gothica*, *M. stabilis*, *M. gracilis* as well as the tangle *luteago-barrettii-andalusica* are given more in detail. The result of the work of British entomologists that *barrettii* is a form of *andalusica* a separate species from *luteago*, is accepted. On the 3 plates there are no less than 163 figures.

Three parts of the Main Volume of Seitz *American Bombyces*, etc., have just been issued and contain 3 sheets and 6 plates. This huge volume still wants about 200 pages and 20 plates to complete it. Nine of the seventeen volumes projected in 1906 have been completed and also two volumes of the Supplement to the European portion, with 918 coloured plates and many thousand figures.

We have received the Volumes containing the account of the Fifth Congress of Entomology held in Paris in July, 1932. The Report contains the Papers received by the Congress, many of which there was no time to read and discuss. The volumes consist of some 1000 pages with 37 plates and many text figures and dealing with the various aspects and activities of the science allocated in the following Sections: General Entomology; Morphology, etc.; Ecology, etc.; Applied Entomology; Medical Entomology; Forest Entomology; Apiculture; and Nomenclature. No less than 106 papers are printed of which more than half were in French and more than a quarter were by English speaking authors; about a dozen were German. Economic and applied entomology form the bulk of the subjects discussed. One of the most interesting papers is that of Dr. Pictet, A consideration of the mongrel population of the Lepidoptera in the zone of contact between the habitats. It is illustrated with four plates and numerous diagrams. The area dealt with is that of the Swiss National Park in the Engadine and the species studied *Erebia pronoe* and its form *pitho*, *Erebia nerine*

and its form *reichlini*, *Erebia cassiope*, *Argynnis (Brenthis) pales*, *Nemeophila plantaginis*, *Erebia gorge* and its form *triopes*. Prof. Poulton assembles a mass of evidence to show that the attempts made during the past quarter of a century to disprove the theories of Mimicry, Warning Colours and Protective Resemblance in Insects are without foundation; a really delightful paper. The subject of Mimicry is again discussed in a paper by Franz Heikertinger of Vienna, with three plates. If space permits we will mention some of the more outstanding papers in this volume later in the year.

May we remind our readers of two things to keep in mind. 1. To remember what has been requested about the Colorado Beetle; 2. To keep an eye on, and to record all species suspected of immigration. We might also ask for reports of second broods this year; as the spring and early summer have been so abnormal and vegetation has matured much earlier, the appearances of many species are sure to be affected. In some Sussex areas the oaks are very badly attacked by *Tortrix viridana* larvae.

Dr. Seitz, in his Preface to the *Supplement of the Palaearctic Bombycids-Sphingids* (Supp. Vol. II.), referring to the obsession of naming says, "Some method must be found of preventing the small number of indispensable and scientifically valuable names being submerged by this flood of dispensable denominations." "The main object of this work is to enable collectors to find a definition and description of every name that may be found in literature, in any Museum or private collection, in descriptions of fauna, etc." "The editor was forced to consider the wishes of his subscribers and disregard the strictly scientific standpoint, which would have appealed to only about 5% of his readers. The other 95%, that study entomology as a matter of sport, or as a hobby, frequently take more interest in a denominated aberration of some local indigenous species than in an exotic rarity from far off lands." In fact the whole preface gives one much food for thought and is well worth perusing.

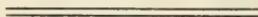
We regret to see the announcement of the death of another of the small band of French entomologists who have for many years devoted their attention to the micro-lepidoptera, M. Chétien. It was not two years ago that M. Joannis passed away, another of those who were great students of the micros. M. Chétien was in his 88th year and with M. Joannis was one of the founders and strong supporters of the fine little paper *L'Amateur de Papillons*.

The Royal Entomological Society have announced that they will hold a *Conversazione* on Thursday, 13th September, in their rooms at 41, Queen's Gate, S. Kensington during the Third International Locust Conference.

CORRECTIONS:—p. 76 "herpertology" should be of course "herpetology."

p. (331) *Brit. Noct.* "taraxici" should be "taraxaci."

p. 64. "Flinders" should be "Vlinders."



All MS. and EDITORIAL MATTER should be sent and all PROOFS returned to Hy. J. TURNER, "Latemar," 25, West Drive, Cheam.

We must earnestly request our correspondents NOT to send us communications IDENTICAL with those they are sending to other magazines.

Reprints of articles may be obtained by authors at very reasonable cost if ordered at the time of sending in MS.

Articles that require ILLUSTRATIONS are inserted on condition that the AUTHOR defrays the cost of the illustrations.

EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. Hy. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—S. *Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—R. C. L. Perkins, 4, Thurlstone Road, Newton Abbot.

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of *D.oo. pupae* of *X. gilvago*, *D. caesia*. A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—C. Zacher, Erfurt, Weimar, Street 13, Germany.

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucerneae*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. Harold B. Williams, Woodcote, 36, Manor Gate Road, Kingston Surrey.

Duplicates.—A large number of species of European and Palaearctic Rhopalocera and Heterocera.

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EDITED

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Dutch Forms of Lepidoptera described in Holland.

By B. J. LEMPKE.

(Concluded from page 66.)

CORRECTION.—On p. 64 for "Flinders" read "Vlinders."

11. *Aricia medon*, Hufn. (*astrarche*, Brgstr.) ab. *snelleni*, ter Haar, *Onze Vlinders*, p. 13, 1899 (or 1900). "Is constituted of examples in which the black points in the middle of the forewings are wholly or partially surrounded by a white ring."

Ab. *albiannulata*, Harrison, *Ent. Rec.*, xviii., p. 236, 1906, falls as a synonym.

12. *Aricia medon*, Hufn., ab. *graafii*, ter Huell, *Sepp's Nederl. Ins.*, vol. VII., preface, p. ii., fig. on frontispiece, 1855. "With white instead of orange marginal points."

13. *Rhyacia orbona*, Hufn. (*comes*, Hb.) ab. *pronubina*, de Graaf, *Sepp's Nederl. Ins.*, vol. vii., p. 139, 1843-55. "Forewings of a greyish olive colour, markings less clear. Hindwings without the black lunule."

In *Bouwst.*, I. p. 250, note 1, 1853, de Graaf writes: "*connuba*, Hb., 680, is, if not another species, certainly another variety."

Connuba, Hb., fig. 680, has the forewings yellowish-brown with markings, so it is impossible to treat *pronubina* as a synonym.

14. *Cosmia (Xanthia) fulvago*, L. ab. *togatoides*, Snellen, *Tijdschr. v. Ent.*, vol. 53, p. 316, 31st. Dec., 1910. "The ground colour of the forewings is not sulphur yellow, but vividly citron yellow as in *togata* [*lutea*, Ström.]. Head and collar as well as the markings are however as in the type of the species."

15. *Conistra (Orhodia) erythrocephala*, F., ab. *caeca*, ter Haar, *Onze Vlinders*, p. 215, 1902 (or 1903). "The lower half of the reniform stigma is usually sharply filled with black, but not always. These sub-varieties could be named *caeca*."

Ab. *impunctata*, Splr., *Schm. Eur.*, I., p. 254, 1907, is a synonym.

16. *Conistra ligula*, Esp. ab. *auronigra*, Heylaerts, *Tijdschr. v. Ent.*, vol. 33, p. xxxviii, 1889. "An example was found by me, near the Speelhuis [Breda], which had the anterior wings deep black, a basal point, the orbicular and reniform stigmata, the outer line and the fringes of a magnificent golden yellow."

17. *Conistra rubiginea*, F., ab. *unicolor*, Heylaerts, *op. cit.*, vol. 33, p. xxxviii, 1889. "Among a large number of specimens of this species, reared *ab ovo*, I have obtained some examples without the ordinary markings and spots."

Ab. *unicolor*, Tutt, *Brit. Noct.*, III., p. 7, 1892, falls as a synonym.

18. *Sarrothripus revayana*, Scop. ab. *grisea*, ter Haar, *Onze Vlinders*, p. 65, 1900 (or 1901). "Has a grey ground-colour and is otherwise as var. V." [= *ramosana*, Hb.]

An example of this aberration, of which only very few have been taken in Holland, is excellently figured by Oudemans, *Tijdschr. v. Ent.* vol. 39, pl. 8, fig. 5, 1895. Sheldon (*Entom.*, vol. 52, p. 101, pl. I. fig. 3, 1919) names the forms paler than the type of *ramosana*, Hb.: *cladodes*, Sh. His name can stand for all the forms paler than *ramosana*, but not pure grey. The figure of Barrett, quoted by Sheldon, greatly differs from the one of Oudemans by its ground colour.

Sagittata, Sh., which has a grey ground colour, differs in the form of the dark streak, which has a normal *ramosana*-form in *grisea*.

19. *Cybosia mesomella*, L., ab. *flava*, de Graaf, *Bouwst.*, I. p. 234, 1853. "Var. *flava*.—Hb. 266.—Engram. vi., fig. 304, a, b. The upper wings are instead of whitish, strong yellow; otherwise as in the type."

Ab. *flava*, Preiss., *Verh. Zool.-bot. Ges.*, Vol. 59, p. (233), 1909, is a synonym. As there is some confusion about the type form of *mesomella*, it will be well to quote Linne's original description (*Syst. Nat.*, X. ed., p. 535, 1758): "P. *Tinea* alis supra albis, subtus luteis, interne nigris. *Habitat* in Gramine." So the form with whitish forewings is the type (= *eborina*, Hb., *Beitr.* I., 3, pl R., fig. Q, 1786, and *Samml. Eur. Schm.*, *Bombyces*, fig. 104; = *albida*, Catherine, *Amat. de Pap.*, I, p. 242, 1923) and not the form with yellow forewings, as Catherine and d'Aldin write. (Is this form predominant somewhere in France?)

20. *Miltochrista miniata*, Först., ab. *flava*, de Graaf, *Bouwst.*, I., p. 234, 1853. "Differs from the typical form only by the deep yellow ground-colour of the wings."

Ab. *crocea*, Bignault, *Bull. Soc. Ent. Fr.*, 1880, p. 105, and *flava*, Meyer, *Insektenbörse*, vol. 23, p. 88, 1906, are synonyms.

21. *Pelosiä muscerda*, Huñ., ab. *immaculata*, Oudms., *Tijdschr. v. Entom.*, vol. 42, verslag [report] p. 20, 1899. Here Oudemans proposes to name the ab. without the points on the forewings: ab. *immaculata*. The form was figured *op. cit.*, vol. 40, pl. 12, fig. 2, by Snellen (without naming it).

Ab. *concolor*, Schultz, *Ent. Zeitschr.*, xxii., p. 183, 1900, falls as a synonym.

22. *Trochilium crabroniformis*, Lewin, ab. *credanensis*, Heylaerts, *Tijdschr. v. Ent.*, vol. 26, p. CLI., 1883. "The thorax shows a tuft of deep yellow hairs at the base of the anterior wings; the scutellum of the mesothorax has two rather large yellow lunules, the inner sides of which are turned to each other. The first abdominal ring is yellow and covered with rather long hairs of the same colour, the second is black with bronze reflection; the third is yellow; the fourth is shining reddish orange and, as all the others, which are yellow, with a very narrow black border; the anal tuft is also of a yellow orange colour and shining. Antennae, palpi, feet, etc., are typical."

February, 1934. Amsterdam.

Landscape Memories.

By G. T. BETHUNE-BAKER, F.R.E.S., F.Z.S.

Memories come and go like clouds in a summer sky, they float in the blue and disappear only to form again and soar above you.

It is well over half a century ago since I made my first visit to Switzerland. There was then no railway up the Visp valley, and my friend and I were off at seven o'clock in the morning for Stalden, and then on to St. Nicholas, where we put up for the night. Up betimes in the morning we ascended and still ascended, then suddenly the first glimpse of the Matterhorn came in sight, and a little later the full view of that stupendous, and ever entrancing mountain, came into

sight, a vision of snowy whiteness. Its terrible precipitous face is rarely so seen in summer, for the snow never lies there, but there happened to have been a heavy fall that had not had time to melt in those upper regions in spite of the sunshine in which we and everything were bathed. But even more beautiful still than the superb mountain in its snowy coldness, lay a dazzling scene of exquisite blue almost at our feet, for there in front of us shone an acre or more of *Gentiana verna* in such profusion and brilliance as I have never again seen; a memory never to be obliterated. Apart from runs to catch, or try to catch, *Pieris callidice*, the capture, that remains in my mind, is that of *Naclia punctata*, of which we caught several in the early morning between Visp and Stalden.

Another reminiscence, again starting from the Rhone Valley, was a tramp up the Orsières-Dranse valley, over the Great St. Bernard to Aosta. We took refuge at the Hospice for the night, and it was a little alarming, as we approached its hospitable doors, to be greeted by a score or more of great St. Bernard dogs, all baying around us. They were, however, quite respectful to strangers. Snow was everywhere and deep. Continuing our way the next morning, a little distance below the ridge of the pass, the snow was melting on a shoulder exposed to the full power of the sun's rays, and here we found hundreds of the larvae of *Zygaena exulans* on the grassy slope. Some of these I sent to Buckler, and his figures of them were those given in his work on the Larvae of British Moths. The contrast of Aosta, with its vineyards and rather dried up vegetation—it was very hot—compared with the luxuriant and flowery hay-fields a couple of thousand feet higher up, was very marked.

It is a long cry from there to the Pyrenees, but I recall my first visit, over twenty-five years ago, to Gavarnie; Hugh Jones was with me, and my old friend Colbran Wainwright joined us a week later. It was a walk with the latter over the Vignemal Pass to the Lac de Gaube that I recall. We had been collecting too long and were beginning to push on when as we suddenly rounded a sharp mountain bend in the track, a scene of such exquisite beauty met our gaze that both of us spontaneously stood transfixed with the single, softly uttered 'Oh!' coming from our lips as we stood and gazed, and gazed. For there, just before us, arose two mountains side by side, separated only by a very narrow grassy valley that was thickly carpeted with rich ultramarine blue Iris, not purple but rich true blue, extending half way up the sides of both mountains; the vast mass of heavenly blue mingling with the deep green of the foliage, formed a scene of beauty that will ever remain a joy to think of.

Now, the pinnacles and aiguilles and turreted embattlements of the Rosenlauri float before my eyes. These seen from Weisslahnbad, bathed in the delicate early sunset rays are again a very happy memory; as the sunset colours deepen, the silvery grey of the range with its entrancing peaks and towers becomes deep crimson in hue, and in its darker tints transform the early delicate aspect into one of rather terrible and forbidding splendour. This is a beautiful neighbourhood (and up to the Pordoi Pass and beyond) for the rocky flower denizens that love these limestone mountain crannies, and many precious specimens changed their habitat, and seemed quite happy in so doing.

It is not far, comparatively speaking, from here to the Engadine,

Pontresina, the Queen of the Alps; her wonderfully varied mountain forms and scenes entrance me more, each time I revisit them. My last visit, with two old friends, was eight years ago; we arrived there on 2nd July, a very late season, for the snow had only left the valleys a few days previously, and the entire district was brilliant with all the early flowers. Here, in earlier days, I made my first acquaintance with the Nutcracker Crow, the Great Black Woodpecker and with the Black Squirrel, and they were all observed again. The fine Palü and its glacier come vividly back to memory as we gazed on them from Alp Grüm, as also the sequence of blue lakes that unfold before you from Muottas Murail. But amid all the other varied beauty spots the Roseg Valley with its stream and woods and wonderful snowy background must ever remain a lovely reminiscence of happy days in Europe's playground.

Nomenclature. The List.

By Hy. J. TURNER, F.R.E.S., F.R.H.S.

(Continued from page 84.)

In his revision of the Palaearctic "Blues" Mr. Bethune-Baker placed the following in the genus *Polyommatus*, Latr.—

eros, Ochs., *evoides*, Friv., *venus*, Stdgr., *stoliczkana*, Fldr., *superba*, Stdgr., *dagmara*, Gr.-Gr., *actinides*, Stdgr., *candalus*, H.-S., *icarus*, Rott., *devanica*, Mr., *sarta*, Alph., *amandus*, Schw., *myrrha*, H.-S., *hylas*, Esp., *meleager*, Esp., *escheri*, Hb., *amor*, Stdgr., and *loewii*, Zell. (*sens. strict.*), with *dis*, Gr.-Gr., *idas*, Rmbr., *psylorita*, Fr., *chinensis*, Murr., *kogistana*, Gr.-Gr., *eumedon*, Esp., *hyacinthus*, H.-S., *phyllides*, Stdgr., *anteros*, Fr., *isaurica*, Stdgr. (part of the genus *Aricia*, R.L. of Tutt and others), with *thetis*, Rott., *coridon*, Poda, *thersites*, Cant., *aragonensis*, Vrtv., *marcida*, Led., *gravesi*, Chap. (the genus *Agriades*, Hb., of Tutt, etc.), with *damon*, Schiff., *dolus*, Hb., *hopfferi*, H.-S., *phyllis*, Christ., *admetus*, Esp., *mithridates*, Stdgr., *erschoffii*, Led., *aedon*, Christ., *glaucias*, Led., *damone*, Ev., *iphigenia*, H.-S., *actis*, H.-S., *poseidon*, Led., *dama*, Stdgr. (the genus *Hirsutina*, Tutt, etc.), with *optilete*, Knoch., *cyparissus*, Hb., *iris*, Stdgr., *rutilans*, Stdgr. (the genus *Vacciniina*, Tutt, etc.), with *coelestina*, Ev., *persephatta*, Alph., *semiargus*, Rott. (the genus *Cyaniris*, Dalm., of Tutt and others). See *Ent. Rec.* 1914, p. 133, etc.

He further states that he is unable to find any stable structural character to differentiate the species placed in *Aricia*, R.L., *Agriades*, Hb., *Hirsutina*, Tutt, *Vacciniina*, Tutt, and *Cyaniris*, Dalm. from *Polyommatus*, Latr. and therefore sinks all five of them.

Polyommatus, Latr., *astrarache*, Brgstr. becomes *Aricia*, R.L. *agestis*, Schiff.

In his *British Butterflies* Tutt substituted *Aricia*, R.L. *medon*, Hufn. which we have used since that time. *Aricia*, R.L. as used by Tutt has long been accepted, but by the stupid misapplication of the Zoologist's wretched homonym rule, *medon*, Hufn. 1766 is displaced. Another species in no way whatever liable to be confused with our species, in fact a Nymphalid, had been named *medon* by Linnaeus. It is simply disgusting to view the gymnastics which takes place in this way. Having brought the priority name into use for some time, someone butts in and displaces it; a nice scientific (*sic*) game.

Such a rule we feel sure, was never intended to be applied in every name repetition, but only where confusion was liable to arise.

Polyommatus, Latr. *icarus*, Rott. remains *Polyommatus*, Latr. *icarus*, Rott.

Polyommatus, Latr. *corydon*, Poda, becomes *Lysandra*, Hem. *coridon*, Poda.

Following Tutt in his *Brit. Butt.* for some period, *Agriades*, Hb. was used in this magazine. But some while after Bethune-Baker's study of the genitalia of this group of *Lycaenidae*, in the main *Polyommatus* has been used. A reference to Poda showed us long ago that *y* in *coridon* was an unwarrantable insertion. There appears to be no adequate and scientific reason for a new generic name here, except, perhaps that the number of species included in *Polyommatus* (*sensu lato*) is inconveniently large.

A large genus is always difficult to grasp and one naturally and unconsciously divides it in one's mind into groups, by some conventional character, *e.g.*, the *damon* group with the vitta on the underside, the *semiargus* group with distinctive underside spotting, the very brilliant *thetis-coridon* group, etc.

Polyommatus, Latr., *bellargus*, Rott., becomes *Lysandra*, Hem., *bellargus*, Rott.

It was subsequently pointed out by Tutt that this species was the *thetis*, Rott. (1775). Now again comes in that wretched homonym rule for it has recently been found that Drury in 1773 two years previously had used the name *thetis*. But it is absolutely ignored that the two species were at the time and for long subsequent years adequately separated by the systematic classification of the age. The *thetis*, Rott. was a "Papilio Plebeius Ruralis," while the *thetis*, Drury was a "Papilio Danaus Candidus." There is only page difference between *thetis* and *bellargus* in Rott., the former being No. 11 on page 24 and the latter No. 12 on page 25. These were redescribed and well figured by Esper, *Abbild.* I(1). p. 332, 333, pl. XXXII., by which it is apparent that Rott. gave the name *thetis* to a ♀, and the name *bellargus* to a ♂ of one and the same species. The case is comparable to that of the Satyrid *jurtina*, L., ♀, and *janira*, L. ♂.

Nomiades, Hb., *semiargus*, Rott., becomes *Cyaniris*, Dalm., *semiargus*, Rott.

Subsequently in the *Ent. Rec.* XVIII. p. 131 (1906) Tutt dropped *Nomiades*, Hb. and noted

"1816. *Cyaniris*, Dalman.—Only *argianus* (= *semiargus*) cited in the generic synopsis (*Vet. Ak. Hand.* p. 63) therefore this is the type."

Since the Revision by Mr. Bethune-Baker this magazine has used *Polyommatus*. Apropos of this use we quote from the Note of the "List."

"The extent to which it is desirable to split up the Palaearctic and Nearctic "Blues" into different genera is a matter on which opinion may well differ." "Those who dislike the subdivision of genera, even though that sub-division is based on structural characters, will probably wish to sink the genera *Aricia*, R.L., *Lysandra*, Hem., and *Cyaniris*, Dalm., as synonyms of *Polyommatus*, Latr."

(To be continued.)

NOTES ON COLLECTING, etc.

DICRANURA VINULA IN THE OUTER HEBRIDES.—Referring to the note on this species in the July-August number (ante p. 85), it may be of interest to put on record that when the late Harry McArthur spent the season of 1901 collecting in the Isle of Lewis he brought me, in the Autumn of that year, four pupae of *Dicranura vinula* from larvae that he had obtained in the neighbourhood of Stornoway, and that I bred moths from them between 11th and 23rd June, 1902. Stornoway, it may be noted, is not far short of a hundred miles north of Barra and probably near the northern limit of the species.—ROBERT ADKIN.

ABUNDANCE OF *MELOLONTHA VULGARIS*, FB., IN WINDSOR FOREST.—Last May the common "Cockchafer" occurred in good numbers in the Windsor Forest area. It also appeared earlier in the year than usual. Up to this year I have never seen it in any numbers there; and generally only a few specimens when beating. This year, however, was quite different. Along one road, about a mile and a half long, leading to part of the Forest, these beetles were present, literally in thousands. Many lay dead on the paths, and in the gutter; others were crawling along the road; some *in cõp.*. On one very tall oak tree, clusters of them occurred on every branch, and almost on every leaf (the centre of the cluster being a pair *in cõp.*) as high as the eye could see.—HORACE DONISTHORPE.

DIPRION POLY TOMUM, HTG., IN WINDSOR FOREST.—On 6th May, last, when beating Spruce trees, a specimen of this Sawfly was taken. There have been, I believe, only two other examples found in Britain; one of them was bred by Miss Chawner from a larva taken in the New Forest.

It is a well known European species, and has recently been introduced into Canada. There it has become a pest, and is doing vast damage to the spruce forests. The Canadian Government has voted a large sum of money to be devoted to getting rid of the sawfly. They are employing an entomologist to study it on the Continent. Parasites of the sawfly larvae are collected, and sent to Farnham Royal to be tested, and reared in some numbers, and are then sent out to Canada. Fortunately it is extremely rare in this country at present.—HORACE DONISTHORPE.

FURTHER NOTES FROM TORQUAY.—Referring to my remarks on *Cerigo matura*, on p. 53. I have to-day 12th June turned out the tin which has been kept in a damp cellar since last autumn when the larvae appeared to be full fed, but without supplementary damping of the earth covering the living larvae. I found about 20 larvae mostly shrivelled up; two or three when dipped in water just showed slight signs of life. There were no pupae. In the autumn I took out about a dozen larvae nearly full fed and placed them in an earthenware vessel half filled with earth and covered with perforated zinc in the garden. This batch has remained there ever since. I ceased feeding them in November, and on turning out the earth to-day found 9 healthy pupae. They had the appearance of being newly formed, being somewhat soft, though brown. In view of the remarks of

Guinée quoted by Barrett, where he says the larvae are tender and few reach the perfect state, I thought it worth mentioning.—(Capt.) C. Q. PARSONS, "Alma Marseau," Seaway Lane, Torquay.

SOUTH DEVON NOTES.—On the night of 12th May after a thunder-storm the following species came to light:—*Notodonta trepida*, 1; *Drymonia chaonia*, 1; *Demas coryli*, 9; *Lithosia sororecula*, 2; and *Cabera pusaria*, 1. There were no commoner species. On 9th May I noted *Leptosia sinapis* and *Polygonia c-album*.—ID.

IRISH NOTES.—On arrival at Milford, Co. Donegal, on the 9th June, I wrote to Mr. Thos. Greer asking about localities and dates of *Melitaea aurinia*, and on Monday morning, the 11th, got a wire from him giving the nearest place he knew and saying that the butterfly was now flying. So I went out to look at a field I had noted close to Milford, and immediately found it there. Greer says that as far as he knows it is a new locality.

On the 16th I drove over to Co. Tyrone and spent a couple of very pleasant days with Greer. He took me to a *Coenonympha tiphon* locality S.W. of Loch Neagh, where we spent some happy hours catching the butterfly and discussing the local flora and fauna of the deep bog lands we were on. The whole country there is being drained and the peat cut, so that I fear *C. tiphon* is doomed there. He showed me a patch of cranberry where the ground was pink with the flowers. I should not have expected it at such a low level, only sixty feet above the sea. We sat down there and presently found some of last year's fruit, still quite eatable. This also was a surprise; I should have expected so delicate a fruit to have rotted long since.

I have not done much entomologizing since, my time being employed in fruitless fishing and sketching. However, on the 5th July I drove up into the hills towards Gweedore to look for *C. tiphon*, which I found at the first spot I thought likely, and failed to find in another place which I thought looked much more likely. On 8th July I went to some sandhills on the Fanad peninsula to look for the blue females of *Polyommatus icarus*. I caught four black ones, about as much blue as Dorset chalk summer brood, and ten males five of which had black marginal spots on the upperside hindwings.

On 9th July I went to Rosapenna, where I found the blue females, and six out of 17 males had the black spots above mentioned; one also on the forewings—and one a few orange scales at the anal angle, upperside.—WYNDHAM FORBES (F.R.E.S.). 16th July, 1934.

CURRENT NOTES AND SHORT NOTICES.

The annual volume of the London Natural History Society has recently appeared. It consists of 142 pp. with 10 plates, of which 20 pp. and 1 plt (including valuable notes on plant galls) are devoted to Entomology; somewhat more than usual. The members of this flourishing Society are largely devoted to the study of Birds, Botany and Archaeology. The Society is divided into sections, each with its own sectional officers, which adds to its efficiency. There is a very useful paper on the Glow-worm by R. W. Pethen, a year's records

of British Butterflies and numerous valuable notes on the occurrence of plant galls with remarks on the economy of their makers. In the Dragonfly note *Aeschna* should be spelt *Aeshna*. (See Fabricius *Gen. Insectorum*, p. 147.)

The Southampton and Hampshire entomologists, under their new title "The Society for British Entomologists" are gradually attracting members all over the country by their unbounded activities. The Society has recently issued No. 1 of Vol. I of a new issue of their *Journal*, a List of Members and a new set of bye-laws, together with their balance-sheet and a very valuable Part I of Vol. I of a new issue of *Transactions*. Let us hope that titular finality has at last been reached. The Balance-sheet is simple and most encouraging; the running expenses are at their lowest with annual commitments practically nil; the balance carried forward on a gross total of £246 being £154, a proportion which, if kept up, will enable the Society to develop its object the "Improvement and Diffusion of Entomological Science as exemplified in the study of British Entomology."

A meeting of the Entomological Club was held at Eastbourne on 16th June, 1934, Mr. Robert Adkin in the Chair. *Members present* in addition to the Chairman:—Prof. E. B. Poulton, Mr. H. Willoughby Ellis, Mr. Jas. E. Collin, Dr. Harry Eltringham, Mr. W. J. Kaye. *Visitors present*:—Mr. B. W. Adkin, Mr. H. W. Andrews, Dr. R. Armstrong, Major E. E. Austen, Mr. E. C. Bedwell, Dr. K. G. Blair, Mr. G. V. Bull, Dr. Malcolm Burr, Dr. E. A. Cockayne, Prof. D. G. Hale Carpenter, Capt. Dannreuther, Mr. H. M. Edelsten, Mr. T. R. Eagles, Mr. F. W. Frohawk, Mr. J. C. F. Fryer, Mr. C. N. Hawkins, Col. F. A. Labouchere, Mr. Hugh Main, Mr. A. L. Rayward, Mr. Edwin D. Sharp, Mr. E. E. Syms, Mr. J. R. Le B. Tomlin, Mr. C. G. M. de Worms, Rev. Geo. Wheeler. The members and guests assembled at the Grand Hotel and were received by the Chairman at 12.45 for 1 o'clock luncheon which was served in a private room. In the afternoon the usual excursions were made to the Crumbles and to the Downs. The weather was very fine and hot and the vegetation was badly parched by the continuous drought.

The Entomological Supper was held at the Grand Hotel at 6.0 in the private room and 31 sat down. After supper Mr. Jas. Collin exhibited a rare Empid, *Rhamphomyia vesiculosa*, Fln., which was taken by him as new to Britain in 1912 and has never been taken since. The species is notable on account of the remarkable genitalia of the ♂. The species is generally found under cold conditions in the Arctic regions. The present specimens were taken at Aviemore and the Bridge of Brown. A most entertaining and very pleasant evening was spent after which many of the company took trains for London and elsewhere and the remainder of the guests who were able to accept the Chairman's invitation to stay over the weekend, were provided with accommodation at the Grand Hotel. On Sunday, 17th June, cars left the Hotel immediately after breakfast for a collecting trip at Whitefield Wood in gorgeous weather. Insects generally were not plentiful but a considerable number of species of butterflies including larvae of *Limenitis camilla* (*sibilla*) were seen, and the Coleopterists captured a large number of beetles including *Pyrochroa coccinea*, L., and other interesting species. Mr. Rayward also presented the writer with a beautiful ♀ specimen of *Macrocephalus albinus*, L., which has for

many years been a denizen of these woods. It was taken on birch on the 5th September, 1933. The return journey to the Grand Hotel was made at 1 o'clock where luncheon was served and during the afternoon a visit was paid to the Chairman's house, "Hodeslea," Meads, when Mrs. Adkin dispensed tea. The gardens were much enjoyed, the shady places offering ideal repose for pleasant converse.

The Chairman gave a dinner party at the Grand Hotel in the evening and the company dispersed on Monday morning after a most successful and enjoyable weekend.—H. WILLOUGHBY ELLIS.

In the more recent numbers of the *Ent. Zeit.* is an interesting paper on the Biology of *Phragmatobia fuliginosa*, the writer having obtained three generations in one year. The 1st generation in size and shape was normal and measured ♂ 29mm. ♀ 33mm.; the 2nd gen. was considerably larger, 34-37mm., no doubt due to the larvae having fed on luscious spring vegetation; the 3rd brood was partly normal in size and partly small 27-30. Another good article is one dealing with the Rhopalocera of Central Tunis, the area lying between the wooded north-western portion, and the Steppe zone south of the Atlas Mountains, and numerous new local forms are differentiated. Another important article to British collectors is that by Herr Warnecke on *Cymatophora* or, with 19 figures of various forms of the species.

We note that Prof. Dr. Arnold Spuler died during June. He will be remembered as responsible for that most useful work *Schmetterlinge Europas*, in 4 volumes with a large number of plates on which the vast majority of the Macrolepidoptera of Europe are figured in both imaginal and larval stages and including a good proportion of the Mieros as well.

In the more recent numbers of the *Ent. Rund.* Prof. M. Draudt is dealing in detail with the genus *Dianthoecia*, with figures of the genitalia of each species. A useful paper for our continental collectors is that on the Macrolepidoptera of the Riesengebirge mountains. Another long article is continued on the Increase of Insects, dealing with various species and with the various factors which effect the increase or otherwise of the Lepidoptera.

The current number of the Spanish entomological journal *Eos* is particularly interesting to those lepidopterists who intend to visit N. Africa in the coming years. Prof. Dr. Darek and Herr Hans Reisser have commenced a very informative article on the Lepidopterous Fauna of the Rif Mountains of Spanish Morocco, consisting of a general account of the character of the country for observation and collecting with 3 plates of photos of localities; a few general remarks on the Fauna itself with a good annotated Bibliography come next, and this is succeeded by a section dealing with each indigenous species to which there are added six plates of figures of particular forms, and of their genital structure. Another article deals with the Spanish species representative of the *athalia* group of the genus *Melitaea* comprising the four recognised species, viz., *M. deione* with its subsidiary forms *nevadensis*, *hispanica*, *signata*, *aranensis* and *voyoi* (ab. nov.); *M. athalia*; *M. parthenie* with forms *codinoi* and *vernettensis*. It is illustrated with 2 plates and a very complete bibliography. A further article deals with the Collembola of the Republic Argentina, with 5 plates and

figures illustrating about 90 species. In fact the whole part is a very valuable contribution to entomological science.

To those entomologists interested in the *Melitaea* species we would refer a very detailed and well illustrated article in the valuable publication produced by the Deutsches Entomologisches Institut, entitled "New Observations on the *didyma* group of the genus *Melitaea* from the material in the Deut. Ent. Ins.," by Herr G. Belter. It is illustrated by a number of figures of imagines and of structure, bringing our knowledge up to date, and describes a new species and three new subspecies. The immense amount of original entomological matter on all orders of insects collected in the publications of this Institut under the able initiative and continued assiduity of its Director Dr. Walther Horn and his helpers is quite phenomenal.

We have received an account of the "Material of the Microlepidoptera group collected in the Kwangtung Province of China by Dr. Mell from 1908 till 1921," by A. Caradja and E. Meyrick. Over 4000 example are dealt with and a very valuable record has been made of new material for our study of the "smaller fry" of a little known area of the world. The authors are to be congratulated for their pioneer work in this thorough investigation.

We have received a reprint of an article by F. M. Jones and D. W. Farquhar on the Psychid *Fumea casta* as observed in N. America, near Boston in Massachusetts, where it has been introduced and apparently become well established, since it has been procured from there in large numbers for experimental purposes. There are two plates and a map to illustrate the biological notes.

W. S. Blatchley, who is well-known for his works on the Coleoptera and Rhynchota of parts of N. America, has sent us further notes on the species of Heteroptera taken in the winter near Los Angeles, California, between 25.vii. and 15.iii., 1927-8. It is intended as a supplement to Van Duzee's "Preliminary List."

In the *Zeit. Oesterr. Ent. Ver.* recent numbers contain contributions by Dr. H. Rebel on "New Lepidoptera from Macedonia"; by Dr. H. Zerny, "A new Zygaenid from the Atlas Mts.,"; by L. Sheljuzko, "New Lepidoptera from the North Caucasus"; by Dr. Zerny, "New Heterocera from the Atlas Mts. in Morocco." Several plates are given in illustration making 8 in all for the first six months of this year.

We have received a Catalogue of second-hand Entomological works, issued recently by Messrs. Wheldon and Wesley of New Oxford Street which lists many works of interest and useful to present day entomologists, mostly at moderate prices.

Some three years ago we mentioned in these pages the admirable small volumes on the Butterflies and Moths of Eastbourne written by that great friend of all entomologists Mr. Robert Adkin. Now there has appeared the 1st Supplement of about 16 pp. of Additions and Corrections (few) largely due to the continued systematic working of a light trap by the indefatigable author and supplemented by records of recent captures by Mr. A. L. Rayward.

Two meetings of the Entomological Club were held at Oxford on 30th June and 1st July, 1934, Prof: E. B. Poulton and Dr. Harry

Eltringham respectively in the Chair. *Members present*:—Mr. Robert Adkin, Mr. Horace Donisthorpe, Prof. E. B. Poulton, Mr. H. Willoughby Ellis, Mr. Jas. E. Collin, Dr. Harry Eltringham. *Visitors present*:—Dr. Malcolm Burr, Dr. G. D. Hale Carpenter, Dr. F. A. Dixey, Mr. E. B. Ford, Dr. B. M. Hobby, Mr. E. Bolton King, Capt. N. D. Riley, Mr. G. Talbot, Mr. W. H. T. Tams, Mr. Colbran J. Wainwright, Comm. Jas. J. Walker, Dr. C. A. Wiggins. On the afternoon of 30th June, the members and guests assembled at the Hope Department and were received by Prof. and Mrs. Poulton and Dr. Harry Eltringham; tea and light refreshments were provided and a very pleasant and instructive afternoon was spent at the Museum. This pleasant annual conversazione which is always looked forward to with much pleasure was as usual most successful. Accommodation was provided for members and visitors in Jesus College. In the evening the company assembled at Jesus College where the first Club Supper was arranged for 8 o'clock, Prof. E. B. Poulton, F.R.S. in the Chair. The reunion of old friends was as usual much enjoyed and a lengthy evening of entertaining conversation was spent, retirement being made at a late hour. On Sunday morning the guests visited friends in Oxford or made up collecting parties on their own account and returned to Jesus College at 1 o'clock for luncheon. In the afternoon an excursion was arranged in glorious weather in motor cars to Bagley Wood, and during the afternoon the company, which now included many ladies, roamed through the woods and returned to the Forest Room at 4 o'clock for tea, after which in the cooler evening the party drove back to Oxford. In the evening the second Club Supper was served at Jesus College at 8 o'clock, Dr. Harry Eltringham in the Chair. Again the members and guests were entertained in the usual Oxford manner, and the pleasure of such gatherings will be a life-time remembrance. On Monday morning, for many, the Hope Department was again the objective, and the company generally dispersed during the day.—H.W.-E.

REVIEWS AND NOTICES OF BOOKS.

PROCEEDINGS AND TRANSACTIONS OF THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, 1933-34. Pp. xx+148, 8 tabs; price 12/6.—These Proceedings record meetings from 9th February, 1933 to 25th January, 1934 together with the Field Meetings during the summer of 1933 and include the President's Address and several papers read before the Society. The Reports of the General and Field Meetings contain numerous interesting records of Insects, mostly of Lepidoptera, amongst which we may refer to the remarks on *Aphomia gularis*, on the species of *Yponomeuta*, and on a second brood of *Eumarmonia pomonella*. The papers read deal with the British Mecoptera (E. E. Syms), Beetle Larvae (K. G. Blair), Gall Midges (M. Niblett), Prothoracic Glands of Drepanid and Notodontid Larvae (K. G. Blair), a Season in Arctic Russia (E. A. Cockayne), and the Lifehistory of the Death-Watch Beetle (D. E. Kimmins), so it is evident that, as the President put it in his Annual Address, the Society had the good fortune to listen to some exceptionally interesting papers on a variety of subjects. From the same source we learn that the

state of affairs of the Society, both as regards numbers and its financial position, has continued to be very satisfactory and that it is particularly gratifying to note that the membership is being annually swelled by an increasing contingent of the younger generation, who are taking a very live interest in all the proceedings. This is good news. Field Meetings and rather informal General Meetings, at which the younger collectors especially are welcome and meet those with more experience, should have a real educative value in training up the coming generation of British Entomologists. It is needless to say that, as usual, these Proceedings are well produced and printed and provided with an excellent Index and it would be ungracious to draw attention to a few minor misprints.—T. BAINBRIGGE FLETCHER.

(E) B I T U A R Y .

William Frederick Johnson. (1852-1934).

(Special Life Fellow of the Royal Entomological Society).

By the death of the Rev. W. F. Johnson, at Rostrevor, on 28th March last, the study of natural history in Ireland has lost one of its foremost followers. Born at Travancore, India, on 20th April, 1852, where his father was in the service of the Church Missionary Society, his education was mainly private—hence perhaps his love of natural history was not curbed. Johnson appears to have taken up entomology early in life and in the *British Naturalist* for April, 1893, we are told that he collected Lepidoptera as early as 1862, while in 1884 his attention was turned towards other groups of insects, especially Coleoptera and Hemiptera, though he retained his interest in Lepidoptera till the end.

Amongst Johnson's chief papers dealing with Coleoptera must be mentioned that published in the first volume of the *Irish Naturalist*, 1892, entitled "The Coleoptera of the Armagh District," in which are recorded many species not previously found in Ireland, including such rarities as the large water-beetle *Dytiscus circumcinctus*, *Pselaphus dresdensis* and *Evirrhinus aethiops*. In the survey of Clare Island and district, organised by the Royal Irish Academy, 1909-1911, Johnson took a leading part and besides collecting all orders of insects for other recorders, contributed the part which dealt with the Myriapods, a new line of research which he had taken up at the request of the organising committee of the survey.

When it comes to be considered that Johnson worked practically alone, and far from any reference library or named collections, his work amongst the Irish insects will always stand out as a remarkable achievement; nor was his study confined to insects, nor even to zoology, for there are few groups in which he has not left some records bearing his name. He may be described as an old time naturalist, interested in all branches of natural history, but one with all the specialist's ability to take up and to study intensively the groups in which he became most interested.

CORRECTION.—p. 88 "Chetien" should be "Chretien" in the second paragraph from the bottom of the page.

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. Hx. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—*S. Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—*J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.*

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—*R. C. L. Perkins, 4, Thurlestone Road, Newton Abbot.*

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of *D.oo. pupae* of *X. gilvago*, *D. caesia*. *A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.*

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—*C. Zacher, Erfurt, Weimar, Street 13, Germany.*

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucernea*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. *Harold B. Williams, Woodcote, 36, Manor Gate Road, Kingston Surrey.*

Duplicates.—A large number of species of European and Palaearctic Rhopalocera and Heterocera.

Desiderata.—All British species especially those illustrating characteristics of an island fauna. *Dr. Lor. Kolb, München 54, Dachauer-str. 409, Germany, and Franz Daniel, München, Bayer-str. 77, Germany.*

Desiderata.—Living larvae or pupae of *Lasiocampa quercus*. Also set specimens of same species taken before 1910 in Devon or Cornwall.

Duplicates.—*Pavonia*, set specimens or living stock: *Monacha*, ova: *ochroleuca*, *griseola*, *advenaria*, *juniperata*, *thetis*, etc.—*J. A. Downes, 5, Trinity Road, Wimbledon.*

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with English collectors and beg to send list of duplicates.—*J. Soffner, Trautenuau (Bezirksbehörde), Bohemia, Tschechoslowakische Republik.*

Duplicates.—Well set British Lepidoptera all in perfect condition about 200 species.

Desiderata.—Living larvae: please send list of species obtainable.—*A. Lester, 2, Pembury Road, London, N.17.*

CHANGE OF ADDRESS.—*K. J. Hayward, F.R.E.S., F.R.G.S., F.Z.S. to Estacion Experimental del Ministerio de Agricultura de la Nacion, Concordia, F.C.E.R., Argentine Republic, South America.*

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. October 3rd.

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. July 12th, 26th, August 9th.—*Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.*

The London Natural History Society.—Meetings first four Tuesdays in the month at 6.30 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. Visitors admitted by ticket which may be obtained through Members, or from the Hon. Sec. A. B. Hornblower, 91, Queen's Road, Buckhurst Hill, Essex.

URUGUAY. I want to sell Lepidoptera, Coleoptera, and other insects from this country and am seeking connections with collectors. H. SCHNEIDER, Correo Libertad, depto. San José, BUSCHENTAL, Rep. Uruguay.

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IMPORTANT

TO ENTOMOLOGICAL SOCIETIES and MUSEUMS.

BACK VOLUMES OF

The Entomologist's Record and Journal of Variation.

(Vols. I-XXXVI.)

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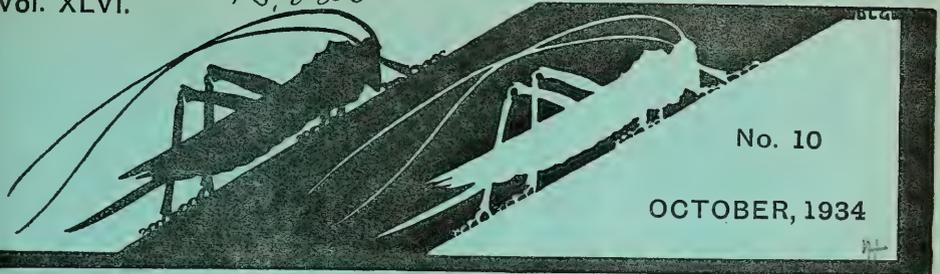
GENUS *Acronycta* and its allies.—Variation of *Smerinthus tiliæ*, 3 coloured plates—Differentiation of *Melitæa athalia*, *parthenie*, and *aurelia*—The Doubleday collection—Parthenogenesis—Paper on *Taeniocampidae*—Phylloxera—Practical Hints (many)—Parallel Variation in Coleoptera—Origin of *Argynnis paphia* var. *valesina*—Work for the Winter—Temperature and Variation—Synonymic notes—Retrospect of a Lepidopterist for 1890—Lifehistories of *Agrotis pyrophila*, *Epunda lichenea*, *Heliophobus hispidus*—Captures at light—Aberdeenshire notes, etc., etc., 360 pp.

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MELANISM AND MELANOCROISM—Bibliography—Notes on Collecting—Articles on VARIATION (many)—How to breed *Agrotis lunigera*, *Sesia sphegiformis*, *Taeniocampa opima*—Collecting on the Norfolk Broads—Wing development—Hybridising *Amphidasys prodromaria* and *A. betularia*—Melanism and Temperature—Differentiation of *Dianthæciæ*—Disuse of wings—Fauna of Dulwich, Sidmouth, S. London—Generic nomenclature and the *Acronyctidae*—A fortnight at Rannoch—Heredity in Lepidoptera—Notes on Genus *ZYGÆNA* (*Anthrocera*)—Hybrids—Hymenoptera—Lifehistory of *Gonophora derasa*, etc., etc., 312 pp.

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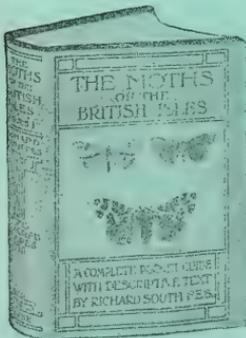
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Lepidoptera at Jaca, Alto Aragon, Spain, in August, 1931 and 1933.

By WM. FASSNIDGE, M.A., F.R.E.S.

Jaca is a small town of some five thousand inhabitants, situated in the foothills on the southern side of the Pyrenees, on the railway from Pau via Canfranc to Zaragoza. The compact little town with its ancient citadel occupies a plateau overlooking the river Aragón, and commands a glorious view of the Pyrenees to the north, where the Collarado towers up into the sky, and of the isolated Peña de Oruel to the south-east, while in every direction are mountains of greater or less height. The district offers a striking contrast to the northern slopes of the Pyrenees, where water flows abundantly and all the fields are fresh and green. Here in August rain is scarce, the river is reduced to a mere trickle, and the fields are dry and brown, save where irrigation makes them unnaturally green against their arid surroundings. The Spanish slopes seem to the traveller, as he emerges from the Somport tunnel and begins the long descent to the plains, like a barren stony desert, cut up by torrent beds, quivering in a haze of dusty heat. Small wonder that the insect fauna is very different from that of the northern slopes where climatic conditions are in such violent contrast.

So far as I can ascertain, nothing whatever has been published on the lepidoptera of this part of Aragón. Dr. H. Zerny of Vienna published in *Eos* in 1927 "Die Lepidopteren-fauna von Albarracin in Aragonien," in which he includes all the published researches of his predecessors and gives a Bibliography up to that date of the literature concerning the lepidoptera of that part of Aragón. Alfred Weiss had published in 1920 his "Contribució al coneixement de la fauna lepidopterològica d'Aragó," in which he gives records for Panticosa, La Val d'Ordesa, and Zaragoza, all of which localities are at a greater or less distance from Jaca, although Panticosa and the valley in which it lies should produce much the same species as Jaca and the valley of the Aragón. There is an interesting article by Dr. A. Seitz, "Insektenleben in den Pyrenäen" (*Entomologische Rundschau*, XL, 1923), which deals chiefly with the insect fauna of the Val d'Ordesa to the north of Barbastro; and Kitchelt, "Sammelergebniss in den spanischen Zentralpyrenäen" (*Int. Ent. Zeitschrift*, Vols. XXVI. and XXVII., 1933), gives a long list of Lepidoptera observed by him in the province of Huesca on the southern slopes of the Pyrenees from Puerto de Bujaruelo in the west to Puerto de Benasque in the east, though he seems not to have noted the "micros." Nothing further appears to have been published dealing with the north of Aragón, and the considerable number of species noted by Dr. Zerny as being new either for Aragón or for the Iberian peninsula shows how little is yet known of the lepidopterous fauna of this region. Of course it is not to be expected that one searcher can explore a whole vast region, nor can he hope to do more in one short month than just scratch the surface. But even the scanty results obtained may be useful when the whole problem of distribution comes to be considered, and that is the excuse for this article.

My first visit to Jaca lasted from 30.vii.31 to 8.ix.31, and was unfortunately rather marred from an entomological point of view by

the poorness of the season and by the fact that I spent the whole of the mornings in the study of Spanish at the Summer Course organised by the University of Zaragoza. Moreover there is no summer time in Spain and dinner is never earlier than 9 p.m., so that the nightwork was seriously hampered by the necessity of returning to dine about one hour after dark. The heat too in August, even at Jaca, can be very oppressive, and it is by no means easy to walk far by day unless one waits until about four o'clock by which time the sun is less fierce. Fortunately the butterflies continue active until the sun has actually disappeared, and some species are quite willing to fly until it is practically dark. It is almost impossible to stir up many moths until quite late in the day, and there is usually a coolness round about 11 p.m. which discourages them from coming to the lamp. Sugar seems to be practically useless, as indeed it nearly always is in August among the mountains.

My second visit lasted from 30.vii.33 to 5.ix.33, and was devoted more to entomology and less to linguistic study, though the polite curiosity of the Jacetanos—and more especially of the Jacetanas, many of whom remembered my previous visit, provided me with ample conversation practice. The season was rather later and infinitely better, so that I was able to gather up sufficient data for a respectable article, and also to settle a few points that had been left unsolved on my first trip to Spain. I had the advantage too of knowing the district, and therefore needed to waste no time in searching for the best localities. Nobody who has not experienced the incredibly stony muletracks that lead up to the slopes of Oruel, or the barren hillsides to the south and west of Jaca, where only a particularly spiteful gorse (*Genista scorpius*, well named) survives the persistent attacks of sheep and goats, can have any adequate idea of the fatigue involved in hunting in this region, so different from anything to be found in England. Trees grow only where planted and not always there: huge areas of hilltop are covered almost by another pincushion-like gorse (*Genista horridus*, again well named): every other shrub almost seems to have developed prickles; the sun is relentless and the roads thick with dust; and there is never a friendly café by the roadside nor even a cooling spring. Yet butterflies abound all over the hillsides and the most unlikely localities produce interesting species. Indeed, I never remember to have seen such large numbers of individuals as there were, for example, on the sloping ridge of Oruel in early August, where *Satyrus actaea*, Esp., and several other species were in real abundance with numerous others quite common. And on 1st August, just below the col above the cement works on the Canfranc road there were such vast numbers of *Epinephela jurtina*, L., *E. lycaon*, Rott., *Satyrus aleyone*, Schiff., *S. statilius*, Hufn., *Melanargia japygia*, Cyr., *M. galathea*, L., and of the Neuropteran *Ascalaphus longicornis*, that the whole hillside seemed in quivering, shimmering motion. It is a real pleasure to see such swarms of insects wherever the Spanish Government is trying to replant the mountain sides and protecting the seedlings from the all destroying herds of sheep and goats.

I hope I may be forgiven if here I record a strange observation quite foreign to entomology. On Wednesday, 5th August, 1931, I was walking along the canal that brings from the mountains water both for drinking purposes—after chlorination—and for irrigation. This

canal is about five feet wide and averages two feet deep; it winds along the mountain side above the Canfranc road and above the railway, and is mostly open to the sky, though covered over in places especially where carried over the aqueducts that bridge the numerous gullies. It is an excellent hunting ground, for all the insects on the mountain side seem to congregate on its banks for shelter or moisture. One may see there large numbers of *Coenonympha dorus*, Esp., at flowers of *Eryngium*, *Polyommatus coridon*, Poda, and *P. aragonensis*, Gerh., *P. dolus*, Hb., *P. admetus*, Esp. var. *ripperti*, Boisd., among swarms of the common Satyrids and a good sprinkling of less common species. Walking along beside the swiftly flowing water, I saw to my surprise on the stream bed and struggling against the current, a thin snake about twenty inches long with a writhing fish from five to six inches long crossways in its jaws. It seemed to perceive me and attempted to make headway against the stream and so escape the fancied danger; but it soon gave up the attempt, turned with the current and disappeared under a covered part of the canal. I do not know if many such observations are on record and cannot say what species of snake is here referred to, but it seemed an interesting note, for which I ask the reader's indulgence.*

Naturally, it was on the ungrazed and unfrequented hillsides that the best hunting-grounds were to be found. The slopes of Oruel are clothed with a fairly thick pine forest, but the ridge itself, though grazed occasionally by a few cows and in places covered with a dense carpet of *Genista horridus*, is exceedingly rich entomologically. *Parnassius apollo*, L. was quite common there, *Coenonympha iphioides*, Stgr., occurred in moderate numbers with *Coscinia striata*, L., *P. coridon* and ♀ var. *syngrapha*, Keferstein, *Erebia stygine*, Ochs., *Hesperia carthami*, Hb. and many other species. Larvae of *Anthocharis euphenoides*, Stgr. were found widely distributed, and in 1933 a few belated imagines of this species were captured. A most surprising capture was that of a single *Libythea celtis*, Fuessly, taken at flowers of *Eryngium* on 10th August, 1933, for I could find no trace of its foodplant anywhere in the district. *Satyrus fidia*, L., very large and in glorious condition, occurred freely on the hottest and stoniest slopes, and I managed at last to complete a good series of this insect, which in my experience, is always difficult to get in really good order. Along the canal *P. dolus* flew commonly during the first fortnight in August, and with it, though not nearly so commonly, flew *P. admetus*, Esp. var. *ripperti*, Boisd. I was always under the impression that these two insects nowhere flew together, but here they were, and the problem of separating their respective females is for me quite unsolvable. I have a long series of var. *ripperti* from Digne where they flew in company with *P. damon*, Schiff., whose females are distinguishable easily enough, but this was the first time I had met with *P. dolus*. *Herse convolvuli*, L. flew nightly in dozens at flowers of *Nicotiana* in the Residencia gardens—a lovely sight in the lamplight for an English collector—with an occasional *Celerio lineata*, Fb. var. *livornica*, Esp. The larvae of *Mimas tiliae*, L. simply swarmed on the elms bordering the roads, and their frass lay thick in the dust under many a favoured tree, but specimens

* Not so strange, *Tropidonotus natrix* sometimes eats fish and so does *T. viperinus*, which occurs in Spain and might be the species referred to here.—T.B.-F.

bred in 1932 showed no difference from English specimens. In the tunnels under the railway *Catocala elocata*, Esp. and *C. nupta*, L. were found commonly with a few *C. puerpera*, Giorna, and *C. conversa*, Esp.; while *Mania maura*, L., often occurred in great clusters of forty or fifty individuals with overlapping wings, in the darker parts of the stone roof. Dr. Zerny (*loc. cit.* page 379) notes the species seen thus in a cleft in the cliff in hundreds. Very few species of Noctuae were taken, probably because few were flying at this time of the year. Sugar was found to be useless in 1931, only an odd specimen of the very commonest insects being seen. Every possible night during both visits I went out with the lamp and sheet to the western edge of the plateau overlooking the river valley and the mountains beyond, a favourite evening promenade with the Jacetas. Unfortunately many of those nights when the moon did not make lamping impossible were rather windy or cold, so that the results were not as good as one hoped for; but fair numbers of Geometers and micros were taken in this way.

A few odd *Sarrothripus revayana*, Scop. were beaten from oak in the middle of August, forms indistinguishable from Hampshire specimens, but a few days earlier on a species of narrow-leaved willow growing in the dry torrent-beds larvae were found, very small, spinning together with quite a lot of silk the leaves of the terminal shoot, especially where it trailed almost on the ground. All these larvae produced only *S. degenerana*, Hb., of which I bred fourteen during the second week of September. This insect was for long believed to be a form of *S. revayana*, until its specific identity was established in 1907 by Klos and Meixner (*Verhandlungen zoologisch-botanischen Gesellschaft*, Wien, LVIII. 1908, page 173), after examination of the genitalia. The different habitat, different foodplant, constant facies, and much lighter hindwings all support this view though I cannot find any decisive difference. The dates given above also seem to suggest that *degenerana* may have more than one brood in the year, and I might add that I have not yet seen this insect from any English locality. It is widely distributed in France for I have beaten or bred it from different species of willows in the Basses-Alpes, the Gironde and Haute-Loire.

One of the rarest insects taken was *Apaidia mesogona*, God., of which four were taken in 1931 and six in 1933. All were beaten in the late afternoon from box shrubs growing in very rocky places, and an immense amount of labour was necessary for their capture. The insect is small and very inconspicuous, and this makes its capture all the more difficult. Probably if one could set up the lamp and sheet close to its haunts it would be found to be much less rare than is generally supposed. Another interesting find was made in 1931 during a visit to the world famous monastery of St. Juan de la Peña, where, by the bye, there is a very flourishing colony of *P. coridon* with females almost without exception of the form *syngrapha*, Kefenstein. There, in very old thick stems of juniper, were found galls of *Synanthedon spuleri*, Fuchs., from which a few moths were bred in 1932. Notes on this interesting species will be found in this Journal for 1931 page 34, and for 1932 page 53. Lepidopterous galls have always had a special interest for me, so that I was very pleased to find a curious gall on hawthorn, since kindly identified by Dr. Heslop Harrison as one stage of the juniper fungus *Gymnosporangium*, which alternates between

hawthorn and juniper, in which a lepidopterous larva was feeding. Old galls were fairly common on the hawthorn bushes and easy enough to find, but this year's galls were scarce and needed careful search. Even then only a small percentage contained a larva, and it is doubtful if I shall succeed in breeding any moths. At present I have three small reddish Tortricid larvae that have spun very slight cocoons in the folds of tissue paper and evidently intend to pass the winter without change. Of course these larvae are gall-eaters not gall-makers, but the habit is curious and interesting and deserves further attention.

The complete list of captures which follows is given in the hope that it may be of use not only to future visitors to Jaca—and they are likely to be more numerous now that the summer University offers such excellent facilities—but also to those workers interested in distribution. The nomenclature and arrangement are those of Dr. Zerny's work already mentioned, and species not found in that list are marked with an asterisk.

(To be concluded.)

The Cottian Alps and Turin in June-July, 1933.

By REV. E. B. ASHBY, F.R.E.S., F.Z.S.

(Continued from p. 83.)

HETEROcera.—*Zygaena achilleae*, race *alpestris*, Burg. (= *alpina*, Obth., nom. praecoc.); *Z. filipendulae*, exerge *stoëchadis*, race *medicaginis*, Hb.

HYMENOPTERA.—*Ammophila hirsuta*, Scop.; *Nomada lateralis*, Panz.; *Xylocopa violacea*.

5. CESANA. 4455 feet.

I made my only visit to Cesana by motor-bus on 3rd July. On arrival there I tried to find my way to the "green marble quarries," mentioned by Dr. Verity in *Ent. Record*, Vol. XXXVIII. (new series), Nos. 7 and 8, p. 101. Alas, I was told that there were 3 different marble quarries in the environs, and thus I was unable to find the ground.

Crossing the bridge over the river I ascended through the town in the direction towards Clavières, for some distance, and then leaving the road, ascended by a steep track parallel to a rushing stream to higher levels. During a long day's hunt after heavy rain of the previous day, I took the following insects.

RHOPALOCERA.—*Euchlōe ausonia*, race *marchandae*, H.G. = *simplonia*, Fr.; *Anthocharis cardamines*, L., race *montivaga*, Trti. and Vrtv.; *Aporia crataegi*, race *basanius*, Frhst.; *P. apollo*, race *pedemontanus*, Frhst.; *M. pseudathalia* race *celaduzza*, Fruh.; *M. phoebe* race *syllieion*, Frhst.; *Hesperia carthami*, Hb.; *H. carlinae*, Rmbr.; *Lycæna alcon*, F.; *P. argus*, race *philonomus*, Bergstr.; *M. galathea*, race *pedemontii*, Vrtv.; *A. amathusia*, Esp.; *A. aglaia*, race *emilocuples*, Vrtv.; *P. mnemosyne*, 1 ♂ rather worn; *M. dictynna* = *diamina*, race *alpestris*, Fruh. trans. ad. *magnaclara*, Vrtv.; *L. sinapis*, race *magna*, I. Gen.; *M. aurelia*, race *imitatrix*, Vrtv.; *C. hippothoë*, race *eurybia*, O., and ab. ♀ *nigra*, Fav.; *C. iphis*, race *bertolis*, de Prun.; *B. ino*, race *adula*, Fruh.

HETEROCERA.—*Melanippe montanata*, Bork.; *Z. stoëchadis*, Bkh.
DIPTERA.—*Stratiomys furcata*, F.

6. CLAVIÈRES. 5801 ft.

This mountain village close by the French frontier is reached by motor-bus from Oulx via Cesana. I was only able to visit this good locality once, on 10th July. I worked that part of Clavières beyond the village to the left of the main road, following up the left side of the stream, passing a pond and later a marsh, below a golf course across which I wandered. I took the following insects:—

RHOPALOCERA.—*Colias phicomene*, race *pulverulenta*, Vrtv.; *Euchloë ausonia*, race *marchandae*, Hb.=*simplonia*, Fr.; *P. apollo*, race *substitutus*, Roth.; *Erebia tyndarus*, race *subcassioides*, Vrtv.; *Erebia epiphron*, race *cydamus*, Frhst.; *B. pales*, race *palustris*, Fruh., ab ♀ *napaea*, Hb.; *A. niobe*, L. race *pinguis*, Vrtv.; *M. dictynna*=*diamina*, Lang., race *alpestris*, Fruh., on marsh; *P. mnemosyne*, race *excelsa*, Vrtv. (?), one quite fresh; *H. alciphron*, race *ultragordius*, Vrtv.; *H. hippothoë*, race *eurybia*, Och.

7. SESTRIÈRES. 6690 ft.

This good locality and the Albergo di Sestrières is reached by motor-bus from Oulx via Cesana. I visited Sestrières on 6th, 8th, and 12th July. Dr. Higgins had kindly given me a map of the best ground, which is situated beyond the hotel, past the golf links, and bearing to the right along a pathway under trees and bordering the peaty ground on which the alpine rose was in full flower. Further on descending to the main stream, I found an excellent ground for *P. delius*, which was in good number and fresh, on either side of this mountain stream. The insects taken were:—

RHOPALOCERA.—*Gonepteryx rhamni*, L.; *C. phicomene*, race *pulverulenta*, Vrtv.; *C. palaeno*, race *europomene*, Och., with 1 yellow female; *E. ausonia*, race *marchandae*, Hb.=*simplonia*, Fr.; *P. delius* race *serenus*, Frhst.; *P. apollo*, race *substitutus*, Rothsch., on peat bog in company with *P. delius*, *P. napi*, race *bryoniella*, Vrtv.; *E. arcania* exerge *gardetta*, de Prun.=*philea*, Hb.=*satyrion*, Esp.; race *gardetta*, de Prun.; *C. iphis*, race *bertolis*, de Prun.; *E. epiphron*, race *cydamus*, Frhst.; *E. euryale*, race *itobyma*, Fruh.; *E. tyndarus*, race *subcassoides*, Vrtv.; *E. lappona*, Esp.; *H. carthami*, Hb.; *H. carlinae*, Rmbr.: *H. virgaureae*, race *zermattensis*, Fallou; *P. semiargus*, race *montana*, M.-D.; *Vacciniina optilete*, race *cyparissus*, Hb.; *A. medon*, Hüfn.; *Plebeius argyrognomon*, Bergst., race *calliopides*, Vrtv.; *D. glandon*=*orbitulus*, Prun.; *M. cinxia*, a small race; *B. pales*, race *palustris*, Fruh., and ab ♀ *napaea*, Hb.; *P. mnemosyne*, race *excelsa*, Vrtv. (?), 1 fresh ♂; *B. amathusia*, race *titania*, Esp.; *A. niobe*, L., race *alpium-stricta*, Vrtv.; *A. eumedon*, (*chiron*, Rott.); *M. varia*, M.-D.

HETEROCERA.—*Zygaena achilleae*, race *alpestris*, Burg., (= *alpina*, Obth. nom. praeocc.); *L. montanata*, W.V., large form; *Selenia bilunaria*, Esp.; *Zygaena exulans* race *subochracea*, White; *Apamea secalis*, L.

COLEOPTERA.—*Clythra quadripunctata*, L.; *Chrysomela vernalis*, Brull.

8. MONFOL. 3210 ft.

I did not get to this locality, which I should think is best reached via Jouvenceau by continuing the road which skirts that village. I recommend a whole day. I understand Dr. Verity got *Erebia ligea* there. I think Monfol would be even more primitive than Jouvenceau.

9. NOTRE DAME DES BROUSSAILLES. 7368 ft.

I did not get as far as this. There is a chapel here, and a mule track leads up to it from Jouvenceau (ask the way), and I understand there is good collecting en route. An early start, carrying lunch necessary.

(To be concluded.)

The Geometers of Storrington, W. Sussex.

By G. S. ROBERTSON, M.D.

(Continued from page 64.)

Horisme (Phibalapteryx) vitalbata, Schiff.—Common on the Downs. *H. (P.) tersata*, Schiff.—Common on the Downs. *Abraxas grossulariata*, L.—Common everywhere. *Lomaspilis marginata*, L.—Generally distributed. Common. Varies greatly. *Ligdia adustata*, Schiff.—Generally distributed. Fairly common. *Bapta temerata*, Schiff.—Common. *B. bimaculata*, Fb.—Not common. *Cabera pusaria*, L.—Very common. *C. exanthemata*, Scop.—Very common. *Anagoga (Numeria) pulveraria*, L.—Not common. *Campaea (Metrocampa) margaritata*, L.—Fairly common. Generally distributed in woods. *Ennomos quercinaria*, Hufn.—Fairly common. *E. abniaria*, L.—Common at light. *E. fuscantaria*, Steph.—Scarce. *Selenia bilunaria*, Esp.—Very common. *f. illunaria*, Esp. (*juliaria*, Haw.)—Common. *Phalaena (Hygrochroa) syringaria*, L.—Fairly common. Well distributed. *Gonodontis bidentata*, Clrk.—Common. Generally distributed. *Colotois (Himera) pennaria*, L.—*Crocallis elinguaris*, L.—Common. *Ourapteryx sambucaria*, L.—Common. *Plagodis (Eurymene) dolabraria*, L.—Scarce. *Opisthograptis luteolata*, L.—Abundant. *Epione repandaria*, Hufn. (*apiciaria*, Schiff.).—Common. *E. vespertaria*, Fb. (*paralellaria*, Schiff.).—One male 23.ix.30. *Pseudopanthera (Venilia) macularia*, L.—Very common. *Semiothisa liturata*, Clrk.—Not common.

(To be continued)

Nomenclature. The List.

By Hy. J. TURNER, F.R.E.S., F.R.H.S.

(Continued from page 93.)

NOTE.—On page 93 it was pointed out that the name *thetis*, Rott., occurred on p. 24 and *bellargus*, Rott. on p. 25 and that the former, as Esper pointed out was a ♀ and the latter a ♂. Dr. Verity points out a fact, which all writers have hitherto failed to note. In the paragraph devoted by Rottemberg to *thetis* it is stated to occur in August, while in the paragraph devoted to *bellargus* it is stated to occur in June, hence one must infer that the former denotes the 2nd generation and the latter the first. Thus it must be assumed that the species name

is *bellargus* and the name *thetis* can be used as that of the 2nd generation and avoid the forced use of the Zoologist's homonym rule.
 REFERENCE:—*Naturforscher* V. pp. 24-5 (1775).

Lycaena, Fab. *arion*, L. becomes *Maculinea*, van Eecke *arion*, L.

Tutt and those who collaborated with him showed with much detail that *arion* was the type of the genus *Lycaena*, and it is only by discarding the authorities they used that *Lycaena*, after long universal use for the "blues" is displaced.

Those who wish to see for themselves the bases for the adoption of *Lycaena* for the "blues" would do well to follow out the whole argument as displayed at length by Tutt in Vol. VIII. (vol. I. of the *Butterflies*) from p. 303 onwards.

The summary of the article is thus:

"1807. LYCAENA, Fabricius. Heterotypical, containing "blues" and "coppers." Restricted to the untailed "blues" by Latreille in 1809, and to the "blues" by Oken in 1815. In 1838 Thon fixed the type as *arion*. In 1824 Curtis wanted to make *phlaeas* as the type of *Lycaena*, but this was impossible in face of the restriction of Latreille and Oken.

On p. 30 of the "List" it is stated that Oken did not restrict *Lycaena* to the "blues." With a copy of Oken before me I cannot agree with that statement. In his diagnosis of the genus *Lycaena*, Oken allows of only the "blues" to be included. He recognises 17 species (Art.) under which he assembles all the names which have been applied to what he takes as forms of each species, many of them occurring in works now only considered as curiosities. Many of these names Bergstrasser had given in his work, and which Kirby in 1871 included in his *Synonymic Catalogue*. In all there are considerably over 100 names. Some of the names occur more than once having been applied to forms of different species by illinformed authors. As an example of Oken we quote his diagnosis of the Genus (Gattung) and the details of the first species (Art.) bearing in mind the absence of real knowledge, and the paucity of workers and the few, very few, specimens available for any one worker to study and compare, with the difficulty of intercommunication at that period.

"I. Gattung. *Lycaena*. *Cupido*; Fusse gleich, Ufl. nicht gezahnt oder geschwängt. 150 Arten.

"Hochschildraupen. Raupen schild- oder asselformig, fast oval, gleich breit, schöngefärbt, nur unten glatt, Kopf und Fusse sehr klein. Verwandlung an Pflanzen stengeln, bisweilen halb unter der Erde: P. langlich, nacht weislich, mit einigen Flecken.

"Bieläugige Falter; Fl. rundlich, oben meist blau (W. oft braun mit rothgelben Flecken) unter grau, nur vielen schwarzen, weisseingefassen Dupfen.

"a. Unterseite der hinterflügel ohne rothgelbes Band.

"Fl. ungezahnt.

"1 Art. *L. arion*, *telejus*, *telegonus*, Randpunct; Fl. oben braun mit blauer Scheibe, schwarzen Flecken, unter graue Aeugelpuncte: *alcon*, *argiades*, *arcas*, *proteus*, *telejus*, *mamers*; Fl. blau; *euphemus*, *diomedes*, *arctophylax*, *arctophonus*, Leipzig, *erebus*, *nausithous*."

In Kirby's *Synonymic Catalogue* all but one (*proteus*) can be found on pp. 374-5 allotted to the various species to which the forms were

subsequently found to belong. The "protée" of Ernst and Engramelle is *proteus*.

At that date, 1815, it will be noted that *alcon*, *euphemus* and *arcas* now treated as true species were not at that date considered as such, but united more or less loosely with *arion*: e.g., Esper strongly suspected *arcas* to be a variety of *arion*; Fabricius placed it as a name synonymous with *alcon* which no doubt Oken copied. *Euphemus* is not mentioned by Fabricius. Ochsenheimer, Godart and even Stephens were quite indeterminate as to the specific value of these four names.

Similarly Oken deals with each of the other Art (Species), all of which are still recognised as "blues" by every authority. The fact remains that Oken did definitely "restrict," segregate, collect, place together, etc., all the "blues" known to him under *Lycaena* by which name Fabricius had designated the section B of Schrank's *Cupido* (1801). To say that there is no such process as restriction is "ultra vires," as it is called, for even the selection of a type is restriction in the most restricted sense of the process.

It is rather curious that, the statement in the List that "the only species Thon mentioned" in his article in 1838 "in connection with that genus was not *arion* but *chryseis*," is so diametrically opposed to the statement of Tutt, *Brit. Lepidoptera* XI. 302, that "In 1838, Thon in his article *Lycaena*, in Ersch. and Gruber's *Allgem. Encyclop. d. Wissens. u. Kunste* 3rd ed., vol. VI. p. 139, cites only *arion* as an example of the genus, and so restricted it to the special little group of which *arion* is probably the best known species."

The real fact is that the above extract in Tutt's book is a series of misstatements. The reference should be Ersch u. Grube, *Allgem. Encyclop. d. Wissens. u. Kunst.* III. Section. Thl. XI. 139 (1838). The article is "*Papiliones*." Thon makes no statement of his own, but gives a summary of the classificatory systems of Linneus and others down to Boisduval. Only once does the name *arion* occur, and that is in his consideration of the system of Ochsenheimer as a follower of Schiffermüller and he quotes their *arion* as being under *Lycaena*. He (Thon) writes no article headed *Lycaena*. In his *Naturg.* 1837 Thon treats of the genus *Lycaena* as containing "blues," "hairstreaks" and "skippers" just as Fabricius, and gives accounts of several species in all sections without discrimination or restriction.

Tutt could not have seen the above work but must have trusted to someone who did not note the context and the purport of this article of Thon's. In this respect Thon's work must be absolutely discarded for good.

(To be continued.)

Psylla ptarmicae, Kieff., as British.

By RICHARD S. BAGNALL, D.Sc., F.R.S.E.

It is many years since Harrison and I found a clump of sneezewort (*Achillea ptarmica*) in Langdon Beck, Upper Teesdale, Co. Durham, exhibiting the rolled and distorted leaves attributed to *Psylla ptarmica*, Kieff., but just upon discovery and before we had run down the insect itself or its larval forms, a cloud-burst put an end to further research. We did not therefore put the occurrence on record.

On the occasion of a field-meeting of the Gall-section of the

London Natural History Society at Effingham, Surrey, last month we discovered patches of *Achillea ptarmica* exhibiting the very tightly rolled but not discolored leaves, mostly in the upper part of the plant which Burkill has already described as being caused by *Eriophyes* sp., whilst lower down in the same plants the leaves were less tightly rolled, discoloured and more or less curved or distorted. After the party had passed on I spent an hour or more on the site and ultimately found numerous examples of the Psyllid gall-causer itself—it was present in large numbers—wherever the gall occurred, but I did not succeed in beating out any from numerous patches of *ungalled* plants.

It is the *Psylla ptarmicae* of Kieffer and the "Psyllide" 5710 in Houard's *Zooecidia*, p. 984, where it is recorded from Germany only, and this, so far as I am aware, is the first British record.

NOTES ON COLLECTING, etc.

A FEW ORTHOPTERA FROM STROUD.—On a brief visit to Dr. Eltringham at Stroud, I found, of course, the common little grasshoppers of the fields abundant on the hillsides, that is, *Chorthippus parallelus*, Zett., *Chorthippus bicolor*, Charp., and the slightly less universal *Omocestus viridulus*, L. On the tops of the hills there is also *Stenobothrus lineatus*, Panz., a rather localised species, which I have always associated with chalk, so was interested to find it here on the Great Oolite.

Mr. T. B. Fletcher showed me a few grasshoppers which he had picked up locally, and among them was a female *Gomphocerus rufus*, L.* This species is very localised with us, and I have noticed that it is also periodic. One year, I think it was 1896, it was swarming at the Folkestone Warren, but in other years it is infrequent, or even apparently absent. It is a distinctive species, with its strongly clavate, white-tipped antennae, and light brown colour, so perhaps collectors will keep their eyes open for it and extend our knowledge of its distribution in this country. That is probably wide enough, as it ranges as far north as the Lena in north eastern Siberia, where I have taken it. Lucas gives a previous record for Gloucestershire. It frequents grassy and scrubby hillsides.

Meconema thalassinum was already putting in its customary appearance indoors. This pretty little Phasgonurid, pale green, with long, spidery antennae, and a long ovipositor in the female, like a very small *Ph. viridissima*, is a tree-hopper, frequenting especially oaks and limes. It is often seen on the trunks, going to sugar. It is a free flyer, and it is common on windows in country houses in the summer, continuing as late as November.

It is not often that one sees the House Cricket on the wing, so I was interested to see a female, with its characteristic swinging, dashing flight, land on a lampshade. In spite of long years of domestication, it has retained its powers of flight, which accounts for its sudden appearance in fresh localities. Gilbert White has described its migratory habit.—MALCOLM BURR.

* *Gomphocerus rufus* has been abundant on grassy slopes at Rodborough throughout September and is still common.—T.B.-F., i.x.34.

PHASGONURA VIRIDISSIMA IN NORTHUMBERLAND.—Dr. Eltringham tells me that he has a vivid and perfectly distinct recollection of the Great Green Grasshopper at Hexham in Northumberland when he was a boy. Northerly records of this striking insect in this country are so few that this is well worth recording. The only other I know of from the northern counties is from Cumberland, mentioned in Stephens' "Illustrations."—MALCOLM BURR.

NOTES OF IMMIGRATING SPECIES.—*Plusia gamma*, L., fresh specimens at Salt Head Island, N. Norfolk, at the end of June—not very common. But common at Aberdavan, N. Wales, the first week in August. *Macroglossum stellatarum*, L., larva was taken on *Galium verum*, Aberdavan, N. Wales, 8th August, and has since pupated.—P. BRODIE.

I caught one *Polygonia e-album*, typical form, in the house, Sutton, Surrey, this morning, 28.viii.34. I have never seen this species here before.—PALMER BRODIE.

A VISIT TO THE ENTOMOLOGICAL EXHIBITION AT ROUEN, 21.viii.34.—I passed the Natural History Museum at Rouen, and to my joy, I saw a notice saying that there was an exhibition of "papillons" on view. On entering I found that the exhibition filled a fair sized room on the first floor, and was comprised mostly of Lepidoptera. At one end there was a collection of the 800 species found in Normandy; then the central case had a collection of Lepidoptera found in other parts of France and some of the more typical (and most beautiful) exotic insects, with a collection of partly named micros. Around the walls of the hall were cases showing the difference between the various orders of *Insecta*, and their life-histories; there were also diagrams showing a beginner how to set, preserve larvae and such like.

The Normandy Rhopalocera attracted me most, but the collection was of no great value as none of the insects had *any* data, and all that was on the label said that the collection was the gift of a certain 'Abbé.'

With regard to the other exhibits:—the cases showing Mimicry were well arranged, and were quite interesting, but, as I have said before, the rest were there only for beauty. The micros on the whole I thought were badly arranged and so few were named. The hints on larva preserving and the difference between the orders of *Insecta* were by far the best points of the exhibition.—J. C. HAWKER. Kingsgate House, Winchester.

CURRENT NOTES AND SHORT NOTICES.

May we call the attention of some of our readers, happily a very few, to our Treasurer's desire to hear from them forthwith.

As the Notes on the *British Noctuae* Supplementary to Vol. I. of Tutt's work on the same group are now almost concluded, the author would be very pleased to hear of any forms which have not been included that they may come in the Appendix. Also he would be pleased to have any errors pointed out, that they too may be in the Appendix.

We have received from the *Ministry of Agriculture and Fisheries* a Selected and Classified List of Books relating to Agriculture in all its

branches. Books on Entomology by authors such as Curtis, Lefroy, Ormerod, Swanton, Theobald, of course on the economic side, Plant and Animal Breeding, Genetics, Mendelism and Heredity including authors Bateson, Punnett, Thomson, Babcock, Crew, Fryer, etc. There are about 20 pages with some 30 titles on each. Bulletin No. 78, Price 6d. net.

We have received the following personal separates recently. Some half a dozen leaflets from Capt. Dannreuther, R.N., F.R.A.S., the energetic Secretary of the Zoological Section of the South Eastern Union, dealing with the work undertaken for the collection of fact of the Migration of Insects. Included is the admirable Presidential Address read by Dr. C. B. Williams, F.R.E.S. on this subject in July at the Reading Congress of the Union. The concluding portion of the "Lepidoptera of the Northern Lebanon" district by Dr. Zerny and others dealing with the Pyrales, Tortrices and Tineina as far as known. Herr Warnecke of Kiel describes new Geometrid species and forms in the Zoological Museum at Hamburg with a plate of 14 figures. Count Turati continues his investigation of the Lepidopterology of Cirenaica and has recently issued part IV of his Notes, with a plate of 30 figures of new species and forms besides several text figures. The same author deals in a very intensively worked out paper with a few species of a section of the old genus *Leucania* which Warren in Seitz has abandoned and split up into *Sideritis*, *Hyphilare*, and *Hyperiodes*. The species belong to the group *zeae* whose members are found in the countries around the central and eastern arms of the Mediterranean Sea. There are many diagrammatic figures.

In recent numbers of *The Pan-Pacific Entomologist*, the San Francisco Journal of Entomology, is running a paper which is well worth reading by other than entomologists. It is entitled "The Historical Background of Entomology in Relation to the Early Development of Agriculture in California," and attempts to trace from contemporary publications of all kinds when, where and how the introduction of many non-indigenous insects first took place, commencing with the "Spanish or Mission Period 1760-1877." Incidentally it is noted that "The first insect described from the Pacific Coast was a beetle, *Carabus taedatus*, Fb., taken by one of the members of Capt. James Cook's third voyage, about 1778, presumably at Unalaska, Alaska. It was later presented to Sir Joseph Banks, who deposited it in the British Museum, where it was later noted by Johann Christian Fabricius when he visited England in 1801. Fabricius described it in 1806."

Dr. Burr sends us the following. "When my friend Captain Arbuoin, formerly of the Shropshire Light Infantry, was quartered at Hong Kong, he was engaged on the construction of a rifle range on the mainland. Fatigued by the heat, he had rested in the shade, leaving his topee on the ground. When he picked it up a little later, he did not notice in the lining a batch of ova of a huge moth, locally known to the English as the Lantern Moth. The consequence was that when he put his helmet on to return to the island, the ova hatched out,* with the result that when he reached his quarters, his head was crawling! He found it even necessary to have it shaved, and was chaffed to death by his friends for a long time after."

* Quick work!

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. Hy. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—S. *Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—R. C. L. Perkins, 4, Thurlstone Road, Newton Abbot.

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of D.oo. pupae of X. *gilvago*, D. *caesia*. A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—C. Zacher' Erfurt, Weimar, Street 13, Germany.

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucernea*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. Harold B. Williams, Woodcote, 36, Manor Gate Road, Kingston Surrey.

Duplicates.—A large number of species of European and Palaearctic Rhopalocera and Heterocera.

Desiderata.—All British species especially those illustrating characteristics of an island fauna. Dr. Lor. Kolb, München 54, Dachauer-str. 409, Germany, and Franz Daniel, München, Bayer-str. 77, Germany.

Desiderata.—Living larvae or pupae of *Lasiocampa quercus*. Also set specimens of same species taken before 1910 in Devon or Cornwall.

Duplicates.—*Pavonia*, set specimens or living stock: *Monacha*, ova: *ochroleuca*, *griseola*, *advenaria*, *juniperata*, *thetis*, etc.—J. A. Downes, 5, Trinity Road, Wimbledon.

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with English collectors and beg to send list of duplicates.—J. Soffner, Trautenau (Bezirksbehörde), Bohemia, Tschechoslovakische Republik.

Duplicates.—Well set British Lepidoptera all in perfect condition about 200 species.

Desiderata.—Living larvae: please send list of species obtainable.—A. Lester, 2, Pembury Road, London, N.17.

CHANGE OF ADDRESS.—K. J. Hayward, F.R.E.S., F.R.G.S., F.Z.S. to Estacion Experimental del Ministerio de Agricultura de la Nacion, Concordia, F.C.E.R., Argentine Republic, South America. H. Main, 9, Woodside Road, Woodford Wells, Essex. H. Willoughby Ellis, Friary Hill, Weybridge, Surrey. Capt. J. C. Woodward, The Red House, 10, Borden, Tonbridge, Kent. Dr. Malcolm Burr, 11, Ray Drive Mansions, Maidenhead.

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. October 17th, November 7th.

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. Oct. 25th (Exhibition), Nov. 8th.—Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.

The London Natural History Society.—Meetings first four Tuesdays in the month at 6.30 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. Visitors admitted by ticket which may be obtained through Members, or from the Hon. Sec. A. B. Hornblower, 91, Queen's Road, Buckhurst Hill, Essex.

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Names, Mere Names.

By T. BAINBRIGGE FLETCHER, R.N., F.L.S., F.R.E.S., F.Z.S.

The recent publication of a list of the Names of British Butterflies seems destined to call forth numerous—but, let us hope, not acrimonious—discussions on the correct usage of some of these names. All Entomologists are perforce interested in the subject of Nomenclature; whether they call their captures by English or scientific names, or even by names of their own invention, they are, consciously or not, employing some system of nomenclature. The “ordinary collector” cares little what names he uses and knows little and cares less about the literature and rules on which such names are based; what he wants is a name which he can use for his captures and which he is reasonably certain to find in the few text-books and journals which he owns and also to find in use by other collectors whom he meets. The more advanced student is not so easily satisfied: he requires to know, not merely that the name he uses is the current one, but that it is absolutely the most correct one and he is prepared to discard—not without regret, as a rule—any name which he used yesterday in favour of another which he considers to be more correct to-day, and to scrap that again to-morrow if need be. At the same time, as each one, even of the most advanced students, has to attain his results from a combination of knowledge and judgment varying with the individual, it is no matter for surprise that their results are not always concordant.

In spite of the apparent diversity in requirements of the two classes, both are really aiming at the same thing, stability of nomenclature, and both are slowly attaining it. The corrected names, which are established by the more advanced workers, find their way into catalogues and journals and more popular text-books and are in current use by the “mere collector” before he realizes it or has really had time to grumble at “these constant changes of names.” When I first began to collect British Butterflies, nearly fifty years ago, our commonest British Blue was called *alevis* and another one was called *adonis*; anyone who referred to these two species under these names in a current journal would leave most of his readers in ignorance of his meaning. Even the vernacular names change in the course of time and most of the present-day collectors would be puzzled to know what common butterflies are intended by the following names, in use one hundred years ago: the Alderman, the Primrose, the Queen, the Wood Lady, the Yellow Crescent, the Silver Spot, the Prince, the Princess, the Golden Eye, the Lead Blue, the Great Streak Skipper, and the Clouded Skipper.

Nomenclature is a complex and to most people a “dry as dust” study, but the student occasionally comes across a few cases which may raise a smile. Some names convey an obvious meaning (*e.g.*, *Gonoptera*, *Coleophora*), some are derived from classical or personal or geographical names or from foodplants or habits, and some are mere agglomerations of letters without any meaning at all. Many of Walker’s generic names, such as *Dudua*, *Eddara*, *Edosa*, *Maroga*, belong to this last category. Walker seems to have prepared lists of such names and to have used them as required for new genera; sometimes he apparently forgot to cross out those which he had already used and used them

again; thus, *Marisba* and *Tirasia*, used by him in 1863, were again employed for other genera in 1864. The classical expert who searches for a meaning in some of these names may come up against a snag at times; thus, *Dolidiria* may appear to be a good classical name until one discovers that it commemorates "Dolly dear"! The pseudo-classical explanation of *Heusimene*, Stephens, may also be referred to; according to the learned authors of "An Accentuated List of the British Lepidoptera, with Hints on the Derivation of the Names, published by the Entomological Societies of Oxford and Cambridge: 1858" it is "derived from two Greek words meaning *to burn* and *the moon*: the forewing having an *ashy lunule* on its inner margin," which seems a very convincing explanation until one finds that it was originally merely a *lapsus* for the name *Hemimene*, Hb. Stephens himself remarks (*Ill. Brit. Ent., Haust.* IV. 403) that his abstract of the British Lepidoptera extracted from Hübner's Verzeichniss was "made very rapidly (having a very limited time to take it)," so that his *lapsus* in this case is comprehensible. Some names, such as *Synia*, Dup., *Luperina*, Bdv., *Epunda*, Dup., *Hyppa*, Dup., quite defeated the authors of the Oxford and Cambridge List, who, however, attempted to derive *Olindia*, Gn.; from "Olinda, a town of South America," although quoting Guenée himself to the effect that this name was "sans étymologie." A list of new names, proposed by Kirkaldy in 1904 (*Entom.* XXXVII. 279-280), included such gems as *Marichisme*, *Isachisme*, *Polychisme*, *Dolichisme* and *Alchisme*; here again the seacher for a classical meaning must remain satisfied with the quite non-classical "Mary, kiss me," etc. Such names are mere inexcusable frivolities and possibly in this case the Editor's eagle eye was blinded by the reflected glory of the name *Southia* proposed in the same list. Perhaps one may be permitted to speculate whether the name *Ofatulena* belongs to the same category as it is connected in origin with a group of names comprising *Gwendolina*, *Barbara*, *Suleima*, *Sonia*, *Gretchena*, *Griselda*, and others derived from feminine names. *Emmelina*, Tutt 1905, was nondescript and hence invalid and still-born, but was fathered by Forbes in 1924.

Then we come across the so-called "gibberish names" which we owe mostly to Kearfott, who described a number of species under such names as *bobana*, *cocana*, *dodana*, *fofana* . . . , *bana*, *dana*, *fana* . . . ; Mr. Meyrick has dealt with these (*Ent. Mo. Mag.* XLVIII. 32-36: 1912) and boldly renamed them and his action had at least the effect of stopping the spate of these nonsense-names.

In forming new names some authors have favoured an anagram of a previous name; thus, Walker described the genera *Datana* and *Nadata*. French authors have been especially fond of anagrams, one of the most striking being *Suhpalacsa*, which is merely *Ascalaphus* written backwards.

Actually non-existent names sometimes get into literature and give a great deal of unnecessary trouble in running them down. Often these are due to some error in copying the original name, as in the case of *Heusimene* (*Hemimene*) noticed above; *Darthula* was printed as *Dartrula* in Waterhouse's *Zoological Index* and as *Darrhula* in the *Zoological Record*. Sometimes they are due to the use of manuscript names under which specimens have been sent out or are standing in collections; if, as often happens, the manuscript name is suppressed

by its author, who may eventually describe the genus or species under another name, whilst the manuscript name is used by other writers, it is often difficult to connect the two names.

Some names have been applied to specimens defective in some way. Although not an entomological exhibit, we may refer to the Bird of Paradise named *apoda* by Linnaeus, the skins brought to Europe in those days having no legs. In his *Supplementary Catalogue of the British Tineidae* (1851) Stainton described *Elachista? decimella*, of which he remarks that "the only specimen I have seen, having been skewered with a No. 10 solid-headed pin, has the head and thorax so distorted that their due investigation is impossible"; hence we are led to suppose that the name *decimella* has reference to the size of the pin used for the specimen. The species described by Linnaeus under *Alucita* seem to have derived their names rather from the author's desire to have a series of names running from *monodactyla* to *hexadactyla* than from the actual structure of the insects described; *didactyla* is a mere literary description of Ray's account of *hexadactyla* and of Réaumur's figures of *pentadactyla*, whilst *tridactyla* and *tetradactyla* are sexes of the same species.

For convenience of consultation Lists of Generic Names are usually arranged in alphabetical order and in this connection one may note several attempts to secure the position of "Head of the List." Walker's *Abacena* (from ABC) was an early effort and at present the record seems to be held by the Buprestid genus *Aaata*, Semenow. The Berlin Nomenclator has only slowly progressed as far as the letter P at present and the last name in Scudder is *Zyxomma*; possibly, however, some ingenious author has since captured the wooden spoon with some combination commencing with Zyz.

Owing to the fact that they are preoccupied, some generic names which have currency are really homonyms and hence, according to the rule "once a homonym, always a synonym," should be synonyms, but it so happens that these genera have not yet been renamed and so have no valid names of which the current invalid names can be synonyms. I will not mention these names here in case some over-zealous nomenclator should rush into print to rename them without having any idea of what the insects are or whether such genera are tenable and really require to be renamed. This has happened too frequently in the past and has merely resulted in encumbering our Catalogues with a mass of useless and unwanted synonyms; for example, Spuler in 1910 proposed the genonym *Chapmania* for *semipurpurella*, Stephens; *Chapmania*, Spuler, was nondescript and hence invalid and also redundant as *semipurpurella* was the type of *Eriocrania*, Zeller 1850; *Chapmania* being preoccupied, Strand in 1917 proposed the name *Allochapmania* to replace it, the nett result being that *Eriocrania* was provided with two useless synonyms.

Some well-known current names are incorrectly used. Thus, in 1811 Haworth described the genus *Fumaria* but in 1812 (*Trans. Ent. Soc. London* I. 340) renamed it *Fumea* on the ground that the name *Fumaria* was already employed in Botany. Entomology takes no regard of Botanical Names and Haworth, having once published his name *Fumaria*, had no special right to alter it. But such cases are perhaps too near the borderline of controversial Nomenclature to be

pursued further within the limits of a short article which only purports to deal with what may be called some Curiosities of Nomenclature.

According to W. S. Gilbert "the policeman's lot is not a happy one," but possibly it was brightened a little when Moore named a *Phalera* as *parivala* (*parawala*, an Indian policeman) and followed this up a few years later by calling another species *bobi* ("Bobby").

The Cottian Alps and Turin in June-July, 1933.

By REV. E. B. ASHBY, F.R.E.S., F.Z.S.

(Concluded from page 107.)

10. OULX. 3,500 ft.

Except on the dates before-specified, I spent the rest of my holiday entirely at Oulx, my first day's collecting there being on 21st June and my last day's collecting on 11th July. The two grounds I used were the Rifle Range by the bed of the river Dora Riparia, and the path which leads in a westerly direction past the two lakes. I refer my readers to Dr. Verity's account of Oulx and environs in the former pages of this magazine (Vol. XXXVIII. new series, No. 7 and 8, July-August, 1926). For this particular season I used the ground by the lakes the more frequently, as I found it much the more sheltered this year. I took the following insects:

RHOPALOCERA.—*Polyommatus* (*Hirsutina*) *damon*, race *ausonia*, Vrtý.; *P. hylas*=*dorylas*, Hb. race *micromargarita*, Vrtý.; *P. eschevi* race *balestrei*, Frhst.; *Agriades coridon* race *rufosplendens*, Vrtý.; *Cupido minimus*, Fuessly; *Klugia lynceus*, Esp.=*spini*, Schiff. race *major*, Obth.; *L. sinapis* race *magna*, I gen., *lathyri*, Hb.; *Euchlōe euphenoides* race *alpium*, Vrtý.; *P. daplidice*, L.; *Aporia crataegi* race *basanius*, Frhst., a rather small and abundant race; *P. apollo* race *oulxensis*, Vrtý.; *C. pamphilus*, race *postaustralis*, Vrtý. I gen. *australis*, Vrtý.; *Epinephele jurtina* race *phormia*, Frhst.; *M. galathea* race *pedemontii*, Vrtý., very fresh; *Nytha actaea exerge ferula*, F. (= *cordula*, F.) race *orsiera*, De Prunner; *Hipparchia semele* race *cadmus*, Frhst.; *Limenitis rivularis*, race *herculeana*, Stichel, well distributed; *M. cinxia* race *avelatia*, Frhst.; *P. maera* race *herdonia*, Frhst.; *Powellia sertorius* (*sao*) race *alioides*, Vrtý.; *H. carthami*, Hb.; *Brenthis euphrosyne*; *B. amathusia* race *titania*, Esp., abundant and fresh by the lakes; *M. dictynna*; *M. aurelia* race *imitatrix*, Vrtý., by lakes. (One fine var. with great increase of black markings). *M. pseudathalia* race *celaduzza*, Frhst.; *H. serratulae*, Rbr.; *H. carlinae*, Rbr.; *Adopaea lineola* race *ludoviciae*, Mabille; *A. sylvanus*, Esp.; *C. semiargus* race *montana*, M.D.; *A. medon*, Hüfn.; and var. *salmacis*; *P. idas*, L.=*argyrognomon*, Bergstr. race *calliopides*, trans ad *alpina*, Vrtý. and Berce; *P. icarus*, Rott., I gen. *A. aglaia* race *emiflorens*, Vrtý.; *B. ino*; *A. niobe*, L. race *pinguis*, Vrtý.; *M. phoebe* race *syllion*, Frhst.; *P. argus* race *philonomus*, Bergst.

HETEROCERA.—*Zygaena achilleae* race *alpestris*, Burg. (= *alpina*, Obth.); *Cerura furcula*, L.; *Notodonta tritophus*, S.-K.; *Agrophila trabealis*; *Pyralis trabealis*; *Ino geryon*, Hb.; *Ino globulariae*, Hb.; *Z. purpuralis* race *nubigena*, Led.; *Z. loniceræ* race *alpiungigas*, Vrtý. (= *major*, Frey.); *Syntomis phegea*, *Heterogynis penella*, Hb.; *Acronicta megacephala*, Fb.; *Leucania conigera*, Fb.; *Omia cymbalariae*,

Hb.; *Idaea flaveolaria*, Hb.; *Scoria lineata*, Scop.; *Agrotis exclamationis*, L.; *Coscinia eribraria*, L.; *Odezia atrata*; *Erannia marginaria*; *Z. stoechadis* race *dubia*, Stdgr.; *Z. trifolii*, Esp.; *Barathra brassicae*, L. var.; *Eupithecia linariata*, Schiff.; *Acidalia immorata*, L.; *Perizoma albulata*, Schiff.; *Cnephasia argentaria*, Ch.; *Cabera pusaria*, L.; *Paedisca kollariaria*, Hg.; *Crambus dumetellus*, Hb.; *H. oleracea*; *Hydroecia nictitans*, Bork.; *Miana strigilis*, Clerck.; *Diacrisia sannio* (russula); *Boarmia punctinalis* (consortaria).

HYMENOPTERA.—*Allantus arcuatus*; *Andrena morio*; *Psithyrus barbutellus* form *maxillosus*, Klug.; *Allantus perkinsi*; *Megalodontes klugi*, Leach; *Hylotoma cyanocrocea*; *Chalicodoma muraria*; *Macrophya annulata*; *Tenthredella mesomella*; *Allantus marginellus*; *Odynerus parietum*, L.; *Tenthredo rossii*, Panz.; *Psithyrus rupestris*, Fab.; *Bombus ligusticus*; *Amblyteles infractorius*, Panz. ♀; *Barichneumon bilunulatus*, Grav. ♂; *Campoplex angustatus*, Thoms. ♂; *Protichneumon fuscipennis*, Wesm. ♂.

PARANEUROPTERA.—*Libellula quadrimaculata*; *Orthetrum cancellatum*, McLach; *Anax imperator*, Leech, 1 male, sitting resting on herbage 23.vi.33, wings a little worn; there were others.

DIPTERA.—*Panponerus germanicus*, L.; *Dioctria atricapilla*, Mg.; *Stratiomys furcata*, F.; *Hemipenthes morio*, L.; *Melanostoma mellinum*, L.; *Pachyrrhina crocata*, L.; *Volucella pellucens*; *Volucella bombylans*; *Anthrax velutina*.

COLEOPTERA.—*Molytes glabratus*, F.; *Cryptocephalus aureolus*, Suf.; *C. schaefferi*, Schk.; *C. hypochaeridis*, L.; *Grammoptera femorata*, Fabr.; *Crepidocera ferruginea*, Scop.; *Cicindela hybrida*, L.; *Hoplia philanthus* Füss.; *Hoplia farinosa*, L.; *Phyllopertha horticola*, L.; *Cetonia aurata*, L.; *Henicopus ater*; *Trichodes alvearius*, Fabr.; *Cebrio lepturoides*; *Orsodacna cerasi*, L.; *Polydrusus lateralis*, Sch.; *Acamaeops collaris*, L.; *Cryptocephalus hypochaeridis*.

ORTHOPTERA.—*Chorthippus parallelus*, Zett., larva.

RHYNCOOTA.—*Elasmucha ferrugata*, F.; *Lopus gothicus*, L.; *Triecophora intermedia*, K.B.M.; *Reduvius personatus*.

ALTITUDES.—The altitudes I give are, at best, approximate. Practically all guide books and maps differ.

I left Oulx by through carriage to Paris the night of 13th July.

In conclusion I wish to express my best thanks to those many naturalists, who have helped me to make this article correct.

Aberrations of British Geometridae.

By E. A. COCKAYNE, D.M., F.R.C.P., F.R.E.S.

The following mutations are all recurrent and so definite that they appear to me to be worthy of aberrational names.

Abraxas grossulariata, L. ab. **aurivestita**, ab. nov.

The two rows of postmedian black spots, which usually enclose an orange fascia are confluent and form a single band, and the whole of the ground colour of the forewing proximal to this band is deep orange. The black spots on the hindwings are elongated to a varying degree.

My example was bred by J. Riches from a North London larva, and I have seen three more specimens in the Tring Museum.

Abraças sylvata, Scop. ab. **glomerata**, ab. nov.

The postmedian fascia is displaced towards the base and the whole of the forewing proximal to it is completely, or almost completely, suffused with grey and rust colour. The grey markings along the termen are reduced or absent. The postmedian fascia on the hindwing is also displaced towards the base and sometimes united along the outer margin to the grey basal mark, while the discal spot is displaced away from the base and confluent or nearly confluent with the postmedian fascia.

I have two examples from the Maddison collection, taken at Sledmere in 1898, and another taken in Yorkshire by B. H. Crabtree, is figured in Barrett's *British Lepidoptera*, Pl. 320. fig. 1.f.

Epione vespertaria, Fb. ab. **fulva**, ab. nov. Male.

The ground colour of both wings is tawny (Ridgway) and without strigulations on either surface. The antemedian line and the border distal to the postmedian line is deep quaker drab (Ridgway), much more leaden in hue than in typical specimens.

The form is a recurrent one at Strensall Common, Yorkshire, where my specimen was taken by A. Smith in 1917. The ground colour varies from deep dark chestnut-brown, as Barrett describes the one depicted on Plate 298. fig. 2 d., to a darker and duller brown like the one figured in the *Entomologist*, 1878. Pl. 2. fig. 8.

Nomenclature. The List.

By Hy. J. TURNER, F.R.E.S., F.R.H.S.

(Continued from page 109.)

Returning to the restriction of Oken in 1815 in placing (restricting) all the "blues" under *Lycaena*, we must take note of Leach who classified the Lepidoptera, in the *Edinburgh Encyclopedia*, vol. IX. pt. 1, p. 129, in the same year 1815. In the latter List Leach included in *Lycaena* both "coppers" and "blues" as follow:—*Lycaena* (a) *dispar*, *chryseis*, *virgaureae*, *phlaeas*, *rubi*. (b) *coridon*, *adonis*, *dorylas*, *argus*, *idas*, *artaxerxes*, *alsus*, *argiolus*, *cimon*. If Oken's work was issued first Leach's inclusion of the "coppers" was erroneous. If, on the other hand, Leach's work was first, Oken's restriction was perfectly in order, and the genus name *Lycaena* in either eventuality henceforth must designate the blues. Still no type was chosen from among the "blues" until Scudder in 1872 in *Sys. Rev.* 36, selected *endymion* = *meleager*. This however could not stand as *meleager* was congeneric with *icarus*, which, under the name *argus*, had been selected as illustrative of his genus *Polyommatus* by Latreille in 1804. However, Latreille in 1805 (*Hist. Nat. Crust. et Ins.* XIV. pp. 16-123) and again in 1809 (*Gen. Crust. et Ins.* IV.) showed that he understood by his genus *Polyommatus* the whole of the "hairstreaks," "coppers" and "blues," and thus the name *Polyommatus* was only a synonym of the name *Lycaena* of Fabricius. Kirby in 1896 *Hand Lep.* II. 90, dealt with this question but, treated Oken and Leach illogically and reasserted *phlaeas* as the type of *Lycaena* in error. We are thus brought down to Tutt in 1906, *Ent. Rec.* XVIII. 130, where he stated the position as he saw it and actually fixed the type as *arion*, but

without references in support, until the Vol. IV. of his *Brit. Butts.* was published in 1913-14 where Wheeler (who completed the volume after Tutt's death) gave them.

We have for the first time fully established the type of the genus *Lycaena* as the species *arion*. Thus the above result follows logically on the true recognition and acceptance of the work of Oken, which was written in far more detail, and thoroughness, and clarity than the work of some of his contemporaries on whom more reliance is placed than their opinions deserve.

Latreille was strongly opposed to Fabrician genera which he always considered both ill-founded and unnecessary. In all his writings he shows that his *Polyommatus* includes the "coppers," "blues" and "hair-streaks" nor does he ever again select *argus-icarus* as an example (type?) of his genus *Polyommatus*.

On p. 186 of his vol. IV. *Gen. Crust. ent. Ins.* (1809) he writes "The celebrated Fabricius has very lately introduced very many genera; a few I accept, a few more I am introducing, and I hope the opinions of the experts will show, with judgment and with care." He really accepts only 4 of the genera of Fabricius (*Cethosia*, *Thais*, *Colias*, and *Urania*). He adds 5 himself. Every genus where Latreille accepts that of another author is indexed, but those only mentioned and not accepted are omitted from the index. For instance *Lycaena* is not indexed.

When Latreille comes to his own genus *Polyommatus* on p. 206 he expressed strong condemnation of the action of Fabricius in introducing his genus *Lycaena*. He says, "Genera have been introduced by Fabricius on the most minute, unreliable and often fragmentary characters."

Latreille does not yet (1809) recognise subgenera,* but he does divide his genus *Polyommatus* suitably into diagnosed sections without giving them names, but endeavouring to fit in species selected from Fabricius list with his own additions and endeavouring to show that Fabricius' genera were more or less illogical. I give the divisions and species but have omitted the diagnoses.

I(1) *betulae*, *spini*, *quercus*, etc. from Fab., with *cerasi* added.

= Genus *Thecla*, Fb.

I(2) *meleager*, *rubi*, *phlaeas*, *virgaureae*, etc. from Fab., with *boeticus* added. = Genera *Hesperia*, Fab. and *Lycaena*, Fab.

II *coridon*, etc. from Fab., with *argus (icarus)*, and *alsus* added.

= Genus *Lycaena*, Fab.

Cyaniris, Dalm., *argiolus*, L. becomes *Lycaenopsis*, Feld. *argiolus*, L.

In 1907-8 *Brit. Lep.* IX. 379, Tutt showed that *Cyaniris* could not be applied to *argiolus*, and introduced the genus name *Celastrina*. Prout had pointed out to him that *Cyaniris* was typified by *semiargus* with which *argiolus* was not congeneric. Tutt and his helpers overlooked that Felder, *Reise Novara Rhopal*, 257 (1865) had applied *Lycaenopsis* as a genus name for *argiolus* and its congeners. We have used this name for some time in this magazine.

* In Cuvier *Regne Animal*, 1817, Latreille calls *Papilio* only a genus and other divisions subgenera, and even then does not use *Lycaena*.

Notes on Coccinellidae collected in the Barberton District, Eastern Transvaal.

By J. SNEYD TAYLOR, M.A., D.I.C., F.R.E.S.

Of the seventeen species of *Coccinellidae* mentioned in the following list, fifteen were observed by the writer, while the two species of *Lotis* were sent to him after he had left the district.

The writer's thanks are due to the Imperial Institute of Entomology for the determinations.

Halyzia variegata, F.—One specimen found on mulberry.

Chilomenes lunata, F., *Cydonia quadrilineata*, Muls., *C. geisha*, Gorb.—Three very common species occurring in large numbers upon aphid-infested cotton, as well as other crops, and doing useful work. (*Ent. Rec. & Jr. Var.* XLV. 119.)

Chilocorus angolensis, Crotch.—Common on Citrus, feeding upon *Pseudococcus* sp.

Chilocorus distigma, Goeze.—A very common species found feeding upon aphid on cotton, also upon *Pseudococcus* sp. on Citrus. An attempt was made to work out the life-history under laboratory conditions at Pretoria. The egg, which was found in small groups in the egg-masses of the mealy bug, hatched in from 6 to 8 days. During the summer the larval period occupied some six days, while in winter it varied from 33 to 37 days. The duration of the pupal period varied from 7 to 9 days in summer, and from 12 to 13 days in winter. The maximum number of progeny reared from one female was 93.

Platynaspis capicola, Crotch., *P. kollari*, Muls.—Both species were occasionally observed upon aphid-infested cotton.

Hyperaspis senegalensis, Muls.—Common on Citrus, feeding upon *Pseudococcus* sp. Under laboratory conditions at Pretoria the duration of the egg and larval periods combined was found to be about 26 days, while that of the pupal period varied from 14 to 16 days. A species of Chalcid, *Xenocrepis secundus*, Crawford, was bred from the pupa.

Scymnus trepidulus, Wse.—Common on aphid-infested cotton.

Scymnus c-luteus, Sic.—Common on Citrus, feeding upon *Pseudococcus* sp.

Rodolia obscura, Wse.—One specimen found feeding upon *Icerya purchasi*, Mask.

Epilachna paykulli, Muls.—One specimen found upon *Solanum sodomaeum*, Dunal. (Bitter Apple, or Apple of Sodom).

Epilachna hirta, Thunb.—A common species; both adults and larvae found feeding upon the foliage of *S. sodomaeum*, and also upon that of potato.

Lotis collaris, Wse., *L. nigerrima*, Casey.—Both species found in considerable numbers upon aphid-infested Citrus. (F. J. Stoffberg.)

NOTES ON COLLECTING, etc.

MARRIAGE FLIGHTS OF *MYRMICA SCABRINODIS*, NYL.—My colleague, Mr. A. W. McKenny-Hughes, handed over to me a number of ♂♂ and ♀♀ of a *Myrmica*, which I found to be *M. scabrinodis*, Nyl. He informed me that they had fallen down the chimney in a house in a field, 600 ft. above sea level, at Birchall Hill, Leek, Staffs., early in September; and that the owner had been much perturbed about it.

I have never heard of these ants falling down chimneys before, but the explanation no doubt can be found in the habits of the genus during the marriage flight. These we have described as follows:—“The marriage flight (in *Myrmica*) takes place in the autumn, and it commences in the air, but as soon as the couples are united they fall to the ground together, because the female is unable to carry the male when on the wing. . . . Much has been written about the marriage flights of these species. Dalglish noticed these ants swarming and dropping like rain on to a green-house; Crawley was on one occasion in a hammock in his garden reading, and thought at first it had begun to rain, by the pattering on the leaves of the trees, caused by *Myrmica* males and females falling down together; Bond described a “combat” of ants which occurred near Hornsey in the summer of 1828: this however was clearly a marriage flight of *Myrmica*, as he says that they met in mid air and always fell to the ground in pairs, the one being black the other red—the former were, of course, the males, and the latter the females.

The winged sexes sometimes occur in such numbers as to give the impression of a cloud of smoke in the air, and it was probably a swarm of these ants which caused the people of Coburg in 1866 to think that the tower of the church of St. Maurice was on fire.” [*British Ants*, 2nd Edtn., p. 115 (1927)].

We thus see that a cloud of these ants might be flying around, and over, a chimney, and when the sexes become united they would fall down the chimney together.—HORACE DONISTHORPE, Department of Entomology, British Museum (Natural History), Cromwell Road, S.W.7.

THE “BLUES” IN WILTS IN 1934.—I am afraid I cannot report on much excepting the “Blues” as I did very little otherwise. My one and only visit to the Forest for *Brenthia selene* was an absolute failure. At Brockenhurst, where it usually swarms, we spent the whole day without seeing one.

The drought and sun had left the place in the worst condition I have known it for 25 or 30 years and I am afraid the Forest collectors had a bad time. As a contrast the “Blues” in our district were quite up to the average and plenty to work on. The first brood of *Polyommatus icarus* were very plentiful and my son-in-law and I picked up a few very good ones. Among the males we took several with elongated spots on the upper wings, the best being one with 6 heavy spots on both upperwings which form a border around it and the usual discoidal spots. It is a very fine form. We took beside these, 3 or 4 of the *Cinnus* type, also heavily and sparsely spotted forms, which improved our series. The females, too, were most interesting and corresponded in markings very much to the males. An extremely nice series of “Blues” and other forms made the selecting a pleasure. At the same time we were working *P. bellargus*. Among these is a form, which, from information given me, does not seem to occur in any number at Folkestone. It is represented in both sexes quite commonly, the spotting is very minute on all the wings, approaching *Cinnus* forms in many of them, accompanied with a broad white chevron on the lower wings. Others are practically *f. obsoleta*, except

for a row of very small spots on the outer border. It is a most interesting form and appears quite common. We had about 100 in the two broods.

Strange to say we did not come across a streaked form, which we had hoped for, 5 or 6 with the spots bunched in the upper wings were our nearest approach to it.

We finished up our season's work with *P. coridon* and as usual got a fair number of good things, including several *cinnus* the best being a true obsolete type of this form and which was immensely pleasing as the ground colour differs entirely from any of this form in my long series of about a hundred examples. It usually tends toward a brown shading in the lower wings. This is more of a slate-colour being light on the upper and much darker on the lower wings: a very fine insect. Other forms taken included males with wedge spotting on the upper wings, a very fine male with the dark shading half way across the upper wings, another with very dark border of good width on all four wings, which is an unusual form, an asymmetrical male with the right under side much darkened, in fact putting all together not a bad lot. We were well pleased with the season.—D. HAYNES.

POLYGONIA C.-ALBUM IN ESSEX.—For the first time in my experience in this neighbourhood of Chelmsford, Essex, I have to record the appearance of *P. c-album*. On August 27th last, in our garden a fine specimen in lovely condition was feeding upon a fallen Victoria plum, and was being jostled by hive-bees, wasps, and bluebottle flies. I watched for it again the next day, and several days after, but saw it no more. Perhaps it was a passing visit!—M. E. MILLER, The Croft, Rainsford Lane, Chelmsford, Essex, October 26th, 1934.

CURRENT NOTES AND SHORT NOTICES.

In the earlier half of the present year the following articles published in the French Journal *L'Amateur de Papillons* are more worthy of note. "Zoogeographical Observations on the *Macrolepidoptera* of France," by Herr Warnecke, in which the probable governing influence of the glacial period in France is discussed with suggested "relict" species, etc. Grenoble and its environs are described as a "good locality" for collecting, with lists of species obtainable in ten more restricted neighbouring parts. Two short articles by Guenée are reprinted, one on "Individuals as Entomologists" and the other on "Names in Entomology." Another locality reported on and described is the Pyrenees where the writer of the account spent a few days at the end of July, 1933.

The *Jr. Soc. Brit. Ent.* has just issued part 2, for the current year. It contains a large number of items on Lepidoptera and Diptera of a few lines each, which would have been far better published in our magazines, and the space occupied by short papers and articles of a few pages each, such as several which are included in the journal:—"Predaceous Diptera and their Prey," by Dr. B. M. Hobby; "What is *Phryganea bicaudata* of Linné?" by K. J. Morton; *Araujia sericifera*, Brot. and its insect Visitors," by C. Nicholson; and "Ejected Dipterous Prey of *Metacrabro quadricinctus*, F.," by G. M. Spooner. These are fine additions to our entomological records.

In the *Ent. News* for May last is a statement backed up by a series of observations that the sex of the migrating American *Danaus archippus* (*plexippus*) is invariably male. One would like to know if all those which reach our own shores are also males. So far of the 5 captured in 1933 2 were ♂s and 1 a ♀.

In the *Int. Ent. Zt.* for September is a plate of specimens more or less pronouncedly gynandromorphic; and in an August number a plate of varietal forms of *Zygaena fausta*.

In several numbers of the *Int. Ent. Zt.* during the past summer, Dr. Bytinski-Salz has been contributing a long article on the Lepidopterous Fauna of the Island of Sardinia, and Dr. Hasebroeck of Hamburg has added further notes on Melanism in the Ruhr, Thuringian and Erze Mts. areas, with detail as to *crepuscularia*, *bistortata*, *doubledayaria* (*carbonaria*), *albingensis*, and other forms.

In Vol. VIII. of the *Bull. Soc. Ent. Bulgaria* (1934) is another article on the Vertical Distribution of Lepidoptera on the Albatus Mts. with enumeration of the species found at the altitudes of 1000m., 1400m., 1600m. and 1800m. The author M. Drenovsky has previously written on this subject and some years ago a similar memoir on vertical distribution in Bulgaria appeared from the pen of, we believe, Dr. Buresch. The remaining articles in this yearly report are original contributions dealing with Coleoptera, Diptera and one on Ants. The matter, being new, is no doubt extremely valuable, but owing to the characters used they must remain a closed book to most of us.

The new publication *Arbeit. Morph. und. Taxon. Ent.* engineered by the indefatigable Dr. Horn at Berlin-Dahlem seems to have found its feet, for No. 3 has already come to hand; about 260 pp. filled with articles dealing with Coleoptera, Diptera, Ichneumonidae, and Hemiptera with many illustrations. That is not the only issue from the same source for a Supplement (Beihefte) has come to hand, the *Proceedings* of the Annual Congress of German Entomologists held in May last. Another volume of 146 pp. We are glad to learn that Dr. Horn is better and able to pursue his tasks with his usual unbounded energy and ability.

Overheard at Oxford.

Lady Visitor: "And what are you interested in?"

Distinguished Entomologist: "Flies."

L.V.: "Good Gracious! How Horrible! And what do you do with them?"

D.E.: "I breed them."

L.V.: "Good Heavens! Arn't there enough already?"

In the June number of *Lambillionea*, M. J. Hackray describes a *Melitaea aurinia* in which on the fore-wings the black wavy line separating the yellow median spots is absent and a wide yellow band is formed dividing the forewings vertically, as ab. *flavofasciata*. He also gives the name *tenuifasciata* to the form of *Erebia ligea* in which the sub-marginal reddish band of the forewings is considerably diminished and that of the hindwings, exists only as fine circles around the ocelli. On the underside this example belongs to the ab. *livonica*, Teich., which shows no trace of whitish.

In the July number of *Lambillionea*, Dr. Mezger names the ♀ *Lycaenopsis argiolus*, in which the forewings are black with a slight

blue reflection, ab. *anteatrata*. And in the Aug.-Sept. number M. G. Durand names as ab. *nigerrima*, a "totally black" *Dyscia fagaria* (*belgiaria*).

In the *Int. Ent. Zeit.* for October is a very interesting article on the close association of *Aglia tau* with the beech. A map of this association indicating the areas of distribution of both is very suggestive. Whereas the beech tree is distributed over a very large area of Europe exclusive of Russia, *A. tau* is found over the whole of Central Europe exclusive of the British Isles, Spain, Italy, Greece and S. France, but extends its range over the Central part of Russia to the Ural Mts. where the beech is stated not to occur.

Another item in an April number of the *Int. Ent. Zeit.* is an article with five plates illustrating and describing the small combs and hair-tufts of the Lepidoptera.

Lambillionea continues each month to issue a photograph plate of aberrations, of species difficult to separate and of local forms of the Lepidoptera which have been recorded or observed mainly in Belgium. During the past six months the following have been so depicted—*Xanthorhøe spadicearia*, Schiff. (*ferrugata*, Stdgr.), *X. ferrugata*, Clrk. and its form *unidentaria*, Haw.; these 6 figures of double size will be a fine reference for definitely separating these species. A treble plate of 30 figures of the upper sides of fifteen named forms of *Plebeius argyrognomon*, Brgstr., 30 figures of their undersides, and a reproduction of Bergstrasser's plate representing his type of the species; an assemblage which would be most difficult for most of us to collect together. Ten figures of *Ennomas quercinaria* with ab. *angularia*, Hb. and ab. *equestraria*, Fb., with an asymmetrical form. Six forms of *Melitaea didyma*. Four forms of *Issoria lathonia*, and a form of *Argynnis aphirape*.

In recent numbers of *Lambillionea* Herr B. J. Lempke continues his thorough and intensive study of the various species of the Rhopalocera occurring in Belgium and the Netherlands. Those species dealt with recently are *Pieris rapae* and *Epinephele* (*Pyronia*) *tithonus*: the large number of references given, are very useful.

The name ab. *intermedia*, has been given to the form of *Euvanessa antiopa* in which the forewings have the blue spots more extended and the border much darkened, while the lower wings do not show blue spots and the yellow border is much extended. Actually on the forewings it is ab. *artemis*, Fisch. and on the hindwings ab. *hygiaea*, Heydr. A red-brown-yellow form of the spring gen. *vernalis* of *Heodes* (*Chrysophanus*) *dispar* ssp. *rutilus*, has been named ab. *brunnea*. It is a union of the ab. *radiata*, Obthr. and the ab. *obsoleta*. Bartel. The name ab. *punctata*, is bestowed on the same species when the upperside of the hindwings shows dots corresponding to the ante-marginal one of the underside. Dr. Mezger in *Lambillionea*, May.

Iris for October contains an account of the life and work of one of the greatest traveller-collector of Germany the late Carl Ribbe, who was born in 1860 and made many journeys to the islands of the Malay from 1883 onward. He also made several collecting visits to Spain. Many of his records are to be found in the pages of *Iris*.

CORRECTIONS.—p. 65 line 8 from bottom for *crantsi* read *brantsi*.
 p. 65 line 3 from bottom for *ugeni* read *uyeni*.
 p. 90 for *credanensis* read *bredanensis*.

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EXCHANGES.

Subscribers may have Lists of Duplicates and Desiderata inserted free of charge. They should be sent to Mr. H. J. TURNER, "Latemar," West Drive, Cheam.

Duplicates.—*S. Andrenaeformis*, Bred 1928, well set on black pins, with data.

Desiderata.—Very numerous British Macro Lepidoptera.—*J. W. Woolhouse, Hill House, Frances Street, Chesham, Bucks.*

Desiderata.—Species of Dolerine and Nematine sawflies not in my collection; list sent.—*R. C. L. Perkins, 4, Thurlestone Road, Newton Abbot.*

Duplicates.—*Albimacula**, *sparganii**.

Desiderata.—Ova of *D.oo. pupae* of *X. gilvago*, *D. caesia*. *A. J. Wightman, "Aurago," Bromfields, Pulborough, Sussex.*

EXCHANGES.—Living Eggs of *Catocala fraxini* and *sponsa*, exchange for butterflies of British Isles.—*C. Zacher, Erfurt, Weimar, Street 13, Germany.*

Duplicates.—*Pyralina**, *Salicis*, *Ianthina**, *Orbicularia**, *Repandata* in variety, *Doubledayaria*, *Black rhomboidaria**, *Black virgularia** and others.

Desiderata.—*Hyale*, *Welsh aurinia*, *Polychloros*, *Tiphon Agathina*, *Lunigera*, *Lucernea*, *Neglecta*, *Diffinis*, *Populeti*, *Gothica v. gothicina*, *White Leporina*, *Tridens Putrescens*, *Littoralis*, *Typhae v. fraterna*, *Rurea v. Combusta*, *Gilvago*, *Fulvago v. flavescens*, *Liturata v. nigrofulvata*. *Harold B. Williams, Woodcote, 36, Manorgate Road, Kingston Surrey.*

Duplicates.—A large number of species of European and Palaearctic *Rhopalocera* and *Heterocera*.

Desiderata.—All British species especially those illustrating characteristics of an island fauna. *Dr. Lor. Kolb, München 54, Dachauer-str. 409, Germany*, and *Franz Daniel, München, Bayer-str. 77, Germany.*

Desiderata.—Urgently wanted for research work at the Royal College of Science, Pupae normal form of *Hemerophila abruptaria*.

Duplicates.—Pupae of *var. fuscata* of the same species offered in exchange.—*J. A. Downes, 5, Trinity Road, Wimbledon.*

I am seeking an opportunity of exchanging Macro- and Micro-Lepidoptera with English collectors and beg to send list of duplicates.—*J. Soffner, Trautenu (Bezirksbehörde), Bohemia, Tschechoslowakische Republik.*

Duplicates.—Well set British Lepidoptera all in perfect condition about 200 species.

Desiderata.—Living larvae: please send list of species obtainable.—*A. Lester, 2, Pembury Road, London, N.17.*

CHANGE OF ADDRESS.—*Rev. C. R. N. Burrows, F.R.E.S., to Stanford-le-Hope, Essex: L. D. Wakeley, to 15, Berkeley Place, Wimbledon, S.W.19: B. C. S. Warren, F.R.E.S., to 3, Augusta Mansions, Folkestone, Kent.*

MEETINGS OF SOCIETIES.

Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. November 21st, December 5th.

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. November 22nd, December 13th.—*Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.*

The London Natural History Society.—Meetings first four Tuesdays in the month at 6.30 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. Visitors admitted by ticket which may be obtained through Members, or from the Hon. Sec. A. B. Hornblower, 91, Queen's Road, Buckhurst Hill, Essex.

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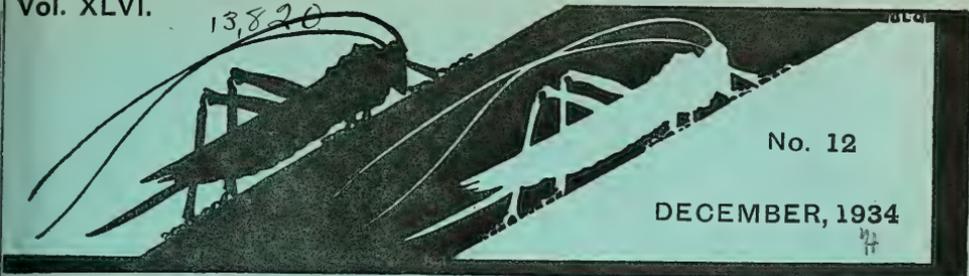
GENUS *Acronycta* and its allies.—Variation of *Smerinthus tiliæ*, 3 coloured plates—Differentiation of *Melitæa athalia*, *parthenie*, and *awelia*—The Doubleday collection—Parthenogenesis—Paper on *Taeniocampidae*—Phylloxera—Practical Hints (many)—Parallel Variation in Coleoptera—Origin of *Argynnis paphia* var. *valesina*—Work for the Winter—Temperature and Variation—Synonymic notes—Retrospect of a Lepidopterist for 1890—Lifehistories of *Agrotis pyrophila*, *Epunda lichenea*, *Heliophobus hispidus*—Captures at light—Aberdeenshire notes, etc., etc., 360 pp.

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MELANISM AND MELANOCHROISM—Bibliography—Notes on Collecting—Articles on VARIATION (many)—How to breed *Agrotis lunigera*, *Sesia sphegiformis*, *Taeniocampa opima*—Collecting on the Norfolk Broads—Wing development—Hybridising *Amphidasys prodromaria* and *A. betularia*—Melanism and Temperature—Differentiation of *Dianthecias*—Disuse of wings—Fauna of Dulwich, Sidmouth, S. London—Generic nomenclature and the *Acronyctidae*—A fortnight at Rannoch—Heredity in Lepidoptera—Notes on Genus *ZYGÆNA* (*Anthrocera*)—Hybrids—Hymenoptera—Lifehistory of *Gonophora derasa*, etc., etc., 312 pp.

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Three "Diptera" Records.

By H. W. ANDREWS, F.R.E.S.

Stomorhina lunata, Fab. (*Idia lunata* of Verrall's List. 1901).

On the 1st September this year (1934) I had the good fortune to capture a ♀ of this rare migrant at Bembridge, Isle of Wight. I can only find two previous records of its capture in this country, *viz.*—One ♂ Christchurch, Hants, taken by Mr. R. C. Bradley in August, 1896: several specimens taken by Mr. F. Jenkinson in 1901, Cambridge, Hendon and the New Forest; as recorded in "British Tachinidae," Appendix B. p. 249 (*Trans. Ent. Soc. Ldn.*, 1928) by Mr. C. J. Wainwright, to whom I am indebted for details of the 1896 record.

In its early stages this species is parasitic on the eggs of the migratory locusts. It has a very wide distribution and is common in France and Central Europe (Seguy, *Mouches Parasites* pp. 189-90). It is a distinctive looking fly (to a dipterist) and in all probability if there were more students of that Order, there would be more records of this migrant visiting England.

Urellia eluta, Mg.

This scarce Trypetid was also taken at Bembridge. Two ♂♂ and two ♀♀ were "swept" on 31st August last amongst a number of *Trypeta serratulae*, L. to which they bear a superficial resemblance in size and general appearance. *U. eluta* however has distinct, though faint, ray-markings at the apex of the wings compared with the clear wing-tips of *serratulae*.

I am informed by Mr. Collin that this is a South European species, which extends up into Central Europe and in this country is probably confined to our Southern coasts. He gave me the following records:—one ♀ Southbourne, August, 1904: one ♀ Beachy Head, July 1914: one ♂ Hengistbury Head, August 1931. The species is not represented in the British collection at South Kensington. In the larval stage *U. eluta* forms galls in flower-heads. I am indebted to Mr. Niblett for a list of host-plants (taken from the records of continental authorities) amongst which the following occur in Britain: *Centaurea nigra*, L., *C. jacea*, L., *Cnicus lanceolatus*, Scop. and *Silybum marianum*, Gärtn.

Tabanus glaucopsis, Mg.

One ♀ at Eynesford, Kent, on 11th August, 1934 and two ♀♀ at Boxhill, 14th August, 1934, all taken by Mr. A. F. O'Farrell, who was good enough to submit the specimens to me for identification, and allow me to record them on his behalf. Both localities appear to be new for this species. I was present when the Eynesford specimen was taken, at one of the Field Meetings of the South London Entomological Society. It was a showery day and the fly was 'beaten' into a Lepidopterist's beating-tray—a curious way of taking a Tabanid. The other two were taken whilst flying around their captor after the usual habit of their kind. This species was formerly one of the rarest of the genus; Verrall, in *British Flies*, Vol. V (1909), could only record three specimens, two from Sussex and one without data, but since then

it has been taken in Berkshire and Hampshire in considerable numbers (vide E. Rivenhall Goffe "British Tabanidae": *Trans. Ent. Soc. South of England*, 1930). Its habitat appears to be confined to woods on the chalk, and the above extension of its range proved by Mr. O'Farrell's captures should encourage dipterists to look out for it in similar situations elsewhere.

All three specimens agree with the form mentioned by Mr. Goffe (*loc. cit.* p. 86, as approaching var. *cognatus*, Lw., having a recurrent veinlet to R_4 on one or both wings.

Lepidoptera at Jaca, Alto Aragon, Spain, in August, 1931 and 1933.

By WM. FASSNIDGE, M.A., F.R.E.S.

(Continued from p. 105.)

PAPILIONIDAE:—*Papilio feisthameli*, Dup.—fairly common. *P. machaon*, L.—a few. *Parnassius apollo*, L.—fairly common on the Peña de Oruel.

PIERIDAE:—*Aporia crataegi*, L.—larval webs common. *Pieris brassicae*, L.—fairly common. *P. rapae*, L.—common. *Pontia daplidice*, L.—fairly common; larvae found on various crucifers. *Anthocharis euphenoides*, Stgr.—a few belated imagines in 1933; larvae not common. *Leptosia sinapis*, L.—rare. *Colias hyale*, L.—fairly rare. *C. croceus*, Fourcr.—common. *Gonepteryx rhamni*, L.—not seen in 1931, a few in 1933. *G. cleopatra*, L.—a few males.

NYMPHALIDAE:—*Limenitis rivularis*, Scop.—fairly rare. *Pyrameis atalanta*, L.—rare. *P. cardui*, L.—not common. *Vanessa urticae*, L.—a few on the summit of Oruel in 1933. *Eugonia polychloros*, L.—empty chrysalids seen. *Polygonia c-album*, L.—rare. *Melitaea phoebe*, Knoch.—in 1933 only. *M. didyma*, Esp.—not common; larval nests common on white scabious. *Melitaea* ? sp.—small larvae fairly common on lower leaves of *Verbascum* in early September. *M. deione*, Hb.—a few. *M. parthenie*, Bkh.—rare. **M. dictynna*, Esp.—rare. **Brenthis dia*, L.—fairly common. *Arymnis lathonia*, L.—rare. *A. aglaia*, L.—fairly common. *A. cydippe*, L. *A. paphia*, L.

SATYRIDAE:—*Melanargia russiae*, Esp. (*japygia*, Cyr.).—very common locally, always high up. **M. galathea*, L.—abundant. **Erebia stygne*, Ochs.—fairly common on Oruel. **E. neoridas*, Bdv.—fairly common from the end of August in 1931, not seen in 1933. Except that the band on the under surface of the hindwings contrasts rather less with the ground colour, these specimens resemble those taken in the Alps. *Satyrus circe*, Fb.—fairly common; seen in good condition 3.ix.33. *S. aleyone*, Schiff.—abundant. *S. briseis*, L.—fairly common; many specimens have the under surface of the hindwings almost unicolorous whitish. *S. senele*, L.—common. *S. arethusa*, Schiff.—very common. *S. statilinus*, Hufn.—common. *S. fidia*, L.—fairly common. *S. actaea*, Esp.—very common; in swarms on the crest of Oruel. *Pararge aegeria*, L.—fairly common. *P. megera*, L.—rare. *Epinephele jurtina*, L. var. *hispulla*, Hb.—very common. *E. lycaon*, Rott.—common. I was unsuccessful in my search for *E. lupinus*, Costa. *E. tithonus*, L.—abundant. *E. ida*, Esp.—rare. *E. pasiphaë*, Esp.—fairly common but worn. *Coenonympha iphiodes*, Stgr.—locally fairly common on the

summit of Oruel in 1933. *C. arcania*, L.—common. *C. dorus*, Esp.—abundant; especially fond of flowers of *Eryngium*. *C. pamphilus*, L.—fairly common, mostly of the form *lyllus*, Esp.

LIBYTHEIDAE:—**Libythea celtis*, Fuessly—one specimen at flowers of *Eryngium*, 10.viii.33.

LYCAENIDAE:—*Laeosopis roboris*, Esp.—two specimens, 3.viii.33. **Thecla betulae*, L.—rare, *Chrysophanus alciphron*, Rott. var. *gordius*, Sulz.—two ♀♀ on Oruel, 6.viii.33. *Rumicia phlaeas*, L.—rare. *Lampides baeticus*, L.—fairly common. *Raywardia telicanus*, Lang.—a few. **Everes alcetas*, Hb. (*coretas*, Ochs.)—locally fairly common: all with only the barest trace of a tail and no sign of red ocelli on under surface of hindwings; ♀♀ sooty black with no blue scales. **E. argiades*, Pallas.—one specimen in 1933. *Plebeius aegon*, Schiff. (*argus*, L.)—rare. *P. argyrognomon*, Bgstr.—rare. *L. baton*, Bgstr.—a few in 1931. *Aricia medon*, Hufn.—very rare. *Polyommatus icarus*, Rott.—common. *P. thesites*, Cant.—very common. *P. hylas*, Esp. (*dorylas*, Esp.)—rare. *P. thetis*, Rott.=*bellargus*, Rott.—rare. *P. aragonensis*, Gerh.—common. *P. coridon*, Poda f. *caelestissima*, Vty.—common; rarely flies with the preceding but more usually rather localised at higher elevations where the ♀ form *syngrapha*, Keferstejn predominates. **P. admetus*, Esp. var. *ripperti*, Bdv.—fairly common; flying with next species. **P. dolus*, Hb.—common; nearly all the specimens are var. *vittata*, Obthr., in which the white streak on the under surface of the hindwings is very distinct. *P. damon*, Schiff.—common but very localised. *Celastrina argiolus*, L.

HESPERIIDAE.—*Adopaea lineola*, Ochs.—fairly common. *A. flava*, Brunn.—fairly common. *Thymelicus actaeon*, Rott.—fairly common. *Urbicula comma*, L.—*Carcharodus lavaterae*, Esp.—rare. *Erynnis alcae*, Esp.—common. *Hesperia carthami*, Hb.—rare and worn. *H. malvoides*, Elw. and Edw.—fairly common. *H. onopordi*, Rbr.—a few. *H. fritillum*, Schiff.—common. *H. alveus*, Hb.—fairly common. *Powellia sertorius*, Hffg.—fairly common. *Nisoniades tages*, L.—two specimens in 1933, still in fair condition.

SPHINGIDAE:—**Herse convolvuli*, L.—common at flowers of *Nicotiana*. *Smerinthus ocellatus*, L.—larvae fairly common. **Mimas tiliae*, L.—larvae abundant. *Amorpha populi*, L.—a few in 1933. *Macroglossum stellatarum*, L.—common. *Celerio lineata*, L. var. *livornica*, Esp.—a few.

NOTODONTIDAE:—**Pheosia tremula*, Cl.—a few. *Pterostoma palpina*, L.—one specimen. **Pygaera pigra*, Hufn.—larvae fairly common.

THAUMATOPEIDAE:—*Thaumatopea pityocampa*, Schiff.—common.

LIPARIDAE:—*Nygmia phaeorrhoea*, Don.—a few. *Liparis dispar*, L. *L. monacha*, L.—fairly common locally.

LASIOCAMPIDAE:—*Malacosoma neustria*, L.—old larval nests of presumably this species seen on hawthorn. *M. castrensis*, L.—one egg ring of presumably this species on a scabious stalk. *Lastiocampa trifolii*, Esp.—a few at light. **L. quercus*, L.—fairly common. **Gastropacha quercifolia*, L.—fairly common. *Macrothylacia rubi*, L.—larvae fairly common.

SATURNIIDAE:—*Saturnia pyri*, Schiff.—a few old pupa cases; one larva. *Eudia pavonia*, L.—one larva.

DREPANIDAE:—*Cilia glaucata*, Scop.—fairly common.

NOCTUIDAE.—*Aconicta megalcephala*, Fb.—rare. **A. aceris*, L.—

two specimens. *A. rumicis*, L.—a few. **Triphaena fimbria*, L.—one specimen. **T. janthina*, Schiff.—a few beaten out from *Clematis*. *Agrotis linogrisea*, Schiff.—one specimen, 2.ix.33. *A. pronuba*, L.—one at light, 7.viii.33. *A. comes*, Hb.—one specimen, 6.viii.33. *A. c-nigrum*, L. *A. xanthographa*, Fb. *A. plecta*, L. *A. puta*, Hb. *A. exclamationis*, L. *A. segetum*, Schiff. *A. saucia*, Hb. **A. obelisca*, Schiff.—seven specimens, det. W. Parkinson Curtis. *A. crassa*, Hb.—fairly common. *Mamestra brassicae*, L. *M. leropacea*, L. *M. trifolii*, Rott. *M. chrysozona*, Bkh. *Dianthoecia carpophaga*, Bkh. *Oligia bicoloria*, Vill. *Bryophila raptricula*, Hb.—rare. *B. algae*, Fb.—a few. *B. muralis*, Forst.—rare. *B. perla*, Fb.—rare. *Apamea testacea*, Hb.—a few at light. *Thalpophila amathusia*, Rbr.—a few at light. *Hadena ochroleuca*, Esp.—a few. *H. secalis*, L. *Heliophobus hispidus*, Esp.—a few. *Polia dubia*, Dup.—one at light, 30.viii.33. *Polyphaenis sericata*, Esp.—one at light, 4.viii.33. *Mania maura*, L.—abundant. *Leucania scirpi*, Dup. *L. putrescens*, Hb. *L. vitellina*, Hb. *L. albipuncta*, Fb. *L. lithargyria*, Esp. *L. exigua*, Hb. *Caradrina clavipalpis*, Scop. *C. blanda*, Schiff. **Stilbia anomala*, Hw.—two at light end August, 1931. These specimens differ somewhat from typical *anomala*, and it has been suggested that they may belong to a closely allied species. Unfortunately I was unable to get more in 1933, and the question remains unsolved. *Lyphoterges millieri*, Stgr.—one at light in 1931. *Epimecia ustula*, Frr.—common. **Calophasia casta*, Bkh.—one at light in 1933. **Cucullia lactucae*, Schiff.—one at light. *Heliothis dipsacea*, L.—common. *H. peltigera*, Schiff.—rare. *H. obsoleta*, Fb. (*armigera*, Hb.)—one specimen. *Acontia lucida*, Hufn. *A. luctuosa*, Esp.—common. *Eublemma blandula*, Rbr.—fairly rare by day among *Genista scorpius*. *E. jucunda*, Hb.—abundant and variable both in size and colour. *E. polygramma*, Dup.—one in 1933. *E. ostrina*, Hb.—rare. *E. pura*, Hb.—rare. *Erastria numerica*, Bdv.—a few worn specimens. *Polythymnia viridaria*, Cl. *Emmelia trabealis*, Scop. *Plusia gamma*, L. *P. ni*, Hb.—one in 1931. *Euclidia glyphica*, L. *Catocala elocata*, Esp.—common. *C. puerpera*, Giorna.—fairly common. *C. nupta*, L.—fairly common. *C. optata*, God.—fairly common. *C. conversa*, Esp.—one specimen.

CYMATOPHORIDAE:—*Cymatophora ocularis*, L.—rare.

GEOMETRIDAE:—*Odezia atrata*, L.—on summit of Oruel. *Pseudo-pteropus pruinata*, Hufn.—one specimen in a spider's web. *P. coronillaria*, Hb.—common. **Chlorissa cloraria*, Hb. (*porinata*, Zell.)—a few. *Euchloris smaragdaria*, Fb., *Thalera fimbrialis*, Scop.—a few. *Hemistola vernaria*, Hb.—beaten from *Clematis*. **Eucrostes herbaria*, Hb.—one specimen, 7.ix.31. *Rhodostrophia calabra*, Pet.—fairly common. *Acidalia rubiginata*, Hufn. *A. marginepunctata*, Göze. *A. submutata*, Tr.—rare. *A. initaria*, Hb.—common. *A. ornata*, Scop. *Cleta vittaria*, Hb.—one specimen in 1931. *Ptychopoda rufaria*, Hb.—fairly common. *P. sericeata*, Hb.—fairly common. *P. moniliata*, Schiff.—one specimen in 1933. **P. subsericeata*, Hw.—fairly common. **P. asellaria*, H.S.—a few. *P. obsoletaria*, Rbr.—a few. **P. incalcarata*, Chrét.—three specimens. *P. herbariata*, Fb.—fairly common. **P. belemiata*, Mill.—one specimen. *P. callunetaria*, Stgr.—a few. *P. elongaria*, Rbr. *P. rusticata*, Schiff.—fairly common. *P. fusco-venosa*, Göze.—a few. *P. degenaria*, Hb.—a few. *P. inornata*, Hw.—one specimen. *P. aversata*, L.—fairly common. *Cosymbia albio-*

cellaria, Hb.—one specimen. *Rhometra sacraria*, L. *Ortholitha chenopodiata*, L. *O. moeniata*, Scop.—common. *O. coelinaria*, Grasl. common. *O. octodurensis*, Favre.—common. **O. bipunctaria*, Schiff.—very common. *Anaitis eiformata*, Gn. *Cidaria fulvata*, Forst. *C. obstipata*, Fb. *C. olivata*, Schiff.—a few. *C. bilineata*, L. *C. galiata*, Schiff. *C. ocellata*, L.—a few. *C. alternata*, Müll. (*sociata*, Bkh.)—one specimen. **Perizoma unifasciata*, Hw.—fairly common. *Cataclysmo dissimulata*, Rbr. *Eupithecia centaureata*, Schiff. (*oblongata*, Thbg.)—a few. *E. sobrinata*, Hb. *E. orphnata*, Bhtsch.; *E. distinctaria*, H.S.; *E. cooptata*, Dietz. *Gymnoscelis pumilata*, Hb. **Horisma vitalbata*, Schiff.—fairly common. **H. tersata*, Schiff.—fairly common. *Abraxas pantaria*, L.—abundant. *Lomographa trimaculata*, Vill. and ab. *cognataria*, Led.—fairly common. **Cabeva exanthemata*, Scop.—one specimen. *Ennomos alniaria*, L. *Opisthographis luteolata*, L. *Macaria liturata*, Cl. *Nychiodes obscurata*, Vill.—two ♂♂ at light. *Synopsis sociaria*, Hb. *Boarmia abstersaria*, Bdv.—fairly common. *Tephronia cremiaria*, Fr.—a few. *T. oranaria* (Stgr.) *castiliaria*, Stgr.—two specimens. *Gnophos obscurata*, Schiff. and ab. *argillacearia*, Stgr.—fairly common. *G. mucidaria*, Hb. **G. pullata*, Schiff.—one specimen at light. *Ematurga atomaria*, L. *Selidosema taeniolaria*, Hb.—common. *Diastictis artesiaria*, Schiff.—fairly common. *Lithina convergata*, Vill.—one specimen. *L. partitaria*, Hb. *Chiasma clathrata*, L. *Tephrosia murinaria*, Schiff.—common in early August. *Onychora agaritharia*, Dard.—three at light in early September. **Aspitates gilvata*, Fb.—fairly common. *A. ochrearia*, Rossi.

(To be concluded.)

The Geometers of Storrington, W. Sussex.

By G. S. ROBERTSON, M.D.

(Continued from page 64.)

Theria (Hybernia) rupicaprvia.—Generally distributed. Common. *Erannis (Hybernia) leucophaea*.—Fairly common. Most named forms. *Erannis aurantiaria*.—Very common locally. *E. marginaria*.—Abundant. *Erannis defoliaria*.—Very common. Most forms. One ab. ♂ *obscurata*. *Alsephila aescularia*.—Common. *Phigalia pedaria*.—Very common. Only slight variation. *Apocheima hispidaria*.—Scarce, locally. *Biston strataria*.—Not common, but well-distributed. *B. betularia*.—Fairly common. All seen were typical, none approaching the darker form. *Hemerophila abruptaria*.—Common. *Boarmia rhomboidaria (gemmaria)*.—Common. No dark forms seen. *B. ribeata (abietaria)*.—Scarce. *B. repandata*.—Common. Varies considerably. Some approach ab. *conversaria*. *B. roboraria*.—Scarce, local. *B. punctinalis (consortaria)*.—Fairly common. *B. lichenaria*.—Fairly common. *Ectropis (Tephrosia) bistortata*.—Fairly common. *E. crepuscularia*.—Fairly common. *E. extersaria (luridiata)*.—Very local. *E. consonaria*.—Scarce. *E. punctulata*.—Common. *Pachytenemia hippocastanaria*.—Abundant, locally. *Ematurga atomaria*.—Very common. Varies considerably. *Bupalus piniaria*.—Fairly common. *Selidosema plumaria (ericetaria)*.—Very local. Scarce. *Itame (Thamnonoma) wanaria*.—Fairly common. *Lithina chlorosata (petraria)*.—Abundant. *Chiasmia clathrata*.—Locally abundant. *Dyscia (Scodiona) fagaria (belgiaria)*.—Locally fairly common. *Perconia strigillaria*.—Not common.

Nomenclature. The List.

By Hy. J. TURNER, F.R.E.S., F.R.H.S.

(Continued from page 119.)

Chrysophanus, Hb. *dispar*, L., becomes *Lycaena*, Fb. *dispar*, L.*Chrysophanus*, Hb., *phlaeas*, L., becomes *Lycaena*, Fb. *phlaeas*, L.

We have shown above that *Lycaena*, Fb. is an impossible name for the "coppers." Tutt in vol. VIII. of *Brit. Lep.* p. 326, by his abundant references to all the genera, which had been used for *phlaeas*, showed that nearly all were definitely preoccupied. Only *Chrysophanus*, Hb. and *Heodes*, Dalm., were doubtfully available, and he proceeded to discuss them. He (Tutt) writes, *l.c.* p. 305.

"Dalman (*Vetens. Acad. Handl.*, pp. 48 et. seq.) named his Phalanx *Zephyrus*, another name that had practically the same comprehensive value as the Linnean *Rurales*, the Schrankian *Cupido* and Latreille's *Polyommatus*," i.e., "Blues," "coppers" and "hairstreaks." He subdivided, however, *Zephyrus*, into the following sections.

Aurotis.—*Z. quercus*, *bétulae*, *pruni*, *w-album*, *ilicis*.*Heodes*.—*Z. hippothoë*, *chryseis*, *virgaureae*, *phlaeas*, *helle*, *jarbas*, *rubi*.*Cyaniris*.—(a) *Z. arion*, *alcon*, *cyllarus*, *argiolus*, *alsus*.(b) *Z. icarus*, *adonis*, *alexis*, *agestis*, *eumedon*, *optilete*, *batus*, *argus*.

On page 63 in his generic summary Dalman gave *betulae* as the type of *Zephyrus*, and as this species occurs in the subdivision *Aurotis* it is given as the type of that. The type of the division *Heodes* is given as *virgaureae*, and that of *Cyaniris*, as *argiannus* (= *semiargus*).

Curtis, *Brit. Ent.* V. pl. 12 (1828), selected *phlaeas* as the type of a species in the original List of Fab. *Illiger's Mag.* VI. 285 (1807) no doubt quite in ignorance of the restrictive action of Oken in 1815. We believe it was real ignorance and not the gymnastic ignore-ance of many modern systematists. Mr. Bethune-Baker says (in litt.) "My father knew Curtis and thought he had a very superficial knowledge of continental literature." Every systematist who breaks up a genus into sections initiates restrictions. Fabricius largely did this and his restrictions are accepted without question and yet Oken's action, in carrying Fabricius' restrictions still further, is ignored. Mr. Bethune-Baker further writes (in litt.) "It seems to me that this attitude ignores the Law of Priority. In my opinion the acceptance of Curtis' designation of *phlaeas* as type of *Lycaena* does the same thing. The Law of Priority is broken to keep the secondary law of Type Designation."

Oken, *l.c.*, designated all the "coppers" as the genus *Hesperia* in error, as Cuvier, *Tab. element.* 592 (1798) and Latreille, *Consid. gen.* 440 (1810) had already restricted the *Hesperia* of Fabricius to the "skippers," hence the action of Dalman, *l.c.* was correct in restricting the "coppers" to *Heodes*.

If we consider *phlaeas* as congeneric with *virgaureae* then we have *Heodes phlaeas*. This agrees with the arrangement of Bethune-Baker as the result of his intensive examination of Lycaenid structure. The following species are placed in *Heodes* by Bethune-Baker (see *Ent. Record* XXVI. 133 et seq. 1914), *virgaureae*, *ottomanus*, *thetis*, *ochimus*, *solskyi*, *lampon*, *asabinus*, *splendens*, *dorcas*, *standfussi*, *sultan(i)*, *sarthus*,

phoenicurus, *dimorphus*, *athamanthis*, and *phlaeas* (*Rumicia*), and *dorilis*, *alciphron*, *amphidamas*, and *subalpina* (*Loweia*), and *thersamon* (*Thersamonea*), and *dispar* and *hippotoë* (*Chrysophanus*). The above list was supplied me by the author subsequently to his article, as we examined photographs of the structures together. Of those which are placed in *Rumicia*, Tutt and *Loweia*, Tutt, he says, "I have examined carefully the species and cannot find a single character whereby to differentiate them from the genus *Heodes* and I have no question in my mind that the names should be sunk to *Heodes*." This remark also includes the consideration of *Chrysophanus*, Hb. of which the species *hippotoë* and *dispar* are "absolutely congeneric with *virgaureae* the type of *Heodes*." The genus *Thersamonea*, Vrtý., is a later restriction by Dr. Verity for *thersamon* (1919). The notes attached to the "List" omit all discussion of *Heodes*, but in "Generic Names" vol. I. it is stated to be unnecessary as its type *virgaureae* is said to be congeneric with *phlaeas* which is there incorrectly placed in *Lycaena*. If lepidopterists think so, it seems quite legitimate to use the sub-generic names, *Rumicia*, *Loweia*, *Thersamonea* and perhaps *Chrysophanus*.

After his remarkable intensive study of *phlaeas*. Tutt felt a new genus was needed for that species and established the genus *Rumicia*, an informative name indicating the foodplant of its larva. And this generic name has been used in this magazine since Tutt's action.

Callophrys, Billberg *rubi*, L. remains *Callophrys*, Billberg *rubi*, L.

Opinion on Billberg's work has been already referred to. To accept the work of an ignoramus like Billberg* and discard the *Tentamen*, the work of a splendid scientist like Hübner, is inexplicable. Scudder chose *rubi* as the type of *Callophrys* and it would seem preferable in view of the dis-reputable character of Billberg's work, to write *Callophrys* (Billberg) Scudder, Kirby or Tutt (*Brit. Lep.* IX. 87). The genus *Callophrys* was well defined and described by Scudder in his *Butterflies of New England* and includes four American species, *affinis*, Edw., *dumetorum*, Bdv., *apama*, Edw. and *sheridanii*, Edw.

* Like all Billberg's generic names, *Callophrys* was totally nondescript and invalid.—T.B.-F.

(To be continued)

NOTES ON COLLECTING, etc.

SECOND BROODS IN 1934.—*Cosymbia* (*Ephrya*) *porata*, 20th August. *Acrioneta rumicis*, 3rd September, *Acidalia imitaria*, 3rd September. These species were taken in South Devon on the above dates and were quite freshly emerged.—(CAPT.) C. Q. PARSONS, Alma Marceau, Seaway Lane, Torquay.

OUR VISITORS.—There has been a good sprinkling of unusual and irregular visitors to our shores during the present season, and some of our more recently discovered residents apparently have settled in more or less firmly. Odd specimens of *Leucania albipuncta* have again turned up. *Sphinx pinastri* seems established locally and *Aphomia gularis* is more than a chance occurrence now; extremely local in London warehouses the latter is a future pest to take note of. A few *Colias hyale* and *C. croceus* were taken in favoured localities. A remarkable occurrence was that of *Brithys crini*, the larvae of which

were found in Kew gardens in the spring, from which later in the year a second brood was obtained. A native of India and Ceylon.

We know of six examples of *Zylophasia zollikoferi* having been taken this year along our coasts. We wonder what form it is. A short note on the species was given in our Supplement to Tutt's *British Noctuae*, Vol. (p. 71) (1891). Barrett, South, Seitz and Culot also deal with it. Tutt named the form which passed through his hands as ab. *pallida* compared with continental forms. Now we want ova and proofs of the species breeding in this country.—Hy.J.T.

MIGRATION NOTES.—I am sending you my records of migratory insects for 1934.

Pieris brassicae and *P. rapae*.—Born common on Lundy Island, 21st-27th July.

Pyrameis cardui.—Seen only once at Ashtead on 25th August.

P. atalanta.—A worn specimen at Ewell on 15th July, seen three times on Lundy Island, 21st-27th July; one at Colley Hill, 18th August; two, Beddington, 19th August; one, Ewell, 25th August; two, Staines, 8th September; seven, Beddington, 23rd September; one, Chessington, 29th September; one, Ewell, 10th October; two, Epsom, 21st October; one, Ewell, 28th October.

Macroglossum stellatarum.—One at Spur Valerian, Ewell, 24th June, and several other times during the summer; one at Eastbourne, 30th June; about a dozen at Spur Valerian, Lundy Island, rather worn, 21st-27th July.

Plusia gamma.—First and last specimens: one, Ewell, 13th June; one at light, Ewell, 28th June; one, Epsom, 6th October.—R. S. R. FITTER.—“Springfield,” Ewell, Surrey.

CURRENT NOTES AND SHORT NOTICES.

In *Lamb.* for October Herr Lempke deals with *Pontia daplidice* and its various subspecies, races, aberrations and forms throughout its range in Europe, Asia and Africa, some three dozen in all. The original descriptions, references, quotations, dates, etc., are very full. In the same number Dr. Arnold Pictet has an article on the subject *Instincts*.

The *Bull. Soc. Ent. de Genève* for 1933, just received, contains the Obituary of Jules Culot, whose wonderfully executed figures of Lepidoptera are quite equal if they are not better than those of the miniature-painter-entomologists of the last century. A capital photograph is appended to the notice. A further article contains descriptions, with a very good plate in colour, of new species from the Belgian Congo.

Really good work is being undertaken by the Section of Entomology of the National Museum of Natural Sciences of Madrid in the publication of useful memoirs on Entomology. These memoirs are not confined to work of their own nationals, for in the journal *Eos* for August one finds contributions from B. P. Uvarov, on the Orthoptera of Turkey, etc.; from M. E. Mosley on the Trichoptera of Kurdistan; from W. E. China, a Reduviid from Iraq; from Schultess-Shindler on the *Vespidae* of Spain and the Balearic Isles. These memoirs are well illustrated.

In the *Ent. Zeit.* for October there are recorded six further examples of Lepidoptera with asymmetrical marking on the wings. Figures are given. They are *Pararge megera*, *Epinephela jurtina*, *Chrysophanus hippothoë*, *Chiasmia clathrata*, *Erebia afer* and *Xanthorhoë montanata*. Unfortunately names have been given to two of them, viz., *divisa*, *Osth.* to *montanata* and *alberti*, *Albert* to *megera*.

In the *Ent. News.* for October, E. T. Cresson, in referring to the "Zoological" Code of Nomenclature points out that under an amendment of 1927 "That any genus erected after 1930 for two or more species without a specifically designated genotype has no status. Consequently anyone subsequently may take the credit for this genus merely by designating a genotype and he may have no knowledge of the group involved. The same may be the fate of a genus or species described if no mention is made as to how it differs from another known or properly described genus or species." Our comment is "What a chance for the gymnastic-minded entomologists."

In the *Ent. Zeit.* for October there is a record of the occurrence of a 3rd generation of *Colias hyale* in the Frankfort-a-Main neighbourhood. The first flew in May and June, the second flew in the latter part of August in small numbers, but completely disappeared in September, but in early October perfectly fresh examples were observed. The same observer had taken the 3rd generation in October, 1915.

We have just received two further parts of the *Supplement* to *Seitz Palaeartic Macrolepidoptera*. They consist of 5 sheets (40 pp.) and 1 pl. and deal with the *Noctuidae*. Between 60 and 70 of our British species are dealt with in these few pages, their forms which have been described since the completion of the Main Volume, are here collected and reviewed, an enormous amount of information chiefly of variations of all sorts. The pages are not packed with biological matter, the recording of which is the rôle of our periodical magazines, although here and there details of such are inserted to aid the emphasis on various determinations. While there is still the opportunity we urge all our Libraries to equip themselves with this encyclopaedia of knowledge, which is not given in our own country's publications, and can only be otherwise obtained by long search in publications of many countries. The intensive study of variation, which the founder of this magazine did so much to further, has reached colossal dimensions, such as he could not have foreseen. The plates contain a well chosen selection of figures and are an excellent aid to the elucidation of the text. Even some of our local and provincial natural history societies aim at obtaining their Seitz. Our South London Society is one that has the Palaeartic volumes and Supplements so far published.

The complete collection of Aculeate Hymenoptera, made by A. H. Martineau, has been presented to the Birmingham Natural History and Philosophical Society for reference purposes. It is in very good order. All the coloured drawings of British Lepidoptera, which were made by the late Foster Newey have also been presented to the Society. The number of species included is large and they are drawn very well, with imagines, larvae and food plants displayed.—P. SIVITER-SMITH.

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By H_r. J. TURNER, F.R.E.S., F.R.H.S

VOL. XLVI. (new series) (1934.)

The Entomologist's Record & Journal of Variation.

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Genera, Species, etc., new to Britain are marked with an asterisk, those new to Science with two asterisks.

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CORRECTION :—P. 122 for “ D. Haynes ” read “ H. Haynes.”

several, about 6, black spots along the costal edge. (Made from a Digne "*argillacea*" so-called.)

The figure by Culot, *N. et G.* I(1). pl. 19, from a Geneva specimen, is somewhat darker in ground which throws out the lighter markings considerably more; the V character is very irregular and much less apparent; the lighter colour is a deeper fulvous; the claviform is present and much emphasized; the submarginal area is divided into three, the central portion is dark, the contracted costal portion and the inner marginal portions are both of the colour of the stigmata. There is a richness about the colour which is not expressed in the Digne example. Presumably this figure represents the *argillacea*, Hb. although it does not quite agree with Hübner's type figure.

Since the above was in print Mr. Tams, of the British Museum, has very kindly sent me the result of his examination of an *andalusica* taken by Brig. Gen. B. H. Cooke, (C. d'Espina, 2,600 ft. 3.vii.27.) He writes, "I send you a photograph of the aedeagus of Gen. Cook's ♂ and you can decide it for yourself where the specimen belongs." "It was coloured like *barrettii* but was a large, fine example." The photograph was, to me, decisive. It was not *luteago* (long-spined) but short blunt spined as *barrettii*. Subsequently Mr. Tams wrote, "I cannot see any other explanation of the facts. There must be two species. The yellow one *luteago* [he includes a diagram of the long sharp spine of that species]; the darker one [he includes a diagram of the short blunt spined species] which includes as subspecies *barrettii* and *andalusica*. But I must do a little more investigation before I can sort out the synonymy." This confirms the findings of both Edelsten and Rayward as to two species.

From the facts so far the specific name is *andalusica*, Stdgr. (1859) with sub.sp. *barrettii*, Dbldy. (1864).

Luperina dumerilii is the next species dealt with by Tutt, but as there seems to be no authentic British examples recorded of late years, even if those many years ago said to be taken in Britain are accepted, it seems scarcely necessary to treat of this species. Neither Tutt nor South had ever seen a British example.

For those who wish to know aught of this species the following references may be of use.

Original Description Dup. *Hist. Nat.* VI. p. 277, pl. XC., f. 4 (1826): Stdgr. *Cat.* 169 (1901): Barrett *Lep. Brit. I.* IV. (1897): Hamps. *Lep. Phal.* VII. 472 (1908): Tutt *Br. Noct.* I. 136, IV. 110.

ab. *desyllesi*, Gn. *Noct.* I. 183, 1852.

r. *diversa*, Stdgr. *Iris.* IV. 284 (1891).

r. *sancta*, Stdgr. *l.c.* IV. 285 (1891).

amentata, Germ. *Fauna*, XXII. 18.

ab. *armoricanus*, Culot, *N. et G.* I(1). 141, pl. XXV. (1909-13).

r. *adriatica*, Stauder *Boll. Soc. Adriat.* XXVII. 159 (1912).

Some twenty years ago Mr. Charles Oberthür sent me a nice series of forms of this species for comparison with our *Luperina guendæi*, since there was a pale form of the species, which on the continent was suspected to be the same as British *L. guendæi*. Dr. Chapman very

kindly examined the genitalia and found the species quite distinct. These pale forms are before me now and show not the slightest similarity of texture to our beautiful British species.

Luperina, Bdv. (1829) Gn. [*Hadena*, Schrnk. (1802) Dup.: *Polia*, Och. and Tr. (1816-25) H.-S.: *Agrotis*, Och. and Tr. (1816-25) Curt., Fr.: *Apamea*, Och.-Tr. (1816-25) Mill.: *Melanchra*, Hb. (1822), Meyr.: *Tholera*, Hb. (1822) Sth., Hamp., Warr.-Stz.: *Neuronia*, Hb. (1822) Sohn.: *Charaeas*, Steph. (1829) Steph., Wood: *Heliophobus*, Bdv. (1829) Barr.: *Epineuronia*, Rbl. (1901) Stdgr., Sprl.] *cespitis*, Schiff. (1775).

This species has been removed from genus to genus by almost every systematist. The genus name *Neuronia* is praecoccupied. Apparently there is no concensus of opinion as to the relationship of this species. Pierce, *Genitalia Noct. Br. Is.*, 38, says, "There is nothing in common with *testacea*, *dumerilii*, or *cespitis*," nor does he indicate the relationship of the last.

Tutt did not take the Original Description, which was the meagre note of Schiff. in the *Verz.* p. 82 (1775), whose description runs "Noctua venosa, the upper wings blackish with yellow toothed line; larva on *Aira cespitosa*, Wasengras." Fab. *Mant.* II. 156 gave a fuller description which was quoted by Tutt. Fab. himself gives the *Verz.* as the original description (*Ent. Sys. Amend.* III(3) 68).

Tutt *Brit. Noct.* I. 136 (1891): Barr. *Lep. Br. Is.* IV. 139, pl. 152 (1897); Stdgr. *Cat.* 155 (1901): Hamps. *Lep. Phal.* V. 218, f. 32 (1905): Sprl. *Schn. Eur.* I. 167, pl. 36 (1905): South *M. Br. I.* 256, pl. 128 (1907): Warr.-Stz. *Pal. Noct.* III. 80, pl. 19h (1909): Culot *N. et G.* I(1). 96, pl. 16, 9 (1909-13).

Ernst. and Engr. *Pap. d'Eur.* (1790) VII. f. 459 give three very fair figures, *a*, a ♂; *b*, a ♀; *c*, underside.

Hüb. gives a good figure of the usual form of the female, fig. 428. In his *Text*, p. 187, he refers it to Ochs. and Tr. who refer it to the *Verz.* Schiff.

Treit. *Schmett.* V. (2). 116, remarks that authors had placed this insect in various positions as to its relationship and notes that in Nature relationship is not expressible in rows, but as a net with connections in many directions.

Wood, *Ind.* (1833) pl. 8 gives a good fig. of *cespitis*, and a figure of Stephen's *confinis*. (121).

Dup. *Hist. Nat.* pl. 102. VI. (VII.) gives a good fig. of the ♀ but the transverse lines are hardly sufficiently margined with lighter colour and the hind-wings not sufficiently suffused.

Hump. and West. *Br.M.* pl. XXII. give a figure too dark and badly shaped with banded hindwings with which I have never met.

Freyer's figures, as H.-S. says, are very bad.

H.-S. *Bearb.* II. 269. says that Hübner's fig. 428 has forewings too short, the stigmata too red; that Freyer's fig. 111 is unrecognisable, the markings are too emphasized, and he puts the *hordei*, Schrnk, as a synonym.

Gn. *Hist. Nat.* V. 164. considers *hordei*, Schrnk, *autumnalis*, Curt. and *confinis*, Steph. as one and the same.

Meyr. *Hand.* 81 (1895), classifies it with *reticulata*, *conspicillaris*, *pisi*, *myrtilli*, etc. and in the genus *Melanchra*, Hb. which he repeats in the *Revised Hand.* (1927-8).

Hamps. *Lep. Phal.* p. 218. has a very poor b. and w. figure; he gives *autumnalis*, Curt. as a synonym.

Splr. *Schn. Eur.* I. pl. 36-7 has a good figure of the ♂.

South M. B. I., I. pl. 128 gives 2 very good figures ♂ and ♀.

Warr.-Stz. places *hordei*, Schrnk., *autumnalis*, Curt., *confinis*, Steph., and *chloris*, Mill., as synonyms of *cespitis*, and *decolor*, Sohn. as a synonym of *ferruginea*, Hofm. only recognising one aberration as did Hampson. They give 2 almost unrecognisable figures on pl. 19h.

Culot, *N. et G.* I(1). 96, pl. 16, 9, gives a very good figure.

Of the Variation Barrett says—"Very rarely variable except in size."

Barrett records an example "having the subterminal line of the forewings broadened out into a white stripe."

The List of Names and Forms to be considered are—

cespitis, Schiff. (1775), *Verz.* 82.

cespitis, Fb. (1787) *Mantissa*, 156.

hordei, Schrnk. (1802), *Fn. Boia.* II(1). 351.

autumnalis, Curt. (1825), *Brit. Ent.* 165. *non-descrip.*

ab. *confinis*, Steph. (1827), *Ill.* II. 109: *Wood Ind.* fig. 121 (1833).

ab. *chloris*, Mill. (1883), *Ann. Soc. Linn. Lyons.* XXIX., 172, pl. 4, 1-2.

ab. *ferruginea*, Hoffm. (1887) *Soc. Ent.* II. 121.

ab. *decolor*, Sohn. (1896) *Soc. Ent.* XI., 115.

Tutt dealt with (1) The *cespitis* of Fab. (*Mant.*); and (2) *confinis*, the very pale form.

hordei, Schrnk, *Fn. Boia.* II(1) 351 (1802).

ORIG. DESCRIPT.—"Silky brownish-black, the bordering of the orbicular, the reniform, and the four curved transverse lines ochre-yellow; the hind-marginal fringes black and ochre-yellow chequered." Münehen.

Schnk quotes *deaurata*, Esp. as a synonym. But *deaurata* is a *Plusia*.

ab. *chloris*, Mill. *Ann. Soc. Linn. Lyon.* (1883) XXIX. 172.

FIG.—*l.c.* pl. 4. f. 1-2.

ORIG. DESCRIPT.—"It is smaller than *testacea* and *nickerlii* and about the size of *dumerilii*. Yet this can never be confused with either of these species, because the forewings of the new *Apamea* are relatively narrower than those of its congeners.

"Forewings, elongate, rectangular, of a clear reddish-grey, with the lines and spots badly marked. The ordinary spots are whitish with a brown centre; they stand on a reddish grey ground. The elbowed line, much turned back on the costa, alone visible, is wide, clear, toothed on both sides; it precedes a series of very small black marks. The fringe is yellow, scarcely interrupted. The lower wings,

of a fleshy white, are without lines. Below, all the wings are of a reddish white and the elbowed line is scarcely visible, yet a black discoidal spot is well marked on the lower wings." Acqui-les-Bains, Italy.

ab. *ferruginea*, Hofm. *Soc. Ent.* II. 121 (1887).

ORIG. DESCIP.—"Head, thorax and forewings red-brown; transverse lines, waved line and stigmata sulphur yellow; hindwings of ♂ almost wholly white, but in the ♀ paler than in the type form." Wolfsberg, Karnten.

Hamp. *Cat. Lep. Ph.* V. 217 (1905) "much paler."—Tyrol, Carinthia.

ab. *decolor*, Sohn. *Soc. Ent.* XI. 115 (1896).

ORIG. DESCIP.—"The black-brown ground, which is usually invariable in *cespitis*, in var. *decolor* varies from a dark ochre-brown to a quite pale yellow-brown. The paler the specimens are, the more obsolescent the markings so that the palest examples are almost without markings. In the last there only remains, as a single characteristic, the pale margining of the stigmata. The hindwings in these specimens are quite white as far as the very fine yellow-grey outermargin."

"The variety occurs in both sexes and is almost as common as the typical form, which occurs with it. It seems to be generally distributed in the country south of the Brenner and Meran."

Luperina, Bdv. (1829) Gn., Newm., Meyr., Barr., Hamp., Warr.-S. [*Apamea*, Ochs. and Tr. (1816-25) H. S., Led., Stdgr., Splr., Cul.; *Trachea*, Ochs. and Tr. (1816-25); *Polia*, Tr. (1816-25) H.-S.: *Hama* Steph. (1829)] *testacea*, Schiff. (1775).

Tutt took Hübner's fig. 139 as the type, whereas early authors went back to the *Verz.* of Schiff. (*cf.* Illiger, Treit., Werneb., etc.).

The Original Description, such as it is, was—

testacea, Schiff. *Verz.* 81 (1775).

ORIG. DESCIP.—"Larvae Terricolae: with pale or distinct orbicular and reniform stigmata: the sand-coloured Noctua with small stigmata." Illiger quotes this last phrase, *Verz.* IIed. I. 261 (1801).

Tutt, *Ent.* XXII. 206 (1889): *Brit. Noct.* I. 137 (1891): Barr. *Lep. Br. Is.* IV. 336, pl. 173 (1897): *Stdgr. Cat.* IIIed. 168 (1901): *Splr. Schm. Eur.* I. 186, pl. 39 (1905): South, *M. Br. Is.* I. 267, pl. 128 (1907): Hamp. *Lep. Phal.* VII. 471 (1908): Culot *N. et G.* I(1). 140, pl. 25 (1909-13): Warr.-Stz. *Pal. Noct.* III. 185, pl. 43c. (1911).

Ernst. and Engram. *Pap. d'Eur.* VII. fig. 451 has given a very good figure of the sand-coloured form. In the text they say it is the *sordida* of the *Verz.*

Hüb. *Saml.* 139 (1802) gives a good figure, but of a darker tint than the common sand brown of our average British form. The hindwings are not sufficiently sand tinted and the wings are, if anything, somewhat too short.

Haworth, *Lep. Brit.* 194, says that his *lunato-strigata* scarcely differs from his *unca*, and that his *x-notata* is very close to *lunato-strigata*.

Dup. *Hist. Nat.* VI. pl. 81 has a very good somewhat dark figure.

H.-S. says Hb's. fig. has wings too short.

Guenée *Noct.* 182 gives reference to Schiff., *Verz.*

Newman. *Brit. M.* 296, fig. has much too great a contrast between central band and ground colour. I have not seen a specimen like it.

Meyrick, *Hand.* 112 (1896) placed *gueneei*, Dbldy. and *nickerlii*, Frr., as synonyms. In the 1927-8 edition *nickerlii* = *gueneei* is separated as a species.

Warr.-Seitz. *Pal. Noct.* III. gives five good figures all somewhat dark and hardly represent the forms we are accustomed to meet. They do not recognise *lunatostrigata* as being different from the typical form.

Culot. *N. et G.* I(1), pl. XXV. gives five figures: 11 a very good figure of the sand-coloured form; 12 a pale ochreous form ab. *ochreopallida*; 13 a dark banded form in which the band is blackish with stigmata of the ground colour ab. *bicolor*; 14 the dark brown form approaching Hübner's figure, called ab. *obscura*; 15 ab. *pallescens* a very pale form with faint ochreous tint. All the figures are very good.

Of the Variation Barrett says "Not a very variable species inland, but on the coast, and especially on the western coasts it is quite otherwise. The range of ground colour there is from the palest drab or even brownish white marbled with pale brown, to blackish umbreous with or without central blacker markings; the central black bar above the dorsal margin is usually faint or even absent in the palest forms, yet occasionally large and strongly marked; in the darkest it sometimes becomes a black rectangular blotch.

"In the South of Ireland a more uniformly dark race is accompanied by normal specimens and also by a curious mealy looking, grey-brown variety, and in the female by deep umbreous forms.

"In all the variations the colour of the thorax coincides with that of the forewings."

Stephens, *Ill.* III. 5, says of the Variation:—"Some examples are of a deep fuscous or rufescent tinge, clouded with black, with two strigae, and a marginal fascia dusky; others are very pale testaceous, scarcely clouded, with a deep black mark in the centre of the wings resembling the letter X, with an arcuated striga of black lunules behind the middle:—while some are nearly immaculate."

Barrett records the following forms.—

1. On the Irish coast. "A smooth uniform dark brown without mottling of either paler or darker, but with the stigmata and subterminal line tinged with yellow."

2. From Ireland. "Two female specimens in which the forewings are singularly striped between the nervures with yellow."

3. A male in which the forewings "are wholly ochreous, the

markings only faintly deeper yellow-brown; and another of the usual pale umbreous but with the hindmargin black brown."

4. A female "of a uniform dark umbreous except that the first, second, and subterminal lines are pale yellow."

List of Names and Forms to be considered.—

testacea, Schiff. *Verz.* 81 (1775).

[*sordida*, Schiff. *Verz.* 81 (1775)].

[*testacea*, Hb. *Samml.* 139 (1802)].

ab. *lunato-strigata*, Haw. *Lep. Brit.* 194 (1809):

ab. *unca*, Haw. *l.c.*

ab. *x-notata*, Haw. *l.c.*

ab. *gueneei*, Dblidy. *Ent. Ann.* X. 123 (1864).

[ab. *obsoleta*, Tutt. *Ent.* XXII. 206 (1889)].

ab. *cinerea*, Tutt. *l.c.* 207 (1889).

ab. *nigrescens*, Tutt. *l.c.*

[ab. *incerta*, Tutt. *Brit. Noct.* 139 (1891)].

ab. *ochreo-pallida*, Culot, *N. et G.* I(1). 140, pl. 25 (1909-13).

ab. *pallescens*, Culot, *l.c.*

ab. *bicolor*, Culot, *l.c.*

ab. *obscura*, Culot, *l.c.*

ab. *irritaria*, Bng.-Hs. *Iris.* XXVI. 146 (1912).

ab. *scotiae*, Strnd. *Arch. Natg.* LXXXI. 155. abt. A. Heft. 11 (1915).

Tutt dealt with (1) typical *testacea*, Hb. (2) the ashy-grey *cinerea* with distinct markings. (3) the blackish grey with indistinct markings, *nigrescens*. (4) Greyish, tinged reddish or brown; striga beyond reniform made of lunules, *lunato-strigata*. (5) Greyish tinged red or brown; with hook-mark under stigmata, *unca*. (6) ditto with mark X-shaped, *x-notata*. (7) the dark variegated form *gueneei* = var. A of Guenée, *Noct.* V.

The *sordida*, Schiff. was early put to *testacea* but wrongly. The forms *obsoleta*, Tutt, and *incerta*, Tutt, belong to another species.

ab. *pallescens*, Culot, *Noct. et G.* I(1). 140 (1909-13).

FIG.—*l.c.* pl. XXV. 15.

ORIG. DESCIP.—"Very pale."

ab. *ochreo-pallida*, Culot, *Noct. et G.* I(1). 140 (1909-13).

FIG.—*l.c.* pl. XXV. 12.

ORIG. DESCIP.—"A clear sandy brown."

ab. *bicolor*, Culot, *Noct. et G.* I(1). 140 (1909-13).

FIG.—*l.c.* pl. XXV. 13.

ORIG. DESCIP.—"The median area of the fourwings is of a deeper ground than the basal and hind-marginal portions."

ab. *obscura*, Culot, *Noct. et G.* I(1). 140 (1909-13).

FIG.—*l.c.*, pl. XXV. 14.

ORIG. DESCIP.—"A uniform obscure brown."

var. *irritaria*, Bng.-Hs. *Iris.* XXVI. 146 (1912).

ORIG. DESCIP.—"From Batna (Algeria) there came a number of male examples (and one female), which by their essentially lighter,

mostly yellowish white to dusty grey colour and weaker, sometimes almost wholly suppressed markings are distinguished from the stronger built dark grey-brownish coloured central European *testacea*."

ab. *scotiae*, Strand. *Arch. Natg.* LXXXI. 155, abt. A. Heft. 11 (1915).

ORIG. DESCIP.—"Much darker brown."—Scotland, Hamp. *Lep. Phal.* VII. 471 (1908). Strand named Hampson's description.

Luperina nickerlii, Freyer (erroneously recorded as *gueneei*, Dbldy.)

There has been the utmost confusion over this insect form.

In 1864 Doubleday described in *Stainton's Annual*, p. 123, for that year a form of *testacea* under the name of *gueneei*. This, Guenée himself recognised as the same form as that described by him as var. A. of *testacea* in *Noct.* I. 182 in 1852.

In 1889 South identified some specimens sent to him by Baxter of St. Anne's-on-Sea, Lancashire as a form of *testacea*, *Ent.* XXII. 271, as being intermediate between the *gueneei* form of Dbldy. and the *nickerlii* of Freyer, and named them *testacea* var. *nickerlii*. A curious intuition of a relationship which subsequently has been proved.

In 1891 Tutt *Ent. Record*, II. 20-1, discussed this new form and tried to prove that it could not be *nickerlii*. Subsequently in the same year in *Brit. Noct.* I. 140, Tutt gave the name *incerta* to the form taken at St. Annes-on-Sea, which he was unable to identify with *nickerlii* and included it "as a simple var. of *testacea*."

In 1909 South, *Ent.* XLII. 289, received further examples from Lancashire and with the aid of the examination of their genitalia by Mr. F. N. Pierce, showed that they were not *testacea*, but strangely, he identified them with Doubleday's *gueneei*, which had always been identified as Guenée's var. A. of *testacea*.

In 1911 Turner, *Ent. Rec.* XXIV. 17 et seq. in much detail, and with the aid of Dr. Chapman and a considerable and varied series of the silvery grey forms, definitely showed that they were not *testacea*, and that their genitalia agreed exactly with those of *nickerlii*. Thus proving that this Lancashire form was a subsp. of the continental *Luperina nickerlii*. But, incredible as it seems, he retained the name *gueneei*, for which there was no evidence whatever, as *gueneei* had always been identified as a form of *testacea*, and ignored the fact that these silvery grey specimens had been named *incerta* by Tutt. (*Brit. Noct.* I. 139 in 1891.)

Before me lie the preparations of the genitalia by Dr. Chapman, a good and varied series of *incerta*, a series of *nickerlii* sent me by M. Chas. Oberthur, one of the actual specimens of *nickerlii* from the collection of Nickerl, kindly sent to me by Herr Carl Höfer, a series of the pale forms of *testacea* and var. A. also from M. Oberthur, all of which go to confirm the results.

Thus it is seen that *incerta*, Tutt, is the real name of our British subsp. of *nickerlii* and that the name *gueneei* has been all along mis-

applied to it. The name *gueneei*, Dbldy, really applies to a pale form of *testacea*, which is the var. A. of *Guenee*.

The *gueneei*, Dbldy, were taken in Wales. Tutt (*Brit. Noct.* I. 139) refers an insect beaten at Abbot's Wood to this. In no way do the beautiful silvery grey insects resemble any form of *testacea*, which I have seen or of which I have seen figures.

For those who wish to go over this investigation again the following Bibliography is quoted from the *Ent. Record* XXIV. 87 (1912).

1845. Freyer *N. Beitr.* V. 140, pl. 466.—*nickerlii*. (Orig. Descrip).
 1845? H.-S. *Bearb.* II. Addenda p. 56, pl. CXI. fig. 565.—*nickerlii*.
 1852. Guenée *Noct.* V. 182, 183.—*testacea* var. A. and var. B.
 1861. *Stdgr. Cat.* Ied. 332.—*nickerlii* and *testacea* v. *gueneei*.
 1863. Graslin *Ann. Soc. ent. Fr.* 309, pl. 8.—*nickerlii*.
 1864. Dbldy. *Stain. Ent. Ann.* X. 123-4.—*gueneei*. (Orig. Descrip.)
 1871. Newman *N. H. Brit. Moths* 297.—*gueneei*.
 1871. *Stdgr. Cat.* IIed. 98.—*nickerlii* and *testacea* var. *gueneei*.
 1885. Hodgkinson *Ent.* XVIII. 54.—*gueneei*.
 1889. Tutt *Ent.* XXII. 206-7.—*testacea* var. *gueneei*.
 1889. *South Ent.* XXII. 271-2.—*testacea* var. *nickerlii*.
 1891. Tutt *Ent. Record* II. 21-29.—*testacea* var. *nickerlii*(?).
 1891. Tutt *Brit. Noct.* I. 138-140.—*testacea* var. *gueneei* and var. *incerta*.
 1897. Barrett *Brit. Lep.* IV. 335, pl. 173.—*gueneei*
 1901. *Stdgr. Cat.* IIIed. pt. 1, 168.—*nickerlii* and var. *gueneei*.
 1908. *Obthr. Bull. Soc. ent. Fr.* 322.—*graslini*.
 1908. *Hamps. Lep. Phal.* VII. 469.—*niccerli* (sic).
 1909. *South Ent.* XLII. 269-70.—*nickerlii*, ab.
 1909. *South Ent.* XLII. 289-92.—*gueneei* ab. *baxteri*.
 1910. Banks *Ent.* XLIII. 75-8.—*gueneei*.
 1911. Turner *Ent. Record.* XXIII. 53 :—*gueneei* (= *incerta*), 89 :—
 ab. *murrayi*, ab. *fusca*, ab. *minor*, 171 :—ab. *iota* ; 201, pls. III., VI.,
 VII., VIII., IX.
 1911. Porritt *E.M.M.* XLVII. 204, pl. III.—*gueneei*.
 1911. Pierce *Ent. Rec.* XXIII. 269-70.—*gueneei*.
 1912. Turner *Ent. Rec.* XXIV. 17-87.—*nickerlii* var. *gueneei* (= *incerta*) and var. *graslini*.
 1909-13. Oberthur-Culot *N. et G.* I(1). 140, pl. XXV. 10.—r.
powelli.

The Names and Forms to be considered are :—

nickerlii, Freyer (1845) *Neu. Beitr.* V. 140, pl. 466.

ssp. *incerta*, Tutt (1891) *Brit. Noct.* I. 140.

ssp. *graslini*, *Obthr.* (1908) *Bull. Soc. ent. Fr.* 322.

ab. *baxteri*, South (1909) *Ent.* XLII. 289.

ab. *murrayi*, Turn. (1911) *Ent. Rec.* XXIII. 89.

ab. *fusca*, Turn. (1911) *l.c.*

ab. *minor*, Turn. (1911) *l.c.*

ab. *iota*, Turn. (1911) *l.c.* 171.

r. *powelli*, *Obthr.-Culot.* (1909-13) *N. et G.* I(1). 140, pl. XXV. 10.

Of these the only one Tutt dealt with was the beautiful silvery grey form of the St. Anne's on Sea coast under the name *incerta*, and

15.iii.34.

subsequently inexplicably mixed, muddled and confused with the var. *gueneei*, Dbldy. (= var. A. of Guenée.) In this error I fear that much blame attaches to myself personally.

There is a similarity of continental *nickerlii* with *brassicae* except in size, an opinion Herr.-Schäf. strongly held. (See note on p. 271 in Addenda to p. 56 of *Sys. Bearb.* vol. II.)

nickerlii, Freyer. *Neu. Beitr.* V. 140 (1845).

FIG.—*l.c.* pl. 466.

ORIG. DESCRIP.—“Of the size, shape and nearly the markings of *echii*. But nearest in colour and marking to *testacea*. The thorax and the forewings are reddish grey, the latter with the usual three waved transverse lines, which on the costa terminate in triangular white spots. In the disc stands the very distinct white reniform with darker central area. The orbicular is very small, also white, with darker centre. The claviform is black-brown, and extends into a similarly coloured, shaded streak, which extends to the second waved line or band, as is the case in most of the *Apamea*. The last white transverse line before the fringes is darkest from the middle to the inner margin on the outer side, and it commences behind the apex of the wing. The fringes are brown in which the veins terminate in white points. The abdomen is dusky white; the hindwings are pure white with a discoidal, and dark shading on the fringes. The underside is quite white. The forewings are suffused with brown scaling from the costa to the middle of the wing. Only the reniform and the outer line come through paler. The fringes are here chequered brown and white. The hindwing shows traces of a very obsolescent discal spot.”

The figure is a very poor and superficial one. All the markings much too formal and of it H.-S. says “utterly useless.” His own figure he says has the wings too short.

ssp. or f. *graslini*, Obthr. *Bull. Soc. ent. Fr.* (1908) p. 323.

ORIG. DESCRIP.—“I distinguish it by the following characters: (1) from *testacea*; the upper wings are longer, and the upperside more grey, not brown; the lower wings above are of a purer white; all the four wings are whiter below; (2) from Bohemian *nickerlii*, by the shape of the wings being still longer, and the tint of the forewings and of the hairs on the thorax being ashy grey and not of a brown which is still warmer and deeper in *nickerlii* than in *testacea*.” Pyrenées-Orientales.

“The var. *gueneei* of *testacea* (var. A. of Guenée *Noct.* V. 182) must not be confused with *graslini*, it is a very pale form of *testacea*.”

ab. *baxteri*, South, *Ent.* XLII. 290 (1909).

FIG.—*l.c.* pl. VII. figs. 3-4.

ORIG. DESCRIP.—“Ground colour paler, and without the ochreous tinge of *gueneei* [= *incerta*, Tutt]. The black edging of the whitish transverse lines varies in intensity, but in 2 of the 6 specimens this is inconspicuous; the reniform stigma is more or less outlined in white, but this character is less evident than in *L. nickerlii*. The fringes are pale, chequered with dark grey, their tips sometimes dotted with blackish. In two females a blackish bar extends from the claviform stigma to the

postmedial line, and in these specimens the area beyond the white submarginal line is pale, almost whitish. White dots on the costa between the post-medial line and the apex are present in some of the specimens." St. Anne's-on-Sea.

ab. *murrayi*, Turn. *Ent. Rec.* XXIII. 89 (1911).

FIG.—*l.c.* pl. III., figs. 5-6.

ORIG. DESCIP.—"In texture, general depth of colour and in markings, it is quite of the typical form, except that the submarginal area, between the dark marginal lunules and the submarginal line, is much paler than any other part of the wing, by contrast throwing out the dark lunules very conspicuously." St. Annes-on-Sea.

ab. *fusca*, Turn. *Ent. Rec.* XXIII., 89 (1911).

FIG.—*l.c.* pl. III. f. 1-2.

ORIG. DESCIP.—"Has all the markings exactly as in typical *gueneei* [= *incerta*, Tutt], except that it is a melanic form. All the markings are much intensified, and even the ground colour is darker. The increased sharpness of the darker markings, in contrast with the ground colour emphasises the contrast, and tends to make the specimens appear darker when looked at with the naked eye, than when the contrast is registered by means of the photographic lens. The general colour is a very dark grey, with, in good light (day), faint flushes of a ferruginous tint in the discal area. There is no trace of the ochreous tinge apparent in many of the typical forms, nor does the pale ground colour appear." St. Anne's-on-Sea.

ab. *minor*, Turn. *Ent. Rec.* XXIII. 89 (1911).

FIG.—*l.c.* pl. III. f. 8.

ORIG. DESCIP.—"A much smaller form. Quite typical in coloration. The one I have before me measures 29mm." Lytham, etc.

ab. *iota*, Turn. *Ent. Rec.* XXIII. 171 (1911).

ORIG. DESCIP.—"Mr. Baxter has just forwarded me an example in which this — mark is distinctly present, but he says it is a very rare aberration. In *testacea* it is practically always present."

r. *powelli*, (Obtbr.) Culot. *Noct. et G.* I(1). 140 (1909-13).

FIG.—*l.c.* pl. XXV. 10.

ORIG. DESCIP.—"A rosy tint, which suffuses the whole surface of the forewings above." S. Oran.

NOTE.—On plate III. *E.M.M.* (1911) fig. 4, p. 204, T. R. Porritt gives a coloured figure of *gueneei* [*incerta*] of a colour, which is quite erroneous. I have never seen a specimen of the rich brown ground. All those with which I have met are shades of dove colour, even ab. *fusca* has no rich brown in its duskiness. In the figure brown is the dominant colour, which is never so in the average *incerta*. [The name *incerta* was still ignored.]

Grammesia, Steph. (1829) Dup., H.-S., Barr., Splr., Cul. [*Caradrina*, Treit. (1816-25) Bdv. Mey. : *Meristes*, Hb. (1822) Hamp., Warr.-Stz.] *trigrammica*, Hufn. (1767).

Tutt. *Brit. Noct.* I. 140 (1891): *Barr. Lep. Brit. Is.* V. 295, pl. 222 (1899): *Stdgr. Cat.* IIIed. 195, (1901): *Splr. Schm. Eur.* I. 229, pl. 43 (1906): *South Moths. Brit. Is.* I. 314, pl. 151 (1907): *Hamps. Lep. Phal.* IX. 152 (1909): *Culot N. et G.* I(2). 45, pl. 46 (1909-13): *Warr.-Stz. Pal. Noct.* III. 229, pl. 46i. (1911).

Ernst. and Engr. *Pap. d'Eur.* VI. fig. 344 (1788), give two admirable figures of *evidens*, Thunb. each with 4 transverse lines very well expressed. The ♀ has darker lower wings. The authors give it as a form of *trigram(m)ica*.

Esper, *Schm. Abbild.* IV. pl. CXXIII. (1786), gives a good figure of the typical form and on page 335 points out that Thunberg only with doubt considers his *evidens* as the *quercus* of Fabricius, and that Gmelin in his *Ent. Linn.* considered there were actually two species and renamed the *quercus*, Fb. as *quercicola*.

Hüb. *Saml.* fig. 216, (1802), is a very good one, light ochreous with 4 transverse dark lines lying in narrow whitish bands. The basal line not quite complete to the inner margin. It is called *trilinea*. Fig. 217 is of darker ground with a dark fuscous discal band. There are four lines as in fig. 216, with wider narrow bands but the 3rd line across the disc is emphasised black and does not lie in a pale band. The basal line is curtailed similarly to that in fig. 216. It is called *bilinea*. Both names are quite inapplicable. They are not mentioned in the text.

Dup. *Hist. Nat.* VII. pl. 107 (1827), gives a good figure of *trilinea* with hindwings rather dark. He mentions the different names which have been given to it.

Wood. *Ind.* pl. 10 gives fig. 192 and fig. 193 (1834), *trilinea* and *bilinea* both good, the former hardly light enough generally.

Freyer (1839) *N. Beitr.* III. pl. 226 *trilinea*, has a very plainly marked figure of a very light sandy ground with the basal line only half length, but with very dark dove-coloured hindwings. It is referred to Hb. 216.

H.-S. *Bearb.* II. 194 (1846), says that fig. 216 of Hb. *trilinea*, is too dark, and that the dark coloured portion of fig. 217 *bilinea* is wholly wrong, the basal portion of the discal area is not dark. In fig. 398 *bilinea*, H.-S. has the discal line very distinctly black, the basal line very obscure. In his text he says "media obsoleta." He treats them as separate species.

Splr. Schm. Eur. pl. 43 (1906), has a very fair figure, obscured of course by the method of reproduction.

South M. Brit. I. I. pl. 151 (1907) gives three good figures. 1. typical; 2. *semifuscana*; 3. *bilinea*.

Warr.-Stz. Pal. Noct. III. 229, pl. 46i (1911), gives six figures (1) typical, (2) *evidens*, (3) *perrufa*, (4) *obscura*, (5) *pallidalinea*, (6) *semifuscana*. He places *trilinea*, Schiff. and *quercus*, Fb. as synonyms of *trigrammica*; *obscura*, Tutt as the same as *bilinea*, Haw. (nec. Hb.); *pallidalinea*, Tutt as the *pallida*, Tr. (nec. Hb.). The figures are all good.

Culot. N. et G. I(2)., pl. 46 has two excellent figures, *trigrammica* and *bilinea*. He points out that in all *bilinea* he has met with the median line is more or less in evidence and that the name is inexact.

- The Names and Forms to be dealt with are :—
- trigrammica*, Hufn. (1766) *Berl. Mag.* III. 408.
- trilinea*, Schiff. (1775) *Verz.* 84. Syn. Hb. *Saml.*, fig. 216.
- quercus*, Fab. (1775) (1781) *Sys. Ent.* Syn.
- f. *evidens*, Thunbg. (1784) *Ins. Suec.* I. 2. [*Dissert.*, Borgstr.] Ernst. and Engr. *Pap. d'Eur.* VI. fig. 344.
- notacula*, Fab. (1788) *Mant.* II. 138. Syn.
- quercicola*, Gmel. (1788) *Linn. Sys. Nat.* I(5). 2535. Syn.
- ab. *bilinea*, Hb. (1802) *Saml. Noct.* 217.
- ab. *approximans*, Haw. (1809) *Lep. Brit.* 249.
- ab. *semifuscana*, Haw. (1809) *l.c.* South *M.B.I.* pl. 151.
- ab. *bilinea*, Haw. (1809), *l.c.* = *obscura*, Tutt.
- ab. *bilinea*, Treit. (1825) *Schm.* V(2). 275. = *pallida-linea*, Tutt.
- ab. *obscura*, Tutt (1801) *Brit. Noct.* I. 142. (*bilinea*, Haw.) Warr. Stz. *Pal. Noct.* III. pl. 46i.
- ab. *pallida-linea*, Tutt (1891) *l.c.* (*bilinea*, Tr.) Warr.-Stz. *Pal. Noct.* III. pl. 46i.
- ab. *fringsi*, Schultz. (1898-9) *Soc. Ent.* XIII. 153.
- f. *erubescens*, Trti. (1909) *Nat. Sicil.* XXI. 103, pl. VI. 11.
- ab. *perrufa*, Warr. Stz. (1911) *Pal. Noct.* III. 229, pl. 46i.
- ab. *convergens*, Wihan. (1917) *Soc. Ent.* XXXII. 4.
- ab. *basivoluta*, Wihan. (1917) *l.c.*
- ab. *oculata*, Wihan. (1917) *l.c.*
- ab. *fasciata*, Kromb. (1920) *Int. ent. Zt.* XIII. 180.
- ab. *albescens*, Lenz. (1927) *Schm. Sud-Bay.* II. 304, pl. XV. 18.
- ab. *brunnea*, Lenz. (1927) *l.c.*
- ab. *renata*, Lenz. (1927) *l.c.* pl. XV. 20.
- ab. *quadrigrammica*, Lenz. (1927) *l.c.*

Tutt dealt with (1) The typical grey form of Hufn. with three perfect transverse lines. (2) *evidens*, Thunbg. (Borg.) the ochreous form. (3) *approximans*, Haw. the 2nd and 3rd lines approaching on the inner margin. (4) *semifuscana*, Haw. with the outer half of wing reddish and darker than the basal half. (5) *bilinea*, Hb. a distinctly banded form, in fact the name and figure do not agree. (6) *obscura*, Tutt = *bilinea*, Haw. the most unicolorous dark smoky-grey form, with 2 more or less distinct lines. (7) *pallida-linea*, Tutt = *bilinea*, Tr. dark ashy grey, with a broad central band and a dark shade across it.

Gmelin. *Linn. S. Ent.* Iv. 2535 describes *evidens*, Borgstr. *Ins. Suec.* I. 2. "Alis griseis: strigis quatuor fuscis." "Tota flavescens, nigro irrorata, *quercicolae* valde affinis."

The author of *evidens* was Thunberg in *Diss. Ent.* of which Borgstrom was editor.

The ORIG. DESCRIPT. by Thunberg was "Laevis alis incumbentibus griseis: strigis quatuor fuscis." (It is referred to the *quercus*, Fb. *Sp. Ins.* II. 214 with a ?). "Tota grisea seu flavescens punctis minutissimis, vix conspicuis nigris adpersa." "Supra fasciis quatuor, tenuibus, nigris, prima in ipsa basi vix observanda, secunda ante medium obliqua, tertia in medio recta, quarta pone medium extus curvata. Puncta nulla ordinariis. Subtus fascia unica et punctum nigrum."

Gmelin. *l.c.* describes his *quercicola*, "Alis griseis; strigis tribus fuscis," and refers it to Fab. *Sp. Ins.* and *Mant.* and to Schiff. *Verz. trilinea*.

15.iv.34.

Goeze, *Beitr.* III(3). treats *quercus*, *trigrammica* and *trilinea* as three separate species (1781).

Fab. *Ent. Sys. em.* III(2). 22 (1794) refers his *quercus* (*Sys. Ent.*) to *trilinea*, Schiff. and to *evidens*, Thunb. He describes it as "Laevis alis incumbentibus griseis: strigis tribus fuscis." "Alae obscure griseae strigis tribus fuscis absque maculis ordinariis."

Fab. *Ent. Sys. em. l.c.* described his *notacula* (1788) "laevis alis incumbentibus cinereis; stigmatibus tribus inter strigas duas flavescentes." "Alae anticae cinereas striga baseas abbreviata, flavescente, ante medium striga altera et pone medium striga tertia, flavescentes. Stigmata tria in medio; posteriori majori, reniformi. Posticae supra fusciscentes."

No subsequent author deals with the *notacula* of Fab. which appears to be a form of *trigrammica*, possibly the *evidens* of Thunberg (Borgström).

Illiger. *N. Ausg. Verz.* I. 290 (1801) referred to the *trilinea*, Schiff., *quercus*, Fb., *trilinea*, Bork., and *trigrammica*, Esper.

Haw., *Lep. Brit.* 249 (1806-10) makes four species (1) *trilinea*, which he refers to Hb., 216 and to the *quercus*, Fb. (2) *approximans*. (3) *semifuscana*, and (4) *bilinea*, which he refers to Hb. 217.

Treit *l.c.* V(2) 275, says his *bilinea* is the same species as Hübner's fig. 217, which he says is unrecognisable as such, both in colour and marking.

Steph. *Ill.* II. 152, 1829, treat it as two species, *trilinea*, Schiff. and *bilinea*, Hb. Of the former he gives (1) with the two central lines approaching on the inner margin, and (2) with the basal half pale and outer portion deep ashy or rufous brown, with central striga very stout.

Most of the early authors use *trilinea*, Schiff. as the name but recognising it as the *quercus*, Fb. and *trigrammica*, Hufn., cf. Tr. *Schn.* V(2). 273 (1825).

Gn. *Noct.* V. 235 was the first to recognise the various named forms as of one species, which he calls *trilinea*, Schiff., attributing *trigrammica* to Esp. instead of to Hufn.

Werneb. *Beitr.* I. 219, refers the *trilinea* of Tr. to the *trigrammica* of Hufn. i.e. the *trilinea*, Schiff. of the *Verz.* On p. 406 he refers *quercus*, Fb., *Sys. Ent.* (1775 etc.) to *trigrammica*, Hufn.

Tutt, *Brit. Noct.*, says *evidens* has the "ordinary transverse lines as in type" but this is not so, there are four lines not three as in the type.

trilinea, Schiff. *Verz.* 84 (1775).

ORIG. DESCRIP.—This species is classed with *acetosellae*, *turca*, *conigera* and *albipuncta* as Noctuae which have "smooth or only slightly crested thorax, almost unicolorous wings without the usual stigmata; some have a white dot in the disc," among which *trilinea* is distinguished as "the whitish three-lined Noctua."

Many subsequent authors unaware of Hufnagel's name *trigrammica* used *trilinea* as the species name.

ab. *fringsii*, Schultz. *Soc. Ent.* XIII. 153 (1899).

ORIGINAL COLOUR DESCRIP.—"Ground colour typical. The marking is essentially different from both the typical and from the ab. *bilinea*,

Hb., in possessing in place of the three darker transverse lines only one, strongly curved across the middle of the forewing, from which towards the margin dark shading of a wider area extends, occupying far less of ground than is before the transverse line. This shading does not extend to the margins of the wings. The rest of the forewing is without marking. The hindwing is normal."

The specimen was taken by Her Karl Kühne in Chodau on 10th June, 1898.

f. erubescens, Trti. *Nat. Sicil.* XXI. 103 (1909).

FIG.—*l.c.* pl. VI. f. 11.

ORIG. DESCRIP.—"Completely differing from the typical form, in fact inclining to reddish colour and not greenish." Sicily.

ab. perrufa, Warr.-Seitz *Pal. Noct.* III. 229 (1911).

FIG.—*l.c.* pl. 46i.

ORIG. DESCRIP.—"The whole wing is rufous, with the median shade absent or obscure." From the description there seems no difference from the last.

ab. convergens, Wihan. *Soc. Ent.* XXXII. 4 (1917).

ORIG. DESCRIP.—"Outer and middle transverse lines united on the inner margin, therefore the middle transverse line runs out obliquely inwards." Tschaslau, Bohemia. Häufigkeitgrad.

ab. basivoluta, Wihan. *Soc. Ent.* XXXII. 4 (1917).

ORIG. DESCRIP.—"A transverse streak barely joins with the outer transverse line at the base by a bend along the outer margin." Tschaslau, Bohemia, Häufigkeitgrad.

ab. oculata, Wihan. *Soc. Ent.* XXXII. 4 (1917).

ORIG. DESCRIP.—"Middle transverse line enlarged to 3mm. length and $1\frac{1}{2}$ mm. width; lenticular." Tschaslau, Bohemia, Häufigkeitgrad.

ab. fasciata, Krombach *Int. ent. Zt.* XIII. 180 (1920).

ORIG. DESCRIP.—"An example with an extraordinarily wide band."

ab. quadrigrammica, Lenz. *Schm. Sudbay.* II(2). 304 (1927).

ORIG. DESCRIP.—"The outer transverse line doubled."

ab. albescens, Lenz. *Schm. Sudbay.* II(2). 304 (1927).

FIG.—*l.c.* pl. XV. 18.

ORIG. DESCRIP.—"Suffused whitish. A darker shading lies in the marginal area of both fore- and hindwings."

ab. renata, Lenz. *Schm. Sudbay.* II(2). 304 (1927).

ORIG. DESCRIP.—"Reniform stigma dark margined and thus distinctly emphasised."

ab. brunnea, Lenz. *Schm. Sudbay.* II(2). 304 (1927).

FIG.—*l.c.* pl. XV. 20.

ORIG. DESCRIP.—"Darkened brown, not grey as in *bilinea*."

Hydrilla, Bdv. (1840) : Dup., H.-S., Gn., New., Tutt, Barr.; Cul. [*Caradrina*, Och.-Tr. (1816-25) Fr., Meyr., Splr. : *Athetis*, Hb. (1822) : *Petilampa*, Auriv. (1890) Hamps., South, Warr.-Stz.] *pallustris*, Hb. (1822) = *pallustris*, Hb. (1808).

Hübner, *Saml.* fig. 367 (1808), and *Text.* 167 ♂ (1805-18) spelled the name *pallustris*. Most subsequent authors spelt it with one l, *palustris*. In his *Verz.* Hb. spelt it *palustris* (1822).

In the *Text* Hb. said "This Geometer-like Noctua does not appear to be rightly placed here (*i.e.* with *pyramidea*, *tragopogonis*, etc.), but I cannot find a suitable place for it."

Tutt *Brit. Noct.* 143 (1891) : Barr. *Lep. Brit. Is.* V. 265, pl. 219 (1899) : Stdgr. *Cat.* IIIed. 198 (1901) : Splr. *Schn. Eur.* I. 239, pl. 44 (1907) : South *M.B.I.* 321, pl. 153 (1907) : Hamps. *Lep. Phal.* VIII. 415 (1909) : Warr.-Stz. *Pal. Noct.* III. 215, pl. 45h (1911) : Culot *N. et G.* I(2). 57, pl. 48, 10-12 (1909-13).

Tr. *Schn.* places it in *Caradrina*.

Dup. *Hist. Nat., Supp.* III. pl. 48, figures both ♂ and ♀, the latter is about half the expanse of the ♂.

Fr. *Neu. Beitr.* V. 121 (1845), describes an insect under the name *lutea*, but on the plate 455 it is named *luteola*. He says that it is more than probably a form of *pallustris*. On pl. 683 are two figures ♂ and ♀ of *pallustris*.

H.-S. *Sys. Bearb.* II. 214 (1846), fig. 292 figures a ♀. He says that Hübner's fig. is too plainly marked.

Newm. *Brit. Moths.* 311 (1869) gives a fig. of a ♀ in the B.M.

Spuler *Schn. Eur.* I pl. 44 gives figures of ♂ and ♀ quite good.

South *Moths Br. Is.* I. pl. 153, gives a good figure of a ♂.

Warr.-Seitz *Pal. Noct.* III. pl. 45h, give good figures of ♂ and ♀ and curiously label them *pallustris* but retains *palustris* in the *Text.*

Culot, *N. et G.* I(2). 57, pl. 48, gives 2 excellent figures, ♂ and ♀ and the very pale *aboleta* form.

Since Tutt wrote in 1891-2 a considerable number of this species was taken in the Cambridge Fens about the end of last century. But only odd specimens at considerable intervals have occurred since.

Of the Variation Barrett says.—"This species is so little known that we are scarcely aware whether it has any degree of variation, except that the female ranges from grey-brown with two strongly marked transverse lines to leaden black brown with the two lines thick and still blacker."

The Names and Forms to be considered are—

pallustris, Hb. (1808), *Saml. Noct.* f. 367.

palustris, Hb. (1822), *Verz.* p. 209.

exilis, Ev. (1842), *Buil. Soc. Mosc.* 848 (♀).

ab. *lutea*, Fr. (1845), *Neu. Beitr.* V. 121, pl. 455.

ab. *luteola*, Fr. (1845), *l.c.*

r. *aboleta*, Gn. (1852), *Noct.* V. 238.

r. *melanochroa*, Stdgr. (1892) *Mem. Rom.* VI. 488.

ab. *lutescens*, Farren (1899), *Ent. Rec.* XI. 113.

ab. *fusca*, Farren (1899), *l.c.*

ssp. *sajana*, Hamps. (1909), *Lep. Phal.* VIII. 416.

ab. *obscura*, Hoffm. (1916), *Mit. nat. Ver. Steier.* LII. 125 (1916).

ab. *raebeli*, Danhl. (1925) *Ent. Zt.* XXXIX. 13.

Tutt dealt only with *palustris*, Hb.

lutea, Frr. *Neu. Beitr.* V. 121 (1845).

FIG.—*l.c.* pl. 455 as *luteola*.

ORIG. DESCRIP.—“Thorax and forewings are brown grey. The latter have in place of the usual stigmata two dark spots. Beyond the second spot, that in place of the reniform, lies a dark band curved outwards across the full breadth of the wing. Between this band and the fringes is a darker shade across the whole breadth of the wing.” The author does not know *palustris* but thinks that it is probably that species.

r. *aboleta*, Gn. *Noct.* V. 238 (1852).

ORIG. DESCRIP.—“Figure and shape of *palustris*. Forewings of a clear ochraceous-grey, powdered with blackish, with the two median lines indistinct, the elbowed line toothed, and an indistinct discoidal darker. The terminal margin and the ends of the nervures more obscure. The lower wings of a dirty white, with little grey terminal points, without a discoidal above, with a very small point below. Palpi less bristly than in *palustris*, with the last joint more distinct.” S. Russia.

ssp. *melanochroa*, Stdgr. *Rom. Mém.* VI. 488 (1892).

ORIG. DESCRIP.—“These Amur specimens are particularly darker than the north European and Swiss examples, especially so in the ♂s, but single European ♀s are quite as dark. The hindwings are almost wholly darkened particularly on the underside, only in one ♂ lighter on the inner margin. The forewings are distinctly shorter and narrower than in typical *palustris* ♂, but far broader than in the usual form of ♀. So also the hindwings are much wider, so that the apparently similarly formed abdomen does not, or scarcely, reach beyond the wing, as is usually the case very pronouncedly.” Bik. Askold.

ab. *lutescens*, Farren *Ent. Rec.* XI. 113 (1899).

ORIG. DESCRIP.—“The forewings of a clear and distinct ochreous-brown, without any of the grey of the type, having the basal transverse line beyond more or less well defined (as in the type) but always without a trace of the subterminal shade.” Wicken.

ab. *fusca*, Farren *Ent. Rec.* XI. 113 (1899).

ORIG. DESCRIP.—“Markings as in the type, but the basal two thirds of the anterior wings so darkly fuscous as almost to obliterate the basal transverse line and stigmata; this almost black coloration extends to, and is sharply limited by the transverse line beyond the reniform; the terminal third of the wing is coloured as in the type, but darker, and has the subterminal shade.” Wicken.

ab. *sajana*, Hamps. *Lep. Phal.* VIII. 416 (1909).

ORIG. DESCRIP.—“Greyer.” Sajan.

15.v.34.

ab. *obscura*, Hoffm. *Mitt. nat. Ver. Steier.* LII: 125 (1916).

ORIG. DESCRIP.—“The dark marking as well as the marginal streaks are in this form particularly clearly developed, while in the light form they are scarcely visible.” Steiermark = Styria.

r. *raebeli*, Danhl. *Ent. Zt.* XXXIX. 13 (1925).

ORIG. DESCRIP.—“Darker, more unicolorous grey-black to brown black, with no outstanding distinct markings; the females are quite black with strong gloss. These examples stand midway between the general European form and the *melanochroa* of East Asia.” S. Tyrol.

Acosmetia, Steph. (1830) Gn., Barr., Meyr., Stdgr., Hamp., Splr., Warr.-S., Cul. [*Anthophila*, Hb. (1805-6) Ochs., Tr., Dup., Ev., Fr. : *Athetis*, Hb. (1822) : *Ophiusa*, Ochs.-Tr., (1816-26) H.-S. : *Caradrina*, Ochs.-Tr. (1816-25) Dup. : *Hydrilla*, Bdv. (1829) Dup.] *caliginosa*, Hb. (1806-18).

H.-S. places the *furvula*, Hb., 390, under *caliginosa* and if accepted as such would supplant that name; but Warr.-S. treat it as a good species in the genus *Caradrina* next to *alsines*, in which they follow Hamp., but his figures *l.c.*, pl. 45gh are quite different in size, colour and marking from that of Hb.

Description of Hb. fig. 390.—Basal and submarginal areas of a very dark blackish dove-colour, the large central area also very dark but with a brown infusion. The outer line is pronounced whitish and borders the central brown area. The elbowed line lies in the central area and is wide and black; the second line is black but not so black as the elbowed line and borders the central area on the basal side. The two stigmata stand out bordered by a slight whitish line. The basal half of the hindwing is much lighter; the marginal half is as dark as the forewing, but shades off into the basal half.

This can be nothing but a melanic form of *caliginosa*.

Tutt *Brit. Noc.* I. 143 (1891) : Barr. *Lep. Br. Is.* V. 263, pl. 219, 2 (1899) : Stdgr. *Cat.* IIIed. 199 (1901) : Splr. *Schm. Eur.* I. 235, pl. 44, 22 (1906) : South *Moth. Br. Is.* I. 321, pl. 153 (1907) : Hamp. *Lep. Phal.* VIII. 413, fig. (1909) : Warr.-Stz. *Pal. Noct.* III. 214. pl. 45gh. (1911) : Culot *N. et G.* I(2). 58, pl. 48, 17-18 (1909-13).

Ochs. *Schm.* IV. 95 (1816) listed *infida*, which Tr. says, V(3). 287 was *caliginosa*, Hb., in the genus *Anthophila*, Hb., (*Tent.* 1805-6) with *purpurina*, Schiff., etc. Hübner in the *Verz.* p. 256 (1825) discarded this genus name for *Porphyrinia*.

Tr. *Schm.* V(3). 287 (1826) says that *caliginosa*, Hb., is the same as *infida*, Ochs., which was listed in Vol. IV. (1816) p. 95 but the name must fall.

Dup. *Hist. Nat.* VII. p. 111 (1827), is confused, he gives himself as author of the name and description of *stagnicola*, while giving Tr. as the only author who has described it. His plate 107 has a figure which one does not recognise. In the *Supp.* 341 (1836) he deals with *caliginosa*, and gives a fairly good figure. In his *Cat.* (1844) 123, Dup. puts *stagnicola* in a separate genus *Stilbia*, and places *anomala* as a

synonym, with which the colour of the figure, but not the shape, more agrees.

Freyer, *N. Beitr.* V. pl. 479 (1845), has two good figures of the form *litorea*; although the text says that the moths were much worn and the wings almost markingless, the lines are very clearly depicted.

H.-S., *Sys. Bearb.* II. 411 (1846) places it in the genus *Ophiusa* with *pastinum*, *cracca*, *viciae*, *tirrhaea*, *lunaris*, *illumaris*, etc., an incongruous association, which no other systematist has made. Nor do I understand the association of *cana*, Frr. (an impossible suggestion). He also refers to the following as probably belonging to this species, *infida*, Ochs. (possibly); *furvula*, H. 390 (a melanic form probably, but considered by Warr.-Seitz as a good species next to *Caradrina alsines*, and figured on plate 42 *g* and *h* quite differently from the figure of Hübner in shape and colour).

H.-S. *Sys. Bearb.* II. fig. 435 has a very good soft figure of the typical form.

Stögr. *Cat.* IIIed. 199 (1901), says that the form of *caliginosa* in Evers. *Fn. Volg.* 339, is the *aquatilis*, Gn. from the Ural.

South *l.c.* pl. 153 gives 2 figs. both of a rich brown and certainly not of the true coloration.

Spl'r's. fig. *Schm. Eur.* I. pl. 44 is poor as to colour, but marking and size about typical.

Warr.-S. *Pal. Noct.* III. 214 places *litorea*, Frr., *stagnicol(or)a*, Dup. and *tristis*, Teich. as synonyms of *caliginosa*.

Warr.-Seitz, *l.c.* pl. 45, has two good figures.

Culot, *N. et G.* pl. 48, has 2 excellent figures: 17 typical with subdued marking as in type; 18 pale without marking = *aquatilis*.

Most figures of this species are inadequate except those of Culot, *N. et G.* I. (2), pl. 48, 17-18.

Of the Variation Barrett says—"Usually not variable but in Dr. P. B. Mason's Collection is an old specimen of an ochreous colour. This was Haworth's type of *lutescens*."

Modern authorities put *lutescens*, Haw. to *arcuosa* [see *ante* p. (137)].

The Names and Forms to be dealt with are:—

caliginosa, Hb. (1808-18), *Saml. Noct.* fig. 474.

ab. *furvula*, Hb. (1802-8) *l.c.* fig. 390. (?)

[ab. *lutescens*, Haw. (1806-10) *Lep. Brit.* 260.]

infida, Ochs. & Tr. (1816-26), *Schm.* V. (3), 286.

ab. *stagnicola*, Tr. (1816-25), *Schm.* V(2). 259.

ab. *stagnicola*, Dup. (1827), *Hist. Nat.* VII. 111, pl. 107.

ab. *litorea*, Frr. (1845), *Neu. Beitr.* V. 163, pl. 479.

ssp. *aquatilis*, Gn. (1852), *Noct.* V. 240.

ab. *tristis*, Teich (1896); *Stett. e. Zt.* 29.

Tutt deals with (1) the grey-brown type (2) the grey-white *aquatilis*, Gn (Bdv.), and (3) *lutescens*, Haw. now considered as a form of *arcuosa*. The *infida*, Ochs. and Tr., was later stated by them to be typical *caliginosa*.

ab. *stagnicola*, Ochs. and Tr. *Schm.* V(2). 259 (1816-25).

ORIG. DESCRIPT.—"The forewings are brownish, with a suggestion of blue coloration, and with isolated black spots. The two complete

cross lines are darker than the ground, the first is toothed, the second includes the indistinct discoidal. Along from the outer margin to below the stigmata the ground colour is almost black. The orbicular and reniform are both distinct, defined by black, inside white and brown marked. The former is very long, lying obliquely. The area between the two is the blackest so that they appear the lightest. The claviform is represented by a slight streak. The waved band has a pale-brown gloss and towards the apex of the wing are two fine arrow-streaks. The fringes are unicolorous. The wings have a strong metallic flush." Bad Ems., etc.

ab. *stagnicola*, Dup., *Hist. Nat.* VII. 111.

FIG.—*l.c.*, pl. 107. 6.

ORIG. DESCRIP.—"The body much more slender than its congeners. The forewings are of a leaden-grey, with two cross bands of a slightly deeper tint, one very wide which extends from the base to the middle, and the other narrower running parallel to the hind margin. Each wing is also crossed by two double lines of blackish points, between which one sees with difficulty the two usual stigmata, often indeed they are entirely obliterated. The hindwings of a uniform whitish-grey. The underside is also of a whitish grey, finely dusted with brown on the borders with the discal areas darkened."

The figure is not that of *caliginosa* in marking.

ab. *litorea*, Frr. *Neu. Beitr.* V. 163.

FIG.—*l.c.* pl. 479, 1-2, ♂ and ♀.

ORIG. DESCRIP.—"Both examples were somewhat worn and therefore almost without clear marking. This moth in size and colour is similar to the *caliginosa*, Hb. 474. Thorax and forewings are of a dusky grey almost without markings. There is no trace of the stigmata. The forewings are somewhat broad, and one can only with difficulty notice any trace of the three transverse somewhat darker waved bands. The abdomen and hindwings are white-grey without bands or spots, and all the underside of the wings is similar. The fringes are similarly coloured."

ssp. *tristis*, Teich., *Stett. e. Zeit.* 29 (1896).

ORIG. DESCRIP.—"The forewings are narrower than in *caliginosa*, with sharper apex. Their colour is yellow-grey somewhat glossy. There is little to note of marking beyond the indistinct reniform and orbicular stigmata, which in one specimen shows only a black middle point. The marginal line is not recognisable, the fringes are unicolorous with the forewings. The hindwings are similarly coloured, very slightly darkened towards the outer margin, with whitish fringes. The underside is somewhat paler than the upperside and the hindwings have very slight discal dots. Antennae feet and body of the same colour." Caucasus, light.

Laphygma, Gn. (1852). Mill., Barr., Stdgr., Warr.-Stz. [*Caradrina*, Ochs. and Tr. (1816-25) Dup., H.-S., Splr., South, Culot: *Spodoptera*, Gn. (1852) Meyr.] *exigua*, Hb.

There seems no apparent reason for *exigua* being transferred to *Spodoptera* by Meyrick alone.

Tutt *Brit. Noct.* I. 144 (1891): Barr. *Lep. Br. Is.* V. 273. pl. 220 (1899): Stdgr. Cat. IIIed. 195 (1901): Spr. *Schn. Eur.* I. 230. pl. 43. 32 (1906): South, *M. Br. Is.* I. 319. pl. 151 (1907.): Hamps. *Lep. Phal.* VIII. 265 (1909): Culot, *N. et G.* I(2). 46, pl. 46, 4 (1909-13): Warr.-Seitz. *Pal. Noct.* III. 207. pl. 48a (1911).

Hüb. *Saml.* 362 (1802-8) type figure, hardly shows the usual distinctness of the stigmata. Gey. 796, *fulgens* (1828-33) shows the stigmata with yellow rings.

Dup. *Hist. Nat.* VI. pl. 75 (1826) is a copy of Hübner's fig. 362 but much darker, consisting of various shades of black, *l.c. Sup.* III. 321. pl. XXIX. *pygmaea*. This is said to be a dwarf example of *exigua*, but it does not look much like it. The h.w. are too clearly white and the dark margin too narrow and too determinate. The two narrow submarginal bands on the f.w. are not those of *exigua*.

H.-S. *Sys. Bearb.* II. 212, says that Hb. fig. 362 has wings too pointed, stigmata not yellow enough, and their surround too dark; Dup's. *pygmaea* may be a small *exigua*, which often occurs. But H.-S.' own fig. 441 is very far from correct, the ground is utterly wrong, the stigmata defective, etc.

Millière, *Icon.* pl. 75 (1866) gives an excellent figure of an average marked example.

Hamp., *Lep. Phal.* VIII. 265 (1909) has a poor b. and w. figure.

Spr., *Schn. Eur.* I. pl. 43 (1906), has a very dark figure with average markings.

South, *Moths Br. Is.* I. pl. 151 (1907) has a good figure of the dull grey mottled form.

Culot *N. et G.* I(2). pl. 46 (1909-13), has a figure of a very small specimen from Beyrout. Probably can be called the *pygmaea*, Ramb.

Warr.-Seitz *Pal. Noct.* III. pl. 48a (1911) give 3 figures which show but little differentiation.

Warr.-Seitz does not recognise any difference in the named forms *fulgens*, *juncta*, *cycloides*, *caradrinoides*, *sebghana* and *venosa*.

Of the Variation Barrett writes.—“Apparently but little variable. It sometimes loses the yellow orbicular stigmata.”

He describes a specimen “Of unusual size; dark grey to the second line, stigmata very distinct and the orbicular quite light yellow.”

In another “The subterminal line is spread broadly into an obscure whitish rippled band.”

Dr. Cockayne says (*in lit.*) “*Exigua* is very variable especially in the colour of the stigmata and the size and shape of the orbicular. In some specimens the last is whitish in others nearly filled with deep orange scales.”

The Names and Forms to be dealt with are—

exigua, Hb. (1808) *Saml. Noct.* 362.

f. *fulgens*, Hb.-Gey. (1828) *l.c.* 796.

ab. *pygmaea*, Rmb. (1834) *Ann. Soc. ent. Fr.* 384, pl. 8, 2.

r. *cycloides*, Gn. (1852) *Hist. Nat. Noct.* V(1). 157.

ab. *juncti*, Zell. (1847) *Isis*, 445.

r. *caradrinoides*, Walk. (1856) *Cat. B.M.* IX. 190.

r. *sebghana*, Aust. (1880) *Natural.* 212.

ssp. *venosa*, Btlr. (1880) *E. M. M.* 7.

15.vi.34.

ab. *canior*, Hamps.-Strnd. (1909, 1915) *Lep. Phal.* VIII. 265: Arch. Naturg. LXXXI. abt. A. Heft. 11.

ab. *albimacula*, Dnhl. (1929) *Mitt. Münch. Ent. Ges.* 113.

ab. *decolorata*, Dnhl. (1929) *l.c.*

ab. *variegata*, Dnhl. (1929) *l.c.*

Tutt dealt with (1) the typical *exigua*; (2) *fulgens* with emphasized stigmata and (3) the very small form *pygmaea*.

race *cycloides*, Gn. *Noct.* I(5). 157 (1852).

ORIG. DESCRIP.—“Forewings of a clear testaceous grey, not reddish, uniform, with the design but little indicated, except the orbicular, which is small, quite round, of a clear ochraceous-yellow, pupilled with grey, and the reniform which is slightly touched with blackish in the middle. Subterminal line composed of groups of clear, separate atoms. A series of blackish terminal points, surmounted by similar groups. Fringe divided by two obscure waved lines. Hindwings of a pure white, semi-transparent, with a blackish fringe and the external angle blackish.” Cape of Good Hope.

ab. *junceti*, Zell. *Isis*, 445 (1847).

ORIG. DESCRIP.—“Alis anterioribus angustatis, griseis, annulo flavido, obscurius expleto, renulo griseo, flavescenti submarginato; posterioribus utrimque albis margaritaceo-micantibus superne griseo-venosis margaratisque.

var. b. renulo utrimque obscurius cinereo-obumbrato.

“This species which apparently is related generically with *cubicularis* and comes also very near it, agrees in a few respects with *Caradrina exigua*, but not so that it cannot be clearly separated from it.

“Forewings narrow with a very flat curved hindmargin, ground colour powdered grey, as on the thorax, like the colour of *cubicularis*; here and there darker; the costa has 6-7 small, obsolescent brown spots, and beyond the middle 3-4 whitish grey dots separated by darker grey. The two usual transverse lines are more or less suppressed and not at all conspicuous; the disc also is not darkened. The orbicular is small, almost circular, pale yellow with darker, sometimes red-brown centre. It stands somewhat nearer the first transverse line, than the reniform does the second line.”

“This has the usual size and a narrow grey filled-in kidney shaped ring, often imperfect; above pale yellowish; it is paler than the orbicular and externally towards the transverse line dark shaded. The toothed line is obsolescent pale yellowish, strongly cut into by the longitudinal veins and outwardly margined by a dark shade. The hind-margin has a row of 7-8 black dots, which inwardly are pale yellowish. Forewings grey with somewhat darker line and outwardly darker chequered. Hindwing shorter than in *cubicularis*, but with a sharper apical angle, white, transparent and perceptibly with lilac sheen. The veins are brownish as is the hind-marginal line, which is shaded narrowly pale grey like the costa. Fringes pure white, dusky grey at the apex. Below glossy.”

race *sebghana*, Aust. *Le Nat.* 212 (1880).

ORIG. DESCRIP.—“I have received two specimens of a *Caradrina* of whose novelty there should be no doubt, in spite of the affinities

which exist between the different species of this genus. It approaches our *quadripunctata* (*cubicularis*) from which it differs in many respects. I will compare it with this last species in order the better to describe its characteristics. The size of *sebghana* is less than that of *cubicularis*. Its wings are more elongate, its forewings are relatively very narrow with the apical angle pointed. The differences are no less in regard to the markings. In *sebghana* the ordinary spots are much emphasized and of a fawn yellow, which runs on to the testaceous grey of the ground. The orbicular is oval and in an oblique position relatively to the reniform, which is finely surrounded by a brown liséré without the accompaniment of white dots. The extra basal and the elbowed lines have very nearly the same shape as in *cubicularis*; they are always better expressed and appear formed of a double line; the one whitish interiorly, and the other brown on the opposite. The subterminal is whitish, simple, without any ferruginous suffusion. The costa wants the brown dots, which, in *cubicularis* indicate the origin of the lines."

"The lower wings are white, very diaphanous, with the nervules and the fringe tinged with reddish and very emphasized. The palpi are entirely grey without brown hairs at their base. The underside of the forewings is of a uniform whitish grey which however allows one to see a deeper tint in the spot, which corresponds to the reniform; the lower wings are white without a vestige of spot, with a violet reflection as on the upperside." N. Africa.

race *caradrinoides*, Walk. *Cat. B.M.* IX. 190 (1856).

ORIG. DESCRIP.—"Cinereous. Forewings moderately broad, slightly oblique along the exterior border, with some paler blackish-bordered costal marks and narrow slight undulating bands; discal marks testaceous, the outer one reniform and larger than the other, which is elliptical; a row of marginal blackish dots. Hindwings whitish with narrow brownish borders." Natal.

ssp. *venosa*, Btlr. *Ent. Mo. Mag.* XVII. 7 (1880).

ORIG. DESCRIP.—"*C. cubiculari* affinis; alis angustioribus, anticis supra pallide fuscis macula orbiculari indistincta, testaceo nigro partim cincta; macula reniformi argillacea lineam angulatam albam includente, marginibus nigro punctatis; lineis ordinariis indistinctis, duplicibus, albido impletis, nigris; area externo albo sparsa; signis minutis angulatis, submarginalibus nigris: ciliis albidis fusco intersectis marginatisque alis posticis margaritaceis hyalinis, venis fuscis; marginibus costali et externo fusciscentibus nitidis; ciliis argenteo albis, linea media indistincta cinerea; thorace fusco, abdomine albido-fusco. Subtus alba, alis nitidis, costis colore arenosa tincta; corpore sordide albo; alar. exp. unc. 1. lin. 1."

Near Honolulu. Hawaii.

ab. *canior*, Strand. *Arch. Natg.* LXXXI. abt. A. Heft, 11 (1915).

ORIG. DESCRIP.—"Much greyer; forewing with the antemedial line on outer side and postmedial line on inner side strongly defined by black on inner area." N. S. Wales.

[Hamps. *Cat. Phal.* VIII. 265. (1909).]

ab. *albimacula*, Dnhl. Mitt. Mün. Ent. Ges., 113 (1929).

ORIG. DESCRIP.—“The stigmata neither yellow nor yellowish red, but whitish. The orbicular especially shows prominently as a white ring. These examples are mostly very weakly marked.” Central Italy.

ab. *variegata*, Dnhl. Mitt. Münch. Ent. Ges. 113 (1929).

ORIG. DESCRIP.—“Darker, very variegated, mostly large specimens. Transverse lines sharply emphasized, blackish, distinctly outlined by a light edging.” Central Italy.

ab. *decolorata*, Dnhl. Mitt. Münch. Ent. Ges. 113 (1929).

ORIG. DESCRIP.—“The opposite extreme. Almost markingless clear grey, the stigmata showing as light spots, without their filling being clearly noticeable. Rarely is a dark spot present between the stigmata.” Central Italy.

The Genus *CARADRINA*, Ochs-Treit. (1816-25).

The genus *Caradrina* in its restricted sense, so far as the British Isles are concerned, consists of 5 species, four of which, *morpheus*, *alsines*, *taraxici*, and *ambigua*, resemble each other so much, that even when in bred condition it is very difficult to separate them; to name them from figures is practically impossible. Even the beautiful figures in Culot do not convey the specific separation which figures of most species do. The fifth species *clavipalpis* is sufficiently distinct to be more readily identified. The older writers, more or less, made a muddle of their accounts so that it is little good going into detail over their figures or descriptions and attempting to identify their work. Of modern figures those of Culot are perhaps the best (*Noct. et G.* I(2). pl. 48). South's figures are good, but do not convey the surface texture for very accurate determination (*Moths Brit. Is.* I. pl. 151). Seitz figures are much too definite in marking for this group. The surface and general colour give no help to identification of the bulk of the specimens obtained in this country.

Tutt considered that *superstes*, a continental species, also occurred in these islands and specimens taken in Sligo, in the W. of Ireland were deemed to be of that species. Some of these actual specimens have recently come into the hands of Dr. E. A. Cockayne, who determined them by examination of their genitalia, as nothing more than ordinary *taraxici*. Pierce had previously examined an example sent him by L. B. Prout and described the genitalia as similar to that of *taraxici* the only difference being that the whole of the triangular tip of the sacculus is squamose in the former, whereas in the latter only the base of the tip is squamose, which looks like a difference, which is not a difference. At any rate we can omit *superstes* from our List of British Noctuae.

The action of Warr.-Seitz in suppressing so many named *Caradrina* forms is significant of the difficulty of identification of species and forms.

Caradrina, Ochs. and Treit. (1816-25). Most authors have used this. [*Athetis*, Hb. (1822) Warr.-S., Hamp.] *morpheus*, Hufn. (1766).

Tutt did not treat Hufnagel as the original authority although he mentions him, as he also did Rottenburg.

morpheus, Hufn. *Berlin. Mag.* III. 302 (1766).

ORIG. DESCRIP.—“Smoky yellow with 2 grey bands and a similar spot on the upper wing.”

Commenting on Hufnagel, Rottenburg, *Naturf.* IX. 121 (1776) says—“The upper wings are dusky yellow-brown. Not far from the outer margin runs a dark-grey angulated somewhat wide transverse line across the wing. To this follows a longish reniform spot, and then a larger round spot, both alike dark grey. The lower wings are dusky white with a quite pale yellowish margin.”

Thus the typical form has a slight yellowish flush.

Tutt *Brit. Noct.* I. 147 (1891): *Barr. Lep. Br. Is.* V. 282, pl. 220 (1899): *Stdgr. Cat.* III ed. 197 (1901): *Splr. Schm. Eur.* I. 232, pl. 43, 33 (1906): *South Moths Br. Is.* I. 316, pl. 151, 5 (1907): *Hamp. Lep. Phal.* VIII. 357 (1909): *Culot N. et G.* I(2). 55, pl. 48, 1-2 (1909-13): *Warr.-Stz. Pal. Noct.* III. 213, pl. 45f. (1911).

Wernebg. refers fig. 406 Ernst and Engr. *Pap. d'Eur.* as *morpheus* but I cannot agree; it is in every way much too light in colour and more resembles a form of *clavipalpis*.

The figure of *sepii*, Hb. 161, is a very good one of the reddish tinged form.

Dup's fig. *Hist. Nat.* VI. pl. 75, 5 (1826) is particularly dark, red-brown.

Wood's *Index* figs. 201 and 202 are labelled *morpheus* and *sepii*. These names should be reversed, as 201 is a red brown form and 202 a grey brown form.

Newman's fig. 517 *Brit. Moths.* p. 312 (1869) is a good b. and w. but the hindwings are too light and do not agree with the text “whitish grey with a dark shade at the tip.”

Spuler's fig. 33 on pl. 43 *Schm. Eur.* (1906) is a good one of the grey-brown form.

Culot, *N. et G.* pl. 48, 1-2, has two good figures of the brown form of a very slight yellow tinge, but rather small.

Barrett says—“Rather variable in the ground-colour from pale yellowish-brown to very dark smoky-brown, and in the degree of dappling or mottling of dark brown, which usually is most distinct in the paler specimens.”

He reports a specimen which “has the mottling on a very pale ground disposed in numerous isolated spots which have an almost ocellated appearance.”

And another “of a pale yellowish-drab, with the stigmata, transverse stripes, and central shade all very dark and sharply defined.”

Ochs. *Schm.* IV. 80 (1816) cites Esp. *Abbild.* IV(2). 497 pl. 151, 4 (1786) *radica* to this species, but Treit. *l.c.* V(2). 250 (1825) shows that this cannot be, which consultation of the figure confirms. It is that of *xanthographa*, teste Werneburg.

Warr.-Seitz recognises no named form as distinct but puts *pulla*, Bkw. and *sepii*, Hb. as synonyms.

15.vii.34.

The Forms and Names to review are:—

morpheus, Hufn. *Berlin Mag.* III. 302 (1766).

radica, Esp. *Abbild.* IV(2). 497, pl. 154, 4 (1786).

morpheus, View. *Tabell.* II. 40 (1790).

ab. *palla*, Beckw. *Trans. Linn. Soc.* I(2). 5, pl. 1, 7-9 (1794).

ssp. *sepii*, Hb. *Noct.* 161 (1802).

ab. *obscura*, Tutt *Brit. Noct.* I. 147 (1891).

ab. *minor*, Tutt *l.c.*

ab. *spalleki*, Kitt. *Ver. Gesll. Wien.* LXVII. (138) (1917).

Tutt dealt only with (1) typical *morpheus*. (2) *sepii*, Hb: the red brown form. (3) ab. *obscura*, and (4) ab. *minor*.

ab. *palla*, Beckw. *Trans. Lin. Soc.* I(2). 5 (1794).

FIGS.—*l.c.* pl. I. 7-9.

ORIG. DESCRIPT.—“*Alae superiores ex fusco dilute ferrugineae nigroque subnebulosae. In medio verso marginem crassiorem duae maculae: quarum interior subrotunda, exterior reniformis albedo obsolete cinctae; linea alba undulata prope marginem exteriorem. Alae inferiore cinerea. Anus barbatus.*”

The figures are of a British *morpheus* form.

ab. *spalleki*, Kitt. *Ver. Ges. Wien.* LXVII. (138) (1917).

ORIG. DESCRIPT.—“It had the normal marking and ground-colour, and the basal and marginal area of the forewings and the orbicular and reniform stigmata were filled by black-brown. The waved line, of lighter shining brownish-yellow-green ground-colour, stands out distinctly.” Hombok near Olmütz, Austria.

Caradrina, Ochs. and Treit. (1816-25) most authors [*Athetis*, Hb. (1822) Hamp., Warr.-Seitz.] *alsines*, Brahm.

Agassiz “corrected” the genus name *Caradrina* to *Charadrina* as he thought it was derived from the Greek, but Treitschke had named the genus (*Schm.* V. 2. p. 246) from *Caradrina*, a river in Albania.

Tutt gave Borkhausen as the original describer and reproduced his description (*Brit. Noct.* I 147) and in a footnote, *Brit. Noct.* I. 147, said that Brahm only describes the early stages. This is not correct, for when Brahm bred the insects from his larvae in May, he then describes the imago, *Ins. Kalend.* II. 298.

alsines, Brahm. *Ins. Kal.* II. 298 (1791.)

ORIG. DESCRIPT.—“The forewings are shades of brownish grey, with three waved transverse lines composed of blackish lunules; but often, and especially in the male sex, these lunules are only recognisable as dots. The first line stands close to the base; but one notes only a trace of it, which is often obsolescent, and for this one must have very distinctly marked examples since in many one cannot recognise the slightest trace. The second line stands before the middle, and the third line beyond it, and between these two one finds the usual stigmata, which are somewhat darker than the ground colour, and are outlined lightly. In different examples one notices an obsolescent band, which

runs from the outer margin through the reniform. Near to the lower margin also lies a light somewhat elongate cross line. The lower wings are whitish."

Treit., *Schn.* V(2). 267 (1825) says that Schiff. *Verz.* confused *blanda* and *alsines* as one species and refers to older collections as having the series mixed; also he says that Illiger in the revised *Verz.* (1801) was equally incorrect.

Humph. and Westw. *Brit. Moths*, I. 144 (1845) reduced all these forms to one omnibus species which they called *plantaginis*, Hb. Under this name they included *sordida*, Haw., *laevis*, Haw. (Hb.)* and Wood, *implexa*, Steph. and Wood, *alsines*, Wood, *blanda*, Ochs. (nec Hb.), *eyena*, Haw., *redacta*, Haw. and Wood, *ambigua*, Stephs. and Wood, and *plantaginis*, Hb., Dup. and Bdv. All this is based on the article by Bentley in Vol. I. of the *Entomologist* (1842).

Tutt, *Brit. Noct.* I. 147 (1891): Barr. *Lep. Brit. Is.* V. 287, pl. 221 (1899); Stdgr. *Cat.* IIIed. 197 (1901): Spr. *Schn. Eur.* I. 232, pl. 44 (1906); South, *Moth Br. Is.* I. 317, pl. 151 (1907): Hamp. *Lep. Phal.* VIII. 319 (1909): Warr.-Seitz *Pal. Noct.* III. 208, pl. 48i (1911): Culot, *N. et G.* I(2). 55, pl. 48 (1909-13).

Ernst and Engr. *Pap. d'Eur.* fig. 406b, c give two very fair figures (teste Treit. with which Werneburg agrees, *Beitr.* II. 114).

Hüb. *Saml.* fig. 577 gives an almost uniform ground without clouding or banding; marking too definite.

Wood. *Ind.* (1834) pl. 11, fig. 199 *implexa* and fig. 200 *laevis* (see Curtis' note below) are *alsines* forms; fig. 198 *alsines* is a figure comparable with Hübner's 577, but darker.

The figure of Dup. *Hist. Nat.* VI. 4 is unrecognisable as such.

H.-S. *Sys. Bearb.* II. fig. 379 (1845) is a very good figure of the usual form. On p. 211 he notes that the fig. 577 Hb. is a very red example, ♂; his own fig. is a small ♀. Wood's fig. 198 he says may belong here.

South, pl. 151 has a good recognisable figure.

Seitz, *Pal. Noct.* III. pl. 42h has 3 very fair figures of *alsines* of different ground shades and one of the larger and more plainly marked *laevis*, with lighter ground.

Culot, *N. et G.* I(2). pl. 48 has an excellent figure. (1909-13).

Barrett says—"Hardly variable except in a small degree in the depth of the ground colour and markings of the forewings."

Stephens, *Ill.* II. 156-7 gives *alsines*, *implexa*, *laevis*, and *sordida* and says "they do not appear to me really distinct from *alsines*" and in his *Cat.* II. 75 (1829) indicates the same opinion.

Curtis, *Brit. Ent.* XIV. 351, 1837, stated that he possessed the specimen which Haw. described under the name *laevis*, and that it was certainly not a variety of *alsines*, nor was it like Wood's figure 200, but appeared closely allied to *neglecta*!

Tutt *Brit. Noct.* I. 147 names var. A. of Guenée *Hist. Nat.* V. 245 (1852) as var. *suffusa*. By a remarkable error Tutt translated "fortement saupoudrés d'écaillés blanches" as "strongly powdered with black scales."

* Haw. *L.c.* refers his *laevis* to Hb. *Noct.* 163, and this latter is referred to the *Noctua neglecta*, Hb., by Herr. Schöff. *Sys. Bearb.* II. The hindwings of Hb's fig. are not those of a *Caradrina*.

Warr.-Seitz recognises (1) *sericea*; Spyr. as a local form from Holland and Germany with narrower silky grey forewings. (2) *levis*, Stdgr. from W. Turkestan and Asia Minor in which the yellow ochreous tint is predominant with conspicuous dark markings. (3) *amurensis*, Stdgr. small dark examples. (4) *ochrea*, Warr., pale yellow ochreous with obsolete marking.

The Names and Forms to be discussed are as follow—

alsines, Brahm. (1791), *Ins. Kalend.* II. 298.

alsines, Bork. (1792), *Naturg.* IV. 607.

laevis, Hb. (Haw.) (1806-10) *Lep. Brit.* 207.

ab. *implexa*, Steph. (1829), *Ill.* II. 156. Wood. *Index.* pl. II. 199.

ab. *sericea*, Speyer. (1867), *Stett. e. Zt.* 73.

race *levis*, Stdgr. (1888), *l.c.* 29.

ab. *suffusa*, Tutt (1891) *Brit. Noct.* I. 147.

ssp. *amurensis*, Stdgr. (1892), *Mem. Rom.* VI. 486.

ab. *ochrea*, Warr.-Seitz. (1911), *Pal. Noct.* III. 208.

Of these Tutt refers to (1) Borkhausen's *alsines*; (2) the powdered white form *suffusa* (3) Staudinger's *amurensis*; and (4) the very pale *levis*, Stdgr. (vol. IV. 122.)

ab. *implexa*, Steph. *Ill.* II. 156 (1829).

FIG.—Wood, *Ind. Ent.* pl. 11, fig. 119 (1834).

ORIG. DESCRIP.—“Paler than *alsines*; head, thorax and anterior wings rusty, or yellowish-griseous, with four distinct darker or fuscous strigae, the first abbreviated at the base, the second rather oblique and considerably undulated, the third placed between the stigmata, broad and subrectangular; the fourth much arcuated, composed of lunules, and placed behind the posterior stigma; between which and the hinder margin is a distinct and strongly waved pale one, edged internally with fuscous; on the margin itself is an interrupted black line; posterior wings pale ochraceous-brown, the base paler, the hinder-margin with an interrupted black line, as in the anterior wings.”

“Known by its paler hue and the distinctness and number of the transverse strigae on the anterior wings, and especially by the greater undulations of the pale posterior strigae.” Darn.

ab. *sericea*, Spey. *Stett. e. Zeit.* 73 (1867).

ORIG. DESCRIP.—“Alis anticis apice minus dilatatis, nitidis, griseo-testaceis (♂) seu griseo-lutescentibus (♀), maculis duabus strigisque ordinariis obscurioribus (♂) obsoletis; posticis sordide exalbidis, apice griseis (♂) seu griseis totis (♀)” [compared with *alsines*].

“Distinguished at first sight from *taraxaci* (*blanda*), *plantaginis* (*ambigua*) and *superstes* by the smooth, shining not powdered surface of the forewing. The gloss is brighter looked at sideways; the hindwings share this; duller in the ♀.

“The wings widen towards the outer margin much less strongly and appear more uniformly wide and somewhat narrower than in *alsines*.”

“The ground-colour of thorax and forewings not brownish at first, as in *alsines*, but ochre-yellowish-grey, in the ♀ more greyish clay-yellow, shiny and without distinctly dark powdering.” Holland. Germany.

race *levis*, Stdgr., *Stett. e. Zeit.* 29 (1888).

ORIG. DESCRIP.—“It is of the same size as *alsines* (31-35mm.) but has a far lighter brownish or yellowish-grey (difficult to determine) ground colour on the forewings, which well sets off against the dark brown-grey of the typical German *alsines*. The two upper dark filled-in stigmata stand out particularly clear in this pale *levis*; only the first (orbicular) stigma is sometimes almost obsolete. Then the dark cross line before the reniform stigma stands out most distinctly, sometimes sharp, almost black. The dark inner margining of the not distinctly recognisable outer light (dentate) cross line is opened up. The usual three cross lines are wholly wanting or are only rudimentary, particularly so is the third, represented by black dots on the veins. In the ♀ they are also darker suffused. Suggested that this pale form is a second generation.” W. Turkestan, Armenia, Asia Minor.

ssp. *amurensis*, Stdgr. *Mém. Rom.* VI. 486. (1892.)

ORIG. DESCRIP.—“A somewhat smaller, and especially on the underside darker form of *alsines*. The measure 27-31 mm. They have the distinctive, brown grey colour of forewing of German *alsines* and the same (strong) markings. The hindwings are also, on the upper side, but particularly on the underside somewhat darker, and bear almost always in the outer part two more or less perfect, dark transverse lines. On the underside the forewings, of which the disk is quite darkened, these two outermarginal lines appear generally in the outer portion, but the outer one only very rudimentary.” Vladivostok.

ab. *ochrea*, Warr-Stz. *Pal. Noct.* III. 208 (1911).

FIG.—*l.c.* pl. 42i.

ORIG. DESCRIP.—“The dark markings tend to become effaced, the head, thorax and forewings being pale yellow-ochreous.”

Caradrina, Ochs. and Treit. (1816-25) most authors [*Athetis*, Hb. (1822) Hamp., Warr.-Stz.] *ambigua*, Fab. (1787).

Tutt gives the description in Fab. *Ent. Sys.* III. (3), 48 (1793) as the original, but omits to say that Fab. gives a reference to Schiff. *Verz.* 77 (1775), as his species.

Schiff. *l.c.* says, “Reddish Noctua marked with pale grey,” a description hardly that of *ambigua* as we know it.

Fab. had already described his *ambigua* in the *Mant.* II. 148 (1787) “*Laevis, cinerea; atomis strigaeque pone medium nigris.—Larva ferrugineo fuscoque variegata: capite fusco,*” which he enlarged in the *Ent. Sys.*, but with no mention of reddish in either place.

Bork. *Naturg.* IV. 612 (1792) Suggests that *ambigua*, Schiff. is *pulverulenta*, on account of the character “reddish” and he points out that Fab. gives the larva as feeding on low plants such as *Chenopodium*, *Dandelion*, etc., whereas the foodplant of *pulverulenta* is oak.

There is evidence here of confusion, hence it seems necessary to consider Fab. as the authority, but in the *Mant.* (1787) and not the *Ent. Sys.*

Reference to Illiger *N. Ausg. Verz.* (1801) I. 234 does not help.

In some specimens when fresh there is a slight, very slight, appearance of the red gloss about the termen such as is always present in *Nonagria phragmitidis*.

Gn., I.-V. 247 (1852), says that *plantaginis*, Hb. belongs to another species and suggests *blanda*. Newman omits mention of *ambigua*.

Warr.-Seitz give the author as Schiff. and *plantaginis*, Hb. as a synonym and only recognises the more ochreous Syrian subspecific form *uniformis*, Swinh., placing *hilaris*, Stdgr. as a synonym to it. He notes the very slight rufous or ochreous tinge in some examples. Genus *Athetis*.

Hamp. *Lep. Phal.* VIII. 321, (1909) treats Schiff. as the authority, places *ambigua* in *Athetis*, gives only ab. *uniformis*, Swinh. the pale form, and considers both *plantaginis*, Hb. and *hilaris*, Stdgr. as synonyms.

Meyrick, *Rev. Hand.* 77 (1928), gives Fab. as the authority.

Tutt, *Brit. Noct.* I. 148 (1891): Barr. *Lep. Brit. Is.* V. 283, pl. 221 (1899): Stdgr. *Cat.* IIIed. 197 (1901): Splr. *Schm. Eur.* I. 233, pl. 44 (1906): South, *Moths Brit. Is.* I. 318 pl. 151 (1907): Hamp. *Lep. Phal.* VIII. 321 (1909): Warr.-Seitz *Pal. Gr.-Schm. Noct.* III. 209, pl. 41h (1911): Culot *N. et G.* I(2). 55, pl. 48 (1909-13).

Hübner's fig. 576 *plantaginis* is darkly marked, hardly comparable with our beautiful softer grey insect.

Dup.'s fig., pl. 1, LXXVI. 5 *Hist. Nat.* VI. is unrecognisable as *ambigua*, with dark hindwings and forewings of a dark chestnut. Although the almost suppressed markings agree with those of *ambigua*, it is *pulverulenta (cruda)* in all probability and is placed in the genus *Taeniocampa*. Some authors put it down as *plantaginis*, Hb., for which however the depth of colour is too extreme. Fig. 2 on the same plate is labelled *plantaginis* and may represent Hübner's form although well on the dark side. Genus *Caradrina*.

I take it that the *ambigua*, Schiff. is a form of *cruda* (to which it stands next after in the *Verz.* as considered by Dup.).

Splr's. pl. 44, 14, is unrecognisable as *ambigua*. Far too ochreous, markings rough and not defined neatly as in true *ambigua*.

H.-S. *Sys. bearb.* II. 211, fig. 381 (1845), is dark, comparable with the dark *plantaginis* of Hb. fig. 576. He does not fig. *ambigua*, but says that his *plantaginis* is the *ambigua* of Schiff.

Warr.-Seitz figs. pl. 42i are bad in both basal colour and marking on all wings, and much too ochreous.

Culot, *N. et G.* I(2). pl. 48, has an excellent figure of our usual form, a pale soft texture form.

Barrett says—"Hardly variable here. Continental examples are usually of a rather more ashy colour."

He reports a specimen "very decidedly dark," from Devon.

The forms and names to be discussed are:—

ambigua, Fb. (1787) *Mant.* 148.

r. *plantaginis*, Hb., *Samml.*, 576 (1808-18).

r. *plantaginis*, Dup. (1826) *Hist. Nat.* VI. 89, pl. 76.

r. *uniformis*, Swinh. (1885) *Tr. Ent. Soc. Lond.* 350, p. 1, pl. 9.

r. *hilaris*, Stdgr. (1901) *Cat.* IIIed. 197.

ab. *tripunctata*, Strnd. (1915) *Arch. Naturg.* LXXXI. 154. Abt. A. Heft. 11 (1915).

ab. *decinerea*, Strnd. (1915) *l.c.*

ab. *ambiguella*, Strnd. (1915) *l.c.*

ab. *subambigua*, Strnd. (1915) *l.c.*

Tutt dealt with (1) *ambigua*, the pale English form. (2) *plantaginis* the dark form.

race *uniformis*, Swinh. *Trans. Ent. Soc.* 350, p. 1, 9, f. 6. (1885).

FIG.—*l.c.* pl. IX., f. 6.

ORIG. DESCRIP.—“Pale fawn-colour; head whitish; thorax, abdomen, and forewings uniform pale fawn-colour; unmarked; orbicular and reniform spots large, round, very faintly indicated by whitish lines around them; hindwings white; the entire surface of both wings covered with a silvery sheen.” S. Afghanistan: Sept.

Reference to both fig. and description at once dispels this association absolutely, by shape, marking, colour, etc. Hamps. *Moths of Ind.* II. 261, treats it as a separate species of *Caradrina* (1894), but in *Lep. Phal.* VIII. 321, 1909, he puts it as a form of *ambigua*, and describes it thus:—“Paler; palpi slightly tinged with fuscous at sides; forewing with an ochreous tinge.—Syria, W. Turkestan, Baluchistan.”

race *hilaris*, Stdgr. *Cat. Lep. pal.* 197 (1901).

ORIG. DESCRIP.—“Multo dilutior; al. ant. flavescenti-griseis.”—Issykul. Ferghana. Syria.

ab. *tripunctata*, Strand. *Arch. Natg.* LXXXI. 154. Abt. A. Heft. II. (1915).

ORIG. DESCRIP.—“Fore-wings with white spots on the reniform.”

ab. *decinerea*, Strand. *Arch. Naturg.* LXXXI. 154. Abt. A. Heft. 11 (1915).

ORIG. DESCRIP.—“Forewings more unicolorous red-brown without any suggestion of grey colour.”

ab. *ambiguella*, Strnd. *Arch. Natg.* LXXXI. 154, abt. A. Heft. 11 (1915).

ORIG. DESCRIP.—“In the forewings the median and marginal areas red-brown, ante- and post-median areas pale; cuneate black spots on the veins 5 and 6 of the marginal area up near to post-median line.”

ab. *subambigua*, Strnd. *Arch. Naturg.* LXXXI. 154 Abt. A. Heft 11 (1915).

ORIG. DESCRIP.—“Forewing more unicolorous grey with strong black streaks in the submedial fold from the base and from the ante-medial line to the margin.”

Caradrina, Ochs. and Tr. (1816-25) most authors. [*Athetis*, Hb. (1822) Hamps. and Warr.-Stz.] *blanda*, Schiff. 1775 = *taraxaci*, Hb. (1808-18).

Tutt did not fully go into the identity of this species and took the *taraxaci*, Hb. as the original description of the species. Subsequent

authors are agreed that it is the *blanda*, Schiff., the identity of which, indefinite as the description is, was substantiated by Illiger, *Neu. Ausg. Verz.* (1801), who had access to the Vienna collections.

Schiff. *Verz.* p. 77 (1775), in defining his "Larvae albopunctatae," "Noctuae rectolineatae" describes *blanda* as having on the almost uniformly coloured reddish-grey forewings the usual two stigmata defined by a paler line, and also towards the lower (hind) margin a similarly almost straight transverse line. The thorax is rough, the antennae of the male slightly pectinated.

Fab. *Mant.* II. 147 (1787), describes *blanda* as "Laevis, alis deflexis cinereo fuscis; strigis albidioribus," which may be anything.

Brahm, *Ins. Kal.* II. 114 and 300 (1791), bred his specimens from larvae which agreed with those of Group L. of the *Verz.* of Schiff., but they were imagines with similarity to *ambigua*.

Bork. *Naturg.* IV. 610 (1792) likens it to *stabilis*, but says it is the *blanda* of the *Verz.* and the *opaca* of Esper, which latter cannot be as Esper wrote "Ashy-grey, white-spotted Bombyx. Alis deflexis cinereis: striga maculisque duabus albis."

Illiger *Neu. Ausg. Verz.* (1801) I. 232-3, says this is the *blanda*, Fb., the *alsines* of Bork., and of Brahm; and doubtfully the *opaca* of Esp. Wernb. *Beitr.* II. 33 points out in detail that *opaca*, Esp. cannot be *blanda*, but in size, shape and marking can only be *viminalis*. With the first opinion I agree, but only doubtfully with the latter determination.

The *laevis* of Haw. and of Stephens is usually now ascribed to *neglecta*. Stephens largely copied from Haworth.

Gn., *Hist. Nat. Noct.* V. 246 (1852) says the *taraxaci*, H.-S., is a form of *blanda*, Schiff., with more blackish forewings with a slight reddish tint on the disc; hindwings slightly more yellowish.

Warr.-Seitz recognises only ab. *centralasiae*, Warr.-S., places *taraxaci*, Hb. and *guttilinea*, Wlkr. as synonyms, and omits all reference to other synonyms or forms.

Tutt, *Brit. Noct.* I. 149 (1891): Barrett, *Lep. Brit. Is.*, V. 290. pl. 221. 3 (1899): Stdgr. *Cat. Hied.* 197 (1901): Splr. *Schm. Eur.* I. 233. pl. 44. 15 (1906): South, *Moths Br. Is.* I. 317. pl. 151 (1907): Hamps. *Lep. Phal.* VIII. 321 (1909): Warr.-Stz. *Pal. Gross.-Schm. Pal. Noct.* III. 208. pl. 42 hi (1911): Culot. *N. et. G.* I(2). 55. pl. 48. f.4 (1909-13).

Hübner's fig. 575 of *taraxaci* is, as Gn. says (V. 246) less rosy than *blanda*, slightly reddish on the disc, the hind-wings of a somewhat yellowish tone, but too pronounced.

Dup., *Hist. Nat.* VI. pl. 75. 6 (1826), has a good figure of *taraxaci* (*blanda*), the dark reddish brown form with distinct markings.

H.-S., *Sys. Bearb.* II. 211, f. 380, is a small dark ♀; with too great emphasis to the hind-marginal dark area of the hind-wings.

He says, Hübner's fig. 575 is recognisable, but has wings too broad, the waved line too black on the basal side, and the hindwings too yellow, and suggests that the *laevis* of Wood is a ♀.

Newman, *Brit. Moths*, 314 (1870), says that *blanda* has a "tendency to obscure purple and rosy," whereas *alsines*, its nearest ally, has a tendency "to ochreous," but the b. and w. figs. are not conclusive as

one does not get the surface tone, and the markings are not distinctive enough to be displayed in such figs.

Splr., *l.c.* pl. 44, f. 15, has a fig. more like *alsines* in marking whereas the figure of *alsines*, f. 12 is not sufficiently distinguishably marked.

South, *Moths Br. Is.* I. pl. 151 (1907) gives a good figure of the dark form *taraxaci*, and calls attention to the silky appearance of the hindwing, p. 317.

Warr.-Stz. has a good figure of the *blanda* form, *l.c.* pl. 42h, and also a figure of the ssp. *centralasiae*, pl. 42i.

Culot, *N. et G.* I(2). pl. 48 has an excellent figure, showing very clearly the difference (typical) between that and *alsines*. In his text p. 55 he calls attention to the fact that the reniform in *alsines* is larger than in *taraxaci*=*blanda*.

Of the Variation Barrett says, "Slightly variable in the depth of colour, from paler to darker brown. In Ireland there is a tendency to greyer colouring, but with the hindwings unusually white."

He reports "one specimen as nearly black."

The Names and Forms to be considered are:—

blanda, Schiff. (1775) *Verz.* 77.

ab. *redacta*, Haw. (1806-10), **Lep. Brit.* 206-8.

ab. *egens*, Haw. (1806-10) *l.c.*

ab. *sordida*, Haw. (1806-10) *l.c.*

f. *taraxaci*, Hb. (1808-18) *Samml.* 575.

ab. *ambigua*, Steph. (1829). *Ill.* 155-7.

ab. *alsines*, Wood. (1834), *Index Ent.*, f. 198.

ab. *laevis*, Wood. *l.c.* f. 200.

ab. *blanda*, Gn. (1852), *Hist. Nat.* V. 245.

r. *guttilinea*, Walk. (1858), *Cat. B.M.* XV. 1709.

ssp. *centralasiae*, Warr.-Stz. (1911), *Pal. Noct.* 209, pl. 42i.

ssp. *pseudambigua*, Zerny (1927), *Eos. Lep. Albarracin*, 382 (1917).

ab. *fusca*, Lenz. (1927) *Schm. Sudby.* II. 2, 307.

ab. *pallidior*, Lenz. (1927) *l.c.*

Of these Tutt dealt with (1) *taraxaci*, Hb. the reddish-brown form with distinct markings: (2) *sordida*, Haw. the reddish-brown form with indistinct markings: (3) the ashy-brown form with distinct markings, *ambigua*, Steph.: (4) the ashy-brown form with indistinct markings, *redacta*, Haw.: (5) the fuscous form, distinctly tinged with purple *blanda*, Gn.: (6) the fuscous form with distinct markings, *egens*, Haw.: (7) *alsines*, Wood, the fuscous form with indistinct markings, and reniform outlined in white and (8) *laevis*, Wood, the fuscous form with indistinct markings.

f. *guttilinea*, Walk, *Cat. B.M.* XV. 1709 (1858).

ORIG. DESCRIP.—"Cervina, subtus cinerea; antennae validae, vix crenulatae; abdomen pallide cinereum; pedes dense pilosi; alae anticae cinereo-cervinae, lineis inferiore et exteriori e punctis nigris, linea submarginali albida subundulata, lunulis marginalibus fuscis, fimbria latissima, orbiculari et reniformi magnis, albido marginatis; posticae albidae, margine subcinereo."

* *teste* the late J. H. Durrant in lit. The usual date is 1809.—HY. J. T.

15.x.34.

"Fawn-colour, pale cinereous beneath. Antennae stout, hardly crenulate. Abdomen pale cinereous. Legs densely pilose. Forewings cinereous fawn-colour; basal half-line black; interior and exterior lines formed of black points; submarginal line whitish, slightly undulating; marginal lunules brown; fringe very broad; orbicular and reniform marks large, a little darker than the ground colour, with whitish borders. Hindwings whitish, slightly cinereous about the border; underside with a brown discal dot."

ab. *centralasiae*, Warr.-Stz. *Pal. Noct.* III. 209 (1911).

FIG.—*l.c.* pl. 42i.

ORIG. DESCRIP.—"Very possibly a distinct species; the ground colour of the forewing is paler, tinged with pinkish-brown along the two folds, and the dark markings stand out more conspicuously; the costal edge is pale; the hindwing, even in the ♀ is whiter, showing a distinct cell-spot." Issykul, etc.

pseudambigua, Zerny. *Eos.* "*Lep. Albarracin*," 382 (1917).

ORIG. DESCRIP.—"Some of the specimens have paler hindwings with the outer margin not darkened, like the clearer grey forewings as in our Lower Austrian examples; and the underside is distinctly paler."

ab. *pallidior*, Lenz. *Schm. Sudbay.* II. (2), 307 (1927).

ORIG. DESCRIP.—"Pale grey-brown with obsolescent markings."

ab. ♀ *fusca*, Lenz. *Schm. Sudbay.* II(2). 307 (1927).

ORIG. DESCRIP.—"Dark grey."

Caradrina, Ochs. and Tr. (1816-25) most authors. [*Athetis*, Hb. (1822), Hamps. and Warr.-Stz.] *quadripunctata*, Fb. (1775) (*cubicularis*, Schiff.) (1775) = *clavipalpis*, Scop. (1763).

Until quite recently this species has been known as either *cubicularis*, Bork. (1776) or *quadripunctata*, Fb. (1775).

Tutt, *Brit. Noct.* I. 152, gave the name *quadripunctata*, Fb., with the alternative *cubicularis*, Bork. Borkhausen was not the authority for *cubicularis*, but refers it to Schiff. in the *Verz.* (1775) and giving references to Fabricius in the *Syst. Ent.*, the *Sp. Ins.*, and the *Mant.* as *quadripunctata*. Thus the latter is the prior of the two, as published just before the *Verz.* of Schiff.

Borkhausen points out that Fab. in the *Mant.* refers the *cubicularis* of the *Verz.* to his name *quadripunctata*.

Tutt did not give the original description, nor did he use the prior name. His description and name were those of Fab. *Ent. Sys.* III(2) 22 (1793) and *quadripunctata*, although there was a previous reference in the description, to Schiff. *Verz.* 72 (1775) *cubicularis* (*culicularis* in error), and Fabricius had already described it in the *Sys. Ent.* 594 (1775); in the *Spec. Ins.* II. 214 (1781) and in *Mant. Ins.* II. 139 (1787) and Treitschke *Schm. Eur.* V(2), 251 (1825) had given the reference to Scopoli, *Eut. Carn.* 218 (1763), where it was first described, under the name *clavipalpis*.

clavipalpis, Scop. *Ent. Carn.* 218 (1763).

ORIG. DESCIP.—“Alae anticae cervinae; margine crassiore punctis (4) nigris.” “Alae anticae subfusco leniter nebulosae, puncto nigro versus basin; subtus pallidae; margine inferiore sub-perlato; posticae utrinque albidae immaculatae; margine obscuriore. Dorsum leve, valvis subtrigonis. Palpi clavati compressi. Tibiae supra fuscescentes, albidis annulis variegatae.” An unmistakable description, and far better than some of the subsequent descriptions.

The description of *cubicularis* in the *Verz.* is quite unrecognisable but is identified by Illiger (1801) who had access to Schiffermüller's collection.

Tutt *Brit. Noct.* I. 152 (1891): Barr. *Lep. Brit. Is.* V. 293, pl. 221, 4 (1899): Stdgr. *Cat.* IIIed. 196 (1901): Splr. *Schm. Eur.* I. 230, pl. 44 (1906): South *Moths Br. Is.* I. 318, pl. 151 (1907): Hamps. *Lep. Phal.* VIII. 321 (1909): Culot *N. et G.* I(2). 47, pl. 46, f. 9-10 (1909-13): Warr.-Seitz *Pal. Noct.* III. 211, pl. 45c (1911).

Esp., *Schm. Abbild.*, IV. 492, pl. 150, 4-5 (1786) gives two figures intended to represent our *clavipalpis*, under the name *segetum* (nec. L.). They are very bad except that the characteristic 4 costal spots are present. In his text Esp., refers his *segetum* to the *cubicularis*, *quadripunctata* of previous authors. Wernb. places them here without comment.

Ernst and Engr. *Pap. d'Eur.*, VII. 9, fig. 405 (1790) is a good figure, but as Wernburg, *Beitr.* II. 114 (1864) says, is somewhat too large, too plainly marked and too variegated. It cannot be confused with any other species. He (Wern.) says it is the *clavipalpis*, Scop. and the *cubicularis*, Tr.

The fig. 162 of Hb. (*blanda*) is probably one of *superstes*, fig. 382 of H.-S.

Dup., *Hist. Nat.* VI. 57, pl. 76 (1826), has a small good figure somewhat too variegated. The wide submarginal dark red-brown band is far from typical. This “ferruginous band” would appear to be an unusual feature. I know of no example like it.

Wood's fig. 203, *Ind. Ent.* (1834), is a bad one; both wings wrong in colour; only recognisable as probably *cubicularis* by the very faint 4 costal spots.

Culot, *N. et G.* II(2). pl. 46, has 2 excellent figures, a light and a dark form. The latter unusually dark, characterized by its dark ground which obscures the markings.

Of the Variation Barrett says—“Rather variable in the ground colour from pale brown to dull umbreous, and also in the distinctness of the few markings; and more especially liable to local variation. In the N. of Ireland having the costal black spots enlarged and very distinct, and the dark stripe near the hind margin emphasized. Some of those from Aberdeen have the markings very dark, and a row of black dashes before the subterminal line; others are very small in size, not exceeding that of *Miana furuncula*. The variability in size is also found in other districts.”

He reports specimens which “have both stigmata surrounded by white dots.”

And “A pale grey specimen devoid of the usual markings except the costal spots, smooth and unicolorous.”

And "Some Orkney examples are also nearly unicolorous smoky-grey, or have the base and hind marginal stripe still darker."

Illig., *Neu. Ausg. Verz.* I. 204, says that there occur examples which show no trace of the four spots on the costa which are usually such an outstanding character. Tutt does not mention this form nor have I seen an example of such.

The Names and Forms under consideration are:—

- clavipalpis*, Scop. *Ent. Carn.* 213 (1763).
quadripunctata, Fb. *Sys. Ent.* 594 (1775).
cubicularis, Schiff. *Verz.* 72 (1775).
grisea, Rott. *Naturf.* ix. 138 (1776).
segetum, Esp. *Schm. Abbild.* IV(2), 1, 492, pl. 150, 4-5 (1786).
 ssp. or r. *leucoptera*, Thunb. *Dissert.* II. 41 (1791).
blanda, Haw. *Lep. Brit.* 208 (1809).
 r. *superstes*, Steph. *Ill.* II. 159 (1829).
 r. *laciniosa*, Donz. *Ann. Soc. ent. Fr.* 529, pl. 8, 4 (1847).
 ?r. *grisea*, Evers. *Bull. S. I. Mosc.* 215 (1848).
 ?sp. or ssp. *albina*, Evers. *Bull. S. I. Mosc.* 215 (1848).
 ?sp. or ssp. *congesta*, Led. *Ver. z-b. Wien.* V. 372, pl. 5, 1 (1855).
 r. *pulverosa*, Walk. *Cat. B.M.* X. 295 (1856).
 ab. *milleri*, Schultz. *Stett. e. Zt.* 367, pl. 1, 6 (1862).
 ?sp. or ssp. *menetriesii*, Kret. *Berl. e. Zt.* 432 (1863).
 ?r. sp. *cinerascens*, Tengrs. *Cat. Lep. Fn. Fenn.* 309 (19) (1869).
 f. *petraea*, Tengstr. *l.c.* p. 356 (1869).
 ? ssp. *mediterraneae*, B.-B. *Trans. Ent. Soc. Lond.* 42, pl. I. 11 (1894).
 ab. *nigrofasciata*, Hoffm. *Mitt. Nat. Ver. Stierm.* LII. 118 (1915).
 ab. *nigromaculata*, Cross. *Int. Ent. Zt.* XIII. 50 (1919).

Tutt dealt with (1) *cubicularis*, pale whitish grey with distinct markings: (2) *grisea*, Ev. ditto with indistinct markings: (3) *congesta*, ditto, ditto with dark outer margin: (4) *quadripunctata*, ashy grey or greyish fuscous with distinct markings: (5) *menetriesii*, ditto with indistinct markings: (6) *superstes*, Steph., dark fuscous with indistinct markings: (7) *albina*, ditto with indistinct markings.

In his Appendix, *Brit. Noct.* Vol. IV. 112 (1893), Tutt—

- (1) Gives the Orig. Descrip. of *grisea*, Ev.
- (2) Refers to *menetriesii*, Kret. as being considered by the Scandinavian entomologists as a distinct species. See Sven Lampa, *Ent. Tidsk.* 69-70 (1885).
- (3) Refers to *albina*, Ev. as being now treated by Stgr. (on a series from Saisan, Central Asia) as without doubt a distinct species, and the dark *congesta*, Led. as probably the first brood of it. (*Stett. ent. Zt.* XLIII. 43-44.)

It is usual to ascribe the *blanda*, Haw., as a form of this species, although the description does not mention the four characteristic spots on the costa of the f.w. The fig. 162 *blanda*, Hb. is given as a synonym. This latter fig. is certainly not *quadripunctata* in shape, markings and colour, and is quite unlike the fig. 417 of Hb. depicting *cubicularis*. Haw. also gives as a reference, Fb. *Ent. Sys.* III(2) 48 *blanda*, the description of which is certainly not that of *cubicularis* but of *taraxaci*.

Stephens, *Illus.* II. p. 109, describes a form, which he names *superstes*, larger but greatly resembling this species.=Tutt's var. *superstes*, Steph.

Steph., *Illus.* II. 158, speaks of the submarginal line as "usually bordered on its inner margin with triangular arrow-shaped red spots." These spots in my series of some 70 specimens are either completely absent or so inconspicuous as only to be recognisable when examined by a glass in the sunshine, and may be represented by a few isolated reddish or brownish scales. An extreme development of these features might be the basis of the unusual form figured by Duponchel.

Eversmann, *Bull. Mosc.* III. 215 (1848), besides recording *cubicularis* from the Volga area of Russia, describes *grisea* as a little smaller and *albina* a little larger but very near to it, the last as agreeing with the variety of *cubicularis* figured by H.-S. no. 425.

Gn. *Hist. Nat.* V. 251 (1852) has a var. A., which is recognised as the *grisea*, Ev. and is the fig. 425 of H.-S., a form from Russia, sent to H.-S. as a new species, but of which he states he finds no distinctive character from *cubicularis*.

Tutt has given Guenée's "Indes Orientales" as "West Indies," obviously a slip. (ab. *grisea*, Ev.)

There is confusion here. Evers. says his *albina* is the *cubicularis* var. of H.-S. fig. 425. Gn. in quoting the *albina*, Ev. omits this reference, but says that his own var. A. of *cubicularis* agrees almost completely with the same fig. 425 of H.-S. Tutt and others identify var. A. of Gn. as the *grisea*, Ev.

Stdgr., *Cat.* IIIed. 196 (1901), omits *grisea*, Ev., treats *albina*, Ev. as a separate species, with *congesta*, Led. as a varietal form of it. ("al. ant. dilute cinereis")

Hamp., *Lep. Phal.* VIII. 336 (1909), now accepts the name *clavipalpis*, Scop. in place of the *quadripunctata*, Fb. he had used in *Moths of Ind.* II. (1894), treating *leucoptera* only as an aberration, and placing *quadripunctata*, Fb., *cubicularis*, Schiff., *grisea*, Rott., *segetum*, Esp. *laciniosa*, Donz., *pulverosa*, Walk., and *milleri*, Schultz. as merely synonyms, while rejecting *hugeli*, Fldr., *belucha*, Swnh., and *placida*, Moore, which he had included previously in 1894, in spite of the action of Cotes and Swnh. in 1888, *Cat. Moths of Ind.* 324, who considered them good species.

Warr.-Seitz., *Pal. Noct.* III. 211, pl. 45c, etc., accepts *clavipalpis*, Scop. as the prior name and description, treats *quadripunctata*, Fb., *cubicularis*, Schiff., *grisea*, Rott., *segetum*, Esp. (nec. L.), *pulverosa*, Walk. and *milleri*, Schultz., as synonyms, recognises as forms only the *laciniosa*, Donz., with subterminal of yellow spots extended to the termen, and the *leucoptera*, Thnbrg., a fuscous suffused form from Scandinavia; considers the *grisea*, Ev. as a true species and *cinerascens*, Tengstr. as a synonym, and *menetriesii*, Kret, as a good species, while the *mediterraneae*, B.-B. he recognises as the species *atriluna*, Gn.

grisea, Rott. *Naturf.* IX. 138 (1776).

ORIG. DESCIP.—"The ground colour of the fore-wings is brownish grey. Across this run three fine black unbroken and toothed lines, and near to the outer margin lies a similar red brown transverse line. Between the 2nd and 3rd of these lines stands a small round spot and also near it a somewhat larger reniform spot. This latter is black-edged, and in the centre brownish and on the lower part black-grey. All these markings are indistinct. The lower wings are snow-white, also have a white fringe, which is cut by small brown streaks. On

15.xi.34.

the underside this species is wholly white." This appears to be a rough description of *clavipalpis*, as recognised by Werneb. and others. As the characteristic 4 costal spots are not mentioned, it may have been the form without them referred to by Illiger. As these spots are the emphasized terminals of the transverse lines it may be that the absence of emphasis caused them to be quite inconspicuous.

segetum, Esp. *Schm. Abbl.* IV. 492 (1786) nec. L.

FIG.—*l.c.* plt. 150. 4-5.

This name is redundant. Esper himself says in his text that *segetum* is the *cubicularis*, Fb.

Illiger, *Neu. Ausg. Verz. Wien.* (1801). I. 204, says that the *segetum*, Esp. is the *cubicularis*, Fb., Bork., and Brahm. Werneb., *Beitr.* II. 46, gives the determination, *clavipalpis*, Scop.

ssp. or race *leucoptera*, Thnbg. *Diss. Ent.* II. 41 (1791).

"*Alis deflexis, anticis cinereis; fasciis tribus punctisque duobus nigris posticis niveis.*"

"*Alae anticae utrinque cinerae, supra fasciis quatuor nigris, 1 in basi interrupta, 2 ante medium undulata, 3 pone medium curva undata, 4 intra marginem obsoleta. Inter fasciam 3 and 4 punctum anterius minutum et macula posterius oblonga. Posticae utrinque totae niveae fascia tenuissima intra marginem e punctis nigris. Alae posticae basi ciliatae.*"

Of this Hamp., *Cat. Lep. Ph.* VIII. 337. (1909) says "Head, thorax, and forewings suffused with fuscous."—Scandinavia, Finland, Urals.

race *laciniosa*, Donz. *Ann. Soc. ent. Fr.* 529. (1847).

FIG.—*l.c.* plt. 8. f. 4.

ORIG. DESCRIP.—"*Alis anticis fuliginosis; maculis centralibus nigris; fasciâ terminali, albidâ interstisâ, posticis albidis.*"

"The fore-wings are of a fuliginous tint; the costa is marked, towards the middle, by two black points, towards the apex three or four others very small. The orbicular stigma is absent; the reniform seems to be indicated by some small white dots. The disc is occupied by a small, black, horizontal mark; above at its end there is another placed diagonally. The transverse lines are not present; the fourth only is well developed; it is preceded, towards its middle by three black arrow-like markings. Between it and the fringe is a series of small horizontal marks of a yellowish white, forming an interrupted band, which terminates at the inner angle as a somewhat large whitish spot. The fringe is the same as the ground colour. The lower wings are of a slightly smoky white, with a discoidal point. The fringe is the same as the ground colour. The lower wings are of a slightly smoky white with a discoidal point. The fringe white also is preceded by a very fine brownish line. Below the upper wings are smoky, with much emphasized nervures, of a reddish white. The terminal band is well indicated, as well as the reniform. The lower wings are whitish with the anterior margin smoky and a not very apparent discoidal. Abdomen of a reddish white. Head and thorax brownish." Marseilles.

race *pulverosa*, Walk. *Cat. B.M.* X 295 (1856).

ORIG. DESCRIP.—“Very pale fawn colour. Forewings with zigzag transverse brownish lines, with a submarginal transverse zigzag whitish line, with blackish costal spots, and with blackish marginal dots; reniform spot and orbicular spot distinct, mostly brown, the former narrow, contracted in the middle; latter small, round. Hindwing white, opaline.” Caffraria.

ab. *milleri*, Schultz. *Stett. e. Zeit.* 367 (1862).

FIG.—*l.c.* pl. 1. fig. 6.

ORIG. DESCRIP.—“Alis anterioribus griseis (♂) aut cinereis (♀), basin versus pallidioribus, obsolete signatis, punctis costalibus nigris, linea undulata basin versus ferrugineo-terminata; alis posterioribus albis (♂) aut fuscis (♀).”

“Very near in size and appearance to *cubicularis*.”

“Forewing shorter and broader than in *cubicularis*. Upperside glossy yellowish-grey somewhat paler towards the thorax. The markings very like *cubicularis*, only finer with less cloudiness: the first band lies more oblique. On the hindwing the veins near the margin dull grey (but finer than in *cubicularis*.)” Misdroy.

ab. *cinerascens*, Tengstr. *Cat. Lep. Fn. Fenn.* no 301. p. 309 (19) on the Ostsee (1869).

ORIG. DESCRIP.—“Minor. *C. kadenii*, Frr., alis posticis albis exceptis non absimilis, in Kexholm medio mensis Julii saepe a me observata. Forma vulgaris jam inde a fine mensis Maii apparet. An propria species? Specimen vetustius ad Helsingfors captum, pallide griseum (verisimiliter decoloratum). Maklin sub nomine *C. grisea*, Ev. mecum communicavit.”

This form Stdgr. *Cat.* 197 (1901) places under *grisea*, Ev.

f. *petraea*, Tengstr. *Cat. Lep. Fn. Fenn.* p. 356 (1864).

Tengström in his *Appendix* describes a very similar insect under the name *petraea* but with dark suffused “not white” hindwings. This Stdgr., *Cat.* IIIed. 197, places as a syn. of *grisea*, Ev. and Warr., *Stz.*, *Pal. Noct.* III. 210, as a syn. of *menetriesii*, Kret.

ORIG. DESCRIP.—“Minor, tota pallida griseo-cinerea, atomis nigris crebrius conspersis, alis anticis latiusculis, strigis simplicibus obsoletis, macula orbiculari, punctiformi, parteque inferiori cum margine interno maculae reniformis, maculis quatuor costalibus tribusque sagittalibus ante lineam undulatam indistinctam, pallidiorem et punctis limbalibus inter costas, nigris; alis posticis cinereis, ad basin albicantibus, ciliis albidis, lineaque, subinterrupta, limbali nigra.”

He emphasizes the comparison with *cubicularis* by its smaller size, by its pale cinereous colour, by its broader forewings, by its cinereous hindwings, white at the base. “*C. cubiculari* affinis mox dignota.”

ssp. *mediterraneae*, B.-B. *Trans. Ent. S. Lond.* 42 (1894).

FIG.—*l.c.* pl. I. f. 11.

ORIG. DESCRIP.—“Primaries ashen fawn colour with the least trace of a greyish subterminal transverse curved line. Just in front of the posterior margin is an indistinct row of very pale ochreous-white spots, the middle spots having their inner margin dusted with golden brown.

Orbicular stigma obsolete, reniform stigma small, dark brown, encircled with pale ochreous. Costa with four indistinct black spots. Fringes lustrous greyish."

"This species is perhaps nearest to *quadripunctata*, but at once separable by the almost entire absence of markings and by its much paler and cleaner appearance."

The figure and description do not agree. *e.g.* Costal spots very distinct and 5 in number. Secondaries are not white nor are they shaded near posterior margin. I fail to distinguish the marginal very pale ochreous white spots, nor the golden brown of the middle ones. But the description seems to me to quite fall in line with forms of *quadripunctata* as classified by Tutt and others, as a very pale unicolorous form practically devoid of all marking.

ab. *nigrofasciata*, Hoffm. and Klos. *Schm. Stierm.* III. 118 (1915).

ORIG. DESCIP.—"An example in which the marginal area of the fore-wing is coloured dark brown. The area from the elbowed line up to the light fringe is black brown, the fine border line light brown and the marginal dots deep black."

ab. *nigromaculata*, Class. *Int. Ent. Zeit.* XIII. 50 (1919).

ORIG. DESCIP.—"The reniform stigmata are filled in with deep black." Berlin-Nordend.

APPENDIX—CORRECTIONS, ADDITIONS, ETC.

- p. (1) line 5 after "corrected" add "to the original spelling."
 p. (2) line 8 "debateable" should be "debatable."
 Footnote: read "Ochs. and Tr. 1816-1825," etc.
 p. (4) line 7 from bottom, for "*Diphtera*" read "*Diphthera*."
 p. (6) line 23 for "*pterographa*" read "*petrographa*" (an error in Seitz.)
 p. (9) lines 1 and 13 read the same.
 p. (10) add a description from p. 81 at bottom.
 p. (12) line 13 for "*albopuncta*" read "*albopunctata*."
 after line 21 to List of Forms of *T. batis* add ab. *phaea* and ab. *diminuta* (see pp. 81, 82)
 p. (15) at bottom, add descriptions of the above two forms of *T. batis*.
 p. (16) to List of *C. ocularis* forms add ab. *frankii* (see p. 82).
 p. (18) after line 14 add description of above form.
 p. (20) line 6 for "*robertsi*" read "*roberti*."
 p. (20) line 14 to List of *C. or.* forms add r. *novogica*, p. (27), f. *clausa*, ab. *fasciata*, ab. *juncta*, p. (82) and ab. *tangens*, p. (83).
 p. (28) line 3 add descriptions of the first four above forms.
 line 4 delete [I have . . . known] and add description of ab. *tangens*, p. (83).
 p. (28) line 10 from bottom to List of *A. diluta* forms add f. *hartwiegi*, p. (29).
 p. (29) line 38 insert the 2 species *C. duplaris*, p. (83) and *C. fluctuosa*, p. (84) accidentally omitted.
 p. (30) line 10 from bottom to List of *P. flavicornis* forms add ab. *confluens*, Klem., ab. *confluens*, Heinr., and ab. *immaculata*, Masl.
 p. (31) line 18 add descriptions of the first 2 above forms.
 ab. *confluens*, Klem., *Spraw. Kom. Fiz.* XLVI. 18 (1911-12).
 ORIG. DESCRIP.—"Alae anteriores maculis ambabus magnis confluentibus."
 ab. *confluens*, Heinr. Deuts. Ent. Zt. 524 (1916).
 ORIG. DESCRIP.—"Specimens in which the stigmata have united together into a continuous spot very extended in length, may be called this name." This name falls before the *confluens* of Klem. (1911) and is superfluous.
 p. (32) line 17 add description of the last of above forms.
 ab. *unimaculata*, Masl. *Pols. Pis.* VIII. 50 (1929).
 ORIG. DESCRIP.—"With only the orbicular stigma on the forewings quite normal; the reniform wholly unrecognisable."
 p. (35) line 30 to the List of *B. perla* forms add the following three names—ssp. *corsicola*, ssp. *abruzzensis*, and ssp. *benaceensis*.
 p. (37) line 17 add descriptions of the above three species and the opinion of Seitz work on *perla* forms.

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ssp. *corsivola*, Schawerd. *Zeit. Oestr. Ent. Ver.* XIII. 112 (1928).

ORIG. DESCRIP.—“A quite well characterized new form, which can readily be distinguished by predominantly pure white ground colour and the not grey, but black, almost blue-black marking from all the other grey-white, yellowish, or the quite darkened South Tyrol or Pyrenees examples. Both stigmata and that part below the orbicular in the central area are quite black. These black parts and the pure milk-white at the base between the stigmata and in the outer area are in very striking contrast. The hindwings with their emphasized discal mark are brighter and darker margined.” Corsica.

ssp. *abruzzensis*, Dnhl. *Mitt. Münch. Ent. Gesell.* XIX. 107 (1929).

ORIG. DESCRIP.—“Green-grey, without yellowish or reddish tinge, central area little or not at all dark. Markings extraordinarily fine, thin-lined, but mostly clear and very rarely obsolescent. Fringes brightly chequered. Very characteristic is the shape of the hindwing. White-grey, around the margin a symmetrically wide band covering at most a third of the wing in dull grey, which at the outer margin clears from the veins so that a recognisable submarginal whitish-pearl ring is formed. This grey marginal band does not extend at all beyond the centre of the wing. Thus the discoidal stands out clearly.” Central Apennines.

ssp. *benacensis*, Dnhl., *Ent. Zeit.* XLVI. 247 (1933).

ORIG. DESCRIP.—“Ground colour almost pure white, here and there with very slight trace of rosy yellow. Markings extraordinarily delicate, the spots before the apex, in the reniform and the lower half of the orbicular small, well outlined, the transverse lines pictured sharp and thin. Hindwings pale grey, on the outer margin only slightly suffused with black, but sufficiently so, that usually before the marginal line there lies quite visible a row of fine greyish white dots. The cell spot well marked. The fringes broadly white, not chequered. This very distinct race, which is strikingly constant, is the lightest form of this species described.” Monte Baldo, Italy 1000-1900m.

p. 34, *Metachrostis perla*, Schiff.

Draudt, in *Supp. Seitz. Pal. Noct.* 19, is of the opinion that *perlodes*, Gn. and *perlina*, Stdgr. are identical, and he considers *pyrenaica*, Obthr. to be a genuine species.

Draudt, *l.c.*, renames the ab. *grisea*, Dufrane as ab. *dufranei*, overlooking the fact that I had already renamed it *subgrisea*. The name *dufranei* falls before *subgrisea*.

p. (37) To the List of Forms of *M. muralis* add after the last line, ab. *amasina* and ab. *viridior*.

p. (40) After line 14 add the Original Descriptions of the above two forms.

ssp. *amasina*, Drdt, *Seitz Supp. Pal. N.* p. 19 (1931).

ORIG. DESCRIP.—“Small and pale, of the same colour as *perla* with grey-brown basal, discal and marginal areas.”

ab. *viridior*, Schawerda *Zt. Oestr. Ent. Ver.* XVII. 30 (1932).

ORIG. DESCRIP.—“Stands out strongly by the deeper green general suffusion.”

p. (41) To the List of Forms of *M. alpium* add ab. *fasciata*.

p. (43) Add after line 20 the Orig. Descrip. of the above form given on p. (85) below.

p. (44) To the List of Forms of *D. caeruleocephala* after line 5 add ab. *coalita*, ab. *confluens* and race *capnodes*, and after line 6 ab. *nigrofasciata*.

p. (44) Add after line 36 the Orig. Descriptions of the ab. *coalita*, ab. *confluens* and race *capnodes*, on p. (85) below.

p. (44) Add after line 40 the Orig. Descrip. of the ab. *nigrofasciata*.

ab. *nigrofasciata*, Hackray. *Lambill.* XXXIII. 54 (1933).

ORIG. DESCRIP.—“The elbowed line is developed into a very black, swollen band, running so far as to unite with the reniform stigma. The general tone of the same forewings is of a clearer grey than normal.” Verviers, Belgium.

p. (45) Add to the List of Forms of *D. coryli*, after line 27 ab. *melanotica*, after line 32 ab. *grisescens*, ab. *ussuriensis*, and ab. *betulae*.

p. (46) Add after line 26 the Original Descrip. of ab. *melanotica*.

ab. *melanotica*, Haverkamp. *Ann. Soc. Ent. Belg.* 158 (1906).

ORIG. DESCRIP.—“Upper side of forewings of a uniform smoky black, with the markings more or less obscure.” Germany. [Also found in the Chilterns.—E.A.C.]

This form was subsequently named *weymeri* in error by Hold.

p. (47) Add after line 32 the Original Descriptions of the remaining three forms above.

ab. *grisescens*, Kard. *Ent. Mitt. Berlin*, XVII. 418 (1928).

FIG.—*l.c.* pl. 8, f. 21.

ORIG. DESCRIP.—“On the forewings, the inner and outer line distinct, but thin. In the pale central part from the cell to the inner margin slightly shaded. The marginal area moderately pale with traces of a shading. Orbicular without a centre. Reniform wholly pale, with a black streak at its base on the margin. Thorax, abdomen and hindwings distinctly paler than normally.” Ussuri.

ssp. *ussuriensis*, Kard. *Ent. Mitt. Berlin* XVII. 418 (1928).

FIG.—*l.c.* pl. 8, f. 20.

ORIG. DESCRIP.—“Differs distinctly from the European form. The inner line on the fore-wing is placed further from the base. The central band is narrow, black-grey, without brown-grey tone. This cross shading reaches up to the reniform. Marginal area grey, paler than in the typical form. Orbicular with a black centre, reniform pale. Hindwings and fringes of both forewings uniformly grey-brown.” Ussuri.

ab. *betulae*, Lenz. *Mitt. Munch. Ent. Gess.* XIX. 104 (1929).

“Is an aberration of the larva not of the imago. They were found

in Upper Pomerania on birch and it is to be presumed that this form will be occasionally found elsewhere; the larva is of a violet-black colour having warts with white hairs, and a white lateral row of spots; the lateral hair tufts on the 1st and on the 11th segments are black, the bristles on the 4th and 5th segments are rusty red." Dr. M. Draudt in Seitz *Pal. Noct. Supp.* p. 6.

p. (52) Add to the List of Forms of *A. aceris* after line 24, ssp. *calceata*.

p. (52) Add after line 35 the above form.

ssp. *calceata*, Dnhl. *Mitt. Munch. Ent. Gess.* XIX. 104 (1929).

ORIG. DESCRIP.—“Ground-colour white with a slight yellow-grey suffusion. Blue-grey tone not apparent. The sprinkling of dark atoms quite feeble, very fine, the markings more delicate than in the typical form, but standing out sharply. Hindwing white, very slightly powdered. The whole appearance is less robust, than the Central European form, the wing shape narrower.” Race of the Southern Abruzzi.

p. (53) Add to the List of Forms of *A. leporina* after line 44 ab. *alba*.

p. (56) Add after line 40 the Original Description of the above form on p. (85).

p. (58) Add to the List of Forms of *A. megacephala* after line 5 the ssp. *slumbergeri*, on p. (85), and the ssp. *ankarensis*.

p. (59) Add after line 25 the Orig. Descrip. of ssp. *slumbergeri* on p. (85).

p. (60) Add after line 18 the Orig. Descrip. of ssp. *ankarensis*.

ssp. *ankarensis*, Hering, *Int. Ent. Zt.* XXVI. 412 (1933).

ORIG. DESCRIP.—“It is characterized by the pure white area placed distal from the transverse line, besides from this there goes a double, white transverse cross line to the inner margin.” Ankara.

p. (62) Add to the List of Forms of *A. alni*, after line 6 the ab. *nigromarginata*.

p. (62) Add next above the bottom line the Original Descrip. of the above form on p. (86).

p. (63) Add to the List of Forms of *A. tridens* after the last line form ssp. *radoti*.

p. (64) Add after the last line the Orig. Descrip. of ssp. *radoti* on p. (86).

p. (65) Add to the List of Forms of *A. psi* after line 26 the forms ssp. *batnana* and ssp. *iliensis*.

p. (66) Add after line 3 the Orig. Descriptions of the above two forms.

ssp. *batnana*, Drdt. *Seitz. Supp. Pal. Noct.* 12 (1931).

FIG.—*l.c.* plt. 1e.

ORIG. DESCRIP.—“The general impression is darker; especially the hind-wings; the outer transverse band is uniformly thick throughout its course, whilst in *psi* it becomes faint between lower and upper

median nervures; basal and anal dark-shaped marks are twice as thick as in the name-form, the anterior striga is distinctly double." Algeria, Batna.

ssp. *iliensis*, Drdt. *Seitz. Supp. Pal. Noct.* 10 (1931).

FIG.—*l.c.* pl. 1e.

ORIG. DESCIP.—“Very large, both transverse lines are very distinctly double, especially the posterior one is distinctly more dentated and strikingly brown instead of being black, further it is not so sharply marked but more diffuse.” Ili, Central Asia.

p. (66) Add to the List of Forms of *A. auricoma* after line 5 from the bottom the form ab. *basistriata*.

p. (68) Add after the last line the Orig. Descrip. of ab. *basistriata*.

ab. *basistriata*, Warn. *Verh. nat. Heimat Hamburg.* 134 (1931).

ORIG. DESCIP.—“Ground colour as in the typical form, but with a deep black, long and wide basal streak, which reaches up to the dagger-like mark at the margin.” Near Hamburg.

p. (71) Add to the List of Forms of *A. euphorbiae* after line 10 from the bottom the forms ab. *debilis* and ab. *virgata*, ab. *xanthomista*, ab. *ottomana*, ab. *appenina*, and ab. *korlana*.

p. (74) Add after line 3 from the bottom the Orig. Descrip. of ab. *debilis* from page (87) and the Orig. Descriptions of the above five forms.

ab. *virgata*, Dnht. *Mitt. Münch.* XIX. 104 (1929).

ORIGINAL DESCIP.—“Specimens with the outer marginal area darkened and quite strikingly distinguishable from the ground-colour, suggesting the *tridens-virga*, Tutt.” Scanno; in both generations.

ab. *xanthomista*, Draudt. *Pal. Noct. Sup.* III. 13 (1931).

FIG.—*l.c.* pl. 1.

ORIG. DESCIP.—“A single specimen of unknown origin in the Dresden Museum showing yellow-red scales on the transverse lines in the grey-blue ground colour; its orbicular stigma is only a dot.”

ab. *ottomana*, Drdt. *l.c.*

FIG.—*l.c.* pl. 1.

ORIG. DESCIP.—“Extraordinarily pale grey, finely marked specimens from Constantinople in the Pungeler Collection. Very close to these also are very pale specimens, more inclined to grey-blue which form a constant local form in the Abruzzi mountains.”

ab. *appenina*, Drdt. *l.c.*

ORIG. DESCIP.—“Delicately and yet distinctly marked.”

ab. *korlana*, Drdt. *l.c.*

FIG.—*l.c.* pl. 1.

ORIG. DESCIP.—“Possibly a genuine species; it is small, slender, margin oblique, ground colour coarsely sprinkled with black; from Korla.”

The Lowland Races of Butterflies of the Upper Rhone Valley.

By ROGER VERITY, M.D.

I had, for a long time, been wanting to make out the lowland races of the butterflies of the Upper Rhone Valley, but, notwithstanding the number of collectors which visit that region, I had, curiously enough, never been able to procure the proper amount of materials and information. I was thus very glad to be able to reside there, during some months, in 1932 and in 1933, and to do the necessary collecting and field work myself. (I intend to carry it on in 1934.)

My abode was the very comfortable and beautifully situated Grand Hôtel des Salines et du Golf, at Bex-les-Bains, where I stayed from 27th June to 21st August, 1932, and from 1st June to 20th August, 1933. Thence, on every favourable day, I went, either up or down the valley, by rail, or, more often, by motor, to the well known collecting grounds, lying here and there, from the Pfynwald of Sierre to the cliffs of Follaterre, Martigny, Vernayaz, Lavey, to the swampy meadows, the river banks and the lower side-gorges of the Vaud, as far as the Lake of Geneva.

The favourable days were, unfortunately, very much reduced in number, as compared with most years, by the particularly cold and rainy seasons I happened to hit on, and this fact is not to be neglected in connection with the aspect of the specimens I have collected, as it may have contributed to produce it in some species. Nevertheless, with constancy and by risking many a trip under threatening storms, or by looking out for sheltered nooks, on days of strong wind, I have been able to put together a considerable amount of material from localities of all sorts, showing the local variations, within the region, in a satisfactory way.

The reason which made it particularly interesting to find out exactly the aspect of the various species in the Upper Rhone valley was that it lies just on the limit between the two great zones of Central and of Southern Europe, in which the butterflies are, nearly always, distinctly different from each other. In a general way, the Alpine mass separates, sharply, the lowland races to the north and to the south of it and its waterparting can be taken as the boundary line between these two zones, but I had observed that in some species there did exist evidence of the northern strain, or exerge, having passed over into some Italian valleys and spread down, right to the plain, and I had always wondered whether the same thing had happened to the southern strain or exerge, in the opposite direction.

The Rhone Valley was the very place where it would have been most likely to have happened and its climate seemed very favourable

to it, considering the well-known existence, in it, of a few colonies of decidedly southern species, such as *Spilothyrus marrubii*, Rbr.=*boeticus*, Rbr., *Pieris manni* (Mayer) Trti., and *Melitaea dejone*, H.-G., not to speak of others, such as *Hesperia malvoides*, Elw. and Edw., *H. onopordi*, Rbr., *Lycaeides sephyrus*, Friv., etc.

Some species, at least, might have been expected to exhibit characters recalling, to a certain degree, the features of their southern races, such as they do, for instance, in the neighbouring Jura and especially in the region of Geneva, whence Frühstorfer has described quite a number of markedly distinct ones in this sense, with clear, bright, colours and dark suffusions and patterns reduced in extent.

Nothing of the sort, however, is there to be found. When I worked out my series of specimens by comparing them with those from many regions of Central Europe, with the aforesaid Jura ones and with the various races of the different valleys on the southern watershed of the Alps, in Piedmont and Lombardy, not to speak of the Tessin, I was surprised to witness that, except for some local peculiarities, to be found in a few species, they all agreed perfectly well with the race, or one of the races, of Central Europe, to a degree I should never have expected.

The waterparting is thus, also in this part of the Alps, a sharp boundary between two perfectly distinct zones, in connection with the aspect of the butterflies. The materials I have collected during several years just across it, to the S.-E. of the Valais, with only Mount Rosa between it and my collecting grounds in the Anzasca valley, are remarkably striking in that respect, by their totally different facies from those of the Upper Rhone valley, and what surprises one is, that every single species should follow this rule: they are all larger and many are real giants, as compared with those of the northern watershed, they are more thickly scaled, richer in pigment, brighter in colour and they are also more boldly marked and variegated, in some cases. To this it can be added that a certain number of species are found in far greater numbers, although some are, on the contrary, scarcer, and several, existing in the Valais, are not found at all in the Anzasca Valley. What accounts for the general aspect of the butterflies in these regions is that the latter is warmer, but particularly damp; the Geneva district is, instead, much drier.

As the Upper Rhone Valley is one of the regions most frequented by lepidopterists, the following notes, on its races compared with those of the neighbouring regions, and on the names that should, as far as I can make out, apply to them, may, I trust, be of some use to those who wish to work out their specimens accurately, according to the modern method of distinguishing the races of the various regions. From this point of view it will make it clear they are not to expect anything very different from what is to be found in Central Europe, generally, as far as the widespread species are concerned. These usually vary very little in that large zone, as compared with the amount of variation they undergo from Geneva and the Alpine waterparting southward.

These remarks do not, of course, apply to the Alpine races of high altitudes, which are not intended to be included fully in the following list, although I have, in most cases, mentioned them and compared them with the lowland ones. Owing to their striking features, they

have been noticed and described ever since the early days of entomology and those of the region we are dealing with are so well known that it would be a useless repetition to include them here. Except for the races of the *Erebia* and a comparatively small number of other species, which have been studied more accurately by Frühstorfer and others, since the beginning of this century, nearly all that is known is to be found already collected in the *Faune des Macrolépidoptères du Valais* of the Chanoine E. Favre (1899), in his Supplement of 1902, in the admirable summary of the Rev. G. Wheeler's *Butterflies of Switzerland* (1903) and in K. Vorbrodt's *Schmetterlinge der Schweiz* (1911). These works are as good now as they were at the time they were published and my object in the following List is only to add what is necessary to complete them, according to more recent methods of studying variation and views in connection with the use of names. The free and vague way in which these were applied till the early years of this century, when Frühstorfer, Oberthür and Tutt began to show how necessary it was to go back to original descriptions and make use of them, according to their exact meaning, has led to dreadfully misleading statements also about the Upper Rhone Valley. Vorbrodt had got as far as eliminating *I. feisthamelii*, Dup. from it, and as casting a doubt, by an interrogation, on the existence of *M. semele* race *aristaeus*, B., in the Valais; but precision has been carried considerably further since that time: for instance, the following, as well as others, must be removed too, having been erected for specimens now well known to belong to extremely distinct and highly characterised races, or even exerges, proper to other regions and mostly to the Ibero-African zone, so that even in the other southern zones, such as the Italian one, they do not exist at all, and it would be quite a mistake to speak of transitions to them in the cases of individuals which may resemble them, at first sight, by parallel variation, in certain respects, but which entirely lack their fundamental features and constitutions. Such are: *lyllus*, Esp., of *C. pamphilus*; *hispulla*, Esp., of *E. jurtina*; *procida*, Hbst., of *M. galathea*; *adrasta*, Hb., of *S. maera*; *lyssa*, Freyer, of *S. megera*; nominotypical *aegeria*, L. (still believed by Vorbrodt to exist in the lower Valais); *allionia*, F., of *N. statilinus*; *meridionalis*, Stdgr., *graeca*, Stdgr., and *occidentalis*, Stdgr., of *M. didyma*, *occitanica*, Stdgr., and *aetherea*, Ev. of *phoebe*. In the region we are dealing with there never occur even superficial resemblances, really similar to those insects, and those names have simply been introduced by entomologists, who had only read descriptions in current text-books; this has been a very common cause of mistakes and one finds the same name applied to individual variations of every region, because the authors of local lists were only acquainted with their own fauna and the original form or race was known to very few.

I must also mention the definitive exclusion of *N. fagi*, Scop. = *hermione*, L., from the region here dealt with, on the strength of the anatomical differences in the Jullien organs, by which it has been specifically separated from *alcyone*, Schiff. and no more confusion or talk of transitional forms to the former can exist any more, as they still did in Wheeler's time. It will be seen I have been able to do away also with the unsatisfactory doubt, even Vorbrodt remained in, concerning the legend of the capture of *Melanargia lachesis*, Hb., at Bex. I thus hope this List will be a useful contribution and a step

further towards a more exact and complete knowledge of the subject we are concerned in. I owe a word of gratitude to Prof. Matthey of the Lausanne University for the information and the specimens, with which he has kindly furnished me, to Mr. T. Bainbrigge Fletcher of Stroud (Glos.) for his generous contributions of specimens and accurate data, and to Mr. B. C. S. Warren for some information.

Nisoniades tages, L. race *subclarus*, Vrtý.—The few specimens, which I found, still on the wing, in the damp meadows at Bex, till the first days of July, are of a remarkably blackish colour and nearly uniformly so, only three minute subapical white dots and a few faint marginal ones being visible. This, thus, is a perfectly characterised *unicolor*, Frr., perhaps due to the hot, damp, time of emergence, but, no doubt, this form is not racial even in those particular localities, as it is known to be in Greece and in Asia Minor and as a series from Gèdre, in the Hautes Pyrénées, in my collection, shows it to be also there; moreover it must be noted that the uniformly blackish form is only the extreme variation even in these series, whilst the peculiar blackish tone is the constant character, and is, in most specimens, broken by grayish bands and black spots.

The few individuals of the II. gen. I met with in the driest localities of the Pfynwald and on the burning rocky slopes of Follaterre on 29th July and on 7th August, did not belong to *clarus*, Car., as they do, in similar surroundings, in peninsular Italy, but were similar to the *subclarus*, Vrtý. of the Isarco valley, in the Upper Adige. This is not surprising, since even the extremely hot and dry spots in the S.-E. of France, such as the rifle-range of Nîmes, fail to produce *clarus*.

Erynnis alceae, Esp. race *alceae*, Esp.—The race of the Alpine region, in general, belongs to the nominotypical one. The specimens of the II. gen. I found at Bex, on 12th Aug., and at Martigny, on the 10th, in 1933 and, more commonly, in 1932, from 24th July to 31st at Bex and Follaterre, do not exhibit as markedly as my summer ones from Vienna the features Hormuzaki describes in his *aestiva*: they are not very large, the white spaces are not very pronounced, nor quadrate, and the underside is not as dark and uniform, so that his name can scarcely be applied to them, unless further features, such as the different shape of the scales found in other species, are discovered to distinguish the second generation from the first in a constant way.

Spilothyrus altheae, Hüb. race *altheae*, Hüb.—This species did not appear suddenly, nor during a few days only, like the preceding and like *altheae* does, too, at Oulx, 1100m., in the Cottian Alps, on the southern watershed of the Alps. The males of the I. generation began to appear, at Bex, on 10th June in 1933. On 29th June, 1932, I had found a female at Bex, which was evidently the end of the I. gen.; then, on 9th July, 1932, and on 10th July in 1933, males again began to emerge and a few were found, now and then, till 12th August, but I met with no females. The females of this II. generation, no doubt, emerge later, as they are apt to do in Peninsular Italy. It only differs very slightly from the first, nominotypical one, as figured by Hübner, by the smaller size of most, but not even of all, the individuals. At

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Oulx the difference is, instead, quite conspicuous, owing, no doubt, to the greater aridity and heat of the Susa valley in June and July, when the second generation is developing; in 1925 it emerged there, in a mass, from 6th to 11th August, females included. These specimens of both sexes give the impression of being not more than two thirds of the size of the average nominotypical *altheae*: the actual length of the forewing, from the root of the costa to the apex, is 13 to 14 mm., instead of 15 to 16; the wings are narrower and more pointed, the colouring lighter on both surfaces, as a rule, but the white spaces, especially on hindwing, are less pronounced. I think the name of **postaltheae** should be erected for this summer form.

Contrary to what I thought till now, I realise that the first, or, as the case may be, according to altitude and localities, the single generation of some localities of the Western Alps and that of the Pyrenees differs quite distinctly from the nominotypical *altheae* of Central Europe, as well figured by Hübner, and must be designated by the name of **siccior**, which can be applied to the race, as a whole. Its features are a lighter (more gray and less black) and a more variegated upperside, the black and the white spots standing out more sharply, but more especially the very different tone of the underside, which is usually more broadly grey and paler on the forewing and, on the hindwing of a light grey, with a pretty bluish sheen, which recalls that of the first generation of *S. marrubii*=*boeticus*, although the white spaces are quite different from those of this species. Individuals similar to nominotypical *altheae* by their dusky colouring on both surfaces occur amongst the *siccior*, but they are exceptional, so that the latter form is quite racial. I take as typical my series of the single generation of the Baths of Valdieri, 1400m., in the Maritime Alps. A series from Porté, in the Pyrénées Orientales, is exactly similar to it. On the contrary a few specimens I have from the French watershed of those Alps (Levens) are quite nominotypical *altheae*, although a single specimen from Guillaume seems to be an indication that *siccior* does exist, in some localities, also on that side.

The first generation of Peninsular Italy, from Tuscany to Calabria, must now, on the strength of the preceding remark, be more exactly determined, as being similar to *floccifera*, Zeller, of Sicily, but with a mixture of *siccior*, so that it can be considered a transitional grade of the same variation, standing between the latter and the former, most extreme one.

✓ *S. marrubii*, Rbr. (= *boeticus*, Rbr.) race *octodurensis*, Obth.—I possess a few specimens, I purchased many years ago from the widow of Wullschlegel, who used to breed this species at Martigny, but I have looked out in vain for it in the likely spots of that neighbourhood and of the rest of the valley. I have asked Mr. Warren, who has collected for years in this region and who is particularly interested in the *Grypocera*, what he thought of my negative experience: his answer has been that he has never succeeded in finding *marrubii* either, although he has searched for it most diligently all around Martigny and all the way, down to the Lake, and he believes it could not have escaped him, if it existed there; he has also explored the valley thoroughly from Sierre to Visp, with the same result, so that he says he is convinced it is restricted to the region stretching from Saxon to Sion. Vorbrodtt furnishes the information that Wullschlegel had

found it at Saillon (opp. Saxon) and at Chiéboz, 1341m., above Branson, and quotes the old records of Christ, from Vex, and of Knecht, from Loèche. This seems to be all that is known about it and, possibly, it does not occur at all at low altitudes.

Carcharodus lavatherae, Esp. race *lavatherae*, Esp.—I have met with single individuals in perfectly fresh conditions from 5th June to the end of July, at intervals of a few days from each other, along the cliffs, from Martigny to Vernayaz and also at the Follaterres, 31st July, and on the Sépey road (27th), and they were all males. This agrees with the general belief that this species has only one long-drawn generation. Kitschelt, in his *Südtirol Grossschmett*, p. 60, sustains there is a second one in the Upper Adige, at the end of July and in August, the first being on the wing, there, in May and June. Dannehl has actually described that second generation from Terlano, near Bolzano, and named it *chlorotos*. In Peninsular Italy, as far as I have made out, there is only one emergence.*

Syrichthus (Hesperia) carthami, Hüb. race *valesiaca*, Mab. (= *valesina*, Mab.)—Warren has very rightly confirmed the race of the Valais to be perfectly distinct from nominotypical *carthami* and sustained that Mabile's name should be applied to it as a whole. Having only found a few fresh individuals in June, 1933, at Martigny, and old ones on 25th and 31st July, 1932, I cannot say whether that race is exactly the same as *speciosa*, Vrtz. = *major*, Rebel (homonym) of the Upper Adige, as Warren maintains it. According to Frey, *Lepid. der Schweiz*, p. 50, the I gen. is "smaller and overshadowed with brown," and he states it flies in June in the Upper Valais. Vorbrodt and Wheeler state, too, there is a second generation in July and August, but this is evidently produced only in favourable years and it certainly was not in these two last ones.

S. (H.) malvae, L. race ***elegantior***, n. nov.—Reverdin had stated in his original paper on the specific distinction of *malvae* and *malvoides*, in the *Bull. Soc. Ent. Genève*, II, p. 62 and 63 (1911) that in the Valais and particularly at Martigny he had only found *malvoides*, and since then, it has been discovered that *malvoides* only extends down the Rhone valley as far as Vernayaz and that it is entirely replaced, further, by true *malvae* (Lavey, Bex, St. Triphon, Sépey), as clearly made out by Warren.

Some specimens, collected by Wulschlegel, presumably in one of these localities, were sent by me to Reverdin, who did not hesitate to recognise *malvae* genitally. Compared with a large series of specimens from Sweden (Dalby, in Scania) they have a very different look indeed and, if the two were not connected by transitional forms from all sorts of localities in Central Europe, one might think them different species: the Rhone race looks fully one third larger, actual measurements of the length of the forewing being 11 to 12 mm., against 9 to 10, in the

* The preceding pages were in the press when the survey of the of generic names of the British butterflies was published by the Royal Entomological Society of London (*The Generic Names of British Insects*, Part 2: *The generic names of the British Rhopalocera, with a check list of British species*, 34 pp. 23 February, 1934). In connection with this genus it is stated that *Syrichthus*, Boisd. is the correct name to use for it, because *comma*, L. has been fixed as the genotype of *Hesperia*, Fab. ever since 1816. I will henceforth use, in this list, the names which have been given in that work, trusting it will, as far as it goes, put an end to the unceasing changes, which have hitherto been going on, owing to the lack of a settled rule of action.

male sex; the fringes are distinctly shorter as compared with the wing surface; the tone of black is not as deep and is slightly warmer; the white spaces are very much less, all being smaller in extent and those of the submarginal row particularly so; the suffusion of white hair at the base of fore and hindwing is very much less conspicuous; the underside of the hindwing is clearer and warmer in tone, the blackish suffusion being very slight and the colour more buff than olive-green, whilst the neuration stands out less and is decidedly yellow, instead of white. All these features are obviously similar to those of *malvoides* Igen. *pseudomalvae*, Vrtý., with which those specimens would certainly have been confused, if slide N. 2045 of Reverdin's files had not revealed their true nature. I name this southern race and individual form **elegantior**. My specimens unfortunately bear no date, but I did not meet with this species, so that they are probably of the spring, and Warren's statement that true *malvae* certainly has only one generation in Switzerland is confirmed.

As I am dealing with these races, I must point out that the localities, whence I possess the nominotypical one, are England, Holland, Germany, from Berlin to Franconia, and Budapest, whilst my series from several localities in both Upper and Lower Austria are a near approach to *elegantior* and contain individuals quite like it; the Geneva specimens are transitional, but nearer the latter, and a few from Sutshanski-Rudnik, near Vladivostok, in Ussuria and from the Shiotsu River, in N.-E. Corea, quite belong to it.

On the contrary, a series from the Yulduz valley, at 2500m., in the eastern Tian Shan, has a decidedly different aspect from any European one and it is well worthy of being distinguished by the name of **asiaeclara**: size of *elegantior*, but with all the white spaces very large, that in the cell and the row beyond it, in particular, being broad and quadrate, to an extent never, or quite exceptionally, seen in Europe; the submarginal row is as distinct as in nominotypical *malvae* on both wings; the white hairs at base are variable and about intermediate between those of the latter and of *elegantior*; the underside affords, however, the most striking feature in the pale greenish yellow colour of the hindwings, clouded with blackish scales in some cases, but usually of a pure tone, and unusually uniform, in looks, because the neuration is scarcely lighter in colour than the internervural spaces. Another large series from Chulugaisha, Mondy, 3100m. in the Sajan Mts. of the Trans-Baikal province, is much more variable and can be described as transitional between *asiaeclara* and *elegantior*.

Exerge *malvoides*, Elw. and Edw. race *malvoides*, Elw. and Edw.—Warren lays stress on the somewhat surprising fact that this should never be found mixed with the preceding one, even in regions, like the Upper Rhone Valley, which are on the boundary between their areas and where only a few miles separate them. To my mind the explanation of it is that this happens because they are not two distinct species, but only exerges, so that, although they could interbreed, they do not, following Eimer's rule that there usually exists strong repulsion and antagonism between very distinct varieties of the same species, which fight and exclude each other. On the other hand, their areas certainly are very different from those of the exerges of most of the widespread species of butterflies and, together with those of *melotis* and *pontica*, resemble more those of some closely allied, but specifically distinct, *Epinephili* and *Lycaenidi*.

I found the males of the II. generation just emerging on 7th Aug., along the stream at the foot of the cliffs of the Follaterres. They belong to the nominotypical *malvoïdes* of the Iberic peninsular and the south of France and not to the smaller and paler race *modestior*, Vrtý., of Italy. The I. generation can only be *pseudomalvae*, Vrtý., which is the same in all these regions and which is markedly different from the II. one, notwithstanding Warren's unaccountable statement to the contrary.

S. (*H.*) *onopordi*, Rbr. race *conyzae*, Guen.—A male at Bex on 19th June; males emerging in company with the *malvoïdes*, just mentioned, at the Follaterres in 1932 and on 31st July, 1933, and a few very fresh ones also in the Pfyn Wald, near Sierre, on 29th July. The features of the II. generation are not as striking in these specimens and especially in the former as they are in those of Oulx, in the Cottian Alps, which I have named *postgenita* in the *Ent. Rec.* of 1926, p. 104, as the reddish tone of the underside, characterising the latter, is only perceptible in some individuals and not to a striking degree in any; notwithstanding, the name can, I think, be applied to this generation, as a whole, also in the Valais, because a difference does exist between it and the very cold tone of olive green of the I. gen. What I cannot understand is how Warren can fail to see the peculiar facies of this *conyzae* race of the Alpine region, as compared with the others of the species. I have never sustained that it is a race proper to high altitudes, and not found in the lower valleys of that region, as he seems to think I did when I dealt with it in the *Ent. Rec.*, 1925, p. 75, but I am always more convinced it does differ, at all altitudes in the Alps, from the *subconyzae*, Vrtý. of the plains of other regions, such as the calcareous ones of Central France, whence Oberthür figures it in his *Ét. Lép. Comp.*, IV, figs. 521-2, and such as Peninsular Italy, whence are my "types," from Florence. Oberthür figures true *conyzae* from Zermatt and I see no reason to cast a doubt on the origin of that specimen, as Warren does, considering Bainbrigge Fletcher has collected it on the Simplon pass road, between the Ganter Bridge and the 10th Kilometre stone, at 1350 m., on 2nd September. The example of the I. generation, which I collected at Bex, near the gardener's house, in the park of the Hôtel des Salines, on 19th June, is perfectly identical with Oberthür's Zermatt one and my series of Oulx, in the Cottian Alps, includes similar ones together with others exactly corresponding with his figures 530-1 of a "type" from La Charnée (Savoy), out of the Guenée collection. The pale and soft grey tone of the underside of the hindwing is the chief feature of *conyzae* and its II. gen. *postgenita*, Vrtý., differs from it quite constantly, notwithstanding Warren's negation of seasonal characters in Europe, by its distinctly warmer tinge: my Follaterres specimens of 29th July, 1933, and of 7th August, 1932, are no exception although they are not as decidedly reddish as my Oulx ones. In the Upper Rhone valley the emergence of the I. generation is shifted to an enormous extent by the state of the weather: in 1933 it was quite wintery till June and that is evidently why *conyzae* was still emerging on the 19th of that month, whereas, in favourable years, it emerges, according to Warren, from early April to late May.

S. (*H.*) *serratulae*, Rbr. race *planorum*, Vrtý.:—I have not met with this species in the lowlands, but it is known to fly at Sierre and Sion in May and June and Vorbrodt says it was abundant in the Pfynwald in

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June, 1910. This author makes a clear distinction between the "form of the plains" and the "form of the mountains," following that which Reverdin had made in the *Bull. Soc. Léop. Genève*, II. pl. 4, and quoting his figures 13 and 6, respectively, and he states that his Pfywald examples belong most exactly to the first, like others he had from Eigg, near Zurich. My materials from many regions fully confirm that those two races are perfectly distinguishable, although in some localities they do intergrade, and Warren's negation of this fact simply shows, together with other criticisms of his, of the same sort, that he is rather too hasty in denying categorically what he has, personally, not seen or failed to grasp. I am quite of Reverdin's and Vorbrod's opinion and I have named *planorum* the form of the plains, in the *Ent. Record*, 1925, p. 56. The few specimens I have collected at the Pont de Nant, 1370m. above Bex, on 4th and 13th July, belong to the extreme opposite, mountain, form by their very small size, their minute and less numerous white spaces on both surfaces and their more decidedly cold underside tone: they thus correspond with my examples from the eastern Alps and to Freyer's description and figures of *caecus* from "the Alps of Tyrol," which should be applied to all the Alpine mountain races of this sort, as they differ very much from the nominotypical *serratulae* of the Spanish mountains.

[*S. carlinae*, Rbr. race *atrata*, Vrtv. :—Although this is not a lowland species at all, I must mention it to record the fact that the race I found emerging at the Pont de Nant, 1370m., above Bex, both in 1932 and in 1933, on 11th August and again on the 13th, when the females were making their appearance, is exactly the *atrata* one, I had discovered in the Formazza valley, between the Rhone and the Tessin, and I have described and named in the *Ent. Rec.*, 1925, p. 57; the only difference is that some Pont de Nant males have the white spaces of the upperside less minute and not as often nearly obliterated as the Formazza ones, but the very small size and the dirty look of the underside, owing to black scales covering the pale green or the pale yellow colour in patches, between the lighter coloured nervures, are perfectly characteristic. It thus seems to be a widespread race in the northern portion of the limited range of this species and it may be the only one there, as the male from Bérival figured by Reverdin in the *Bull. Soc. Léop. Genève*, II., pl. 4, fig. 4, falls within the range of its individual variations, although it is not characteristic of *atrata*, but transitional to the more boldly spotted, on upperside, and more evenly and brightly coloured, on underside, nominotypical *carlinae* of the French and Piedmontese Alps.]

✓ *S. alveus*, Hüb. race *scandinavicus*, Strand = *alticola*, Rebel = *ryffjænsis*, Obth. :—The few individuals of this species, I have met with at Bouillet, near Bex, on 24th July, at Lavey, on 9th August, at Martigny, on the 10th, and at Pont de Nant on the 11th were all rather worn, except the females of the latter locality. What is worth noticing is that they all belong most distinctly and thus, evidently, quite racially to the form which is the darkest on both surfaces and which has very small white spaces on the upperside. Warren is thus quite right in saying that this race is neither peculiar to Norway, as believed by Strand, nor to high altitudes, as believed by Rebel, so that the names they have given it are unfortunate. I have pointed out in the *Bull. Soc. Ent. de France*, 1928, p. 140, that the specimen from

the Ryffelalp, in the Valais (8-15 July) figured by Oberthür in the IV. vol. of his *Études Lép. Comp.*, fig. 470-1, and to which he explicitly give: the name *ryffelensis*, is nothing but the race we are here dealing with, so that it was quite a mistake of his and then of Warren to use it for the peculiar little race of some very elevated localities, which Oberthür has figured from Larche (Basses Alpes) in his Vol. VII. and which Warren has studied minutely; I have consequently named the latter *warrenensis* and this author has agreed I was right in doing so. In my List of the Butterflies of the Cottian Alps (*Ent. Record*, 1926, p. 104) I have stated that in those Alps *scandinavicus*=*alticola* is found alone at the very high altitudes of Clavières 1700m., and Sestrières 2100m., whilst lower down, at Oulx, 1100m., it becomes an individual form, mixed with *grandis*, Vrtz. and with what I then thought was quite the nominotypical *alveus*. It will be interesting to ascertain whether in the low plains of the Upper Rhone valley it is the only form, as my specimens seem to indicate. Anyhow, I presume, from what I have seen, that it must, at least, be very prevalent and that the name of *scandinavicus* must apply to the race, as a whole, strange as it may seem that such different surroundings as the Ryffelalp, the hot cliffs of Martigny and the Follaterres and the damp meadows of the plain should produce the same one.

This makes it all the more interesting to note that on the Simplon there is, instead, another race. The so-called nominotypical *alveus* of the French and the Piedmontese Alps, apart from the giant *grandis* form peculiar to them, and from the *scandinavicus* one, which does not vary in the least from there to Austria and Germany, and both of which are often found mixed with it in those Alps, is not, in reality, the form figured by Hübner, but is a first step of variation in the direction of *jurassica*, Warren, leading, in its turn, to the still more extreme and genitically different *neaccretata*, Vrtz. and *accretata*, Vrtz., of the Pyrenees and of Spain. For some time I have been noticing that specimens of the Carnic and of the Julian Alps, of the Schneeberg and of Vienna have a deeper colouring and a deeper tone of black, which is particularly striking on the underside of the forewing, than those mentioned above; in the latter that surface is always grey and often partly whitish, whilst the hindwings are of a greenish grey and often distinctly warm and bright, but never of the cold, saturated and sometimes very dark olive green of the Austrian examples; it must be added the hindwings have, on the upperside, white spaces which are often very pronounced, whereas in Austria they are always entirely absent or scarcely discernible. One can say that although variations are considerable and partly overlap, the lightest individuals of the Eastern Alps are similar to the darkest ones of the Western ones. If, now, we examine the typical figure 463 of the underside of *alveus* in Hübner's great work, we find that, although it is a female and this sex is always of a warmer tone of colour than the male in all the races, the anterior wings are nearly entirely of a deep black one and the posterior wings exhibit bands of a cold and rather deep olive green. My copy of that book is the one Staudinger had selected for his own use and endowed with a manuscript index and both Friedländer and Junk have stated it is one of the few they have seen in which the colouring is absolutely perfect, so that we can take it to convey what the original specimen actually was. As it was German in origin, according to the *habitat*

given by Hübner, its aspect is exactly what might have been expected. It is thus clear that the form and race of the Western Alps described above is decidedly different from Hübner's. On the other hand it would not be at all correct to lump it with that of the Jura, as it very rarely exhibits the peculiar quadrate shape of the wings, the prominent yellow neuration of the underside and the other minor features described by Warren in *jurassica*. I conclude it is quite necessary to have a name by which to designate it and I suggest that of *claralveus* n. nov., taking as cotypes my series from Cesana, 1300 m, in the Cottian Alps, which consists entirely of this form, instead of its being mixed with *grandis* and curiously enough, with *scandinavicus*, as it is lower down the valley, at Oulx.

The Simplon race, mentioned above, seems to belong precisely to *claralveus*, judging from a few females of Bérissal which are in my possession and which differ markedly from all the specimens I have spoken of before from the lower Valais and the adjacent part of the Vaud. Two males, I found at Bérissal on 20th July, and some of a series sent to me by Bainbrigge-Fletcher, which includes several *claralveus*, are not as distinct as those females, but transitional examples of the kind exist also in my typical Cesana series. A few from the Simplon Pass are all *scandinavicus*. As to *warrenensis*, Vrtý., it may actually exist on the Rychfelalp, together with *scandinavicus*, but the confusion which has been made between these forms and their names leaves us, for the present, without exact information about it.

✓ *S. armoricanus*, Obth. race *armoricanus*, Obth.:—Warren has found that this species exists, in the region we are dealing with, at the Follaterres, Branson and St. Triphon and that there is a specimen from Brig in the British Museum collection. As I have not hit upon it, I can only presume the race must be the nominotypical one and not the southern *fulvoinspersa*, Vrtý., on the strength of *onopordi* and of the races of the butterflies of the Upper Rhone valley in general, which are not their southern ones.

✓ *Powellia sertorius*, Hoffmans. (= *sao*, Hüb.) race *sertorius*, Hoffm.:—The first generation emerged in most localities all through June and exactly resembles Hübner's typical figures of *sertorius* by its large size, deep black tone and rather restricted white space, whereas most of my German specimens are smaller, lighter and have these spaces more pronounced. The II. generation emerged at Martigny and at Bouillet, near Bex, during the last days of July and worn individuals were still on the wing after the middle of August. All those I collected belong to the *parvula*, Vrtý. form, I have described from the Upper Adige, with the white spaces of small size and the outer row quite obliterated or nearly so, none to the *alioides*, Vrtý. form, I have described from Oulx, in the Cottian Alps, with the white space in the middle of the hindwing very large on both surfaces and prolonged on the underside into one or two long points and with the outer margin broadly whitish on the underside of the hindwings, so that it is evidently a transition to the African *ali* and it presumably only occurs in dry localities, such as only exist on the southern watershed of the Alps; also in Spain it is not infrequent at Albarracin, but it is never produced in the damper Catalonia.

✓ *Carterocephalus (Pamphila) palaemon*, Pall. race *palaemon*, Pall.:—Emerging in the first days of June at Martigny, Lavey and in other

localities of the plain and at Pont de Nant, 1370m., on 4th July. It varies so extraordinarily little, all over its European range, that there is nothing to be said about its local aspect.

Adopoea lineola, O. race *lineola*, O. :—Swarmed in certain meadows, at Bex, from the end of June to the middle of July and, in a worn condition, till the end. I think the race can decidedly be called nominotypical, but with a tendency to produce a certain percentage of strikingly darker individuals, referable to *ludoviciae*, Mab. by the very sombre aspect of both surfaces; the latter had already been reported from the Simplon by Tutt and from the Haut Valais by Agassiz. The size is constantly that of the small, nominotypical, race, whereas on the opposite side of Mt. Rosa, in the Anzasca Valley, it is intermediate between it and *major*, Tutt, and that race has been named *intermedia*, Tutt, from Macugnaga examples.

Adopoea flava, Brünn. (= *thaumas*, Hüfn.) race *macta*, Vrtý. (*major*, Tutt, *homonym*): Quite common in the neighbourhood of Bex and elsewhere, all through July, the females having appeared about the 10th. In this species the race is larger than the nominotypical northern one and corresponds to the description of Tutt's *major*, also by its more accentuated black markings. The Anzasca valley race is exactly like it.

Thymelicus acteon, Rott., race *acteon*, Rott. :—I only came across it by the La Bâtiaz tower of Martigny, on July 10th, 1933, when just emerging, and, as a matter of fact, it is well known to be scarce and restricted to small areas, in Switzerland; Wheeler records: Sierre and several places in the Pfywald, Brig, above Plan Cérisier, between Aigle and Sépey, Arpilles, Zermatt. The race is the nominotypical one, as it might have been expected, considering even in Peninsular Italy it predominates broadly and it only varies by producing a small percentage of individuals of the *ragusai*, Vrtý. form, with the hindwings entirely fulvous, whereas the latter only becomes racial in Sicily.

Hesperia (Urbicola) comma, L. race *superalpina*, Vrtý. :—This species emerges so late in the season that I was not able to secure any females from the plains and I only got males emerging at Bouillet, near Bex, on 18th and 21st August of both 1932 and 1933. Although the races of *comma* in the Alpine region, such as I have made them out in detail in the *Bull. Soc. Ent. France*, 1928, p. 124, are chiefly determined by the aspect of the female sex, I think it can be affirmed that those males belong to race *superalpina*, as distinguished from *alpina*, Bath, in the restricted and exact sense I have given the latter. In the Anzasca Valley this *alpina* extends from Vanzone, at 700m., to Macugnaga, at 1300. Instead, the aforesaid males of the Rhone Valley, although they are only from an altitude of about 500m., are distinctly more melanic, by the extent of the black pattern on the upperside and by black suffusions of scales on the underside, so that they agree most exactly with my "co-types" of *superalpina* from Bormio, at 1300m., on the Stelvio road. I must mention that at Pont de Nant, 1370m., both sexes were common on 13th August and that they exhibit the next, and most extreme degree of melanism known, corresponding to my race *atralpina*, described from 1800 to 2300m. on the Ortler and on that road. Instead, at Evolene, at Arolla, and at 2000m. on the Simplon road the race is *superalpina*.

Augiades sylvanus, Esp. race *sylvanus*, Esp. :—Quite common, more

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or less, everywhere in the region, during July, and belonging to the usual, widespread, race, as geographical variation is apparently, nearly nil in Europe, except for *septentrionalis*, Vrtý.

Since the name of *sylvanus*, Esp., is a homonym and invalid, as the Committee on Generic Nomenclature has just pointed out, it must be added that a substitute is necessary for the race figured by Esper and that it should be *esperii*, n. nov., whilst, according to that Committee, the Asiatic *venata*, Bremer and Grey, is the nominotypical one of the species, and *Ochlodes* is the correct generic name.

✓ *Heodes virgaureae*, L. race *zermattensis*, Fallou.—A few males, at the beginning of July, along the foot of the cliffs, from Martigny to Vernayaz. The single female found, evidently just emerged at Martigny on 25th July, is so extremely dark that it can only be ascribed to this race of the lower Valais, usually inhabiting high altitudes and readily distinguishable from *montana*, M.-Dür, of the Simplon and Brigue, as stated by Graves and Hemming in their excellent little monograph on this species in *The Entomologist*, 1928, p. 58, "by the blackish suffusion at the base of the forewings on the upperside, which is relatively slightly developed in *montana*."

✓ *Palaeochrysophanus** *hippotoë*, L. race *mirus*, Vrtý.—Two females from the golf-links of Bex, one of which I found on 18th June, 1933; with its wings still soft, and the other on 9th July, 1932, in a slightly worn condition, are certainly, perfectly distinct from *eurybia*, O., as the underside of the forewing is nearly entirely of a clear fulvous and the hindwing has a broad orange premarginal band, and also from the nominotypical *hippotoë* of Sweden and the north, such as are my Belgian examples, by the lighter tone of the fulvous and of the grey on that surface, agreeing well with my typical *mirus* of the Pyrenees and with others from Austria, etc. It will be interesting to see whether the males have the bright and broad violet sheen of *mirus*, but, queerly enough, I never saw a single one, keenly as I looked out for them all through June and July.

✓ *Lycaena (Runicia) phlaeas*, L. race *nigrioreleus*, Vrtý.—Wheeler is right in stating this species is usually met with singly in this region. I have, actually, only found one fresh male at the foot of the cliffs of Follaterres on 31st July, 1933, and one female, which had just emerged on 19th August, 1932, at Martigny. The former is an *eleus*, F., as restricted by Tutt and by me, but with a very slight trace of dark suffusion on the forewings; the female has nearly none and would correspond to the degree of it, Tutt has called *initia*; but, on the other hand, it is exactly similar to most of the females of the *Anzasca*

* The dreadful changes in the generic names of the *Lycaenidae*, which have been going on for years, have been brought to the climax by Hemming's revision in the *Annals and Magazine of Natural History*, ser. 10, vol. III., p. 117 (March, 1929), where he concludes that the genotype of the name *Lycaena* is *phlaeas*, L., that the names of *Chrysophanus* and of *Polyommatus* can, in no way, be used for the generic groups of "coppers," to which they have been applied, and that the name of *Loweia*, Tutt was not available, because it was already in use for a Rhynchota genus. As there is not much doubt that names will be necessary for these groups, it seems to me that the most practical way of erecting them, so that the new ones recall the old ones, in future, when texts of different periods are compared, would be to simply add a prefix to the latter and I suggest it should be "palaeo" (=ancient), as most of those names are Greek in origin. The following seem to be required:—PALAEOCHRYSOPHANUS, with the genotype *hippotoë*, L.; PALAEOLOWEIA, with the genotype *tityrus*, Poda. = *dorilas*, Hüfn.

and other Alpine valleys, where the males belong to two (*eleus*, F.) and to three (*nigrioreleus*, Vrtz.), degrees further in the amount of that suffusion, and Wheeler informs us that the form "in which the copper is entirely suffused and the hindwing distinctly tailed" is very frequent in the Valais; this cannot be *aestivus*, Z., the extreme melanic form of the most southern parts of Europe and the Mediterranean islands, and it can thus only be *nigrioreleus*, when *eleus* is taken in its true restricted meaning of the form in which the copper is left entirely, or nearly entirely, quite clear on the disc. The first generation can only belong to the nominotypical *phlaeas*, as it does all over Europe, and the third, presumably, to *initia*, Tutt, as in central Europe, generally.

Palaeoloweia alciphron, Rott., race *ultragordius*, Vrtz.—In 1933 both sexes appeared on 28th June and went on emerging till about 10th July, along the foot of the cliffs, from Martigny to Vernayaz; in 1932 I found a couple, still in tolerably fresh condition, as late as 31st July by the La Bâtiaz tower. Next to race *ultragordius*, which I have described in the *Ent. Rec.*, 1926, p. 105, from Oulx, in the hot and dry Susa valley of the Cottian Alps, that of the locality here concerned is the most highly characterized in the same direction of *gordius* variation: in the male the fulvous ground-colour is of a very light, yellowish tone, which is left quite clear by the total absence of dark suffusion, and there is no, or nearly no, violet sheen; the black spots are very small indeed in that sex and smaller than in other races, except *ultragordius*, also in the female; the underside is of a light grey and the premarginal orange band is narrow and pale. This race thus stands nearer to *ultragordius* than to any other and must be included under the same name, although it just falls short of reaching the most extreme facies of the latter. Compared with race *gaudeolus*, Frhst. of the mountains of the Valais, it differs from it distinctly by its larger size (length of forewing, from base to tip, where fringes begin, 18 to 20mm. in both sexes, against 17 or less), by its more constantly clear ground-colour on upperside and very pale grey underside and by the decidedly smaller size of the black spots on both surfaces, especially in the male sex.

The way Frühstorfer has erected his *gaudeolus* is rather queer: he states, in the original description, that there exists a light coloured female, with small black spots, from Zermatt and the northern side of the Simplon, and that there is a heavily spotted and dark reddish yellow female from Lana (S. Tyrol) and he gives "the name of *gaudeolus* to that of those two races which is not Sulzer's *gordius*." In September 1920 I wrote to him and asked him what was to be made of this; his answer, of 3rd Oct. was as follows: "I have now discovered that the type of *C. alciphron gaudeolus* is, anyhow, not of the Tyrol, but of the Valais." Vorbrodtt, followed by Gaede, in the *Supplement* to Seitz, have, thus, rightly applied that name and, as Sulzer figures an enormous female, with very large black spots, one can consider it definitively settled. Some of the giant females of the very fine race *isokrates*, Frhst., described from the southern side of the Simplon (Iselle) and which I have collected in the Anzasca Valley, are those which come nearest to Sulzer's, in my collection, but none quite reach its size and large spots. I have recalled the fact (*Ent. Rec.*, 1926, p. 105) that "Bündten" is the locality given by Sulzer; as it is very unlikely such a race should be found on the northern watershed of the

Alps, in the actual Grisons, the most likely one is Chiavenna, which was included with these in that ancient denomination. I possess a female *ab. midas*, Lowe, from the Simplon (Bérisal or Pass).

✓ *Palaeoloweia tityrus*, Poda race *dorilas*,* Hüfn., with *I. gen. vernalis*, Rebel.—My experience confirms Wheeler's remark that this insect is "by no means generally common." I have only met with it in three places: at St. Triphon, on the banks of the Gryonne, below Bouillet and on the golf-links of Bex. In this last locality it was, however, very abundant. As to its time of emergence, it seems to be variable: in 1932 old individuals were still on the wing at the beginning of July and the second generation emerged in August, the first female only appearing on the 20th; in 1933 both sexes disappeared entirely about 10th June, but the second generation was on the wing on 23rd July, a female on the next day and both sexes abundant in the following ones. I do not doubt the third generation, mentioned by Wheeler, is produced in most years, as 1933 was anything but a particularly favourable one and, yet, there was plenty of time for another life-cycle.

There has been some discussion concerning the aspect of the spring generation and of the summer ones: Meyer-Dür, in his *Schmett. der Schweiz*, p. 60, sustained the former was larger and the males had "more prominent and sharper marginal lunules on the upperside." Courvoisier denied this statement and Vorbrodtt equally denies, quite rightly, the opposite one of Rebel, in Berge's *Schmetterlingsbuch*, p. 63 (1910), that they lack those lunules. The name of *vernalis*, Rebel, however, must not be sunk, because its author adds, in the description, that "the underside is much less yellowish than in the summer generation" and this is quite true, especially in the female sex, where the hindwing is decidedly white, or of a cold tone of pearl grey, which is never seen in summer examples, and the whole of that surface has a softer look.

In the Rhone valley the second generation does correspond perfectly to Meyer-Dür's description of it: "generally smaller, ground-colour of male darker, with the marginal lunules partly or, more usually, entirely obliterated," whereas my June examples are larger and lighter in colouring in both sexes; the lunules of the male are not, however, much more pronounced. The former is the smallest and darkest local race, ascribable to *dorilas*, Hüfn., I have seen; all the females have a dark clouding all over the fulvous of the forewing. None belong to the very common, and often locally prevalent, form of Central Europe, with the forewing more or less entirely of a clear and bright fulvous, for which the name of *phocas*, Rott., can very well be used, as its author's description of the forewings is that they are like those of *phlaeas*, but of "a reddish orange, with no gloss," and as Esper, soon after, gives an excellent figure of that form. Taken in this sense, the name of *phocas* can be applied to the race of many localities in Northern France, Belgium, Germany and Austria (such are most of my examples from Vienna), whereas the name of *dorilas*, Hüfn., becomes restricted to the darker ones, like that of the Rhone Valley and other localities in the same area, including Berlin, whence were Hüfnagel's types.

* The most unfortunate misspelling of this name, which Staudinger started in his Catalogue of 1861 and did not subsequently correct, has spread to the whole of literature since then, but in Hüfnagel and in all the authors before that date the spelling is with an *a* in the last syllable and not with an *i*.

It must, of course, be remembered that, since Courvoisier has revived the name of *tityrus* for the species, the nominotypical race is the one peculiar to Styria and Carniola, whose females are of as deep and uniform a black colouring as the male and only differ from the latter by the large fulvous lunules, which stand out sharply and boldly, as described by Poda; the forewing, thus, becomes similar to the hindwing; in the male the lunules are either entirely lacking or only faintly visible.

On the southern watershed of the Alps the aspect of the females again is different, owing to their larger size and to their beautiful, rich and bright, orange colour on both surfaces; also a certain percentage of the males are more warmly and brightly coloured on the underside where their forewing exhibits a patch of pale fulvous, which never exists in *dorilas*; this race has been called *locarnensis* by Tutt; it is abundant in the Anzasca Valley and contrasts very much with the *dorilas* of the opposite side of the mountains, in the Rhone Valley. It has a wide range: a large series of specimens of the Vendée, on the west coast of France, owing, no doubt, to the mild climate of that region, decidedly belongs to it and only differs from my examples of Northern Italy by its slightly duller tone of fulvous; in the opposite direction it actually reaches Asia Minor and my series, both from high and low altitudes in Anatolia, are very much like it and do not belong at all to *orientalis*, Stödr.

On the contrary, in Peninsular Italy, from Emilia southward, race *italorum*, Vrtý. (1919) = *reverdini*, Stauder (1921), with its first generation *italaveris*, Vrtý., differs markedly from *locarnensis* by the much greater development of the premarginal fulvous lunules on both surfaces of the male and by their brighter and redder colour, usually accompanied by a richer fulvous suffusion over the disc of the forewing on the underside; the females, on the contrary, are rather less bright, but differ chiefly by the decidedly smaller black markings and by the lesser frequency and extent of the black suffusion over the forewing on the upperside, culminating in form *fulvior*; Stef.

I must take this occasion to note that the race of southern France exhibits no signs of connection with the Italian ones, as is, on the contrary, usually the case in the S.-E.; it varies in quite the opposite direction and it can be considered a first degree of variation from race *dorilas* of more northern localities, towards the highly characteristic race *bleusei*, Obth., of the Iberic Peninsula; what betrays this is chiefly the dull yellowish white colour which replaces the fulvous, or orange, in both sexes and on both surfaces; the males of dry localities, such as are mine, of 15th August, from Mont Ventoux, in the Vaucluse, also show a strong tendency of the dark ground-colour to turn grey and especially whitish on the forewing, where *bleusei* actually has a distinct yellowish-white patch; the premarginal black dots contained in the lunules of the female are usually larger than in *dorilas* and this, too, is an Iberic character. I name this race **pallidepicta**, taking as typical my Ventoux specimens. Others, from Barcelona, seem similar to them. The Gironde females are like them, but the males are of a deeper tone of black. The race of Pajares, 1300m., in the Asturias, as represented by my August examples, are intermediate between the preceding and true *bleusei* of central Spain: they are smaller than the latter, they have no tails, but the forewing of the male is broadly of a

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pale yellowish ochre all over its central portion and the female's ground colour has an ochre tinge, richer than that of *pallidepicta*. I think the name of **praebleusei** will be useful to designate this grade.

It is instructive to note how *bleusei* seems to be the primitive form of the species, which has survived, as in many other species, on the Iberic Atlantic coast, after having reached it during the, still subtropical, early Miocene days; the male still retains the aspect of the female. In other regions frigidipetal transformation of constitution has presumably conferred the dark aspect first to the male and then, through forms similar to nominotypical *tityrus*, to the female, and on to the culminating, very distinct, *subalpina*, Spr., of very cold mountain localities, in which both sexes have lost all traces of fulvous on both surfaces; this is perhaps an exerge, rather than a race, although the existence in Switzerland of race *brunnea*, Wheeler, described from Mürren and which seems transitional to it, makes it more difficult to believe in a sharply distinct hereditary constitution. I have found *subalpina* emerging at Pont de Nant, 1370m. on 4th July, but no females were yet on the wing.

✓ *Lycæenopsis argiolus*, L. race *argiolus*, L., with II. gen. *parvipuncta*, Fuchs. = *latisquama*, Ball.—A few newly emerged individuals I found at Bex and various localities during the first days of June, and which disappeared very soon after, and others of the II. generation, which were on the wing in August, all belong to the widespread race of central Europe. The latter have the usual summer features, which Fuchs described quite well and named *parvipuncta*. I cannot follow Tutt's and Lempke's (*Lambillionea*, 1931, p. 183) criticisms of his description and their conclusion that his name is not to be used for that generation. Some of the minute characters he mentions may be individual, but others are perfectly true and, if the validity of names was to depend on the perfection of the original description, there would not be many left. Ball has the full credit of having discovered the best distinctive character, but, if names were allowed to be altered on this principal, the results would be disastrous for nomenclature.

Scolitantes orion, Pall., race *metioche*, Frühst.:—It has long been known that the usual Valaisian form is that in which the blue has almost, or often quite, disappeared, and the female is much larger than the male, as stated by Wheeler, who applies Gerhard's name of *nigra* to the race as a whole. Frühstorfer has, later, erected the name of *metioche*, from the Valais and S. Tyrol, on the strength of the fact that the males and some females are not of the entirely black form named *nigra*. In the Anzasca valley this race exists too and it is extremely abundant in the middle of July, whilst a scarcer II. generation emerges in the first days of September. In the Rhone valley I only found a few individuals at Martigny and at Vernayaz during the first days of June.

✓ *Twanana baton*, Bergstr. race *baton*, Bergstr.:—The usual race, which spreads all the way to Sicily, without affording any geographical variation. Vernayaz, Martigny and Sierre seem to be the only localities from which it is recorded, in April and May and in July.

✓ *Iolana iolas*, O. race *eurysthenes*, Frhst.:—My series of specimens agree with the features described by Frühstorfer from the Follaterres and S. Tyrol, but those from the latter region are more pronounced.

✓ *Maculinea arion*, L. race *obscura*, Frey.:—A few fresh individuals, which made their appearance, in a meadow, at Bex, on 18th June, 1933,

and on 11th July, 1932, quite belong to the dark races, described by Frey "from Zermatt to the Stelvio," and which I possess from many high mountain localities in this region and further east. They do not exhibit the features of *tainaron*, Frhst. from (type) Tschieboz, 1300m. above Fully (N.E. of Martigny), from the Val d'Entremonts and from the south side of the Simplon: very glossy blue, large black spots on both surfaces, and broad greenish suffusion at the base of the hindwings on the underside, as in *laranda*. Courvoisier and Wheeler have already reported *obscura* as racial in the lowlands (Sierre and Martigny), whilst in other localities of the Upper Rhone the species is large and light; the latter is more likely to belong to nominotypical *arion*, whose "type" is Roesel's figures 3-4 of pl. 45, from "Germany," than to *arcina*, Frhst. of very dry localities further west (Geneva, Jura, Lausanne, Digne, Allevard), judging from the races of most butterflies of these regions compared with each other.

Maculineaalcon, F. race *alcon*, F.:—Although this species exists in the localities I have collected in, I evidently have not hit off its very restricted areas, not having seen any. There can, however, be little to say about its local features, because *alcon* varies very much indeed, individually, everywhere, but no races have been detected, except its extreme southern ones of Italy: race *turati*, Vrtv. (= *italica*, Turati, primary homonym) and *peninsulae*, Vrtv.; even *monticola*, Stdgr., which has been separated racially, is, apparently, unsustainable, as Wheeler remarks very rightly.

Glaucopsyche cyllarus, Rott. race *andereggi*, Rühl. (= *alpina*, Trti. and Vrtv. = *maritimalpium*, Vrtv.):—Some worn males and some perfectly fresh females were still on the wing on the 3rd of June in the park of the Hôtel des Salines, at Bex, which is comparatively not far from Lavey, where Wheeler reports it as more plentiful than elsewhere in the Rhone valley. These specimens have revealed to me the unfortunate fact that the race of the Maritime Alps, on the Italian watershed, and of the rest of Piedmont (I have it from Mt. Musinè, near Turin, and from Lake Maggiore), which Turati and I had named *alpina* and which I had renamed, because of homonymy, should have been referred to *andereggi*. The cause of this not having been found out sooner is that all text-books present the latter name as applying to the female form of any locality with no blue scaling on the upperside, and Rühl has been the first to do so in his *Pal. Gross-Schmett.* His long original description in *Soc. Entom.*, VI, p. 51 (1891), although it only deals with the female, presents it quite differently, as a peculiar local form of the Valais, and includes, amongst its features, the very dark underside and the very large spots, twice as large as usual and standing out prominently, besides the particularly deep black upperside. Vorbrodt, very rightly, lays stress on the fact that also the male of this form is different from the nominotypical one by its larger size, its broader forewing, its very marked black marginal band and the very large ocelli of the forewing on the underside. All these characters are precisely those we had described in our *alpina* and the specimens of Bex exactly resemble our "types" of the Baths of Valdieri. Size, however, is not a constant feature anywhere and, both here and in all my series from Piedmont, the remarkably large individuals, characteristic of *andereggi*, occur with very much smaller ones, in both sexes; one of my Bex females is, furthermore, quite nominotypical by its

light, pearl-grey, underside and its usual sized spotting; one or two exhibit a dash of blue scaling at the base of the wings on the upperside. This is one of the few cases in which the race of the Rhone valley is the same as that of the southern watershed; possibly the very early time of the year, in which it is on the wing, has something to do with this exception, as it shifts very much, according to localities and yearly weather, and a great deal of variation in the surrounding conditions is thus avoided. Nevertheless, the race of the Jura, Neuchâtel and Geneva, is quite different and it is this one which resembles that of Central Europe, instead of its being the Rhone valley race, as in most species.

✓ *Cyaniris semiargus*, Rott. race *semiargus-montana*, Rott.-Meyer Dür, with II. gen. *microconia*, Ball:—It has been remarked by many that the races of this species are far from definite and sharply distinct and the way names have been erected for the various forms makes it still more difficult to describe them and to apply the latter. Tutt seems to have attained what best could be done in this respect by restricting the nominotypical form and race to that of average size, of a moderately bright and clear blue and with a well marked marginal black border in the male sex; for that with a thin border he uses the name of *cimon*, Lewin; the very large, clear, bright, blue one, with a thin margin, he calls *acis*, Schiff.; the small, or very small, dark blue or violet one, with a broad black border, above, and a dark grey underside is *montana*, Meyer-Dür. Stauder has lately (*Entom. Anzeiger*, 1925, p. 74) pointed out that in the Alps, a much more widespread form than the extreme *montana* one is what he calls a transition between it and nominotypical *semiargus*. This is perfectly true, but the particular form he describes in this sense and he names *transiens* (renamed *semimontana* by Bollow, on account of an homonymy) is, instead, transitional between *montana* and the Austrian race *acis*, Schiff., with which he compares it in his collection, taking the latter to be nominotypical *semiargus*; he says, in fact, *transiens* has the same dark and saturated blue as *montana*, but "a very narrow black marginal band, which stands out sharply, and never any discocellular streak," so that this marked reduction of the black pattern makes it the mountain variation corresponding to the large *acis* of the lowlands. Described in this restricted way *semimontana* is not at all predominant either in the eastern (Stauder's materials were from the Tyrol) or in the western Alps, but occurs in both, mixed with *montana* and with true transitions to nominotypical *semiargus*: I have some from several Piedmontese localities and some of the Baths of Valdieri are so extreme that they even approach *acis*, although other specimens are quite *montana*.

Following this distinction of the various forms of the species, it can be said, in a general way, that in the Upper Rhone valley *semiargus* varies comparatively very little, both locally and individually and that its race, there, is, on the whole, one of its smallest and darkest ones. I have found the same one at all altitudes, from that of 1400m. of Bérisal, Champéry and the Pont de Nant, where it emerges during the first half of July, to every locality of the plain, where the first generation was on the wing till the middle of June and the second appeared in the last days of July and went on emerging till I left, on 22nd August.

It is a known fact that well characterised *montana* are never found

alone below 1800m. The race just mentioned consists, everywhere, in a mixture of *montana* and of nominotypical *semiargus* or, more exactly, of its darkest individual form, pointing to *montana*, for I have not met with a single individual of the opposite one, pointing to *cimon* or to *acis* by a lighter and brighter blue upperside and grey underside together with a much thinner black border, such as occurs frequently and even predominantly in the lowlands of central Europe. In the Rhone valley the utmost variation in that direction can only be ascribed to the grade of *semimontana*, in which, as we have seen, the tone of blue and of grey are the same, or nearly the same, as in *montana*. The only way to denominate a race of this sort correctly is to associate the names of the two forms which are mixed together, with a large percentage of perfectly characterised individuals of each and some intermediate ones. It must, thus, be: *semiargus-montana*, Rott.-Meyer-Dür.

A rather remarkable fact is that the individuals of the second generation from the dry and hot cliffs of Martigny, such as those I have collected on 31st July, and of the Follaterres, on 7th August, are not only small, but very dark, so that, to the naked eye, they look like well characterised *montana* and it is only on the strength of the microscopical features of the scales described by Ball in that generation that his name of *microconia* must be applied to them. As to the second generation of other, more usual, surroundings, I detect no difference between it and the first, except the one of the scales, and Vorbrod's statement that "the males are larger, with a lighter underside and paler ocelli," is not carried out in this region, according to the materials I have put together.

✓ *Aricia agestis*, Schiff. race *allous*, Hub.-Geyer. :—In all the localities of the plain the first generation emerged from the first days of June till the first days of July and then the species disappeared entirely in the Vaud till 21st August, when several males, which had evidently just emerged, were seen again on the golf-links of Bex and at Bouillet. During the interval I found a few individuals in the Valais, at Martigny (10th August) and at Sierre (29th July, fresh males). I need scarcely mention that the specific name must be *agestis*, Schiff. and that the one of *medon*, Hüfn., which Tutt had revived, must be again dropped, because it is a primary homonym, very rightly discarded by early authors, owing to the previous use made of it by Clerck in 1759 in the same, inclusive, genus *Papilio* of those days. The nominotypical race thus becoming again that of Vienna, with quite a fair development of marginal fulvous lunules in both sexes and with quite a distinct seasonal dimorphism (the II gen. is *aestivus*, Stdgr. and well characterised), the race which is widespread further north and chiefly in Germany and in the region of the Alps and which was precisely Hüfnagel's *medon*, from Berlin, must now be designated by the name of *allous*. Geyer, in his continuation of Hübner's great work, very judiciously figured under this same name a male with no trace of fulvous lunules on the upperside, another with these lunules, although they are smaller than in the average nominotypical *agestis*, and a female with the lunules a little more pronounced. These figures thus exactly represent the aspect of that race, with the two forms of the male, one always finds associated, and with its sexual dimorphism. As far as individual forms are concerned, Harrison, in 1906, has restricted the name of *allous* to that with no lunules by erecting the name of *semi-*

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allous for the form which is, to use his own words, "as in *P. astrarche*, except that the row of red spots above is becoming obsolete." Jakontov is not justifiable in having erected, in the *Revue Russe d'Entomologie*, of Nov. 1909, the name of *inhonora* for specimens from central Russia of the same size as nominotypical *agestis*, but with no lunules in the male and with very small ones in the female; these are exactly *allous*, in its most restricted individual meaning. What led him to do this was Staudinger having identified his own *alpina* with *allous*, in the last edition of his Catalogue, and having described them, both together, as smaller than *agestis* = *astrarche*. Geyer's *allous* is, on the contrary, the same size as the latter and the name of *alpina* can, very usefully, be kept separate and used to designate the very small race found in some localities of the Alps and more especially at high altitudes, where the males are, furthermore, much more frequently entirely lacking in fulvous lunules. Staudinger in his original description of *alpina*, in the *Horae Soc. Ent. Rossicae*, VII. p. 52 (1871) lays particular stress on the smallness of this alpine form and on the males being entirely black, whilst those of this sort, from other localities, are distinctly larger.

The race of Bex corresponds exactly with Geyer's figures in aspect and in average size. That of Sierre (Pfywald) is smaller and thus similar to the individuals of *alpina* with the lunules most accentuated. I do not detect any difference between the two generations I have collected and I can only say that some females of Martigny point to *aestiva*, Stmgr. by a slightly warmer tone in the ground-colour of the underside, but are far from being as fulvous as are many summer examples of Vienna, not to speak of more southern regions. Wheeler's use of the name *calida*, Bell. for individuals from that locality of the Valais is, needless to say, the result of the inaccurate way names were applied in those days; it is the most extreme southern form and nothing like it is found anywhere in Central Europe.

✓ *Aricia** *chiron*, Rott. (= *eumedon*, Esp.) race *chiron*, Rott.—There is nothing particular to be said about the local aspect of this species, which scarcely varies at all, geographically, in Europe, except for the dwarf *glaciata*, Vrtv. of some very high Alpine localities. Kirby, Courvoisier and others have rightly established that *chiron* has precedence over *eumedon*. The former has a primary homonym in *Papilio chiron*, Fabr. (an American *Megalura*), published in the same year 1775, but Rottenburg's paper is dated 24th of March and the month of Fabricius's is not known, so that, according to the Rules of Nomenclature, it is to be considered published on 31st December and it is the latter name which must be substituted by *marius*, Cramer. Reported from Sierre in mid-June.

Lycaeides argyrognomon, Berg. race *nivea*, Courv., race *valesiaca*, Obth. [and race *callioides*, Vrtv., in the mountains].—Courvoisier has described and figured, from the Pfywald, under the name of *nivea*, a large race, with a very white underside (*Iris*, 1911, p. 103) and Chapman states, in Oberthür's *Études Léop. Comp.*, Vol. XIV., p. 50, that he had it also from Bex. It certainly is a striking race, but

* The exact generic position of this species has not yet been definitely made out: Tutt placed it, by rule of thumb, amongst the *Aricia*, but Bethune-Baker has found that the alliance to *icarus* is evident in the pattern and also in the genitalia generally, though the aedeagus is between *Plebeius* and *Polyommatus*, so that he concludes it is best placed in *Polyommatus*, together with *psylorita*, Freyer.

Reverdin is, no doubt, right in rejecting, at p. 27 of Oberthür's volume, the suggestion Courvoisier makes there, at p. 34, on the strength of the difference he has found in the androconial scales, that it is a distinct species from *argyrognomon*. Reverdin states, at p. 25, that the genitalia are the same as those of the latter. As to the blue female form, with prominent premarginal orange lunules, described from the Pfywald by Courvoisier and named *astragaliphaga* by Vorbrodt, it can only be the individual one of race *nivea* corresponding to the smaller, but similar *valesiaca*, whose frequency is quite a feature of this region.

I failed to find this species in the Pfywald and I have met with no colony of pure *nivea* anywhere else, but some of the individuals of the Follaterres and of St. Triphon and Bouillet, near Bex, are a near approach to it, both in size and in their underside aspect. Here they are, however, accompanied by the extreme opposite form *valesiaca*, Obth. and by complete series of intergrades and the race, as a whole, stands nearer the latter than the former by the small size and the thin underside markings of most individuals and by the majority of females being broadly suffused with blue on the upperside. The I. generation was emerging during the first days of June and I found it particularly, in fair numbers, along the banks of the canals and in the old stone quarry of St. Triphon. The second generation was on the wing at the foot of the cliffs of the Follaterres, by the Branson bridge, on 31st July and the females on 7th August, but, in the Bex district, it only made its appearance, at Bouillet, on 21st August. I do not detect the slightest difference of aspect between the two generations, just as I never have in the southern, Italian, races either.

Above Colombey, opposite Aigle, I found a locality, in an old quarry, where, on 6th August, both sexes were just emerging of a pure *valesiaca* race, constantly small in size and with all the females of the extreme form, entirely covered, more or less thickly, with blue, on which the orange lunules stand out, in a lovely way. This is evidently the form Wheeler reports from "Branson, Sierre, Pfy" under the name of *argulus*, Frey, but such a use of the name will not do at all, for it was given to the pale race of very high and cold localities, where the females are of an entirely different, pale, silvery, blue and the underside is much duller; those he reports from "the road to Alpien above the Simplon Pass" may really belong to it, for even at Simplon Dorf and at the Pass many individuals are transitional to it in colour, although they are much larger, judging from specimens sent to me by Bainbrigge-Fletcher; another little series collected by him at Arolla, 2200m., is a further approach to *argulus* both in colour and in size. At Bérisal the extent of variation is remarkable: on the whole that race can only be referred to *alpina*, Berce, but there are numerous transitions to *valesiaca* in both sexes, including blue females, and some individuals, of very large size, are similar to the *magnalpina*, Vrtý., form, which is racial in some localities of the Susa valley, whence I have described it.

In connection with the mountain races, I must add that the one I found at the Pont de Nant, 1400m., above Bex, is neither the true *argulus*, Frey, such as it exists, for instance, on the Ortler, nor *alpina*, Berce, of some localities of the Western Alps; it is perfectly similar to race *callioides*, Vrtý., defined in the *Annales Soc. Ent. France* of 1926, from other localities of these same Alps. I noted, there, that it can be regarded as the high alpine race of the peculiar *calliopsis*, B., of the

lowlands in that region (described from Grenoble) and Oberthür, in his description of *valesiaca* from Martigny, notes that it can be considered a *calliopsis* with a richer blue colour in the female and a lighter and brighter underside colouring. It thus stands to reason that the race of high altitudes, in the mountains around, should be the one corresponding to *calliopsis* too: *callioides* is not as pale on either surface or in either sex as *argulus*, the underside lunules being pale orange, but not yellow, and the grey ground-colour is darker and not as much broken by white spaces, on the disc, as in the latter.

Note: It would be rather remarkable that there should not exist in the Upper Rhone Valley the local, but widespread, species, which has lately been distinguished from *argyrognomon* under the names of *ligurica*, Courv., *aegus*, Chapm., or *insularis*, Leech, and which will have to bear that of *isemenias*, Meigen, if this group of species is separated generically from *argus*, L., as Hemming sustains it should be: in this case *isemenias*, Hoffmannsegg, which is a synonym of *argus* and was described as a *Papilio*, would not render invalid, anymore, *isemenias*, Meigen, which was described as a *Polyommatus*. For the present there is no record of it, I know of, notwithstanding the fact that Reverdin and Chapman examined a large quantity of *Lycæides* from this region.

✓ *Plebejus** *argus*, L. race *cretaceus*, Tutt.—The way this species is confined to certain spots and scarce in numbers is quite remarkable, as compared with the frequency of the preceding and to the way this one swarms on the opposite side of the mountains, in Piedmont, not to speak of a great many other regions. The only localities of the plain, where I have come across it, are the foot of the cliffs from the La Bâtiâz tower of Martigny to Vernayaz, where it appeared, singly, between 3rd and 25th July, in the few spots of that hitherto entomologically famous track, which the heaps of rock, hurled down by the construction of the new road above, have not buried for ever, and a plot on the left bank of the Rhône, near Bouveret, where both sexes, already some days old, were on the wing on 2nd July, 1933. In neither of these localities did I meet with the particularly large individuals mentioned from the second by Wheeler, but it is not surprising they should be produced there, because the race is *cretaceus*, Tutt, which is, even prevalently, of large size in many regions; Oberthür figures a couple from Rennes in his *Ét. Lép. Comp.*, IV., figs. 283-4, showing well the clear blue, the extremely reduced marginal suffusion of black and the light grey underside of the male; such are all my Rhone specimens, except for their smaller size; on the other hand, none reach the minute one of *cretaephilonome*, Vrtý., which I have described in the *Iris*, 1931, p. 66, from Soulac, in the Gironde.

I must record the somewhat unexpected discovery that at the Pont de Nant, notwithstanding the altitude of 1400m. there exists this very race, absolutely indistinguishable from my specimens of the west coast of France and affording a strong contrast with the usual Alpine *aegidion*, Meisner (= *alpina*, Wheeler = *valmasinii*, Perlini) and with

* The objections, lately raised by Hemming, to the use of this name in a generic way have subsequently been removed by his recent discovery (*The Entomologist*, 1933, p. 224) that *Plebejus* (spelt with a *j*) had actually been erected generically, in 1802, by Kluk, with *argus*, L. as genotype. Hemming is of opinion that the differences between the genitalia of this species and of *argyrognomon* are of a generic degree.

altaegidion, Vrtý. (= *alpina*, Courvoisier, homonym) by its exact resemblance, on both surfaces, to *cretaceus*. As a matter of fact, its upperside colour and the lack of the black border give it such a different look from the usual Alpine *argus* that an untrained eye might easily overlook it and mistake it for the *argyrognomon* which fly with it. I have, originally (*l.c.*, p. 59) described *altaegidion* from "the highest altitudes along the Simplon road," remarking the couple, figured by Oberthür (figs. 257-8) from Bérísál, are a near approach to it, but not the extreme form found racially at Zermatt, according to Vorbrodít, above 1700m. and up to 2400; the latter has precisely the opposite aspect to *cretaephilonome* by its deep, violet-blue colour, by its enormously broad black marginal band and by the well marked discocellular streaks on all the wings. The specimens I collected at the "Second Refuge," below Bérísál, on 20th July, are not this form, but all decidedly *aegidion*, Meisner and afford very little variation. Wheeler's name of *alpina* can thus only be a synonym of the latter name, because he explicitly states it was extremely abundant at Bérísál, when he collected there, and he mentions no other locality in particular, so that his specimens from that one were evidently those he applied the name of *alpina* to, typically; although it is but a synonym, it has a nomenclatorial status, since the generic separation of *argus* from *argyrognomon* makes it possible to use it in both species, as Wheeler's *alpina* was not, originally, a primary homonym of Berce's, in *argyrognomon*, the first having used the generic name of *Rusticus* and the second of *Lycæna*. What cannot stand is Courvoisier's *alpina*, given to the extreme form and race of the highest altitudes, which I have mentioned above, for it is invalidated by the previous existence of Wheeler's, and my name of *altaegidion* must replace it, as I based it explicitly on Courvoisier's description; when I erected it I thought Wheeler's *alpina* was this same form and race, but, now I have personal experience of the Bérísál one, I see it belongs to *aegidion*, Meisner, as stated above.

This species is supposed to have two generations in the plains of Switzerland, in May and June and again from July to September, but I certainly should not say this can have taken place in the Rhone valley during the years I was there.

Plebejus sephyrus, Friv. race *lycidas*, Trapp.—Although it has not been recorded from the actual plain, this species can be included here on the strength of its having been found by Wulschlegel at the Follatteres on the 22nd of July, 1899, as well as on the little mountain above Visp, to the right of the Zermatt railway, *i.e.*, at low altitudes. A List of the Butterflies of this region would, besides, seem incomplete without a mention of this peculiarity of it.

I had pointed out in the *Ann. Soc. Ent. France* of 1927, p. 15, that a change of name seemed inevitable, according to the Rules of homonymy in the International Code of Zoological Nomenclature, because Meigen had used that of *lycidas*, before Trapp, for a race of *argyrognomon*, which was then considered co-generic with *sephyrus*. Hemming, who has made a special study of the genitalia of this group of butterflies, has, since that time, come to the conclusion that they must be separated into two genera, as I have just mentioned in connection with *argus*. He now kindly furnishes the information, I asked him for, about *sephyrus* and tells me he has examined its genitalia and

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found them to belong to the genus *Plebejus*, like *argus*. The very satisfactory result is that *lycidas*, Trapp, is no more a homonym of Meigen's, for they belong to two distinct genera, and they are not primary homonyms either, for Trapp described his as a *Lycaena* and Meigen his as a *Polyommatus*. Therefore, if the division into two genera be accepted, the familiar name becomes perfectly valid for the Valaisian insect and *trappi*, Vrtý, a useless synonym.

✓ *Polyommatus icarus*, Rott. race *icarus*, Rott. with II. gen. *ovalisquamosa*, Ball.—In all the localities, where I have collected, the race is remarkably northern in aspect, most individuals exhibiting a darker underside tone of grey than many of the nominotypical ones from central Germany, in both sexes, and the II. gen. scarcely differing from the I. to the naked eye, except in that most males are of a slightly lighter grey on that surface, the females show a very slight touch of fulvous in the grey and both sexes have less metallic suffusion at the base. At Geneva and in the Jura, although the same race exists there, it is distinctly larger, brighter and lighter on the underside and the seasonal dimorphism is more conspicuous, as it often is in central Germany. At Martigny I noticed the species became much more abundant, on the 19th of August, than it had hitherto been and the same thing happened at Bouillet, near Bex, on the 21st; here both sexes had been common till the end of June, but the males had got scarce and all very worn by that time.

✓ *Polyommatus (Meleageria)*, Sag., if generic peculiarities are discovered) *meleager*, Esp. race *alpinum*, Vrtý.—I have pointed out in the *Ent. Record* of 1926, p. 120, that the name of *steveni*, Treitschke, in use for the black, alpine, form of the female, can, in no way, be extended to any race of the Alps, as a whole, because it was originally given to some females from Russia and Frühstorfer has shown in the *Int. Ent. Zeit. Guben*, 1910, p. 56, how different the race from there is, also in the male sex, from those of the Alps. I have thus erected the names of *alpinoclava* for the race of S. Tyrol and of *alpinum* for that of the Western Alps, taking as typical some specimens collected by Wullschlegel at Martigny. I found the males emerging there on 25th July and in the Pfynwald on the 29th, those from the latter locality being smaller and of a paler blue.

✓ *Agrodiaetus (=Hirsutina)*, synonym) *damon*, Schiff. race *damon*, Schiff.—At Bouillet and Bex the males began to emerge on 24th July and the females on the 27th. The race compares nearly exactly with the nominotypical one of Vienna, save that the size is slightly smaller and the tone of blue slightly darker and pointing a little more to the lavender tint, which characterises the very small race *ferreti*, Favre, of the Val Ferret, which I possess also from Bonneval-sur-Arc, at 1800 to 2000m., in Savoy.

✓ *Lysandra** *thersites*, Cant.—Chapm. race *chapmani*, Ball, with I. gen. *hibernata*, Vrtý.—In 1914 (*Ann. Soc. Ent. Belgique*, p. 179) Ball named the II. gen., on the strength of Chapman's description, and the I. gen. thereby became the nominotypical one, because Cantener's figure and his very few words of description covered both generations,

* After having replaced the name of *Agriades*, as wrongly used here by Tutt, because Scudder had fixed *orbitulus* as genotype, by that of *Uranops*, in 1929, Hemming has been obliged to again replace the latter by *Lysandra* (*Entomologist*, 1933, p. 277) because it already had been used for a genus.

and Ball was at liberty to restrict the name to the form he liked. Not knowing of this act, in 1919 (*Entom. Record*, p. 44) I suggested the inverse restriction and named the I. gen. *hibernata*, on the strength of the fact that Chapman had discovered the specific features in the II. gen. and originally described the latter, in which alone the androconial ones exist, because those of the first are exactly as in *L. escheri*. There is no doubt that Ball's view is perfectly correct and that, in a general way, *hibernata* would be a synonym of *thersites*. As, however, there are, in the first generation, two very distinct extreme forms, both individually and locally, the name of *hibernata* can be made use of by restricting it to that which usually has the darkest grey underside in both sexes, the black dots smaller and partly obliterated and which is especially characterised by the orange lunules being dull and pale and, in the male, sometimes yellowish; it predominates in the mountains and the earliest spring individuals often belong to it, also elsewhere. As I based my name of *hibernata* on Chapman's description in the *Trans. Ent. Soc. London*, of 8th October, 1914, p. 209, and as this was drawn from specimens of the monogeneitic race of high altitudes of Le Lautaret (2300m.) and from spring ones of the high latitude of Belgium and there can be little doubt that they belonged to the forms and race described above, like my specimens of Sestrières and the I. gen. of Oulx, the use of that name, I propose making, is quite justified. The specimens known to Cantener, were, according to his statement, from "the south of France," and the usual form of the I. gen. is, there, the brighter one, more lightly coloured on the underside, with the black dots well pronounced, as in Cantener's original figure, and especially with vivid and warm orange lunules; hence, this falls in well as the nominotypical form. My May specimens from as far north as the Vendée (Auzay) and the Deux Sèvres (Mollet) belong, distinctly, to it, too, and so does the more southern I. gen. of Italy, including the peninsular portion and the Carso, above Trieste, and that of Ak-Chehir, in Anatolia (Asia Minor). A series collected for me in May, by the late Carl Höfer, at Klosterneuburg, near Vienna, is, instead, a well characterised *hibernata*. If, now, we compare the I. gen. of the Upper Rhone valley with the preceding races, we find it decidedly belongs to *hibernata* too, as its facies corresponds to that we have noted, there, in *icarus*, in being of a northern and mountainous kind; most of the females are suffused with blue scales to a considerable extent on the upperside, whereas those of the II. gen. are not.

As to the II. generation, it affords the same variations of the underside as the I, with the difference that they are broader, owing to the fact that they include the considerably warmer, fulvous, colouring of the southern race *meridiana*, Vrtý., in which the seasonal dimorphism is very marked. The next degree of that variation is similar to the nominotypical *thersites*, as I have defined it above, except for the difference in the androconial scales described by Chapman and for a slightly warmer tinge on the underside, especially in the female sex. The still further degree of variation is, instead, more similar to *hibernata*, save for the usual androconial difference, and it can reach quite the same extreme amount of darkness and dullness as the latter.

This last form seems to be the one which should bear more exactly the name of *chapmani*, Ball, for both Chapman and Ball declare they have detected no difference, visible to the naked eye, between the generations

and we have just seen the first generation, they had before them at the time, and they compared the second too, in making this statement, was precisely *hibernata*; furthermore, Chapman's principal series of the II generation were from the French Alps and from the Valais, so that it is very likely they belonged to the darkest form. Anyhow I deem it advisable to restrict the name of *chapmani*, Ball to the latter, darker, form by erecting that of **postthersites**, n. nov. for the preceding, lighter one, which resembles nominotypical *thersites* and only differs from it, apart from the scales, by an average reduction of the basal suffusion of greenish-blue scales on the underside and by a lighter and usually a distinctly warmer tone of ground colour in both sexes. I select, as typical, specimens of the 20th of August from Auzay, in the Vendée, and I have others from Montignac, in the Charente, from the Plateau St. Claude in the Oise, from Paris and from the Mont Ventoux, in the Vaucluse. Some August females from Klosterneuburg and Bisamberg, near Vienna, can be referred to the same form; although they are slightly darker on the underside than my French ones, they contrast more with their I gen. because the latter at Vienna is *hibernata*, as we have already seen.

Instead, in the Upper Rhone Valley the II. gen. I collected at Bouillet, near Bex, on 25th July (both sexes just emerged), at Martigny from 31st July to 10th Aug., and at the Follaterres on 31st July and on 7th August, are all rather dark on the underside and belong to *chapmani*, except a few individuals of a lighter tone transitional to *postthersites*. It will be remembered we have made the same remark in connection with the II. gen. of *icarus*. Also in the *thersites*, as in the latter, a large August series I have from Dombresson, in the Jura, consists of a larger and lighter form than the Rhone one, although, not having any fulvous either, and having a considerable amount of basal, greenish-blue, scaling, it must, notwithstanding that difference, be included in the *chapmani*.

These considerations on the variations and on the nomenclature of *thersites* establish the following races:—(1) race *hibernata*, Vrty., which is monogenetic, from high altitudes; (2) race *chapmani*, Ball, with I. g. *hibernata*, Vrty. and II. g. *chapmani*, Ball; (3) race *thersites*, Cant.-Chap., with I. g. *thersites* and II. g. *postthersites*, Vrty.; (4) race *meridiana*, Vrty., with I. g. *thersites*, Cant.-Chap. and II. g. *meridiana*, Vrty. Besides which there is the transitional Austrian race, between (2) and (3), with I. g. *hibernata* and II. *postthersites*, and there are some races peculiar to certain regions, such as the giant *centro*, Chapm., from the Tarentaise, *josephina*, Sag., from Aragon, and *ferdinandi*, Sag., from Catalonia.

✓ *Lysandra eschevi*, Hüb. race *eschevi*, Hüb.:—All the specimens I have collected in the Pfynwald, at Sierre, on 29th July, and one couple of the 22nd, 1932, and of the 26th, 1933 from the golf grounds at Bex, are, like *thersites* and *icarus* of this region, particularly dark on the underside of both sexes; the females are thus quite similar to the one figured by Hübner and resemble it, furthermore, by the unusually large size of the black spotting. According to Duponchel, in a note in Godart, *Lép. France*, Suppl. 1 (Diurnes), 71, Hübner's specimens were from the Sainte Baume (Var) and I have remarked in the *Bull. Soc. Ent. France*, 1929, p. 157, that the race from this locality is, on the whole, *balestrii*, Frhst., but that the dark, nominotypical form, does

occur there individually. On the contrary, it is quite racial in the localities which are not particularly cold of the Alps, but the Valaisian race of the lowlands is certainly darker than any other I have seen, and so are the specimens I have collected at Bérisal on 20th July. Oberthür has noted that some males of the Ryffelalp, above Zermatt, are quite indistinguishable from his *rondoui* of high altitudes in the Pyrenees, so that I presume the race, there, is *microsticta*, Vrtý., which I have described from Cesana, in the Cottian Alps, as similar, in some ways, to *rondoui*, but different on the whole and especially in the female, which I possess also from Annot, in the Basses Alpes, and which replaces nominotypical *escheri* in the colder localities of the Alps. At Sierre I found a fine aberrating female, with the discal row of spots on the underside of the forewing obliterated and those of the hindwing extended into long streaks.

Lysandra amandis, Schm. race *hispelis*, Frhst. :—The Valaisian race of this species, which has been chiefly reported from localities around Martigny, is described as follows by Frühstorfer from "the Simplon region and Martigny": "very distinct from Vienna males by the deeper blue upperside and the very much broader marginal band of the forewing; underside whitish and chiefly characterised by the nearly total obliteration of the pale yellowish-red sub-anal spots." I can confirm that this is quite a distinct race from any other I have seen, characterised by its small size and dull colouring, on the strength of specimens in the collection of the Lausanne University, which are males, in good condition, dated 26th June, but I have been unable to discover it in nature, although I looked for it in the marshes, whence it was reported by Lowe and by Wheeler thirty years ago, between Vernayaz and Martigny. Prof. Matthey of that University tells me he has done the same for years, at the end of June, quite unsuccessfully too, whereas Warren informs me he has found it near the Sion station, at the end of May, and in the meadows just to the north of the St. Triphon hill, along the foot-path to Aigle, at the beginning of June.

Lysandra argester, Bergstr. (= *dorylas*, Schiff. = *hylas*, Esp., both primary homonyms) race *argester*, Bergstr., with II. gen. **postargester**, nov., and race **parvaplumbea**, nov., with I. gen. **anteparvaplumbea**, nov. :—The name of this species must be *argester*, because *dorylas*, Schiff. is a primary homonym of *dorilas*, Hüfn. we have dealt with at p. 15, the difference of a *y* instead of an *i* being explicitly considered null by the Rules of Nomenclature, and because that of *hylas*, given it by Esper, is a primary homonym of Schiffermüller's, equivalent to *vicerama*, Moore, but already no more available, as it had been used by Linnaeus in 1758.

Both the Central European forms and races (the large one has become the nominotypical one, since I have distinguished the smaller and paler one by the name of *enervis*) and Bergsträsser's typical figure of a specimen from Hanau have the ground of the underside of a pronounced grey tinge, whereas the corresponding races of the Italian and French Alps are distinctly whiter and occasionally also slightly warmer in tone and often have larger and more vivid orange lunules (*macromargarita*, Vrtý. and *micromargarita*, Vrtý.), so that both of these two names, based on series of specimens from the Maritime Alps and, thus, particularly extreme and southern, can stand usefully.

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Now, the race of the Upper Rhone valley is constituted precisely by the darkest form of the species, as it is the case in the allied species, we have dealt with above. There is, as in most regions, a larger form and race and a lesser one, whose forewing measures respectively 16 to 18 and 14 to 16 mm. from its base to the apex, where the fringes begin to appear. The first is nominotypical *argester* taking, as typical, the first generation I have collected in the damp meadows of Bex, of the Gryonne and of St. Triphon, where both sexes were on the wing till about 10th June and the second generation began to appear on 15th July and went on until I left, on 22nd August. Specimens of 12th July, I have from Celakowitz, in Bohemia, are just like them, but rather larger.

The other, small, race I found on the dry and hot cliffs of Martigny, where the first generation actually only emerged at the beginning of July, in 1933, because all the butterflies were extremely late there, in that year, on account of the strong cold winds, which swept that side of the mountains every day during June. Anyhow, the second generation was not to be seen, in that locality, till the 10th of August and the females till the 19th even in 1932. The latter I select as typical of **parvaplumbea**. The underside is, on the whole, not quite as dark as in the preceding, but, on the other hand, it cannot be confused either with the frailer and paler (on both surfaces) *enervis* of Vienna, or with the decidedly whiter and brighter *micromargarita* of the southern watershed of the Alps, although the darkest individuals of the latter do overlap the brighter ones of the former. I thus think the Martigny race should be named *parvaplumbea*. Spüler's fig. 23, on pl. 16 of his *Schmett. Eur.*, gives a fair idea of its size and underside facies. I have August specimens of it from the Grand Salève, near Geneva, and now, with this new distinction, my Dombresson (Jura) one, which I once referred to *enervis*, belongs here. The race I collected at Opeina, on the Carso, above Trieste, on 25th Aug., is a well characterized one of it, too. The I gen. of the two races just described can be designated by the names of **argester** and **anteparvaplumbea**, their chief distinctive character being their broader androconial scales, corresponding to the seasonal difference discovered, in this respect, by Ball in *bellargus* but less pronounced. In the same way, it will be necessary to use the name of **postargester** for the II gen. of the nominotypical race, on the strength of its narrower and longer androconial scales, (holotype from Vienna), and that of **postenervis** for the one of the small race of that region.

✓ *Lysandra bellargus*, Rott. race *fuscescens*, Tutt, with I. gen. *bellargus*, Rott. :—The Rule of primary homonymy does away with the change of the specific name from *bellargus* to *thetis*, which Tutt had considered it necessary to affect, according to the Rule of priority: *thetis*, however, is twice a homonym in the genus *Papilio* of the earliest writers and that is why it had been discarded from the beginning and it cannot be revived here, now, for the species or for a subspecies. No one seems to have noticed, nevertheless, that Rottemburg, in his original descriptions, explicitly states *bellargus* to be on the wing "at the beginning of June" and *thetis* "in the month of August," in his neighbourhood, which was that of Halle, to the N.-W. of Leipzig, where the *Naturforscher* was published, and not at all Landsberg-on-the-Warte, as stated by Tutt in *Brit. Butt.* III., p. 327. These exact dates, in

connection with Rottenburg's "types," fix his names definitely for the two generations of the nominotypical race, for the Rule of primary homonymy does not apply to variations inferior in rank to "subspecies" and *thetis* can and must be used for the seasonal one; fortunately no name has been erected to designate those generations, although Ball, in the *Ann. Soc. Ent. Belgique*, 1914, p. 179 and 180, says *bellargus* exhibits the same seasonal differences in the androconia as those he describes in *icarus* and I have just described in *argesta* and although there are other differences, visible to the naked eye, not in all, but in some localities and in a variable percentage of individuals; thus, in the second generation: warmer tone of the underside of the hindwings in both sexes; lesser extent of the basal greenish-blue scaling; females less suffused with blue on the upperside; premarginal orange lunules more accentuated.

The race I have found from Bex to St. Triphon till about the 25th of June, and which appeared again at Bouillet on 21st August (both sexes emerging) and on the road to Sépey on the 17th, are not quite similar to my specimens of Central Germany and chiefly Düsseldorf, but rather to those of Vienna and of Northern France (Pont-de-l'Arche, in the Eure), in that the II generation is, in most individuals, distinctly fulvous on the underside of the hindwings of both sexes and the markings, both black and orange, are larger and more accentuated, so that they point to the southern *etrusca*, Vrtý.; the latter spreads northward to the warmer valleys of the southern water-shed of the Alps, where, for instance, at Vanzone, 700m., in the Anzasca valley to the south of the Valais, I found, on 11th Aug. a little colony consisting of a mixture of perfectly characterized *etrusca* and of equally characteristic *thetis*, so that the race could be designated as *thetis-etrusca*, Rott.-Vrtý. True *etrusca* does not seem ever to be produced, even individually, on the northern watershed of the Alps. The aforesaid intermediate form, pointing to it by its fulvous underside, is evidently Tutt's *fuscescens* (*Brit. Butt.*, III, p. 386) and this is the right name for the races mentioned above, in which it predominates. It can be taken that Tutt, by erecting this name, together with those of *palescens* and *atrescens* for the lightest and darkest fulvous individuals, has unconsciously restricted the name of *thetis* to the form in which the hindwing is of the same cold tone of grey as the forewing, or, in other words, to the particular summer form, which only differs from the spring one by the androconial features. A large Aug. and Sept. series of specimens I have from Dombresson, in the Jura, all belong to this form and do not exhibit the slightest trace of fulvous in the male sex and in some females and extremely slight ones in others of the latter sex, so that the true *thetis* facies can evidently be quite racial in some localities. As a matter of fact, it is so also in race *britannorum*, Vrtý. of Cuxton, in Kent: I have selected my holotype of the latter in a series of paratypes of 26th August, but they do not differ, to the naked eye, from a series of 16th June and of the same locality, which it will, notwithstanding, be more exact to call **antebritannorum**, owing to the androconial differences. In the same way, the lovely race *caelestis*, Obth., of the west coast of France, having been described from August specimens, the I gen. should be designated as **antecaelestis**: my May and June series from Auzay, in Vendée, differs from the August one, in this case, also in that the underside is constantly grey, whereas many specimens

of the latter are very fulvous and quite belong to *pallescens* and *fuscescens*.

In connection with the Valais I must recall the very small alpine race, with a very dark underside and small black and orange markings, surrounded by broad white rings, which I have named *inalpina*, in the *Entom. Record* of 1919, from specimens collected by Wullschlegel in the mountains near Martigny and which I possess also from Bergün, in the Grisons, and perhaps from Madonna di Campiglio, judging from a single specimen. Some, kindly sent to me by Bainbrigge Fletcher, of Les Avants, 1300m., Les Pléiades, 1500m., in the Vaud, and of the Grimmialp, 1300m., correspond to *inalpina*, but a series of the last days of August from Bérisal, although this is at 1700m. of altitude, are exactly like the second generation of the plains and there can be no doubt two generations are produced there.

In 1934 I found, at Bex, on the outskirts of the woods, about two hundred yards south of the second tee of the golf-links, a tuft of leguminous plants, upon which I collected each day, from the 21st to the 23rd of June, a very fresh specimen of a male form of *bellargus*, referable, broadly, to the one named *polonus* by Zeller and *calydonius* by Lowe, in Wheeler's *Butterflies of Switz.*, p. 31, and usually considered a result of hybridisation with *coridon*. All these three examples, like the two I have from the Apuane Alps in Tuscany and I have discussed in the *Ent. Record* of 1920, p. 141, and like another I have collected, since, at Sappada, in the Carnic Alps, actually only point to *coridon* by the *meleager*-tone of blue of the upperside; otherwise, the shape of the wings, the fringe and the underside are quite those of *bellargus* and the marginal pattern of the forewing, above, only differs from the one of this species in that it exhibits a series of premarginal blackish dots, either quite detached from the marginal streak or partly blent with it. Herrich Schäffer's figure of *polonus*, which is said to be from a co-type of Zeller, suggests *coridon* much more by having a broad, diffused, black marginal band on these wings and it thus sustains the hybrid theory, in, apparently, being a grade further in the direction of the latter species, in this respect. My Bex specimens differ from Wheeler's description of the underside of *calydonius*, from Montana and the Follaterres, to the effect it is very dark and quite devoid of fulvous (as in my Sappada specimen), in having, on the contrary, a rather light grey one, with a distinct touch of fulvous on the hindwing, like the II gen. of *bellargus*. As they, instead, emerged with the last females and with one laggard male of the I gen., which is much darker and has no fulvous, possibly, also that unusual underside colour is due to a *coridon* strain. Another remarkable fact, in this connection, is that a few yards away from the *polonus* plants I found, on the 23rd, a perfectly normal-looking male *coridon*, which had just emerged, whereas no other individual was seen there, or elsewhere, till a month later. It makes one wonder whether it might be a heterozygote of the same family as the *polonus*, the proportion of 1 : 3 being singularly in accordance with the Mendelian law and the *coridon* aspect being, if so, recessive to the *bellargus* one! All the females I found with the *polonus* seem to be quite *bellargus*.

✓ *Lysandra coridon*, Poda race *jurae*, Vrtý. and race *fulvescens*, Tutt:— In the neighbourhood of Bex the emergence of the males began on 20th July and that of the females on the 27th. There, and at Martigny

the race can be said to belong to *juræ*, I have described from Dombrésson, in the Jura, with the difference that the tone of blue is very slightly richer, the black marginal area, on an average, a little broader and the underside more frequently and a little more warmly tinged with fulvous, forms *fulvescens* and *fuscescens*, Tutt, being more frequent; this is still more particularly the case in the Pfynwald, whence the race can well be designated as *fulvescens*, Tutt. As compared with nominotypical *juræ*, the upperside facies of the Rhone Valley one points slightly more to that of the races of Central Europe, whereas the underside one points more to that of *rufosplendens* of the particularly warm and dry localities of the southern watershed of the Alps, such as Oulx (Susa Valley), whence I have described the latter. By this last character it thus differs from the Jura race in a parallel way to the second generation of *bellargus* from those same localities.

The race of the Simplon road, at Bérissal, I have collected on 20th July, is, instead, in every way, perfectly identical with my typical series of *juræ*. It must also be noted that at Champéry, 1400m., at Pont de Nant, 1400m., and at Javerna, 1700m., above Bex, there is still another race, which can be referred to *altica*, Neustatter, with which it agrees by its small size; the upperside black band is not quite as reduced and pale as in the well characterized series of *altica*, of Salzburg and of Sulden, on the Ortler, but it is distinctly more so than in *juræ* and the same may be said of the whiteness of the underside ground-colour and of the smallness of the black markings. I must take this occasion to remark that *bieneri*, Stauder, is an absolute synonym of *altica* and entirely different from my *alpiumpallida* of the lowest and warmest valleys of the Upper Adige, which Bollow, in Seitz's Supplement, wrongly makes out to be a synonym of *bieneri*.

✓ *Cupido minimus*, Fuesslin (Courvoisier has pointed out this is the right spelling of this name and not Fuessly) race *minimus*, Fuesslin, race *alsoïdes* [Anderegg and Boisduval, nom.nuda], Gerhard, and race *montana*, Favre. — The race I collected in considerable numbers, during the first days of June and then, again, during the whole of July and August, at Bex and at Bouillet cannot be called anything else but nominotypical *minimus*, of average size and with a fair amount of greenish-blue scaling on the upperside of the male, as one finds it to be the case in most localities. More has been said about the local variations of this species in the Valais than it deserves: a variety has been designated by Boisduval, from there, as *alsoïdes*, but not described by him, so that Gerhard furnishes its first description and figures and the information it was discovered by Anderegg at Gamsen, which is between Visp and Brig; as a rule, however, it is stated to exist at high altitudes. Tutt, in *Brit. Butt.*, III., p. 110, has made a blunder in connection with the author of *alsoïdes*, which he states is Meyer-Dür, whereas the latter actually quotes Gerhard's figures; it has evidently come from Tutt being under the impression that Gerhard's *Monographie* had been published in 1853, whereas the first part was issued in 1850, before Meyer-Dür's *Schmett. der Schweiz*, which was published in 1852 (not 1851), as Tutt, himself, discovered later (vol. IV., p. 51). The character of *alsoïdes*, to be taken into account, is thus only that mentioned by Gerhard, who simply says "it chiefly consists in large size"; his figures, in fact, represent the largest form I am acquainted with (length of forewing 13mm., corresponding to

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25mm. of expanse), and such as I only possess from the hills around Modena, in Emilia, where it is racial and where the blue suffusion on the upperside of the male is broader than anywhere else. This character was added by Meyer-Dür to that of *alsoïdes* and was taken up by subsequent authors, but the patches of blue, roughly shown on one of Gerhard's figures, do not justify this restriction, as their extent is not greater than in the average form of the male, found in most regions. Tutt's names of *viridescens*, *violascens* and *caerulescens* are much more to the point, when one wants to designate that form individually, and Favre, in his *Lép. du Valais*, p. 23 (1899) has erected the name of *montana* for the association of the "strongly grey-green" feature with the large size of *alsoïdes*, such as is stated to be characteristic of the race of considerable heights by Frey and others and which Favre describes from the Simplon. According to Wheeler *montana* is a very usual form also in some lowland localities, such as the slopes above Lavey, in May and June, and I have, in fact, found it at the Follaterres on 31st July. No one seems to have detected any difference, anywhere, between the two generations of *minimus*.

(*Cupido (Tiora) sebrus*, Hüb. race *sebrus*, Hüb. :—The determination of the period 1824-1826 for Hübner's pl. 172, as made out by Hemming in the *Trans. Ent. Soc. London*, 1931, p. 499, has at last definitely established the priority of *sebrus*, Hüb. over *osiris*, Meigen (1829). Staudinger, in the IIIed. of his *Catalog*, has discarded Hübner, as the author of *sebrus*, and credited Boisduval for it; this act is, of course, quite inadmissible: Hübner's figure 854 is unmistakably the species known as *sebrus* and validates this name for it, perfectly, although his three other figures on the same plate are certainly *semiargus*. As stated by Hemming, one can infer it was drawn from a specimen of St. Maximin, in Provence. It represents the average female form, both as regards the tone of grey of the underside and the size of the black dots; the race I possess from Allos, in the Basses Alpes, and those I have collected in the Rhone Valley belong, more or less, to this form, with transitions to *majuspunctata*, as described below. In the latter region it has been reported from all sorts of localities, from the Simplon and Zermatt to the Lake. I have found the first generation still in perfectly fresh conditions in the earliest days of June from Bex to St. Triphon and the second generation, at the end of July, there and at the Follaterres, near the Branson bridge. At the Pont de Nant, 1400m, it was emerging on 13th July.

I must take this occasion to note that the race of central Italy, from Modena to Macerata, one specimen I have from St. Étienne de Tinée, in the Alpes Maritimes, and some from Klosterneuburger, near Vienna, have a distinctly lighter gray tone and have more minute black spots, some being even occasionally quite obliterated. Meigen's figure, rough as it is, seems to represent this form and I suggest using his name of *osiris* for it; he says he did not know its place of origin, so that we can fix, here, the race of Vienna, which is the most extreme in the sense described above, and of a light tone of blue on the upperside, like Meigen's figure, as typical of it. Specimens I have from Fogarasc, at the foot of the Carpathian Mountains, and a large May series from Ak-Chehir, in Anatolia, are, instead, always quite as dark, and often distinctly darker than the nominotypical *sebrus* and they are, furthermore, characterized by the larger size of the black dots on the underside;

I think the name of **majuspunctata**, n.nov. will be useful to designate this form and race, taking the Anatolian one as typical of it.

Everes alcetas, Hoffm. (*Illiger's Mag.*, 1804, p. 205) = *coretas*, Ochs. (1808) race *alcetas*, Hoffm., with I gen. **antealcetas**, nov.:—The males of the first generation were emerging on 5th June, 1933, at the La Bâtiaz tower of Martigny; fresh individuals of both sexes were again on the wing there, at the end of July; also in 1932 I had found them from 25th July to 19th August, as well as at the foot of the Follaterres cliffs on 7th August.

Hübner's figures 319-21, which Hoffmanssegg named *alcetas*, are stated to be of Austrian specimens. Mine, from the Valais, exactly agree with those I have from Vienna in the tone of blue and in the pronounced black marginal streak and dots of the male, as well as in the tone of grey and in the pronounced markings of the underside of both sexes, but more especially of the female, which agrees perfectly also with that of the female figured by Hübner. I thus take the Valaisian race to be quite nominotypical. The first generation is very small and, in fact, not much more than half the size of the second and of Hübner's figures, so that I deem it advisable to designate it by the name of *antealcetas*.

The race of the Carso and of Istria, where I have collected it at Portorose, is transitional between the preceding and that of all the rest of Italy, from Piedmont and the Upper Adige, in the north, to the Mainarde Mountains, near Naples, where the species seems to end southwardly. The latter is characterized by a less saturated tone of blue, by thinner black marginal streaks and dots in the male and by a lighter grey and thinner black markings on the underside of both sexes. I propose distinguishing its second generation by the name of **dilutior**, selecting as typical specimens from Florence, whence I had named *diminuta* the first generation, which is considerably smaller and slightly darker on the underside.

Note: Wheeler's remark, in *Butt. of Switz.*, p. 44, that the only form he has ever found in the Rhone Valley is *coretas*, O., makes it clear that *alcetas*, as far as is known, exists alone, there; the nearest localities of *argiades*, Pall., are Geneva and the Jura. His use of the name of *polysperchon*, Brgstr., for very small individuals of the II gen. would be a mistake even in *argiades* and is still more so here.

Syntarucus telicanus, Lang, race *telicanus*, Lang:—Wheeler has collected a few records of the existence of this species from the Lake of Geneva as far up the Rhone Valley as Martigny, but, as usual, its chief time of emergence is the autumn and I did not see it, so that I can only presume its race is the widespread nominotypical one described from southern France.

*Cosmolyce** *boeticus*, L. race *boeticus*, L.:—What has been said of the preceding can be repeated here, save that this species has been met with more frequently than the other, beginning in August and extending up the Rhone as far as Sierre.

Callophrys rubi, L. race *rubi*, L.:—During the earliest June days I came across this species in most localities, but already in worn conditions. The race is distinctly small in size and dark in colour, of a

* This name, erected by Toxopeus in 1927, is the correct one to use in the place of *Lampides*, which has been applied quite wrongly to this species, as its genotype is *zethus*, Hüb. (Hemming, *The Entomologist*, 1933, p. 224).

deep, blackish brown above and of a dark, bluish green below, so that it exactly corresponds to the Scandinavian one and to the Linnean specimen I have examined. Some individuals have, like the latter, only one white space on the underside, others have a complete row of well marked ones on all the wings. One, I have, collected by Wullschlegel, belongs to the discoloured form *pimentocarens*, Vrtý., which exhibits a cold tone of dark slate grey.

✓ *Strymon (Chattendenia) w-album*, Knoch. race *w-album*, Knoch.:—A few specimens, in fresh conditions, I collected on 17th August on the road to Sépey, belong to the invariable nominotypical race found everywhere in Europe, from the most northern to the most southern limits of the species. It is reported from Sion and Siere; but it is very local.

✓ *Strymon (Nordmannia) ilicis*, Esp. race *inalpina*, Vrtý.:—Well characterized at Martigny, where both sexes emerged at the end of June. At Bex this species only emerged during the second week of July; along the road from Aigle to Sépey both sexes still existed on the 17th of August, but they were very old. The fulvous patch on the forewing of the males was not as large and clear, in these two last localities, as in my typical series obtained many years ago from Wullschlegel and, no doubt, of Martigny, and also the females are transitional to the nominotypical *ilicis* of Germany, as figured by Esper, by their smaller size and lesser fulvous space.

✓ *Strymon (Nordmannia) acaciae*, F. race *nostras*, Courv.:—Reported from Charpigny and Siere. I presume it belongs to this widespread race, otherwise the only alternative would be *frigidiior*, Vrtý., which I think is not at all likely.

✓ *Strymon pruni*, L.—Reported from Aigle, St. Triphon, Martigny and Siere.

✓ *Strymon (Tuttiola) spini*, Schiff. race *spini*, Schiff.:—Courvoisier's argument in the *Intern. Entom. Zeit. Guben*, 1913, p. 231, that *spini* is, in Schiffermüller, a *nomen nudum*, could only be taken into consideration, as in other similar cases, if most of the names erected by that author and which are in the same position, were discarded. One might well ask, for instance, here, whether the biological indication of the food-plant of the larva, which has so well answered the purpose of identifying the species that no one has ever doubted which the name applied to, is not quite as valid, and even more useful, than the few inadequate words on morphological features one so often recognises as perfectly sufficient to validate a name.

The race, which exists in large numbers at Martigny, where I collected some fresh individuals of both sexes on 25th July and on 10th August, at Lavey on 9th August and on the road to Sépey on the 17th, is quite similar to the Vienna one: individual size is very variable, but the very large one of race *major*, Obth., from the Maritime Alps, is never reached and the smallest individuals, which are like the tiny *minuta*, Vrtý., of Peninsular Italy, differ from it by the presence of the fulvous spots on the upperside of the hindwings, which the latter lacks.

✓ *Thecla (= Zephyrus = Ruralis) quercus*, L. race *interjecta*, Vrtý.:—Several very fresh females of 25th July, I found at La Bâtiâz, curiously enough, with no males, and several fresh males of 9th August, I found at Lavey, all belong distinctly to the race I have described from Florence,

which is that of Peninsular Italy in general and which I possess also from Ax-les-Thermes, in the Pyrenees; they do not exhibit the slightest tendency to vary in the direction of the nominotypical race of England and of Central Europe, all differing from it by the pale and clear tone of grey of the undersides, the reduced black markings and the small and very yellowish orange one and thus pointing to *iberica*, Stögr.

Thecla betulae, L. race *betulae*, L.:—Probably widespread in the Upper Rhone Valley and recorded particularly from Charpigny, but I did not meet with it until 18th August, at Bouillet, just before my collecting came to an end, no doubt, owing to the fact *betulae* is on the wing very late in the season in all its habitat.

✓ *Nemeobius lucina*, L. race *fulvior*, Rocci:—This is one of the few species which does not belong, in the Upper Rhone Valley, to the darkest race of central Europe. It is rather interesting that in this exception to the general rule, as in the one of *G. cyllarus*, we have mentioned, the time of emergence should be at the earliest onset of the season, so that the explanation, we have suggested for the latter, would apply to both.

The fact is that the race I have found (males all worn, females partly still fresh) in the Vaud, from Bex to St. Triphon, on 2nd, 3rd and 4th June, and in the Valais, at the La Bâtiâz tower of Martigny, on the 5th, is the same as the one of Geneva. It is large, the black markings are thin, especially in the female sex, in which, they are often partly obliterated, in a conspicuous way, and the broad fulvous spaces are of a bright tone. I have noted, in my short revision of the forms of *lucina*, in the *Ent. Rec.*, 1923, p. (14), that this form has been described by Rocci, under the name of *fulvior*, from the Genoese Apennines and that the Geneva race belongs to it. On the contrary a series of specimens I have from Dombresson, in the Jura of Neuchâtel, contrasts sharply with it and belongs to the nominotypical form by its small size, thick black markings and pale, dull, tinge of fulvous.

✓ *Gonepteryx rhamni*, L. race *rhamni*, L.:—Racially quite invariable from Northern Europe to the whole region of the Alps and to the lowlands on the northern side of the Po Basin; on the southern side of the latter, as, for instance, in Emilia, whence I have specimens of Modena, the southern *transiens*, Vrtý., makes its appearance. At Bex the period of emergence of the male sex began on 20th July and that of the female one on 27th July; from that time onward the species became common almost everywhere in the Vaud and in the Valais. This late time of emergence makes it quite clear that no second generation exists and that the authors, who have spoken of it, have mistaken the two periods of flight (one after emergence and one in the spring, after hibernation and during reproduction) for two generations. Race *transiens* does have a partial second one, but the full, first one, emerges in June and begins even very early in that month, so that the second one is on the wing in August, together with the individuals of the first which had not reproduced in June and July, but had retired to aestivate for a few weeks, before flying for the second time, at the end of the summer, when they seek their hibernating quarters; the following spring flight of the latter is thus their third one, whilst the second generation only has two flight-periods.

Colias hyale, L. race *calida*, Vrtý., with *I. gen. vernalis*, Vrtý.:—During the first few days of June, 1933, both sexes were common in

15.xii.34.

the Vaud, wherever I collected, from Bex to St. Triphon, but all were quite worn and so were the few single ones, which turned up during the rest of the month, till early in July. In 1932 I found a few fresh males at the end of June, on my arrival. In 1933 I visited Martigny several times in June, beginning by the 5th, but I never saw anything of the first generation and, as a matter of fact, very few individuals of the second one either. The first of the Vaud has, like the second, decidedly no resemblance to the nominotypical northern *hyale*; it is quite similar to the southern one, I have described from Italy as *vernalis*, or rather, as far as size goes, it is even larger than most of the latter are in Tuscany. Two females, of early July, are distinctly yellow and, although this colour is much paler than in the male, they can be referred to *flava*, Husz.; a male of the same time of year is a fine *sieversoides*, Vrty., with the black markings of the forewings reduced to a few marginal dots and to a small sub-apical crescent. At Pont de Nant, 1400m., *hyale* was not on the wing on 4th July, but I collected some small and pale *vernalis* on the 13th, flying with *C. phicomone* race *alpiummitida*, Vrty.

The II gen. appeared in the Vaud at the end of July, but only became plentiful towards the 20th of August; it is distinctly *calida* by its brighter yellow colour than in any other *hyale* I have seen from the northern side of the Alps; even the race of the Anzasca Valley and of many localities on their southern watershed are not as bright and belong to the nominotypical northern one. At Bex I hit on a fine *uhli*, Kováts, specimen, with no trace of yellow spaces in the marginal black band of the forewings. I saw a few *hyale* in all the localities, from Sépey to Sierre, I went to.

Colias croceus, Fourcr. = *edusa*, Fabr.:—In 1932 I only saw two or three individuals in the whole of the region, from the end of June to the 20th of August; on the 21st, just before leaving, I found several males at Bouillet, but they were all quite worn, so that I presume they were immigrants, which were then spreading up the Rhone valley. These belong to the usual nominotypical form. One of the June individuals, which is the only one I was able to capture, is very much larger and suggests that the June emergence is a partial II generation, like it is in Italy, and belongs to *ampla*, Vrty, for that male corresponds to the fullest size of the latter; the forewing measures 28mm. in length and the expanse between the apexes is 51 in that Bex specimen; the expanse I gave, in my original description of *ampla* in the *Entom. Record*, 1919, p. 87 (it stands in the paragraph on *daplidice*, by a mistake of the printer, but the correction was made at page 121), is only 49mm., but I have obtained larger specimens, since then, from Tuscany and from Sicily. In 1933 *croceus* was still scarcer and I only saw two or three individuals on the wing in August. In 1934, after a long spell of fine, warm, weather in May and June, it was, on the contrary, quite frequent in the Vaud at the end of the latter month, mostly in perfectly fresh condition and emerging on the spot in some places, such as the meadows north of the St. Triphon hill. At Bex I observed females ovipositing at that time. Many of these, but not the majority, were decidedly of the large *ampla* form and some also exhibited the yellower hindwing, owing to a lighter greenish-black suffusion, which in Italy is predominant in and characteristic of the II generation and hardly ever seen in the others. A very large female, I purchased

from Wullschlegel and which must be of Martigny, is the specimen most similar to Oberthür's "type" of *helicina* I have ever seen: it is like an *helice*, but with the white replaced by very pale sulphur or lemon yellow.

Leptidea sinapis, L. race *bivittata*, Vrty. trans. ad *sinapis*, L. with I gen. *lathyri*, Hüb.:—On the 2nd of June, when I began to collect in 1933, most individuals of both sexes were already worn, but a few went on emerging all through the month and some were still on the wing in the first days of July, more or less, everywhere at low altitudes. At Martigny, however, the emergence occurred later and mostly in the second half of June, so that on the 28th many females were quite fresh. At Champéry, 1400m., the earliest males were appearing on 8th July. The first generation consisted nearly entirely of perfectly typical *lathyri*, as figured by Hübner, but I met with a few examples, which had a very light grey apical patch and which were therefore similar to *cana*, Vrty., described from Tuscany; I have seen no tendency to variation in the opposite, *nigrescens*, Vrty., direction.

The mass of the second generation emerged from the 10th to the 20th of July, but a few fresh males were to be met with even in August and females as late as the 20th, both at Bex and at Martigny. The race is, quite constantly, of the usual size of nominotypical *sinapis* and I did not find a single individual attaining that of *magna*, Vrty., which prevails broadly in the second generation of the southern, Italian, watershed of the Alps, beginning as near to the Valais as the Anzasca Valley, the mountains around Lake Maggiore and the plains of Lombardy. Individual variation is very broad and in a large series of specimens I collected at Bex these can, according to the aspect of the underside, be divided into three principal groups: One with a very extensive grey suffusion all along the sub-costal portion of the forewing, nearly to the apical part, with two broad grey bands across the hindwing and with suffusions of grey partly connecting them and covering the base and the inner margin; this is the nominotypical form of *sinapis*, such as is prevalent in the north; on the upperside the black apical patch is very large, shaded in outline and accompanied by two or three little grey streaks, below it, on the outer margin. At Bex 30% of the males belonged to this form. Another form has much less grey on the forewing and the hindwing is crossed by two bands, or occasionally by one and a more or less incomplete second one medially, which stand out more or less sharply on a clear ground colour, whilst on the upperside the black, apical, patch is rounded and sharp in outline; this is *bivittata*, Vrty., quite similar to my typical specimens from damp localities in the Tuscan hills. At Bex 60% were of this form. The third form is *diniensis*, Boisd., with the underside of the hindwings uniformly white and no grey markings; this covered the remaining 10%. On the strength of these proportions it seems to me the correct way of designating the race is the one mentioned above; it distinguishes it both from race *bivittata* of Tuscany, in which the nominotypical *sinapis* form does not occur, and from the nominotypical *sinapis* race of the north, in which *bivittata*, on the contrary, does not occur, or does so in a minority of individuals, and in which variation extends, rather, in the opposite, darker, direction, producing the next degree *transiens*, Vrty., transitional to the spring form *lathyri*. The few specimens I obtained in a single day's collecting in the Pfynwald,

near Sierre, on 29th July, seem to suggest a larger proportion of small *diniensis*, on those dry grounds, than on the damp meadows of Bex, but nominotypical *sinapis* existed there, quite commonly, all the same. In this connection it is noteworthy that there are quite distinct differences from one year to another in the same locality: for instance, at Vanzone, in the Anzasca Valley, the *magna* I collected in 1924, when the early summer was rainy there, mostly have the *bivittata* underside, whereas those of 1928, which was very dry, have no black markings at all on the underside (*diniensis*) or a single thin streak (form *monovittata*, Vrty., which is racial on the Tuscan coast in some localities); this confirms the fact that the series of various degrees in the development of the pattern from *diniensis* to *lathyri*, is entirely due to the influence of the surroundings.

Anthocharis cardamines, L. race *cardamines-montivaga*, L.-Trti. and Vrty. and race ? *turritis*, O.:—I was rather surprised at witnessing the emergence of a few individuals of this species all through July, the last fresh male being caught on the 31st, in 1932, at Bex, where it seemed localised to the outskirts of the wood on the southern side of the golf-grounds, and the last, perfectly fresh, female at the Branson bridge, under the Follaterres on the same day in 1933. I did not see a single individual anywhere else in the Vaud or Valais localities I visited, except between Vernayaz and Martigny. Some of my specimens, from Bex, are quite similar to the nominotypical Scandinavian ones, which are the usual form all over Central Europe, but more than half are transitions to, or entirely characteristic of, *montivaga*, Trti. and Vrty., described from Valdieri, in the Maritime Alps: they are of unusually large size, with more elongated wings; the orange patch stretches nearly to the middle of the cell and shades into a yellow zone, which, in some examples, reaches the root of the wing; on the underside this happens in most cases; the green pattern of the hindwing has, in *montivaga*, a peculiar look, because it consists chiefly of rough bands on the neurulation, radiating from the cell outwardly and the minute transverse streaks between them are greatly reduced. In the Bex specimens of all sorts the green has a very dark, blackish tinge. A few specimens I have, collected at Martigny, in May, by Reverdin, are quite different: they are of the smaller, usual, average size; the wings are shorter and broader; the orange patch barely surpasses the discocellular black lunule and there is no yellow beyond it medianly; it thus is a perfectly characterized *turritis*, O., like the topotypical ones I have from the Veneto, and not to be confused with the corresponding southern form, which is, in other ways, transitional to the more extreme *phoenissa* of the east and racial in some localities of Peninsular Italy, the Balkans and Asia Minor (*turritiferens*, Vrty.).

Euchloë ausonia, Hb. exerge *sinplonia*, Freyer, race *flavidior*, Wheeler:—Although I was on the look out for this species, on the 2nd of June and in the following days, in its haunts, from Bex to St. Triphon, where Wheeler says it is common in some years, at Lavey, and from Vernayaz to Martigny, I did not meet with a single specimen, so that it had evidently emerged in May, notwithstanding the exceptionally cold weather of 1933, which had delayed most of the other early butterflies. In 1931 Ashby found it emerging along the "grand canal" of St. Triphon from 21st to 24th of May. Through the generosity of Prof. Matthey I was, however, able to secure a nice series

of specimens, collected by him on Mt. Autan of Martigny on 5th May, 1915.

These plainly show that *flavidior* is nothing else but *simplonia*, Freyer=*marchandae*, Hüb., which spreads down to the plain in this region and gets slightly modified in aspect in some individuals and more considerably so in others by the change of surroundings. That this should happen is not at all surprising, considering the number of mountain species, which descend, in the same way, to unusually low altitudes in the Rhone valley, beginning by the quite extraordinary cases of *callidice* and of *aello*. It is particularly interesting and instructive to note that the features of *flavidior* are transitional to those of the south-eastern races (*graeca*, *romana*, *kruegeri*) and more particularly to the race of the Veneto, very similar, if not identical to *graeca*, with which *simplonia* is most directly in contact also geographically. I have pointed out, in the *Ent. Rec.*, 1923, p. 169, that I am convinced Hübner's figures 582-3 of *ausonia* represent a female of the Veneto race, which Marzola of Vienna would very naturally have obtained, because the Veneto was then part of Austria. I do not believe it can represent a mountain specimen, as believed by Rothschild, who sinks *simplonia* and *marchandae* as synonyms of *ausonia*; Geyer, himself, was the first to notice and illustrate the differences between them by figuring and naming *marchandae* soon after *ausonia*. According to Hemming's latest researches on the dates of issue of Hübner's plates, *marchandae* is, however, to be considered published in 1832, so that *simplonia*, Freyer, of 1829, has precedence over it.

Apart from questions of nomenclature, the transitional forms of *flavidior*, even resembling, to a remarkable degree, the second emergence of the S.-E., such as *romanoides*, Vrty. and *trinacriae*, Trti., by the thinness of the green pattern and by the prominent bright yellow nervural streaks of the underside, seem to demonstrate very clearly that *simplonia* cannot be considered a distinct species in and by itself, as some have maintained it is, but must be grouped with the south eastern races, from which it differs, at most, in being their glacial exerge. The question as to whether this group, as a whole, is specifically distinct from the south western one *cramerii*, Btl., hitherto called *belia*, must be discussed from other standpoints, which I have worked out at length in the *Annales Soc. Entom. France*, 1929, pp. 351-5, concluding they are not species, but exerges.

✓ *Pontia daplidice*, L. race *daplidice*, L. :—I saw a few individuals on the wing, here and there, in the Vaud and several in the Pfynwald, near Sierre, on 29th July, but I was unable to secure any specimens. Anyhow, it is well known that the I gen. is constituted by *bellidice*, O. (certainly not found in other generations, as Wheeler states it is, evidently making a confusion with small individuals of other sorts). In the Anzasca valley, at Vanzoue, 700m., as well at at Macugnaga, 1300m., where it was worn and it must have flown up, I have found the II generation, of the middle of July, consists of a large form, referable to *expansa*, Vrty., in colour and pattern, although not reaching the giant size of some southern localities, so that it seems extremely probable the Rhone valley race should have the same aspect. At Vanzoue the III generation makes its appearance on the last days of August and the first days of September, so that the same thing can be

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Entomological Society of London.—41, Queen's Gate, South Kensington, S.W. 7. 8 p.m. January 10th, 24th (Annual Meeting).

The South London Entomological and Natural History Society, Hibernia Chambers, London Bridge. Second and Fourth Thursdays in the month, at 7 p.m. January 16th.—*Hon. Secretary, S. N. A. Jacobs, "Ditchling," Hayes Lane, Bromley, Kent.*

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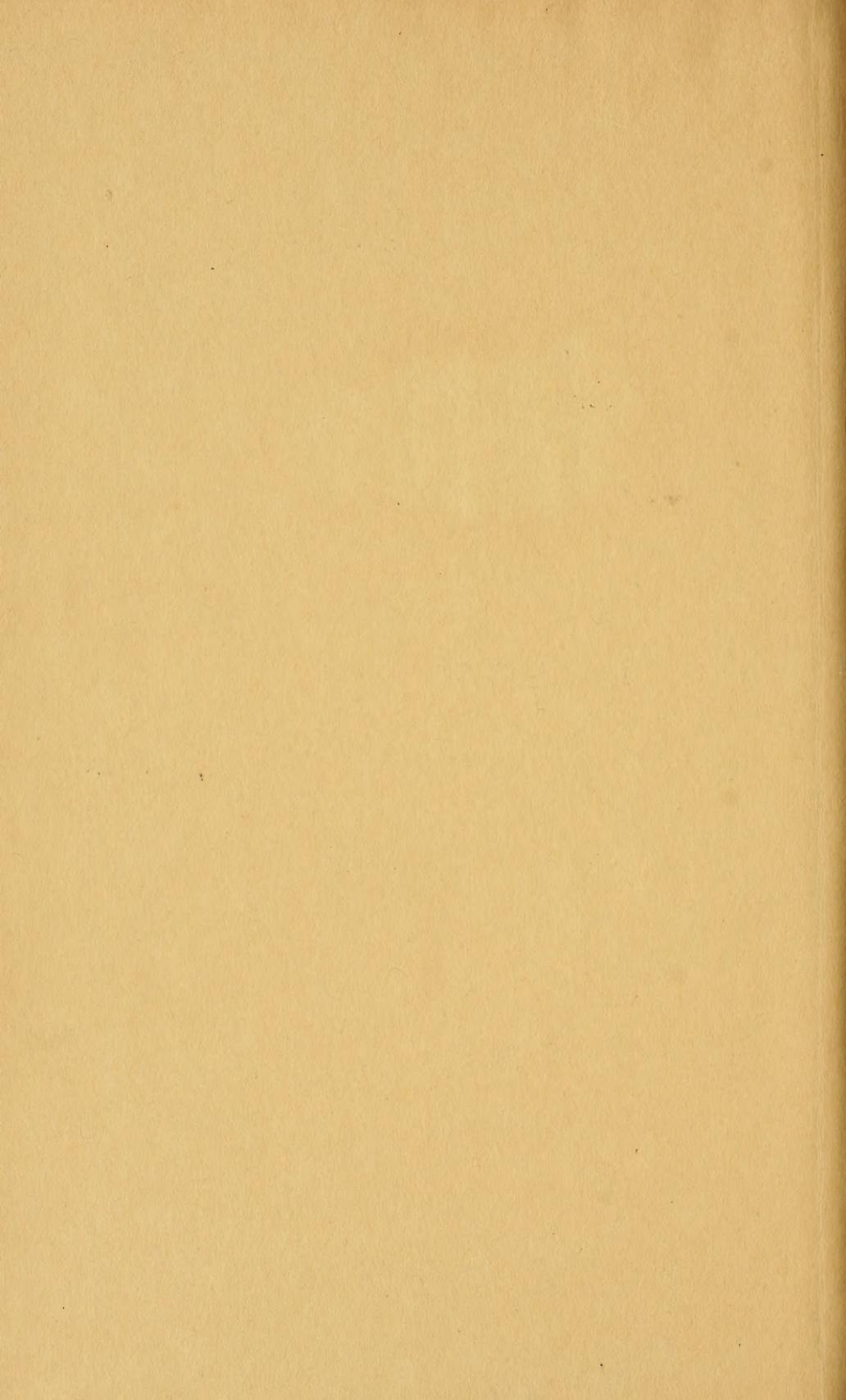
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1 Apr 50

