ZOOLOGICAL RESULTS OF THE INDIAN CHO-OYU EXPEDITION (1958) IN NEPAL

PART 9.—INSECTA

By

A. P. KAPUR

Deputy Director, Zoological Survey of India, Calcutta

(With 5 Text-figures and 2 Plates)

CONTENTS

I—INTRODUCTION

The collection of insects under report comes from altitudes between 700 m. and 5,334 m. and contains a little over one thousand specimens belonging to 79 species of the following ten different orders of insects.

Orders	No. of species represented
I—Ephemeroptera	4
II—Plecoptera	1
III—Orthoptera	16
IV—Dermaptera	1
V—Hemiptera	8
VI—Lepidoptera	2
VII—Trichoptera	1
VIII—Diptera	5
IX—Hymenoptera	8
X—Coleoptera	33
Total	79

In spite of its numbers, the collection represents only a fraction of the proverbially rich insect fauna of the Himalaya. It has further revealed that many species are more widely distributed than had been known previously. Over forty species are recorded for the first time from Nepal, several of which also constitute first records from the Himalaya.

Another interesting feature of the collection is that a few species are represented by long to fairly long series of examples showing wide range of variation in their colour patterns. An opportunity has been taken to record, and illustrate where possible, the variations in these species. The Lygaeid (Hemiptera), *Graptostethus quadratomaculatus* (Kirby) (Text-fig. 1), which is represented by 109 examples varied in length between 7·75 mm. and 9·35 mm., but showed a good degree of uniformity in the colour-pattern except for the pronotal spots which varied considerably in size. The seven-spotted lady-bird beetle, *Coccinella septempunctata* L. (Coccinellidae, Coleoptera), which is represented by 198 examples, contains as many as 44 examples (approximately 22·2 per cent.) which show confluence of two or more elytral spots. Although another lady-bird beetle, *Adonia variegata* (Goeze), is represented in the collection by only 10 examples, it shows six different elytral patterns as illustrated in text-figure 2. The Meloid (Coleoptera), *Mylabris macilenta* Marseul (Text-fig. 3), which is represented by a little over 500 examples, measures between 9·25 mm. and 13·25 mm. in length and shows considerable variation in the elytral patterns, six of which are shown in text-figure 4. Dissection of the male genitalia (Text-fig. 5) of a large number of examples of this species did not show any variation and apparently confirmed that the examples with different patterns belonged to the same species.

Four species of weevils (Curculionidae, Coleoptera) have been described as new. Two of these belong to the genus *Hyperomias* Marshall, a genus which was first described from the Himalaya and of which only one species was hitherto known. The other two species belong to the palaearctic genus *Dactylotus* Schon. of which the hitherto known species come mostly from Central Asia and North China.

The material of various species recorded in the paper has been arranged in the same manner as in other papers in the series. For further details of localities, etc., the reader is referred to the introductory paper by Dr. A. K. Datta. It may, however, be mentioned that the abbreviation " Sta. No. " stands for the number given to the station or locality by the collector of the material in his field book ; likewise " ex. " and " exs. " stand for example and examples, respectively, of the species collected. The expression " Z. S. I. collection " in the text stands for the National Zoological Collections at the Zoological Survey of India, Calcutta.

I am grateful to Dr. M. L. Roonwal, Director, Zoological Survey of India, for affording me the opportunity of studying the collections. I am also indebted to Mr. E. O. Pearson, Director, Commonwealth Institute of Entomology, London, for help in the identification of some of the species, especially of Diptera and certain Coleoptera. My thanks are also due to Dr. A. K. Datta, the collector of the material under report.

II—SYSTEMATIC ACCOUNT

1 Order EPHEMEROPTERA

Family BAETIDAE

Genus **Baetis** Leach

1815. *Baetis* Leach, *Brewster's Edin. Ency.*, **9**(1), p. 137.

Baetis is a very widely distributed genus of which several species are known from various parts of India and Nepal. However, from the latter country, it is recorded from the nymphs only (*vide* Ueno[1]). Geographical distribution and a key to Indian species (based on imagos), including several from other parts of the Himalaya are given by Kapur and Kripalani [2]. The material of this genus under report consists of nymphs only and apparently belongs to two species. Examples of *Baetis* sp. I referred to below are characterised by the presence of three caudal filaments, while those of *Baetis* sp. II are with two caudal filaments each.

1. **Baetis** sp. I

Material.—3 nymphs, Sta. No. 3A, a stream *ca.* 3·2 km. N. of Dolaghat, 710 m., 28. iii. 1958.

Remarks.—The three nymphs under report resemble the nymphs of *Baetis* sp. 1, described by Ueno (1955, pp. 303-305), on account of the presence of three filaments. These are, however, different from Ueno's material in the colouration and pattern on the abdominal tergites. The pairs of elongate dark patches on the 4th, 5th and 6th tergites present in Ueno's examples are entirely wanting in our material. The 7th gill in Ueno's examples is much smaller than the other gills whereas in our material the difference in size is not so marked.

2. **Baetis** sp. II

Material.—20 exs., nymphs only, Sta. No. 48, on way to Jumbesi, 2,700 m., 1 vi. 1958.

Remarks.—The individuals in this lot are in various stages of development, *i.e.*, smaller to larger nymphs are present, but are in a poor state of preservation. Although resembling *Baetis* sp. 2 of Ueno's (1955, p. 305) in having only two caudal filaments each, the examples under report are easily distinguishable from the latter by the pattern and colouration of the thoracic and abdominal tergites, and other morphological features.

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[1]UENO, M. 1955. *Fauna and flora of Nepal Himalayas, May fly nymphs*, pp. 301-316, 10 pls., Kyoto (Kyoto University).

[2]KAPUR, A. P. and KRIPALANI, M. B. 1962. *Rec. Indian Mus.*, **59**, pp. 183-221.

Family EPHEMERELLIDAE

Genus **Ephemerella** Walsh

1862. *Ephemerella* Walsh, *Proc. Acad. nat. Sci. Philad.*, p. 377.

This holarctic genus was recorded earlier from Nepal by Ueno (1955) on the basis of nymphal material. Hora[1] and Traver[2] had also recorded it on the basis of nymphs from the North-West Himalaya, and Kapur and Kripalani (1962) described a species of it, on the basis of an imago, from the Kulu Valley in the Punjab. The material under report consists of nymphs only.

3. **Ephemerella** sp.

Material.—6 exs., nymphs only, Sta. No. 3A, a stream *ca.* 3·2 km. N. of Dolaghat, 710 m., 28. iii. 1958.

Remarks.—These specimens are characterised by the presence of a rather broad fore-femur having a number of spines, and by the paired dorsal spines which are directed backwards on the abdominal tergites 3 to 8 inclusive. The latter spines gradually increase in length successively from the 3rd to the 7th tergite. In contrast, the nymphs of *Ephemerella* sp. described by Ueno (1955, p. 302) do not possess a broad fore-femur and have paired spines upto the 9th tergite.

Family HEPTAGENIIDAE

Genus **Iron** Eaton

1883. *Iron* Eaton, *Trans. Linn. Soc. Lond.*, (2) *Zool.*, **3**, pl. 24, fig. 44 ; 1885. *ibid*, pp. 235, 236, 244.

This is another holarctic genus which is known from the Himalaya so far from the nymphs only. Hora (1930) first recorded it from the " Himalaya " and Khasi Hills but did not describe the material in any detail. Traver (1939), and Kapur and Kripalani (1962) described the nymphs from Kashmir and Kulu Sub-Division in the Punjab, respectively. The genus is being recorded for the first time from Nepal.

4. **Iron** sp.

Material.—21 exs., Sta. No. 3A, a stream *ca.* 3·2 km. N. of Dolaghat, 710 m., 28. iii. 1958.

Remarks.—These nymphs have two caudal filaments and a triad of stout spines at the tip of galea-lacinia, but do not have a median row of long hairs on abdominal tergites. These are, however, distinct from the nymphs from Kulu, described by Kapur and Kripalani (1962, p. 212), on account of the conspicuous pattern on the abdominal sternites and the absence of submedian spines on the abdominal tergites. In the material from Kulu referred to above, and from Kashmir (Traver, 1939), the paired submedian spines on the abdominal tergites are present and the conspicuous pattern on the sternites is absent.

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[1]HORA, S. L. 1930 *Phil. Trans. R. Soc.*, London (B), **218**, pp. 171-282.
[2]TRAVER, J. R. 1939. *Ann. Mag. nat. Hist.*, London (11) **4**, pp. 32-56.

II. Order PLECOPTERA

Family NEMOURIDAE

5. **Rhabdiopteryx lunata** Kimmins

1946. *Rhabdiopteryx lunata* Kimmins, *Ann. Mag. nat. Hist.*, **13**(11), pp. 722-724.

1958. *Rhabdiopteryx lunata* Kimmins, Jewett, *Proc. nat. Acad. Sci. India*, **28**(4), p. 328.

Material.—(i) 1 ex., Sta. No. 18, on way to Thyangboche, 4,150 m., 17. iv. 1958. (ii) 1 ex., Sta. No. 19, on way to Pangboche, 4,572 m., 20. iv. 1958. (iii) 6 exs., Sta. No. 37, on way to Dob, 5,000 m., 15. v. 1958.

Remarks.—Originally recorded from Rongbuk in the Eastern Himalaya, this species appears to be widely distributed as it was collected by the present writer from the North-West Himalaya, *i.e.*, Lahaul Valley in the Kulu Sub-Division in the Punjab, and recorded by Jewett (1958).

III. Order ORTHOPTERA

Family TETTIGONIIDAE

6. **Mecopoda elongata** (Linnaeus)

1767. *Tettigonia elongatus* Linnaeus, *Syst. Nat.*, **1**(2), p. 696 (12th ed.).
1873. *Mecopoda elongata* (Linn.), Walker, *Cat. Derm. Salt., B. M.*, Part 2, p. 457.

Material.—1 ex., Sta. No. 23A, Gorashan, 5,334 m., 25. iv. 1958.

Remarks.—Originally described from India, Walker (*loc. cit.*) recorded it further from Ceylon, China and Sarawak. In the Z. S. I. collection the species is represented from Assam, Uttar Pradesh (Bijnor Dist.) and Orissa (Chilka Lake) in India, and also from Ceylon and North Borneo.

Family GRYLLIDAE

7. **Gryllus bimaculatus** De Geer

1773. *Gryllus bimaculatus* De Geer, *Mem. Ins.*, **3**, p. 521.
1936. *Gryllus bimaculatus* De Geer, Chopard, *Ceyl. J. Sci.*, B, **20**, p. 22.
1954. *Gryllus bimaculatus* De Geer, Sandrasagara, *J. Bombay nat. Hist. Soc.*, **52**, p. 544.

Material.—1 ex., Sta. No. 3A, near a stream *ca.* 4·8 km. N. of Dolaghat, 710 m., 28. iii. 1958.

Remarks.—Chopard (1936) remarks that this species is one of the most common and widely spread Gryllids in all the tropical and subtropical regions of Africa and Asia. In the Z. S. I. collection, material from the Punjab and Darjeeling (West Bengal) is present. The two yellow marks at the base of the elytra are very small in the example before me which otherwise resembles the typical form of the species.

8. **Gryllulus mitratus** Burmeister

1838. *Gryllus mitratus* Burmeister, *Handb. Ent.*, **2**, p. 734.
1900. *Gryllus mitratus* Burm., Bolivar, *Ann. Soc. ent. Fr.*, **68**, p. 795.
1936. *Gryllus mitratus* Burm., Chopard, *Ceyl. J. Sci.*, **20**, p. 24.

Material.—1 ex., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—This species is common in the Oriental Region. The Z. S. I. collection contains examples from Java (Type-locality) and Sitong Ridge (*ca.* 1,432 m.), Darjeeling district. The present record from Nepal from an altitude of 3,600 m. is, therefore, of interest.

Family ACRIDIDAE

9. **Acrida gigantea** (Herbst)

1794. *Truxalis giganteus* Herbst, in : Fuessly, *Arch. Ins.*, p. 191, pl. 3, fig. 6.
1910. *Acrida gigantea* (Herbst), Kirby, *Syn. Cat. Orth.*, **3**(2), p. 93.
1914. *Acrida gigantea* (Herbst), Kirby, *Fauna Brit. India, Orthoptera* (*Acrididae*), p. 98.

Material.—(i) 1 ex., Sta. No. 17, round about Namche Bazar, 3,500 m., 14. iv. 1958. (ii) 1 ex., Sta. No. 48, Jumbesi, 2,700 m., 1.vi.1958.

Remarks.—Kirby (1914) gives its distribution as " Nepal, Africa " In the Z.S.I. collection the material from India comes from Varanasi (U. P.) and the vicinity of Mettur Dam, South India. Both the examples under report are females.

10. **Acrida exaltata** (Walker)

1859. *Truxalis exaltata* Walker, *Ann. nat. Hist.*, (3)**4**, p. 222.
1910. *Acrida exaltata* (Walk.), Kirby, *Syn. Cat. Orth.*, **3**(2), p. 94.
1914. *Acrida exaltata* (Walk.), Kirby, *Fauna Brit. India, Orthoptera* (*Acrididae*), p. 99.

Material.— 4 exs. (including 3 nymphs), Sta. No. 48, on way to Jumbesi, 2,700 m., 1. vi. 1958.

Remarks.—Recorded earlier from Ceylon, the species is fairly widely distributed, there being many examples of it from Mysore, Bombay, Bengal, and Assam in the Z.S.I. collection. The mature example from Nepal mentioned above is a female.

11. **Acridella nasuta** (Linnaeus)

1758. *Gryllus Acrida nasutus* Linnaeus, *Syst. Nat.*, (ed. 10), **1**, p. 427.
1914. *Acridella nasuta* (Linn.), Kirby, *Fauna Brit. India, Orthoptera* (*Acrididae*), p. 100.

Material.—(i) 1 ex., Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958. (ii) 1 ex. (nymph), Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—This is a widely distributed species which is recorded from South Europe, Africa, Western Asia, Baluchistan (West Pakistan), India, Ceylon and Burma (*vide* Kirby, 1914). In the Z.S.I. collection examples from Bengal and Assam, among the Indian material, are present. The two examples mentioned above are first records from Nepal. The one from Namche Bazar area is a female of medium size, while the other is apparently a nymph of the same species.

12. **Phlaeoba infumata** Brunner von Wattenwyl

1893. *Phlaeoba infumata* Brunner von Wattenwyl, *Ann. Mus. Civico Storia nat.*, Genova, (2)**13**, p. 124.

1914. *Phaleoba infumata* Brunn., Kirby, *Fauna Brit. India, Orthoptera (Acridiidae)*, p. 103.

Material.—1 ex., Sta. No. 44, on way to Chama, 3,000 m., 27.v.1958.

Remarks.—Previously recorded from Burma (Pegu ; Tenasserim), this is the first record from Nepal or the Himalaya. The example before me is a female.

13. **Trilophidia annulata** (Thunberg)

1815. *Gryllus annulata* Thunberg, *Mem. Acad. Petersb.*, **5**, p. 234.

1873. *Trilophidia annulata* (Thunbg.), Stal, *Recencio Orthopterorum*, **1**, *Acridoidea*, p. 132.

1910. *Trilophidia annulata* (Thunbg.), Kirby, *Syn. Cat. Orthoptera*, 3(2), p. 244.

1914. *Trilophidia annulata* (Thunbg.) *Fauna Brit. India., Orthoptera (Acridiidae)*, p. 149.

Material.—(i) 2 exs., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958. (ii) 1 ex., Sta. No. 48, on way to Jumbesi, 2,700 m., 1.vi. 1958.

Remarks.—This species is widely distributed in different parts of the Oriental Region, having been previously recorded from Ceylon, India, China, Japan, Java, Philippines, etc. In the Z.S.I. collection examples from Sikkim are also present. It is, however, being recorded from Nepal and from such high altitudes for the first time.

14. **Trilophidia turpis** (Walker)

1870. *Epacromia turpis* Walker, *Cat. Derm. Salt., B. M.*, **4**, p. 775.

1914. *Trilophidia turpis* (Walk.), Kirby, *Fauna Brit. India, Orthoptera (Acridiidae)*, p. 149.

Material.—2 exs., Sta. No. 4, near stream *ca.* 4·8 km. N.E. of Chaubas, 2,027 m., 29. iii. 1958.

Remarks.—Previously recorded from South India and Ceylon, this species is being recorded for the first time from Nepal or the Himalaya.

15. **Chrotogonus trachypterus** (Blanchard)

1836. *Ommexycha trachypterus* Blanch., *Ann. Soc. ent. Fr.*, **5**, p. 618, pls. 22, fig. 6.

1910. *Chrotogonus trachypterus* (Blanch.), Kirby, *Syn. Cat. Orth.*, 3(2), p. 300.

1914. *Chrotogonus trachypterus* (Blanch.), Kirby, *Fauna Brit. India, Orthoptera (Acridiidae)*, P. 165.

1954. *Chrotogonus trachypterus* (Blanch.), McE. Kevan, *Indian J. Fot.*, **16**(2), p. 150.

Material.—3 exs., Sta. No. 4, near a stream *ca.* 4·8 km. N. E. of Chaubas, 2,021 m., 29. iii. 1958.

Remarks.—It is a species which occurs commonly in northern India where it has been known to be injurious to cultivated crops. Nothing is known, however, of its feeding habits from Nepal.

16. **Atractomorpha crenulata** (Fabricius)

1793. *Truxalis crenulatus* Fabricius, *Ent. Syst.*, **2**, p. 28.

1910. *Atractomorpha crenulata* (Fabr.), Kirby, *Syn. Cat. Orth.*, 3(2), p. 331.

1914. *Atractomorpha crenulata* (Fabr.), *Fauna Brit. India, Orthoptera (Acridiidae)*, p. 181.

Material.—(i) 5 exs., Sta. No. 4, near a stream *ca.* 4·8 km. N.E. of Chaubas, 2,021 m., 29. iii. 1958. (ii) 2 exs., Sta. No. 48, Jumbesi, 2,700 m., 1.vi.1958.

Remarks.—Recorded from India, Ceylon, Malaya, Java, Thailand, etc., the species is widely distributed. In India it is known from Bengal and Madhya Pradesh, the latter material being present in the Z.S.I. collection. The present record from Nepal is of interest.

17. **Spathosternum prasiniferum** (Walker)

1871. *Heteracris prasinifera* Walker, *Cat. Derm. Salt., B. M.*, **5**, p.65.

1910. *Oxya prasinifera* (Walk.), Kirby, *Syn. Cat. Orth.*, 3(2), p. 394.

1914. *Spathosternum prasiniferum* (Walk.), Kirby, *Fauna Brit. India, Orthoptera (Acridiidae)*, p. 208.

Material.—2 exs., Sta. No. 4, near a stream *ca.* 4·8 km. N.E. of Chaubas, 2,021 m., 29.iii.1958.

Remarks.—This species, with variable markings on the tegmina, is apparently widely distributed in India, being known from Bombay, Bihar, etc. The examples before me measure 16-17 mm. in body-length and are with the black streak running through the entire length of the tegmina.

Genus **Catantops** Schaum

1853. *Catantops* Schaum, *Monatsber. Akad. Berlin*, p. 779.

18. **Catantops** sp.

Material.—7 exs., Sta. No. 10, Bhandar, 2,745 m., 4. iv. 1958.

Remarks.—This specimen, which is a female, comes very close to *Catantops humilis* (Serv.), but is decidedly more stout and with relatively shorter wings than is the case with the female examples of *C. humilis* present in the Z.S.I. collection.

19. **Catantops indicus** Bolivar

1902. *Catantops indicus* Bolivar, *Ann. Soc. ent Fr.*, **70**, p. 626.

1914. *Catantops indicus* Bol, Kirby, *Fauna Brit. India, Orthoptera (Acridiidae)*, p. 251

Material.—1 ex., Sta. No. 4, near a stream *ca.* 4·8 km. N.E. of Chaubas, 2,021 m., 29.iii.1958.

Remarks.—This species has been recorded from India (Kodaikanal), Ceylon, Korea, and China (Kirby, *loc. cit.*). In the Z.S.I. collection, examples are present from several parts of India of which the following may be mentioned : Calcutta, Siliguri, and Purnea (West Bengal), Parasnath Hills (Bihar), Barkuda Islands (Orissa), Naga Hills (Assam) and Kulu (Punjab).

20. **Catantops humilis** (Serville)

1839. *Acridium humile* Serville, *Hist. nat. Inst., Orthoptera*, p. 662.

1914. *Catantops humilis* (Serv.), Kirby, *Fauna Brit. India, Orthoptera (Acridiidae)*, p. 250.

Material.— 2 exs., Sta. No. 4, near a stream *ca.* 4·8 km. N.E. of Chaubas, 2,021 m., 29. iii. 1958.

Remarks.—This is also a widely distributed species having been previously recorded from Sikkim, Assam, Bengal, Bombay and Ceylon. In the Z.S.I. collection there are specimens from Chota Nagpur (Bihar), and West Bengal (Darjeeling and Kurseong). The examples from Nepal are small males, measuring 22-24 mm. in body-length.

Genus **Euprepocnemis** Fieber

1873. *Euprepocnemis* (ex. Fieber, 1853) Stal, *Recens Orth.*, **1**, p. 75.

21. **Euprepocnemis** sp. near **plorans** (Charpientier)

Material.—1 ex., Sta. No. 16, *ca.* 8·0 km. N. of Ghat, 3,200 m., 10.iv. 1958.

Remarks.—The single female example in the collection is in an imperfect condition and comes very near to *E. plorans* Charp. in its description. A close comparison between it and a few Japanese examples of *E. plorans* in Z.S.I. collection, however, reveal certain differences in colouration and female genitalia.

IV Order DERMAPTERA

Family FORFICULIDAE

22. **Forficula mogul** Burr

1904. *Forficula mogul* Burr, *Trans. ent. Soc. Lond.*, p. 321.

1907. *Forficula mogul* Burr, ibid., p. 3.

1908. *Forficula mogul* Burr, *Bull. Mus. Hist. nat., Paris*, p. 121.

1910. *Forficula mogul* Burr, *Fauna Brit. India, Dermaptera*, p. 167.

Material.—2 exs., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—The species was first described from Darjeeling from where a few examples are also present in the Z.S.I. collection. The collection under report constitutes the first record of the species from Nepal.

V Order HEMIPTERA

Family REDUVIIDAE

23. **Coranus emodicus** Kiritschenko

1931. *Coranus emodicus* Kiritschenko, *Ann. Mag. nat. Hist.*, (10) 7, pp. 365, 383.

Material.—1 ex., Sta. No. 37, on way to Dob, 5,000 m., 15.v.1958.

Remarks—This species was first described from the material collected by the Third Mount Everest Expedition, 1924, in Darjeeling and Sikkim, between 6,000 ft.—10,000 ft. (*ca.* 1,828 m.—3,048 m.) altitudes. The occurrence of the above mentioned specimen from Nepal at an altitude of 5,000 m., is, therefore, of interest.

Family LYGAEIDAE

24. **Graptostethus quadratomaculatus** (Kirby)

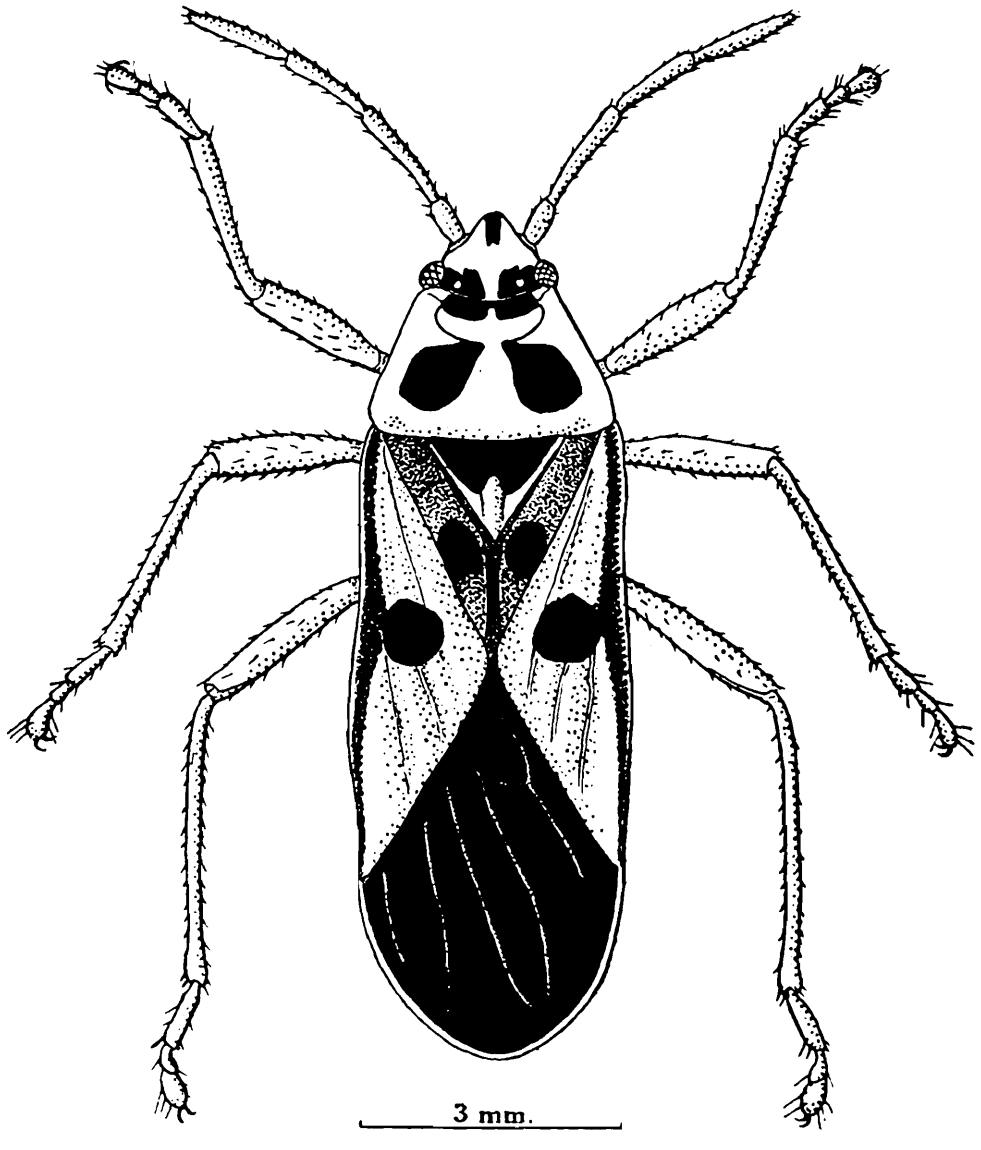
(Text-fig. 1)

1891. *Lygaeus quadratomaculatus* Kirby, *J. Linn. Soc.* (*Zool.*), **24**, p. 98.

1901. *Graptostethus quadratomaculatus* (Kirby), Distant, *Ann. Mag. nat Hist.*, (7)**7**, p. 537.

1904. *Graptostethus quadratomaculatus* (Kirby), Distant, *Fauna Brit. India, Rhynchota-Heteroptera*, **2**, pp. 9-10.

Material.—(i) 5 exs., Sta. No. 16, near a stream *ca.* 8·0 km. N. of Ghat, 3,200 m., 10.iv.1958. (ii) 2 exs., Sta. No. 17A, from shrubby vegetation N. of Namche Bazar, 3,500 m., 15.iv.1958. (iii) 4 exs., Sta. No. 18A, on way to Thyangboche, 4,150m., 16.iv.1958. (iv) 17 exs., Sta. No. 19, on way to Pangboche, 4,572 m., 20.iv.1958. (v) 35 exs. (including 21 nymphs), Sta. No. 20, on way to Thaparma, 4,572m. 21.iv.1958. (vi) 1 ex. Sta. No. 21, on way to Phariche, 4,600 m., 22.iv.1958. (vii) 3 exs., Sta.



TEXT-FIG. 1.—*Graptostethus quadratomaculatus* (Kirby). The specimen was collected on way to Lukhla in Nepal at an altitude of 4,870 m.

No. 22,on way to Lobujeige, 4,876m. 23.iv.1958. (viii) 4exs., Sta. No. 23A, Gorashan, 5,334 m., 25.iv.1958. (ix) 4 exs., Sta. No. 31, on way to Chub, 5,000 m., 6.v.1958. (x) 3 exs., Sta. No. 32, round about Lunak, 5,100 m., 8.v.1958. (xi) 5 exs., Sta. No. 34, on way to Lehengo, 5,100 m., 11.v.1958. (xii) 5 exs., Sta. No. 35, on way to Mosamba Lake, 4,600 m., 12.v.1958. (xiii) 5 exs., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13.v.1958. (xiv) 5 exs., Sta. No. 31, on way to Dob, 5,000 m., 15.v.1958. (xv) 50 exs., (nymphs), Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958. (xvi) 14 exs., Sta. No. 41, on way to Lukhla, 4,870 m., 24.v. 1958. (xvii) 1 ex., Sta. No. 44, on way to Chama, 3,000 m., 27.v.1958. (xviii) 8 exs., Sta. No. 46, on way to Jamnaso, 4,876 m., 29.v.1958. (xix) 3 exs., Sta. No. 48, on way to Jumbesi, 2,700 m., 1.vi.1958.

Remarks.—Hitherto known only from Ceylon, the discovery of this species in large numbers from Nepal is of great interest. The material shows remarkably constant colour pattern except for the posterior pair of subquadrate black pronotal spots in certain examples. In adult examples of the species before me certain variation in the size of specimens was also noticed. The smallest specimen in the series measured 7·75 mm. in length, while the largest 9·35 mm. Some examples out of the above-mentioned series were very kindly compared for me by the Commonwealth Institute of Entomology, London, with the examples of the species in the British Museum (N.H.), London. The occurrence of this species in Ceylon and Nepal shows that it is widely distributed, almost like the species that follows next.

25. **Aphanus sordidus** (Fabricius)

1787. *Cimex sordidus* Fabricius, *Mant. Ins.*, **2**, p. 302.

1901. *Aphanus sordidus* (Fabr.), Distant, *Ann. Mag. nat. Hist.*, (7) **8**, p. 501.

1904. *Aphanus sordidus* (Fabr.) Distant, *Fauna Brit. India, Rhynchota : Heteroptera*, **2**, pp. 79-80.

Material.—5 exs., Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958.

Remarks.—This species is very widely distributed, having been recorded from Assam (Naga and Khasi Hills), West Bengal (Calcutta), Bihar (Ranchi), Maharashtra State (Bombay) in India, and from Ceylon, Burma and China among other countries. It is reported to have damaged sesamum crop near Calcutta (*vide* Distant, *loc. cit.*) but nothing is known of its feeding habit in Nepal.

Family PYRRHOCORIDAE

26. **Dysdercus evanescens** Distant

1902. *Dysdercus evanescens* Distant, *Ann. Mag. nat. Hist.*, (7) **9**, p. 43.

1904. *Dysdercus evanescens* Distant, *Fauna Brit. India, Rhynchota : Heteroptera*, **2**, p. 120.

1960. *Dysdercus evanescens* Distant, Kapur and Vazirani, *Rec. Indian Mus.*, **54**, p. 164.

Material.—(i) 1 ex., Sta. No. 17A, from shrubby vegetation N. of Namche Bazar, 3,500 m., 15. iv. 1958. (ii) 1 ex., Sta. No. 37, on way to Dob, 5,000 m., 15.v.1958.

Remarks.—The species occurs in the hills and plains of northern India (Simla Hills and the Punjab; Kumaon Hills and Banaras in Uttar Pradesh ; Calcutta, Purnea, Darjeeling, Kalimpong and Kurseong in West Bengal), Sikkim, Nepal and Burma. It was only recently recorded from Chitlong and above Nah (15,500 ft., *ca.* 4,724 m.) in Nepal (Kapur and Vazirani, *loc. cit.*).

Family PENTATOMIDAE

27. **Palomena reuteri** Distant

1879. *Palomena reuteri* Distant, *Trans. ent. Soc. Lond.*, p. 122.

1904. *Palomena reuteri* Distant, *Fauna Brit. India, Rhynchota : Heteroptera*, **1**, p. 156.

Material.—1 ex., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13.v.1958.

Remarks.—The species was hitherto known from Muree (Punjab, now West Pakistan) and Kashmir in the North-west Himalaya. Its present record from Nepal is, therefore, of interest.

28. **Dolycoris indicus** Stal

1876. *Dolycoris indicus* Stal, *Enumeratio Hemipterorum, Sv. Ak. Handl.* (n.f.). **14**(4), pp. 28-130.

1904. *Dolycoris indicus* Stal, Distant, *Fauna Brit. India, Rhynchota : Heteroptera*, **1**, p. 160.

Material.—1 ex., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958.

Remarks.—This species is recorded from Bangalore, Bombay, Calcutta, Darjeeling and Naga Hills and examples of it are also present in Z. S. I. collection from Allahabad, Purnea and Sikkim. Its occurrence in Nepal is, therefore, not surprising.

29. **Sciocoris funebris** Distant

1918. *Sciocoris funebris* Distant, *Fauna Brit. India, Rhynchota : Homoptera : Heteroptera*, 7, p. 126.

Material.—(i) 1 ex., Sta. No. 4, near a stream *ca.* 4·8 km. N. E. of Chaubas, 2,021m., 29. iii. 1958. (ii) 1 ex., Sta. No. 19, on way to Pangboche, 4,572 m.. 20. iv. 1958. (iii) 1 ex., Sta. No. 37, on way to Dob, 5,000 m., 15. v. 1958. (iv) 1 ex., Sta. No. 38, round about Namche Bazar, 3,800 m., 16. v. 1958.

Remarks.—Originally described from "South India , Nilgiri Hills", the occurrence of this species in Nepal is of unusual interest. According to Distant there are six species of the genus in our zoogeographical area of which *S. indicus* Dall. is found both in northern and southern India. *S. funebris* must also be regarded to belong to the same category in

so far the geographical distribution is concerned. Of the other four species, two are known from southern India (Coonor), one from North Khasi Hills and one (*S. nepalensis* Distant) from Nepal. The material under report is distinct from the latter and agrees in most respects with Distant's description of *S. funebris* except for the generally large size ; the four examples mentioned above measure 4·38 mm., 5·00 mm., 5·38 mm., and 6·25 mm. in length.

Family NEPIDAE

30. **Laccotrephes ruber** (Linnaeus)

1764. *Nepa ruber* Linnaeus, *Mus. Lud. Ulr.*, p. 165.

1906. *Laccotrephes ruber* (Linn.), Distant, *Fauna Brit. India, Hemiptera*, **3**, pp. 18-19.

Material.—1 ex., Sta. No. 5, a pool with rocky bed at Risingo, 2,200 m., 30.iii. 1958.

Remarks.—This is a very widely distributed species which has been recorded from Sind in West Pakistan to Naga Hills in north-eastern India and also from Ceylon, Burma, China, Taiwan, and Japan. In Nepal the habitat of the only example collected is a pool with rocky bed situated at an altitude of 2,200 m.

VI. Order LEPIDOPTERA

Family HESPERIDAE

Genus **Syrichtus** Boisduval

1834. *Syrichtus* Boisduval, *Ic. Hist. Lepidopt. Europe*, **1** (21,22), p. 230.

31. **Syrichtus** sp.

Material.—1 ex., Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958.

Remarks.—The specimen is in an extremely bad state of preservation, with wings shrivelled up and most scales rubbed off. It is, therefore, not possible to place it with certainty in the genus *Syrichtus* Boisduval.

Family LIMOCODIDAE

Genus **Natada** Walker

1855. *Natada* Walker, *List specimens Lep. Ins. Brit. Mus.*, **5**, p. 1108.

32. **Natada** sp.

Material.—1 ex., Sta. No. 34, on way to Lehengo, 5,100 m., 11.v. 1958.

Remarks.—This specimen is also in a very poor state of preservation and cannot be identified further. Members of this genus are commonly found in the hills, and plains of India and neighbouring countries.

VII. Order TRICHOPTERA

Family RHYACOPHILIDAE

Genus **Himalopsyche** Banks

1940. *Himalopsyche Banks, Proc. U. S. nat. Mus.*, **88**, No. 3079, p. 197.

33. **Himalopsyche** sp.

Material.—1 ex., Sta. No. 19, on way to Pangboche, 4,572 m., 20. iv.1958.

Remarks.—The specimen is a large one of which the fore-wing is 26·5 mm. long, and the colour is on the whole light brown with a few dark patches on the fore-wings. It is not in a good state of preservation but resembles closely another example of the genus in the Z.S.I. collection.

VIII. Order DIPTERA

Family BIBIONIDAE

34. **Penthetria japonica** Wiedemann

1830. *Penthetria japonica* Wiedemann, *Auss. Zweifl. Ins.*, **2**, p. 618.

Material.—5 exs., Sta. No. 4, near a stream *ca.* 4·8 km. N.E. of Chaubas, 2,021 m., 29. iii. 1958.

Remarks.—This species is widely distributed and has been recorded from many parts in northern India, especially the Himalaya. It has been also recorded previously from Nepal. Outside these two countries it is known from Siberia, China and Japan. It is most probably the same species as has been noticed by Brunetti [1] under the name *Pleciomyia melanaspis* Wied.

Family TABANIDAE

Genus **Therioplectes** Zeller

1842. *Therioplectes* Zeller, *Isis* (Oken), p. 819.

35. **Therioplectes** sp.

Material.—7 exs., Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958.

Remarks.—A few species of this genus occur commonly in the Himalaya, especially in the Simla and Kumaon Hills. The examples of *T hirtus* Walker, and *T subcallosus* Ricardon from the above mentioned areas respectively, that are present in the Z.S.I. collection do not closely resemble the material under report. Owing, however, to the not very good state of preservation of the material, it is very difficult to determine it further.

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[1] BRUNETTI, E. 1912. *Fauna Brit. India, Diptera :* Nematocera, p. 161.

Family SYRPHIDAE

36. **Eristalis himalayensis** Brunetti

1908. *Eristalis himalayensis* Brunetti, *Rec. Indian Mus.*, **2**, p. 70.

1923. *Eristalis himalayensis* Brunetti, *Fauna Brit. India, Diptera*, **3**, p. 168.

Material.—1 ex., Sta. No. 34, on way to Lehengo, 5,100 m., 11.v.1958.

Remarks.—This is a very widely distributed species in the Himalaya and is already noted from Nepal by Brunetti (1923, *loc. cit.*) who further records it from the following other places : Phagu, (9,000 ft. or *ca.* 2,743 m.) Simla district ; Talpani, Gahrwal district ; Nainital ; Sikkim ; Darjeeling, (9,000ft.-12,000 ft. or *ca.* 2,743 m.-3,657m.) in India and Chittagong in East Pakistan. The writer has collected several examples of the species from Shillong in recent years. It is one of the largest species of the genus occurring in the Himalaya.

Family CALLIPHORIDAE

37. **Calliphora erythrocephala** (Meigen)

1826. *Musca erythrocephala* Meigen, *Syst. Beschr.*, **5**, p. 62.

1940. *Calliphora erythrocephala* (Meig.), Senior White, Aubertin and Smart, *Fauna Brit. India, Diptera*, **6**, p. 33.

Material.—2 exs.,Sta. No. 42A, on way to Lukhla, 4,870 m., 24.v.1958.

Remarks.—This blow fly is a very widely distributed species which is, according to Senior White, Aubertin and Smart (*loc. cit.*), recorded from "North America ; Europe ; Egypt ; India ; Beluchistan, Quetta, Nushki ; Northern India : Simla, Cherat, Mussoorie, Dehra Dun, Sikkim, Darjeeling ; Japan ; Australia ; New Zealand." Examples from Nainital are also present in the Z.S.I. collection. Its occurrence in Nepal is, therefore, not surprising.

The species is stated to breed in decaying matter of many kinds and there is considerable literature on its bionomics.

Family TACHINIDAE

Genus **Ernestia** Robineau-Desvoidy

1830. *Ernestia* Robineau-Desvoidy, *Mem. presentes Acad. Roy. Sci. Inst.*, France, **2**, p. 60.

38. **Ernestia** sp.

Material.—1 ex., Sta. No. 4, near stream *ca.* 4·8 km. N.E. of Chaubas, 2,021 m., 29.iii.1958.

Remarks.—The nearctic genus *Ernestia* is very widely distributed but is not represented in the Z.S.I. collection. The specimen mentioned above is in a very poor state of preservation and quite unsuitable for further identification.

IX. Order HYMENOPTERA

Family TENTHREDINIDAE

39. **Tenthredo pulchra** Jakovlev

1891. *Tenthredo pulchra* Jakovlev, *Hor. Soc. ent. ross.*, **26,** p. 61.

Material.—1 ex., Sta. No. 32, round about Lunak, 5,100 m., 8.v.1958.

Remarks.—The genus *Tenthredo* Linn. is extensively distributed in the palaearctic region and several species of it are found in the Himalaya. The species under report was hitherto known from China and is now being recorded from Nepal.

Family ICHNEUMONIDAE

Genus **Amblyteles** Wesmael

1845. *Amblyteles* Wesmael, *N. Mem. Acad. R. Brux.*, **18,** p.114.

40. **Amblyteles** sp.

Material.—1 ex., Sta. No. 18, on way to Thyangboche, 4,150 m., 17.iv.1958.

Remarks.—The genus is well distributed in the Himalaya, including Nepal. It has not been possible to identify further the above-mentioned example.

Family SCOLIIDAE

41. **Elis thoracica** (Fabricius)

1798. *Tiphia thoracica* Fabricius, *Ent. syst., Suppl.*, p. 254.

1897. *Elis thoracica* (Fabr.), Bingham, *Fauna Brit. India, Hymenoptera*, **1,** p. 99.

Material.—2 exs., Sta. No. 21, on way to Phariche, 4,600 m., 22.iv.1958.

Remarks.—Bingham (*loc. cit.*) records this species from Kumaon, Sikkim, Bangalore, Madras, Burma, Tenasserim, China, Java. Its present record from Nepal is not surprising. In the Z.S.I. collection examples from Tibet, Nainital, Siliguri, Calcutta, Bangalore and Borneo are present.

Family FORMICIDAE

42. **Oecophylla smaragdina** (Fabricius)

1775. *Formica smaragdina* Fabricius, *Syst. Ent.*, p. 828.

1894. *Oecophylla smaragdina* (Fabr.), Forel, *J. Bombay nat. Hist. Soc.*, **8,** p. 400.

1903. *Oecophylla smaragdina* (Fabr.), Bingham, *Fauna Brit. India, Hymenoptera*, **2,** p. 311.

Material.—1 ex., Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958.

Remarks.—This well-known species is distributed in the whole of India, Burma, Ceylon and from Malaya to New Guinea. Its occurrence in Nepal is probably quite common, although in the present collection it is represented by only a single worker.

Family POMPILIDAE

43. **Pompilus reflexus** Smith

1873. *Pompilus reflexus* Smith, *Trans. ent. Soc. Lond.*, p. 189.

1907. *Pompilus reflexus* Smith, *Rec. Indian Mus.*, **1**, p. 15.

1897. *Pompilus reflexus* Smith, Bingham, *Fauna Brit. India, Hymenoptera*, **1**, p. 159.

Material.—1 ex., Sta. No. 5, Risingo, 2,200 m., 30.iii.1958.

Remarks.—Originally described from Japan the species is also recorded from Sikkim and Burma. In the Z.S.I. collection examples from Kangra Valley (Punjab), Siliguri (West Bengal), Burma, and Nepal are present, besides the specimen under report.

Family SPHEGIDAE

44. **Ammophila vagabunda** Smith

1856. *Ammophila vagabunda* Smith, *Cat. Hymenoptera Ins.*, pt. 4, p. 218.

1897. *Ammophila vagabunda* Smith, Bingham, *Fauna Brit. India, Hymenoptera*, **1**, p. 231.

Material.—1 ex., Sta. No. 18, on way to Thyangboche, 4,150 m., 17. iv.1958.

Remarks.—Recorded earlier by Bingham (*loc. cit.*) from "N. China, Sumatra, N. India" the collection of the species from Nepal is of some interest. There is also present an example of it from Leh, in the Z.S.I. collection.

Family APIDAE

Genus **Bombus** Latreille

1802. *Bombus* Latreille, *Hist. Nat. Fourmis*, etc., p. 437.

45. **Bombus** sp.

Material.—(i) 4 exs., Sta. No. 45, on way to Tate, 4,400 m., 28.v.1958. (ii) 2 exs., Sta. No. 48, on way to Jumbesi, 2,700 m., 1. vi. 1958.

Remarks.—Since the material had been initially preserved in liquid (spirit) which has resulted, in the loss of colouration and damage to its pubescence, it is not possible to identify it further.

46. **Bombus terminalis** Smith

1870. *Bombus terminalis* Smith, *Trans. Zool. Soc. Lond.*, 7(3), p. 193.

1897. *Bombus terminalis* Smith, Bingham, *Fauna Brit. India, Hymenoptera*, **1**, p.552.

Material.—(i) 1 ex., Sta. No. 32, round about Lunak, 5,100 m., 8.v. 1958. (ii) 1 ex., Sta. No. 45, on way to Tate, 4,400 m., 28.v.1958.

Remarks.—According to Bingham (*loc. cit.*) it is distributed in the Himalaya from Simla to Sikkim. An example of it from Dalhousie (Punjab) is also present in Z.S.I. collection. Its occurrence from Nepal at such altitudes is worthy of note.

X. Order COLEOPTERA

Family CARABIDAE

47. **Carabus everesti** Andrewes

1929. *Carabus everesti* Andrewes, *Fauna Brit. India, Coleoptera, Carabidae,* **1,** p. 76.

Material.—(i) 1 ex., Sta. No. 32, Lunak, 5,100 m., 8.v. 1958. (ii) 1 ex., Sta. No. 47, Thanja, 3,600 m., 30.v.1958.

Remarks.—Previously recorded from Rongshar Valley in Tibet, the present record from Nepal is of interest.

48. **Paropisthius indicus** (Chaudoir)

1864. *Opisthius indicus* Chaudoir, *Ann. Soc. ent. Fr.*, p. 449.

1929. *Paropisthius indicus* (Chaudoir), Andrewes, *Fuana Brit. India, Coleoptera, Carabidae,* **1,** p. 104.

Material.—(i) 1 ex., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958. (ii) 2 exs., Sta. No. 47, Thanja, 3,600 m., 30. v. 1958.

Remarks.—The species is well distributed in north-eastern India, including Sikkim. It has also been recorded from several parts of Tibet (*vide* Andrewes, *loc. cit.*).

49. **Bembidion radians** Andrewes

1922. *Bembidion radians* Andrewes, *Ent. mon. Mag.* **58,** p. 177.

1935. *Bembidion radians* Andrewes, *Fauna Brit. India, Coleoptera, Carabidae,* **2,** p. 184-185, fig. 28.

Material.— 1 ex., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958.

Remarks.—It is a widely distributed species, having been recorded from the Punjab (Simla Hills), Uttar Pradesh (West Almora, Nainital, etc.), Sikkim and West Bengal (Darjeeling, etc.). It is also recorded from several places in Tibet according to Andrewes (*loc. cit.*).

Genus **Amara** (ex. Bonelli) Stephens

1827. *Amara* (ex. Bonelli) Stephens, *Ill. Brit. Ent.*, p. 67.

50. **Amara** sp.

Material.—(i) 1 ex., Sta. No. 5B, Raisingo, 2,200 m., 30. iii. 1958. (ii) 1 ex., Sta. No. 19, on way to Pangboche, 4,572 m., 20. iv. 1958. (iii) 4 exs., Sta. No. 32, round about Lunak, 5,100 m., 8. v. 1958. (iv) 3 exs., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958.(v) 9 exs., Sta. No. 37, on way to Dob, 5,000 m., 15. v. 1958. (vi) 1 ex., Sta. No. 38, round about Namche Bazar, 3,800 m., 16. v. 1958. (vii) 1 ex., Sta. No. 46, on way to Jamnaso, 4,876 m., 29. v. 1958. (viii) 1 ex., Sta. No. 48, on way to Jumbesi, 2,700 m., 1. vi. 1958.

Remarks.—The above-mentioned series of 21 specimens belongs to the subgenus *Leiocnemis* Zimm., of the genus *Amara* Stephens and in description comes close to the species *Amara dichroa* Putz*, which is a palaearctic species recorded from Greece and Turkey, but of which I have no facility to examine a specimen. A comparison of our material with *A.* (*Leiocnemis*) *himalaica* Bates, shows it to be quite distinct and easily separable from the latter which is smaller in size and slightly different in the outline and sculpture of the pronotum.

51. **Pterosticus yunnanus** var. **aeneocupreus** (Fairmaire)

1887. *Platysma yunnanus* Fairmaire, *Ann. Soc. ent. Belg.*, **31**, p. 94.

1887. *Platysma aeneocupreus* Fairmaire, *ibid.*, p. 95.

1930. *Pterosticus yunnanus* var. *aeneocupreus* Fairm., Csiki, *Coleopt. Cat., Berl.*, **2**(112), p. 627.

Material.—(i) 1 ex., Sta. No. 3A, *ca.* 3.2 km., north of Dulaghat, 710 m., 28. iii. 1958. (ii) 2 exs., Sta. No. 32, round about Lunak, 5,100 m., 8. v. 1958. (iii) 3 exs., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958. (iv) 5 exs., Sta. No. 37, on way to Dob, 5,000 m., 15. v. 1958. (v) 2 exs., Sta. No. 38, round about Namche Bazar, 3,800 m., 16. v. 1958. (vi) 3 exs., Sta. No. 45, on way to Tate, 4,400 m., 28. v. 1958.

Remarks.—Though originally described from Yunnan, this species has since been recorded from other parts of China, namely Szetshuan and Gans-su. It is for the first time being recorded from Nepal or any part of the Himalaya. In the long series before me the elytra are uniformly copper-coloured, while the head and pronotum are bluish green.

Genus **Agonum** (ex Bonelli) Stephens

1827. *Agonum* (ex Bonelli) Stephens, *Ill. Brit. Ent.*, **1**, p. 85.

52. **Agonum** sp.

Material.—3 exs., Sta. No. 35, on way to Mosamba Lake, 4,600 m., 12. v. 1958.

Remarks.—One of the three specimens is brownish and tennerial. The species belongs to the subgenus *Anchomenus* Stephens (1827) and is not comparable with any of the known Indian species or the material in Z. S. I. collection. It is, however, not being described because of the poor condition of the specimens.

53. **Agonum (Oxypselaphus) lissopterum** (Chaudoir)

1854. *Oxypselaphus lissopternum* Chaudoir, *Bull. Soc. Nat. Moscou*, **21** (1), p. 136.

1931. *Agonum* (sub-gen. *Oxypselaphus*) *lissopterum* Chaud., Csiki, *Coleopt. Cat., Berl.*, **2** (115), p. 865.

1958. *Agonum* (*Oxypselaphus*) *lissopterum* (Chaud.), Kapur, *Proc. 10th intern. Congr. Ent.*, Montreal, **1**, p. 778.

Material.—1 ex., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958.

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* *Amara* (*Leiocnemis*) *dichroa* Putz. 1870, *L. Abeille* (1869-70) (*Monogr. Amar.*) p. 62, Csiki, 1929, *Coleopt. Cat., Berl.*, **2** (104), p. 449.

Remarks.—This species is very widely distributed, having been recorded earlier from Central Asia, Northern India, Sikkim and Tibet. I had collected a long series of this species from Kulu and Lahaul Valleys in the Punjab, mostly from 11,000-13,000 ft. (*ca.* 3,352-3,962 m.) altitudes (Kapur, 1958), and there are also examples of it from Simla in the Z. S. I. collection.

54. **Agonum (Anchomenus) viator** (Andrewes)

1931. *Anchomenus viator* Andrewes, *Ann. Mag. Nat. Hist.*, (10) 7, pp. 517-518.

1933. *Agonum (Anchomenus) viator* (Andrewes), Csiki, *Coleopt. Cat. Berl.*, 3 (126), p. 1671.

Material.—(i) 6 exs., Sta. No. 32, round about Lunak, 5,100 m., 8. v. 1958. (ii) 4 exs., Sta. No. 34, on way to Lehengo, 5,100 m., 11. v. 1958. (iii) 1 ex., Sta. No. 35, on way to Mosamba Lake, 4,600 m., 12. v. 1958. (iv) 1 ex., Sta. No. 41, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—Recorded from Uttar Pradesh (Mussoorie, 7.534 ft., or *ca.* 2.297 m. ; Dehra Dun ; Deoban) and the Punjab (Simla, Talroach, 10,000 ft., *ca.* 3,048 m., Jubbul) earlier, the present record from Nepal is of interest. The material before me agrees with the description given by Andrewes excepting the slightly darker colour of legs.

55. **Chydaeus obscurus** Chaudoir

1854. *Chydaeus obscurus* Chaudoir, *Bull. Soc. Nat. Moscou.*, **27(2)**, p. 344.

1926. *Chydaeus obscurus* Chaud., Andrewes, *Ent. mon. Mag.*, **62**, p. 68.

1932. *Chydaeus obscurus* Chaud., Csiki, *Coleopt., Cat. Berl.*, **3(121)** p. 1080.

Material.—1 ex., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958.

Remarks.—Previously known from Sikkim and Tibet, this species is being recorded for the first time from Nepal.

Family STAPHYLINIDAE

56. **Philonthus protenus** Schubert

1906. *Philonthus protenus* Schubert, *Dtsch. ent. Z.*, Berlin, 1906, p.382.

1932. *Philonthus protenus* Schubert, Cameron, *Fauna Brit. India. Coleoptera, Staphylinidae*, **3**, p. 95.

Material.—6 exs., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13. v. 1958.

Remarks.—Originally described from Kashmir, the species has been further recorded by Cameron (*loc. cit.*) from Simla Hills, Mussoorie, and Chakrata, (5,000—8,000 ft. or *ca.* 1,524 m.—2,438 m.). The present record from such a high altitude in Nepal is of interest.

Family SCARABAEIDAE

Subfamily *GEOTRUPINAE*

57. **Geotrupes (Phelotrupes) tenebrosus** Fairmaire

1901. *Geotrupes tenebrosus* Fairmaire, *Ann. Soc. ent. Fr.*, **4**, p. 267.

1912. *Geotrupes (Phelotrupes) tenebrosus* Fairm., Beucomout, *Coleopt. Cat., Berl.*, **19(46)**, p. 30.

Material.—1 ex., Sta. No. 47, on way to Thanja, 3,600 m., 30. v. 1958.

Remarks.—Originally known from Sikkim the species is now being recorded from Nepal. The example before me is a female.

Subfamily *RUTELINAE*

58. **Mimela pectoralis** Blanchard

1851. *Mimela pectoralis* Blanchard., *Cat. Coll., Ent. Mus., Paris*, (1850), p. 197.

1917. *Mimela pectoralis* Blanch., Arrow, *Fauna Brit. India, Coleoptera, Lamellicornia*, pt. 2, p. 107.

Material.—1 ex., Sta. No. 45, on way to Tate, 4,400 m., 27. v. 1958.

Remarks.—Already recorded from Lahore (West Pakistan) and Simla in the Punjab, this species is now being reported for the first time from Nepal.

59. **Popillia marginicollis** Hope

1831. *Popillia marginicollis* Hope, Gray's *Zool. misc.*, p. 23.

1915. *Popillia marginicollis* Hope, Arrow, *Fauna Brit. India, Coleoptera, Lamellicornia*, pt. 2, p. 64.

Material.—1 ex., Sta. No. 22, on way to Lobujeige, 4,866 m., 23. iv. 1958.

Remarks.—Originally described from Nepal, the species has also been subsequently recorded from Assam (Mangaldai Ghat and Cachar) and East Pakistan (Sylhet). The example before me is a female and has deep metallic green colour on the head and median part of the pronotum.

60. **Popillia puncticollis** Kraatz

1897. *Popillia puncticollis* Kraatz, *Dtsch. Ent. Z.*, Berlin, 1897, p. 329.

1915. *Popillia puncticollis* Kraatz, Ohaus, *Coleopt. Cat., Berl.*, **20(66)**, p. 140.

1917. *Popillia puncticollis* Kraatz, Arrow, *Fauna Brit. India, Coleoptera, Lamellicornia*, pt. 2, p. 69.

Material.—1 ex., Sta. No. 16A, *ca.* 8·0 km. north of Ghat, 3,200 m., 10. iv. 1958.

Remarks.—Originally described from Sikkim, the present record from Nepal is of interest. The example before me is a female.

Subfamily *Melolonthinae*

Genus **Serica** MacLeay

1819. *Serica* MacLeay, *Horae Entom.*, **1**(1), p. 146.

61. **Serica** sp.

Material.—1 ex., Sta. No. 46, on way to Jamnaso, 4,876 m., 29. v. 1958.

Remarks.—The example belongs to the genus *Serica* MacLeay which is a large genus with a good number of species known from the Himalaya and neighbouring areas. The present example is not present in the Z. S. I. collection and is not in a good state of preservation for further study.

62. **Holotrichia cavifrons** Brenske

1892. *Holotrichia cavifrons* Brenske, *Berl. Ent. Z.*, **37**, p. 167.

1912. *Holotrichia cavifrons* Brenske, Dalla Torre, *Coleopt., Cat.*, **20**(49), p. 201.

Material.—1 ex., Sta. No. 47, on way to Thanja, 3,600 m., 30. v. 1958.

Remarks.—This species is already recorded from Nepal and Darjeeling. The species is also referred to under the generic name *Lachnosterna* Hope (1837).*

Family Elateridae

Genus **Hypnoidus** Dillwyn

1892. *Hypnoidus* Dillwyn, *Mem. Col. Ins., Swansea*, p. 32, (1892).

63. **Hypnoidus** sp.

Material.—1 ex., Sta. No. 32, round about Lunak, 5,100 m., 8. v. 1958.

Remarks.—The only example present is not preserved well enough for further identification.

Family Cantharidae

Genus **Themus** Motschulsky

1857. *Themus* Motschulsky, *Etudes Ent.*, **6**, p. 27.

64. **Themus** sp.

Material.—1 ex., Sta. No. 37, on way to Dob, 5,000 m., 15. v. 1958.

Remarks.—This example belongs to a large genus of which many species occur in the Himalaya and the palaearctic region. Further examples of the species would be required for further identification of the specimen.

65. **Themus stevensi** Champion

1926. *Themus stevensi* Champion *Ent. mon. Mag.*, **62**, p. 132.

1939. *Thelms stevensi* Champ., Delkeskamp, *Coleopt. Cat.*, **9**, p. 28.

Material.—1 ex., Sta. No. 11, on way to Shate, 2.700 m., 5. iv. 1958.

* Hope, F. W. 1837 *Coleopt. Manual*, **1**, p. 100.

Remarks.—Originally described from Sikkim, this species is now being recorded from Nepal.

Genus **Discodon** Gorham

1881. *Discodon* Gorham, *Biol. Centr.—Amer. Col.*, 3 (2), p. 78.

66. **Discodon** sp.

Material.—1 ex., Sta. No. 37, on way to Dob, 5,000 m., 15. v. 1958.

Remarks.—This example belongs to a genus which has many species and is very widely distributed in the tropics of the world and neighbouring areas. Here also more examples would be required for further identification, as the present example is not well preserved.

Family CUCUJIDAE

67. **Cucujus bicolor** Smith

1851. *Cucujus bicolor* Smith, *List. Col. B. M.*, Part 1, p. 2.

1908. *Cucujus bicolor* Smith, Grouv, *Ann. Soc. Ent. Fr.*, 77, p. 460.

Material.—1 ex., Sta. No. 4, near a stream *ca.* 4·8 km. N. E. of Chaubas, 2,021 m., 29. iii. 1958.

Remarks.—The species is already recorded from Nepal and India. It is also represented in Z. S. I. collection by an example from Kumaon Hills in Uttar Pradesh.

Family COCCINELLIDAE

68. **Afissa mysticoides** (Sicard)

1912. *Solanophila mysticoides* Sicard, *Ann. Soc. Ent. Fr.*, **81**, p. 507.

1931. *Epilachna* (subgen. *Solanophila*) *mysticoides* (Sicard), Korschefsky *Coleopt. Cat., Berl.*, **16**(118), p. 30.

1947. *Afissa mysticoides* (Sicard), Dieke, *Smithson. Misc. Coll.*, **106**(15), pp. 145-146.

1958. *Afissa mysticoides* (Sicard), Kapur, *Rec. Indian Mus.*, 53(3& 4), pp. 316-317, figs. 7, *c*, *d*. (genitalia).

Material.—1 ex., Sta. No. 37, on way to Dob, 5.000 m., 15.v. 1958.

Remarks.—The species is recorded from Darjeeling area (*ca.* 7,000 ft.—8,000 ft. or *ca.* 2,133 m.—2,438 m.) in India (*vide* Dieke, *loc. cit.*) from several places altitudes between 8,000 ft. and 11,000 ft. (or *ca.* 2.438 m.—3,352 m.) in Nepal (*vide* Kapur, *loc. cit.*).

69. Coccinella septempunctata Linnaeus

1758. *Coccinella 7-punctata* Linnaeus, *Systema Naturae*, (ed. 10), p. 365.

1932. *Coccinella septempunctata* Linn., Korschefsky, *Coleopt. Cat., Berl.*, **16** (120), p. 486.

1958. *Coccinella septempunctata* Linn., Kapur, *Rec. Indian Mus.*, **53** (3 & 4), p. 328.

Material.—(i) 20 exs., Sta. No. 3B. on way to Phokda village, 700 m., 28. iii. 1958. (ii) 34 exs., Sta. No. 6. stream at Phoktey, 2,000 m., 31. iii. 1958. (iii) 10 exs., Sta. No. 7A. on way to Namdu, 2,030 m., 1.iv. 1958. (iv) 26 exs., Sta. No. 8, Sikri, 2,100 m., 2.iv.1958. (v) 32 exs., Sta. No. 11, on way to Shate, 2,700 m. 5. iv. 1958. (vi) 7 exs., Sta. No. 29, on way to Thami, 4,000 m., 4. v. 1958. (vii) 7 exs., Sta. No. 31, on way to Chub, 5,000 m., 6.v. 1958. (viii) 2 exs., Sta. No. 34, on way to Lehengo, 5,100 m., 11. v. 1958. (ix) 6 exs., Sta. No. 35, on way to Mosamba Lake, 4,603 m., 12. v. 1958. (x) 7 exs., Sta. No. 38, round about Namche Bazar, 3,800 m., 16. v. 1958. (xi) 1 ex., Sta. No. 44, on way to Chama, 3,000 m., 27. v. 1958. (xii) 2 exs., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—This species is already known from Nepal and other parts of the Himalaya. Although a palaearctic species, it extends beyond this region and is also found in the plains of India.

69a. Coccinella septempunctata Linnaeus var. confusa Wiedemann

1823. *Coccinella confusa* Wiedemann, *Zool. Mag.*, **2**(1), p.72.

1932. *Coccinella septempunctata* Linn. var. *confusa* Wied., Korschefsky, *Coleopt. Cat., Berl.*, **16**(120), p. 488.

Material—(i) 8 exs., Sta. No. 3B, on way to Phokda village, 700 m., 28.iii.1958. (ii) 9 exs., Sta. No. 6, stream at Phoktey, 2,000 m., 31.iii.1958. (iii) 4 exs., Sta. No. 7A, on way to Namdu, 2,030 m., 1.iv. 1958. (iv) 7 exs., Sta. No. 8, near a fast flowing stream with rocky bed at Sikri, 2,100 m., 2.iv.1958. (v) 7 exs., Sta. No. 11, stream, on way to Shate, 2,700 m., 5.iv.1958. (vi) 2 exs., Sta. No. 35, on way to Mosamba Lake, 4,600 m., 12.v.1958. (vii) 5 exs., Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958. (viii) 2 exs., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—In the examples of this variety under report, the elytral spots are generally enlarged and become confluent in several ways. The discal spot of the elytron may join the scutellar (common to both elytra), lateral or the apical spot or all the three spots at the same time. The incidence of confluence of spots in the populations of two species is maximum in the eastern Himalaya, as has been shown in another paper by the writer, read before the First All-India Congress of Zoology, Jabalpur, in 1958. The incidence of the variety *confusa* in the samples of the populations of *C. septempunctata* under report is, as stated earlier, about 22·2 per cent in a total of 198 examples.

70. **Adonia variegata** (Goeze)

1777. *Coccinella variegata* Goeze, *Ent. Beyrt.*, **1**, p. 247.

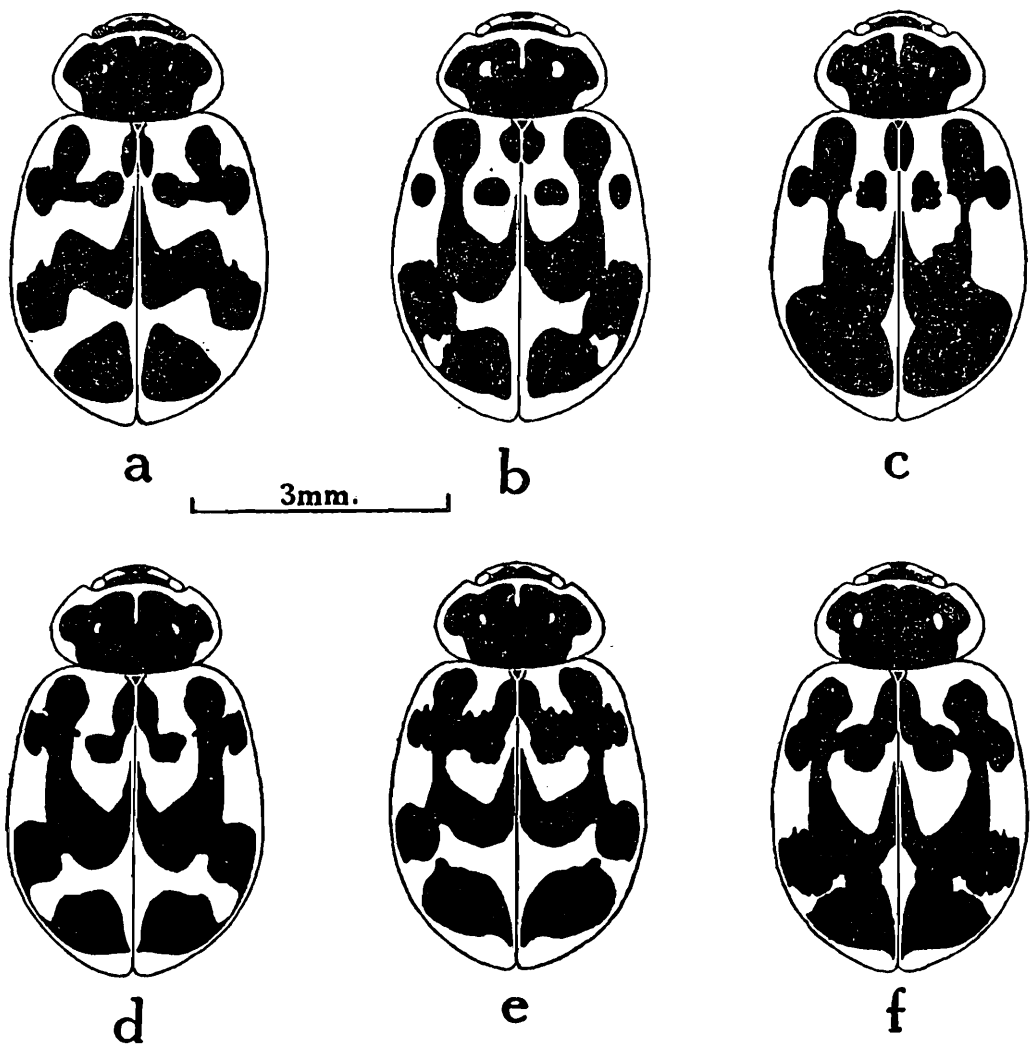
1846. *Adonia variegata* (Goeze), Mulsant, *Histoire naturelle des coleopteres de France : Sulcicolles—Securipalpes*, p. 39.

1932. *Adonia variegata* (Goeze), Korschefsky, *Coleopt. Cat., Berl.*, **16** (120), p. 346.

1958. *Adonia variegata* (Goeze), Kapur, *Rec. Indian Mus.*, 53(3-4), pp. 325-326.

Material.—(i) 9 exs., Sta. No. 38, round about Namche Bazar, 3,800 m., 16.v.1958. (ii) 1 ex., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—This palaearctic species is already recorded from Nepal (*vide*, Kapur, *loc. cit.*). It also occurs in such parts of the Ethiopean and Oriental region as are close to the Palaearctic region. It is very variable in its elytral pattern, in the examples under report, six different patterns present among only nine examples, are shown in text-figure 2.



TEXT-FIG. 2.—*Adonia variegata* (Goeze). Variation in the colour-pattern in the examples collected from environs of Namche Bazar (alt. 3,800 m.) the patterns in the other three specimens collected are more or less like those seen in figures *a*, *b* and *e*.

Family TENEBRIONIDAE

71. **Blaps ladakensis** Bates

1879. *Blaps ladakensis* Bates, *Cist. Ent.*, **2**, p. 472.

1910. *Blaps ladakensis* Bates, Gebien, *Coleopt. Cat., Berl.* **18** (22), p. 232.

Material.—1 ex., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958.

Remarks.—Hitherto known from Ladakh (Kashmir) in the western Himalaya, the present record of this species from Nepal extends its range eastwards.

72. **Pseudanemia brevicollis** (Wollaston)

1864. *Anemia brevicollis* Wollaston, *Cat. Can. Col.*, p. 493.

1867. *Anemia brevicollis* Woll., *Col. Hesper.*, p. 199.

1875. *Pseudanemia brevicollis* (Woll.), Mars., *Abeille*, **12**, p. 126.

1910. *Pseudanemia brevicollis* (Woll.), Gebien, *Coleopt. Cat., Berl.*, **18**(22), p. 317.

Material.—1 ex., Sta. No. 48, on way to Jumbesi, 2,700 m., 1.vi.1958.

Remarks.—Distributed in North Africa, the occurrence of this species in Nepal is rather surprising. However, the example has been very kindly determined by Mr. E. Duffy at the British Museum (N. H.).

Family MELOIDAE

73. **Epicauta nepalensis** (C. O. Waterhouse)

1871. *Cantharis nepalensis* C.O. Waterhouse, *Trans. Ent. Soc. Lond.* (3), pp. 405-406.

Material.—1 ex., Sta. No. 45, on way to Tate, 4,400 m., 28.v.1958.

Remarks.—This species is already recorded from Nepal. In the Z. S. I. collection an example from Sangoo in Nepal is also present.

74. **Mylabris macilenta** Marseul

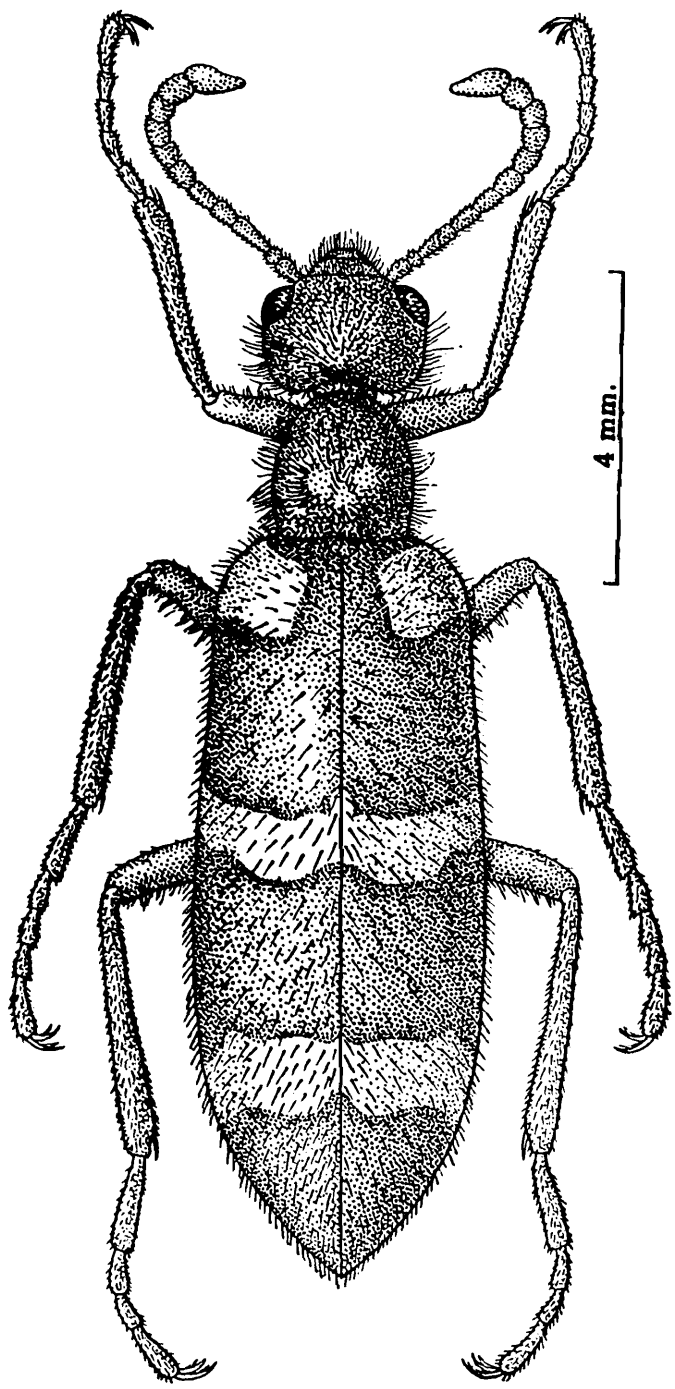
1872. *Mylabris macilenta* Marseul, *Monogr. des mylabrides*, pp. 129-131.

1873. *Mylabris macilenta* Mars., *Mem. Soc. Liege*, $(2)^3$, p.489.

Material.—(i) 13 exs., Sta. No. 16A, stream *ca.* 8·0 km. N. of Ghat, 3,200 m., 10.iv.1958. (ii) 26 exs. Sta. No. 17A, from shrubby vegetation N. of Namche Bazar, 3,500 m., 15.iv.1958. (iii) 11 exs., Sta. No. 18A, on way to Thyangboche, 4,150 m., 16.iv.1958. (iv) 17 exs., Sta. No. 19, on way to Pangboche, 4,572 m., 21.iv.1958. (v) 35 exs., Sta. No. 21, on way to Phariche, 4,600 m., 22.iv.1958. (vi) 41 exs., Sta. No. 22, on way to Lobujeige, 4,876 m., 23.iv.1958. (vii) 21 exs., Sta. No. 23A, Gorashan, 5,334 m., 25.iv.1958. (viii) 13 exs., Sta. No. 29, on way to Thami, 4,000 m., 4.v.1958.(ix)34 exs., Sta. No. 30, on way to Marlung, 4,500 m., 5.v.1958. (x) 62 exs., Sta. No. 31, on way to Chub, 5,000 m., 6.v.1958. (xi) 18 exs., Sta. No. 32, round about Lunak, 5,100 m., 8.v.1958. (xii) 37 exs., Sta. No. 34, on way to Lehengo, 5,100 m., 11.v.1958. (xiii) 22 exs.,

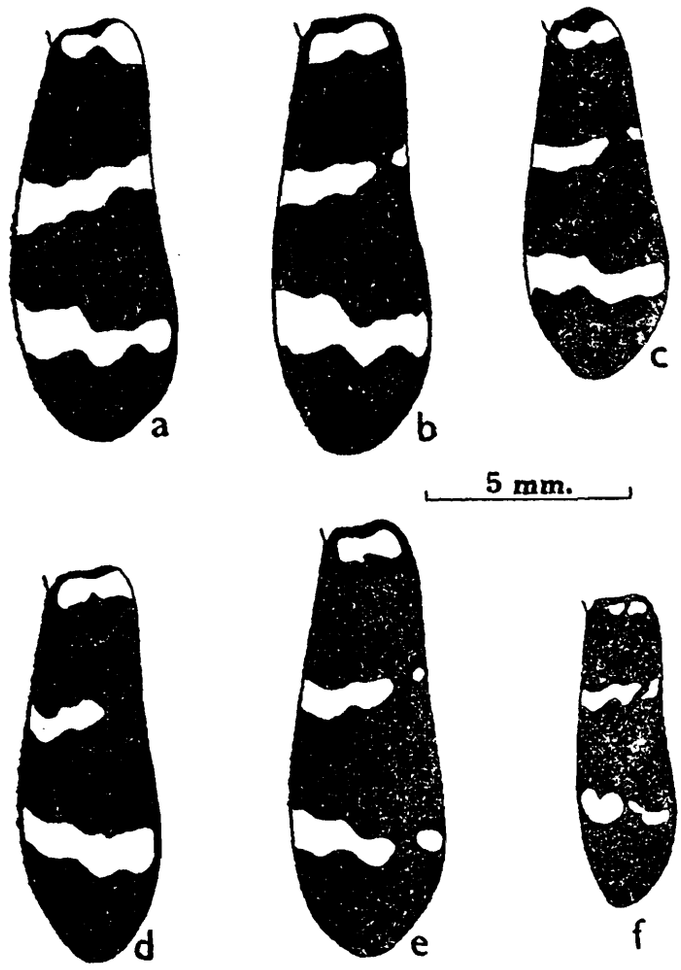
Sta. No. 35, on way to Mosamba Lake, 4,600 m., 12.v.1958. (xiv) 55 exs., Sta. No. 36A, on way to Dudh Pokhari, 5,000 m., 13.v.1958. (xv) 35 exs., Sta. No. 41, on way to Lukhla, 4,870 m., 24.v.1958. (xvi) 13 exs., Sta. No. 44, on way to Chama, 3,000 m., 27.v.1958. (xvii) 20 exs., Sta. No. 46, on way to Jamnaso, 4,876 m., 29.v.1958. (xviii) 24 exs., Sta. No. 47, on way to Thanja, 3,600 m., 30.v.1958. (xix) 23 exs., Sta. No. 48, on way to Jumbesi, 2,700 m., 1.vi.1958.

Remarks.—A total of 523 examples of the species offered opportunity for a study of the variation in the elytral pattern of the species. One of the most predominant pattern in the material is shown in text-fig. 3,



TEXT-FIG. 3.—*Mylabris macilenta* Marseul. It was collected on way to Gorasham in Nepal at an altitude of 5,334 m. (Note the well-developed claws With which the beetle holds the plants.)

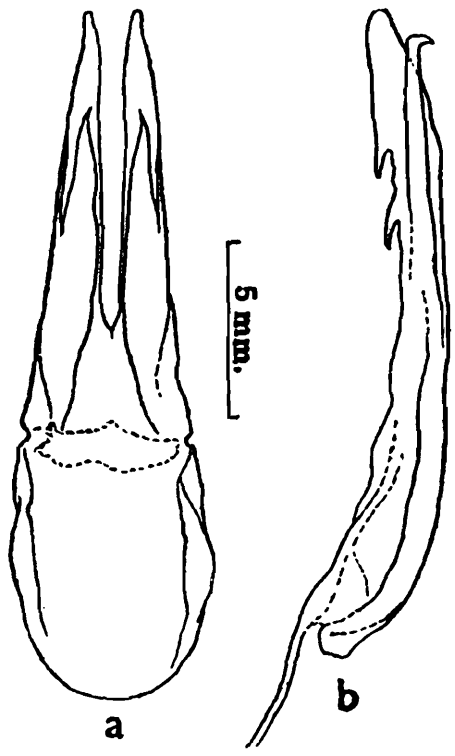
another commonly found pattern is similar to the latter except for slightly reduced humeral yellowish testaceaus spot , yet another common pattern is like that shown in figure *a* of the text-fig. 4. The remainder of the



TEXT-FIG. 4.—The right elytra of *Mylabris maculata* Marseul, showing variation in the elytral pattern. (*a*) comes from Ghat (3,200 m.) ; (*b*) was collected on way to Chama (3,000 m.) ; (*c*) Dudh Pokhari (5,000 m.), (*d*) Jamnaso (4,876 m.) ; (*e*) Lukhla (4,870 m.) : and (*f*) Chama (3,000 m.), all in Nepal.

patterns shown in the latter text-figure are rather rare. Some time different elytral patterns in different species of the genus have been employed in the identification of the species. While this practice is not wholly incorrect for practical reasons, it seems necessary also to employ other morphological characters for the purpose. Besides the shape of the antennal segments in the male, the male geniatalia also offer reliable characters. In view of the variability in the elytral pattern referred to above, a large number of examples were dissected for a study of their male genitalia which are sketched in text-figure 5. These proved to be uniform in the various examples and confirmed the conclusions arrived at on the basis of other external morphological characters that the examples

under report belonged to one and the same species. The material also showed some variation in size ; the larger examples were about 13·00 mm. —13·25 mm. and the smaller 9·50 mm.—9·25 mm. in length.



TEXT-FIG. 5.—Male genitalia of *Mylabris macilenta* Marseul. (*a*) basal piece and paramere ; (*b*) aedeagus.

Originally described from the "Indes orientales, Himalaya" the species is represented in the Z. S. I. collection from Gilgit Road (*ca.* 8,100 ft., or *ca.* 2,468 m. Yarkand Expedition) and from Nainital and Mussoorie in Uttar Pradesh. It is now being recorded for the first time from Nepal.

Family CHRYSOMELIDAE

Subfamily *HALTICINAE*

75. Phyllotreta downesi Baly

1877. *Phyllotreta downesi* Baly, *Trans. Ent. Soc. Lond.*, 1877, p. 300.

1926. *Phyllotreta downesi* Baly, Maulik, *Fauna Brit. India, Coleoptera, Chrysomelidae* (*Chrysomelinae* and *Halticinae*), p.380.

Material.—1 ex., Sta. No. 18, from shrubby vegetation, Thyangboche, 4,150 m., 17. iv. 1958.

Remarks.—The species was originally recorded by Baly (*loc. cit.*) from Bombay and subsequently by Maulik (*loc. cit.*) from Tavoy, Tenasserim (Burma). The example under report in every detail agrees with the description of the material from Tenasserim.

Family CURCULIONIDAE

Subfamily *BRACHYDERINAE*

Tribe Blosyrini

76. Dactylotus rugosus sp. nov.

(Pl. 19, Fig. 3)

♂. Almost black except the legs which are piceous brown and the antennae and tarsii which are brown, moderately shiny, with sparse, greyish pubescence.

Head separated from the rostrum by a well-marked, deep stria, and constricted behind the eyes, the vertex rather finely coriaceous, the forehead moderately convex except in the anterior middle part where it is impressed, with rather sparse and fine punctures intermixed with coarse punctures ; pubescence short, subdepressed and coarse. *Rostrum* nearly as long as broad, with a transverse ridge in the middle and a median longitudinal ridge extending from its base to nearly three-fourths the length of the rostrum, the remainder one-fourth the ridge bifurcates to enclose a small triangular and shiny area , surface on the whole rough, the punctures being medium to coarse and the pubescence very sparse and short. *Antennae* with the first segment of the funicle stouter than the second which is slightly longer, 3-6 much shorter than the second, bead-like, and nearly equal to one another, 7 also similar but slightly larger ; the club fusiform, more pointed at the apex than at the base, covered densely with fine and short pubescence, the other antennal segments being sparsely provided with long and grey hair. *Prothorax* transverse (2 : 3), convex, moderately rounded at the sides, widest in the middle ; smooth along the narrow, incomplete, longitudinal median line and at the small discal area which has only a few, mostly minute, punctures, the remainder of the surface rugose, more so and almost granulose on the sides ; punctation of the mixed type, coarser punctures impressed and more common than the fine punctures ; pubescence short, coarse to medium, and subdepressed, a post-discal pair of depressions present on the thorax. *Scutellum* small, triangular, and smooth. *Elytra* almost subglobose (4 : 5), being less convex on the discal area, rounded at the anterior and posterior angles, less so at the sides, widest in the middle, rather shallowly striate, with separated punctures that are both larger and shallower than those on the prothorax ; the intervals between striae also moderately rugose and together with the punctures on the striae give the elytra a rugose appearance ; pubescence short, rather coarse, sparse, depressed, and mostly present along the striae, especially on the discal area, elsewhere similar but not so sparse or confined to striae. Abdomen (♂) with 2—4 sternites subequal in length. *Male genitalia* with the aedeagus 0·75 mm. long and 0·6 mm. broad, subrounded at the apex, with its pair of struts very slender and nearly twice as long as the aedeagus, the tegminal strut also very long, this together with the aedeagus measure 3·0 mm. in length.

Length 7·3 mm., breadth 4·0 mm.

Holotype.—A male from NEPAL, on way to Jamnaso, *ca.* 4,876 m., 29.v.1958 (*A.K.Datta*) ; genitalia dissected and mounted with the type specimen, in the Z.S.I. collection (Regd. No.14603/H4).

Remarks.—No species of *Dactylotus* Schonh., is known from Nepal or India before. These are ground weevils which have lost the second pair of wings and are unable to fly, like many typical high-altitude Coleoptera. The species now described is easily distinguishable from *Dactylotus clavus* Marshall, which comes from S. Kansu, China, and which is also without scales, by the presence of a deep transverse stria that separates the rostrum from the head and by its larger size. Amongst the other species that are without scales, it comes close only to *Dactylotus egenus* Faust, from Central Asia, on account of its large size, but is distinguishable from *egenus* by several characters. The latter species is glabrous, the prothorax is widest anterior to the transverse median line, and has only minute granules as against the large granulations in *D. rugosus*. Similarly the elytral surface in *egenus* has minute punctures and is coriaceous at the interspaces instead of having coarser puncture and being rugose as in *D. rugosus*.

77. **Dactyllotus nepalensisn** sp. nov.

(Pl. 19, Fig. 4)

♂♀ Piceous brown except for the chestnut brown legs and antennae, moderately shiny, with very sparse, short, and greyish pubescence.

Head separated in front from the rostrum by a moderately deep stria which does not extend to the sides, moderately constricted behind the eyes, the vertex coriaceous, with several fine and a few coarse punctures, the front slightly convex, with a few fine and a fair number of coarse punctures, each of the latter with oblique and backwardly directed opening and accommodating a short, rather stout, depressed, and grey seta. *Rostrum* nearly as long as broad, with a semicircular emargination at the median half of the apex, the front with a Y-shaped tridentate ridge with the arms slightly bent ; the punctures and pubescence similar to or slightly coarser than those on the front of the head. *Antennae* with the first segment of the funicle equal in length to second but thicker, the remainder segments of the funicle smaller, bead-like in appearance, and almost subequal, the scape and the funicle with sparse, moderately long and pale brown pubescence, the club fusiform slightly more elongate than in the preceding species but like it covered mainly with fine and short pubescence. *Prothrax* transverse (8 : 11), moderately convex and rounded on the sides, surface on the whole smooth, provided with rather moderately coarse punctures (less coarse than those on the head or rostrum) which are sparse at the disc and fairly close towards the lateral and anterior margins but which do not give a granulose appearance ; pubescence sparse, depressed and short. *Scutellum* small, triangular and smooth. *Elytra* subglobose (4 : 5), being uniformly convex in the discal area also, rounded at the anterior and posterior angles, moderately so laterally, widest in the middle, very shallowly striate, with separated punctures that are ill-defined and shallower than those on the prothorax ; the intervals generally smooth, slightly coriaceous, especially in the ♀ ; pubescence sparse, almost non-existent on the disc, elsewhere short and depressed. *Abdomen* with the second sternite slightly longer than the third and fourth sternites in both the sexes. *Male genitalia* with the aedeagus a little more elongate than in the preceding species, 0·75 mm. long, 0·5 mm. broad, widely round at the apex, with the struts of aedeagus slender and about 1·0 mm. long, the tegminal

strut not very long, this together with the aedeagus measure about 2·0 mm. in length. *Female genitalia* are characterised by short apically filiform ovipositor and by well-chitinised spermatheca which is straight and narrow at the proximal one-thirds of its length, thence bent at right angle and partly swollen and recoiled on itself in the distal two-thirds.

Length ♂ 5·5—6·2 mm., ♀ 6·2—6·4 mm. Breadth ♂ 2·9—3·3 mm., ♀ 3·2—3·3 mm.

Holotype.—♂, NEPAL, round about Lunak, *ca.* 5,100 m., 8. v. 1958 (*A. K. Datta*) ; genitalia dissected and mounted between two coverslips and attached to the specimens ; in the Z.S.I. collection (Regd. No. 14,604/H4).

Allotype.—♀, with the same data as the holotype, genitalia dissected and mounted as above, in the Z.S.I. collection (Regd. No. 14,605/H4).

Paratypes.—2 ♂♀, with the same data as the type (in one paratype, however, the body colour is dark chestnut instead of piceous brown), 1 ♀, NEPAL, on way to Pangboche, *ca.* 4,572 m., underneath stones with vegetation, 20. iv. 1958. 2 ♀♀, NEPAL, round about Namche Bazar, *ca.* 3,800 m., 20. v. 1958 ; all collected by A. K. Datta and deposited in Z.S.I. collection.

Remarks.—This species is easily distinguishable from the preceding species and *D. egenus* Faust by its smaller size, the incomplete transverse stria separating the head and rostrum, and the relatively fine punctures and smooth body-surface. From the other non-squamose species like *D. semipubens* Faust, from Central Asia and *D. nitidulus* Faust, from Kuku-noor, it is distinctly larger and has shallower elytral stria and punctures. It is also easily distinguishable by several characters from *D. roborovskyi* Faust with which it resembles in size. *D. roborovskyi* is black and glabrous and has coarser punctures almost amounting to granules on the sides of prothorax ; the elytral punctures are also coarser than is the case in *D. nepalensis.*

Subfamily *Brachyderinae*

Tribe Tanymecini

78. **Hyperomias dattai** sp. nov.

(Pl. 19, Fig. 1)

♂♀. Derm bronze-black , the head and rostrum with fairly dense, grey scale in the male, and grey to light bronze-black scale in the female, except for the medium light grey streak in the head. The prothorax also with fairly dense scales which, in the male, are greyish excepting some white ones situated along the median longitudinal line and on the sublateral areas on either side , in the female the scales are light grey, greyish-green or bronze-black, the latter forming two pairs of longitudinal, rather ill-defined, vittae on either side of the median longitudinal greyish line. Scutellum black. The elytra with grey and dark-grey scales in the male, arranged in irregular and ill-defined patches in the male, and grey, greenish-grey or bronze-black scales in the female, in the latter also arranged in irregular but rather well-defined patches which on the whole, give a darker colouration to it than is the case in the male. The sparse, short hairs in the apical part of the elytra greyish in both sexes.

Head moderately convex, with the eyes lateral, moderately prominent, and circular ; forehead as broad as the base of the rostrum which is longer than the head, subparallel at the sides, plain above, with a longitudinal, deep, median stria and a scarcely emarginate apex. *Antennae* short and stout, with rather dense, short, greyish scale ; first basal segment of scape distinctly longer and the second slightly so than the other segments. *Prothorax* slightly wider than long (♂, 1·4×1·8 mm. ; ♀, 1·3× 1·7 mm.) sides rounded, apical margin narrower than the basal margin, much less so in the female than in the male ; upper surface smooth without a median longitudinal furrow or the setae. Scutellum very small but distinct. *Elytra* subelliptical in the male, slightly broader in the female except towards apex where these are acuminate ; the striae narrow and finely and impressedly punctate, the intervals almost plain and devoid of setae except for a few short ones towards the apex. *Legs* relatively slender in the male than in the female, with median to short setae as well as scales, the latter becoming gradually reduced in number being absent on the distal tarsi; the inner edges of tibiae fringed with fine hairs and a number of spine-like bristles which are fewer in the male.

♂ *genitalia* with the aedeagus for the most part like a flattened tube, 1·5 mm. long, strongly curved, almost like a semicircle, in the median part, and slightly curved in the opposite direction in the distal one-fourth which is subrounded at the apex ; cornutus-like structure (transfer apparatus?) in the aedeagus rather deeply bilobed distally. ♀ *genitalia* are characterised by the rather acutely pointed, conical ovipositor and a narrow spermatheca with the distal end pointed and bent double in the middle over the basal half and with the ramus short and stumpy.

Length ♂ 5·7 mm., ♀ 6·0 mm., Breadth ♂ 2·3 mm., ♀ 2·7 mm.

Holotype.—♂, NEPAL, round about Lunak, *ca.* 5,100 m., 8. v. 1958 (*A. K. Datta*); *genitalia* dissected and mounted with the type specimen, in the Z.S.I. collection (Reg. No. 14,611/H4).

Allotype.—♀, with the same data as the holotype, in the Z.S.I. collection, genitalia dissected and mounted between the two coverslips (Reg. No.14,612/H4).

Paratype.—1 ♀, with the same data as the holotype ; genitalia, dissected and mounted as above, also in Z.S.I. collection.

Remarks.—Members of the genus *Hyperomias* Marshall are also flightless ground weevils. This species is distinguishable from *Hyperomias aenescens* Marshall*, the only species hitherto known of the genus, by the relatively larger size (In *H. aenescens*, length of the male is 4·5 mm., and of the female 5·75 mm.) and the differences in the colouration and the detailed structures of the rostrum, head, prothorax, legs, etc. *H. dattai* further shows greater degree of sexual dimorphism than either *H. aenescens* or the succeeding species.

The species is named after Dr. A. K. Datta, the collector of the material under report.

*Marshall, G. A. K. *Fauna Brit. India, Coleoptera, Curculionidae*, part 1, p. 195 (1916).

79. **Hyperomias roonwali** sp. nov.

(Pl. 19, Fig. 2)

♂♀. Derm bronze-black ; the heads and rostrum densely beset with scales of greyish, bronze-black, and grey with faint green, intermixed irregularly in both the sexes. The prothorax also similar in both sexes, with dense scales of the same colour as the above but arranged somewhat as follows : the oblong area along the longitudinal middle line has greyish-bronze scales and is surrounded on either side by a relatively broad area having grey and greenish-grey scales ; the latter areas interrupted by four patches with bronze-black scales, each patch situated near the anterior and posterior angles of the prothorax, the lighter area is sharply demarcated laterally by bronze-black areas and which are not easily visible from above. The scutellum usually black, sometime with a grey scale or two. The elytra with the grey, greenish-grey and bronze-black scales, arranged in irregular and ill-defined patches; on the whole in the male the grey and the greenish-grey colours predominate, while in the female the patches with bronze-black scales are relatively more common than is the case in the male. The sparse, short, hair in apical part of the elytra greyish in both the sexes.

Head moderately convex, the eyes lateral, moderately prominent and circular forehead as broad as the base of rostrum, without even a faint longitudinal stria, the rostrum with the sides subparallel, apparently narrower in the male than in the female and with the apex slightly emarginate ; a median longitudinal stria present on the rostrum. *Antennae* short and stout, with moderately dense, short, and grey setae, the funicle with the first segment a little and the second slightly, longer than the others, the club compact and pointed at the apex. *Prothorax* slightly broader than long (1·9 mm. long ; 2·2 mm. broad) in the male, and distinctly broader than long (1·8 mm. long ; 2·4 mm. broad) in the female; sides rounded, apical margin narrower than the basal margin in the female, much less so in the male ; upper surface plain but with a median, longitudinal, impressed stria which runs throughout the length of the prothorax. The scutellum very small but distant. *Elytra* in the male subelliptical (4·2 mm. long ; 2·8 mm. broad), similar but slightly broader (4·8 mm. long ; 3·3 mm. broad), and distinctly acuminate towards the apex, in the female ; the stria narrow, with fairly close and impressed punctures, the intervals almost plain and devoid of setae except for a few short ones towards the apex. Legs relatively longer and rather more slender in the male than in the female ; covered sparsely with median to short setae throughout and small scales upto the femur and proximal tarsii ; inner edge of the tibiae fringed with fine hairs and a number of spine-like bristles which are fewer in the male.

♂ *genitalia* with the aedeagus for the most part like a flattened tube, narrower and relatively longer (1·8 mm.) than that of *H. dattai*, besides it is moderately curved in the middle, with the distal one-fourth straight ; apex subrounded to somewhat subtruncate at the extreme tip ; cornutus-like structure (transfer apparatus) in the aedeagus more shallowly bilobed at the apex than is the case in the preceding species. ♀ *genitalia* with the spermatheca bent in the middle at about 80° angle, with the distal half gradually, narrowed to a pointed apex, and with the ramus which is nearly twice as long as wide and much narrower than is the case in the *H. dattai.*

Length ♂ 6·9—7·0 mm., ♀ 7·0—7·5 mm. Breadth ♂ 2·7—3·0 mm., ♀ 3·2—3·5 mm.

Holotype.—♂, NEPAL, round about Namche Bazar, Sta. No. 16, *ca.* 3,800 m., 16. v. 1958 (*A. K. Datta*) ; genitalia dissected, in a small tube attached to the specimen, in Z.S.I. collection (Regd. No. 14,614/H4).

Allotype.—♀, with the same data as the holotype, genitalia mounted between two coverslips, and attached to the specimen, in Z.S.I. collection (Regd. No. 14,615/H4).

Paratypes.—1♂, with the same data as holotype dissected, partly on card, abdomen and ♂ genitalia in a tube. 1♂, NEPAL, on way to Pangboche, *ca.* 4,572 m., underneath stones with vegetation, 20. iv. 1958. 1♂, NEPAL, on way to Namche Bazar, *ca.* 3,810 m., 28. iv. 1958. 1♀, NEPAL, on way to Dudh Pokhari, *ca.* 5,000 m., 13. v. 1958. 1♀, NEPAL, on way to Dob, *ca.* 5,000 m., 15. v. 1958 ; all collected by A. K. Dutta and deposited in Z.S.I. collection.

Remarks.—This species is easily distinguishable from *H. aenescens* Marshall and *H. dattai*, by its larger size (see remarks given under the latter species) ; in colouration, especially of the prothorax as described above, and in other structural details. The longitudinal central stria on the forehead is always present in this species as a continuation of the stria on the rostrum while in the case of *H. dattai* the stria is absent on the forehead and only sometimes present in *H. aenescens*. Whereas the prothorax in the latter has a shallow central stria, in the case of *H. roonwali* the stria runs throughout the length of the prothorax ; in the case of *H. dattai* thoraic stria is altogether absent. The aedeagus is relatively shorter, broader and more curved in the latter species than is the case in *H. roonwali*, as described in detail above. Likewise, the female examples of the two species are easily distinguished from each other by the structure of the spermatheca which is very pointed and bent almost double in the middle in the case of *H. dattai* and only slightly bent (*ca.* 80° angle) in the case of *H. roonwali.*

This species is named after Dr. M. L. Roonwal who took great interest and initiative in getting the zoological collections of the Indian Cho-Oyu Expedition worked out.

III—SUMMARY

The insect collections brought by the Indian Cho-Oyu Expedition—1958, in Nepal, contain a little over one thousand examples belonging to 79 species of ten different orders. Four new species of ground weevils are described, these being *Dactylotus rugosus*, *D. nepalensis*, *Hyperomias dattai* and *H. roonwali.* Some 43 other species are recorded for the first time from Nepal ; out of these neraly 15 also constitute first records from the Himalaya.

MGIPC—M—3 ZSI/61— 25-9-64—500