

THE TAXONOMIC STATUS AND FURTHER DESCRIPTION
OF *HARMONIA EXPALLIDA* WEISE, (COL., COCCINELLIDAE),
FEEDING ON *ADELGES* SPECIES (HEM., ADELGIDAE)
IN NORTH-WESTERN INDIA

BY

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WEISE (1907) described an odd specimen from Kashmir and named it as a new variety, *expallida*, of the species *Coccinella* (*Harmonia*) *quadripunctata* PONTOPPIDAN, which is widely distributed in Europe. Subsequently, SICARD (1912) came across further material of it (misspelled by him as *palliata* WEISE) from Dalhousie, N. W. India, and opined that to him it looked to be a distinct species on account of its more depressed form and shiny appearance and especially for its tapering elytra which were rounded at the apex in *Harmonia quadripunctata*. However, subsequent workers, namely SCHAUFUSS (1916), MADER (1931) and KORSCHESKY (1932), continued to regard it as a variety of the above-mentioned species. More recently I had the opportunity of examining ten examples (*vide infra*) of it from different parts of north-western India, including Kashmir, the type locality, and my observations lend support to the view expressed by SICARD, that it is a valid species, and not a mere variety of *H. quadripunctata*.

Five out of the above-mentioned examples were collected by the staff of the Indian Station of the Commonwealth Institute of Biological Control from Deoban, in Himachal Pradesh (N. W. India), and they were found feeding on *Adelges* spp. (*Hem.*, *Adelgidae*) which occur as pests on fir. In view of the economic interest about the species, it seems desirable to review its taxonomic position and briefly redescribe the species.

Harmonia expallida WEISE (1907)

Coccinella (*Harmonia*) *quadripunctata* var. *expallida* WEISE, *Wien. ent. Ztg.*, 26 : 15.

♂, ♀. Body rather elongate oval, moderately convex to rather flattened, distinctly narrowed posteriorly and pointed at the apex

(Fig. 1, A-D). Head pale testaceous except for the black eyes and two rounded black spots on the vertex, the spots being sometimes enlarged to form a medianly emarginated band at the base of the vertex. Pronotum fulvous-testaceous throughout (Fig. 1, A, C), or with a pair of black, elongate and usually obliquely placed spots (Fig. 1, B), or

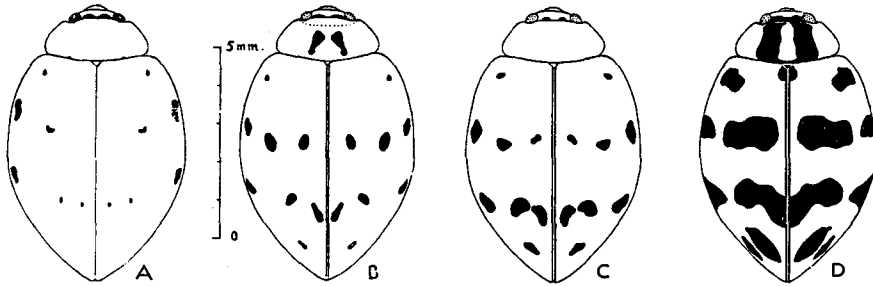


FIG. 1. — *Harmonia expallida* WEISE. A-D : outline of the beetle showing colour-pattern in four examples.

with two, rather broad, black, stripes, each being placed at a short distance on either side of the longitudinal median line and connected posteriorly (Fig. 1, D). Scutellum usually fulvous-testaceous but sometime black. Elytra rather shining with the ground-colour fulvous-testaceous, sometimes without any black spot but usually ornamented with about eight black spots of variable size, arranged as 1, 3, 3, 1 (Fig. 1, B-C), and rarely with enlarged and additional spots, a few of which may become confluent (Fig. 1, D). The sutural and the lateral margins are also in some cases very narrowly bordered black. The underside fulvous-testaceous except for the testaceous metasternum and legs.

Head with the frons having fine, moderately sparse and shallowly impressed punctation. Pronotum transverse, nearly twice as broad as long, moderately emarginate anteriorly, subrounded laterally and with the anterior and posterior angles rather acutely and broadly rounded, respectively; punctation fine, shallowly impressed and rather close and uniform; the inter-spaces shining. Scutellum with a few fine punctures. Elytra elongate, broadest just behind the middle but distinctly narrowed posteriorly and with a distinctly pointed apex; the shoulder-angles rounded; external border narrowly margined; shoulder-boil rather indistinct; punctation uneven, the coarse punctures moderately impressed, sparse, and situated along the sutural and external margins; the rest of elytra with fine punctation which is sparse and shallowly impressed; the inter-spaces shining. Underside with the punctation fine and sparse, except for the lateral parts of metasternum which are coarsely punctate, and the mesepimera and

metepimera which are both coarsely and closely punctate, and are finely pubescent. The legs with coarse and generally sparse punctures, and moderately hairy. Abdominal sternites more or less similar in both sexes, which are, therefore, not easily distinguishable by the external character, i.e., the outline of the apical sternite. The male

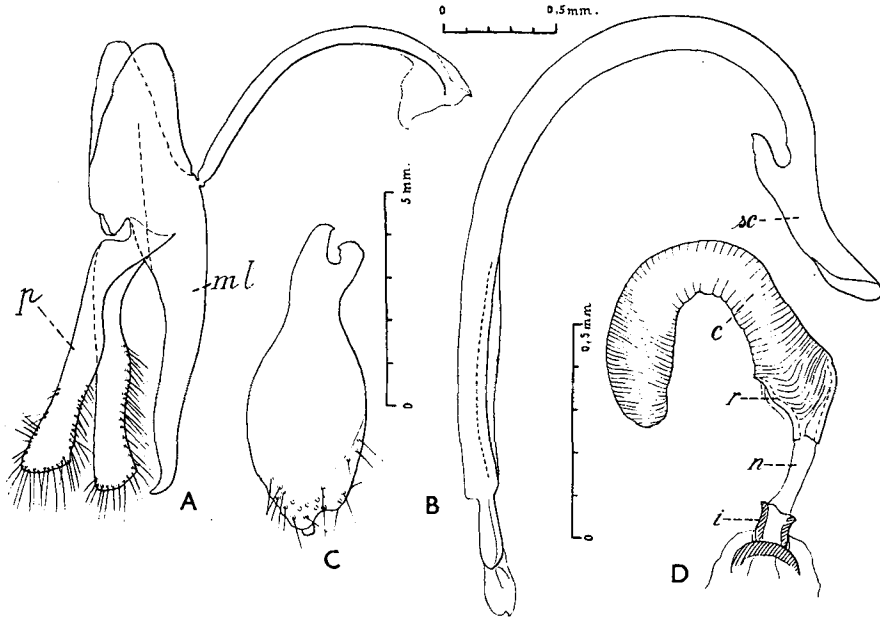


FIG. 2. — *Harmonia expallida* WEISE. A : lateral view of the male genitalia except the siphon (*ml*, median lobe; *p*, parameres); B : siphon (*sc*, siphonal capsule); C : female genital plate; D : spermatheca (*c*, cornu; *r*, ramus; *n*, nodulus; *i*, infundibulum).

genitalia are characterised by the median lobe (Fig. 2, A, *ml*) being elongate, and when viewed laterally, appear to be slightly curved twice (once before the middle and again before the apex); the parameres (*p*.) slightly angular near the apex, on the side facing the median lobe. The siphon (Fig. 2, B) is moderately curved in the basal half, being more or less straight in the distal half and characterised by the siphonal capsule (*sc*) being narrowed at either end. The male genitalia are relatively larger in size when compared with the male genitalia of *H. quadripunctata* (Fig. 3, A, B); in the latter case the median lobe is less elongate and curved only once i. e., before the apex, and the parameres are uniformly rounded at the apex; the siphon is moderately curved even in the distal half and its siphonal capsule is expanded at either end. The female genitalia are also distinct in the two species. The genital plate (Fig. 2, C) is more narrowed in *H. expallida* than in

H. quadripunctata; the spermatheca in the former (Fig. 2, D) is more robust than is the case in the latter (Fig. 3, C), where it is characterised by a narrow base of the cornu (*c*).

Length 6.0 — 7.5 mm, breadth 3.2-5.0 mm.

MATERIAL EXAMINED. — India : Kashmir, Gogaldara, Jhelum Valley, 8,000 ft. (ca. 2,440 m.), 3. vi. 1928 (B. M. BHATIA coll.)

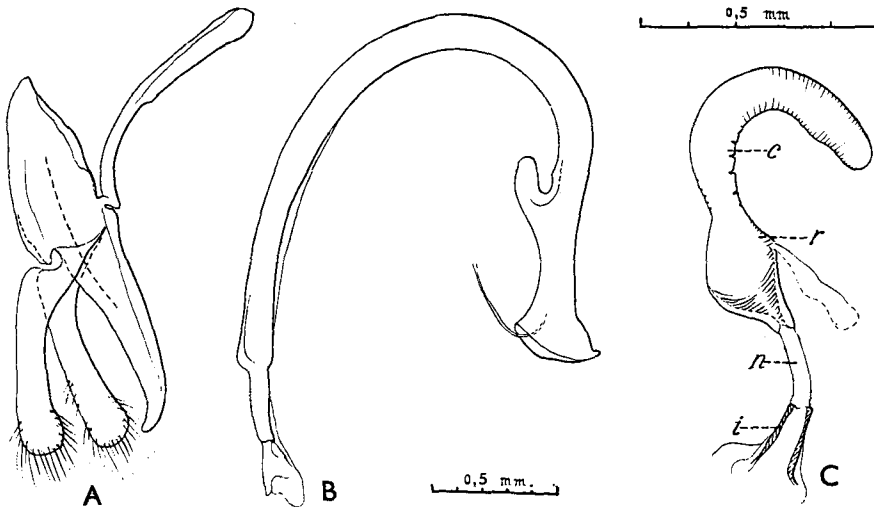


FIG. 3. — *Harmonia quadripunctata* PONTOPPIDAN. A : lateral view of the male genitalia except the siphus; B : siphus; C : spermatheca (*c*, cornu; *r*, ramus; *n*, nodulus; *i*, infundibulum).

(4 examples (2 ♂, 2 ♀), in the Zoological Survey of India, Calcutta, collection). Himachal Pradesh, Deoban, 9. vii. 1958, feeding on *Adelges* spp. on fir, (CIBC-BS) (5 examples, all females, in Z.S.I. coll.). Punjab, Bajaura, Kangra district, v. 1914 (G. BABAULT coll.) (1 ♂, in Museum Frey, Tutzing.).

REMARKS. — Besides the differences in the structure of both the male and female genitalia, as pointed out above, the two species may be readily separated by their external characters also. As pointed out by SICARD (*loc. cit.*), in *H. expallida* the body is relatively flattened and elytra are distinctly pointed and more narrowed at the apex than is the case in *H. quadripunctata*. In the latter, the head and pronotum are ornamented with greater number of black spots (usually four on the head and nine on the pronotum) than in *H. expallida*. There are also differences in punctation in the two species; the punctures are more sparse on the head and pronotum in *H. quadripunctata* than is the case in *H. expallida*; in the latter species, the coarse punctures on the elytra are more prominent and numerous than is the case in the

former; the inter-spaces in the latter are also smooth and shining. Thus, on the basis of both the genitalia and the external characters the two species are undoubtedly distinct.

It may be worthwhile pointing out here that STEBBING (1903), while giving an account of the predaceous *Coccinellidae* of the Indian region, gives figure of a beetle (*vide* Fig. 2 of plate III) which he calls *Hippodamia constellata* CROTCH, but it appears to belong to *Harmonia expallida*, on account of the characteristic outline and coloration of the body. STEBBING records that the beetle is predaceous, among others, upon the blue pine aphid, and further states that it is common in N.W. Himalaya from May to June at elevations of 7,000 - 9,000 feet, and that he had found the beetles in « 1901 and 1902 in some abundance upon spruce, silver fir, and blue pine trees in the Jaunsar Hills, N.W. Himalayas ». Since, none of the specimens examined by STEBBING are now available for study, it can not be stated definitely that STEBBING was referring to this very species, but from the figure of the beetle and the geographical and biological account given by him, there is a possibility that this might be the case.

RÉSUMÉ

L'auteur rétablit au rang d'espèce le *Coccinellidae* *Harmonia expallida* WEISE, espèce décrite et encore considérée par de nombreux auteurs comme une simple variété de *Harmonia quadripunctata* PONTOPPIDAN malgré l'opinion de SICARD 1912. L'espèce est décrite en détail et comparée à *H. quadripunctata* dont elle diffère par le corps plus aplati, la ponctuation plus dense sur la tête et le pronotum et par la structure des genitalia. *H. expallida* est un prédateur d'*Adelges* sp., *Adelgidae* nuisible aux conifères dans le Nord-Ouest de l'Inde.

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