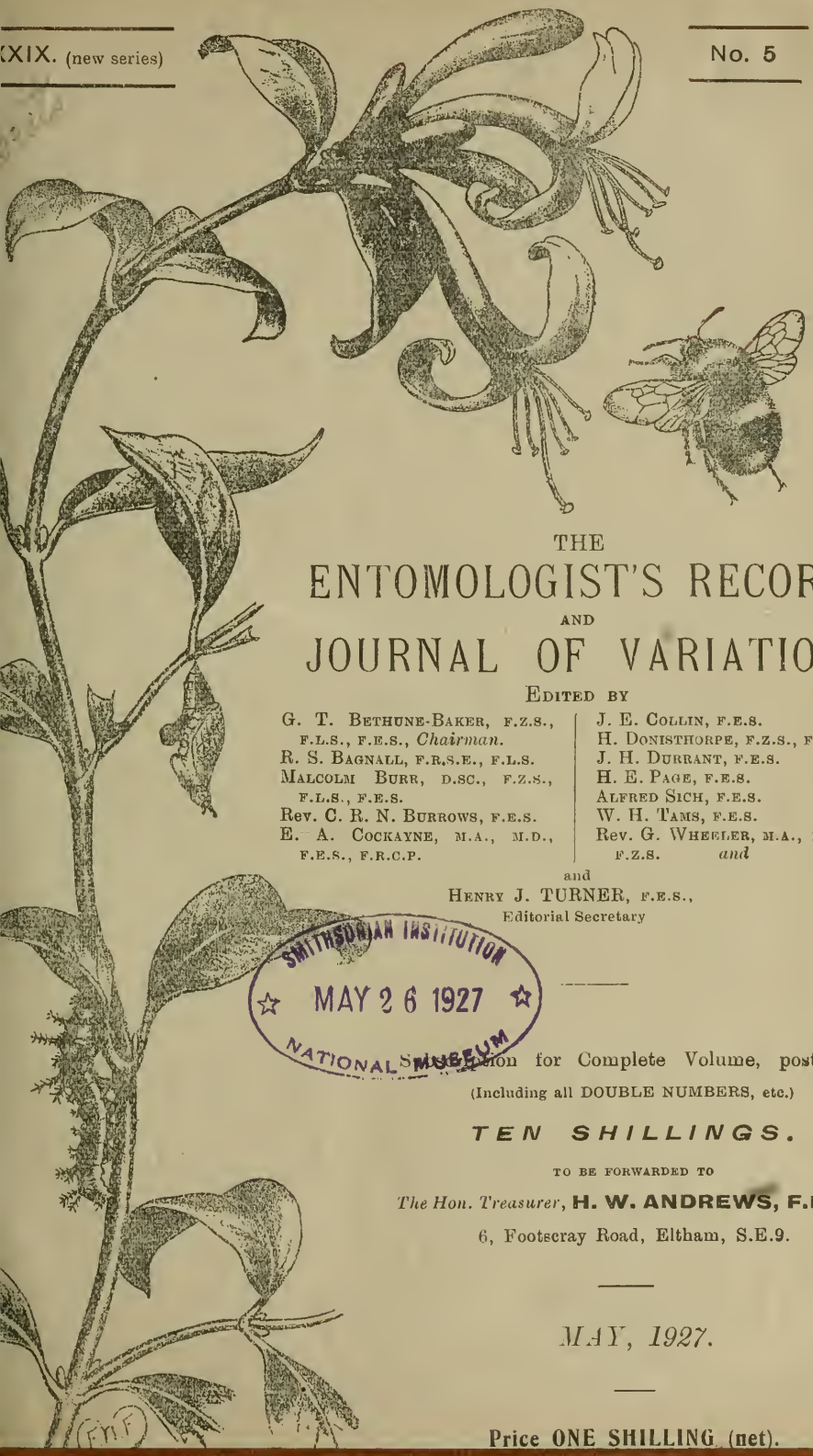
(XIX. (new series) No. 5



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A Contribution to the Life-History of Senta maritima, Tausch.

By E. A. COCKAYNE, D.M., F.R.C.P., F.E.S.

The food of the larva of this moth has been a puzzle to entomologists for many years. Barrett quotes Wilde and Hoffmann, who state that it feeds on other reed-frequenting insects, both larvae and pupae, and says "This seems to be an extraordinary habit, but is confirmed by Schmidt. Doubtless the ordinary food is the reed-leaves." Herr Leonhardt told me that in Hamburg the local collectors go to the reed beds when the water is frozen and take the larvae, which they bring to maturity on raw meat and fat.

Mr. H. M. Edelsten told me last year that he believed the natural food was the delicate lining of the dead reeds. Mr. Edwin Sharp showed me his larvae at night eating dripping and passing frass, and this suggested to me a simple way of solving the problem. I collected larvae from a reed bed in Surrey, finding most of them inside the open ends of broken reeds. One was hiding in the empty cocoon of a large ichneumon fly in an old pupation chamber of *Nonagria geminipuncta*. I watched my larvae at night and thought I detected one eating the lining of a reed, and inside another reed I thought I could see a place where the lining had been eaten. This was inconclusive, so I adopted the method I had decided on at Eastbourne. Taking frass from half a dozen boxes, in each of which a single larva had been confined, I teased the bits out on separate slides and looked at them under the microscope. In every case the frass was composed of little pieces of the lining membrane, which showed the cellular structure clearly. In one bit of frass there were some thin short fibres, that looked like the woolly substance covering the lining of some stems, and there was a piece built of larger broader cells than the membranous lining I had mounted for comparison. To confirm the discovery I examined the contents of the alimentary canal of a larva, taken a day before and kept without food, and found similar bits of lining membrane in it. In every case the frass examined was produced from food eaten before capture.

This proves conclusively that the usual food of big larvae is the lining of the dead reeds, *Phragmites arundo*, as Mr. Edelsten shrewdly suspected. I was also lucky in seeing a larva, taken the week before, in the act of changing skin, its head snow white and the old skin still clinging to the posterior segments, and so proved that some larvae at least pass their last instar in the spring.

With regard to the observations of continental authors there is no doubt that they will eat larvae of their own species. Three of mine taken at Easter were eaten in this way. Mr. Sharp tells me they eat larvae of *Chilo phragmitellus*, and it is probable that they will eat those of *Leucania straminea*, but he thinks that this is due to thirst. In captivity they are fond of drinking droplets of water and it may be necessary to them owing to the dry nature of their food. On April 24th, I found three pupation chambers. All were in rather large open-ended broken reeds, which had been closed by thin silk and chips of reed. About the length of a larva below this was another similar diaphragm, and the larva itself lay between this and the node. One larva was dead and black, the others were healthy and one pupated on April 25th.

May 15th, 1927.

Some Observations on Coccinellids and New Aberrations.

By G. CURTIS LEMAN, F.E.S.

Herr Leopold Mader of Vienna is publishing in parts a comprehensive and interesting work on Palearctic Coccinellids in the *Ent. Anzieger* with plates, and has, meantime, sent me his preliminary separata on his new aberrations published in the same journal in 1926, on both of which I wish to make some observations.

A. *Epilachna chrysomelina*, L. Weise (B.T. 1879) locates the spots on this species as follows: "1 und 2 am Grunde, 3 und 4 in der Mitte (4 an der *Nath* gewöhnlich weiter vorn), 5 an der *Nath* in $\frac{2}{3}$ Länge, und 6 am Aussenrande ein Stück vor der Spitze,"=2, 2, 1, 1.

His var. *nigrescens* has any of the following confluences: 4+6, or 3+4+5, or 1+2, but in view of what follows I cannot help thinking that his confluence 4+6 should have read 4+5. At the same time Della Beffa (*Rev. Coc. It.* 1913) and Mader both figure specimens with 4+6.

Be that as it may Weise then describes var. *hieroglyphica*, Sulz., as having the two confluences 4+6 and 3+5 forming two long bands ("bilden 2 Langsbinden.").

In *l'Abeille Jour. Entom.* XXVIII. p. 6 (which contains a translation into French of Weise B-T. 1885, of which I know of no copy in England) we find Weise stating that the confluences 3+5 and 4+6 form two separate bands ("3+5 et 4+6 formant deux bandes séparées (*hieroglyphica*, Sulz.)").

Weise continuing in 1879 states that, where 3+5 and 4+6 "bilden eine V-förmige Zeichnung," we have var. *elaterii*, Rossi, while if 1+2 are also confluent, we get his var. *furva*.

I have not been able to see the original description of v. *hieroglyphica*, Sulz., but if *l'Abeille's* translation of Weise (1885) is correct (and I think we can well assume this) that this aberration has two *separate* bands, then the two confluences must be 4+5 and 3+6 to obtain the V form of v. *elaterii*, Rossi, the formula of which must be 3+6+5+4 to form this V.

In fact 4+6+3+5, if correct per Weise, do not make two separate bands, but an X.

While Mader numbers the spots on his diagram according to Weise, his plate for ab. *hieroglyphica*, Sulz., actually shows the two separate confluences of 3+6 and 4+5.

Della Beffa follows the same procedure, but while his figure agrees with Mader's, his text follows Weise!

Accepting Weise's position of the spots with 5 at the suture and 6 at the apex, the formulæ for the above aberrations will be:—

ab. *nigrescens*, Wse. (s. str.)—1, 2, 3, 4+6, 5.
ab. *hieroglyphica*, Sulz.—1, 2, 3+6, 4+5.
ab. *elaterii*, Rossi—1, 2, 3+6+5+4.
ab. *furva*, Wse.—1+2, 3+6+5+4.

In my view ab. *nigrescens*, Wse., should be limited to the above formula, and the other two require new names:—

1. ab. **marrineri**, m. nov. nom. 1, 2, 3+4+5, 6.
2. ab. **sulzeri**, m. nov. nom. 1+2, 3, 4, 5, 6.

and the following are new aberrations:—

8. ab. **maderi,** m. nov. ab. 1, 2, 3+6, 4, 5.
4. ab. **donisthorpei,** m. nov. ab. 1, 2, 3, 4+5. 6.
5. ab. **beffai,** m. nov. ab. 1+4, 2. 3, 5, 6.
6. ab. **rossii,** m, nov. ab. 1, 2. 3+6+5, 4.
7. ab. **hawkesi,** m. nov. ab. 1, 2, 3, 4+5+6.
8. ab. **lestagei,** m. nov. ab. 1+2, 3+6+5, 4.
9. ab. **meieri,** m. nov. ab. 1+2, 3+4+5+6.
10. ab. **weisei,** m. nov. ab. 1+2, 3+6, 4+5.

I do not find any aberration with Weise's formula of 1, 2, 3+5, 4+6, and the two latter forming an X recorded, nor do Della Beffa or Mader figure any such aberration.

B. *Synharmonia conglobata*, L.

(*a*) Mader in his separata proposes in a laudable attempt at group naming to give his ab. *pruni* three separate formulas: 1, 2, 3, 4+5+8, 6+7, 8: 1, 2, 3+4+5+8, 6+7, 8 and 1, 2, 3+4+5+8, 6+7+8, but his aberration cannot stand for such different formulas and he agrees with me that ab. *pruni* must be confined to the first named formula and to my naming the other two:

1. ab. *pruni*, Mader. 1, 2, 3, 4+5+8, 6+7, 8.
2. ab. **maderi,** m. nov. nom. 1, 2, 3+4+5+8, 6+7, 8.
3. ab. **donisthorpei,** m. nov. nom. 1, 2, 3+4+5+8, 6+7+8.

(*b*) The same remarks apply to ab. *importuna*, Mader:—

1. ab. *importuna*, Mader. 1+2, 3+4, 5+8, 6+7+8.
2. ab. **walteri,** m. nov. nom. 1+2. 3, 4+5+8. 6+7, 8.
3. ab. **depolii,** m. nov. nom. 1+2, 3+4+5+8, 6+7, 8.
4. ab. **marrineri,** m. nov. nom. 1+2, 3+4+5+8, 6+7+8.

C. *Anatis ocellata*, L.—Mader in his separata has also attempted group naming in a series of aberrations which cannot stand and his new aberrations will only stand for the following formulae and with this he also agrees:

1. ab. *4-notata*, Mader—1, 6.
2. ab. *6-notata*. Mader—1, 4, 7.
3. ab. *8-notata*, Mader—1, 2, 3, 6.
4. ab. *10-notata*, Mader—1, 2, 6, 8, 10.
5. ab. *12-notata*, Mader—1, 2, 4, 6, 7, 8.
6. ab. *14-notata*, Mader—1, 2, 3, 4, 6, 7, 8.
7. ab. *16-notata*, Mader—1, 2, 3, 4, 5, 6, 7, 8.

In any event in his group 6 Mader had overlooked ab. *prava*, Heyd., with formula 1, 2, 3, 4, 5, 6, 7.

I propose to name the following new aberrations:—

8. ab. **maderi,** m. n. ab. 1, 2, 4, 6.
9. ab. **donisthorpei,** m. n. ab. 1, 2, 3, 4, 5, 9.
10. ab. **marrineri,** m. n. ab. 1, 3, 4, 5, 7, 9.
11. ab. **hawkesi,** m. n. ab. 1, 3, 7, 8, 9, 10.
12. ab. **caprai,** m. n. ab. 1, 3, 4, 7, 8, 9.

Notes on Synanthedon formicaeformis, Esp., in South Hampshire.

By Wm. FASSNIDGE, M.A., F.E.S.

Although no mines of *S. flaviventris* have been found here so far this season, one interesting result of prolonged search for them has been the discovery of a very flourishing colony of *S. formicaeformis* at