

NOTES ON INDIAN HEMIPTERA IN THE ZOOLOGICAL SURVEY OF INDIA.

I. ON THE SUBFAMILY PLATASPINAE OF THE FAMILY PENTATOMIDAE.

By H. A. HAFIZ, Ph.D. (London), D.I.C. (London), Assistant Superintendent, and S. RIBEIRO, Entomological Assistant, Zoological Survey of India.

INTRODUCTION.

In this series of notes we propose to publish from time to time the results of our work on the unnamed material of Hemiptera in the collections of the Zoological Survey of India. In general we follow the monographic work of Distant on the Rhynchota, which was published in the "Fauna of British India" series between the years 1902 and 1918, as this still constitutes the only comprehensive work on the Indian Hemiptera, but more recent work on the subject has also been consulted.

This paper deals with the genera *Cratoplatys* Montandon, *Tarichea* Stål, *Oncylaspis* Stål, *Brachyplatys* Boisduval and *Coptosoma* Laporte, comprising twenty-four species. In all, we have determined three hundred and seventy-seven, mostly pinned specimens.

With reference to the position of the genus *Carrabas* Distant it may be noted that Distant¹ placed it after the subfamily Plataspinae but commented upon its close approach to the genus *Thyreocoris*. McAtee and Malloch² remarked on its resemblance to the subfamily Thyreocorinae, but owing to the paucity of material were not able to define its exact relationships.

In conclusion, we take this opportunity to express our sincere thanks to Dr. Bains Prashad, Director, Zoological Survey of India, for his kindness in going through the manuscript of the paper.

SYSTEMATIC ACCOUNT.

Family PENTATOMIDAE.

Subfamily PLATASPINAE Distant.

- 1851. *Plataspidae*, Dallas, *List Hem.* I, p. 61.
- 1902. *Plataspidinae*,³ Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 3, 4.
- 1903. *Plataspinae*, Distant, *Fasc. Malay.* II, p. 223.
- 1908. *Coptosomatinae*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 132.
- 1908. *Plataspidinae*, Distant, *Faun. Brit. Ind., Rhyn.* IV, p. 421.
- 1909. *Coptosominae*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, pp. 316, 317.
- 1912. *Plataspidae*, Oshanin, *Kat. paläarkt. Hem.*, p. 3.
- 1916. *Plataspidae*, Oshanin, *Horae Soc. Ent. Ross.* XLII, p. 21.
- 1918. *Plataspidinae*, Distant, *Faun. Brit. Ind., Rhyn.* VII, p. 110.

¹ Distant, W. L., *Faun. Brit. Ind., Rhyn.* IV, pp. 421, 422, fig. 256 (1908).

² McAtee, W. L. and Malloch, J. R., *Ann. Carnegie Mus.* XXI, pp. 196, 199, 393 and 395, figs. 75 and 258-260 (1933).

³ Referred to by Distant in his synonymy as *Plastipidae* Dallas. This is apparently a printer's error for *Plataspidae* cf. Dallas, W. S., *List Hem.* I, p. 61 (1851).

1925. *Plataspidae*, Pruthi, *Trans. Entomol. Soc.*, pp. 142, 143 and 149-151.
 1926. *Plataspidae*, Esaki, *Ann. Hist.-nat. Mus. Nat. Hungar.* XXIV, p. 142.
 1927. *Coptosomidae*, Bergroth, *Ark. Zool.* XVIII (A), p. 1.
 1928. *Plataspidae*, China, *Journ. Fed. Malay States Mus.* VIII, p. 185.

Plataspinae has been more frequently referred to by Rhynchotists as a distinct family. Pruthi (*loc. cit.*, pp. 143, 150) in his work on the morphology of the male genitalia in Rhynchota, however, restored it to its proper place as one of the subfamilies of Pentatomidae. According to Pruthi, Plataspinae should be placed near the subfamilies Pentatominae and Scutellerinae. Distant (1902, p. 2), in his synoptical key of the subfamilies of Pentatomidae, separated Plataspinae by the nature of its hemelytra, which are "longer than the body, (and) folded in at the base of (the) membrane" We follow Distant's arrangement.

Dallas (*loc. cit.*, p. 61) considered this group of Hemiptera as constituting a distinct family. He called it *Plataspidae*. Distant (1902, p. 3) regarded it as a subfamily of Pentatomidae and named it *Plataspidae*. In a subsequent paper, Distant (1903, p. 223) changed the name to *Plataspinae* but later (1908, p. 421 and 1918, p. 110) he again used *Plataspidae*. The name *Plataspinae*, as employed by Distant (1903, p. 223), is more in accordance with the International Rules of Zoological Nomenclature¹ and has, therefore, been adopted here.

Genus *Cratoplatys* Montandon.

1894. *Cratoplatys*, Montandon, *Ann. Mus. Civ. Stor. Nat. Genova* (2) XIV, pp. 119, 120.
 1902. *Cratoplatys*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 5.
 1908. *Cratoplatys*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 132.
 1909. *Cratoplatys*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 318.

Montandon (*loc. cit.*, p. 119) described the genus *Cratoplatys* and considered it to be allied to the genera *Heterocrates*, *Handhirschiella* and *Aphanopneuma*. The single male specimen of *Cratoplatys gestroi* Montandon, described elsewhere, appears to be related also to the genus *Ceratocoris* on account of the corniform appendages of the head, the position of the ocelli and the appearance of the margins of the abdomen as seen from below. *Ceratocoris*, however, differs from *Cratoplatys* in the shape of the head and the form of the corniform appendages, the situation of the true spiracles present in the abdomen and in the short and compressed tibiae of the legs, which are scarcely longer than the tarsi. It may be added that the genus *Cratoplatys* is also related to the genus *Aphanopneuma* due to the hidden position of the spiracles, which is equally characteristic of *Cratoplatys gestroi* Montandon, the slender tibiae of the legs and the smaller tarsi.

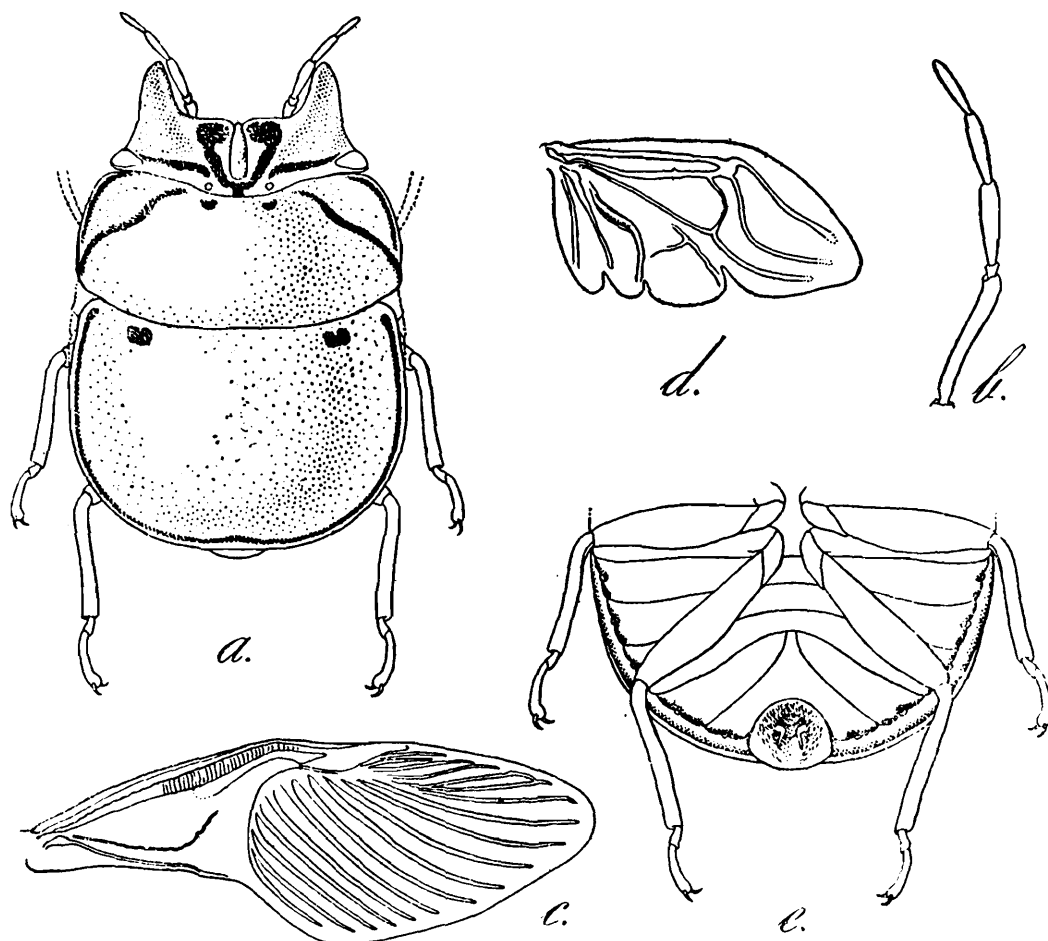
Cratoplatys gestroi Montandon.

1902. *Cratoplatys gestroi*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 5, 6, fig. 2.
 1908. *Cratoplatys gestroi*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 132.
 1909. *Cratoplatys gestroi*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 318.

We refer to this species a single male pinned example, which we describe and figure here. Only the female has hitherto been known.

¹ Schenk, E. T. and McMasters, J. H., *Procedure in Taxonomy*, p. 27, article 4 (1936).

♂ (*pinned*).—Like the female except in the following details. The head bears two pointed horn-like processes, which are situated at



Cratoplatys gestroi Montandon. ♂.

a. Dorsal view: $\times 3\frac{1}{2}$; b. Right antenna: $\times 7$; c. Right hemelytron: $\times 4\frac{1}{2}$; d. Right wing: $\times 4\frac{1}{2}$; e. Ventral view of abdomen: $\times 4$.

the anterior outer areas of the lateral lobes. The central lobe is free and is as long as the lateral lobes, which are broad and foliaceous. The inner areas of the lateral lobes are each furnished with a comma-shaped ochraceous marking. These markings unite together at the basal margin of the head at a point, medially, between the ocelli. The apical margin of the scutellum is incised in the middle. The segments of the abdomen on the ventral surface have an impressed line on each side ending near the margin of the abdomen and there is a series of sinuate ochraceous markings at the apices of the abdominal segments.

Length.—12.3 mm. *Max. breadth*.—9.6 mm.

♂ *specimen*.—No. 5931/H7, Zoological Survey of India (*Ind. Mus.*).

Locality.—Foot hills, Pegu Yomas, Thayetmyo district, Lower Burma (C. J. Rogers, x.1911).

The holotype female of this species, from Palon, Pegu, Burma (L. Fea), is probably in the Genoa Museum.

The species had hitherto not been represented in the collection of the Zoological Survey of India.

Genus **Tarichea** Stål.

1902. *Tarichea*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 6.

1909. *Tarichea*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 322.

So far only two species of this genus viz. *T chinensis* (Dallas), male and female, from China (Brit. Mus.) and *T nitens* (Dallas), female, from North India (Brit. Mus.) and North-West Himalayas (Distant Coll.) are known.

Tarichea nitens (Dallas).

1902. *Tarichea nitens*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 6, 7, fig. 3.

1909. *Tarichea nitens*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 322.

We assign to this species twenty-three male and thirty-four female pinned specimens, all from Dehra Dun, United Provinces.

The apical margin of the scutellum in the male of *T nitens* is emarginate. Moreover, the dorsal apical margin of the ninth abdominal segment is ciliate; the segment itself being more or less clothed throughout with short brownish-ochraceous pubescence.

Genus **Oncylaspis** Stål.

1851. *Plataspis*, Dallas, *List Hem.* I, pp. 72-74 (*Partim*).

1864. *Oncylaspis*, Stål¹, *Hem. Afr.* I, p. 2.

1866. *Oncylaspis*, Stål, *Berliner Ent. Zeitsch.* X, p. 151.

1876. *Oncylaspis*, Stål², *Enumer. Hem.* V, pp. 4 and 6.

1887. *Oncylaspis*, Atkinson, *Journ. Asiat. Soc. Bengal* LVI, pp. 24, 25.

1902. *Oncylaspis*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 7.

1909. *Oncylaspis*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 322.

Dallas (*loc. cit.*, pp. 73, 74) described a male and a female from Tenasserim as *Plataspis ruficeps*. Stål (1864, p. 2) later recognized this species as constituting a separate genus, which he called *Oncylaspis*.

Oncylaspis ruficeps (Dallas).

1851. *Plataspis ruficeps*, Dallas, *List Hem.* I, pp. 73, 74.

1864. *Oncylaspis ruficeps*, Stål, *Hem. Afr.* I, p. 2.

1866. *Oncylaspis ruficeps*, Stål, *Berliner Ent. Zeitsch.* X, p. 151.

1876. *Oncylaspis ruficeps*, Stål, *Enumer. Hem.* V, p. 6.

1887. *Oncylaspis ruficeps*, Atkinson, *Journ. Asiat. Soc. Bengal* LVI, p. 25.

1902. *Oncylaspis ruficeps*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 7, fig. 4.

1909. *Oncylaspis ruficeps*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 322.

We refer to this species two female pinned specimens from LeO, 1,170 feet, Upper Burma (Miss Molesworth, x.1915).

O. ruficeps (Dallas) was originally recorded from Tenasserim (Brit. Mus.) and later from Burma (Holm. Mus.), Karen Hills (Doherty) and Cochin China.

The species was hitherto not represented in the collections of the Zoological Survey of India.

¹ This work is unfortunately not available in Calcutta.

² The *Enumeratio Hemipterorum* was originally published in *Kongl. Svensk. Vetensk.-Akad.* between the years 1870 and 1876. The reference cited above appeared in volume XIV, No. 4, pp. 4 and 6 of this publication for the year 1876.

Genus **Brachyplatys** Boisduval.

1902. *Brachyplatys*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 8.
 1908. *Brachyplatys*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 133.
 1909. *Brachyplatys*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 323.
 1918. *Brachyplatys*, Distant, *Faun. Brit. Ind., Rhyn.* VII, p. 110.

The Indian species of the genus *Brachyplatys* need revision. In this connection, reference may be made to *B. pauper* Vollenhoven and *B. radians* Vollenhoven, both of which are generally treated as varieties of *B. subaëneus* (Westwood) and *B. vahlîi* (Fabricius) respectively.¹

Brachyplatys subaëneus (Westwood).

1902. *Brachyplatys subaëneus*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 11.
 1909. *Brachyplatys subaëneus*, Lefroy, *Rec. Ind. Mus.* III, p. 302.
 1909. *Brachyplatys subaëneus*, Breddin, *Ann. Soc. Ent. Belgique* LIII, p. 250.
 1909. *Brachyplatys subaëneus*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, pp. 325 and 379.
 1910. *Brachyplatys subaëneus*, Kershaw, *Ann. Soc. Ent. Belgique* LIV, pp. 69-71, figs. 1-7.
 1926. *Brachyplatys subaëneus*, Esaki, *Ann. Hist.-nat. Mus. Nat. Hungar.* XXIV, p. 143.
 1932. *Brachyplatys subaëneus*, Hoffmann, *Arch. Zool. Torino* XVI, p. 1014.

We refer to this species three female pinned examples from the following localities :—Maini Mukh, Chittagong Hill Tracts, Bengal (R. P. Mullins, 1922); Balugaon, Puri district, Orissa (N. Annandale, 21-30.vii.1913); Mahanandi, 800 feet, foot of Nallamalai Hills, West, South India (H. S. Pruthi, 12.viii.1929).

Altogether we have examined six male and nineteen female specimens. Of the male specimens four examples are from Calcutta and the remainder are from the Andaman Islands. In all these male examples the short and conical ray-like fasciae of the abdominal segments are replaced by narrow irregular ochraceous markings.

B. subaëneus is very widely distributed, being known from India, Burma, Ceylon, China, Cochin China, French Indo-China, Siam, Malay Archipelago, Dutch East Indies, Straits Settlements, Formosa and the Philippines.

It is represented in the collections of the Zoological Survey of India from Mangpu, Darjeeling district, Eastern Himalayas; Calcutta and Maldah, Bengal; Katihar, Purnea district, Bihar; Ceylon; Andaman Islands.

Brachyplatys punctipes Montandon.

1902. *Brachyplatys punctipes*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 11.
 1908. *Brachyplatys punctipes*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 133.
 1909. *Brachyplatys punctipes*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 325.

We refer to this species two male and two female pinned examples from Tope, foot of Palni Hills, South India (S. W. Kemp, 1922).

The species has been recorded from Trichinopoly, Madras Presidency; Karennee, Burma; China; Java.

It is represented in the collections of the Zoological Survey of India by a single female pinned specimen from Rungpo, 1,400 feet, Darjeeling district, Eastern Himalayas, determined by the late Mr. C. A. Paiva.

¹ China, W. E., *Journ. Fed. Malay States Mus.* VIII, p. 185 (1928); also see Kirkaldy, G. W., *Cat. Hem. (Het.), Cimicid.* I, pp. 325, 326 (1909).

Genus **Coptosoma** Laporte.

1902. *Coptosoma*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 17.
 1908. *Coptosoma*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 134.
 1908. *Coptosoma*, Distant, *Faun. Brit. Ind., Rhyn.* IV, p. 421.
 1909. *Coptosoma*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 327.
 1912. *Coptosoma*, Oshanin, *Kat. paläarkt. Hem.*, p. 3.
 1916. *Coptosoma*, Oshanin, *Horae Soc. Ent. Ross.* XLII, p. 21.
 1918. *Coptosoma*, Distant, *Faun. Brit. Ind., Rhyn.* VII, p. 111.

Since the publication of Distant's volumes in the "Fauna" series, three other species of *Coptosoma* from India and Ceylon have been described. These are *C. galathea* Jensen-Haarup,¹ *C. montandoni* Bergroth² and *C. sikkimensis* China³ and are not represented in the collections of the Zoological Survey of India.

Coptosoma duodecimpunctatum (Germar).

1902. *Coptosoma duodecimpunctatum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 19.
 1903. *Coptosoma duodecimpunctatum*, Distant, *Fasc. Malay.* II, p. 224.
 1909. *Coptosoma duodecimpunctatum*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, pp. 331 and 379, 380.
 1909. *Coptosoma 12-punctatum*, Breddin, *Ann. Soc. Ent. Belgique* LIII, p. 250.

We assign to this species three male and eight female pinned examples from the following localities:—Mangpu to Rieng, 1,500-3,500 feet, Darjeeling district, Eastern Himalayas (S. W. Kemp, 10.v.1917); Dejoo, North Lakhimpur district, base of hills, Upper Assam (H. Stevens, 1910); Barkul 0-1,000 feet, Puri district, Orissa (F. H. Gravely, 1-3.viii.1914); Tope, foot of Palni Hills, South India (S. W. Kemp, 1922); Mormugao, Portuguese India (S. W. Kemp, ix.1916).

C. duodecimpunctatum is recorded from Sikkim; Khasi Hills and Cachar, Assam; Palon, Pegu, Burma; Nalanda, Ceylon; Malay Peninsula (throughout).

The species is represented in the collections of the Zoological Survey of India from Kurseong, 6,000 feet, Darjeeling district, Eastern Himalayas; Sikkim; Samgooting, Assam; Bangalore, 3,000 feet, South India.

The specimen from Bangalore is entirely black, neither spotted nor marked on the pronotum, without any markings at the lateral margins of the abdomen and with the legs piceous in colour.

Distant (1903, p. 224) and Kirkaldy (*loc. cit.*, p. 380) recorded *Acacia* as its host-plant.

Coptosoma contectum Montandon.

1902. *Coptosoma contectum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 21.
 1908. *Coptosoma contecta*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 135.
 1909. *Coptosoma contecta*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 331.
 1918. *Coptosoma contectum*, Distant, *Faun. Brit. Ind., Rhyn.* VII, p. 111.

We refer to this species nine pinned specimens, five males and four females, from Soom, 4,000-5,000 feet (F. H. Gravely, 14.vi.1914), Pashok,

¹ Jensen-Haarup, A. C., *Ent. Medd.* XVI, p. 44 (1926). This publication is not available in Calcutta.

² Bergroth, E., *Ann. Soc. Ent. Belgique* LVIII, pp. 183, 184 (1914). It may be remarked here that Distant later noticed *C. montandoni* by name only but did not refer to it in detail. Cf. Distant (1918, p. 151).

³ China, W. E., *Ann. Mag. Nat. Hist.* (10) VII, pp. 576-578, fig. 2 (1931).

4,500-5,500 feet (F. H. Gravely, 26.v-14.vi.1914) and Mangpu (S. W. Kemp), Darjeeling district, Eastern Himalayas.

The species is already known from Rungbong Valley and Lebong, Darjeeling district, Eastern Himalayas.

It is represented in the collections of the Zoological Survey of India from Lebong, 6,000-6,600 feet, Darjeeling district, Eastern Himalayas.

***Coptosoma ramosa* Walker.**

1867. *Coptosoma ramosa*, Walker, *Cat. Het.* I, p. 93.

1902. *Coptosoma ramosum*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 21, 22.

1909. *Coptosoma ramosa*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 337.

There are two pinned specimens, a male and a female, of this species from Trincomalee, Ceylon, in the collections of the Zoological Survey of India. The specimens were determined by Dr. F. H. Gravely.

The species is also known to occur in the Andaman Islands ; Papua ; New Guinea ; Birara.

***Coptosoma cribrarium* (Fabricius).**

1798. *Cimex cribrarius*, Fabricius, *Ent. Syst. Suppl.*, p. 531.

1902. *Coptosoma cribrarium*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 22, 23, fig. 11.

1903. *Coptosoma cribrarium*, Distant, *Fasc. Malay.* II, p. 224.

1909. *Coptosoma cribraria*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, pp. 331 and 379, 380.

1909. *Coptosoma cribrarium*, Lefroy, *Rec. Ind. Mus.* III, p. 302.

1910. *Coptosoma cribrarium*, Kershaw, *Ann. Soc. Ent. Belgique* LIV, pp. 71, 72, figs. 8-11.

1912. *Coptosoma cribrarium*, Oshanin, *Kat. paläarkt. Hem.*, p. 3.

1913. *Coptosoma cribraria*, Aiyar, *Journ. Bombay Nat. Hist. Soc.* XXII, pp. 412, 413, pl. B (pt.).

1915. *Coptosoma cribraria*, Gravely, *Rec. Ind. Mus.* XI, p. 510.

1926. *Coptosoma cribrarium*, Esaki, *Ann. Hist.-nat. Mus. Nat. Hungar.* XXIV, p. 142.

We refer to this species fifty pinned specimens, comprising twenty-seven males and twenty-three females, with two nymphs in spirit, from the following localities :—one female from Chashma Shahi, Srinagar, Kashmir (B. Chand, 5.ix.1928) ; two females from Pashok, 2,500 feet, Darjeeling district, Eastern Himalayas (F. H. Gravely, 26.v-14.vi.1916) ; one female from Maini Mukh, Chittagong Hill Tracts (R. P. Mullins, 1922), one female from Khargpur (R. A. Hodgart, 17-30.vi.1911) and one male, one female, and two nymphs from Calcutta (C. Paiva, 18.viii.1916 ; F. H. Gravely 16.iii.1911 “ on *Pongamia glabra* ”), Bengal ; two males from Pusa, Bihar (H. S. Pruthi, 26-30.viii.1925) ; one female from Barkuda Island, Chilka Lake, Ganjam district, Orissa (N. Annandale, 3.ix.1923 “ on trunk of *Pongamia glabra* attended by *Camponotus mitis* ”) ; one female from forests between Diguvametta and railway tunnel, eight miles from railway station, 1,000-1,500 feet, foot of Nallamalai Hills, East, (H. S. Pruthi, 22.viii.1929) and twenty-four males and fifteen females from Denkanikota, 3,000 feet, Salem district (H. S. Pruthi, 8-14.vii.1929), South India.

The species has been recorded from Jullundur, Punjab ; Calcutta, Bengal ; Barway, Muzaffarpur, Pusa and Ranchi, Bihar ; Naga Hills, Assam ; Nilgiri Hills and Bangalore, South India ; Bombay, Burhanpur, Jalalpur, Mahim, Nadiad and Surat, Bombay Presidency ; Bhamo,

Metanja and Swegu, Burma ; Tennasserim ; Ceylon. It is also widely distributed in Southern Asia, being known from China, Cochin China, Indo-China, Siam, Malay States, Java, Sumatra, Sunda, Timor, Formosa and Japan.

It is represented in the collections of the Zoological Survey of India by ninety-one examples, comprising forty males, forty-nine females and two nymphs from the following localities :—Rungpo, 1,400 feet and Singla, 1,500 feet, Darjeeling district, Eastern Himalayas ; Rangamati, Chittagong Hill Tracts and Calcutta, Bengal ; North-East Assam ; Bangalore, South India ; Medha, Satara district, Bombay Presidency ; Maymyo, Burma.

Kershaw (*loc. cit.*, p. 71) and Aiyar (*loc. cit.*, p. 412) have described and figured the life-history of *C. cribrarium*. The two nymphs already present in the collections of the Zoological Survey of India are rotundate in appearance and not elongate as figured by Kershaw.

Kershaw (*loc. cit.*, p. 71) has recorded the species in association with *Brachyplatys subaëneus* (Westwood) on *Pueraria thunbergiana* Bentham. Aiyar (*loc. cit.*, p. 412) has reported it as one of the commonest pests of *Dolichos lablab*, also attacking agathi, red gram, indigo and cluster bean plants.

Coptosoma pravum Montandon.

1902. *Coptosoma pravum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 24.

1908. *Coptosoma prava*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 137.

1909. *Coptosoma prava*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 336.

We assign to this species a single female pinned example from Hopin, Myitkyina district, Upper Burma (B. N. Chopra, 12-13.x.1926).

The species had been known only from Myitta, Tenasserim.

It was hitherto not represented in the collections of the Zoological Survey of India.

Coptosoma sphaerula (Germar).

1902. *Coptosoma sphaerula*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 26.

1909. *Coptosoma sphaerula*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 339.

There is a single pinned female of *C. sphaerula* from Java in the collections of the Zoological Survey of India.

The species has also been recorded from Barway, Bihar ; Java ; Australia.

Coptosoma parvulum Dallas.

1902. *Coptosoma parvulum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 26.

1909. *Coptosoma parvula*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 336.

This species is represented in the collections of the Zoological Survey of India by a single male pinned specimen from Sikkim. The specimen is in a rather poor condition. Its previous record was merely East Indies.

Coptosoma assamensis Atkinson.

1886. *Coptosoma assamensis*, Atkinson, *Proc. Asiat. Soc. Bengal*, pp. 174, 175.

1902. *Coptosoma assamense*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 27.

1909. *Coptosoma assamensis*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 328.

The species is represented in the collections of the Zoological Survey of India by a single female pinned example from North-East Assam (H. H. Godwin-Austen).

Coptosoma pulchellum Montandon.

1902. *Coptosoma pulchellum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 28.
 1903. *Coptosoma pulchellum*, Distant, *Fasc. Malay.* II, p. 224.
 1908. *Coptosoma pulchella*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 137.
 1909. *Coptosoma pulchella*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 337.
 1918. *Coptosoma pulchellum*, Distant, *Faun. Brit. Ind., Rhyn.* VII, p. 111.

We refer to this species two pinned specimens, a male and a female, from Neutral Saddle, 5,000 feet, Palni Hills, South India (S. W. Kemp, 13-15.ix.1922).

C. pulchellum is already known from Kodaikanal, Pondicherry and the Nilgiri Hills, South India ; Karennee, Burma ; Myitta, Tenasserim ; Malay States ; China ; Java.

The species was hitherto not represented in the collections of the Zoological Survey of India.

Coptosoma W Montandon.

1902. *Coptosoma W*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 28, 29, fig. 12.
 1908. *Coptosoma W*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 138.
 1909. *Coptosoma W*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 341.

There are in the collections of the Zoological Survey of India four female pinned specimens of this species and its varieties, presumably named by the late Mr. C. A. Paiva, as follows :—

No. 9625/15 *Coptosoma W*, from Paresnath, Bihar (N. Annandale, 9.iv.1909) ; No. 220/15 *Coptosoma W* var. *a* Distant, from Sukna, 533 feet, Eastern Himalayas ; No. 9626/15 *Coptosoma W* var. *b* Distant, from Paresnath, Bihar (N. Annandale, 9.iv.1909) ; No. 6145/15 *Coptosoma W* var., from Sukna, 500 feet, Eastern Himalayas (N. Annandale, 2.vii.1908). The last two specimens *viz.* Nos. 9626/15 and 6145/15 belong to *Coptosoma W* Montandon var. *a* Distant.

Coptosoma W has been recorded from Barway, Bihar ; Bhamo, Burma.

Coptosoma nepalensis Westwood.

1837. *Coptosoma nepalensis*, Westwood, in *Hope Cat. Hem.* I, p. 17.
 1902. *Coptosoma nepalense*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 30.
 1909. *Coptosoma nepalensis*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, pp. 335 and 382.

We refer to this species two female pinned examples, No. 9363/7 from Sikkim (E. T. Atkinson) and No. 8836/16 from Kurseong, 4,700-5,000 feet, Darjeeling district, Eastern Himalayas (N. Annandale, 23.vi.1910), determined previously as *Coptosoma fimbriatum* Distant.

The collections of the Zoological Survey of India comprise three male and two female specimens of this species from the following localities :—Pussumbing, 4,700 feet, Pashok, 2,000 and 3,500 feet and Soom, 4,000-5,000 feet, Darjeeling district, Eastern Himalayas.

C. nepalensis was originally recorded from Nepal. Since then it has been known from India and Sikkim.¹ Kuhlitz² listed it also from these localities, but Distant (*loc. cit.*, p. 30) and Kirkaldy (*loc. cit.*, pp. 335

¹ Atkinson, E. T., *Journ. Asiat. Soc. Bengal* LVI, pp. 32, 33 (1887).

² Kuhlitz, T., *Arch. Naturgesch. Beih.* LXVII (i), p. 215 (1901).

and 382) have noticed it only from Sikkim (Mangpu), Burma (Shwegu), Java, Timor, the Philippines and North Queensland, thus omitting its original habitat from which the species derived its name.

Coptosoma siamica Walker.

1867. *Coptosoma siamica*, Walker, *Cat. Het.* I, p. 89.
 1902. *Coptosoma siamicum*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 30, 31.
 1903. *Coptosoma siamicum*, Distant, *Fasc. Malay.* II, p. 225.
 1909. *Coptosoma siamicum*, Breddin, *Ann. Soc. Ent. Belgique* LIII, p. 258.
 1909. *Coptosoma siamicum*, Lefroy, *Rec. Ind. Mus.* III, p. 302.
 1909. *Coptosoma siamica*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 338.
 1910. *Coptosoma siamica*, Kirkaldy, *Ann. Soc. Ent. Belgique* LIV, p. 111.
 1912. *Coptosoma siamicum*, Oshanin, *Kat. paläarkt. Hem.*, p. 3.
 1926. *Coptosoma siamicum*, Esaki, *Ann. Hist.-nat. Mus. Nat. Hungar.* XXIV, p. 143.

We assign to this species sixty-four pinned specimens from the following localities:—one male and three females from Khargpur, Bengal (R. A. Hodgart, 17-30.vi.1911); one male from North-East Assam (H. H. Godwin-Austen); two males and one female from forests at Guvvaluchervu, 1,200 feet, Palkonda Hills (H. S. Pruthi, 20-22.vi.1929), four males from hills near Mathiapalli, adjoining Craigmere Road, about three miles from Yercaud, 4,500 feet (H. S. Pruthi, 9.vi.1929) and eight males and forty-three females from Yercaud, 4,600 feet (H. S. Pruthi, 4.vi.1929 “from *Lantana* flowers”), Shevaroy Hills, Salem district, South India; one male from Haddo, Andaman Islands (C. A. Paiva 24.iii.1911).

A few of the several specimens from Yercaud that we have examined have the anterior margin of the pronotum concolorous.

C. siamica is known to occur in Calcutta, Dacca and Raneeunge, Bengal; Barway and Pusa, Bihar; Bombay and Surat, Bombay Presidency; Karennee and Mergui, Burma; Ceylon; China; Indo-China; Siam; Malay Archipelago; Formosa; North Australia.

It is represented in the collections of the Zoological Survey of India from Kalka, 2,400 feet, base of Simla Hills, Punjab; Almora, 5,500 feet, Kumaon district and Bijrani, Naini Tal district, United Provinces; Rajmahal, Bihar; Mazbat, Mangaldai district, North-East Assam; Malay Archipelago; Australia.

Kirkaldy (1909, p. 338), in a footnote, remarked on the invalidity of Walker's species which he cites in the synonymy of *C. siamica*. According to Kirkaldy these species stand in need of revision.

Coptosoma noualhierii Montandon.

1902. *Coptosoma noualhierii*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 31, 32.
 1908. *Coptosoma noualhierii*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 137.
 1909. *Coptosoma noualhierii*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 335.
 1909. *Coptosoma noualhierii* var. *obscuratum*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 335.
 1918. *Coptosoma noualhierii*, Distant, *Faun. Brit. Ind., Rhyn.* VII, p. 115.

We refer to this species twelve pinned examples from the following localities:—one female from Allahabad, United Provinces (R. A. Hodgart, 10.xi.1911); two males and one female from Sukna, 1,000 feet, Darjeeling district, Eastern Himalayas (Lord Carmichael's Colln., iv. 1913); one female from Calcutta, Bengal (Mus. Colln., 25.ix.1912);

three males and four females from Kukkal, 6,500 feet, Palni Hills, South India (S. W. Kemp, 29-30.viii.1922).

In the specimens from Kukkal the spots on the basal callosity of the scutellum vary in size and the broken pale anterior margin of the pronotum is absent.

The species is known from Dehra Dun, United Provinces ; Barway and Chota Nagpur, Bihar ; Palni Hills, South India ; Maha Illupalama, Ceylon.

It is represented in the collections of the Zoological Survey of India from Calcutta, Bengal ; Katihar, Purnea district, Bihar ; Hambantota, Ceylon.

Coptosoma indicum Lethierry.

1896. *Coptosoma indicum*, Montandon, *Ann. Soc. Ent. France* LXV, p. 458.
 1902. *Coptosoma indicum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 33.
 1908. *Coptosoma indica*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 136.
 1909. *Coptosoma indica*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 333.
 1909. *Coptosoma indicum*, Lefroy, *Rec. Ind. Mus.* III, p. 302.

This species is recorded from Palamau¹ and Pusa, Bihar ; Pondicherry, Madras Presidency ; Point de Galle, Ceylon ; Siam.

It is represented in the collections of the Zoological Survey of India from Barkuda Island, Chilka Lake, Ganjam district, Orissa ; Vizagapatam, Madras Presidency ; Medha, 2,200 feet, Satara district, Bombay Presidency.

Coptosoma nazirae Atkinson.

1902. *Coptosoma nazirae*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 33.
 1909. *Coptosoma nazirae*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 335.

We refer to this species forty-seven pinned specimens, comprising twenty-six males and twenty-one females, from the following localities :—Pashok, 5,000 feet (F. H. Gravely, 26.v-14.vi.1916) and Singla, 1,500 feet (Lord Carmichael's Colln., vi.1913), Darjeeling district, Eastern Himalayas ; Sikkim (Lord Carmichael's Colln., v-vi.1912).

The species is also known from Mangpu, Darjeeling district, Eastern Himalayas and Assam.

It is represented in the collections of the Zoological Survey of India from Pussumbing, 4,700 feet, Darjeeling district, Eastern Himalayas ; Sikkim ; Mangaldai, North-East Assam.

Coptosoma feanum Montandon.

1902. *Coptosoma feanum*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 33, 34.
 1908. *Coptosoma feana*, Bergroth, *Mém. Soc. Ent. Belgique* XV, p. 136.
 1909. *Coptosoma feana*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 332.

This species occurs in Mangpu, Darjeeling district, Eastern Himalayas ; Naga Hills, Assam ; Nilgiri Hills, South India ; Karennee and Rangoon, Burma ; Myitta, Tenasserim ; Malacca.

¹ This is the old name for the present Daltonganj, Bihar. Cf. *Post and Telegraph Guide*, p. 510. September 1939. New Delhi.

It is represented in the collections of the Zoological Survey of India from Mangpu, Darjeeling district, Eastern Himalayas ; Sikkim ; Margherita, Assam.

This species appears to be closely related to the preceding one.

Coptosoma variegatum (Herrich-Schäffer).

1839. *Thyreocoris variegatus*, Herrich-Schäffer, *Wanz. Ins.* IV, p. 83, pl. cxxxiv, fig. 414.
 1902. *Coptosoma siamicum* var. *orbicula*, Distant, *Faun. Brit. Ind., Rhyn.* I, pp. 30, 31.
 1909. *Coptosoma variegata*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 340.
 1909. *Coptosoma variegata* var. *orbicula*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 340.
 1909. *Coptosoma siamicum* var. *orbiculus*, Breddin, *Ann. Soc. Ent. Belgique* LIII, p. 258.
 1910. *Coptosoma variegata*, Kirkaldy, *Ann. Soc. Ent. Belgique* LIV, p. 111.
 1918. *Coptosoma variegatum*, Distant, *Faun. Brit. Ind., Rhyn.* VII, p. 114.
 1928. *Coptosoma variegatum*, China, *Journ. Fed. Malay States Mus.* VIII, p. 185.

We assign to this species seventy-four pinned examples from the following localities :—three males from Rangamati, Chittagong Hill Tracts, Bengal (R. Hodgart, 11-16.vii.1915) ; one female from Naga Hills, Assam (H. H. Godwin-Austen) ; one male at the Assam-Bhutan Frontier, Mangaldai district, North-East Assam (S. W. Kemp, 25.xii.1910) ; one male and four females from forests at Guvvaluchervu, 1,200 feet, Palkonda Hills (H. S. Pruthi, 1-3.viii.1929), one female from hills near Mathiapalli, adjoining Craigmere Road, about three miles from Yercaud, 4,500 feet (H. S. Pruthi, 9.vi.1929) and one male and four females from Yercaud, 4,600 feet (H. S. Pruthi, 4.vi.1929 “ from *Lantana* flowers ”), Shevaroy Hills, Salem district, South India ; one female from Pakokku, 180 feet (Miss Molesworth, ix-x.1915) and one male and one female from Hopin, Myitkyina district (B. N. Chopra, 12-13.x.1926), Upper Burma ; thirty males and seventeen females from Haddo (C. A. Paiva, 24.iii.1911) and three males and five females from Port Blair, Andaman Islands (S. W. Kemp, 15.ii-15.iii.1915).

The following pinned specimens, named by the late Mr. C. A. Paiva as *C. siamica* Walker, are also referable to this species :—one male from Calcutta, Bengal ; two females from Purnea district and Siripur, Saran district, Bihar ; six males from Bandra, Bombay Presidency ; three males from Peradeniya, Ceylon ; one male and one female bearing the locality-labels “ Bombay ” and “ Ceylon ”, respectively.

C. variegatum has been recorded from Gopaldhara, Rungbong Valley, Darjeeling district, Eastern Himalayas ; Sakhawala, Dehra Dun, United Provinces ; Ceylon ; Tonkin, Indo-China ; South China ; Java ; Sumatra ; Borneo ; Timor ; Philippines ; Papua ; Sula.

Distant (1902, p. 31) considered Walker's two species, *C. orbicula* and *C. blandula* and Montandon's *C. pygmaeum* var. *accensitum* as synonyms of *C. siamicum* var. *orbicula*. Kirkaldy (1909, p. 340) regarded Walker's species and Montandon's variety as synonyms of *C. variegatum* rather than of *C. siamica* Walker. Later, Distant (1918, p. 114) followed Kirkaldy's modification. China (1928, p. 185), in his synonymy of *C. variegatum* refers only to the more important literature relating to the species (*i.e.* Herrich-Schäffer, *loc. cit.*, p. 83 and Montandon¹).

¹ Montandon, A. L., *Ann. Mus. Civ. Stor. Nat. Genova* (2) XIV, p. 134 (1894).

Coptosoma fimbriatum Distant.

1902. *Coptosoma fimbriatum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 34.
 1909. *Coptosoma fimbriata*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 332.
 1909. *Coptosoma fimbriata* var. *cingulatum*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 332.

We refer to this species twenty-two pinned examples from the following localities:—two females from Kurseong (F. Stoliczka), one male and one female from Pankabari (F. Stoliczka), one male and two females from Soom, 4,000-5,000 feet (Lord Carmichael's Colln., 7-8.vii.1914), one male and two females from Pashok, 4,500 feet (F. H. Gravely, 26.v-14.vi.1916) and five males and two females from Sureil, 5,500 feet (N. Annandale and F. H. Gravely, 11-31.x.1917 "on spiny nettle"), Darjeeling district, Eastern Himalayas; two males and females from Cherrapunji, Khasi Hills, Assam (S. W. Kemp, 2-8.x.1914) and one male from North-East Assam (H. H. Godwin-Austen).

Some of the specimens listed above which we have determined as *C. fimbriatum* do not entirely conform to Distant's description. In the five males and the two females from Sureil the dorsal aspect of the body and the abdomen ventrally are purplish-black or metallic in colour and the first two apical joints of the antennae are infusate; the one male and the two females from Soom and the two males and the one female from Pashok, besides having the first two apical joints of the antennae infusate have the ochraceous lateral anterior dilated margins of the pronotum intersected by a black line, the lateral and the apical margins of the scutellum ochraceous and an ochraceous marking at the apex of each abdominal segment.

As will be noticed from the foregoing remarks, *C. fimbriatum* is a rather variable species. Montandon¹ established the variety *cingulatum* on account of the presence of the markings at the edges of the scutellum and the apices of the abdominal segments but as these features are also present in the specimens that we have studied, we consider Montandon's variety as belonging to the species itself.

C. fimbriatum has been recorded from Kurseong, Darjeeling district, Eastern Himalayas, Sikkim and China.

Coptosoma testacea Walker.

1867. *Coptosoma testacea*, Walker, *Cat. Het.* I, p. 91.
 1902. *Coptosoma testaceum*, Distant, *Faun. Brit. Ind., Rhyn.* I, p. 34.
 1909. *Coptosoma testacea*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 340.
 1909. *Coptosoma testacea* var. *immaculata*, Kirkaldy, *Cat. Hem. (Het.), Cimicid.* I, p. 340.

The species is represented in the collections of the Zoological Survey of India by forty-one pinned specimens, comprising twenty-one males and twenty females, all from Calcutta.

It has previously been recorded from Calcutta, Bengal and Java.

¹ Montandon, A. L., *Ann. Soc. Ent. Belgique* XL, p. 435 (1896).