COCCINELLIDÆ OF NEPAL

By A. P. KAPUR, *M.Sc., Ph.D. (London), D.I.C., F.R.E.S., F.E.S.I.,*
Zoological Survey of India, Calcutta

INTRODUCTION

The first comprehensive account of the Coccinellidæ of Nepal was given by Hope[1] in 1831. It contained descriptions of 19 new species, the types of which are in the British Museum (Nat. Hist.), where the present writer had the opportunity of examining these. Since 1831, very little has been added to our knowledge of these beetles from Nepal. Mulsant[2] and Crotch[3] who undertook extensive studies of the family, added three and one species respectively to the list given by Hope and subsequently Dohrn[4] described one more species from Nepal.

Lately there have been more opportunities of collecting these insects in Nepal. The collections under report contain 26 species of which 5 are new, 16 are being recorded for the first time from Nepal and the remainder 5 are those that have been previously known from Nepal. The present study is based principally on the material collected by the British Museum-Nepal Expedition, 1949 (hereafter referred to as *B.M.-N.E. 1949*) and the 1950 and 1952 British Expeditions to Nepal (*B.-N.E. 1950 or 1952*). The writer wishes to record his thanks to Mr. N. D. Riley, C.B.E., and Mr. E. B. Britton, of the Department of Entomology, British Museum, and Dr. A. M. Easton of Great Bookham, Surrey, for sending the material for study. The writer is also indebted to Dr. S. L. Hora, F.R.S.E., F.N.I., the Director of this Survey, for providing facilities and showing interest in this work. Thanks are also due to Sri N. Paul for making certain drawings.

GEOGRAPHICAL DISTRIBUTION

Following is a revised list of species known from Nepal. Geographical distribution based on published records and on the collections under report is given against each species. Additional information on certain species in the collections of the Zoological Survey of India, has also been added.

---

[1] Hope, F. W., (*in* Gray) *Zoological miscellany*, pp. 21-32 (1831).

[2] Mulsant, E., *Ann. Soc. Agric. Lyon*, III, pp. 1-1, 104 (1850).

[3] Crotch, G. R., *A revision of the coleopterous family Coccinellidæ*, pp. 1-311 (1874).

[4] Dohrn, *Stettin. ent. Ztg.*, XLII, p. 374 (1882).

List of Coccinellidæ known from Nepal

Name of Species	Distribution
Subfamily *Epilachninae*	
1. *Epilachna ocellata* Redt.	Kashmir to North Bengal.
2. *Epilachna 28-punctata* F.	Nepal.
†3. *Afissa grayi* (Muls.)	Kumaun Hills; Nepal; N. Bengal; Assam; Nilgiri Hills; East Indies.
4. *Afissa macularis* (Muls.)	Nepal; Sikkim; N. Bengal and Assam; Burma; China, Czechwan Prov., Tibet.
*5. *Afissa marginicollis* (Hope)	Nepal; Sikkim; N. Bengal; Burma.
†6. *Afissa mystica* (Muls.)	Kumaun Hills; Nepal; Sikkim; N. Bengal; Burma.
†7 *Afissa mysticoides* (Sic.)	Nepal; N. Bengal.
†8. *Afissa nepalensis*, sp. nov.	Nepal.
9. *Afissa undecimspilota* (Hope)	Nepal; Sikkim; N. Bengal and Assam; Burma.
†10. *Affisula rana*, gen. *et* sp. nov.	Nepal.
†11. *Aphidentula manderstjernae* (Muls.).	Mussoorie Hills; Nepal; Sikkim; N. Bengal; Burma; China.
Subfamily *Coccinellinae*	
Tribe 1. Coccinellini	
†12. *Adonia variegata* (Gœze)	Throughout the Palæarctic Region; plains and hills of N. India; Nepal; China; Central Africa.
13. *Bulaea nevilli* Dohrn	Nepal.
14. *Tytthaspis univittata* (Hope)	Nepal.
†15. *Adalia luteopicta* Muls.	Nepal; North-East India; China, Tibet.

† New records from Nepal.
* Species already recorded from Nepal that are also present in the material under report.

Name of Species	Distribution
16. *Adalia tetraspilota* (Hope)	Bokhara (W Turkestan) ; Afghanistan ; Nepal.
17. *Coccinella axiridis* Pallas var. *circumvelta* Muls.	Throughout the Palæarctic Region ; Nepal ; Naga Hills, Assam.
†18. *Coccinella* (*Synharmonia*) *billieti* Muls.	Kashmir ; Punjab ; Nepal ; Assam.
†19. *Coccinella repanda* Thunbg.	South, North and N.-East India ; Andamans ; Burma ; Central China ; Java ; Sunda Islands ; Molucca ; New Guinea ; Australia and Tasmania.
†20. *Coccinella septempunctata* L.	Throughout the Palæarctic region ; plains and hills of India.
21. *Calvia uniramosa* (Hope)	Nepal.
22. *Calvia vulnerata* (Hope)	Nepal.
Tribe 2. SYNONYCHINI	
*23. *Leis dimidiata* (Fabr.)	Kashmir to Assam.
24. *Aiolocaria dodecaspilota* (Hope)	Nepal ; Burma.
25. *Aiolocaria hexaspilota* (Hope)	Kashmir ; Nepal ; Sikkim ; Upper Burma.
†26. *Ballia gustavi* Muls.	" N. India Himalaya " ; Nepal ; Sikkim.
27. *Palaeoneda miniata* (Hope)	Nepal.
†28. *Oenopia luteopustulata* Muls.	Simla ; Kumaun Hills and Lucknow, U. P., Nepal ; Sikkim ; N. Bengal and Assam ; Andaman Islands ; Burma ; Tibet.
†29. *Oenopia sauzeti* Muls.	Murree and Dalhousie Hills, Punjab ; Kumaun Hills ; Chota Nagpur, Bihar ; Nepal ; Burma.

†New records from Nepal.
*Species already recorded from Nepal that are also present in the material under report.

Name of Species	Distribution
†30. *Coelophora bissellata* Muls.	Kumaun Hills ; Nepal ; Sikkim ; N. Bengal ; Assam ; South India ; Sumatra ; Java ; Borneo ; Philippines ; Malacca ; New Guinea.
31. *Coelophora cincta* (Hope)	Nepal.
32. *Coelophora nepalensis* Crotch	Nepal.
†33. *Coelophora sexareata* Muls.	" Himalaya, N. India " ; Nepal ; Sikkim ; Chota Nagpur ; N. Bengal ; Manipur, Assam ; Burma ; West Yunan.
†34. *Menochilus sexmaculata* (F.)	Throughout the plains of India, foothills of N. W. India and W. Pakistan ; Nepal ; Sikkim ; N. Bengal and Assam ; Burma ; Yunnan ; Andaman Islands ; Sumatra ; Java ; Borneo ; Celebes ; Philippines ; Molucca ; New Guinea.
Tribe 3. Chilocorini	
*35. *Chilocorus rubidus* Hope	Russia to N. India ; Nepal ; China ; Japan.
†36. *Exochomus timurensis*, sp. nov.	Nepal.
Tribe 4. Sticholotini	
†37. *Sticholotis amator*, sp. nov.	Nepal.
Tribe 5. Aspidimerini	
†38. *Cryptogonus trioblitus* (Gorh.)	Kumaun Hills ; Nepal ; Assam ; Burma.
Tribe 6. Scymnini	
†39. *Scymnus bourdilloni*, sp. nov.	Nepal.
†40. *Pullus pyrochellus* Muls.	South Bengal ; Nepal.
Tribe 7. Psylloborini	
41. *Halyzia straminea* (Hope)	Simla Hills ; Nepal ; Sikkim.

† New records from Nepal.

* Species already recorded from Nepal that are also present in the material under report.

It will be observed that out of a total of 41 species, 13 are known only from Nepal while 11 (nearly 27 per cent.) are distributed in various parts of the Himalayas, between Kashmir and Burma. Four other species (Nos. 27, 28, 33 and 40 of the list) occur in the Himalayas as well as in the neighbouring plains of India. Four more species (Nos. 3, 19, 30, and 34) which are widely distributed in the Oriental region, also occur in Nepal. It is, however, worthy of note that these latter species are mostly found at lower altitudes in Nepal. The remaining 9 species (Nos. 4, 11, 12, 15-17, 20, 23, 35), constituting nearly 22 per cent. of the total number of species known from Nepal, are apparently of Palæarctic region. Some of these (Nos. 4, 11, 15, 16, 23, 35) have very wide distribution and extend into China, Japan, or Central Asia in the Palæarctic region while a few others (Nos. 12, 17 and 20) extend beyond that region into the Oriental region.

The geographical distribution of the species may be summarized as follows :

Known only from Nepal	13
Distributed elsewhere in the Himalayas	15
Oriental species	4
Palaearctic species	9

SYSTEMATIC ACCOUNT

Subfamily *EPILACHNINAE*

1. **Epilachna ocellata** Redtenbacher

1844. *Epilachna ocellata* Redtenbacher (*in* Hugel) *Kaschmir und das Reich der Siek* IV, 2, pp. 497-564. (Type loc. : Kashmir).

1951. *Epilachna ocellata*, Kapur, *Rec. Indian Mus.* XLVIII, pp. 17-29.

Material.—5 examples : Thangiet, 6,000 ft. ; Trisuli to Rasua, 8,000 ft. ; Rasua, 8,000 ft. (*B. M.-N E., 1949*).

Remarks.—The species is distributed in the Himalayas from Kashmir to North Bengal. Its colouration and other distinctive characters have been recently given by the author (1951).

2. **Afissa grayi** (Mulsant)

1850. *Epilachna grayi*, Mulsant, *Ann. Soc. Agric. Lyon* III, pp. 774-776. (Type loc. : 'Bengal and Northern India)'.

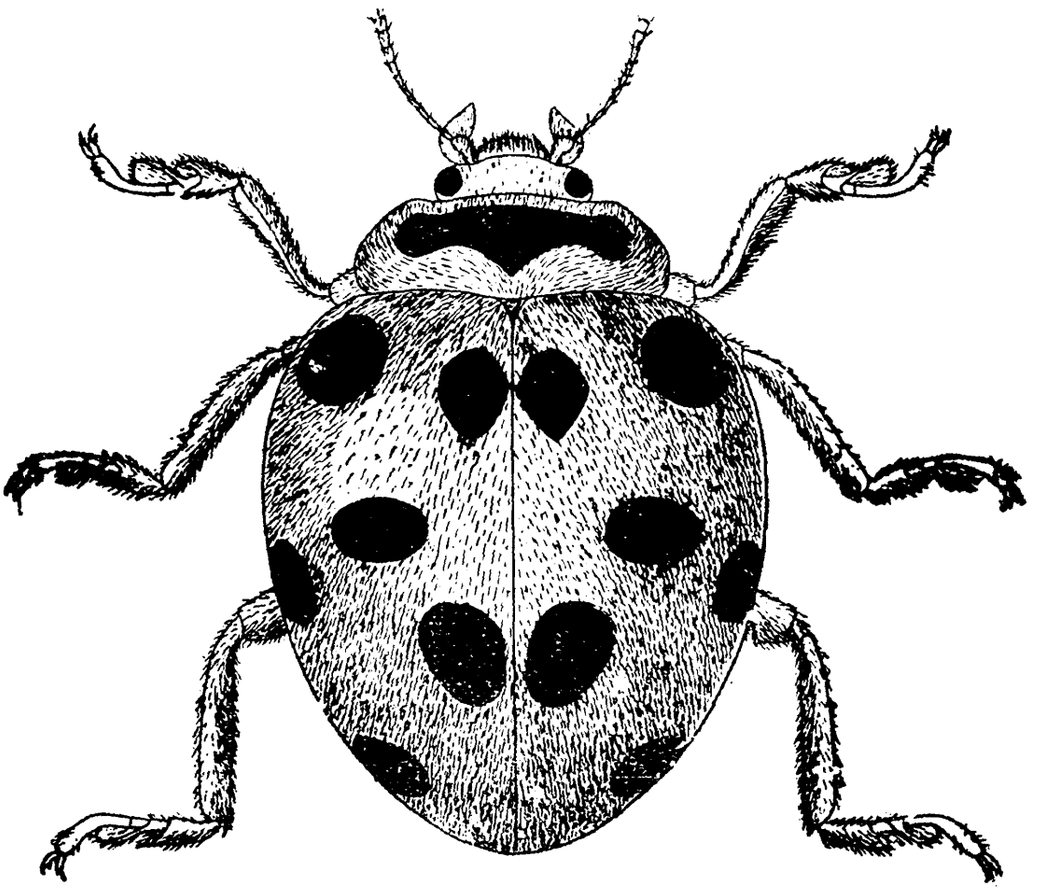
1931. *Epilachna alternans*, var. *grayi*, Korschefsky, *Coleopt. Cat., Berl.* XVI, 118, p. 27.

1933. *Epilachna grayi*, Korschefsky, *Trans. nat. Hist. Soc. Formosa* XXIII, p. 301.

1947. *Afissa grayi* Dieke, *Smithson. misc. Coll.* CVI, 15, pp. 121-122.

Material.—2 examples : Rasua, 7,000 ft. ; Trisuli Valley, 5,000—7,000 ft. (*B. M-N E., 1949*).

Remarks.—Epilachna alternans Mulsant[1] and *Epilachna grayi* Mulsant, were described as distinct species but were later synonymized by Weise[2]. In the light of this synonomy, Korschefsky gave its distribution as North India, Nilgiri Hills, Java and Formosa. Subsequently in 1933, he pointed out differences including those in their colour-patterns, and the species were once again regarded as distinct. Lately, Dieke transferred both the species to the genus *Afissa* Dieke.



Text-fig. 1.—*Afissa grayi* (Muls.).

The Zoological Survey of India (hereafter referred to as Z. S. I.) has examples from Kumaun Hills, N. Bengal (Darjeeling district) and Abhor Hills, Assam. Dieke's material came from Java. The species apparently belongs to the Oriental region.

The colouration in the two examples from Nepal may be described below as it differs slightly from earlier descriptions of the species. In the example from Rasua (Text-fig. 1) the pronotum has a transverse, broad and subtriangular black spot and the elytral spots Nos. 3 and 5 are well developed (The spots are numbered according to their position on the right elytron from left to right and from base to apex). In the

[1] Mulsant, E., *Ann. Soc. Agric. Lyon* III, p. 767 (1950).

[2] Weise, J., *Arch. Naturg.* LXXXIX, 2, p. 182 (1923).

example from Trisuli Valley the pronotal spot is further enlarged so as to cover almost the whole of pronotum except along the margins, but the elytral spots Nos. 3 and 5 are very much reduced in size. According to Dieke the two examples from Java have spotless pronotum ; Mulsant's examples from North India and Bengal possessed the pronotal spot, which was not quite as prominent as in the examples from Nepal. The male genitalia of the species are figured in text-fig. 8 *a-c*.

3. **Afissa marginicollis** (Hope)

1831. *Coccinella marginicollis* Hope, (*in* Gray) *Zoological miscellany*, p. 31. (Type loc. : Nepal).

1850. *Epilachna marginicollis*, Mulsant, *Ann. Soc. Agric. Lyon* III, p. 728.

1874. *Epilachna marginicollis*, Crotch, *Revision of the coleopterous family Coccinellidae, London*, p. 80.

1931. *Epilachna* (*Solanophila*) *marginicollis*, Korschefsky, *Coleopt. Cat., Berl.* XVI, 118, p. 30.

Material.—4 examples : Chilime, 6,000—8,000 ft. ; Langtang, 9,000—11,000 ft. (*B. M.-N. E. 1949*). Langtang Khola, 10,600—11,000 ft. on Labiatae, Nepal (exact locality not given) (*B.-N. E. 1952, T. D. Bourdillon*).

Remarks.—The species is distributed in Nepal, Sikkim, North Bengal and Burma. Its pronotal and elytral colour-pattern is illustrated in text-fig. 6, *c*. It is being transferred to the genus *Afissa* Dieke[1], on account of the absence of basal tooth in the claws which are bifid and on account of the last visible segment in the female being entire and not split into two longitudinally.

4. **Afissa mystica** (Mulsant)

1850. *Epilachna mystica* Mulsant, *Ann. Soc. Agric. Lyon* III, p. 841.

1947. *Afissa mystica*, Dieke, *Smithson. misc. Coll.* CVI, 15, p. 146.

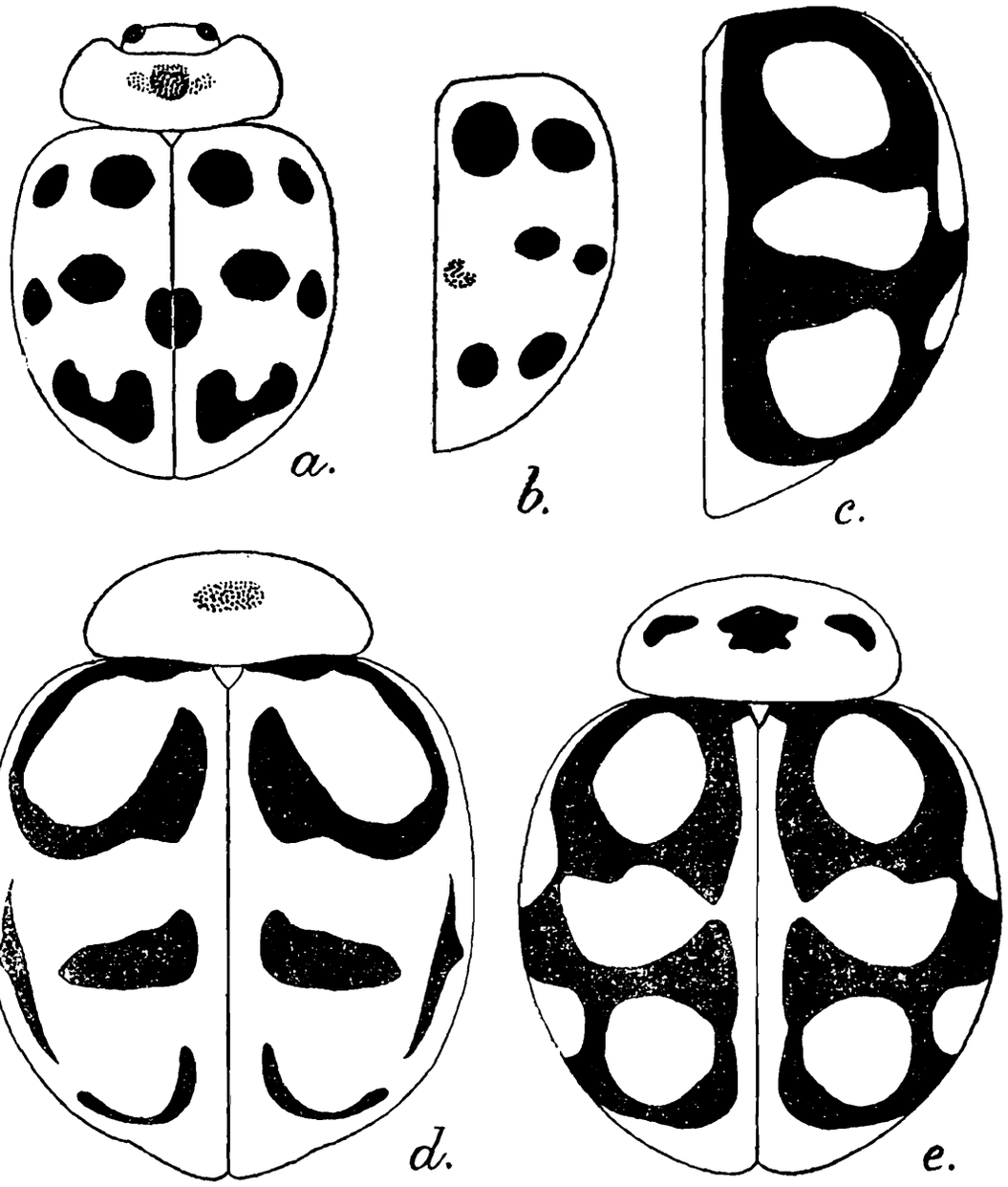
Material.—2 examples : Indrawati Khola, 6,000 ft. (*B. M.-N E. 1949*). Tate, 11. vi. 1952 (*T. D. Bourdillon, B.-N. E. 1952*).

Remarks.—Mulsant was uncertain of its type locality which he gave as East India with a question mark. Known already from Burma, North Bengal and Sikkim, it is being recorded for the first time from Nepal. Examples from Kumaun Hills in northern India, and Bangalore in the south, are present in the Z. S. I.

The species is very variable in markings. In some examples there are five black spots of irregular shape on the elytron ; in others the spots are enlarged into bands which coalese at places to enclosce one to there roundish cells close to the suture. (Text-fig. 2, *c-e*.) In addition, two incomplete cells are sometimes present near the external margin.

[1] Dieke, G. H., *Smithson. misc. Coll.* CVI, 15 pp. 22-29 (1947).

In the example from Indrawati the three cells near the suture are complete (Text-fig. 2, *c.*) while in the example from Tate the central cell is incomplete near the suture (Text-fig. 2, *e.*).



Text-fig. 2.—*a.—b.* Colour-pattern of *Afidentula manderstjernae* (Muls.); *c.-e.* Elytral patterns of *Afissa mystica* (Muls.).

5. **Afissa mysticoides** (Sicard)

1912. *Solanophila mysticoides* Sicard, *Ann. Soc. Ent. France* LXXXI, p. 507. (Type loc. : India).

1931. *Epilachna* (*Solanophila*) *mysticoides*, Korschefsky, *Coleopt. Cat., Berl.* XVI, 118, p. 30.

1947. *Affisa mysticoides*, Dieke, *Smithson. misc. Coll.* CVI, 15, p. 145.

Material.—28 examples : Langtang, 9,000—11,000 ft. ; Langtang Khola, 10,600—11,000 ft. (on a Labiatae, 16 examples) ; Timure, 10,500 ft. ; East of Timure, 8,000—10,000 ft. (*B. M.-N. E. 1949*). Tate, 12. vi. 1952 (*T D. Bourdillon, B.-N E. 1952*).

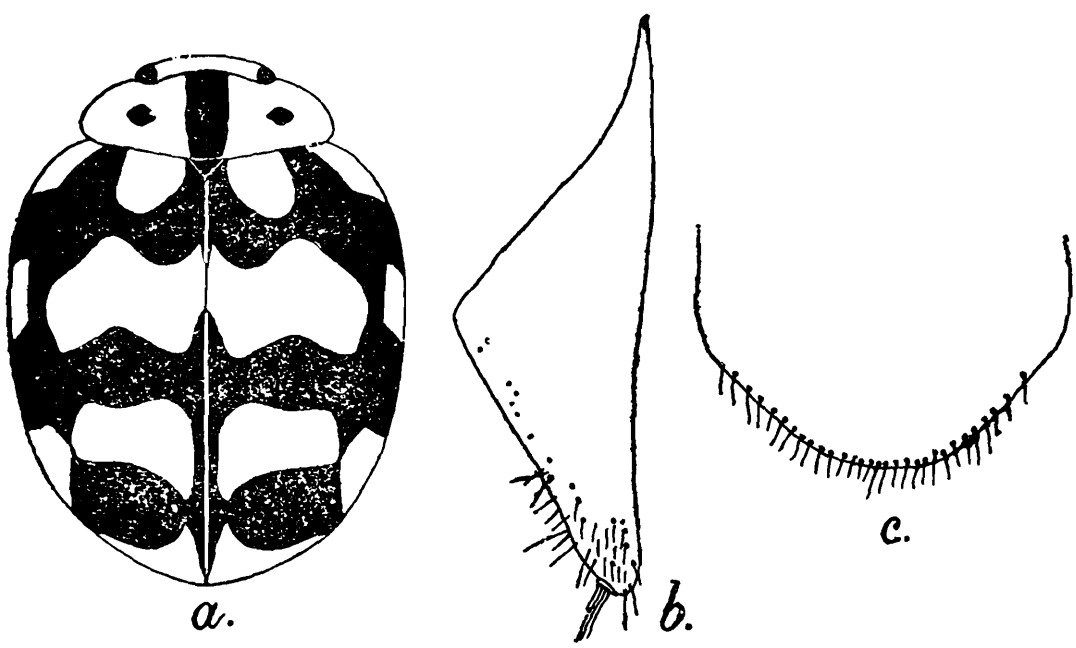
Remarks.—The above-mentioned material contains 28 examples which show considerable variation in colour-pattern. In almost all the examples the spots are a little larger than what have been described by Sicard or

Dieke, though there is no doubt that these belong to the same species. Dieke had only two examples from Darjeeling, N. Bengal, while the exact locality and other particulars of Sicard's material are not known. Confluence of elytral spots, noticed in certain examples in the present series, has also not been described before. In the present series while all the spots are free in 11 examples, in 10 other examples, spots Nos. 1 and 2 become confluent towards their distal ends. In one more example, these spots are confluent at their proximal ends, and remain free at their distal ends. In three other examples they are confluent at both the distal and proximal ends but free in the middle so as to enclose a testaceous (as is the colour of the elytral background) area between them. In two more examples whereas the spots Nos. 1 and 2 have this pattern, the spots Nos. 3 and 4 extend towards the middle so as to join one another. Finally in one more example the spots are much enlarged and the spot No. 2 (situated at the shoulder) not only meets spot No. 1 but also the confluent spots Nos. 3 and 4.

The male genitalia of the species which are very characteristic and reliable for separating the species, are shown in text-fig. 7, *c* and *d*.

6. **Afissa nepalensis,** sp. nov.

♀ Body shortly oval, convex, most so in the middle ; pubescence golden yellow except on the black spots where it harmonizes with the background. Head testaceous to reddish testaceous ; eyes shining-



TEXT-FIG. 3.—*Afissa nepalensis*, sp. nov ; *a*. Pattern of pronotum and elytron ; *b*. ♀ genital plate ; c. ♀ tenth tergite.

grey. Pronotum testaceous to reddish testaceous except for a broad, median, black stripe extending from the anterior to the posterior margin and for the two black spots, each situated on either side of the stripe but at equal distance from it and the external margins (Text-fig. 3, *a*.). Scutellum black. Elytra testaceous to reddish testaceous with three fairly broad transverse and irregular black bands which become confluent at places to form seven cells enclosing testaceous

or reddish testaceous areas as shown in figure 3 *a*. The first band is situated at one-fourth of the length of the elytron and is extended towards the base in the middle and along the suture. The second band is situated in the middle of the elytron and extends in the middle to join the first and the third bands. It also extends along the suture so as to touch the third band which is situated at the apical one-fourth of the length of elytron. It usually extends from the suture to the external margin but in one example (Paratype) it stops short of either of these margins. Underside light testaceous except for the meso and metasternum and the abdominal sternites which are piceous ; sometimes the femora may also be darker but not quite piceous.

Head minutely and rather sparsely punctate, with thin, moderately long, yellowish pubescence ; antennae longer than the width of the head and with the distal three segments, forming the club, being rather subtriangular in outline. Pronotum slightly arched, nearly twice as wide as long, widely emarginate anteriorly and moderately rounded anterolaterally. Minutely punctate, punctures being closer than those on the head. Pubescence fine, golden-yellow, moderately long and directed anterolaterally. Scutellum triangular, with pubescence and punctation similar to that on the pronotum. Elytra very convex, with hardly any visible shoulder-boil, shoulder angles rounded, external margin very narrowly bordered ; punctation mixed, surface mostly with minute and rather close punctures in between which coarse, moderately impressed and sparse punctures are present. Pubescence golden-yellow, moderately long, fairly close and subdepressed. Underside with moderately broad epipleurae ; minute, shallow and rather close punctation and fine, short and sparse pubescence. Abdominal lines almost semicircular and extending as far as two-thirds the length of the segment. Claws bifid, the inner denticle shorter and more curved than the outer one. Female genitalia with the genital plates (IX sternite) elongate and triangular in outline and with a pencil of long setae on the papilla near the apex (Text-fig. 3, *b*.). Tenth tergite rather broadly rounded apically (Text-fig. 3, *c*.). Male example unknown.

Length 4·5 mm. ; width 3·2 mm.

Holotype.—NEPAL : Trisuli Valley, 5,000 ft. (*B. M.-N. E. 1949*) ; a female, genitalia mounted in Canada balsam and pinned along with the specimen ; in the British Museum (N. H.).

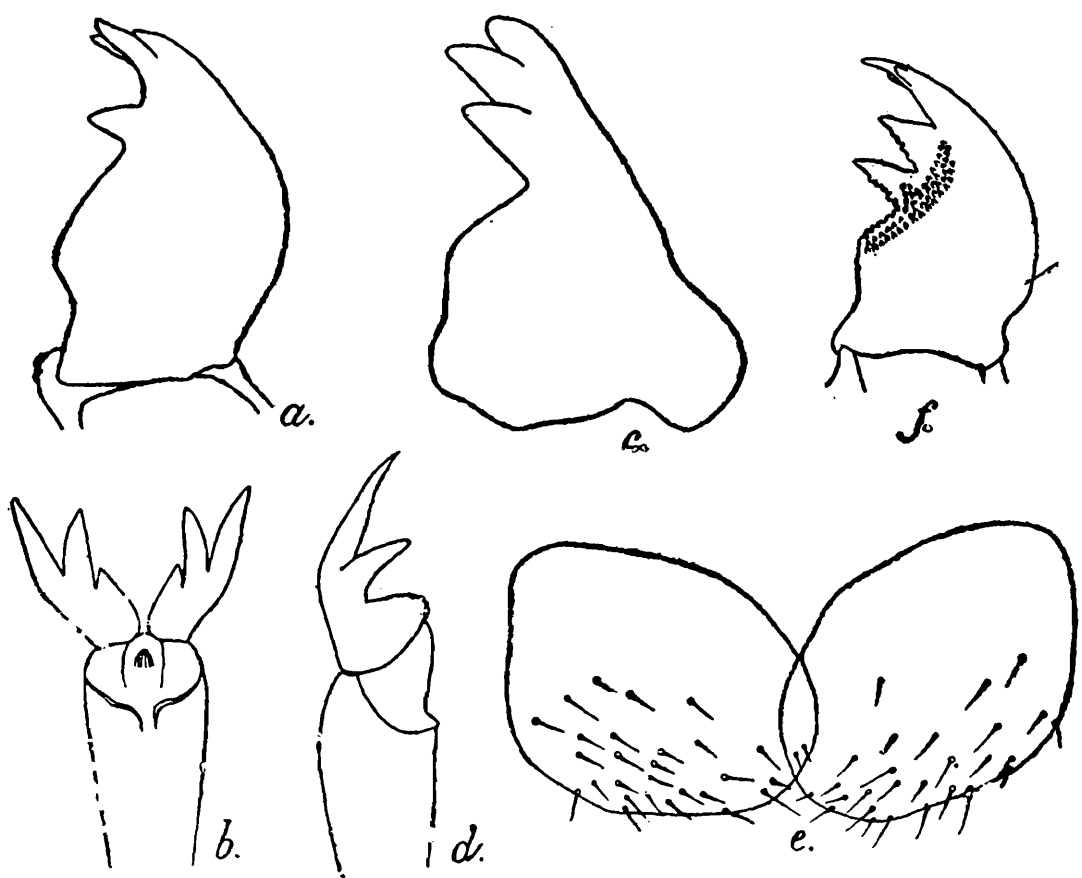
Paratypes.—NEPAL : Langtang Khola, 7,000—9,000 ft., one female (*B. M.-N. E. 1949*) ; Tate, 11 vi. 1952, (*T. D. Bourdillon, B.-N. E. 1952*) one female, returned to Dr. Easton. The genitalia of a paratype dissected and mounted as for the holotype.

Remarks.—The colour-pattern of this species is not only beautiful but distinct. The pattern in the three examples shows slight variations. According to Dieke's (1947) key to the groups of the genus *Afissa* (p. 115), this species comes close to the *flavicollis* group but is easily separated from the known species of the group by its distinctive colour-pattern.

Afissula, gen. nov.

Type of the genus : *Afissula rana*, sp. nov.

Referable to the subfamily Epilachninae. Body elongate oval ; legs relatively long permitting the femora and tibial joints to be seen easily from above ; femora rather thin, tibiae thin with short and shallow depression at the distal extremity ; tarsal claws bifid and provided with sub-triangular basal tooth (Text-fig. 4, *b*). Antennae narrow just a little longer than the width of the head. Mandibles, (Text-fig. 4, *a*.) with three apical and one median teeth none of which are serrated. Pronotum not margined ; pronotal and elytral epipleurae without foveae ; the elytral epipleurae horizontal. Abdominal lines semicircular, usually not extending beyond two-fifths of the length of the first abdominal sternite ; the sixth abdominal sternite in the female entire, *i.e.*, not longitudinally split into two, the female genital plates (IX sternite), elongate, much narrowed apically and each with apical papilla bearing a few long setae. Male with the sixth sternite having a median emargination and with conspicuously developed penis.



TEXT-FIG. 4.—*a.-b. Afissula rana*, sp. nov. ; *a*. Outline of mandible ; *b*. Tarsal claws ; *c.-d. Afidentula manderstjernae* (Muls.) ; *c*. Outline of mandible ; *d*. Tarsal claw ; *e*. ♀ genital plates ; *f*. Outline of mandible of *Afidenta gradaria* (Muls.).

The genus is at once distinguished from *Afissa* Dieke by the presence of the basal tooth in the tarsal claws and from *Epilachna* Chevrolat, as limited by Dieke[1] (1947), by the sixth abdominal sternite in the female being entire. The latter is split longitudinally in the genus *Epilachna*.

[1] Dieke, G. H., *Smithson. misc. Coll.* CVI, 15, pp. 22-29 (1947).

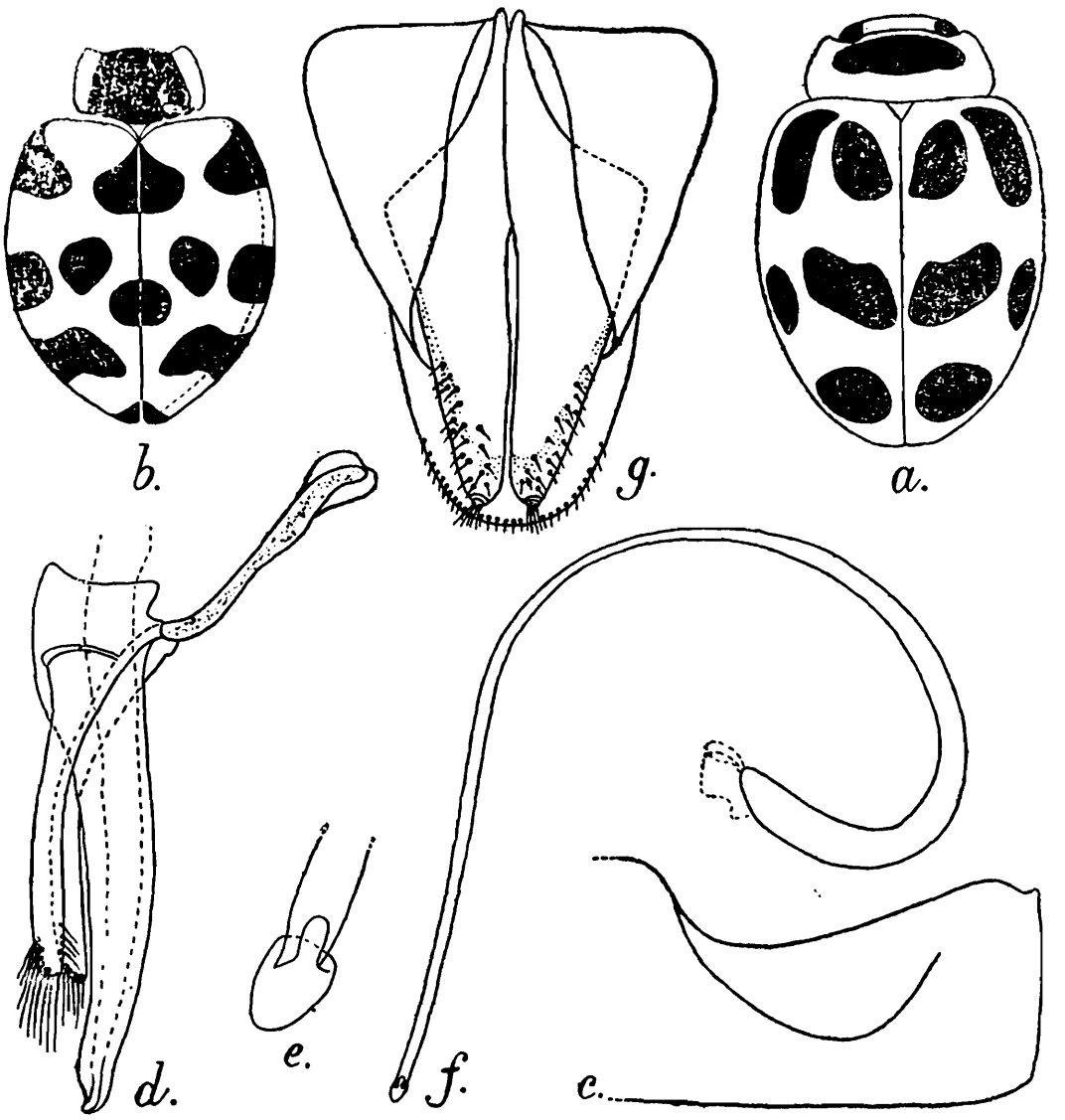
It is distinguishable from the genus *Afidenta* Dieke by the elongate and tapering genital plates of the female and by the well developed male genitalia, which are distinctly short in *Afidenta*. From the genus *Macrolasia* Weise, it is distinguishable by several characters, particularly by the tibiae which are wide and distinctly emarginate near the apex in *Macrolasia ;* the latter is also characterized by the subhemispherical body, the subinclined elytral epipleura and the laterally concave and strongly margined prosternum : characters which are not present in *Afissula.*

The various genera mentioned above also differ in the structure of the mouth parts, particularly in the shape of the mandibles, labrum and maxillae and in the opinion of the present writer any revisionary work on the classification of the genera of the subfamily Epilachninae must pay adequate attention to these structures.

7. **Afissula rana**, sp. nov.

Body elongate, oval, convex, most so in the middle. Pubescence greyish except on the black spots where it is usually dark brown but sometimes greyish. Head reddish testaceous, antennae and mouth-parts testaceous and eyes greyish. Pronotum reddish testaceous except along the lateral border which is yellowish testaceous ; with one transverse oval black spot which is as wide as the head and which occupies the anterior three-fifths of the pronotum excepting along the narrow anterior margin. In one out of eleven examples this spot shows a tendency to break into three smaller spots which, however, remain connected. Scutellum and ground colour of the elytra reddish testaceous. Each elytron has five, rather gross, black spots arranged as 2, 2, 1 (Text-fig. 5, *a*). Spots Nos. 1 and 2 sub-basal, the former subquadrate, near the suture but not touching it and extending to just beyond one-fourth of the length of the elytron. Spot No. 2 situated on the shoulder-boil, almost rectangular or elongate oval, a little longer than spot No. 1 and extending nearly as far as one-third the length of elytron and not touching the basal or the lateral margins of the elytron. Spots Nos. 3 and 4 lying on a slightly arched, median, transverse line ; the 3rd like a transverse band with feeble emargination towards the base and extending from near the suture to just beyond the middle of the width of the elytron. Spot No. 4 situated a little away from the latter spot and a litle more towards the apex, subquadrate and not touching the lateral margin. Spot No. 5 is situated at three-fourths the lengths of elytron and is smaller than spot No. 3 ; laterally it stops short of the sutural and the external margins by a little distance. Variability of spots is common : in seven out of eleven examples, spots Nos. 1 and 2 become confluent near the base but remain otherwise distinct. Confluence of spots Nos. 3 and 4 has not been observed in any of these examples. In certain examples where there is a general increase of black pigment the latter two and the 5th spots are enlarged so as to reach the external margin. In two instances, however, spot No. 5 is reduced in size and consequently remains away from the sutural as well as the external

margin. Underside reddish testaceous except for the metathorax and the basal four abdominal sternites which are piceous ; the legs and usually the epipleurae also remain reddish testaceous.



TEXT FIG 5.— *a*. Colour-pattern of *Afissula rana*, sp. nov. *b*. The same of *Afissa undecimspilota* (Hope) (drawn from type) ; *c.-g*. *Afissula rana*, *c*. Abdominal lines ; *d*. Male genitalia except sipho ; *e*. Tip of sipho ; *f*. Sipho ; *g*. Female genitalia.

Head wider than long, very finely and closely punctate, punctures impressed. Pubescence yellowish, very thin, short and not very close. Eyes finely facetted, antennae thin, longer than the width of the head, the first and third segments subequal and the apical three segments forming a serrated club. Labrum transverse, a little wider than long, with the base a little narrower than the clypeus. Mandibles (Text-fig. 4, *a*) with three apical and one median teeth which are not serrated. Galea and lacinia subrounded and subconical respectively and covered with moderately thick and long setae. Pronotum transverse, slightly emarginate anteriorly and feebly rounded laterally, anterior angles subrounded, the posterior angles rather pointed. Punctation similar to that on the head ; pubescence also similar but slightly longer and greyish. Scutellum triangular, with punctations and pubescence similar to that on the pronotum. Elytra elongate, with distinct shoulder-boil ;

external margin narrowly bordered ; punctation mixed—fine, fairly close and rather shallow punctures interspersed with coarse and sparse punctures. Pubescence moderately long, depressed and fairly close. Prosternum without any carinae or foveae. Legs relatively long, tibiae rather narrow, claws (Text-fig. 4, *b.*) bifid with the inner dentule smaller than the outer and with a subtriangular basal tooth. Elytral epipleura horizontal and without foveae. Abdominal lines (Text-fig. 5, *c.*) semicircular, incomplete and not extending beyond two-thirds the length of the sternite. The sixth abdominal sternite in the female not split longitudinally. Male genitalia with the sipho (Text-fig. 5, *f.*) narrow and somewhat lancet shaped at the apex (Text-fig. 5, *e.*) ; basal piece small and the paramera shorter than the penis which is well developed and slightly curved and narrowed at the apex (Text-fig. 5, *d.*) ; trabes piceous. In the female the genital plates (IX sternite) are elongate, narrowed and dark apically and sparsely hairy and each with an apical papilla bearing a few long hairs (Text-fig. 5, *g.*).

Length 4·75—5·0 mm. ; width 3·0—3·15 mm.

Holotype.—Nepal : Syabrubensi (*B. M.-N. E. 1949*) ; a male ; in the British Museum (N. H.).

Allotype.—The same data as for holotype ; a female ; in the British Museum (N. H.).

Paratypes.—Five examples with the same data as the holotype ; other paratypes as follows : Nepal : Langtang, 9,000—11,000 ft. (2 examples) ; Trisuli Valley, 5,000—10,000 ft. (1 example) ; Landekhola, 9,000 ft., (1 example). Some of the paratypes in the Zoological Survey of India, Indian Museum, Calcutta, and the remainder in the British Museum (N. H.), London.

Remarks.—Mulsant's[1] description of *Epilachna undecimspilota* (Hope) agrees with the above description to a large extent and also with another and probably yet undescribed species from North-East India, in the collection of the Z. S. I. Mulsant stated that his description of *E. undecimspilota* was based on a typical example sent to him by Hope. Crotch[2] was, however, doubtful about it and stated that the type of *Epilachna undecimspilota* (Hope) was in the British Museum. Crotch gave a revised description of the species which differed greatly from the one given by Mulsant. In spite of the revised description given by Crotch and of his statement regarding the type of the species being in the British Museum, Dieke[3] continued to regard Mulsant's description of *E. undecimspilota* (Hope) as valid. The present writer investigated the matter again and found evidence in support of Crotch's statement. Hope's[4] description of new Coleoptera from Nepal was based on Major-General Hardwicke's collections, the types of which are in the British Museum (Nat. His.), where the present writer had examined the type of *E. undecimspilota* (Hope) some time back. Very recently at the writer's request, Mr. E. B. Britton of the Department of Entomology, British

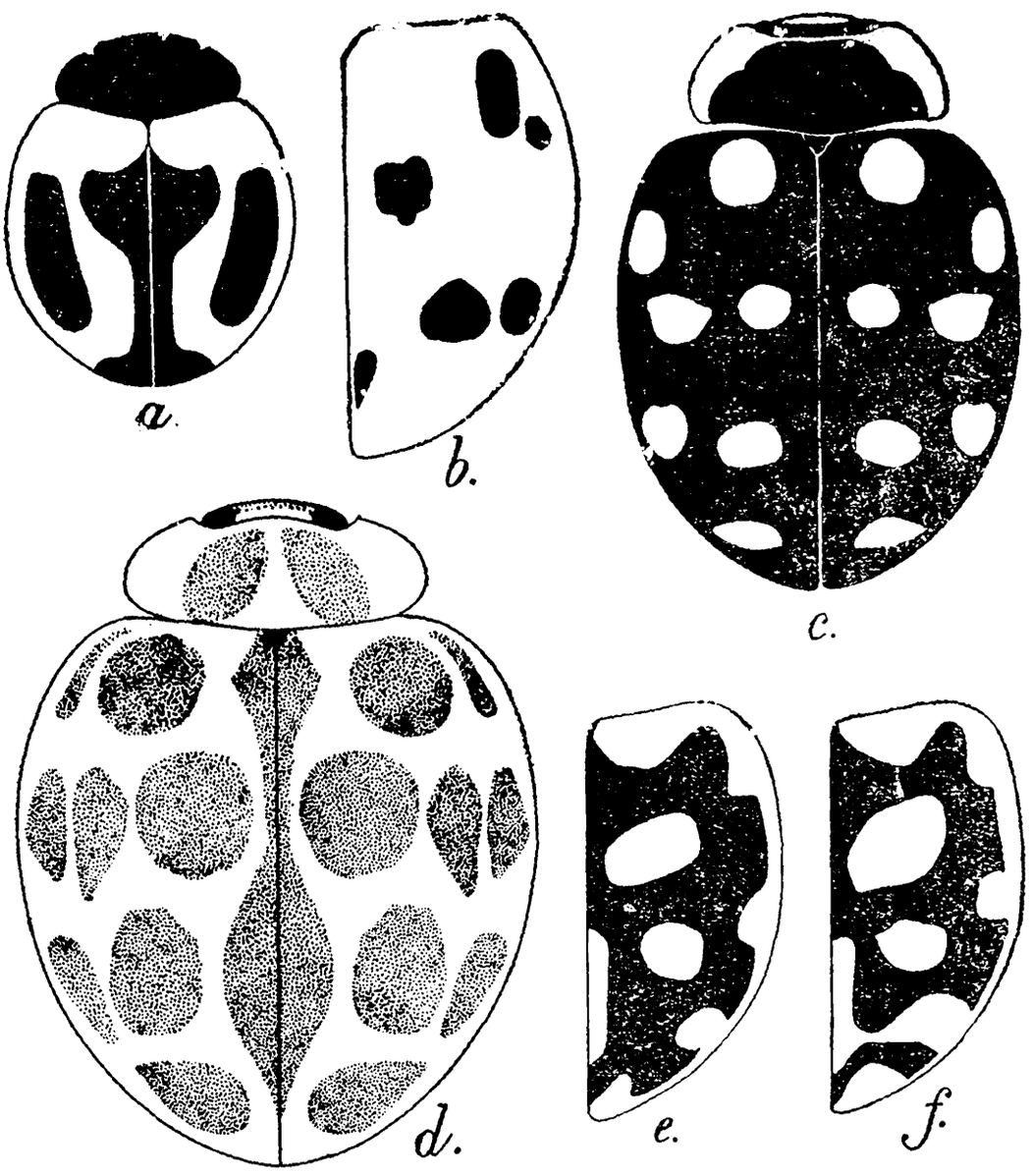
[1] Mulsant, E., *Ann. Soc. Agric. Lyon* III, pp. 799-800 (1850).

[2] Crotch, G. R., *Revision of the coleopterous family Coccinellidae*, p. 81 (1874).

[3] Dieke, G. H., *Smithson. misc. Coll.* CVI, 15, p. 138 (1947).

[4] Hope, F. W., (in Gray) *Zoological miscellany*, p. 31 (1831).

Museum, sent a pencil sketch of the pronotal and the elytral pattern of the type. The same is reproduced in black and white in text-figure 5, *b*. It is very different from the pattern given in text-fig. 5, *a* which is the pattern of the species described above and which fits in with the description of *E. undecimspilota* of authors, particularly Mulsant. However, the original description of a line and a half given by Hope would fit both the species. It is apparent that Mulsant did not describe *E. undecimspilota* from the type which was in the B. M. Furthermore, an



TEXT-FIG. 6.—*a. Exochomus himalayensis*, sp. nov. *b.* Elytral pattern of *Oenopia luteopustulata* Muls. var. *nigromaculata* Mader. *c. Afissa marginicollis* (Hope). *d. Rallia austavi* Muls.; *e.-f.* Elytral patterns of *Adalia luteopicta* Muls. (*e.* typical; *f.* Variety).

examination of a collection of Coccinellidae identified by Mulsant and deposited in the Hope Department of Entomology, Oxford University, showed that while it contained types of several new species described by Mulsant in 1850, it did not contain any type or example of a coccinellid from Major-General Hardwicke's collection. Dieke suggested

that it seemed likely that Mulsant saw the original type which subsequently may have been confused with another specimen. In view of the position explained above regarding the careful preservation of the collections at the British Museum and at Oxford, and in the absence of any direct evidence in support of the presumption made by Dieke, the present writer has, like Crotch, regarded the type of *E. undecimspilota* (Hope) in the B. M. to be the valid one, and has dealt with the taxonomy of the species involved on that basis. Crotch regarded *E. stephensi* Mulsant (1950) to be a synonym of *E. undecimspilota* (Hope) (1831) but he did not propose any name for *E. undecimspilota* Mulsant (not Hope).

Afidentula, gen. nov.

Type of the genus : *Epilachna manderstjernae* Mulsant (1853)

Referable to the subfamily Epilachninae and close to the genus *Afidenta* Dieke from which it is distinguishable by the following characters : Body shortly oval, usually small ; antennae subequal to the width of the head, with a relatively thick and compact club ; clypeus and labrum narrow ; mandibles (Text-fig. 4, *e.*) sub-triangular in shape, very much narrowed towards the apex which is provided with three teeth which are without any dentulations or serrations, submedian or median tooth absent, viewed from the front, only one of the three apical teeth mentioned above is visible, the other two being concealed behind it. Tarsal claws (Text-fig. 4, *d.*) bifid, the inner division being shorter than the outer and provided with sub-triangular basal tooth. The sixth abdominal sternite in the female entire as in *Afidenta*, but the male genitalia are well developed unlike the case in the latter genus. In *Afidenta* the body is sub-hemispherical and the antennae are shorter than the width of the head, the clypeus and labrum are also wide and the mandibles are larger, curved, externally smooth, on the inner margin provided with three major teeth which are situated at different levels (Text-fig. 4, *f.*) ; the apical tooth is the longest and has two prominent dentules, one on either side, the sub-apical and median teeth as well as the proximal molar surface bear a large numbe" of dentules ; the tarsal claws are bifid but the divisions are sub-equal in length and the basal tooth is subquadrate in outline.

As far as known, the type of the genus *Afidenta*, namely *Afidenta gradaria* (Muls.) (Synonym : *Afidenta mimetica* Dieke), feeds on leguminous plants. The other two species, namely *Afidenta minima* (Gorham) and *Afidenta bisquadripunctata* (Gyllenhal), which were doubtfully included in the genus *Afidenta* by Dieke, do not appear to belong to that genus. One of these, namely *A. minima*, appears to be congeneric with *A. manderstjernae* and should be transferred to the genus *Afidentula*. Incidently it may be pointed out that Dieke missed to observe the basal tooth in the tarsal claw of *manderstjernae* and placed it in the genus *Afissa*.

8. **Afidentula manderstjernae** (Mulsant)

1853. *Epilachna manderstjernae*, Mulsant, *Ann. Soc. linn. Lyon*, I, p. 256
1874. *Epilachna manderstjernae*, Crotch, *A revision of the coleopterous family Coccinellidae*, p. 83.
1885. *Epilachna manderstjernae*, Weise, *Stettin. ent. Ztg., XLVI*, p. 228.
1931. *Epilachna manderstjernae*, Koreschefsky, *Coleopt. Cat., Berl.*, XVI, 118, p. 24.
1947. *Afissa manderstjernae*, Dieke, *Smithson. misc. Coll.*, CVI, 15, p. 125.

Material.—6 examples : Trisuli Valley, 5,000—7,000 ft. ; Lende Khola, 8,000—9,800 ft. ; Rasua, 7,000 ft. (*B. M.-N. E. 1949*).

Remarks.—The species is already known from Mussoorie Hills (Uttar Pradesh), Kurseong (N. Bengal), Sikkim, and Burma. It is also reported to occur in China.

The typical pattern of the species is shown in text-figure 2, *a*, except for the fact that the apical spot or spot No. 6 shows a tendency to split into two. Another variation in pattern is exhibited in one example where spot No. 5 is faint and a little smaller than usual and is situated away from the suture and where also spot No. 6 is completely split into two distinct spots (Text-fig. 2, *b*). The male and female genitalia of species are characteristic and are shown in text-figure 7, *e* and *f* and in text-figure 4, *e*, respectively. The genital plates in the female are roundish ; for this reason and for the claws being bifid and with basal tooth, the species cannot be placed in the genus *Afissa*, as was done by Dieke. It does not belong to the genus *Epilachna* (*sensu stricto*) because the last visible abdominal sternite in the female is entire and not split into two longitudinally, and also because it differs markedly in the structure of its mandible and other mouth-parts from those in *Epilachna*. It can not be placed in the genus *Afidenta* for the reasons already given earlier while defining the genus *Afidentula*.

Subfamily *COCCINELLINAE*

Tribe COCCINELLINI

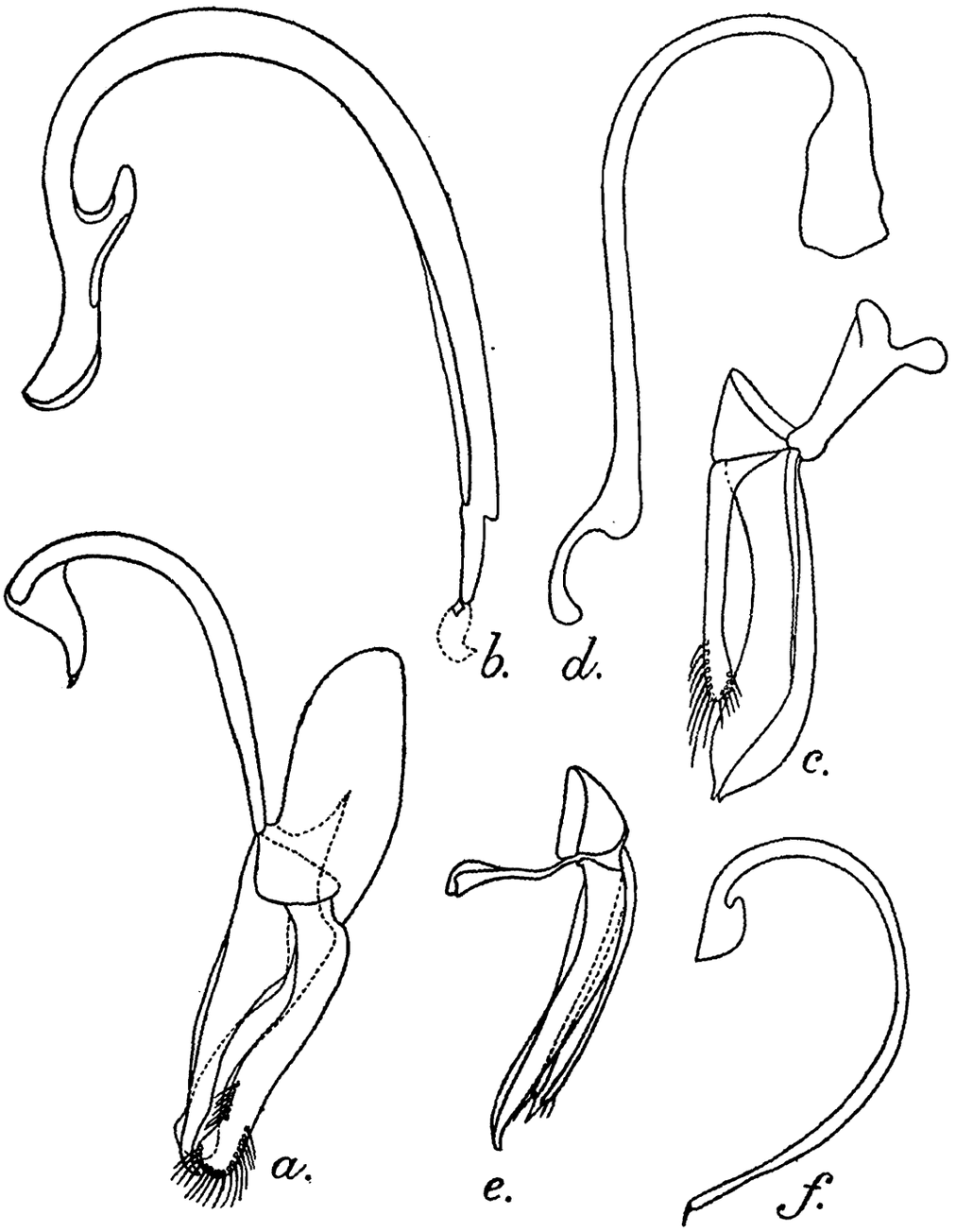
9. **Adonia variegata** (Goeze)

1777. *Coccinella variegata* Goeze, *Ent. Beyrt.* I, p.247.
1846. *Adonia variegata*, Mulsant, *Histoire naturelle des coleopteres de France : Sulcicolles-Securipalpes*, p. 39.
1932. *Adonia variegata*, Koreschefsky, *Coleopt. Cat., Berl.* XVI, 120, pp. 346-359.
1942. *Adonia variegata*, Kapur, *Indian J. Ent.* IV, pp. 49-66.

Material.—7 examples : Timure, 10,500 ft. (*B.M.-N.E. 1949*). Marsiandi Valley, 3,000 ft. (*B.-N.E. 1950*). Above Those, 10. iv. 1952 (*T D. Bourdillon, B.-N. E. 1952*).

Remarks.—This palaearctic species is widely distributed not only in the Palaearctic region but also in the neighbouring parts of the Aethiopean and the Oriental regions. In India it has been recorded earlier from the northern parts, namely from Kashmir to Mussoorie Hills. The present record from Nepal extends its distribution further east. In the Z. S. I. collections two examples from Darjeeling (N. Bengal) are present. The present writer has not yet seen an example from Assam or Burma.

The colour-pattern in the species is very variable. In the examples from Nepal, nearly all the spots are present and in some the spots are enlarged and united and on the whole present patterns similar to those found in the subspecies *doubledayi* Mulsant, from Kashmir and the Punjab Hills.



TEXT-FIG. 7.—*a*. Male genitalia of *Ballia gustavi* Muls. ; *b*. Sipho of the same ; *c*. Male genitalia of *Afissa mysticoides* (Sic.) ; *d*. Sipho of the same ; *e*. Male genitalia of *Afidentula manderstjernae* (Muls.) ; *f*. Sipho of the same.

10. **Adalia luteopicta** Mulsant

1866. *Adalia luteopicta* Mulsant, *Monogr. Coccinell.*, p. 45 (*Mem. Acad. Lyon* XV (1865-66), p. 45).

Material.—7 examples : Timure, 10,500 ft. ; Langtang Khola. 10,600 ft., 10,600-11,000 ft., 13,500-14,000 ft. ; Langtang. 11,500 ft. (*BM.-N.E. 1949*). Nepal (no precise locality given) (1 ex.) ; Tate, 13-14. vi. 1952 (*T. D. Bourdillon, B.-N.E. 1952*).

Remarks.—Recorded earlier from east and north India and China, the present writer has seen examples of it from Dehra Dun (in Z.S.I.) and Sikkim. The colour pattern of the examples mentioned above generally agrees with the typical pattern (Text-fig. 6,*e.*) of the species. In one example (Tate, 13-14. vi. 1952, *T. D. Bourdillon*), however, the area of black markings shows a reduction, especially in the apical half of the elytron as shown in text-figure 6,*f.*

11. **Coccinella(Synharmonia) billieti** (Mulsant)

1853. *Harmonia billieti* Mulsant, *Ann. Soc. linn. Lyon* I, p. 144.

1931. *Synharmonia billeti*, Mader, *Evidenz Palaearctic Coccinellidae*, p. 191, t. 40, f. 1,2.

1932. *Coccinella billieti*, Korschefsky, *Coleopt. Cat., Berl.* XVI, 120, p. 447.

Material.—2 examples : Timure, 10,500 ft. ; East of Timure, 8,000-10,000 ft. (*B.M.-N.E. 1949*).

Remarks.—The species is known from northern India and has been hitherto recorded from Kashmir, Punjab and Assam. The present writer has seen three examples from Yarkand (in Z.S.I. ; damaged condition), West Almora and Mussoorie. Each of these examples has different pattern.

Variation in colour-pattern.—The colour pattern which agrees with the description of the type is shown in text-figure 9, *a* (drawn from the example from W Almora). The elytral pattern of variety *indica* Weise is shown in text-figure 9, *b.* (Type locality : Assam ; figure drawn from an example from Timure). The example from Mussoorie (*ca.* 6,000 ft. VIII. 1933, *H. S. Pruthi* coll., in Z.S.I.) has testaceous elytra except for a narrow black margin along the suture and a transevrse, rather wavy and moderately broad, black band along the transverse median line (Text-fig. 9, *c.*). For convenience of reference, this variety is named *pruthii*, **var. nov.** The only example from "East of Timure", mentioned above has no trace of black area on the elytra which are yellowish testaceous but apparently not tennerial (Text-fig. 9, *d.*) ; its pronotal pattern and the scutellum show the normal black colouration. This variety is named *testacea*, **var. nov.** Since the species is variable in colour-pattern, the male and the female genitalia are shown in outline for purposes of confirming the identification based on external characters. The penis (Text-fig. 9, *e. f.*) is curved towards the paramera near the apex and is a little asymmetrical ; the paramera have also conical and subapical projections pointing towards the penis (Text-fig. 9, *e*) but appears rather spatulate when viewed from the front (*g*) ; the sipho (*h*) is well developed. The female genital plates are small (Text-fig. 9, *i.*), but the spermatheca (*j*) is well developed.

12. **Coccinella repanda** Thunberg

1781. *Coccinella repanda* Thunberg, *Nov. Ins. Spec.* I, p. 18.

Material.—2 examples : Marsiandi Valley, 2,500 ft. ; 3,000-5,000 ft. (*B.-N.E. 1950*).

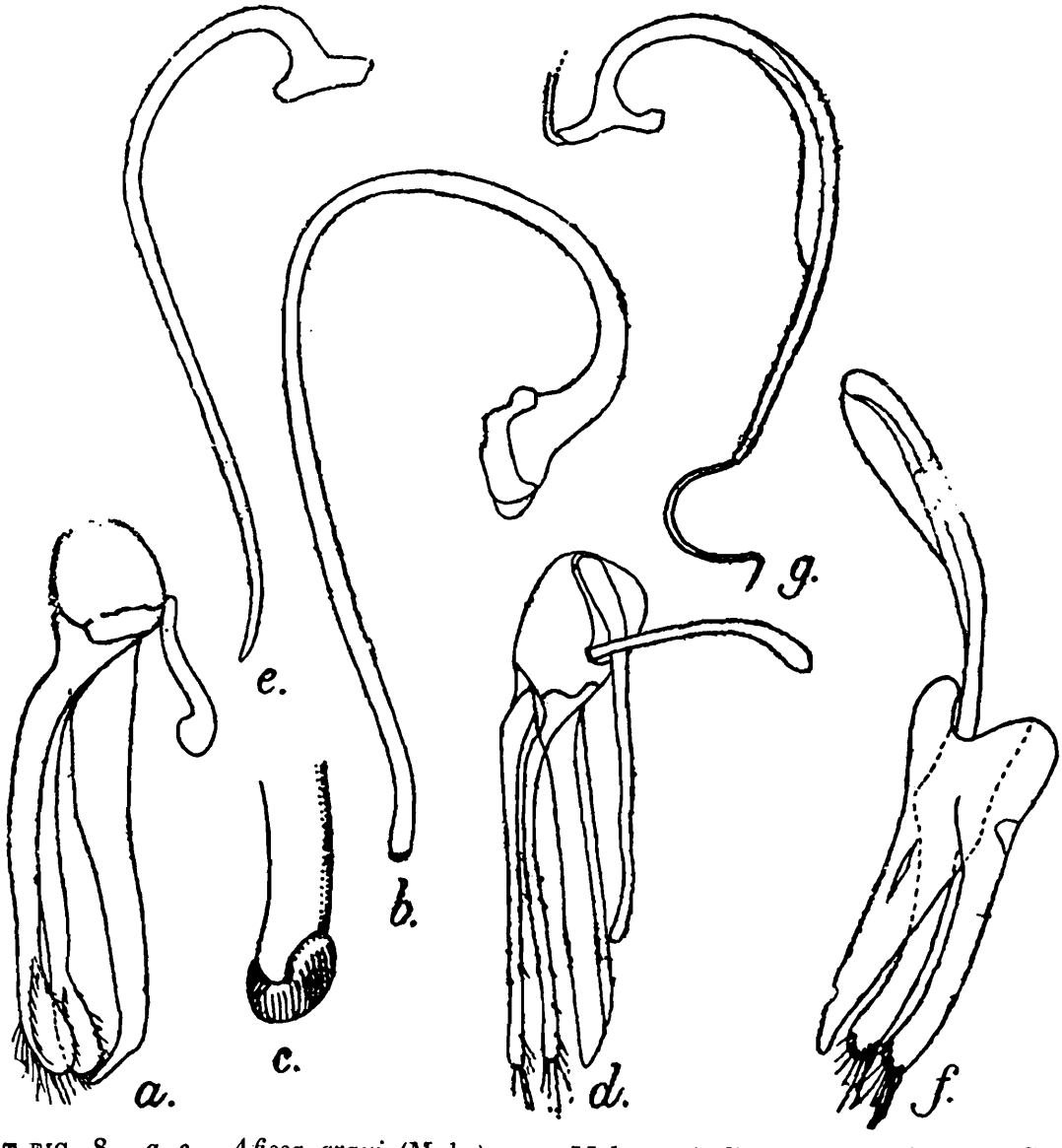
Remarks.—The species is widely distributed in the Oriental Region and also extends to the Australian Region. In India it has been recorded from almost the whole of peninsular India, Bengal, Assam and the Andaman Islands.

Outside India it is distributed in Central China, Sunda and Molucca Islands, New Guinea, Australia, Tasmania and New Zealand. It will be noted that like two other Oriental species, *Menochilus sexmaculata* (F.) and *Coelophora bissellata* Muls., which are widely distributed in South-East Asia, the present species also comes from a place of relatively lower altitude in eastern Nepal, namely an altitude of 2,500 ft. in Marsiandi Valley.

13. **Coccinella septempunctata** Linnaeus

1758. *Coccinella 7-punctata* Linnaeus, *Systema Naturae* (ed. X), p. 365. (Type loc.: Europe.)

Material.—10 examples : Trisuli Valley, 5,000 ft. ; 5,000-7,000 ft. East of Timure, 8,000-10,000 ft. ; Timure, 10,500 ft. ; Syagrubensi, *ca.* 5 000 ft. ; Langtang Khola, 7,000-10,000 ft. (*B. M.-N.E. 1949*).



Text-fig. 8.—*a.-c.*—*Afissa grayi* (Muls.) : *a.* Male genitalia except sipho ; *b.* Sipho ; *c.*—Enlarged apex of sipho. *d.-e.* *Sticholotis amator*, sp. nov. : *d.* Male genitalia except sipho ; *e.* Sipho. *f.-g.* *Oenopia luteopustulata* Muls. ; *f.* Male genitalia except sipho ; *g.* Sipho.

Remarks.—This palaearctic species extends widely beyond the Palaearctic region and is known from the plains of India and the Himalayas already. In three examples the elytral spots are enlarged and confluent.

Tribe SYNONYBHINI

14. **Leis dimidiata** (Fabr.)

1871. *Coccinella dimidiata* Fabr. *Species insectorum*...I, p. 94.

1850. *Leis dimidiate*, Mulsant, *Ann. Soc. Agric. Lyon* III, p. 242.

Material.—1 example : Marsiandi Valley, 2,500 ft. (*B.-N.E. 1950*).

Remarks.—The species is widely distributed in the Himalayas, being known from Kashmir to Assam. Outside India, it is recorded from China and Japan. It is very variable in colour-pattern, several varieties having been described and named. Five varieties are known from Nepal alone. The present example has a humeral black spot on the elytron, the apical two thirds of which is black. It is very much like the variety *humeralis* Weise,[1] described from Dehra Dun.

15. **Ballia gustavi** Mulsant

1853. *Ballia gustavi* Mulsant, *Ann. Soc. linn. Lyon* I, p. 165. (Type loc. : N. India, Himalaya).

Material.—1 example : Rasua, *ca.* 7,000 ft. (*B.M.-N.E. 1949*).

Remarks.—Crotch[2] considered *gustavi* (Text-fig. 3, *d*) to be variety of *Ballia dianae* Mulsant, also from North India, but to the present writer the two appear to belong to two distinct species with different colour-patterns. It must, however, be admitted that various species of this genus form a very compact group. Nearly half a dozen species comprising the genus are similar in general form but differ basically in the schemes of their colour-patterns. The male genitalia of *B. dianae*, *B. eucharis* Muls., *B. gustavi* (Text-fig. 7, *a*, *b*), *B. korschefskyi* Mader, and a few apparently un-named species which the present author has come across, appear to be similar in shape and are not, as far as the preliminary examination shows, very helpful in separating the species. Until more is known of the genus it seems more appropriate that the described species should not be synonymized. *Ballia gustavi* is, therefore, regarded here as a distinct species.

16. **Oenopia luteopustulata** Mulsant

1850. *Oenopia luteopustulata* Mulsant, *Ann. Soc. Agric. Lyon* III, p. 421. (Type loc. : Assam).

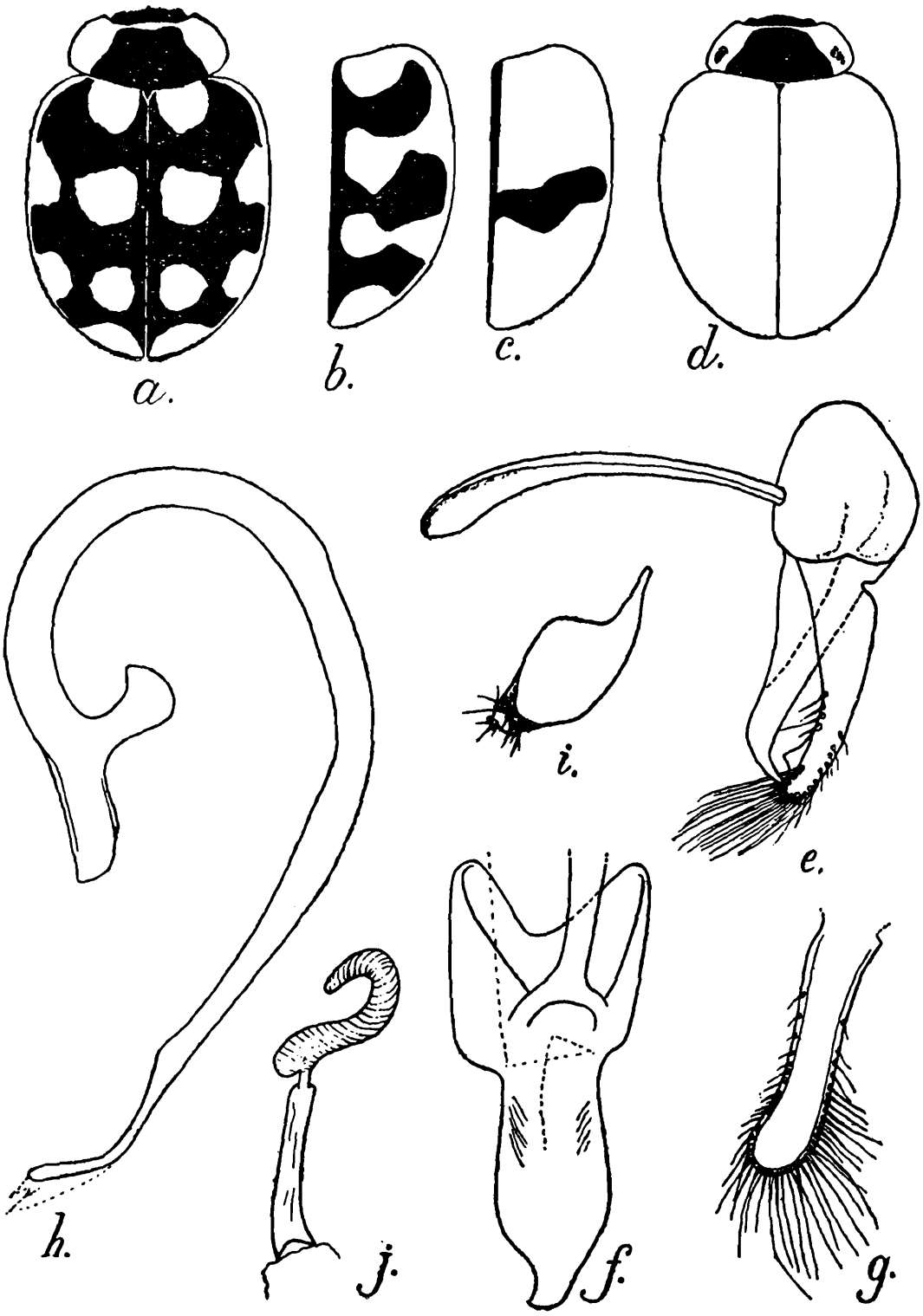
Material.—10 examples: Rasua, 7,000 ft. (1 ex., typical form). Rasua, 7,000 ft. (2 ex.); Indrawati Khola, 6,000 ft.; Sayabrubensi (1 ex. each, var. *thibetina* Mulsant). Rasua, 8,000 ft. ; Thangiet, 6,000 ft. (1 ex. each, var. *pracuae* Weise). Rasua, 7,000 ft. ; Thangiet, 6,000 ft.

---

[1] Wiese, J., *Arch. fur Naturg., Jahrg.* LXXVIII A, 12, p. 113 (1912).

[2] Crotch, G. R., *Revision of the coleopterous family Coccinellidae*, p. 128 (1874).

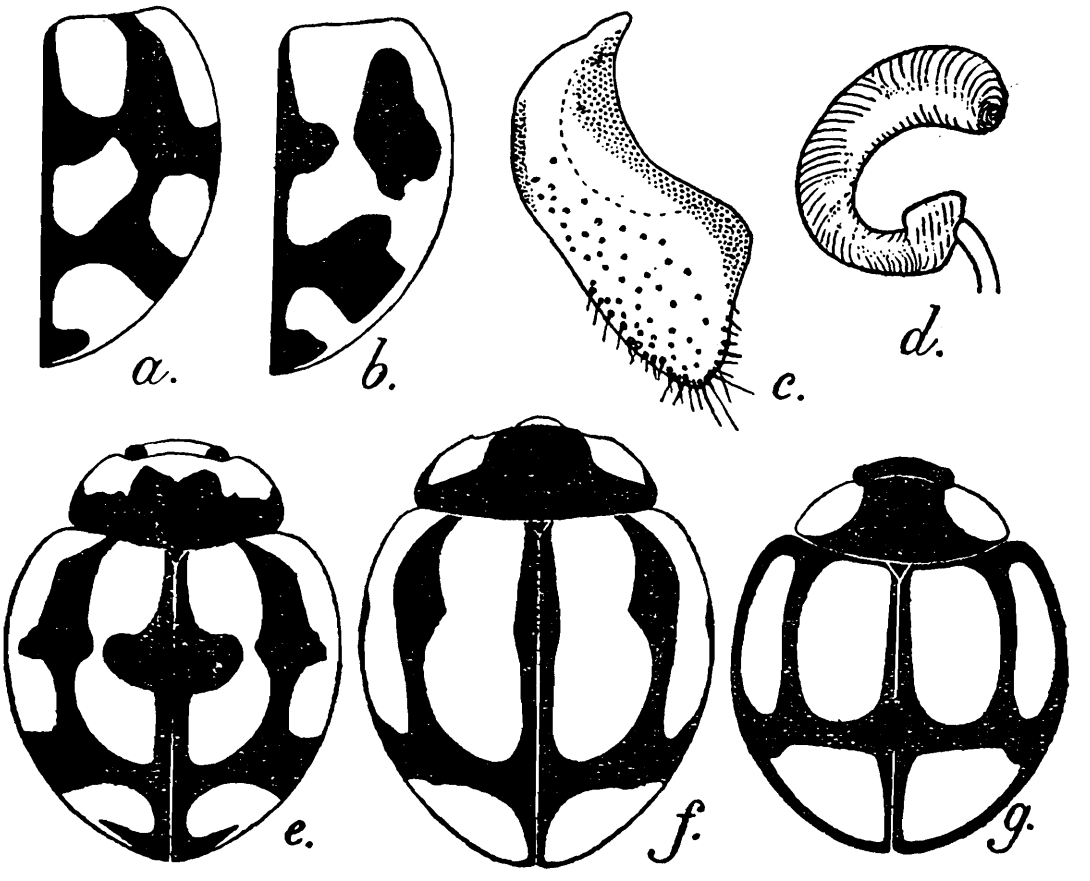
(1 ex. each, var. *nigromaculata* Mader;) Rasua, 7,000 ft. (1 ex., Type, var. *subpedicata*, var. nov.) (all collected by the *B.M.-N.E. 1949*).



Text-fig. 9.—*Coccinella billieti* Muls. *a*. Colour-pattern of typical form; *b*. The same of var. *indica* Weise; c. The same of var. *pruthii*, var. nov.; *e*. Male genitalia except sipho. *f*. Front view of basal piece and penis.; *g*. Parameron; *h*. Sipho; *i*. Female genital plate; *j*. Spermatheca.

Remarks.—The species is widely distributed being known from the Simla and Kumaun Hills; plains of U.P. (Lucknow); Nepal; Sikkim; N. Bengal; Assam, and Andaman Islands; Burma and Tibet. It is also very variable in its colour-pattern. The elytral pattern of the typical form *luteopustulata* is shown in text-fig. 10, *a*; of variety *pracua*

in fig. 10, *b* ; the pronotal and elytral pattern of variety *thibetina* in fig. 10, *e*. The male genitalia siphɔ (*g*) and the rest (*f*) of the specis are shown iv text-fig. 8, *f*. and *g*. and the female genital plate (IX sternite) (*c*) and spermatheca (*d*) in text-fig. 10, *c*, and *d*. *Oenopia luteopustulata* var. *subpedicata*, var. nov. (Text-fig. 10, *f*) is similar to the variety *pedicata* Mulsant[1] but has three pale yellow cells on the elytron instead of the four that are present in *pedicata*. This caused by the disappearance of the external transverse black line which is situated at the basal one-third of the length of the elytron in *pedicata*. In the long series of nearly 70 examples of the species in the collection of the Zoological Survey of India, almost all intermediate stages between the varieties mentioned above are present.



TEXT-FIG. 10.—*a* Elytral pattern of *Oenypia luteopustulata* Muls. (Typical) ; *b*. The same of var. *pracuae* Ws. ; *c*. Female genital plate of *O. luteopustulata* ; *d*. Spermatheca of the same ; *e*. Pronotal and elytral pattern of *O. luteopustulata* var. *thibetina* Muls. *f*. The same of var. *subpedicata*, var. nov ; *g*. The same of *Coelophora sexareata* Muls.

17 **Oenopia sauzeti** Mulsant

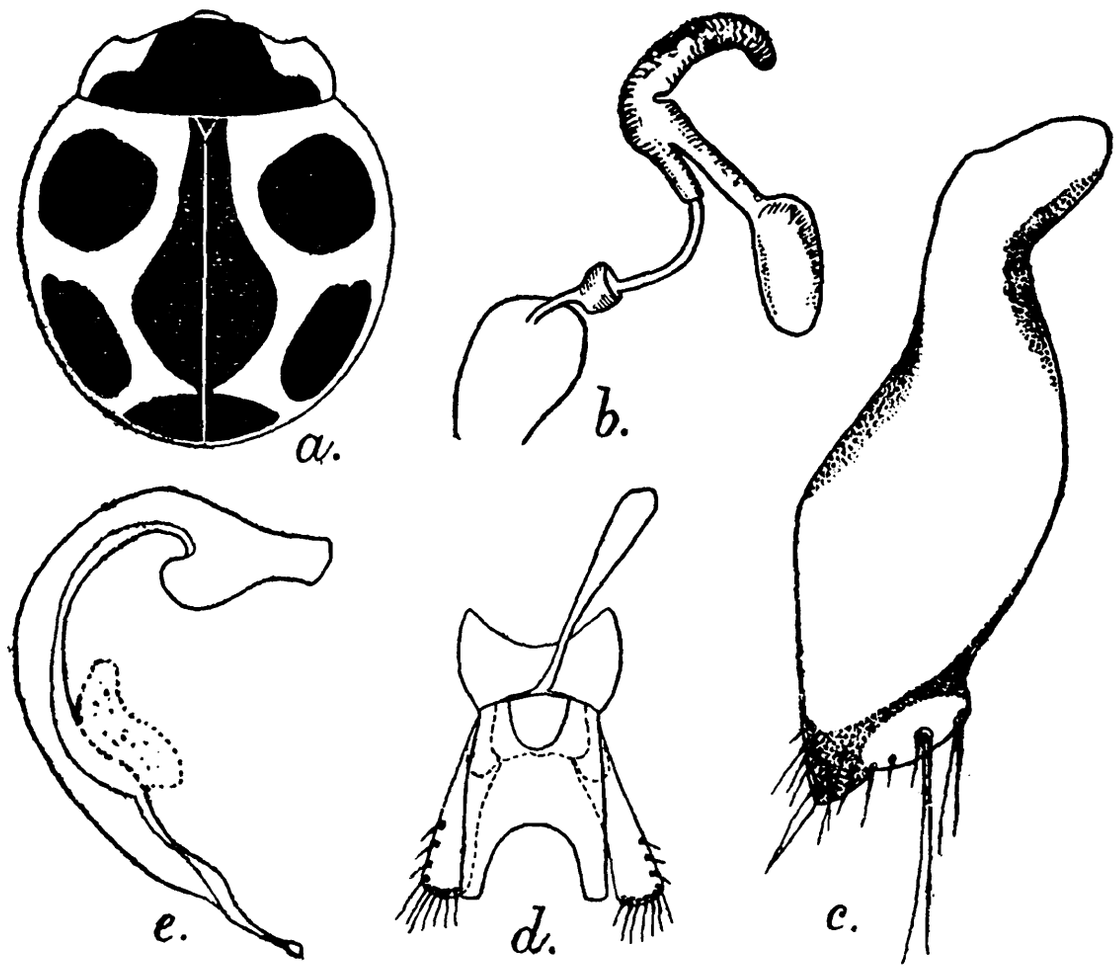
1866. *Oenopia sauzeti* Bulsant, *Monogr. Coccinell.*, p. 281 (*Mem. Acad. Lyon* XVII (1869-1870). p. 55). (Type loc. : India).

Material.—10 examples, Malemchi Gaon, 6,000 ft. ; Rasua, 7,000 ft. ; Indrawati Khola, 6,000 ft. ; Chilime, 6,000-8,000 ft. (*B.M.-N.E. 1949*) ; Marsiandi Valley, 2,500 ft. ; 3,000-5,000 ft. (*B..N.E. 1950*).

Remarks.—Although at the time when this species was first described, the precise locality in India from where the material came was not given, it was latter on recorded from Konbir and Mandir (formerly in Bengal and Burma. The present one is the first record from Nepal. The

[1] Mulsant E., *Ann. Soc. linn. Lyon* I, p. (1853).

species appears to be widely distributed. The Zoological Survey of India contains examples from Murree and Dalhousie Hills (Punjab), Kumaun Hills (U.P.), Sikkim, and Darjeeling District (N. Bengal). The colour pattern in this species does not appear to be very variable (Text-fig. 11,*a*.). The male genitalia (*e*,*d*.) and the female genital plates (*c*.) and also the spermatheca (*b*), are very characteristic.



Text-fig. 11.—*Oenopia sauzeti* Muls.;
a. Pronotal and elytral pattern; *b*. Spermatheca; *c*. Female genital plate; *d*. Male genitalia except sipho; *e*. Sipho.

18. **Coelophora bisellata** Mulsant

1850. *Coelophora bisellata* Mulsant, *Ann. Soc. Agric. Lyon* III, p. 400. (Type loc.: Bengal; Java (*sic*.).)

1956. *Coelophora bisellata*, Kapur, *Rec. Indian Mus.* LXI, p. 335.

Material.—8 examples: Marsiandi Valley, 2,500 ft.; 3,000-5,000 ft.; 6,000 ft. (*B.-N.E. 1950*).

Remarks.—Originally described from Bengal and Java, the species has since been recorded from South India, Malacca, Sumatra, Borneo, the Philippines and New Guinea. The present writer has recently recorded it from Kumaun Hills, Sikkim, Darjeeling and Assam. The examples from Nepal show a rather uniform pattern of spots.

19. **Coelophora sexareata** Mulsant

1853. *Coelo phora sexareata* Mulsant, *Ann. Soc. linn. Lyon* I, p. 181. (Type loc.: N. India).

1874. *Coelophora sexareata*, Crotch, *Revision of the coleopterous family Coccinellidae*, p. 157.

1894. *Coelophora sexareata*, Gorham, *Ann. Soc. ent. Belg.* XXXVIII, p. 209.

1895. *Coelophora sexareata*, Gorham, *Ann. Mus. Civ. Genova* XXXIV, p. 685.

1932. *Coelophora sexareata*, Korschefsky, *Coleopt. Cat., Berl.* XVI, 120, p. 296.

1956. *Coelophora sexareata*, Kapur, *Rec. Indian Mus.* LII, p. 334.

Material.—1 example: Thangiet, 6,000 ft. (*B.M.-N.E. 1949*).

Remarks.—First described from 'N. India', the species was further recorded from West Yunann by Crotch, from Konbir and Mander (formerly Bengal, now Bihar) and Burma by Gorham, and from N. Bengal, Assam and Sikkim by the present writer. The pronotal and elytral patterns of the species are shown in Text-fig. 10, *g*. It will be noted that the external border of the elytron is black throughout.

20. **Menochilus sexmaculata** (Fabr.)

1781. *Coccinella sexmaculata* Fabricius, *Species insectorum*, p. 96.

1850. *Chilomenes sexmaculata*, Mulsant, *Ann. Soc. Agric. Lyon* III, p. 144.

1932. *Chilomenes sexmaculata*, Korschefsky, *Coleopt. Cat., Berl.* XVI, p. 120.

Material.—1 example: Marsiandi Valley, 2,500 ft. (*B.-N.E. 1950*).

Remarks.—This Oriental species is found commonly in the plains of India but sometimes extends to the foot-hills. The present example is the first one to be recorded from Nepal and comes from the eastern part and from low altitude of 2,500 ft. only. Outside India, Korschefsky gives its distribution as the Philippines, Borneo, Celebes, Sumatra, Java, Molucca and New Guinea. The species is very variable but the example mentioned above has typical elytral pattern, namely, two black, wavy bands and a subapical roundish spot.

Tribe CHILOCORINI

21. **Chilocorus rubidus** Hope

1831. *Chilocorus rubidus* Hope (*in* Gray), *Zoological miscellany*, p. 31. (Type loc.: Nepal).

1956. *Chilocorus rubidus*, Kapur, *Rec. Indian Mus.* LII, pp. 262-264.

Material.—1 example: Nepal (Precise locality not given) (*T. D. Bourdillon ; B.-N.E. 1952*).

Remarks.—Originally known from Nepal, the species is widely distributed in North India, China, Japan, Russia, etc. A revised description and notes on its taxonomy and biology have been recently given by the present writer.

22. **Exochomus himalayensis**, sp. nov.

Body shortly oval, convex (Text-fig. 6, *a*.), black throughout except for the elytra which are reddish testaceous with black markings as follows: each elytron has an elongate, moderately wide, black, discal

band which is a little longer than one-half of the length of the elytron ; running along the apical seven-eighth of the length of the suture is another black border which is distinctly wider near its base and at apex and together with the opposite border on the other elytron, it gives the appearance of a wine-glass as shown in text-fig. 6, *a*. Elytral epipleura which are elsewhere reddish testaceous, are black or piceous near the apex. In one example (Nepal : (Precise locality not given), *T. D. Bourdillon; B.-N.E. 1952*) the discal and the sutural bands meet at their basal ends.

Head with very fine, rather sparse and shallow punctures, pubescence very sparse and greyish. Pronotum with similar and slightly coarser punctures and with very sparse, short and greyish pubescence towards the lateral margins. Scutellum small, triangular and with four fine punctures. Elytra with fine, impressed and fairly close punctation ; spaces between the punctures smooth ; glabrous throughout. Underside of the body with sparse to rather sparse, fine and impressed punctation and with very sparse, short and greyish pubescence. Male a little smaller than the female.

Length 3·0—3·2 mm. ; width 2·3—2·5 mm.

Holotype.—Nepal : Timure, 10,500 ft. (*B.M.-N.E. 1949*), a male in the British Museum (N.H.) ; genitalia mounted in Canada balsam and attached to the specimen.

Allotype.—A female, with the same data as the holotype, also deposited in the B.M. (N.H.).

Paratypes.—Seven in number, both sexes, with the same data as the holotype, in the B. M. (N.H.) and the Z.S.I. One more example with partly confluent discal and sutural black bands on the elytra (*vide supra*) returned to Dr. A. M. Easton.

Remarks.—The species is easily distinguished by its characteristic elytral pattern and shortly oval body and by its punctation and pubescence from other species of the genus. *Exochomus uropygialis* Mulsant and *Exochomus lituratus* Gorham, which are also known from the Himalayas and have testaceous elytra are distinguishable by their coarse and impressed punctation and short and subdepressed pubescence which is present all over the surface of the elytra. In *E. uropygialis* only the apex of the elytra is black while in *E. lituratus* there is, in addition, a long, subdiscal black streak. Moreover, in these two species the spaces between the elytral or other punctures are not very smooth but mat.

Tribe Sticholotini

23. **Sticholotis amator,** sp. nov.

Body subhemispherical, glabrous. Head and pronctum reddish testaceous, scutellum and elytra piceous except for the moderately broad, reddish testaceous external border of the elytra. Underside testaceous except for the fumeus meso- and metasternum.

Head very finely, rather sparsely and uniformly punctate. Pronotum with coarser and closer punctures which are more impressed towards the lateral margins of the pronotum and less so towards its base. Scutellum very small, with only a couple of fine punctures. Elytra with coarse and moderately close punctures which are similar to those on the pronotum but rather less impressed, uniformly distributed and without an indication of their being arranged in lines ; external border of elytra narrowly margined. Prosternum with two subparallel carinae enclosing a subquadrangular flat area ; punctation on the underside coarse but shallow and sparse. Male genitalia (Text-fig. 8, *d.*, *e.*) with a long and narrow sipho (*e*) and with the penis nearly as long as the paramera and slightly narrowed near the apex which is broadly conical (*d*). Female unknown.

Length 2·5 mm. ; width 2·1 mm.

Holotype.—NEPAL : Rasua, 7,000 ft. (*B.M.-N.E. 1949*) ; male genitalia mounted in Canada balsam and attached to the specimen ; deposited in the British Museum (N.H.).

Remarks.—This species is easily distinguished from other species by its distinctive colour-pattern and the nearly hemispherical form of the body. In Korschefsky's catalogue[1] *Jauravia limbata* Mots. has been included in the genus *Sticholotis* but the present writer[2] had transferred it back to *Jauravia*, the species of which are pubescent. The present species resembles *J. limbata* in colouration but is at once separated from it by the absence of pubescence.

Tribe ASPIDIMERINI

24. **Cryptogonus trioblitus** (Gorham)

1895. *Aspedimerus trioblitus* Gorham, *Ann. Mus. Stor. nat. Genova* XXXIV, p. 690. (Type loc. : Burma).

1949. *Cryptogonus trioblitus*, Kapur, *Trans. R. ent. Soc. Lond.* XC, pp. 101-102.

Material.—1 example : Tate, 9,300 ft. 12. vi. 1952 (*T. D. Bourdillon ; B.-N.E. 1952*).

Remarks.—Originally known from Burma, this species has been lately recorded from Kumaun Hills and Assam. The present record from Nepal fills up a gap in its distribution.

Tribe SCYMNINI

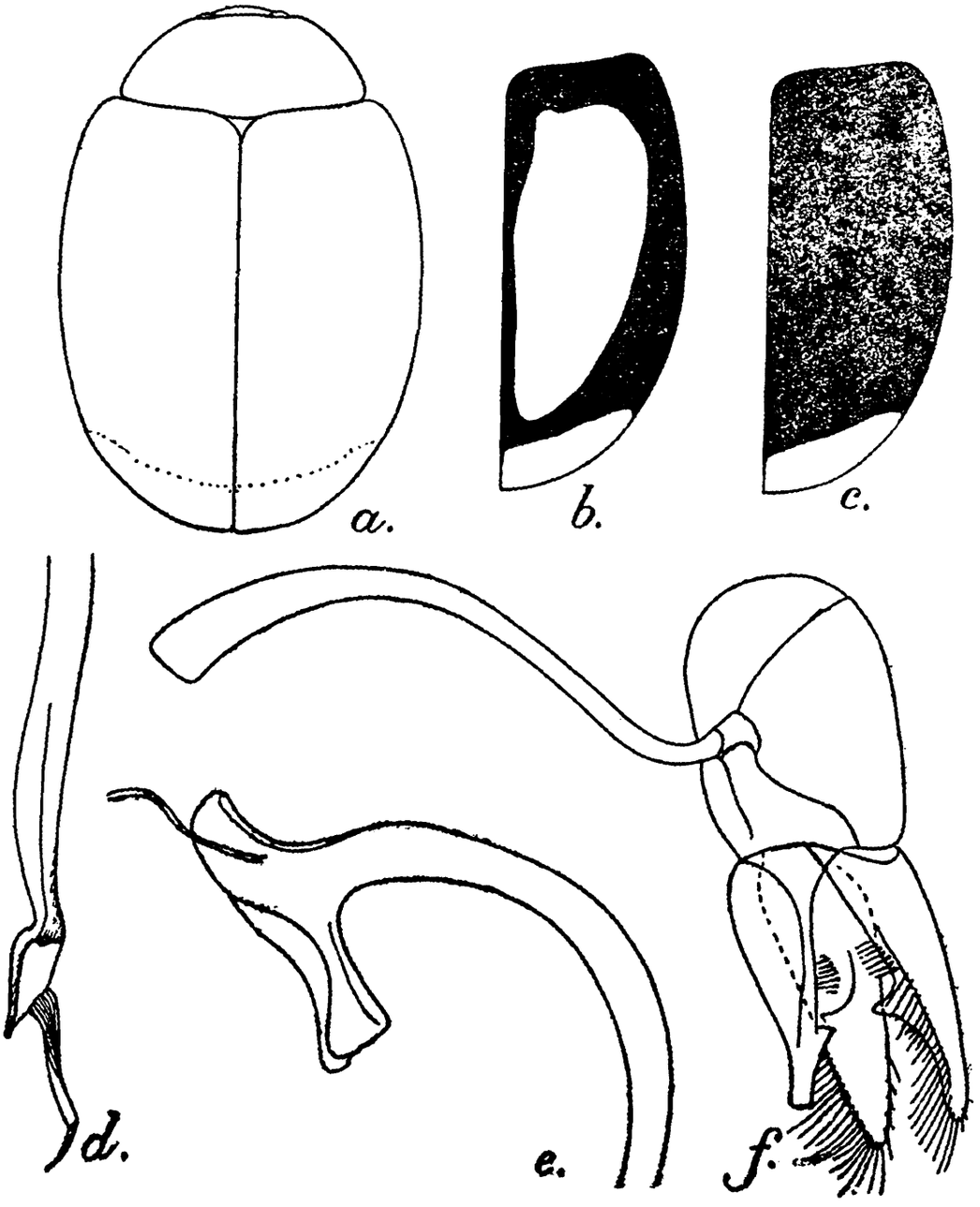
25. **Pullus bourdilloni,** sp. nov.

Body oblong oval (Text fig. 12, *a.*), convex, with rather indistinct humeral calli. Colouration very variable : of the four examples two have reddish testaceous head, pronotum and elytra, one has black border along the elytral margin, another is mainly black (excluding the apex in the last two cases). Detailed description of colouration is as follows : (1) *Typical*—Head, antennae and mouth parts reddish testaceous, eye

[1] Korschefsky, R., *Coleopt. Cat., Berl.* XVI, 118, p. 212 (1931).

[2] Kapur, A. P., *Ann. Mag. nat. Hist.* (11) XIII, pp. 78, 82-83 (1947).

shining yellowish grey, pubescence yellowish grey. Pronotum reddish testaceous except towards the anterior angles where it is testaceous, pubescence greyish. Scutellum fuscous red or piceous. Elytra reddish testaceous except for the apical one-seventh part which is testaceous, pubescence greyish. Legs and underside reddish testaceous except for the meso- and metasternum and first two or three abdominal sternites



Text-fig. 12.—*Pullus bourdilloni*, sp. nov.

a. Outline of the typical (holotype) form ; *b.-c.* Elytral patterns of two varieties ; *d.* Apex of sipho ; *e.* Siphonal capsule ; *f.* Male genitalia except sipho.

which are piceous to fuscous. (2) The next variety has a pattern similar to the above except that the scutellum is black and that the elytra are bordered black along the base, the suture and the external margin except near the apex which remains testaceous (Text-fig. 12, *b.*). On the underside the meso- and metasternum and the elytral epipleura are black and the first three abdominal sternites black to piceous. (3) The

third variety of patterns is mainly black. Front and underside of the head are dark piceous, eyes shinning grey but black in the centre, antennae and mouth-parts fuscous red. Pronotum piceous to black except for the fuscous red anterior angles and border. Scutellum black. Elytra black (Text fig. 12, c.) except for the apical one-seventh part which is testaceous, the shape of the latter area on the elytron is almost oval. Underside dark piceous to black except for the narrow, testaceous pronotal epipleura, the dark testaceous tibiae, tarsii and the external margins of the apical abdominal sternite. In other structural details, the four examples agree with one another, the following being further description from the holotype.

Head with very fine, rather impressed, close and uniform punctuation on the front, pubescence short, sparse and grey. Pronotum emarginate anteriorly, anterior angles acute, lateral margins slightly rounded, base feebly margined ; punctuation and pubescence similar to that on the head. Scutellum triangular, with the basal angles less sharp, with about a dozen fine and close punctures. Elytra with the shoulder-angles rounded, external margin very narrowly bordered, apex subrounded ; punctuation close, fine to moderately fine generally shallow but with a number of impressed punctures distributed irregularly all over but are more in number near the base and suture ; pubescence fine, greyish, slightly longer than that on the head, directed posteriorly and towards the suture on the basal half and towards the external margin in the apical half of the elytron. Underside with the prosternal carinae gradually converging near the anterior margin of prosternum which is uniformly and finely punctate, meso-and metasternum with coarser and denser punctures, the remainder of the underside with finer punctures ; pubescence greyish, depressed, rather sparse and slightly shorter than that on the dorsal surface. Abdominal lines semi-circular, almost reaching the distal margin of the sternute. The male genitalia (Text-fig. 12, *d*,. *e*., *f*.) with the basal piece and paramera well developed, the latter characterized by a median conical projection and a group of short blunt hairs (*f*), penis wedge shaped but with a blunt, truncate apex ; spiho with well developed siphonal capsule (*e*) pointed and curved apex (*d*).

Length 2·5 mm. ; width 1·75 mm.

Holotype.—NEPAL : Those, *ca.* 6,000 ft., 9. iv. 1952 (*T.D. Bourdillon* ; *B. N. E. 1952*) ; a male ; genitalia dissected and mounted in Canada balsam and attached to the specimen ; in the British Museum (N.H.)

Paratypes.—NEPAL : Namche (*ca.* 12,000 ft.) to Tate (*ca.* 9,300 ft.) 10. vi. 1952 (*T D. Bourdillon* ; *B. N. E. 1952*), 1 example, reddish testaceous in colour like the holotype. Tate (*ca.* 9,300 ft.) 12. vi. 1952 (*T.D. Bourdillon* ; *B. N. E. 1952*) one male, example with elytra margined black ; 11. vi. 1952 (*T D. Bourdillon* ; *R.-N E. 1952*), example that is mostly black.

Remarks.—Species of the genus *Scymnus* (*sensu lato*) of which *Pullus* and *Nephus* were first described as subgenera, are distinguished from one another with difficulty and as far as the Oriental species are concerned-a thorough revision of the genus is badly required especially as the

species are of considerable economic importance as predators of plant-lice and mealy-bugs. It seems almost a lucky coincidence that markedly different varieties described above, should be present in a small series comprising four examples. Hitherto no example of the tribe *Scymnini* was known from Nepal and very few species of the tribe are recorded from the Himalayas. *Pullus victoris* (Mots.) which is known from the latter area differs from *P. bourdilloni* in having a less narrow body and a large black spot covering the middle of the elytra and the pronotum. *Pullus pallidicollis* Muls. *Pullus apiciflavus* (Mots.) and *Pullus pyrochellus* Muls., have very different colour-patterns than *P. bourdilloni*, *Pullus. xerampelinus* Muls. is smaller, more roundish and throughout reddish testaceous or testaceous, unlike the typical form described above which is mostly piceous on the underside. The male genitalia in the different species mentioned above are very distinctive in each case.

26. **Pullus pyrochellus** Mulsant

1153. *Scymnus* (*Pullus*) *pyrochellus* Mulsant *Ann. Soc. linn. Lyon* 1, p. 281. (Type loc. : Calcutta).

Material.—1 example : Nepal (no precise locality mentioned) (*T. D. Bourdillon ; B.-N. E. 1952*).

Remarks.—The example mentioned above compares well with the material of the species from Calcutta, the type locality. The species, though fairly common in Calcutta as a predator of certain mealy-bugs, has hitherto not been recorded from elsewhere.

Summary

The paper contains a report on 26 species of Coccinellidae collected by various British expeditions to Nepal between 1949 and 1952, and also notes on certain related material in the collections of the Zoological Survey of India. Geographical distribution of all the 41 species known from Nepal is given. Of these, 13 species are known only from Nepal, 15 are distributed in the rest of the Himalayas, 4 others are distributed widely in the Oriental region and the remaining 9 are of Palaearctic origin.

Of the 26 species under report 5 are new, 16 are being recorded for the first time from Nepal and 5 others are such that have been already known from there.

Two new genera, *Afissula* and *Afidentula*, are described. The five new species described are : *Afisa nepalensis*, *Afissula rana*, *Exochomus himalayensis*, *Sticholotis amator* and *Scymnus bourdilloni*. In the case of several species which were represented by long series of examples, variability of colour pattern has been described in detail and certain varieties named as *Coccinella billieti* var. *pruthii* var. nov. ; *C. billieti* var. *testacea*, var. nov. and *Oenopia luteopustulata*, var. *subpedicata*, var. nov. *Epilachna marginicollis* (Hope) has been transferred to *Afissa* Dieke and *Epilachna manderstjernae* Muls. and *Epilachna minima* Gorham, likewise transferred to *Afidentula*, gen. nov.