

ward it is of course a regular breeder. Herons have attempted to breed in Dovedale on several occasions, but never with success until the present year. As, however, they are still shot down by water bailiffs on the Dove, it is improbable that we shall see any great increase in their breeding stations.—F.C.R.J.]

NOTES ON COLLECTING LEPIDOPTERA
AT REPTON, 1915.

BY H. C. HAYWARD.

The mild weather experienced in February of this year was conducive to the early appearance of several of the spring Geometers. *Hybernia Marginaria* was observed as early as February 4th, *H. Leucophæaria* on February 9th, whilst *H. Rupricapraria* though not noticed before February 3rd was doubtless well out in January. It is noteworthy that the dark forms of *H. Marginaria*, appeared considerably later than the type. The first *var. Fuscata* was taken on March 10th, though a search had been made for it on most suitable evenings previously, and this experience confirms that of former years, *var. Fuscata* being often taken in fine condition when the typical forms are for the most part worn to rags. *Phigalia Pedaria*, usually common and often abundant in the woods here, was this year strangely scarce, not more than half a dozen examples being seen. Sallow bloom was abundant and proved fairly attractive, producing the usual *Taeniocampids*, and amongst them *Taeniocampa*

Cruda in quite unusual numbers, and in addition *Anticlea Badiata* and *Pachnobia Rubricosa* freely and a few hibernated *Triphosa Dubitata*. *Taeniocampa Populeti* was, however, scarcer than usual in its very restricted haunts, though an additional locality for it was discovered. A few specimens of *Eupithecia Abbreviata* were also taken, and one of *Anticlea Derivata*, both of which species I have only observed here once before. A number of larvæ of *Trochilium Crabroniformis* were obtained from osiers in early March and greater success in rearing these was obtained by keeping the cut sticks in wet sand in an inverted position. When thus treated the larva invariably forms a cap across the hole in the cut stick and never works through to the side of the stick, as it does in nature. The authorities say that this larva does not become fullfed until May, pupating in June. This is contrary to my experience of the species here. The majority of larvæ found in March are already fullfed, or very nearly so, and I have had them in pupa as early as mid-April, though the imagines have not emerged until June or July, June 20th being the earliest date recorded this year.

On April 15th three specimens of *Brephos Parthenias* were noted in Repton Shrubs. The species is recorded from the Shrubs in 1882 by Mr. H. H. Crewe, but has not been observed there during the last 12 years. A specimen of *Cymatophora Flavicornis* was also taken on a tree trunk on March 12th; hitherto only the larva had been reported here. Larvæ of *Thera Variata* obtained in April produced very fine melanic imagines of large size. Melanism in this species, as in some others, would appear to be rapidly progressive, as it is quite exceptional now to take or breed specimens of normal coloration, though these were common enough in the wood as recently as ten years ago.

Tephrosia Crepuscularia was observed as early as May

gth, and a fine *Pheosia Dictæoides* was taken on a tree trunk on May 11th. I had always regarded this species as single-brooded here, from my experience in breeding it. I have frequently beaten the larvæ in September and October and the imagines have invariably emerged in late June or July, sometimes quite towards the end of July. *Dictæoides* is usually stated to be double-brooded in the south and single-brooded in the north, and it is possible that in this locality, which may be regarded as near the transition line, the northern habit has been largely, but not completely acquired. I have taken freshly emerged specimens on Cannock Chase in August, which would seem to belong to the second brood. A specimen of *Pseudoterpna Pruinata* having been taken last year amongst the plants of broom growing near Repton Station, a determined search for the larva was made this year, but only one was obtained, which duly produced an imago of an unusually deep blue-green colour. This species is very scarce in the Midlands generally, and has only been recorded in Derbyshire from this immediate neighbourhood. There is little doubt, however, that here, as elsewhere, the larva feeds on gorse as well as broom, as two or three specimens were secured some years ago in a spot near the Shrubs, where gorse is plentiful, but no broom grows. When searching for this larva, larvæ of *Chesias Spartiata* were found to occur in quite astonishing profusion, many dozens being beaten from almost every plant, although in former years the same plants had been beaten for *Spartiata* with very meagre results. Last autumn a large number of larvæ of *Cabera Pusaria* had been collected with a view to varieties and some remarkably fine examples of *ab. Rotundaria* and intermediate forms were bred from these; one variety was also bred with four distinct transverse lines, the fourth being formed by the agglomeration of the dark atoms into a broad bar equidistant between the normal third line and the hind

margin. About a dozen specimens of *ab. Angelicata* were also bred from upwards of 150 pupæ of *Eupithecia Albipunctata*. A black *Eupithecia* taken last year and supposed to be *Angelicata* laid a few ova, and the resultant larvæ proved to be *Eupithecia Castigata*: unfortunately only two pupated, but these both produced coal-black imagines, absolutely indistinguishable from *Angelicata*, except by the slightly broader and less elongated form of the fore wings. As both *Eupithecia Lariciata* and *Eupithecia Virgaureata* are now reported to have evolved black aberrations, the identification of a black *Eupithecia* taken at large, will be a matter demanding some subtlety of determination. The melanic specimens taken in my own garden last year and recorded in this *Journal*, have proved upon further investigation, to be *Eupithecia Vulgata* but they are a more extreme form than those taken in the London district.

By far the most striking capture of the year was that of a specimen of *Ephyra Annulata* in Repton Shrubs. This species has apparently never been recorded from any of the midland counties, though, like so many other species with an almost exclusively southern distribution, it re-appears in the Yorkshire dales. It does not seem probable that it can have been recently introduced to the wood; there is but little maple there, and what there is consists of fairly old trees: so far as I know, no young maple has been recently planted, on the leaves of which a pupa might have lurked; and failing some such explanation, it would seem that the species must have maintained for an indefinite period a precarious existence, undetected, in a wood which for many years has probably been as regularly and thoroughly worked as any of its size in the kingdom. The specimen was taken on June 22nd, and was fairly fresh. In southern England the species emerges in May, with a second brood in late July and August. The date would therefore seem to point to

another instance of a normally double-brooded species becoming single-brooded: whether two broods occur in its Yorkshire habitat, I have no information.

Some four years ago a large number of oaks were felled in a spinney not far from the Shrubs and the stumps were duly searched two years after felling for larvæ and pupæ of *Sesia Cynipiformis*, but without result. This year, however, almost every stump was found to be abundantly tenanted; at the end of May, larvæ in all stages and pupæ could be obtained in profusion; the earliest imago recorded emerged on June 1st, but the species was not fully out until well into July.

Butterflies are so scarce in this immediate neighbourhood that it is worth recording that a specimen of *Coenonympha Pamphilus* was taken on June 12th, the first that has come to my notice here, whilst hibernated *Pyrameis Cardui* and *P. Atalanta* were both fairly common, and a small colony of *Lycæna Icarus* was observed in which all the specimens were of rather large size and richly coloured.

On the whole the season proved a good one for *Geometrae* and flower-frequenting *Noctuae*, but sugar proved, if possible, a more complete failure even than last year, and this was, I believe, very widely the case throughout the country. Amongst the *Geometrae*, the exceptional abundance of *Bupalus Piniaria* may be noted, many of the females being of a very deep smoky brown; *Macaria Liturata* is also becoming commoner in the wood, but *var. Nigro-fulvata* was not again recorded: of *Euchloris Bajularia*, one of the best of our local species, quite a respectable number of specimens were taken, including three of a pale brick-red colour: these specimens are all rather worn, but it does not seem clear whether this colour is solely due to fading in a damp atmosphere or whether the insect may actually assume the red colour upon emergence in certain weather conditions, just as

green specimens of the red *Ellopia Prosapiaria* occasionally occur. Certainly, it is not the colour normally assumed by weathered specimens, which fade to a pale green and finally to a yellowish buff. I had also the good fortune to pick up a pupa of this species in the wood, spun up in a little cluster of debris attached to a grass stem, after the manner of various Tortrices. Hitherto, all my attempts to beat the larva from oak before or after hibernation have met with no success. One or two specimens of *Geometra Papilionaria* were also taken, whilst such species as *Ephyra Punctaria*, *Perizoma Affinitata*, *Lomaspilis Marginata*, *Abraxas Sylvata*, *Coremia Designata*, *Metrocampha Margaritaria*, *Drepana Falcataria*, etc., were all more in evidence than usual.

On July 10th a female specimen of *Eurois Prasina* was taken on a tree trunk, a most unusual resting-place for this species. She laid a large number of ova from which a fine series of imagines has been bred, by forcing the larvæ, the earliest imago emerging on October 25th. These show a fair range of variation, but all are darker than the ordinary forms, and in some of them the tendency to melanism is well marked, the green colour having almost entirely disappeared and being replaced by a deep purplish or blackish grey.

When beating for larvæ in September, a couple of specimens of *Amathes Helvola* were dislodged from birch trees. This species had not hitherto been recorded in our local lists, though it has occurred near Burton and is probably generally distributed throughout the county. The scarcer larvæ were rare this year, no *Pheosia Dictæoides* being obtained and very few *Notodonta Dromedarius* or *Geometra Papilionaria*; on the other hand, larvæ of *Cymatophora Duplaris* were far commoner than usual, whilst the pines held *Bupalus Piniaria* in profusion and a fair number of *Macaria Liturata*, and *Lophopteryx Camelina* was abundant on almost all deciduous trees.

A couple of *Cerura Bifida* and several *Acronycta Megacephala* were obtained from poplar, which also provided numbers of *Lomaspilis Marginata* and other common *Geometers*.

It is very desirable that records from other parts of the county should be included in these notes, and I should be grateful to anybody interested in Lepidoptera if they would send me before November any information worthy of note during the year.