

Amphidasis betularia (Peppered Moth).
Amphidasis prodromaria (Oak Beauty).
Odontoptera bidentata (Scalloped Hazel).
Phigalia pilosaria (Pale Brindled Beauty).
Boarmia repandata (Mottled Beauty).
Boarmia abietaria (Satin Carpet).
Boarmia rhomboidaria (Willow Beauty).
Gnophos obscurata (Annulet).
Hybernia progenmaria (Dotted Border).

Scheme of particulars:—

(1) State, if possible, the number of specimens of each variety (light or dark, &c.) of the above species that have been observed at rest, together with particulars as to the object upon which they were found, and also say whether they were conspicuous or well protected by their colour.

(2) State, if possible, whether the species is abundant, fairly common, or rare in the locality to which reference of the observation is made.

(3) If it is not possible to answer the foregoing questions, any other information concerning observations of a general character will be very acceptable.

All help received will be fully acknowledged on publication; and I would like here to express (as it has not yet been possible to publish anything upon the subject) my great indebtedness to those entomologists who have previously sent valuable information concerning the distribution, &c., of the various forms of *A. betularia* in their own particular localities in compliance with a former request.

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H. S. LEIGH.

Protection from "White Ants" and other Pests.

IN a recent number of NATURE there was a note on the subject of ants in general and white ants in particular (they are not ants, but that does not matter, as they are "so called"), in which it is said that the Admiralty has decided in favour of "blue oil." Blue oil is the residue left in the distillation of mineral oils after the isolation of kerosine (called petroleum in England) and paraffin. I therefore venture to give you my experience in regard to the same and as to some other cognate matters.

Some twenty years ago I bought a cottage at Mittagong, about eighty miles from Sydney; it was furnished, and when I went there for a night I heard a continual rasping sound whilst in bed, and next morning, on examining the place, I found it was infested with white ants. They had eaten the pine lining in two rooms, as well as the uprights of a door.

I was then connected with a kerosine company, and immediately got a quantity of blue oil, which I had sprinkled all round the foundation of the house with a watering-can. The result is that the lining is in the same condition that it was twenty years ago. This is not an isolated instance, because during that time I have had much experience of "white ants," and have always found that they cannot work if they are cut off from connection with the ground, from which they get moisture, which is necessary for them, and they do not seem able to get through ground saturated with blue oil.

There is another matter to which I may refer in this letter. When I bought my present home, in 1882, I found it full of weeds and ants. I have got rid of both by extermination, and with the latter of aphids and almost entirely of scale insects. Of the former I have not seen one for the past fourteen or fifteen years. My first experience was with black aphids, by which the leaves of a nectarine tree were all curled up, whilst ants were continually running up and down the stem. I had read Sir John Lubbock's account of ants carrying the eggs of aphids to their nests, and I therefore shaved off the rough bark and chalked the stem for a foot or so, and the result was that the ants soon ceased to visit the tree, and we had a healthy tree and a fair crop of fruit. I may say that, so far as my observation goes, ants cannot climb up a chalked stem or post, as the chalk comes off with their feet and they fall down. I am not sure that this is the correct interpretation, as I have seen that if a broad chalk line is drawn round a meat-dish standing on a shelf the ants seldom get across it, and if they do it is

only by some place being missed in chalking. They seem to leave a trace of formic acid behind them which guides the followers, and, combining with the calcium of the chalk, deprives them of their clue.

As to ants in general, I may say that after trying various ways to get rid of them I have come to an effectual method, that is, to find their nests and pour down each hole two ounces of a solution of cyanide of potassium. Two ounces per gallon is the strength I have used, but it might be weaker. The ants are not all killed by the first dose, for some are out foraging, and one cannot be certain of killing all the queens, but by giving them a dose once a week or a fortnight it is possible to get rid of them.

There is another matter I may mention. Some thirty-nine or forty years ago I observed an old shingle-roofed cottage at Maitland. It had two dormer windows, the sides of which had been painted white with white lead. The whole of the roof was rotten with fungoid growth except below the dormers, where the paint had been washed down by the rain, leaving a white streak, and there the shingles were nearly as good as they were when put on. It was therefore evident that white lead was inimical to fungoid vegetation.

When I came to my present home I had outside venetian blinds, and the "ladders" got quite rotten in three years, evidently by fungoid growths. In getting new ladders I steeped them in a solution of acetate of lead (6 ounces to the gallon), and they lasted for thirteen years, being by that time worn out by friction in moving them up and down. Acetate of lead is soon converted into white lead by atmospheric carbon dioxide. I have used the same process with a sheet surrounding a shower bath which in six months was black with "mould," and now it is in as good condition as it was ten years ago.

WILL. A. DIXON.

97 Pitt Street, Sydney, October 31.

January Meteors.

THE most noteworthy of the January meteor showers is that of the Quadrants. Owing to the great northerly declination of the radiant, these meteors can be observed at any hour of the night, and being long-pathed they may, if fairly numerous, present quite a striking display. In 1911 the maximum will fall on the night of January 3, computed particulars of which and of other subsequent meteor showers are here summarised.

Epoch January 3, 11h. (G.M.T.), fourteenth order of magnitude. Principal maximum January 3, 12h. 30m.; secondary maximum January 3, 16h. 30m.

Epoch January 4, 13h. 30m., seventeenth order of magnitude. Principal maximum January 3, 12h. 40m.; secondary maximum January 3, 6h. 30m.

Epoch January 6, 22h., approximately sixth order of magnitude. Principal maximum January 5, 14h. 10m.; secondary maximum January 5, 2h. 45m.

Epoch January 6, 2h. 30m., fifteenth order of magnitude. Principal maximum January 7, 9h. 45m.; secondary maximum January 7, 7h.

Epoch January 11, 4h. 40m., eighteenth order of magnitude. Principal maximum January 12, 23h.; secondary maxima January 11, 4h. 40m., and January 12, 13h. 15m.

Epoch January 12, 19h., seventeenth order of magnitude. Principal maximum January 14, 9h. 20m.; secondary maximum January 14, 16h. 30m.

Epoch January 19, 17h., fifth order of magnitude. Principal maximum January 18, 7h. 30m.; secondary maximum January 19, 2h. 15m.

Epoch January 21, 8h. 30m., twelfth order of magnitude. Principal maximum January 22, 23h. 30m.; secondary maximum January 22, 18h. 30m.

The intensity of a meteoric epoch is inversely as its order of magnitude. Thus the heaviest maximum occurs on January 18, as it belongs to an epoch of the fifth order of magnitude, which is the highest of the month. Owing, however, to the times at which its maxima occur, and also to other circumstances, this epoch will not furnish so many meteors as the first two of the month, which have their principal maxima shortly after midnight on January 3.

Dublin.

JOHN R. HENRY.