

- Figur 3. *Sphaeroseius praedatoris*. Der Doppelfleck am Rande des Rückenschildes hinter Coxa IV.
- | | | |
|---------|--------------------------------|--|
| 4. | | Unterseite. |
| 5. | | Peritrema. |
| 6 u. 7. | | Haare vom Rückenschilde. |
| 8. | | Sternalschild. |
| 9. | | Epistom. |
| 10. | | Hypostom. |
| 11. | | Vorderende von Bein I. |
| 12. | | Mandibel. |
| 13. | | Nymphe, Unterseite. |
| 14. | <i>Sphaeroseius comes</i> . | Oberseite. |
| 15. | | Unterseite. |
| 16. | „ | Anal Schild. |
| 17. | <i>Sphaeroseius ecitonis</i> . | Borste vom Hinterrande d. Rückens. |
| 18. | | Borste vor Coxa II auf dem Rande des Rückenschildes. |

Bei allen Figuren, welche die Rücken- oder Bauchseite der Tiere darstellen, ist nur ein Teil der darauf befindlichen Haare gezeichnet.

A revision of the genus *Ceracris* Walk. (Orthopt. Acrid.).

By B. P. Uvarov, London.

Walker described the genus *Ceracris*, with a single species *nigricornis*, as a member of *Oedipodidae*, which family has been understood by him in a very wide sense. His description being very unsatisfactory, the genus remained unrecognised for a long time, and J. Bolivar described in 1909 a synonymous genus *Kuthya* founded on two species by Brunner, *Duronia versicolor*, which is conspecific with *nigricornis*, and *D. deflorata*. In 1910 Kirby in his Catalogue quite correctly referred the two species by Brunner to *Ceracris*, but Bolivar's *Kuthya* remained unknown to him, and even in 1914, in the Fauna of British India, he overlooked Bolivar's genus. In that latter work Kirby redescribed the genus *Ceracris* and its species, while he failed to recognise the synonymy of *nigricornis* and *versicolor*, and also described under the name *Phlaeoba cinctalis* Kirby a species synonymous with *deflorata*. J. Bolivar, also in 1914, published a full description of the genus *Kuthya* and of one more species of it, *laeta* Bol. This latter species has been described twice more, as *Parapleurus amillatus* by Karny in 1915, and as *Geea conspicua*, type of the genus

Geea, by Caudell in 1921. A preliminary discussion of generic and specific synonymy has been published by me in 1921. Since then I have found that *Parapleurus fasciatus* Br. W. and *P. koshunensis* Shiraki also belong to *Ceracris* which raises the number of specific names in the genus to nine, while the genus itself has three names. The full synonymy of the genus is, as follows:

1870. *Ceracris*, Walker, Cat. Derm. Salt. Brit. Mus. IV, pp. 721, 790.

1909. *Kuthya*, J. Bolivar, Bol. Soc. Esp. Hist. Nat., p. 291.

1910. *Ceracris*, Kirby, Syn. Cat. Orth., III, p. 144.

1914. *Ceracris*, Kirby, Fauna Brit. India, Orth., Acrid., pp. 96, 110.

1914. *Kuthya*, J. Bolivar, Trab. Mus. Nac. Madrid, Ser. Zool., no. 20, pp. 74, 78.

1921. *Geea*, Caudell, Proc. Ent. Soc. Wash., XXIII, p. 29.

Bolivar's description of *Kuthya*, the genotype of which is fixed here by me as *Duronia versicolor* (= *nigricornis*) may be taken as description of *Ceracris*.

As regards the systematic position of *Ceracris* I think J. Bolivar is quite right in treating it as a member of *Phleobae*, allied to *Holopercna* and *Sjoestedtia*, while it is certainly not closely related to *Parapleurus* to which genus several species of *Ceracris* have been referred by various authors. Indeed, its differences from *Parapleurus* are quite important: the face is much more oblique; fastigium of vertex less sloping, more prominent and more narrow; pronotum more compressed, constricted in the middle, with the lateral keels always present (if sometimes only in parts) and the hind margin obtusely angulate; valvae of the ovipositor are quite short and thick, the lower ones without a footh. Of the other Old World genera, *Vitalisia* J. Bol. seems to be very near *Ceracris* and, perhaps, even synonymous with it, but I cannot decide the point without examining the genotype. On the other hand, there is a strong resemblance and, I believe a genuine affinity between *Ceracris* and the South American genus *Compsacris* J. Bol. In fact the differences between *Ceracris* and *Compsacris* are mainly of relative character, the head in *Compsacris* being more elongated and distinctly ascending, while the pronotum is more saddle-shaped; ovipositor in *Ceracris* is of the same structure as in *Compsacris* and in the closely allied *Staurochectus*, also a South American genus. It may be mentioned also that the type of coloration and pattern is very similar in the three genera, but this may be due to convergence provoked by similar ecological conditions of respective habitats.

Thanks to the courtesy of authorities of the respective Museums, I have been able to study the types of seven species, out of nine, as follows: *Ceracris nigricornis* Walk., *Phlaeoba cinctalis* Kirby (British

Museum), *Duronia versicolor* Br. W., *D. deflorata* Br. W., *Parapleurus fasciatus* Br. W. (Genoa Museum, Dr. Gestro), *Kuthya laeta* J. Bol. (Madrid Museum, Dr. C. Bolivar) and *Parapleurus armillatus* Karny (Deutsches Entomologisches Institut at Dahlem, Dr. Walther Horn). I wish here to express my thanks to all above named persons for lending me the types. The two species not studied on types are *Geea conspicua* Caudell, which I am able to identify owing to its good description, and *Parapleurus koshunensis* Shir., which remains somewhat obscure.

As a result of my studies, based, apart from types, on fairly good series of specimens, mainly in the collections of the British Museum, and of the Pusa Agricultural Research Institute, I can recognise only four distinct species of *Ceracris*, including a new one.

The following key to species is based mainly on colour pattern, since this proved to be the most obvious and reliable character. On the other hand, the degree of development and the shape of pronotal keels are subject to strong individual variations, while the size, general habitus, relative length of elytra and some other characters, though of unquestionable value for recognising species, are not definite enough to be used in the key. Accordingly, they are included by me in the specific diagnoses, but not in the key.

Key to species of *Ceracris*.

- 1 (2). Face and pronotum coarsely punctured. Hind femora externally with a narrow, but always distinct, blackish fascia just before the pre-apical pale ring. Elytra brown, with the anal field green, or brownish-green. 1. *nigricornis* Wlk.
- 2 (1). Face and pronotum smooth, or only minutely punctured in metazona. Hind femora without a blackish fascia before the pale ring.
- 3 (6). Elytra with a pale pre-radial stripe.
- 4 (5). The whole pre-radial part of elytra green; anal area also green. Antennae with white tips. 2. *fasciata* (Br. W.).
- 5 (4). Elytra with only a sharply defined narrow sulfurous stripe in the scapular area; anal area greenish or only slightly paler than the rest of elytra. Antennae entirely black. 3. *striata*, sp. n.
- 6 (3) Elytra without a pale pre-radial stripe; anal area pale. 4. *deflorata* (Br. W.).

1. *Ceracris nigricornis*, Wlk.

1870. *Ceracris nigricornis*, Walker, Cat. Derm. Brit. Mus., IV, p. 791.

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1893. *Duronina versicolor*, Brunner, Ann. Mus. Civ. Genova, XXXIII, p. 126.

1914. *Kuthya laeta*, J. Bolivar, Trab. Mus. Nac. Madrid, ser. Zool., no. 20, p. 79.

1915. *Parapleurus armillatus*, Karny, Supplementa Entom., IV, p. 83.

1921. *Geea conspicua*, Caudell, Proc. Ent. Soc. Washington, XXIII, p. 30.

More robustly built than other species. Face coarsely punctured; frontal ridge with the margins thick, subparallel, below somewhat divergent and obliterate. Pronotum thick, very coarsely punctured in prozona, less coarsely, but more densely in metazona; lateral keels very low, almost obliterated by punctures, parallel in prozona, scarcely perceptible at the front margin of metazona. Elytra reaching the hind knees, or a little longer, relatively broad.

Coloration brownish-green, or olive-green. Black lateral fascia on the head, and along the upper margin of pronotal lobes, not extending on the disc of metazona. Elytra brown, with the anal field apple-green, or olive-green. Hind femora more or less reddish, especially below, with a narrow pale pre-apical ring, preceded by a narrow blackish (sometimes interrupted) ring; knees black, but their lobes in ♀ pale. Hind tibiae dirty-bluish, with the base black, a pale postbasal ring, followed by a blackish ring; underside brown.

According to size, the species may be divided into two geographical races, as follows:

a) *C. nigricornis nigricornis*, Wlk.

Total length ♂ 18—20, ♀ 26—30; elytra ♂ 15—20, ♀ 21—26; hind femur ♂ 11—14, ♀ 15—18 mm.

b) *C. nigricornis laeta* (Bol.).

Total length ♂ 22—24, ♀ 34—37; elytra ♂ 23, ♀ 28—31; hind femur ♂ 17, ♀ 19—21 mm.

Specimens studied:

a) *C. nigricornis nigricornis*, Wlk.

North Hindostan, ♀ (type of *nigricornis*, Brit. Mus.); Bhamo, ♀ (type of *versicolor*, Genoa Mus.); Lebong, 5000', 3 ♂♂, 4 ♀♀ (Pusa coll.; Brit. Mus.); Assam, Shillong, 4900', 4 ♂♂, 1 ♀ (Pusa coll.; Brit. Mus.); Khasi Hills, Dumpep, 6000', 1 ♀ (Pusa coll.); Kumaon, Ramargh, 6000', 2 ♂♂, 1 ♀ (Pusa coll.); Manā Basti, 1 ♂, 1 ♀ (Madrid Mus.); Kurseong, 1 ♂ (Madrid Mus.); British Bootan, 1 ♀ (Madrid Mus.)

The small (typical) subspecies, thus occurs in N. E. India, in the middle regions of Himalayas, which suggests that the species belongs really to the South Chinese fauna and only relatively recently penetrated westwards into India.

b) *C. nigricornis laeta* (J. Bol.).

Than-Moi, Tonkin, 1 ♀ (type of *Kuthya laeta* Bol.; Madrid Mus.); *ibidem*, 2 ♀♀ (Brit. Mus.); Hoozan, Formosa, 1 ♀ (type of *P. armillatus* Karny; Deut. Ent. Inst.); Sam-sa, 1 ♂ (Brit. Mus.); Chung-king, Szechuen prov., W. China, 1 ♂, 1 ♀ (Brit. Mus.)

Caudell described his *Geea conspicua* from Mokanshan, China and it is obvious that this more robust race is peculiar to S. China and Formosa.

2. *Ceraeris fasciata* (Br. W.).

1893. *Parapleurus fasciatus*, Brunner, Ann. Mus. Civ. Genova, XXXIII, p. 127.

? 1910. *Parapleurus koshunensis*, Shiraki, Acrididen Japans, p. 14, pl. I, fig. 3.

Small, but not very slender. Face smooth; frontal ridge sulcate throughout, with the margins sharp, gradually divergent downwards. Pronotum rounded, finely punctured in metazona only; lateral keels very fine and interrupted, or practically obsolete (when present, slightly incurved in prozona and strongly divergent in metazona). Elytra slightly projecting beyond the hind knees.

Coloration pale-green, on each side with a very sharply defined black lateral fascia, which encroaches on the pronotal disc, especially on metazona. Elytra black or blackish, with the whole of pre-radial area and the anal area pale-green. Hind femora yellow, brownish above; knees black; outer knee-lobes in ♀ pale; a pale pre-apical ring. Hind tibiae pale-blue; pattern as in *nigricornis*,

Total length ♂ 15—19, ♀ 22—27; elytra ♂ 13—17, ♀ 18—23; hind femur ♂ 10—13, ♀ 14—16 mm.

The species is somewhat variable with regard to the development of pronotal keels, which are sometimes well distinct, though very fine, and sometimes practically absent. The coloration is, however, very constant and highly characteristic; especially noticeable are the white-tipped antennae. Variation in size may be due to geographical conditions since Brunner's specimens from Burma are distinctly smaller than those from Foochow, China; in the above measurements, the first figure applies to one of Brunner's specimens, the second one is taken from Chinese insects. Brunner's types are badly discoloured by preservation in liquid, and the above description of coloration is based on Chinese specimens, which do not differ, however, from the Burmese ones in pattern except the female from Metania, Catcin. This latter has not the whole of pre-radial area pale, but only the scapular field, which reminds on the next species; the bad state of preservation makes it impossible to

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decide definitely, whether this female actually belongs to *fasciata*, but I regard the male from Palon, Pegu as the single type of the species, since it is labelled so originally.

The description of *P. koshunensis* is very unsatisfactory, but, on the whole, corresponds well to specimens of *fasciata* discoloured by liquid preservation, and the figures agree with the latter species; I refer *koshunensis* here as a doubtful synonym.

Specimens studied:

Palon, Pegu, 1 ♂ (type of *P. fasciatus* Br. W.; Genova Mus.); Metania, Catein, 1 ♀ (perhaps not the same species; paratype of *P. fasciatus* Br. W.; Genova Mus.); Foochow, China, 3 ♂♂, 2 ♀♀ (C. B. Kellog coll. and Brit. Mus.).

3. *Ceracris striata*, sp. n.

Of medium size, very slender. Antennae very slightly widened basally. Head distinctly ascending; face strongly reclinate, smooth; frontal costa deeply sulcate; its margins sharp, gradually and considerably divergent downwards; fastigium of vertex prominent forward, longer than broad. Pronotum compressed laterally, its fore part somewhat ascending; disc smooth, with only very fine punctures in the hind part of metazona; lateral keels distinct, callous, practically parallel in prozona, strongly divergent in metazona, disappearing behind, deeply intersected by sulci. Elytra extending somewhat beyond the hind knees, narrow.

Coloration greenish-grey. Antennae wholly black. The usual black lateral fascia on pronotal lobes very narrow, not sharply defined below. Elytra brownish, with a very sharp, narrow sulfurous stripe in the scapular field, not reaching its apex; anal area greenish. Hind femora reddish-brown, with a yellowish preapical ring; knees black (even the lobes in ♀). Hind tibiae black below, blackish-blue above, with the usual pattern near the base.

Total length ♂ 18 - 20, ♀ 28: elytra ♂ 16—18, ♀ 23; hind femur ♂ 11—12, ♀ 15.

A very distinct species known to me by a series of 9 ♂♂ and 3 ♀♀ from Abbotabad, N. W. Frontier Province 4120' (Pusa coll. and Brit. Mus.).

4. *Ceracris deflorata* (Br. W.)

1893. *Duronia deflorata*, Brunner, Ann. Mus. Civ. Genova, XXXIII, p. 126.

1914. *Ceracris deflorata*, Kirby, Fauna Brit. India, Acrid., p. 112.

1914. *Phlaeoba cinctalis*, Kirby, l. c., p. 105.

Large, but very slender. Face smooth; frontal ridge sulcate

throughout, its margins sharp, gradually divergent downwards. Pronotum strongly compressed laterally, smooth; lateral keels well distinct throughout, though not quite reaching the hind margin, callous, perfectly straight and parallel in prozona, divergent and slightly convex in metazona. Elytra narrow, extending well beyond the hind knees.

Coloration pale brown. Antennae black. Lateral fasciae on pronotum castaneous, extending in metazona on the disc. Elytra pale brown, with the anal area stramineous, or greenish. Hind femora pale reddish-brown, with a pale pre-apical ring, knees blackish or black, outer lobes in ♀ pale. Hind tibiae bluish, with the usual basal pattern.

Total length ♂ 25, ♀ 28—33; elytra ♂ 23, ♀ 27—30; hind femur ♂ 14, ♀ 17—18 mm. (the first figure for ♀ refers to the type of *deflorata*).

This species is only a little smaller than *C. nigricornis laeta*, but much more slender, and is easily recognisable by its not at all sharply contrasted coloration.

Specimens studied:

Bhamo, 1 ♀ (type of *deflorata* Br.; Genova Mus.); Pusa, Bengal, 2 ♂♂, 3 ♀♀ (including type of *Ph. cinctalis* Kirby; Brit. Mus.); Chapra, Bengal, 1 ♂ (Brit. Mus.).

Specimens from Pusa and Chapra, that is from the plains of India, are somewhat larger than the type from Burma, but I have not seen any more specimens from the latter locality and the difference may be of no importance.

Ein neuer *Haplothrips* aus Ferghana nebst Verzeichnis der bisher in Rußland gefundenen Thysanopteren.

Von Oscar John, Petersburg.

An der Erforschung der Thysanopteren-Fauna Rußlands ist noch wenig gearbeitet worden. Bis 1921 waren für dieses ganze große Gebiet nur 35 Arten dieser Insektenordnung gemeldet worden, eine Zahl, die meine in genanntem Jahre erschienene Liste der Petersburger Thysanopteren (John, a) um 16 Arten vermehrte. 1921 beschrieb Zaitsev und 1922 Vassiljew je eine neue Art dazu und schließlich werden in einer kürzlich von mir veröffentlichten Arbeit (John, d) weitere 6 für Rußland neue Arten angeführt. Die Bearbeitung des allerdings recht spärlichen Thysanopteren-Materials des Zoologischen Museums der Russischen Akademie der Wissenschaften ergab einige neue Daten, besonders aber das in letzterer Zeit von verschiedenen Seiten zufließende Material.

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