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THE COCCINELLIDAE (COLEOPTERA) OF THE ITALIAN EXPEDITIONS TO THE KARAKORAM AND HINDU KUSH

By

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(With 2 Text-figures)

Through the courtesy of the late Prof. Edoardo Gridelli, Director, Museo Civico di Storia Naturale, Trieste, Italy, I have been able to examine a small but interesting collection of the Lady-beetles (Coccinellidae, Coleoptera) made by Prof. A. Marussi, leader of the Italian Expeditions to the Karakoram and Hindu Kush in 1954 and 1955, respectively. Very little is known of the coccinellid fauna of these areas. Altogether there are 15 examples belonging to four species, two of which are new to science and are being described in the present paper.

I am grateful to Dr. Renato Mezzena, the present Director of the above-mentioned Museum, for very kindly supplying me detailed information on the location of various collecting stations ; the information supplied by him is given in square brackets at appropriate places in the text.

1. **Coccinella septempunctata** Linnaeus

1758. *Coccinella septempunctata* Linnaeus, *Systema Naturie* (Ed X): 365.

1932. *Coccinella septempunctata* Linnaeus: Korschefsky, *Coleopt. cat., Berl.*, **16** (120): 486.

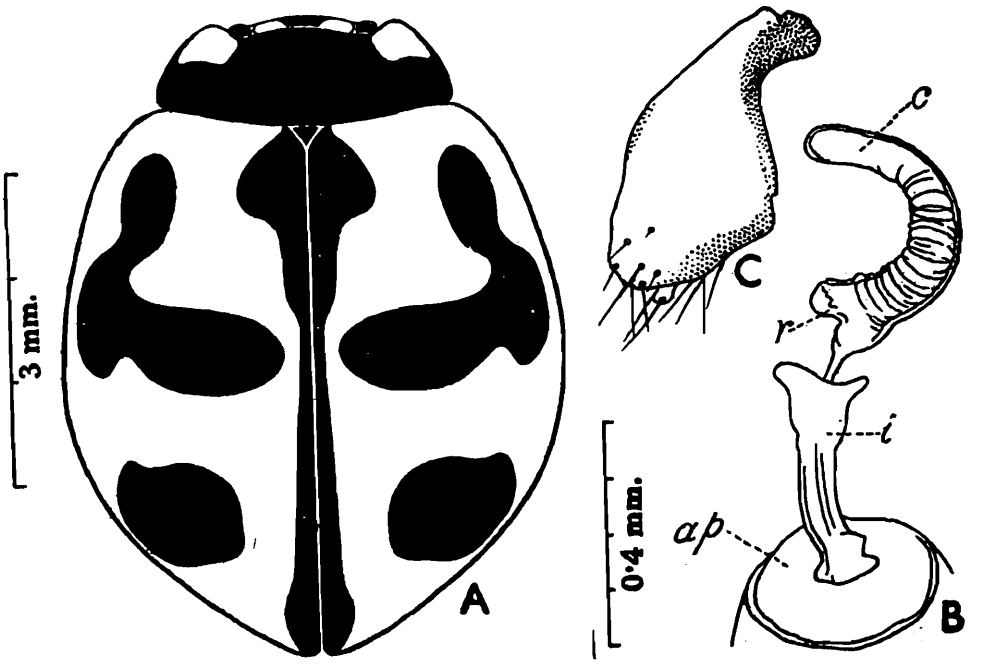
Material.—3 examples, Valle YARKHUM [Chitral], 2100-3600 m. [Hindu Kush ; 72° - 74° E ; 36° - 38° N].

This palaearctic species is very widely distributed and is distinguishable into a number of subspecies and varieties. The above-mentioned examples resemble the typical material of the species from Europe in respect of colour-pattern, but like some smaller members of the species, these examples are approximately 5.8 mm. long and 4.5 mm. broad.

2. **Coccinella marussii** sp. n.

(Text-fig. 1)

♀. Body subovate, moderately convex and smaller in size but otherwise similar to *Coccinella septempunctata* Linnaeus. Head black except for the dark grey eyes and a pair or pale testaceous, subquadrate spots on the frons each lying near the inner margin of the eye ; canthus of the eye also testaceous. Pronotum black, with a pale testaceous subquadrate spot at each anterior angle, the spot weakly emarginate posteriorly. Scutellum



Text-fig. 1. *Coccinella marussii* sp. n. (A) Outline of the beetle, showing the pattern. (B) Spermatheca. (C) A genital plate of the female. *ap.* accessory plate ; *c.* cornu ; *i.* infundibulum ; *r.* ramus.

black. Elytra (Text-fig. 1, A) reddish testaceous, with a large subrounded, black, scutellar spot which is gradually narrowed to a black sutural line that widens a little before the apex of the elytra ; the other black spot in the basal half of the elytron is a compound one and appears to be composed of three confluent spots, *viz.*, a transverse discal spot, a submarginal spot, and a humeral spot with the connecting black areas fairly broad. The apical half of the elytron with a large, transverse-oval, black spot (1.3 mm. × 1.0 mm.) lying much closer to the lateral margin (though not touching it) than to the suture. Underside black except for the pale testaceous apices of the

pronotal epipleurae, the testaceous elytral epipleurae, and the whitish mesepimera.

Head with moderately impressed, small and fairly close punctures on the frons and a few greyish hair on the anterior margin of the clypeus. Pronotum with very fine, close and moderately impressed punctation. Scutellum small, triangular, with the sides as long as the base and with about eight very fine punctures. Elytra narrowly margined along the anterior half of the lateral margin, with the maximum width beyond the middle ; punctation relatively sparse, coarse and less impressed than that on the pronotum. Underside with the prosternal carinae short, and with each abdominal line crossed by an oblique line. Female genitalia with the spermatheca semicircular, the cornu (*c*) slightly narrowed distally, the ramus (*r*) short, the infundibulum (*i*) broader at the distal than at the proximal end, and the accessory plate (*ap*) circular (Text-fig 1, B) ; the genital plates (ix sternite) elongate being 0.5 mm. long and 0.25 mm. broad, narrow and constricted near the base, broad distally, a well-defined papilla present at the apex of each genital plate (Text-fig. 1, C).

♂ unknown.

Length 5.4 mm. ; breadth 4.0 mm.

Material.—Holotype : ♀, KARAKORAM, V Stak, (Kulan-kae) ; 3,100 m., [75° E., 35° 50′ N.] August, 1954 (Prof. *A. Marussi)* ; in Museo Civico di Storia Naturale, Trieste, Italy. (The genitalia dissected and mounted in Canada Balsam between two cover-slips and attached to the same pin as the specimen.)

This species is easily distinguishable from all other known palaearctic species of *Coccinella* by its elytral pattern which is characterised by a common, black, sutural border and a compound, almost tricuspid, black spot in the basal half of the elytron. The female genitalia are also characteristic and indicate its affinities to *Coccinelia septempunctata* L. and other related species of the group. However, in outline and detailed structure of the female genitalia, especially of the spermatheca, as described above, *C. marussii* is easily distinguishable from the other species.

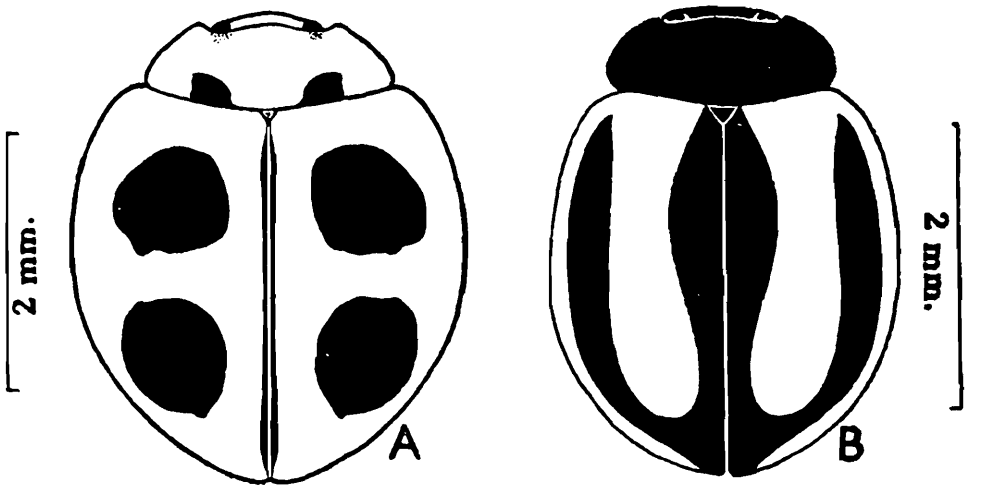
3. **Verania allardi** (Mulsant)

(Text-fig. 2, A)

1866. *Lemnia allardi* Mulsant, *Mem. Acad. Lyon*, **17** : 28.

1874. *Verania allardi* (Mulsant): Crotch, *Revision of the Coleopterous family Coccinellidae:* 177.

1932. *Verania allardi* (Mulsant): Korschefsky, *Coleopt. Cat., Berl.*, **16** (120): 307.



Text-fig. 2. Outlines of the beetles, showing the patterns. (A) *Verania allardi* (Mulsant). (B) *Exochomus trijunctus* sp. n.

Material.—8 examples belonging to both sexes. CHITRAL, V Birir, 2,300 m., [In Brumboret's Valley; Hindu Kush.] August, 1955 (Prof. *A. Marussi*). (The genitalia of a few examples dissected and mounted between two cover-slips and attached to the same pin as the specimens.)

Originally described from "Northern India", the species is fairly widely distributed. In the Zoological Survey of India examples of the species from Chitral, Bihar, Manipur and Burma are also present. In the above-mentioned eight examples before me, variation in the size of the elytral spots has been observed although the relative position of spots remains constant. The example illustrated in the text-fig. 2, A, has large elytral spots, whereas in some other examples the spots are smaller. The elytral markings are very much reduced or almost absent in the examples from Manipur and Burma. Korschefsky (*loc. cit.*), in his catalogue lists *Verania malaccensis* Crotch (1874), from Gilol as its variety and gives wide distribution for the species, including a number of other countries from South-East Asia, but such a wide range of distribution for the species remains to be confirmed by comparative studies based on the material from different countries.

4. **Exochomus trijunctus** sp. n.

(Text-fig. 2, B)

♂, ♀. Body shortly oval, moderately convex, pubescent, mostly black except for the reddish-testaceous elytra which are ornamented with three black vittae that become confluent near the apices of elytra (Text-fig. 2, B). Each lateral stripe or vitta commences from the humeral callus and runs parallel to but at a little distance away from the lateral margin of the elytron except near the apex where all the vittae meet one another. The sutural vitta commences from the base of the elytra (on either side of the scutellum) and runs along the suture for its entire length, becoming gradually broad in the basal one-third of its length and narrowing again thereafter ; the trijuncture thus formed by the meeting of the vittae near the apex is quite broad. Underside black except for the reddish-testaceous elytral epipleura and the piceous tarsi.

Head with fine, rather shallow and moderately sparse punctation, and the greyish, short, sparse and subdepressed pubescence. Pronotum transverse, twice as broad as long ; narrowly margined laterally and at the base ; the anterior and basal angles rounded ; punctation only relatively coarse and sparse when compared to that on the head ; pubescence also slightly longer but otherwise similar to that on the head. Scutellum triangular, small, with only three or four fine punctures. Elytra with fine, close and relatively shallow punctation, and with short, subdepressed and greyish pubescence. Underside with the thoracic sternites finely and sparsely punctate, abdominal sternites, however, with relatively coarse, impressed and closer punctures ; the sternites and legs clothed with greyish, rather long and sparse pubescence except for the elytral epipleurae where the pubescence is short.

Length 3.1 mm. ; breadth 2.2 mm.

Material.—Holotype : ♂ KARAKORAM, V Stak, (Kulankae) 3,100 m. [75° E., 35° 50′ N.], August, 1954. (Prof. *A. Marussi*) ; in Museo Civico di Storia Naturale, Trieste, Italy. (Male genitalia dissected and mounted in Canada Balsam between two cover-slips and attached to the same pin as the specimen). *Allotype* : ♀, same data as the holotype ; deposited in the said Museum. (Genitalia dissected and mounted as above). *Paratype* : KARAKORAM, V Stak (Kuthia) 3,700-

3,900 m., August, 1954 (Prof. *A. Marussi*), in the Zoological Survey of India, Calcutta, India.

Exochomus trijunctus comes close to *Exochomus uropygialis* Mulsant and *Exochomus lituratus* Gorham, both of which occur in northern India and are characterised by the pubescent dorsal surface, black body and reddish testaceous elytra having black markings of different patterns. In *E. uropygialis* there is a small, black, common spot at the apex of elytra, while in *E. lituratus* each elytron is provided with a black sublateral vitta. However, both *E. uropygialis* and *E. lituratus* are larger species, being about 3.5 mm. to 4.2 mm. in length. Moreover, the elytral punctation in the latter two species is quite different, being coarser, more impressed and uneven than is the case in *E. trijunctus*. The genitalia in the three species also show differences in respect of the shape of the sipho and median lobe, but these need not be described here as these species can be easily distinguished from one another by the external characters stated earlier.

SUMMARY

Four species of Coccinellidae (Coleoptera) collected by the Italian Expeditions to the Karakoram and Hindu Kush under the leadership of Prof. A. Marussi, during 1954 and 1955, respectively, are recorded. Of these, *Coccinella marussii* Kapur and *Exchomus trijunctus* Kapur, both from Karakoram, are described as new species. The other two species are *Coccinella septempunctata* Linnaeus and *Verania allardi* (Mulsant), both of which are widely distributed.