

Noctuae and Geometers, among them *Noctua margaritacea*, Vill., which usually occurs only at altitudes higher than 1,500 metres, *Miselia proxima*, Hb. (three specimens), which seems to be very rare in the Pyrenees, and *Noctua stigmatica*, Hb., which occurred in fair numbers, although only two specimens are recorded in the Catalogue of Monsieur Rondou. Plusias were found to be very scarce; the only interesting insects taken were one *Plusia gutta*, Gn., at flowers at dusk, and one *P. chryson*, Esp., kicked up by day. This last species is recorded from the Pyrenees in the Supplement, published by Monsieur Rondou in 1916.

Many long and almost wasted hours were spent in beating for larvae. Never in our experience had we worked so hard for such negligible results, so far as larvae were concerned. For my own part, I should have abandoned the attempt almost at once, had it not been that I found Hemerobiids and Chrysopids in large numbers, and had also the good fortune to beat out a specimen of *Drepanopteryx phalaenoides*, L., a Neuropteron I had never seen alive before. But of these and of the Trichoptera and Longicornia taken, some account may possibly appear in the future, nor do I propose to do more than give a list of the so-called Micro-lepidoptera observed.

The names and the order used in the following list are those of the Catalogue of Staudinger and Rebel, 1901, so that reference to Monsieur Rondou's Catalogue is thereby facilitated. I take this opportunity also of thanking Mr. Hy. J. Turner, and the entomological staff of the British Museum for their kind help in the identification of some of the insects captured.

(To be concluded.)

A Further Study of the Habits of *Acanthomyops* (*Donisthorpea*) *brunneus*, Latr., and the *Myrmecophiles* inhabiting its Nests.

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

(Concluded from p. 43.)

(13) *Batrisodes delaporteï*, Aubé.—I have found this beetle in every *brunneus* nest I have examined this year; I must have seen quite 200 specimens first and last. In January I introduced a certain number of living individuals into my *brunneus* observation nest, and some (or all of them!) are alive to-day (December 20th). When the nest is uncovered and the ants all run wildly about, these little beetles put in an appearance, and trot about among the ants in a very important and consequential manner. If an ant runs into one of them by accident, and knocks it over, the beetle appears to be overcome with astonishment and chagrin at the carelessness of its host. I have never seen an ant attempt to attack, nor even to threaten these beetles, and they walk about all over the nest in perfect freedom. On December 2nd I made an observation which helps to show on what these beetles feed. Four *delaporteï* were to be seen walking about in different cells in the nest, and two of them were carrying something white in their mouths. On examination with a weak lens, the white objects proved to be young ant larvae!

35. *Ptenidium turgidum*, Th.—Several specimens occurred on October 12th in the centre of a fallen branch, which was all channelled

by *brunneus* and full of the ants and their brood. Matthews [*Trichopterygia* 1872, 78] gives:—"Habitat—Europe. Rare; taken with ants;" and Fowler [*Col. Brit. Isles* 3 141 (1889)] writes:—"In rotten wood; usually in company with ants."

36. *Dendrophilus punctatus*, Hbst.—This Histerid was twice taken in *brunneus* nests—on July 9th and 17th; though often found in birds' nests (I have also found it in numbers in old birds' nests at Windsor), cellars, etc., it is nevertheless also myrmecophilous, and has occurred with *Formica rufa*, *A. (D.) fuliginosus*, etc.

(17) *Ptinus subpilosus*, Müll., was taken with *brunneus* again this year on July 17th.

37. *Dryophthorus corticalis*, Pk.—This weevil was new to Britain when I first discovered it in Windsor Forest on July 9th, 1925 [*Ent. Mo. Mag.* 61 182 (1925)]. I have since found it in four other trees, and in the utmost profusion; but only in trees inhabited by *A. (D.) brunneus*. The beetle occurs in the damp wood, and in the galleries of the ants in the inside of the tree. Its larvae and pupae sometimes being found side by side with those of the ant. The ants walk over, and on the beetle (as *F. rufa* does with the species of *Monotoma*, which inhabit its nest), but never attack it. I introduced living specimens into my *brunneus* nest, where they have lived for months; but being very lethargic, and mostly resting under the wood and frass, are seldom seen. I think there must be a real association between these beetles and ants: and my friend Major Sainte Claire Deville tells me that *D. corticalis* is also found in company with *brunneus* in France—in the Forest of Fontainebleau, etc.

HYMENOPTERA.—Proctotrupidae.

39. *Conostigmus* n.sp.?—A number of a *Conostigmus* near to *C. wasmanni*, Kief., was found in company with *brunneus* (and by sieving the frass from their nests) on July 9th and 18th, October 14th, etc. The following species were also obtained in the same manner—39. *C. leptothorax*, Kief.; 40. *C. lucidus*, Kief.; 41. *Ceraphron scoticus*, Kief.; 42. *Belyta nigriceps*, Cam.; 43. *Aphanogmus aenicornis*, Th. I again have to thank Mr. Claud Morley for kindly naming these parasitic Hymenoptera for me.

DIPTERA.

44. *Atrichopogon lucorum*, Kg.—In January a number of the curious larvae of this little fly was found in cells, inhabited by *brunneus* and its brood, in wood taken from the centre of a large felled oak. From these many ♂♂ and ♀♀ of the Dipteron hatched out in April.

APHIDAE.

45. *Stomaphis quercus*, L.—On October 1st, ♂♂ of *brunneus* were observed attending this Aphid on the bark of a large oak tree. This is the first time I have seen this plant-louse at Windsor, or in association with *brunneus*. (27) *S. longirostris*, F., was again frequently seen, in most nests, and in numbers, this year.

PSEUDOSCORPIONINA.

46. *Chelifer wideri*, C.L.K.—This False-Scorpion was found in numbers with *brunneus*, in the frass, under bark, and in the cells in the wood, inside the trees. Wallis Kew [*Proc. R. Irish Acad.* **33** 12 (1916)] writes of this species that it “ . . . was established by C. L. Koch on Bavarian specimens, found ‘in dem faulen Holzstaube einer Eiche’; Simon found it in the Forest of Fontainebleau ‘sous les écorces de chênes’; while in Britain we know it from Sherwood Forest, in the old forest-land of Richmond Park, and in a small remnant of forest at West Wickham (Kent), always under bark of old oaks; and unlike other tree species, it is usually found where the space between the bark and the wood is choked with a characteristic reddish powdery débris.” This débris much suggests the work of ants to me; and *brunneus* frequently causes such powdery frass under oak bark at Windsor.

MYRIAPODA.

47. *Proteroiulus fuscus*, Am. Stein.—This millepede occurred in exactly the same situations with *brunneus* as the *Chelifer* before mentioned; and also in considerable numbers, especially in the cells in the heart of the nests. I was fortunate enough to obtain a few ♂♂, as the Rev. S. G. Brade-Birks, who kindly identified the species for me, tells me the males in this genus are extremely rare in Britain.

ARANEINA.

48. *Tetrilus arietinus*, Th.—Two adult examples and a number of young of this myrmecophilous spider were found in the interior of a *brunneus* nest on July 9th. Very many of its white egg-sacs occurred, fastened to the wood inside the tree, in which the ants' galleries were excavated. It was subsequently found in other nests, including that of a very recently established colony discovered on September 16th. I have previously taken it in nests of *F. rufa*, *A. (D.) fuliginosus*, etc., and have observed the egg-sacs fastened to the carton of which the latter ants' nest is constructed.

ACARINA.

49. *Antennophorus* n. sp?—A species of *Antennophorus* was found in some numbers on the ants (chiefly on callows) from a nest of *brunneus* situated in the centre of an oak tree cut down in Windsor Forest on July 9th, 1925. I sent specimens to Father Wasmann, who tells me it is evidently a species new to science. No species of this interesting genus of mites has been recorded with *brunneus* before. Four species previously were known in Britain, all strictly confined to their special host, viz., *A. uhlmanni*, Hall., with *A. (C.) umbratus*; *A. grandis*, Berl., with *A. (D.) fuliginosus*; *A. pubescens*, Wasm., with *A. (C.) flavus*; and *A. foreli*, Wasm., with *A. (D.) niger*. The genus *Antennophorus* appears to be parasitic, only on ants of the genus *Acanthomyops*: and Wheeler, in 1910, described two new species found on North American species of *Acanthomyops*,—as *A. donisthorpei* and *A. wasmanni*. The great interest attached to these mites is that they rest on the body of their host, chiefly beneath the chin, and are fed by the ants. When

one of these mites wishes to be fed it scrapes the mouth of its carrier, and the ant disgorges a drop of fluid which is devoured by the *Antennophorus*. The Rev. J. E. Hull in a paper in the *Vasculum* [8 126-30 (1922)] pretends that no mite is fed by ants and he writes, "If this be so, Donisthorpe was mistaken, when he supposed that he saw an ant feeding one of these mites," and says the final solution must come from direct observation. Of course this is all pure nonsense. I have kept several species of *Antennophori* alive for months in my observation nests, and have frequently seen them fed by the ants, not only by the ants on which they rested, but by others which have come up and fed them. Also when an ant has been feeding a fellow, the mite on one of them has lent forward and shared in the disgorged liquid. I have frequently recorded these observations, moreover Janet, Karawaiew, Wasmann, Wheeler, and others have all recorded similar facts.

50 (-52 ?) *Laelaps* (*Laelaspis*.) sp?; *Laelaps* (*Oolaelaps*) sp? I have taken what appears to me to be a *Oolaelaps*, and one or two species of *Laelaspis*, sparingly in nests of *brunneus*, but have been unable to get them named yet.

FORMICIDAE.

53. *Leptothorax acervorum*, F.—On June 25th, a small colony of this ant with their larvae was found nesting in and under the bark of an oak tree at Windsor Forest in company with *brunneus*. *L. nylanderi*, Forst.; ♀ ♀ also occurred in the same tree.

Miscellaneous Notes from Argentina. II.

By KENNETH J. HAYWARD, F.E.S.

(Continued from Vol. XXXVII., page 154.)

DESCRIPTION OF LARVA AND PUPA OF *DIONE VANILLAE*, L.

LARVA.—Length 28-31mm.

Head brown with five vertical yellowish white stripes and two short spines in front.

Body colouring a series of longitudinal stripes as follows:—A central dorsal stripe of grey bordered by a thin white line, the remaining stripes on either side being in order brown, grey-brown, grey, a thinner stripe of white, brown, yellowish-white, and the lower area of mixed colours that appear in the upper stripes.

On segments 2 to 11 black hairy spines placed laterally on each of the four grey stripes. On the 12th segment two similar smaller spines. Feeds on *Passiflorae*.

Described from larvae found at Villa Guillermina on 20.II.25, of which the type specimen in spirit will shortly be sent to the British Museum. (No. 5510.)

PUPA.—Suspended from a silk pad. An angulated pupa of 22mm. length. Ground colour brownish-pink more or less suffused and mottled with a darker brown. At the junction of the abdomen with the wing-sheaths above, a pinkish patch about 1mm. wide and extending over two segments in length. The abdomen with a pinkish lateral



Donisthorpe, Horace St. John Kelly. 1926. "A further study of the habits of *Acanthomyops* (*Donisthorpea*) *brunneus* Latr. and the myrmecophiles inhabiting its nests [Pseudoscorpions, Myriapods, Araneina, Acarina]." *The entomologist's record and journal of variation* 38, 52–55.

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