

*marculenta*. Instead there is a vague and broad darker shade only visible with attention. The outer line is rounded outwardly over the median nervules, as in *trimaculalis*. It is apparently disconnected below vein 3, appearing again higher up below the open reniform and describing an inward curve above vein 1. The orbicular dot is imperceptible and the inner line very faint. Fringes faintly discoloured, being pale fuscous, concolorous with the lines. Hind wings very pale fuscous with a slight yellow cast. The line is continuous, squarely projected over median nervules, very different from allied forms. A pale terminal line before the pale fuscous fringes. Beneath largely washed with fuscous, legs outwardly white. On primaries the marking of the upper surface reappears relieved by pale interspaceal blotches; hind wings pale fuscous, uniform, with the line repeated. Palpi white beneath, dark at the sides. *Habitat*, Hamilton, Ontario, Mr. Moffat. The species seems a little stouter bodied than *marculenta*, of about the same expanse.

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#### CORRESPONDENCE.

##### SWARMING OF ARCHIPPUS.

DEAR SIR,—

The assembling of *D. archippus* referred to in CAN. ENT. is perhaps not so frequently noticed as their passing over localities in flocks. Several years ago I saw them congregating in a bit of woods in the neighborhood of the city which I was visiting at the time. At least every other day they were hanging in a listless kind of manner to the underside of branches in immense numbers, with their wings closed, and not noticeable unless disturbed, very few being on the wing. Their favorite resting place seemed to be dead pine twigs, which would be drooping with their weight, and in more than one instance I saw one too many light and the twig snap, and send a dozen or more into the air to seek for another perch. In going to and from the woods I have seen several of them at once coming from different directions, high in the air, sailing along in their own easy and graceful way, all converging to the one spot. I did not see them depart. I went one day and could not find one in the woods; and as there were thousands, perhaps hundreds of thousands of them, it would have been a fine sight to see them go. The following year they were remarkably scarce and it was three years before they were even moderately plenty.

J. ALSTON MOFFAT, Hamilton, Ont.

## SWARMING OF ARCHIPPUS.

DEAR SIR,—

I was surprised to learn from the letter of Mr. Edwards in your last issue, that the flocking of *archippus* is not a well known fact in Entomology, and in view of this I venture to add a few facts in regard to it which may be of interest.

While spending the winter of 1875-76 in Apalachicola, Florida, I found one of these *archippus* swarms in a pine grove not far from the town. The trees were literally festooned with butterflies within an area of about an acre, and they were clustered so thickly that the trees seemed to be covered with dead leaves; fig. 6 will enable the reader to form some idea of their appearance thus grouped. Upon shaking some of the trees a cloud of butterflies flew off, and the flapping of their wings was distinctly audible. They hung in rows (often double) on the lower dead branches, and in bunches on the needles. I find by my note book that visiting the

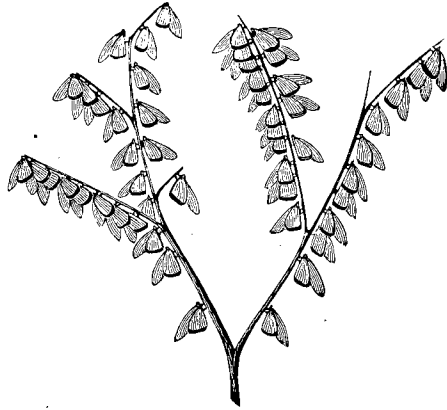


Fig. 6.

flock towards evening, it was receiving additions every moment. I caught a net full off a bunch of dead needles, and, walking away to some distance and letting them go, all but three returned to the flock. The question as to where they came from seems a very interesting one. I was told by Dr. A. W. Chapman that there was hardly Milkweed enough in all Florida to produce one of these flocks, which doubtless do not confine themselves to Apalachicola. During my visit I found two more flocks not far from the first, but neither of these was as large. I should mention that I often observed examples among them *in coitu*.

I have seen *archippus* flocking at the Isles of Shoals, N. H., towards evening, in very much the same manner, having flown nine miles from the mainland. I have also seen clusters of *Vanessa F-album* on tree trunks

at dusk in New Hampshire, which seemed to present a parallel to the *archippus* flocks, though of course on a very small scale.

R. THAXTER, Newtonville, Mass.

DEAR SIR,—

Last summer I discovered, unfortunately too late, that a large *Cossus* was working in some large and very old Oak trees near here. I hope next June or July to find out what it is, as I shall construct nets to envelop the tree trunks of several of these so infected Oaks. None of my correspondents have been able to give me light on the subject; they think it possible that this is a new species, and urge close observation, advice which I hope to be able to follow.

I also purchased five large trees of a coarse variety of Poplar, known here as Cottonwood, that were to be cut down, as they had commenced dying, "caused by a *grub* working in them." I found it to be a *Cossus* larva, but not as large as that working in the Oaks. Judging from a comparison of the empty pupæ cases found in them, which in these Poplars were very numerous, it is not the one described by Mr. Bailey in last January number as "*Cossus centerensis*," but seems more like *Xystus robiniaæ*. I had three of the trees cut down in order to obtain the pupæ; judge of my surprise and disappointment when my man came in, telling me he could find *none* but "lots of nasty *grubs*, of which he had given the near chickens probably a hundred or more," not thinking them valuable to me. I sent him back with instructions to preserve every larva he could find, and I now have about fifty in every stage of development from the half-inch beet red, the nearly two-inch long pink, to the about two and a half-inch long greenish-white larva. I have some in the wood in their own burrows, and have put the rest in sawdust; and I have ordered him to cut me pieces of that wood, bore some holes in the ends and put in the other larvæ, and cork it in, leaving a few air-holes; with these I hope to complete my observations in a warm room. I did not know before that these hibernated in the larval state, much less did I think they would be found of different moults.

A. H. MUNDT, Fairbury, Ills.

#### MIGRATION OF BUTTERFLIES.

DEAR SIR,—

I have received the following notes on migration of certain butterflies from Prof. J. E. Willet, of Macon, Ga., dated 19th Jan'y, 1880.

W. H. EDWARDS, Coalburgh, W. Va.

“ I saw *Callidryas Eubule* passing here in great numbers during Sept., Oct. and Nov., 1878, from N. W. to S. E. About noon, when they were most abundant, there would be half a dozen visible all the time, crossing a 15-acre square of the city. They pursued an undeviating course, flying over and not around houses and other obstructions. They flew near the ground, and stopped occasionally to sip at conspicuous flowers. A geranium with scarlet flowers, and set in the open yard, attracted most that flew near it. Papers in Southern Georgia noticed the great numbers passing at different points ; and a friend in Southern Alabama sent me specimens of the same, saying that they were subjects of speculation there. About March, 1879, there was a similar migration from S. E. to N. W., but in diminished numbers. I saw the fall migrations again Oct. and Nov., 1879, but in smaller numbers than in 1878. A lady of So. Georgia told me that her husband called her attention to the fall migration 26 years ago, and that she had observed it every year since. *C. Eubule* is found here in small numbers at other seasons of the year.”

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EARLY STAGES OF EPHEMERIDÆ.

The Rev. A. E. Eaton would like to communicate with anybody who would supply him with examples in fluid of nymphs of some of the American genera of Ephemeridæ. He would readily offer to pay a fair price for them and would defray their carriage to England. All that would be required would be five or six nearly full grown examples of one species per genus, put up in narrow tubes or narrow cylindrical bottles (one tube for each set), containing a solution of two parts of water to three of spirits about 60 over proof, well corked and with the cork tied down. Some tissue paper should be put into each tube with the specimens, to prevent the solid contents moving about within the tube when its position is shifted, care being taken not to compress the insects ; and the tube should be filled up as nearly as possible with the fluid, to the exclusion of air bubbles. The tubes should be packed up with cotton, wool or tow, in a box, so that they shall be kept upright during the voyage ; and this box should be packed into a stronger case with tow or hay or straw, and forwarded to Mr. Eaton by express, or through the agency of some bookseller, *not through the Post Office*. Address Rev. A. E. Eaton, 51 Park Road, Bromley, Kent, England.