

Palaeartic Acrididae new to the Indian Fauna

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The present paper includes notes on several Acrididae of definite Palaeartic affinities not previously reported from India, two of them new to science but belonging to a purely Palaeartic genus.

It will be seen that the series comprises not only the Mediterranean faunistic elements (*Oedipoda*, *Calliptamus*), and those of the southern Palaeartic steppes (*Doclostaurus*), but also much more northerly ones such as *Chorthippus* and even *Gomphocerus sibiricus*, which is typical of the northernmost steppes and of the high mountains of Europe.

Chorthippus almoranus sp. n. Fig. 1.

A small, robustly built and hirsute species with thick antennae, probably related to *Ch. jacobsoni* Ikonnikov from Russian Central Asia, and differing from it in longer elytra and in the shape of pronotal carinae.

♂ (*type*). Antennae scarcely longer than head and pronotum, very stout; middle joints not more than twice as long as wide.

Face strongly oblique. Frontal ridge weakly convex in profile, deeply sulcate below the ocellus, somewhat expanded between antennae. Foveolae of vertex deep, more than twice as long as wide, weakly curved. Fastigium of vertex rhomboidal, with acute apex and weakly incurved margins.

Pronotum short, constricted. Median carina very distinct, cut by the typical sulcus immediately behind the middle. Lateral carinae strongly raised, angularly incurved in the middle of prozona, divergent backwards, widened in the anterior part of metazona. Hind margin of the disc obtusely angulate.

Elytra reaching the apex of the supra-anal plate, with somewhat

irregular venation. Scapular area weakly expanded, but with irregular crossveins; discoidal area scarcely wider than the posterior inter-radial and the interulnar, with irregular crossveins; apex of the

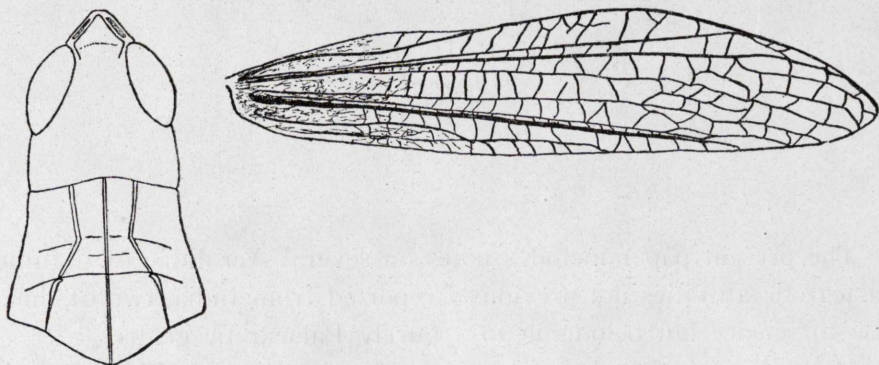


Fig. 1.

elytron parabolic. Wings as long as elytra, with sparse and irregular venation.

General colouration reddish-brown, with the lateral pronotal carinae of a lighter shade and marginated with blackish. Elytra not spotted; wings infumate apically. Hind femur with some black dots on the carinae and an oblique black streak in the basal part of the inner face; knee slightly darkened. Hind tibia reddish-brown (possibly red in fresh specimens).

Total length 12.5; pronotum 2.7; elytra 8; hind femur 8.8 mm.

United Provinces: Almora, Kali valley, 9000 ft., 13-VII-1923
1 ♂ (R. N. Parker).

The unknown female is, probably, quite short-winged.

Chorthippus indus sp. n. Fig. 2.

A member of the *bicolor*-group, characterised by rather slender habitus and the lateral pronotal carinae roundly inflexed in the prozona.

♂ (*type*). Antennae longer than head and pronotum together, slender, composed of elongated joints.

Face strongly oblique; frontal ridge shallowly sulcate from the base of antennae downwards. Foveolae of vertex deep, more than twice as long as wide, weakly curved. Fastigium of vertex elongate-parabolic, with subacute apex.

Pronotum elongated. Median carina well developed, cut by the typical sulcus shortly behind the middle. Lateral carinae well developed, roundly inflexed in the middle of prozona, divergent backwards. Hind margin of the disc rounded.

Elytra extending a little beyond hind knees. Scapular area well expanded, but less so than in *Ch. biguttulus* (L.); interradiar area weakly expanded; third radial vein gradually bent back, not branched (or branched in paratypes); discoidal area fairly broad, regularly cross-veined; interulnar area a little narrower than the discoidal, with regular cross-veins.

Colouration and pattern as in other members of the group.

♀ (*paratype*). Frontal ridge weakly sulcate only from the me-

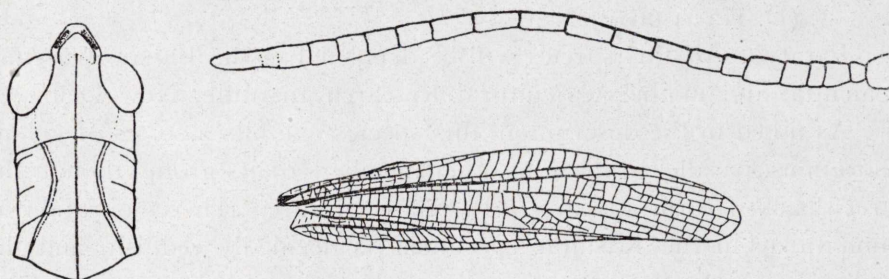


Fig. 2.

dian ocellus downwards. Elytra scarcely extending beyond hind knees; discoidal area with fairly regular crossveins, without a trace of a false vein. Lower valvae of the ovipositor very short, but acutely pointed, with a round basal prominence.

Length of body ♂ 14.5; ♀ 19; pronotum ♂ 3, ♀ 3.8; elytra ♂ 12, ♀ 13.5; hind femur ♂ 8, ♀ 10.5 mm.

Chitral: Izh, Lutkoh valley, VIII-29, 2 ♂ ♂, 1 ♀; Shahadini, Lutkoh valley, 11-VIII-29, 2 ♂ ♂, 8 ♀ ♀, 2 ♀ ♀ nymphs; Chimiksan stream, a little below Kunisht, Rambhur valley, 4-VII-29, 1 ♂ (B. N. Chopra).

N. W. Frontier Province: Abbotabad, 4120 ft., 6-10-X-1922, 3 ♂ ♂, 1 ♀ (Dutt); Chhangla Gali, Abbotabad distr., 8450 ft., 3-X-1928, 1 ♂, 2 ♀ ♀ (H. S. Pruthi).

Kashmir: river Kishengunga Gurez, 8900 ft., 1926, 1 ♂ (F. J. Mitchell); Gandarbhal, 5200 ft., 16-27-VI-1923, 4 ♂ ♂, 1 ♀; Yusimarg, 7500 ft., 6-15-VIII-1923, 3 ♂ ♂, 2 ♂ ♀; Risin Gorge, 6000 ft., 30-IX-1923, 1 ♂ (*type*), 1 ♀; *ditto*, 4-X-1923, 3 ♂ ♂,

4 ♀ ♀ ; Perimahar, Srinagar, 5800 ft., 10-X-1923, 1 ♂ , 4 ♀ ♀ ; Sopor, 5200 ft., 15-X-1923, 3 ♂ ♂ , 2 ♀ ♀ (Fletcher).

Punjab: Simla, 6-700 ft., 15-IX-25, 1 ♂ , 5 ♀ ♀ ; *ditto*, 1-10-X-25, 11 ♀ ♀ (H. Whistler); *ditto*, 3500-5500 ft., XI-XII-25, 1 ♂ , 2 ♀ ♀ ; Simla hills, 5-7000 ft., 1926, 1 ♀ (A. Jones); Ban, Murree subdivision, 9-X-28, 1 ♂ , 2 ♀ ♀ ; Bhuban, Murree hills, 6000 ft., VI-1934, 3 ♂ ♂ , 6 ♀ ♀ , 1 ♀ nymph (H. S. Pruthi).

United Provinces: Kumaun hills, Khurpa Tal, 5635 ft., fields round the lake, 7-V-30, 2 ♂ ♂ , 1 ♀ (H. S. Pruthi); Muktesar, Kumaon, 7000 ft., 24-IV-15-V-23, 1 ♀ (Fletcher).

Baluchistan: Nanna valley, 6000 ft., 14-IX-1930, 1 ♂ (W. H. Evans); Chiltan forest, 7000 ft., 14-V-1931, 1 ♂ , 1 ♀ ; Urak, 7000 ft., 17-V-1931, 1 ♂ ; Juniper Kotal, 7500 ft., XII-1931, 2 ♂ ♂ (D. Harrison).

Paratypes of this species will be deposited in the Indian Museum, Calcutta, and in the Agricultural Research Institute, New Delhi.

As noted in the description, this species exhibits a series of colour variations, parallel to those in other members of its group, though the green-backed form appears to be relatively rare. The colouration of hind tibiae in the Kashmir specimens is decidedly reddish, and the abdomen, especially in males, is red, but these do not seem to be very constant features. There is also a considerable variation in the length of elytra, which (particularly in the Simla series) are distinctly longer than hind femora. The degree of the inflexion of lateral pronotal carinae may vary so that they may become almost angular.

It is not impossible that geographical forms may be distinguished on those variable characters, but this must not be done without careful studies of mass material.

The occurrence of two representatives of a typical north-Palaeartic (*Angaran*) genus on the southern slopes of the Himalayas is of considerable zoogeographical interest.

My doubtful record of *Chorthippus (Stauroderus) vagans* Eversmann in the Kangra district of Punjab (Uvarov, 1925, in: Guy Babault, Mission Prov. Centr. Inde etc., Orth., Acr., p. 12) almost certainly refers to this species, though the only specimen on which it was based is not available to me at present.

Gomphocerus sibiricus (Linné 1767) subsp.?

N. W. Frontier Province: Shahadini, Lutkoh valley, Chitral, 11-VIII-29,
1 ♂ (B. N. Chopra).

It was a great surprise to find a specimen of this species in the Chitral material. The known distribution area of *G. sibiricus* extends in a continuous zone from the Amur region to eastern European Russia, while isolated colonies of more or less well defined subspecies are found in the mountains of Caucasus, Balkans, Alps, Pyrenees and Central Spain. The species is clearly of Angaran origin and the European colonies represent isolated relics of the postglacial, or interglacial, westward dispersal of the species. In Asia, the species was known to occur as far south as Eastern Tibet (Uvarov, 1935, *Ann. & Mag. Nat. Hist.* (10) 16: 195) where it might have arrived with other Angaran elements *via* the highlands of Central China. In the more western areas of Asia, however, the direct southward spread of Angaran elements would be prevented by the wide zone of deserts, and the main lines of their dispersal would be possible only along the great chains of the Tian-Shan. In that direction, *G. sibiricus* was known to have reached as far west as the Alai mountains, north of the Pamirs (Miram, 1928, *Abhandl. Pamir Exped.*, 8: 67). It has not been found, however, on the Pamir plateau itself, and its occurrence not only to the south of it, but even on the southern side of the Hindukush range is a fact of considerable zoogeographical interest, since it shows probably the extreme south-western limit of the dispersal of the Angaran fauna connected with the more northern type of steppes. Faunistic elements of the southern Angaran steppes have, of course, penetrated even farther south, as is shown by the distribution of the genus *Chorthippus* recorded above.

It is unfortunately impossible to determine the Chitral subspecies of *G. sibiricus* from a single damaged male specimen, but it is a large insect, similar to the typical sbsp. *sibiricus* and certainly distinct from the sbsp. *tibetanus* Uv. of the southeastern Tibet. This difference suggests that the species has arrived in Eastern Tibet and in Chitral by different routes.

Dociostaurus nigrogeniculatus (Tarbinsky 1928).

1928. *Dociostaurus kraussi nigrogeniculatus* Tarbinsky, *Izvestia Kursov Prikl. Zool. Leningrad*, 4: 58.

1933. *Dociostaurus kraussi nigrogeniculatus* Bey-Bienko, Bol. Soc. Esp. Hist. Nat., 33: 337.
Baluchistan: Wam Kotal, 7500 ft., 23-V-1931, 1 ♀ (D. Harrison).

Both authors quoted above agreed that *nigrogeniculatus* differs from *kraussi* in a number of morphological features, apart from the colouration, and I consider them distinct species. There are two known subspecies of *D. nigrogeniculatus* (see Bey-Bienko, *l. c.*), but they differ mainly in the male sex and I am, therefore, unable to determine the only Baluchistan female subspecifically; in the measurements, however, it approaches the sbsp. *aurantipes* Bey-Bienko, known from the south-eastern Tadzhikistan (formerly Bokhara), while the typical sbsp. *nigrogeniculatus* is more widely distributed over most of the Russian Middle Asia.

Dociostaurus tartarus (Stshelkanovtzev 1909)

N. W. Frontier Province: Kunisht, Rambhar valley, Chitral, 1-13-VII-29; Karakal, Bumberet valley, Chitral, 22-25-VII-29; Shahadini, Lutkoh valley, Chitral, 11-VIII-29; Buni, Mastuj valley, VIII-29 (B. N. Chopra).
Baluchistan: Quetta, 5500 ft., VII-IX-1929; Ziarat, 8000 ft., VIII-1929 (W. H. Evans).

This is a species occurring mainly in the hilly areas of the Russian Middle Asia and recorded from northern Afghanistan, but the present records greatly extend its area southwards.

Notostaurus albicornis (Eversmann 1848).

Baluchistan: Urak valley, 16 miles from Quetta, 7000 ft., 8-VI-1930, 1 ♂; Cuam pass, Ziarat road, 7000 ft., 2-VII-1930, 1 ♀ (W. H. Evans).

Another species of the Russian Middle Asia, with the previous southernmost records from northern Afghanistan and northern Iran.

The two Baluchistan specimens appear to have the vertex somewhat more acute than the typical ones, but the taxonomic value of this character is not clear and, in the absence of other differences, I believe my determination to be correct.

Oedipoda miniata (Pallas 1771).

- Baluchistan: Quetta, 5500 ft., 23-VII-10-VIII-29 (J. W. Evans); Hanna Valley, 6000 ft., 14-IX-30 (W. H. Evans).
N. W. Frontier Province: Ram-ram Gol, near its junction with Chitral river, below Arandu, Chitral, 15-16-IX-29; Drosh, Chitral, IX-29 (B. N. Chopra).

A common species of dry hilly areas forming the northern fringes of the Palaearctic deserts. In Iran it occurs as far south as the southern Arabistan in the west and Bhampur in the east, but further east it has not yet been recorded south of Russian Middle Asia.

Calliptamus barbarus (Costa 1836).

- Baluchistan: Quetta, 27-II-1932 (Y. R. Rao).
N. W. Frontier Province: Chitral, Ustui Gol, Rambhur valley, 8-VII-29; Karakal, Bumberet valley, 22-25-VII-29; Ram-ram Gol, near its junction with the Central river, below Arandu, 16-IX-29; Runi, Mastuj, VIII-29 (B. N. Chopra).
Afghanistan: Dukhtar-a-Kaffir hill, nr. Kabul, 7500 ft., 5-18-VII-38; Beghtut, 25 m. N. W. of Kabul, 7800 ft., 8-VII-38 (S. A. Authar).

This Mediterranean species has already been recorded from Baluchistan (Rao, *Ind. Journ. Entom.*, vol. 1, 1939, p. 113; as *C. siculus* Burm., which is a synonym) as well as from northern Afghanistan (Mistshenko, 1937, *J. Bombay Nat. Hist. Soc.*, 39: 809) and its occurrence in Chitral was to be expected.

The Baluchistan specimens of *C. barbarus* should be regarded as subsp. *deserticola* Vosseler, as they are large and longwinged. Those from the Dukhtar-a-Kaffir hill near Kabul also approach that race, while the specimens from Beghtut in Afghanistan are very small and short-winged and resemble subsp. *minimus* (Ivanov 1888; see Tarbinsky, *Bull. Acad. Sci. URSS*, 1930: 182). The Chitral series is very uniform, all specimens being of medium size with the elytra reaching the apex of the hind knee; they may be regarded as subsp. *barbarus*. Since, however, the subspecific taxonomy of *C. barbarus* is still rather confused, I prefer for the time being to record only the species as a whole.

