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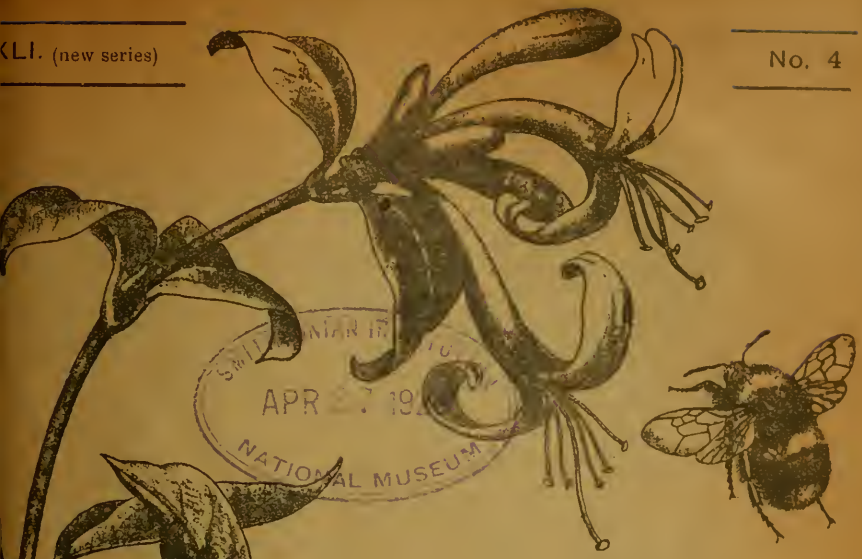

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they may be distinct; they occur in similar localities, in hot, dry grassy places, and often enough together. One is mottled and variegated in pattern, either green or buff prevailing, with plain yellowish wings; this seems identical with a form which is common in the south of Europe. Another is plain, green or buff, and had bright yellow wings with a strong black fascia; the third is invariably of a plain reddish tint and the wings are crimson. It is a beautiful creature and very prominent on the wing, especially as the members of this genus make a clattering noise when they fly.

Butterflies have not made the same obvious progress with the advance of spring as the Orthoptera. In the dry country one does not see many, but in the neighbourhood of water they occur in flocks. On the banks of the Lungue Bungu there is a boggy patch where they swarm, and at one spot the ground was literally covered by a solid phalanx of butterflies. The most striking is a beautiful *Papilio*, light blue banded with black, with prominent tails; a white one with similar pattern seems to be the female; with it there are quantities of a light brown Satyrid that recalls the Wall, a small and rather dingy Lycaenid and number of a bright yellow Pierid, with the forewings tipped with brown; these are yellow above and beneath and there are two sizes of them, perhaps sexes. To form an idea of the numbers settled at that spot, I made a side stroke with a butterfly net and found in it thirty-nine butterflies; of these seven were the blue *Papilio*, eight the white form which I suspect to be the female, three of the Satyrid, six of the Lycaenids and fifteen of the yellow Pierid. I have no doubt that the record could be beaten, but when taken in this way they make poor specimens, as they damage themselves so much by fluttering in the net before they can all be dealt with.

It is not only the butterflies and Orthoptera that are brilliant here, for gorgeous colours are sometimes exhibited by the lizards. Yesterday I saw a brilliant spot of turquoise on a tree; it moved, and I saw that it was a greenish lizard, probably *Agama*, the body of which was of the same colour as the tree, but the head of a brilliant and dazzling blue. Pavel Stepanovich tells me that the intensity of colour in this genus is an expression of the emotions, and he has seen, in Central Asia, what he took for a gorgeous flower on a Saxaul shrub, which carries no flowers; his curiosity aroused, he dismounted and went to examine it; as he approached, it faded away and he found a dull-looking greenish-grey lizard.

Coccinella hieroglyphica, L. Notes and New Aberrations.

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

The following appear to be unnamed and unrecorded aberrations. I have followed the numbering of the spots given by Edwards in his interesting monograph on this species in *Ent. Mag.* L. 139.

1. ab. **marshami,** n.a. mihi.—½, 1. (Weybourne, Norfolk, 1923, Leman.)
2. ab. **weybournensis,** n.a. mihi.—½, 3. (Weybourne, Leman.)
3. ab. **donisthorpei**, n.a. mihi.—½, 1, 5. (Windsor Forest, 1928, Donis.)

4. ab. **sexpunctata**, n.a. mihi.—1, 3, 5. (Weybourne, Leman.) This is the only specimen I know without the ½ spot.
5. ab. **interrupta**, n.a. mihi.—½, 1 (broken into long spot and small spot at base), 3, 5. Type in Mr. Philip Harwood's collection. (Newbury, 1909.)
6. ab. **edwardsi**, n.a. mihi.—½, 1+3+5. (New Forest, 1923, and Windsor Forest, Donis.; Weybourne, Leman.)
7. ab. **lloydi**, n.a. mihi.—½, 1+3, 2, 5. (New Forest, Donis.) I have taken the liberty of naming this after Mr. C. Lloyd, chief of the Crown Estates Office, Windsor, in recollection of a very pleasant day spent in the Forest with Mr. Donisthorpe under his auspices.
8. ab. **ellisi**, n.a. mihi.—½, 1, 3, 4, 5. (Weybourne, Leman.)
9. ab. **kirkae**, n.a. mihi.—½, 1+3, 4, 5. (New Forest, Donis.)
10. ab. **conjuncta**, n.a. mihi.—½, 1+3+2, 5. (Weybourne, Leman.)
11. ab. **sigardi**, n.a. mihi.—½, 1+3, 2, 4, 5. (New Forest, Donis.)
12. ab. **harwoodi**, n.a. mihi.—½, 1+3+2, 4, 5. Type in Mr. Philip Harwood's collection. (Newbury, 1909, and Weybourne, Leman.)
13. ab. **maderi**, n.a. mihi.—½, 1+3+5, 2, 4. (Weybourne, Leman.)

The types of Nos. 1 to 4, 6 to 11 and 13 are in Mr. Donisthorpe's collection. In the same collection are three abnormal specimens with different formulae on each elytron. (*a*) R. ½, 1+3, 5; L. ½, 1, 3, 5. (*b*) R. ½, 1, 3, 5; L. ½, 1, 5 (Donis.), and (*c*) R. ½, 1+3, 4, 5; L, ½, 1+3, 2, 4, 5 (Leman), all taken in Windsor Forest (1928). Mr. Philip Harwood has two specimens taken at Newbury. (*d*) R. ½, 1, 3, 5; L. ½, 1, 3 (in both cases spots 3 and 5 are very minute) and (*e*) R. (1+3+½) (3+5); L. 1+3+½, 5.

It may be observed that though Edwards describes his ab. *5-punctata* as having spot 1 reduced to a point, this name will also embrace specimens with formula ½, 1, 3, where the spot 1 is the normal shape and size. This reduction occurs in other aberrations, *viz.*, ab. *septempunctata*, Rye, Mr. Donisthorpe having taken 2 specimens in Windsor Forest and New Forest with spot 3 and spots 3 and 5 (Windsor Forest) respectively reduced to points.

It may be well to record captures of other known aberrations by Mr. Donisthorpe and others: ab. *brunnea*, Ws. (Windsor Forest, Donis.), ab. *5-punctata*, Edwards (Newbury, Harwood), ab *septempunctata*, Rye (=ab. *robini*, Pic.) at Oxshott, 1902, and Windsor Forest, Donis.; Weybourne, Leman; Newbury, Harwood, 1909. ab. *sinuosa*, Marsh (=ab. *4-fasciata*, Ws.; ab. *bracchiata*, Gradl.) in Windsor Forest, Donis., and Newbury, Harwood. ab. *flexuosa*, F., (Braemar, 1910, and Windsor Forest, Donis.; Weybourne, Leman). ab. *schneideri*, Gradl., Newbury, Harwood, a very finely marked specimen with formula: (1+3+½) (2+1), 4+5.

I do not agree with Edwards' synonymy of ab. *septempunctata*, Rye, for ab. *lineolata*, Marsh.

The latter's description is:—"puncto communi scutellari et in singulo lineola longitudinali nigra ad basin, puncto unico in medio et altero minus postice."

Rye's description is:—"Var. B. (*septempunctata*) Elytra same colour as the ordinary form, with six distinct spots, three on each

elytron and one on each scutellum." He adds that this variety is generally common. I read his formula to be: $\frac{1}{2}$, 1, 3, 5, which is in fact a common variety, and ab. *lineolata*, Marsh, as $\frac{1}{2}$, 1, 2, 3 (a variety I have never met). Both Della Beffa (*Rev. Lacc. It.* 1913, Tav. V. fig. 42) and Kuhnt (*Kaf. Deutsch.* 1913) give similar figures and formulae.

I hope in a later paper to deal with the aberrations in which the black pigment predominates.

My thanks are due to Mr. Donisthorpe, Mr. Philip Harwood and Herr Leopold Mader for help in preparing this paper, and both the former for lending me their specimens.

The Asiatic origins of the Western Palaearctic Rhopalocera exemplified by Melitaea didyma, Esp.

By ROGER VERITY, M.D.

(*Continued from page 43.*)

To classify the races of the West in a rational way it is only necessary to realise that they fall into three natural groups, corresponding to the three zones described above and probably also differentiated constitutionally into three exerges, as I have remarked at the beginning of this paper.

The northern, nominotypical, exerge is obviously a direct emanation of the original *didymoides* one, after it had spread westward from the Altai region; it resembles the male of the latter in size, shape, fringe, tone of colour and pattern, but the sexual dimorphism is greatly reduced, owing to the female having made an approach to the male aspect, particularly in the lowland races. One of its deviations from the uniform aspect it usually has, compared with the other exerges, is afforded by race *neera*, F.d.W., as restricted to the original meaning, that is to say, to the race of the warmer localities of southern Russia. The colour of the male, its fringe and the shape of the wings of both sexes seem to me to be indicative of its origin from the northern exerge, although, having spread southward, the latter has evidently intercrossed with some races of the following one.

The Central exerge one should, I suppose, designate as *dalmatina-caucasica*, Stdgr., from the two oldest valid names to be included in it and fortunately very suitable, because they refer to two extreme characteristic forms amongst the large number of very different ones this exerge has produced, even though we exclude from them the alpine races of Central and Western Asia, which we believe to have originated from another stock, as discussed above. From races of very large size, like *graeca*, *patycosana*, *turanica*, *caucasica*, *subpatycosana*, *entitania*, *mauretanica* (all with broad quadrate wings), it passes to minute forms of the II. generation, like *araratica*, *dalmatina*, *marsilia*, *caldaria*, and *occasus*. The fulvous is never of as warm and saturated a tone as in the preceding exerge: the male is always of a clearer fulvous, more mixed with yellow and brighter, when it is not quite ochreous, and the female of most races is often of a yellowish white.

As belonging to a third, Southern, exerge *casta*, Koll. (= *persea*, auctorum, nec Koll.)—*occidentalis*, Stdgr. should, to my mind, be considered the races which inhabit the parched regions of the extreme south and