SOME NEW SPECIES OF CHINESE ACRIDIDÆ

(ORTHOPTERA: ACRIDIDÆ)

by

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In this paper are described ten new species and one new subspecies of Chinese Acrididæ. They belong to material consigned to me by Father EMILE LICENT and Father MAURICE TRASSAERT of the Hoang Ho Pai Ho Museum, Tientsin, by Dr. EDWARD CHAPIN and Mr. ASHLEY GURNEY of the United States National Museum of Washington, D. C., and Father OCTAVE PIEL of Musée Heude together with material from my own collection. In describing the new species of the different genera, I have, with the exception of the large genus *Chorthippus,* included descriptions of the other Chinese species of the genera concerned so as to aid identification and differentiation.

I wish here to express my sincere gratitude to my colleagues of the three museums mentioned above for their invaluable consignments and for their interest and efforts in promoting the progress of the science of entomology in China.

Subfamily ACRIDINÆ.

Genus **Chorthippus** FIEBER.

This is by far the largest genus of Chinese Acridids. Altogether 20 species have been recorded. They are namely:

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C. albomarginatus * (De Geer), *C. dorsatus* (Zetterstedt), *C. longicornis* * (Latreille), *C. parallelus* (Zetterstedt), *C. jacobsoni* (Ikonnikov), *C. dubius* * (Zubowsky), *fuscipennis* * (Caudell), *C. chinensis* * Tarbinsky, *C. aethalinus* (Zubowsky), *yunnaneus* Uvarov, *C. latipennis* * (I. Bolivar), *C. biguttulus* (Linnæus), *C. bicolor* * (Charpentier), *C. scalaris* * (Fischer de Wattenwyl), *C. apricarius* (Linnæus), *C. grahami* * Chang, *C. hammarstroemi* * (Miram), *C. intermedius* * (Bey-Bienko), *C. fallax* * (Zubowsky) and *C. tibetanus* Uvarov. The majority of these species are Siberian and European imigrants, only about 25 — 30 per cent are endemic. In another paper, I shall later give the records of distribution of these species in China. Those species with stars are represented in our collections. Two new species and one new subspecies are here described.

Chorthippus shantungensis sp. nov.

Very close to *Chorthippus bicolor* (Charpentier) and *C. vagans* (Eversmann).

Holotype: ♂. Oshan, Kianglukou district, Shantung, ix, 18, 1934. (Coll. K. S. Francis Chang).

Size moderately small, body pilose. *Antennæ* 1½ times as long as head and pronotum taken together, somewhat flattened, the middle segments about twice as long as wide, or a little less. *Fastigium* pentagonal, margins distinctly formed, apex right angular, narrowly rounded; surface well impressed, near the middle with a rounded transverse line which marks it off from the convex vertex behind it. *Lateral foveolæ* elongate rectangular, 2½ times as long as broad, well impressed, margins distinct. *Face* receding, but not strongly so. *Frontal costa* seen in profile slightly convex above; seen from the front sub-parallel sided, gradually and gently widening towards the clypeus, well grooved except above the antennæ and the portion near the clypeus, margins well raised but rounded.

Disc of *pronotum* with anterior border truncate or slightly convex, posterior border obtuse-angular, the *median carina* strong, and distinct; *lateral carinæ* concavely inflexed on the prozona, diverging on metazona; *typical sulcus* placed in the middle. *Lateral lobes* higher than long.

Organs of flight fully developed. *Elytra* reaching to the extremity of the hind femora, not extending beyond, tip narrow, parabolic; *mediastinal area* extending to a little beyond basal one third of the anterior border, forming an elongate and narrow lobe, with a weak false vein; *scapular area* slightly broader than the discoidal area, with rather regular wavy cross-veins; *first* and *second radial veins* parallel to each other, the area between them with regular cross-veins; *discoidal* area only slightly broader than the *inter-ulnar* area, both of them with regular cross-veins. *Wings* hyaline, as long as elytra.

Hind femora rather slender, not thickened.

Terminal parts of the *abdomen* pilose. *Supra-anal plate* triangular, with more or less distinct median groove, with side transverse ridges slightly posterior to mid-length of plate, tip acute angular. *Cerci* thick, tapering; *subgenital plate* short, obtuse.

Allotype: ♀. Locality same as type.

Antennæ less than $1\frac{1}{2}$ times the length of head and pronotum taken together, somewhat flattened, middle segments $1\frac{1}{2}$ or less as long as wide.

Elytra of similar proportion as that of the male, never extending beyond the hind knee; *mediastinal area* reaching beyond the middle of the anterior border of the elytra, the projecting lobe slight; *scapular area* about as broad as the discoidal, with rather irregular, often sulphur-colored cross-veins, often with an irregular false vein; the *first* and *second radial veins* parallel, space between them narrow; *discoidal area* only slightly wider than inter-ulnar area, closed, with irregular cross-veins and longitudinal false vein, the same is true with the *inter-ulnar area.*

Gencral coloration brown or buff. *Antennæ* buff. The lateral carinæ of the *pronotum* marked conspicuously and narrowly in white or yellow, with the portion of prozona bordered with velvety black below and the portion on metazona bordered with the same above; these marks form the continuation of the post-ocular stripe. *Elytra* brown with dark spots or dashes on the discoidal area, and fainter and smaller mottles on anal area. *Hind wings* transparent, pellucid. *Hind femora* brown, with two faint cross bands above; knee brown, black. Ventral surface of hind femora of males red and so are the tibiæ; the same in females pale yellowish.

	♂	♀
Length of body	15-16 mm.	20-22 mm.
Length of pronotum	3.5	4-4.5
Length of elytra	13.5-13	17-18
Length of hind femora	10.5	13.2-14

Paratypic series (in my collection):

Shantung: Shuan Ho, ix, 7, 1934, 4♂♂, 2♀♀; Yuen Ku Shan, ix, 14, 1934, 1♀; O-shan (Kan Lu Kou), ix, 18, 1934, 2♂♂, 9♀♀; Lingchi, ix, 12, 1934, 1♀; Lai U, Lien Hwa Di, viii, 20, 1934, 1♂; Ku So Shan, I-chien, ix, 24, 1934, 1♂; Mung Ing, Chow-tze-chuan, ix, 2, 1934, 1♂. (Coll. K. S. FRANCIS CHANG).

Kiangsu: Tong Hai (N. Kiangsu), ix, 26, a series of males and females. (Coll. K. S. FRANCIS CHANG).

I place the holotype and allotype in the custody of Musée Heude, Shanghai, for the benefit of future workers.

The present species is very closely related to both *Chorthippus bicolor* (CHARP.) and *Chorthippus vagans* (EVERSM.) and *C. apicalis* (HERRICH-SCHAFFER). From *C. bicolor* it is well differentiated by the position of the typical sulcus of the pronotum, which is distinctly situated in the middle and by the shortness of its elytra, not extending beyond the hind femora. From *C. vagans* (EVERSM.) it is differentiated by 1. its sulcate frontal costa, which is more

strongly punctate and not sulcate in the males of *C. vagans*, and in the females of the some species, it is sulcate only from the median ocellus downwards and not above; 2. the anterior basal margin of the mediastinal area hardly presenting a projecting lobe. The same structure is distinct and well developed in *C. vagans*. It must be very closely related to *C. apicalis* (HERR-SCHAFF.) also, which is distributed in Spain, Greece, Portugal and France, but is differentiated by its smaller size and perhaps other morphological characters. It is probably also related to *C. schmidti* (IKONNIKOV) from Korea and Siberia but is well differentiated by its distinctly shorter antennæ.

Chorthippus chapini * sp. nov.

(Pl. II, figs. 2, 5, 10. Pl. III, figs. 3, 6).

Holotype: ♂. Szechwan: between Li-to and Luh Ding Chao, 4-9000 feet, viii, 21, 1930, (Coll. C. GRAHAM).

Size rather small, but form not slender. *Antennæ* $1\frac{1}{2}$ times the length of head and pronotum taken together, the middle segments about $2\frac{1}{2}$ times as long as wide. *Fastigium* about as long as broad, impressed, margins distinct, tip acute angular, rounded. *Lateral foveolæ* well impressed about $2\frac{1}{2}$ times as long as broad, *Face* strongly receding. Frontal costa subparallel-sided, rather deeply sulcate from between the antennæ downwards, rather finely and shallowly punctate, margins obtuse, very slightly divergent ventrally. *Compound eyes* elliptical, its height measures about $1\,^1/_3$ the infra-orbital distance, and $1\frac{1}{2}$ as long as wide.

Pronotum long, disc with anterior margin truncate, posterior margin obtuse-angulate, the *median carina* strong and thicker than lateral carinæ; *lateral carinæ* concavely inflexed and comparatively more weakly developed on

* Name given in honour of Dr. EDWARD CHAPIN of U.S. Nat. Museum.

prozona, strongly divergent and more strongly developed on metazona; *typical sulcus* placed slightly behind the middle. *Lateral lobes* about as long as high.

Elytra abbreviated, reaching to the middle of hind femora and the 6th abdominal segment, tip parabolic. *Mediastinal area* hardly reaching to near mid-length of elytra, very slightly expanded, without false vein; *scapular area* moderately broad, quite well fenestrated; *discoidal area* parallel-sided, closed at apical third (or fourth or fifth) of elytra, *inter-ulnar area* narrower than discoidal, subparallel-sided. *Wings* shorter than the elytra, reaching to 3rd abdominal segment.

Subgenital plate short and obtuse. Cerci thick, rather blunt at tip.

Allotype: ♀. Locality same as type.

Antennæ longer than head and pronotum, the middle segments about two times as long as wide. Fastigium broader than long, apex right-angular, rounded. Elytra abbreviated, reaching to middle of hind femora; tip parabolic. Valves of ovipositor rather short.

	♂	♀
Length of pronotum	3.5 — 3.4 mm.	4.25 — 4.25 mm.
Length of elytra	6.6 — 7.0	7.6 — 8
Length of hind femora	7- — 10.5	13 — 13
Length of body	16.25 — 17	21 — 22

General coloration greenish brown. The black postocular longitudinal bands continued on prozona right below the lateral carinæ, on metazona partly on pronotal disc inside the lateral carinæ and partly outside of the latter on the lateral lobes. Lateral lobes of pronotum with a distinct black blotch anterior of the second sulcus, the anterior and posterior vertical margins of the lobes with black dots. Pteropleura with horizontal black stripe above. Abdomen with broad lateral black bands which reach to the end of the abdominal terga.

Types kept in the Washington Museum.

This species is superficially similar to *C. grahami* CHANG (1937) I have recently described from Szechwan but not related to it. It is intermediate between the genera *Chorthippus* (FIEBER, 1853) and *Dasyhippus* (UVAROV, 1930, pp. 357-358), but I feel that it is better to refer it to the former genus because of some morphological differences from *Dasyhippus* such as the absence of prosternal tubercle, the filiform antennæ and the male supra-anal plate, which is more flattened and broader in the latter. The fact that such intergeneric species exist, suggest that a careful restudy and revision of the genera concerned is much needed; however, progress requires time and accumulation of more data.

Chorthippus hammarstrœmi subsp. nov. **peipingensis**

This new subspecies is decidedly distinct from the typical *Chorthippus hammarstroemi* (MIRAM, 1907, p. 5) and is differentiated from the latter by its characteristically larger size and by the reddish colour of the hind tibiæ.

	♂	♀
Length of pronotum	3.8 — 4 mm.	5.05 — 5 mm.
Length of elytra	11.5 — 12	8.75 — 9.5
Length of hind femora	11 — 11.5	14.5 — 15
Length of body	17.5 — 18	24.5 — 25.5

I have a very long series of this new subspecies from Western Hills, Peiping in the Summer of 1934, and also from Shantung in the regions of Tai Ang and Ngo Ku. I have compared them carefully with the typical *C. hammarstroemi* (MIRAM) which I have before me from Shansi and Central Mongolia in Father LICENT'S collection.

Types of this new subspecies are presented to and placed in Musée Heude.

Genus **Dasyhippus** UVAROV.

This is a recently created genus, described by UVAROV (1930, pp. 357-358) with *Gomphocerus escalerai* BOLIVAR

as the genotype. The species *G. przewalskii* ZUBOWSKY, *Chorthippus volgensis* PREDT. and *Ch. kozhevnikovi* TARBINSKY and *Ch. kozhevnikovi arenosus* BEY-BIENKO have been referred to it. BEY-BIENKO (1931b, pp. 223-4) described a new species *Dasyhippus pygmæus* from Southern Transcaucasia, (summit of the mountain Shih-yurdy), but later (1933c, p. 332) referred it to the genus *Chorthippus.*

There are two species of *Dasyhippus* in China as far as known, one being described as new here. They may be differentiated by the following key:

1. Anterior tibia thickened and hairy on the ventral surface..... *D. przewalskii* (ZUBOWSKY).

1. 1. Anterior tibia normal, not hairy..... *D. peipingensis* sp. n.

Dasyhippus przewalskii (ZUBOWSKY, 1896, p. 150).

♂. Size moderately small. *Antennæ* a little greater than $1\frac{1}{2}$ times the length of head and pronotum together, distinctly flattened, the apical segments greatly broadened into a flat spear-head-shaped club. *Eyes* oval, its vertical height much greater than the infra-orbital distance. *Fastigium* pentagonal in shape, measured from the extreme base about as long as, sometimes longer than broad, projecting, surface impressed, with a transverse rounded line between the apices of the eyes marking it from posterior convex portion of vertex; side margins distinct, the short section between the eyes slightly converging medio-posteriorly, the section before the eyes concavely converging anteriorly towards the acute-angular apex. *Dorsum of head* without median carinula. *Lateral foveolæ* elongate, about $3\frac{1}{2}$ times as long as wide, anteriorly somewhat narrower than posteriorly, well impressed with sharp margins, ventral border somewhat bowed. *Face* fairly strongly receding. *Frontal costa* can be seen when the whole insect is viewed from above; on side view, it is convex above the antennæ, straight and receding below the antennæ; seen from the

front, it is slightly constricted at the median ocellus, narrower at where it joins the fastigium and broader near the clypeus, sulcate from near below the antennæ downwards, flat or convex above the antennæ, punctate. *Lateral facial keel* slightly convex.

Pronotum fairly elongate, rather smooth but not shiny. *Disc* narrow, metazona flattened, prozona slightly gibbose, anterior border truncate, posterior border very broadly and obtusely convex, very slightly projecting, *median carina* strong, *lateral carinæ* very weakly and smoothly concavely inflexed, diverging in metazona, *typical sulcus* placed behind the middle. *Lateral lobes* with dorsal portion seen considerably when the insect is viewed from above, longer than high, surface with a horizontal and oblique, low and broad, rugose ridge behind the median sulcus slightly below the middle. *Prosternum* bearing a low and obtuse tubercle.

Elytra not broadened, reaching to the tip of the hind femora, tip rather narrow, parabolic; *mediastinal area* occupying a little less than proximal third of the anterior border, hardly forming a definite projecting lobe; *scapular area* as broad as or almost as broad as the discoidal and interradial areas taken together, its anterior border gently convex, well fenestrated with distinct cross-veins; *discoidal area* closed near the mid-length of the elytra or a little beyond, cross-veins regular; *inter-radial area* slightly narrower than the discoidal, with cross-veins denser. *Wings* as long as elytra.

Anterior tibia uniformly incrassate, bearing long silky hair. *Hind femora* slender and elongate, reaching to the tip of the elytra and beyond the abdomen; all keels smooth, knee lobes broadly rounded at tip. *Hind tibia* with 11-12 spines on the inner and outer borders; inner claws larger and longer than outer ones. *Tarsal claws* small, pulvillus also small.

Abdomen cylindrical. The *8th segment* as long as the

7th, with a longitudinal keel; the *9th segment* very short dorsally, laterally broadening; the *10th segment* very broadly excised dorso-medially and the base is just a narrow rim, narrowly interrupted in the middle, broader laterally with its posterior margin bearing a slight blunt and rounded projection on each side of the median excision; both the narrow median basal strip and the inner edge of the broader lateral portions of the 10th tegum marked in deep black. *Supra-anal plate* very broad, its lateral and posterior borders continuous in one rounded convex curve, very broadly and shallowly depressed in the middle, broadly bordered with deep black. *Cerci* thick, laterally compressed, tip parabolic, blunt. *Subgenital plate* conical, rather long, upturned, tip blunt, bearing long hair.

♀. *Antennæ* slightly shorter than head and pronotum together flattened, tip slightly broadened. *Fastigium* broader basally, shorter than in males; margins distinct, the portion between the antennæ somewhat converging posteriorly, in front of the eyes straight, converging to the right-angular tip, rounded, slightly impressed. *Lateral foveolæ* elongate rectangular, well impressed with sharp margins. *Face* rather strongly receding. Frontal costa broad, convex above the median ocellus, below that very shallowly sulcate, margins very broadly obtuse; punctate.

Pronotum with disc broader than in males. *Prosternum* somewhat swollen to form an incipient tubercle.

Elytra slightly short of reaching tip of abdomen and hind knee; narrow, narrowing towards the roundly truncate tip, mediastinal lobe more projecting than in the male. *Wings* as long as elytra.

Fore tibiæ normal. *Hind femora* extending a little beyond the tip of the elytra, reaching just as far as the abdomen.

Supra-anal plate triangular, with sides flexed laterally, tip right-angular, rounded. *Cerci* short, triangular in shape, tapering to a blunt tip, thickly punctate. *Podical plate* broad.

Valves of the ovipositor very short, hardly exerted, not serrated. *Subgenital plate* longer than broad, posterior border slightly convex on each side of egg-guide.

General coloration yellowish brown, variegated with darker markings. *Head* darker above, either more uniformly so or with a median light stripe narrowly bordered with black. *Face* brown with deeper mottlings. Lateral areas of face bright yellow and the infra-orbital suture marked in black. *Cheeks* yellowish or more or less freckled. *Post-ocular stripe* distinct on each side of head, continued on pronotum, bordering outside of lateral carinæ on prozona, inside of them on metazona. *Lateral lobes of pronotum* with an oblique lighter brown longitudinal stripe above, a dark longitudinal band below, which contain behind the typical sulcus one oblique bright yellowish stripe. *Elytra* with some brown spots on the discoidal area, the base of the scapular area opaque yellowish, especially distinct in females. *Wings* hyaline. *Hind femora* yellowish brown, sometimes with upper margin of externo-medial area dark, knee arculus dark, the lobes brown. *Hind tibiæ* pale, apically dark, spines with tip black. Abdomen ventrally yellowish, dorsally with darker markings,

	♂	♀
Length of pronotum	3.1 — 3.25 mm.	3 — 3.5 mm.
Length of elytra	12.5 — 12.7	12 — 12.5
Length of hind fem.	10.5 — 10.5	11 — 11.5
Length of body	15.5 — 16.5	17.1 — 19

I have material from the following localities in China that belong to the LICENT'S collection:

East Mongolia: Ik'e'tala, vi, 26, 1924, 1 ♂, 3 ♀♀. (Coll. E. LICENT, Hoang Ho Pai Ho Museum).

Ordos: Choeitongkeou, ix, 13, 1923, 1 ♂ (Coll. E. LICENT, Hoang Ho Pai Ho Museum).

The type locality of this species is from Mongolia, between Kalgan and Kuku-choto (ZUBOWSKY, 1896).

IKKONIKOV (1911) recorded it from Tsitsihar in Manchuria, and BEY-BIENKO (1929) recorded it from Mangan in the same region.

Dasyhippus peipingensis sp. nov.

(Pl. II, figs. 3, 6, 8, 9. Pl. III, fig. 5).

Holotype: ♂. Peiping, Western Hills, viii, 10, 1934 (Coll. K. S. Francis Chang).

Antennæ a little longer than 1 $\frac{1}{2}$ times as long as head and pronotum taken together, distinctly flattened, tip forming a flattened club. *Fastigium* broader than long, apex acute-angular, rounded, surface shallowly impressed before the eyes and between the eyes there is a transverse convex line which demarks it from the convex portion of the vertex behind it; margins sharply marked, between the eyes very short and slightly converving posterio-medially, in front the eyes practically straight or very slightly concave, converging to the apex. *Lateral foveolæ* elongate-rectangular, well impressed with margins sharp. *Face* strongly receding. *Frontal costa* narrow and subparallel-sided above the median ocellus, broadening below the latter towards the clypeus, grooved from near between the antennæ downwards.

Pronotum with disc rather flat, the *median carina* distinct, *lateral carinæ* very slightly and smoothly curved inwards on the prozona, moderately divergent on metazona. *Lateral lobes* slightly longer than high, *Prosternum* with a low obtuse tubercle.

Elytra extending as far as hind knee, narrow, tapering to a narrow parabolic tip; *mediastinal area* occupying less than proximal third of the anterior border of the elytra, without forming any projecting lobe; *discoidal area* slightly narrower than the discoidal and inter-radial area taken together, well fenestrated; *discoidal* and *inter-ulnar areas* of about equal width, closed distinctly beyond the middle. Wings as long as the elytra.

Fore tibiæ normal, not hairy. *Hind femora* extending beyond the abdomen, but not beyond or slightly beyond the tip of the elytra.

Abdomen cylindrical. *8th segment* normal, as long as the *7th*, smooth above, with very low, hardly noticeable median longitudinal keel. *9th tergum* very narrow dorsally, *10th tergum* dorso-medially roundly incised, the lateral portions on each side broadening downwards, bearing above on each side of the medial emargination a very short and broadly rounded projection. *Subgenital plate* very broad, lateral and apical margins in one convex curve, surface rather flat on the whole, with basal portion broadly and shallowly impressed, side margins thickened. *Cerci* short, broad, laterally compressed, hardly tapering, tip blunt. *Supra-anal plate* moderately long, conical, projecting upwards.

Allotype: ♀. Same locality as type.

Antennæ as long as head and pronotum taken together, distinctly flattened, tip slightly broadened. *Fastigium* transverse, distinctly broader than long, apex right-angularly rounded, shallowly impressed. *Face* strongly receding. *Frontal costa* narrow above the median ocellus, gradually broadening below the latter, sulcate from a little above the median ocellus downwards, above the sulcate area flat or slightly convex.

Pronotum with *lateral carinæ* very slightly inflexed in prozona, moderately divergent behind; disc nore or less flat, anterior border straight, truncate, posterior border broadly and obtusely rounded, hardly projecting, *typical sulcus* placed behind the middle. *Prosternum* with a low obtuse tubercle.

Elytra reaching to the tip of the abdomen, but not to the hind knee; narrow, *mediastinal* area extending to near the middle of the elytra, with a slight projection.

Cerci very short, triangular, tip blunt. *Valves of ovipositor* hardly exerted, smooth, lower valves with distinct basal shoulders.

General coloration ashy or reddish brown. Dorsum of *head* either uniformly dark or with two narrow submedial black stripes. *Face* yellowish or dark. Lateral genal area light yellowish brown. *Post-ocular stripes* not very distinct, continued onto pronotum. Lateral lobes of *pronotum* with a median dark stripe, containing behind the mesal sulcus an oblique horizontal yellowish stripe. *Elytra* with the scapular area conspicuously marked with yellow basally in most specimens. *Wings* hyaline. *Hind femora* brown, pale greenish-yellow below, knee black. *Hind tibiæ* with base black, the rest pale. The *male genitalia* not marked in black dorsally as in the other species. This species is very distinct from *D. przewalskii* (Zub.) and is in fact not entirely characteristic of the genus in some of the features. It is, however, undoubtedly and almost typically a *Dasyhippus*. It is different from other species of this genus by the following characters: 1. the fore tibiæ normal, not swollen, neither hairy, 2. the fastigium not so prolonged and acute, 3. the male supra-anal plate not bordered laterally with black.

	♂	♀
Length of body	17 — 18.25 mm.	20 — 22.5 mm.
Length of pronotum	3 — 3.25	3.5 — 4
Length of elytra	12.2 — 12.5	14 — 15
Length of hind femora	11.5 — 12	12.5 — 13
Length of antennæ	7	7.25

I have collected 12 ♂♂, 18 ♀♀ from Western Hills in Peiping on the hills behind Wuo-foo Temple. They seem to prefer humid short grass, soft soiled areas. From Shantung I have also a paratypic series from the following localities:

Shantung: Shan-pu, Tai An, vii, 21, 1934, 2 ♂♂. Fon-yu Shan, vii, 11, 1934, 4 ♂♂, 2 ♀♀. Pa-ting-ding, vii, 19, 1934,

1 ♀. Mong-ying, viii, 26, 1934, 1 ♀. Pau-tsong, vii, 5, 1934, 1 ♂. Ho-shan-fang, vii, 14, 1934, 4 ♀♀. Shuang-to-sha, vii, 16, 1934, 2 ♀♀. (Coll. K. S. Francis CHANG).

Types presented to and kept in Musée Heude, Shanghai.

Genus **Aeropus** GISTL

From the old conglomerate genus *Gomphocerus* of THUNBERG (1815), a number of genera have recently been split, namely *Myrmeleotettix* I. BOLIVAR (1814), *Gomphoceridius* I. BOLIVAR (1914), *Dasyhippus* UVAROV (1930), *Gomphocerus* THUNBERG s. str. (1815), *Aeropedellus* HEBARD (1835), and *Aeropus* GISTL (1848), a name resurrected by UVAROV in 1931. The whole group of Gomphoceri have the common character of the clubbed antennæ. The genus *Aeropus* is distinguished from the others by the pear-shaped strongly inflated fore tibiæ of the male.

There are several records of *A. sibiricus sibiricus* (L.) from China. BEY-BIENKO (1929) recorded it from Mandhe in Manchuria; SJOSTED (1933) recorded it from Tien-Shan: Fu-shu-shan, ca. 2650 m., Hai Na Li, ca. 1800 m; Fu-shu-shi, Gudica, Urumchi, Biango, ca 1500 m; and TARBINSKY (1925) from Altai. UVAROV has recently (1935 p. 195) described a new subspecies, *A. sibiricus tibetanus* from the bleak and arid alpins meadows of Najong, Shugden Gompa, about 13,000-14,000 ft in South Eastern Tibet. The Hwang Ho Pai Ho Museum specimens from Shansi and Southern Mongolia represent what I think a new species.

Key to the Chinese species of *Aeropus*

1. Pronotum and fore tibiæ very strongly inflated. Ulnar veins of elytra fused or practically fused ..... *A. sibiricus.*

1.1. Pronotum and fore tibiæ inflated, but comparatively less strongly inflated. Ulnar veins of elytra close together but not fused at all ..... *A. licenti* sp. nov.

Aeropus licenti sp. nov.

Holotype: ♂, Shansi: Hahaye, 2, vii, 1933 (Coll. E. LICENT. Hoang Ho Pai Ho Museum).

Fastigium of the vertex triangular in front of the eyes, margins well marked, the short section inside of the compound eyes parallel, apex right-angular or slightly less than right-angular. *Median carinula* on dorsum of head absent. *Lateral foveolæ* elongate rectangular, slightly bowed, quite well impressed with distinct obtuse margins. Face compared to *A. sibiricus* rather strongly oblique. *Frontal costa* convex dorsally between the antennæ and upwards, curving over to meet the fastigium so that this portion can be seen when the head is viewed from above; seen from the front, it is subparallel-sided, slightly narrower at where it joins the fastigium, slightly broader between the antennæ, slightly constricted at the median ocellus, and slightly broadening towards the clypeus; shallowly grooved from a little above the median ocellus downwards, margins not raised, obtuse and broad. *Antennæ* about one and a half times the length of the head and pronotum taken together, middle segments $2-3\frac{1}{2}$ times as long as wide (a variable character) tip flattened and broadened.

Pronotum inflated in front of the typical sulcus, but much less so than other species of the genus, *typical sulcus* placed far behind the middle, the *prozona* is about $1\,1/3$ times the length of the metazona. *Metazona* not inflated. *Lateral carinæ* roundly incurved in the prozona, so close together that the pronotal disc is here made very narrow. *Median carina* strong throughout.

Fore tibiæ conspicuously inflated but comparatively much less pronounced than other species and races of the genus.

Elytra reaching the hind knee or extending slightly beyond, comparatively shorter and broader, the apical

portion (measured from the end of the first radial vein to the apex) considerably shorter than the greatest width which is $3\frac{1}{2}$ times the total length of the elytra, the *ulnar veins* close but never fused, parallel and equally strong. Wings slightly shorter than elytra (when both are folded).

Supra-anal plate shield-shaped, with long hair, the side margins convex, converging to a small acute-angled triangular apical lobe, median groove broad, near mid-length of the plate on each side of the median groove is an arched transverse ridge. *Podical plate* small. *Cerci* laterally compressed, broad, tip subtruncate, extending beyond podical plate, reaching to about the tip of the supra-anal plate. *Subgenital* plate short, thick, pointing upwards, blunt at tip.

Allotype: ♀. Locality same as type.

Antennæ slightly shorter than head and pronotum taken together, slightly but distinctly broadened at tip. *Fastigium* broader than in the males, right-angular. *Lateral foveolæ* shallowly impressed, margins obtuse, not always well marked.

Pronotum very slightly dilated, typical sulcus placed only slightly behind the middle.

Fore tibiæ normal.

Elytra extending to apical third of the hind femora.

Supra-anal plate triangular, tip obtuse, sides flexed downwards. *Podical plate* of normal size, depressed on the side of the cerci. *Cerci* short, triangular. *Ovipositors* rather short.

	♂	♀
Length of antennæ	8.5 — 13.0 mm.	8.0 — 9.5 mm.
Length of pronotum	4.5	4.75
Length of elytra	12.5	11.5
Greatest width of elytra	3.75	
Length of hind femora	10.8	14.0

General coloration brown, often darker, with admixture of olive color. *Head* and *pronotum* dark. *Mouth parts* white or yellowish. *Antennæ* brown, with the tips dark. *Elytra* brown. *Hind femora* with two dark bands dorsally, which may be continued on the brownish outer aspects; on the yellowish inner aspect the first band is continued horizontally to the base and the second band continuous with a diffuse dilute broad band; ventral aspect lemon-colored; knee totally black. *Hind tibiæ* dilutely reddish.

This new species is closest to *A. armeniacus* Uv. (1931, pp. 93-4), recently described by UVAROV from the Russian Armenia: Mt. Agmagan, Shishkara and Chichagin and also to *A. sibiricus tibetanus* Uv. (1935, p. 195) from S. E. Tibet to which I have already referred. Unfortunately I have no specimens of either species before me. Judging from UVAROV'S description, this new species must be very similar to *A. armeniacus* Uv. in having its pronotum and fore tibiæ distinctly less inflated than those of *A. sibiricus* and its subspecies, in the shape, and length to breadth ratio of its elytra. I find the character of the antennæ and the length to breadth ratio of their middle segments decidedly variable in the specimens before me. These specimens must belong to one species as they agree in all other characters, besides the extremes in length are found in specimens from the same locality, bearing the same date, or localities closely adjacent to each other in the same province. What UVAROV found in his measurements of *A. armeniacus* would seem true for his species as he had a long series consisting of "numerous specimens of both sexes" before him. It is interesting that the same does not hold true in the series before me. From these species, *A. licenti* is differentiated by the ulnar veins of the elytra being equally strong always separate, though close, in all the specimens before me.

I had the opportunity of comparing the types and paratypes of *A. licenti* with *A. sibiricus* (LINNÉ. 767) from

Europe and *A. kudia* (CAUDELL. 1927, p. 2) from Ussuri. It is well differentiated from these species by the following characters: 1. Pronotal disc only slightly dilated, seen in profile the median carina straight. In *A. sibiricus* and *kudia,* the pronotum is much more dilated, more so in *sibiricus* than in *kudia.* 2. The typical sulcus of the pronotum placed more forwards, the prozona being about 1 1/3 times the length of the metazona in the males, and 1 1/5 in the females. In *A. sibiricus* and *kudia,* it is placed considerably more posteriorly. 3. Hind margin of pronotum not hairy as in *kudia.* 4. Elytra not ektending beyond hind knee. In both *sibiricus* and *kudia,* it extends beyond the hind knee. 5. hind knee darker. 6. Fore tibiæ dilation much less pronounced. 7. Hind tibiæ reddish in color, those of *sibiricus* and *kudia,* yellowish. 8. Ulnar veins of the elytra close but separate, those of *kudia,* and *sibiricus* are fused. In all the specimens before me this is an invariable character.

I have the following paratypic series before me:

Shansi: Hahaye, 2, vii, 1933, 3♂♂; Tongt'ing Chan, 8, vii, 1915, 1♂ (Coll. E. LICENT, Hoang Ho Pai Ho Museum).

Mongolia: Outangtchao (Pl. du Toumet), 1, viii, 1919, 3♂♂, ♀♀; Maoeullting, 4, vii, 1933, 1♂, ♀. (Coll. E. LICENT. Hoang Ho Pai Ho Museum).

Types are kept in the Hoang Ho Pai Ho Museum, Tientsin.

Subfamily ŒDIPODINÆ.

Genus **Œdaleus** FIEBER.

This genus is very closely related to and sometimes difficult to differentiate from *Gastrimargus* SAUSS. Both genera are very commonly met throughout China. The following table may serve to separate them.

1. Superior keel of the hind femora smooth *. Pronotal disc comparatively shorter, median keel not forming a high arched crest, the posterior angle obtuse or right-angular, not forming a long projecting lobe. Anterior intercalary portion of the discoidal area of elytra subequal to the posterior intercalary portion. ..... *Oedaleus.*

1.1. Superior keel of the hind femora finely serrated. Pronotal disc longer, median keel forming a high arched crest, posterior angle acute angular, forming a strongly projecting process (except in *Gastrimargus africanus* var, *orientalis* SJOST.). Anterior intercalary portion of the discoidal area of elytra generally narrower than posterior portion ..... *Gastrimargus.*

There are three species of *Œdaleus* known to occur in China in addition to one which is here described as new. A key is given to differentiate the four species and each is described in detail so as to aid identification.

1. Size smaller. Body length, ♂ 15-16.2 mm; ♀, 20-24 mm. Fastigium of vertex very slightly impressed in both sexes. X-marks on the pronotal disc distinctly marked on slightly raised ridges. Mesosternal lobes narrower than the interspace between them, the inner margins of lobes strongly diverging. Pteropleura (pleura of meso- and metathorax) more finely puncto-reticulated. Outer aspect of hind femora without cross marks. The black fascia arcuata of hind wing starts from the first anal vein not from the costal border ..... *O. abruptus* (THUNBERG).

1.1. Size larger. Body length, ♂ 21-28.2 mm., ♀, 30-40 mm. Fastigium of vertex more impressed, distinctly grooved in males. X-marks on pronotal disc distinct or not distinct but never as raised fine ridges. Mesosternal lobes as broad as or slightly broader than the space between them. Pteropleura distinctly and coarsely puncto-reticulate. Outer aspect of hind femora crossed by 2 or 3 transverse bands of black. Fascia arcuata of hind wing starts from the costal border.

2. Frontal costa parallel-sided, side margins distinct throught. Ventral margin of lateral lobes of pronotum

* The best way to detect if the superior keel of hind femora is smooth or finely serrated is to pass a small pin from knee to base on the keel. If the pin catches, the keel is serrated. The spines are very small.

obliquely convex. Prozona of pronotum distinctly constricted, as long as or slightly longer than metazona. X-mark on pronotal disc distinctly marked as fine neat lines. Fascia arcuata never touching the hind margin of wing..... *O. decorus* (GERMAR).

2.2. Frontal costa not parallel-sided or sub-parallel sided, side margins becoming obsolescent towards the clypeus. Ventral margin of lateral lobes of pronotum with anterior portion oblique and posterior portion horizontal. Prozona less constricted, decidedly shorter than metazona. X-marks on disc of pronotum less distinctly marked, not fine well defined lines. Fascia arcuata of hind wings touching the hind border.

3. Frontal costa regularly broadening towards the clypeus, its dorsal extremity near the fastigium finely punctate. Anterior margin of fastigium fairly well marked. (Median carinæ of pronotum comparatively more highly raised). Fascia arcuata of the hind wing narrower. The ventral aspect of hind femora without a touch of red colour in the female. Hind tibiæ of female yellowish brown, the dark fascia distally bordering the broad sub-basal ring of yellow less distinctly marked. The red of male hind tibiæ reaching as far up as to tinge the yellow sub-basal ring..... *O. infernalis* (SAUSSURE).

3.3. Frontal costa often constricted below the median ocellus, coarsely punctate in its dorsal extremity. Anterior margin of fastigium obsolete or subobsolete. (Median carina of pronotum comparatively lower). Fascia arcuata of hind wing broader. The ventral aspect of the hind femora bright red in both sexes. Hind tibiæ in female red, the fascia distally bordering the broad sub-basal ring of yellow well marked at least ventrally. In males the red of the hind tibiæ not reaching so far upwards as to touch the yellow of the broad sub-basal ring..... *O. manjius* sp. nov.

Œdaleus manjius* sp. nov.

Holotype: ♂. Chekiang: Wenchow, ix, 15, 1933 (Coll. K. S. CHANG).

Eyes oval, not large. *Antennæ* longer than head and prothorax together, brown, apical portion dark.

* Manji was the name given to South China by Marco Polo who was impressed by the difference of the South from the North which he named Cathaya.

Interorbital space of vertex broad. *Fastigium* broader than long, sulcate, side borders between eyes sub-straight, anterior of eyes convergent, anterior border at apex indistinct and irregular and here the fastigium merge into the coarsely punctured dorsal portion of the frontal costa. *Frontal costa* coarsely punctate on the non-sulcate area above the antennæ at where it joins the fastigium of the vertex, obsoletely punctate or sometimes obsoletely rugose-punctate on ventral half; very shallowly sulcate from between the antennæ downwards, gradually fading away below the muscle impressions, subparallel-sided dorsally or sometimes narrower above the antennæ, and somewhat broader at the median ocellus and constricted slightly below the muscle impressions, regularly divergent as it extends towards the clypeus, with the side margins becoming subobsolete. *Lateral areas* of the face weakly rugose, the genal areas more obsoletely rugose, genæ rugose ventrally.

Disc of pronotum with anterior border more or less projecting, the posterior border right-angled, rounded at the tip; *median carina* well marked, but comparatively low, not interrupted or slightly impressed by the hind sulcus which is situated before its mid-length; *prozona* shorter than the metazona, sloping; *metazona* more or less flat, finely, thickly and obsoletely punctate; *lateral keels* absent. *Lateral lobes* of the pronotum shorter than high, reticulo-punctate behind, rugose on prozona; posterior half of the ventral border straight or slightly oblique, hind-ventral angle obtuse and rounded.

Elytra long, extending far beyond the tips of the hind femora, apical half subhyaline, tip sub-truncate rounded. *Wings* as long as tegmina.

Mesosternal lobes widely separated, broader than long, so is the interspace. *Metasternal lobes* broadly apart.

Pteropleura rugose-reticulate. *Abdomen* punctate.

Supra-anal plate with basal portion of side margins oblique and convergent, at the end of which there is a slight

constriction on each side, and beyond the constriction the side borders bulge out a little and then converge to a right-angular and rounded tip; surface of plate impressed on distal half which sometimes possesses two median ridges, impressed on the lateral portions of the basal half on each side of the broad shallow median groove. *Cerci* long, hairy extending beyond the podical and supra-anal plate, subcylindrical or slightly laterally compressed, sub-elongate-rectangular on lateral view, slightly narrowed distally, tip rounded. *Subgenital plate* rather short, hairy, pointing upwards tip bluntly rounded.

Allotype: ♀. Locality same as type.

Antennæ as long as head and pronotum together. *Fastigium* broader than long shallowly impressed.

Supra-anal plate triangular, sides sloping downwards, tip broadly rounded, surface punctate, median longitudinal groove very shallow, not distinct. *Cerci* triangular, tip narrowly rounded. *Subgenital* plate very long, posterior border hairy. *Dorsal valves of ovipositor* concave, smooth, more or less pointed at tips. *Ventral valves* with a rectangular process basally.

General coloration brown variegated either with patterns of shades of brown or with green and yellow and darker brown markings, which are more distinct in males. *Head* all brown or with a varying touch of light green or yellow, dorsum of head on each side with a fine longitudinal postocular stripe of lighter brown or green or yellow, bordered with deeper brown continuous with the markings on the pronotum. *Pronotum* brown, but rarely homogenously so, varying from dark and dirty brown to yellowish or greenish or reddish brown, differing in shades and intensity of colours mentioned in different individuals. Disc of pronotum with an imperfect X-mark of green or yellow or lighter brown. In some specimens the X-mark may even be obscured and the whole disc may be brown or yellowish green.

Tegmina brown or of dark dead twig color, generally more or less lighter brown on the anal area, and the rest darker but fasciated with irregular cross bands of paler brown which match as a rule with the paler areas of the hind femora between the darker bands of the same.

Wings sulphur-colored hyaline in the base, the dark fascia arcuata rather broad extending from the costal margin backwards reaching the hind border and turning inwards to the anal angle; area of wing beyond the black fascia clear hyaline with darker veins, sometimes with a few black spots in ♀ and a broad patch in ♂ at or near its extremity.

Hind femora brown or green, distinctly banded with three black fascia above, namely the basal, premedial and postmedial bands; these bands are faintly indicated as forwardly slanting fascia on the outer surface of the femora; on the inner surface the premedial cross band is confluent with a broad longitudinal black band which occupies half of the length of the femora, and the postmedial band is continued across the inner surface as far as the inner lower keel; lower border of the inner surface and the inner ventral surface red from base to the postmedial cross-bands, beyond which yellowish or brownish; outer lower surface brownish, somewhat mottled in black; outer knee arculus darkish and outer knee lobe dark brown; inner knee arculus and inner knee lobes black.

Hind tibiæ red or reddish with a broad yellowish or whitish basal ring bordered above and below in dark, spines 10-11, black tipped. Hind tarsi reddish above or only metatarsus with a touch of red above, the rest yellowish or testaceous.

	♂	♀
Length of pronotum	5.15 — 6 mm.	6.75 — 8 mm.
Length of antennæ	10.7 — 12,5	12.0 — 13.5
Length of elytra	21.6 — 26,7	29.5 — 34.5
Length of hind femora	13.0 — 14.5	17.7 — 19.6
Length of body	21.5 — 27	30.8 — 39

Paratypic series: 12 pairs collected from Wenchow and Ching Tieng in southern Chekiang Province in September by me in 1933. The types are presented to and kept in Musée Heude, Shanghai.

I have examined other specimens of the same species in the Washington Museum:

Szechwan: Near Wenchuan, viii, 24, 1933, 5-7, 800 ft. 2♂♂, 8♀♀; Tseo Jia Gee, South of Suifu, viii, 1929, 1,400-2,000 ft., 3♂♂, 2♀♀; Kong Shien, viii, 27, 1929, 1,400 ft. 3♂♂; Mupin, vii, 20, 1929, 4,000.—7,000 ft, 1♂, ♀; Suifu, x, 15-17, 1929, 1,000-2,000 ft, 3♂♂, 1♀; Mount Omei, vii-viii, 1927, 1♀; Kiating, vi, 23-29, 1924, 1,300 ft, 1♂, 2♀♀; Ningyuenfu, viii, 1928, 4,400 ft, 4♀♀; Yachow, viii, 28, 1930, 2,400, 1♂; Between Uen Chuan and Mowchow, vii, 24, 1929, 2♂♂, 2♀♀; Yachow to Mupin, vi, 23-27, 1929, 2,000-5,000 ft, 2♀♀. (All collected by D. C. GRAHAM).

Kweichow: Shih Men Kan, vii, 1934, 1♀ (Coll. D. C. GRAHAM).

Yunnan: Chao Tung, vii-viii, 1934, 2♀♀ (Coll. D. C. GRAHAM).

This species is very close to *O. infernalis* SAUSSURE, and has been always confused with the latter in records and identification of the species from South and South-western China. The species that WILLEMSE recorded from Szechwan (1933) is most likely this species and not *O. infernalis* SAUSS. It is widely distributed in montane regions in South China, rare in the coastal provinces, but evidently much more common in the South-West.

Morphologically this species is well differentiated from *O. infernalis* SAUSS. by its distinctly and more coarsely punctate upper extremity of the frontal costa, by the fine anterior border of the fastigium being obsolete and the less convex curve of lateral facial keel. These characters are constant in all specimens I have examined. There are other characters of somewhat variable nature, such as the presence

of a slight constriction of the frontal costa below the median ocellus (almost always absent in *O. infernalis*), the median carina of the pronotum lower in the majority than that of *O. infernalis* SAUSS. In coloration there are several outstanding differences which are pointed out in the description of *O. infernalis*, to which the reader is referred.

Œdaleus infernalis SAUSSURE

Fairly large size grasshoppers. Very similar to the above species. *Eyes* oval, not large. *Antennæ* as long as head and pronotum together or somewhat shorter in females, and longer in males; brown, apical portion sometimes dark. *Interorbital space* of vertex broad. *Fastigium* broader than long, shallowly impressed in females, more deeply grooved in males, side borders between eyes sub-straight, beyond the eyes convergent, more or less continuous with the anterior border which is comparatively more distinctly formed than in *O. manjius* nov. sp., rounded or transverse. *Frontal costa* finely punctured on the non-sulcate area above the antennæ at where it joins the fastigium of the vertex, obsoletely punctate on ventral half; very shallowly sulcate from between the antennæ downwards, gradually fading away towards the ventral one-third; side borders obtuse, dorsal half sub-parallel, rarely or never constricted at the muscle impression as in *O. manjius* nov. sp.; ventral half of side borders obsolete and here the frontal costa gradually broadens towards the clypeus. *Lateral areas* of the face weakly rugose; *lateral keel* forms a more continuously convex curve than in *O. manjius*. The *genal areas* obsoletely rugose, *genæ* weakly rugose ventrally.

Disc of the pronotum with anterior border more or less projecting forwards, the posterior border right angled, rounded in the tip; median carina well marked, and the median keel is high and tectiform, not interrupted or slightly impressed by the hind sulcus which is situated before its mid-length; *prozona* shorter than metazona,

sloping; *metazona* more or less flat, finely, thickly and obsoletely punctate; *lateral keels* absent. *Lateral lobes* of the pronotum shorter than high, reticulo-punctate behind, rugose on the prozona; posterior half of the ventral border straight or slightly raised posterio-dorsad, hind ventral angle obtuse and rounded.

Tegmina long, extending far beyond the tips of the hind femora; apical half subhyaline, tip subtruncate rounded. *Wings* as long as tegmina.

Male and female *genitalia* very similar to the above species.

General coloration and appearance very close to *O. manjius* nov. sp. and only differences necessitate description. Important colour differences are noticed in the hind legs and in the hind wings and as they are constant they deserve special mention.

Hind femora: 1. The ventral aspect of the hind femora of female specimens yellowish without any touch of red at all. In *O. manjius,* the lower inner surface is bright red, and in this respect the males of *infernalis* resemble *O. manjius.*

Hind tibiæ: (1). Hind tibiæ yellowish brown or pale in females in contrast to red in *O. manjius.* (2). The dark fascia distally bordering the broad sub-basal yellowish or pale ring in females is at best only very faintly indicated. In *manjius,* this fascia is in the majority of cases quite distinct at least on the inner and lower surfaces. (3). The hind tibiæ of males of this species is bright red and the red is extended upwards to tinge the broad sub-basal ring and reach as high up as the dark base of the tibia. In *O. manjius,* the broad sub-basal ring of the tibia is distinct and never tinged with red.

Hind wings: The dark fascia arcuata is distinctly narrower than in *O. manjius.*

	♂	♀
Length of pronotum	5.5 — 5.75 mm.	6.5 — 8.5 mm.
Length of elytra	22.0 — 24.5	26.5 — 34.0
Length of hind femora	15.5 — 16.25	18.5 — 21.8
Length of body	23.5 — 27.5	30.5 — 39.0

I have a very long series collected in the Summer of 1934 from various localities in Peiping and Shantung Province. Father LICENT'S collection contains the following records:

Chanhaikoan, ix, 16, 1915, 1 ♀, Paita, viii, 27, 1930, 1 ♀; Si Chang, 8, viii, 1933, 1 ♀; Ordos S., 12, viii, 1920, 2 ♂♂; Hiatouopa (Kansou O.) 13, x, 1918, 4 ♀♀; Peitchang, 16, ix, 1934, 1 ♂; Hingan, 25, viii, 1931, 1 ♀; Niouyingze, 22, ix, 1919, 4 ♀♀; Ts'oeikiayao, 28, viii, 1933, 1 ♀; Hiatouopa, 13, x, 1918, 3 ♀♀; Maochan, 9, ix, 1914, 1 ♂; Changhaikoan, 12, ix, 1930, 1 ♀; Tchant'sounn, 6, vii, 1934, 1 ♀; Kingtcheou, 12, vii, 1921, 1 ♀; Yuchoutihia, 19, ix, 1919, 1 ♀; Kargan, 13, x, 1918, 1 ♂; Tiensing, 15, ix, 1929, 1 ♀. (Hoang Ho Pai Ho Museum).

One male specimen in Father LICENT'S collection from Shansi, 5, ix, 1933, is peculiarly small; its measurement is here given:

Length of pronotum, 4.5mm.; length of elytra, 17.5mm.; length of hind femora, 11.2 mm.; length of body, 20.05 mm.

I have also one male and female specimens sent to me by Prof. T. L. TSOU from Nanking.

The following are other published records of this species in entomological literature:

Manchuria, Harbin (BEY-BIENKO, 1929); Lan-tschou (KARNY, 1908), Amur (SAUSSURE, 1884); S. Mongolia; Tien-Shan; S. Kansu (SJOSTEDT, 1933); N. W. Mongolia (BEY-BIENKO, 1933a); Altai (TARBINSKY, 1925); Tsitsihar in Manchuria (IKONNIKOV, 1911).

Œdaleus decorus (GERMAR).

Size smaller and slenderer than the former two species. *Fastigium* broadly impressed, broader at base than long, side borders well formed obtuse ridges but the anterior border is very poorly indicated or wholly absent where the fastigium merges into the front. *Median carinula* more distinctly indicated in females than in the former two species. *Lateral foveolar area* triangular and very distinct. *Frons* minutely punctate, sulcate from between the antennæ down to the ventral one-thirds, parallel-sided and the side borders though becoming very broadly obtuse as they approach the fronto-clypeal suture, are nevertheless much more distinct than in either *O. infernalis* or *O. manjius* and not obliterated. *Lateral area of face* rugose punctate, *genal area* and *cheek* rather smooth with slight uneveness.

Pronotum distinctly constricted in the prozona and the disc is distinctly tectiform on the prozona, metazona rather flat, median carina distinct and sharp-edged. *Hind sulcus* is placed behind the middle of the disc, the *metazona* is thus decidedly shorter than the *prozona. Lateral lobes* weakly rugose, ventral border distinctly convexly rounded.

Tegmina extending well beyond the hind femora, transparent in distal half. *Hind wings* as long as the tegmina.

General coloration green, variegated with patterns of lighter and deeper brown. *Head* green. Frontal costa and lateral area of face green. The genal area of face green with darker and lighter oblique brown stripes: the dark stripe extending from the ventral angle of the compound eyes obliquely downwards to the lateral carina or sometimes cover the whole dorsal portion obliterating the green portion, and the light brown stripe may be continued on the the green genæ. Dorsal aspect of head green with a fine light brown postocular stripe or each side which is bordered with dark brown specially dorsally.

Pronotum green with patterns of brown. Disc of pronotum green, laterally with the imperfect light brown X-mark very well defined and narrow, situated in the dark brown longitudinal stripes on each side of the disc. Median carina light brown. Lateral lobes green, except the ventral two-thirds of the prozona which is dark brown containing a few light spots, and the broad shoulder at the cite of the obliterated lateral carina somewhat yellowish brown.

Elytra with two broad cross-bands of dark brown on the basal half, proximad of which there is a basal blotch of brown, and distad of which the tegmina is hyaline with a number of larger and smaller brown blotches; anal area green and brown and the base of the subscapular area green.

Hind wings sulphur-colored in base; the dark fascia arcuata cresentic, rather broad, outer border distinctly convex, broadest in the middle, it extends from the costal border backwards, then making a turn towards the base of the wing, parallel to the posterior border but at a distance from and never touching it. Area of the wing beyond the fascia arcuata, clear hyaline with brown veins, with a small spot of brown or none in females, in the males with a small area of brown near the tip.

Hind femora with external area brown, marked with a basal, a premedial and a post-medial oblique cross-bands of brown, but not all of them may be distinct, the basal one often absent; dorsal aspect green with three cross-marks which never reach as far as the dorsal external carina, the post-mesal one hardly crossing the median carina; internal aspect with basal half black, distal half greenish yellow or brown with a broad cross-band which is the continuation of the post medial cross-mark from the dorsal aspect; ventral aspect yellowish brown without even a tinge of red; knee arculus brown, outer knee lobes greenish or greenish brown or yellow, inner knee lobe black bordered apically with lighter brown. Hind tibiæ red with a broad basal ring which is bordered proximally with black

on the ventral side. Hind tarsi either red, pale, yellow or brownish.

Ventral side of the body and abdomen light yellow.

	♂	♀
Length of pronotum	4.0 — 4.5 mm.	5.5 — 6.25 mm.
Length of elytra	22.5 — 23.0	26.8 — 31.0
Length of hind femora	12.8 — 15.0	17.4 — 18.7

I have a series collected in the summer of 1934 from Peiping, and various localities in Shantung Province.

Father LICENT'S collection bears the following records: Ordos S. 6, vii, 1920, 1 ♂; Lapouling, 16, viii, 1929, 1 ♀; Tatungfou, 30, vii, 1931, 1 ♀; Ontangtchao, 2 viii, 1919, 1 ♂, ♀. (Hoang Ho Pai Ho Museum). The pair from Ontang tchao is peculiar in being uniformly brown without even a touch of green.

This species has the same distribution as *O. infernalis* SAUSS. but not half as commonly met as the latter.

This is the first record of the species from China.

Œdaleus abruptus (THUNBERG).

The smallest species of this genus in China.

Fastigium of the vertex declivent, smooth, very slightly impressed, triangular, broader than long, the convergent side borders very distinct, anterior border subobsolete. *Median carinula* comparatively well formed. *Lateral foveolar area* triangular. *Frontal costa* punctate, sulcate from above the median ocellus downwards, sub-parallel-sided, slightly narrower dorsally at where it joins the fastigium, and slightly and gradually broader ventrally as it approaches the fronto-clypeal suture. *Genal area, lateral area* and *cheeks* weakly punctate, rather smooth, or sub-obsoletely rugose punctate.

Disc of pronotum with prozona tectiform, metazona rather flat, *median carina* very distinct but not high,

typical sulcus placed befor the middle, metazona finely punctate, longer than prozona. *Lateral lobes* higher than long, rugose-punctate, posterior half of the ventral border straight, horizontal, or slightly oblique, posterior-ventral angle obtuse and rounded.

Pteropleura weakly reticulate. *Mesosternal lobes* transverse, broader than long, inner margins divergent; *interspace* distinctly broader than either lobe on each side. *Metasternal lobes* widely apart.

General coloration green or brown or dark brown with the usual pattern of the genus, variegation being more pronounced in the darker specimens. Top of *head* green or brown or red, with a fine narrow light postocular line on each side bordered dorsally by a broader stripe of brown. Median carina colored brown more distinctly seen in green forms. Frons and lateral area of the face green, brown or ashy-colored. Genal area dark brown dorsally and light brown ventrally. Genæ either uniformly green or brown or with two dark brown oblique stripes and a lighter stripe in between and these stripes may correspond with markings of the prothorax.

Disc of the *pronotum* green or brown medially, bordered laterally by two longitudinal stripes of dark brown which contain the fine white or pale imperfect X-mark. This broken X-mark is mounted on fine elevated lines, a case not found in the other species. Lateral lobes with the dorsal shoulders light brown, prozona and the ventral border of the metazona brown; the oblique light-colored or white stripe that extends from the median sulcus posterio-ventrad to the hind border very distinct in dark brown specimens, but usually not completely so in lighter or green specimens; the rest of the lateral lobes either green or also brown. Pteropleura greenish or brownish.

Tegmina with anal area wholly green or brown, the rest brown with a row of transverse triangular or irregular light spots.

Wings pale yellowish basally sometimes with a touch of light green; the dark fascia arcuata starts from the first anal vein backwards, narrowing very gradually as it curves towards the base, free from the posterior border by a narrow rim; a greater portion of the anterior border of the wing narrowly dark brown, in males there are clouded spots near the tip, which are absent in females.

Hind femora brown with two very faint cross stripes on its dorsal and inner aspects but these marks are often too obscure; inner surface brown or pale; knee lobes brown. *Hind tibiæ* brownish, sometimes paler towards the base, spines brown black-tipped.

	♂	♁
Length of pronotum	3.5 mm.	4 mm.
Length of elytra	16.0	20 — 20.8
Length of hind femora	10.0	12 — 13
Length of body	15.5 — 16-2	20.5 — 23.5

I have many specimens collected from Foochow, Canton, Amoy, and Hai-nan Island. I can distinctly recollect collecting it on the barren hillocks of Amoy, where they are numerous, almost as common as *Aiolopus tamulus*.

The following are the other published records of the species from China:

China (THUNBERG, 1815), (STAL, 1873); Hainan (UVAROV, 1931), Hwang-mei (Hupeh Province) (TINKHAM, 1936); Wuchow and Taipingfu in Kwangsi (TINKHAM, 1935).

It is further distributed in India.

Subfamily PYRGOMORPHINÆ.

Phymateus asiaticus sp. nov.

Holotype: ♂. Szechwan: Suifu, Feb. 1928. (D. C. GRAHAM. Coll.).

Size very large. *Antennæ* longer than head and pronotum taken together, thick, filiform. *Head* short

dorsally, face except the dorsal portion almost vertical. *Eyes* roundish, inter-orbital distance above very broad, a little greater than the horizontal width of the eye or equal to the vertical height of the same. *Dorsum of head* very short, slightly convex, not very smooth, with a distinct and rather thick *median carinula,* with one raised nodule on each side just inside of the compound eyes. *Tempora of fastigium* distinctly separated by a deep cleft, which is comparatively wide at the apex, rounding over to join the lateral margins of the frontal costa; surface rugulose, hairy, outer margins concave. *Frontal costa* seen laterally very broadly concave as a whole, the dorsal extremity slightly roundly protruding; seen from the front, it is subparallel-sided from the apex of the fastigium to above the median ocellus or very slightly dilated between the antennæ, deeply cleft, with the side margins thicker, moderately dilated around the median ocellus, constricted at the muscle impression, below which moderately and gradually broadening to the clypeus. *Lateral facial carinæ* thick and well developed, convexly bent at the anterior lower angle of the eye. *Lateral facial area* concavely impressed.

Pronotum spiny as shown in the figure given. *The anterior, mesal* and *typical sulci* deeply grooved, especially the latter two. *Pronotal disc* narrow anteriorly, regularly broadening to the hind margin, all margins spiny except the anterior margin, anterior portion of the prozona before the fore sulcus bearing two lateral spines, portion between the fore and mesal sulci bearing a thick bi-dentate longitudinal blunt tubercle laterally, portion between mesal and typical sulci bearing 2 spines laterally and 2 finer submedial spines; *metazona* broad, with median carina, lateral margins with larger spines which decrease in size from before backwards, spines on the hind border much finer, 8 in number, which decrease in size from the sides towards the middle, surface of metazonal disc transversely convex in the middle, transversely grooved anteriorly and posteriorly, bearing

about a dozen spines of various sizes and length. *Median carinæ* low, developed on in the metazona. *Lateral lobes of pronotum* a little longer than high, metazonal portion short, bearing 5 spines near the hind margin and 2 or 3 tubercles dorsally near the upper border and one at the ventral margin, prozonal portion between the hind and the mesal sulci with one dorsal tubercle, prozonal portion between the mesal and fore sulci with 2 larger spines above the mid-height, and one low broad tubercular area below the mid-height, the anterior border with 3 or 4 small tubercles and one at the anterior ventral angle of the lateral lobe.

Prosternum with a fairly elongate tapering *spine* which is curved posteriorly.

Mesosternal lobes and the *interspace* between them elongate, 1 1/3 times longer than broad. *Metasternal lobes* and *interspace* transverse. *Pteropleura* also tuberculate.

Hind femora slender. *Elytra* and *wings* and *venation* as shown in the figure given.

Tenth abdominal tergum broad and broadly grooved dorso-medially. *Supra-anal plate* narrow, triangular, acute-angular at tip. *Cerci* laterally compressed, triangular, sub-accuminate at tip, reaching a little beyond the mid-length of the supra-anal plate. *Podical plate* very small. *Subgenital plate* sub-conical, broadly blunt at tip.

As with most of the GRAHAM material, the coloration of the specimen is badly decolorized, though morphologically well preserved. Its *general coloration* was most likely greenish, with the thorax and head brownish. Antennæ black. Wings with dark spots as shown. Abdomen with a black spot on each side of the dorso-median keel in each segment.

	♂
Length of body	50.5 mm.
Length of pronotum	11.0
Length of elytra	55.5
Length of hind femora	29.0

The present species is very closely related to some of the African species. From *Ph. viridipes* STAL, *Ph. brunneri* I. BOLIVAR and *Ph. karschi* I. BOLIVAR, it is distinguished by its distinctly broader disc, its more spiny metazona, the finer spines on the hind margin of the later, its frontal costa being widened below the median ocellus, and comparatively more deeply grooved between the antennæ, its prosternal spine being slightly thicker and distinctly more bent apically than in *Ph. viridipes,* and sharper and more bent than that of *Ph. brunneri* and less thick and blunt and more sharply bent posteriorly than *Ph. karschi.* It is even more closely related to *Ph. purpurascens* KARSCH and *Ph. stollii* SAUSSURE, but the former species has its prosternal spine straighter and shorter and the latter species with the same organ practically straight. I am unable to compare the coloration with these species, but in general they must also be very close.

The discovery of a species of *Phymateus* from China is extremely interesting in view of the fact that all of the known species of this large genus are, as far as known, confined to Africa. It is made even more interesting, because of its exceedingly close morphological affinity to the African species. Unfortunately I have just one specimen before me. This is not the first faunal surprise of the kind we have met in entomological literature. A parallel case of almost identical nature was reported by UVAROV in his revision of the genus *Hieroglyphus* and their nearest allies (1922-1923). The species *H. africanus* UVAROV described in the said revision from Africa (Atbara, Sudan and Adamane, Kamerun), was so very closely related to the oriental species *H. concolor* from India and separated from the latter only by a few characters of uncertain value that he thought that further study of long series of both species might prove them to be mere geographical races. I have no doubt that the specimen before me did come from China and not due to misplacement of locality labels

by the clerks in the Washington museum, for like the rest of the GRAHAM material it was first preserved in liquid and later restored through a careful process to dry state. It goes without saying that the African fauna on the one hand and the oriental fauna (Chinese and Indian faunas) on the other must have had one or two contacts in the past, either by the Indian Ocean land-bridge or through the later physiographically and climatologically altered Asia and Persia etc. of forest and grassland types. There are a number of genera common to both faunas, like *Euprepocnemis, Catantops, Aularches, Epistaurus, Eucoptacra, Gesonia, Hieroglyphus, Spathosternum, Ischnacrida, Atractomorpha, Phymateus, etc.* Consider the genus *Catantops.* By far the greater majority of its species are found in Africa, far greater in proportion to those which are found in India and China. The oriental species of this genus would seem to have been derived from Africa. The genus *Hieroglyphus,* on the other hand, is characteristically Indo-chinese or Indian.

The first record of this genus from China is by E. DONOVAN, who listed the species *Phymateus morbillosus* (L.) in his ancient work *Insects of China* (1798), and in the new edition of the said work by WESTWOOD (1842). HEBARD of the Academy of Natural Sciences of Philadelphia, according to the foot note in WU'S *Catalogus Insectorum Sinensium* (1935, p. 181) stated that the genus *Phymateus* is purely African and its record from China is certainly incorrect. It shows in the light of the present rediscovery of the genus that without definite and adequate proof one must hesitate in discrediting records of other authors.

It will be interesting to quote here what WESTWOOD wrote about the record of *Phymateus* from China, and his description of the coloration and habit of the species.

Donovan states that "the *Gryllus morbillosus* appears in the early edition of the *Systema Naturæ* and the works of ROESEL

as an Indian species, and that Mr. DRURY assured him he had received it several times from China. Another sort is also found at the Cape of Good Hope, which is rather larger and deeper in colour than the Chinese variety."

If this be correct, it will, I apprehend, be necessary to consider these two *sorts* as distinct species, to retain the specific name *morbillosus* for the African species, and to give a new name to the Chinese species.

When this insect is at rest, the wings are folded and much of its beauty is concealed; but when these are expanded, its appearance is altogether magnificent. It has nothing of the shining and metallic splendour of the Coleoptera, for its colours are translucent, and assume their richest hues when they pass before the light. The elytra are purple, variegated with yellow; the wings of a glowing crimson, spotted with black; the abdomen is surrounded with alternate zones of black and yellow, and the legs are throughout of an elegant scarlet, inferior only in brightness to the coral red of the head and thorax. Upon the whole, this species is embellished with such a profusion of various and beautiful colours, that it may be considered as a most splendid example of the Linnæan Hemipterous order of insects. It is represented on the *Iris Chinensis* in a flying position.

This is not supposed to be a numerous species in China; on the contrary it is probably uncommon." (Westwood, 1842, pp. 25-26).

Subfamily CATANTOPINÆ

Caryanda STAL

Only one species of Caryanda, *C. elegans* BOL., has so far been authentically recorded from China. The type locality of this species is from Than Moi, Tonkin. TINKHAM (1935) recorded it from Tapingfu and Lungchow mountains in Kwangsi. BRUNNER'S record of the Javan species, *C. spuria* (STAL), from China *(Révision du Système des Orthoptères,* (1893, p. 154) needs to be affirmed, and may probably be what BOLIVAR later named as *C. elegans.* The four new species described below are decidedly different from *C. elegans* BOL. and other known species. They may constitute a new genus, but for the present I prefer to refer them to *Caryanda,* for I am in no position to do a thorough revision of the whole group which is necessary before

creating a new genus. The known species of the genus, e. g. *C. sanguineo-annulata* BRUNNER (1893), *C. flavo-maculata* BOLIVAR (1918), *C. cachara* (KIRBY, 1914), *C. spuria* STAL (1861) are too poorly described morphologically to give one adequate information about them.

A detailed redescription of *C. elegans* is here given, and the original description of the species by BOLIVAR is appendixed for comparison.

Key to Chinese species of *Caryanda*

1. Fastigium only slightly projecting, more strongly sloping forwards. Interorbital distance on dorsum of head narrow, as narrow as the frontal costa between the antennæ in males, slightly broader in females. Pronotal disc very terete. Hind tibiæ red..... *C. elegans* BOL.

1.1. Fastigium almost horizontal or slightly sloping. Interorbital distance twice as broad as the frontal costa. Pronotal disc less terete, with more or less apparent lateral borders. Hind tibiæ not red.

2. Fastigium (♀) 3 times as broad as long. Prosternal spine strongly anterio-posteriorly compressed..... *C. methiola* sp. nov.

2.2. Fastigium (♀) less than 3 times as long as broad. Prosternal spine not strongly anterio-posteriorly compressed.

3. Posterior margin of pronotum roundly obtusely convex. Elytra broader..... *C. sinensis* sp. nov.

3.3. Posterior margin of pronotum biconvex with a shallow median incision. Elytra narrower.

4. Fastigium longer and more projecting, almost as long as broad (♀), tip right-angular..... *C. omiensis* sp. nov.

4.4. Fastigium distinctly broader (♀), twice as broad as long, not so projecting, tip obtuse-angular..... *C. pieli* sp. nov.

Caryanda elegans BOL.

1918. I. BOLIVAR, Trab. Mus. Nac. Ciènc. Nat., Serie Zool., no. 34, pp. 20-21.

1935. TINKHAM, Lingnan Sc. Journ., vol. 14, p. 490. *(Caryanda sp.)*

♂. *Size* smaller and graceful. *Head* as large or slightly larger than pronotum. *Compound eyes* rather strongly bulging, ellyptical, almost vertical, its height about $2\frac{1}{2}$ to 3 times the infra-orbital distance; seen from above close together, the interorbital space being narrow, parallel-sided, almost as narrow as the frontal costa, and about 1/3 the horizontal width of eye. *Fastigium* short and small, trapezoidal in shape, distinctly on a lower plane than the rest of vertex behind, sloping downwards, apex very broadly rounded, margins obtuse. Seen in a side view, the fastigium is very short, only very slightly protruding. *Face* weakly receding. *Frontal costa* parallel-sided, distinctly sulcate throughout, thickly punctate as the rest of face, margins thick and obtuse.

Pronotum moderately elongate, parallel-sided, thick but shallowly punctate, finely hairy, cylindrical as the whole, the disc smoothly and roundly sloping at each side onto the lateral lobes, the lateral margins or carinæ being entirely non-existing. Anterior border of *disc* broadly convex, hind margin very broadly convex with a small and shallow median incision. *Lateral lobes* longer than high. *Prosternal spine* rather slender, moderately long, straight, subconical, tapering to an acuminate tip, slightly anterio-posteriorly compressed.

Mesosternal lobes transverse, interspace longer than broad. *Metasternal* lobes contiguous.

Elytra abbreviated, elliptical lobiform, reaching to the hind margin of the first abdominal segment or very slightly beyond, both anterior and posterior margins similarily convex, tip rounded.

Fore and *median femora* stout.

Hind femora reaching beyond the tip of abdomen; knee lobe strongly convex ventrally, tip acute-angular, forming a fine sharp spine. *Hind tibiæ* with 8-9 outer (including the smaller apical one) and 10 inner spines.

The *10th segment* is interrupted by a space medo-dorsally. *Supra-anal plate* with side margins convex converging to an apical triangular lobe, which is right-angular at apex, surface with a median groove. *Cerci* tapering to a fine pointed tip, extending beyond the podical plate, and slightly beyond the supra-anal plate. *Subgenital* plate conical, short, tip obtuse.

♀. *Antennæ* as long as head and pronotum, or slightly longer.

Size larger. *Inter-orbital distance* slightly broader than in males, a little wider than the frontal costa.

Prosternal spine more anterio-posteriorly compressed than in males.

Supra-anal plate triangular, with a transverse sulcus, basal half with a shallow groove, tip acute-angular, rounded. *Cerci* tapering to an acuminate tip. *Valves of ovipositor* serrated with close short teeth.

General coloration with greenish yellow. Eyes brown. Side of body with deep black horizontal band extending from the compound eyes through the pronotum and elytra to near the tip of the 9th segment of abdomen. Face bright brownish or greenish yellow. Anterior articular joints of mandibles dark. Cheek crossed by a diagonal dark stripe extending from the eyes obliquely posterio-ventrad. Postgenæ black except the antero-ventral angle. Lateral lobes of the pronotum bordered horizontally above and below by the broader dorsal and the narrower ventral black stripes and these stripes are connected vertically by a black stripe along the mesal sulcus. Pteroptera also with black markings. Elytra with pre-anal area black, the anal area yellowish green. Fore and mesal legs greenish yellow. Hind femora greenish yellow with a non-defined preapical reddish area, which is intervened from the dark knee by a yellowish ring. Hind tibiæ red, except the black base and a narrow yellowish zone beyond; spine red, tipped in black;

distal border and claws of hind tibiæ black. Hind tarsi yellowish green.

The following is the original description:

"Corpus subcylindricum, compressiusculum, flavo-olivaceum, fascia laterali ab oculos usque apicem abdominis extensa. nigra. Caput ab antico posticoque distincte compressum; costa frontalis late sulcata. Pronotum medio subindistincte constrictum, antice obtusissime subrotundatum, postice truncatum et medio brevissime excisum; lateribus impresso punctatum, nigro et flavo vittatum, margine inferiori atque sulco secundo nigris. Elytra oblonga, angusta, elongata, triplo longiora quam latiora, marginibus parallelis; apice rotundata, apicem segmentum primum abdominale attingentia, nigra, intus flavo limbata. Pedes flavo-olivacei. Femora postica apicem versus rufa, geniculis infuscatis. Pectus pilosum. Segmentum ultimum abdominale, superne medio interruptum. Lamina supra-analis oblonga, lata, utrinque concava et medio sulcata. Cerci compressi, acuti, lamina subgenitalis haud superantes.

♀. *Antennis tibiisque posticis rufescentibus; elytris latioribus, apicem versus ampliatis, nigro et olivaceo dimidiatis, infra oculos linea obliqua nigra.*

♂. *Long. corp., 18; pron., 4; elytr., 2.5; fem. post., 10mm.*
♀. *„ „ 25; „ 5.5; „ 4.2; „ „ 14mm.*

The types of *C. elegans* Bol. were taken from Than Moi in Tonkin, 2-3,000 ft. iv-v. Tinkham collected it from Taipingfu and Lungchow Mts. in Kwangsi and from Laokay in Tongking in his collecting trip in the summer of 1934. They were found in the dense rank grass growing under large shady trees and around the base of large rocks.

This species as pointed out by Bolivar is distinguished from *C. spuria* Stal by its somewhat larger size, by the form of its elytra and by the greater length of the antennæ which are much shorter in *C. spuria*. It is similar to *C. spuria* in coloration.

Caryanda methiola sp. nov.

(Pl. I, figs. 5, 6, 9. Pl. III, fig. 4).

Type: ♀. Szechwan: Yachow. ix, 1928. 2-4,000 ft. (Coll. D. C. GRAHAM).

Size medium, form rather robust. *Head* as large as or slightly larger than pronotum, *face* weakly receding. *Antennæ* short, slightly shorter than head and prozona together, filiform, flatenned, segments short. *Compound eyes* elliptical, slightly oblique, its height almost twice the infra-orbital distance, its width slightly greater than the latter, inter-orbital distance very wide, about equal to the horizontal width of eye or twice the width of the frontal costa. *Fastigium* transverse, triangular, short and very broad, 3 times as broad as long, apex broadly obtuse, slightly sloping, margins obtuse. *Dorsum of head* behind fastigium smoothly, broadly and moderately convex, seen laterally almost on the same plane of pronotum, only very slightly arched. *Lateral ocelli* much reduced. *Frontal costa* moderately broad, narrower dorsally at where it joins the fastigium, very slightly constricted below the median ocellus and slightly converging towards clypeus, otherwise almost parallel-sided, rugose-punctate, shallowly sulcate throughout, margins obtuse. The *lateral facial carina* almost straight. *Face* on each side of frontal costa moderately rugulose-punctate.

Pronotum broad, elongate, reticulo-punctate; disc more or less flat, anterior border straight, truncate; hind margin biconvex; *median carina* low but distinct; lateral margins straight, slightly and gradually diverging from before to behind, more evident than real carinæ, rugose-punctate, *typical sulcus* placed well behind the middle. *Lateral lobes* perpendicular to disc, its anterior and posterior margins strongly oblique, lower margin with its anterior and posterior sections also oblique.

Prosternal tubercle triangular in shape, short, vertical, strongly anterio-posteriorly compressed, tip subacuminate. *Mesosternal lobes* transverse, *interspace* slightly longer than broad. *Metasternal* lobes contiguous.

Elytra oval, anterior margin more convex than posterior, gradually narrowing to a parabolic apex, extending to hind margin of second abdominal segment.

Hind femora extending to the tip of abdomen, knee-lobes with ventral margin convex, tip acute-angularly rounded not forming a spine. *Hind tibiæ* with 9-10 inner and 9-10 outer spines.

Abdomen with a sharp median dorsal keel above.

Supra-anal plate triangular, with a broad short median longitudinal groove basally and a transverse ridge beyond. *Cerci* triangular, not extending beyond podical plates, tip subacuminate. *Valves of ovipositor* blunt-tipped, with short serration. *Subgenital plate* shallowly grooved in the middle, hind margin concave in the middle between 2 short blunt submedial projections, laterally shallowly incised.

General coloration brown, with distinct and broad postocular stripes which extend through the elytra. Hind femora reddish distally and on lower surface. Hind tibiæ bluish with black spines.

	♀
Length of pronotum	5.75 mm.
Length of prozona	4.0
Length of metazona (measured along median carina)	1.75
Length of elytra	5.0
Width of elytra	2.75
Length of hind femora	13.25
Length of antennæ	7.5
Length of body	24.5

I have only one female specimen before me. This interesting new species is readily recognizable by its broad

fastigium which is three times broader than long, by the bi-convex posterior margin of its pronotum, by its triangular and much anterio-posteriorly compressed prosternal tubercle.

Type in U. S. Natural Museum, Washington.

Caryanda sinensis sp. nov.

(Pl. I, figs. 3, 4, 7. Pl. III, fig. 2).

Type: ♀. Szechwan: Suifu. April, 1925. (Coll. D. C. GRAHAM).

Size larger than the former species. *Antennæ* short, slightly longer than head and prozona, filiform. *Head* as large as or very slightly larger than pronotum, *face* weakly receding. *Compound eyes* elliptical, almost vertical, its height about twice the infra-orbital distance, its width about the same as the latter; interorbital distance on dorsum of head wide, about twice the width of the frontal costa or $1\frac{1}{4}^{th}$ the horizontal width of eye. *Dorsum of head* evenly and slightly convex behind the fastigium, seem laterally almost on the same plane of pronotum. *Fastigium* transverse, triangular, short and broad, two times as broad as long, apex obtuse-angular and rounded, slightly depressed, margins obtuse. *Lateral ocelli* much reduced. *Frontal costa* moderately broad, low; seen laterally straight, moderately oblique; seen from front, slightly narrower dorsally at where it joins the fastigium, subparallel-sided below, rugulose-punctate, shallowly sulcate almost throughout, its margins obtuse. *Lateral facial carinæ* almost straight, obtuse, somewhat punctate.

Pronotum long, reticulo-punctate. *Disc* more or less flattened, anterior margin slightly convex, hind margin obtuse-roundedly angled, *median carina* low but distinct, side margins subparallel, rugulose, more apparent than real carinæ; *typical sulcus* placed behind the middle. *Lateral lobes* perpendicular to disc, its anterior and posterior margins strongly oblique, lower margin with its anterior and posterior sections oblique.

Prosternal tubercle fairly long, tapering to an acuminate apex, anterio-posteriorly compressed, straight, vertical. *Mesosternal lobes* transverse, *interspace* longer than broad. *Metasternal lobes* contiguous.

Elytra much reduced, broad, oval, front border strongly convex, tapering to a rounded parabolic tip, extending slightly beyond the second abdominal segment.

Hind femora reaching to near the tip of abdomen; knee-lobes strongly convex ventrally, tip acute-angular, sharp. *Hind tibiæ* with 8-9 outer (including the well-formed apical spine) and 10 inner spines.

Metanotum and *abdomen* with a sharp median dorsal keel above.

Supra-anal plate triangular, with median longitudinal groove on the basal portion and a transverse sulcus beyond. *Valves of ovipositor* serrated, with short blunt apex. Subgenital plate with a shallow depressed area, hind margin convergent to a median obtuse projection.

General coloration greenish yellow with rather distinct post-ocular stripes stretching from behind the eyes through the elytra.

	♀
Length of pronotum	6.75 mm.
Length of prozona	4.15
Length of metazona	2.60
Length of elytra	6.5
Width of elytra	3.5
Length of hind femora	15.5
Length of antennæ	9.5
Length of body	29.0

This new species is differentiated from all other species of this genus by the convex hind margin of its pronotum. This character according to my judgement has no generic significance.

There is just one other paratypic specimen from the same locality as the type, also a female.

Type kept in the Washington Museum.

Caryanda omeiensis sp. nov. (Pl. I, fig. 8).

Type: ♀. Szechwan: Shin Kai Si, Mt. Omei. viii, 6, 1929, (Coll. D. C. GRAHAM).

Size same as the above species. *Head* as large as or slightly larger than pronotum. *Face* weakly receding. *Antennæ* about as long as head and prozona and half of metazona taken together, filiform, middle segments about twice as long as broad. *Eyes* elliptical, height less than twice as long as infra-orbital distance, horizontal width about equal or very slightly greater than the latter; inter-orbital distance not so broad, about 2/3 the horixontal width of eye. *Dorsum of head* smoothly and slightly convex behind the fastigium, seen laterally almost on the same plane of pronotum, only very slightly arched. *Fastigium* well produced, as long as broad, tip right-angular, rounded, with a raised median carinula. *Frontal costa* parallel-sided, shallowly sulcate throughout, punctate, margins obtuse. *Face* as a whole coarsely rugose-punctate. *Lateral facial carina* almost straight.

Pronotum elongate, reticulo-punctate. *Disc* flattened, smoothly and slightly convex from side to side, anterior margin straight, truncate, hind margin very broad and obtusely rounded with a small incision in the middle, median carina low, subparallel-sided. *Lateral lobes* perpendicular to disc, its anterior and posterior margins strongly oblique, lower margin with its anterior and posterior sections oblique.

Prosternal tubercle rather long, tapering, acuminate at tip, anterior-posteriorly compressed. *Mesosternal lobes* transverse, interspace longer than broad. *Metasternal lobes* contiguous.

Elytra rather broad, oval, abbreviated, tip broadly

parabolic, reaching slightly beyond the first abdominal segment.

Hind femora reaching to near the tip of abdomen; knee lobes strongly convex ventrally, tip acute-angular, sharp. *Hind tibiæ* with 8-9 outer (including the well-formed apical spine) and 10 inner spines.

Metanotum and *abdomen* with a sharp median dorsal keel above.

Supra-anal plate triangular, with a broad short median longitudinal groove basally and a transverse ridge beyond. *Cerci* triangular, not extending beyond podical plates, apex acuminate. *Valves of ovipositor* blunt tipped, with short serration. *Subgenital plate* with posterior margin broadly convex with a small concave incision in the middle.

	♀
Length of pronotum	6.3 mm.
Length of prozona	4.1
Length of metazona	2.25
Length of elytra	5.25
Width of elytra	2.75
Length of hind femora	15.00
Length of antennæ	9.5
Length of body	28.5

This new species is easily recognized by its longer fastigium, which is longer than any of the other species, being as long as broad and by other characteristics mentioned in the key.

Type kept in the U.S. National Museum, Washington.

Caryanda pieli sp. nov.

(Pl. II, figs. 1, 4. Pl. III, figs. 1, 7).

Holotype: ♀. Chekiang: Tienmu-shan, vii, 28, 1936. (Coll. O. PIEL).

Size medium. *Head* as large or slightly larger than pronotum, face weakly receding. *Antennæ* short, slightly shorter than head and prozona together, slightly flattened, none of segments more than twice as long as broad. *Compound eyes* elliptical, slightly oblique, its height not much less than twice the infra-orbital distance, its horizontal width a little greater than the latter, the inter-orbital distance above about equal to $^4/_5$ of the horizontal width of eye and about two and a half the width of frontal costa. *Dorsum of head* smoothly and moderately convex behind the fastigium, seen laterally almost on the same plane with pronotum. *Fastigium* triangular, short, about twice as broad as long, apex broadly obtuse, slightly sloping, margins obtuse. *Lateral ocelli* not well-formed. Face thickly reticulo-punctate. *Frontal costa* practically parallel-sided, slightly narrower at where it joins the fastigium, shallowly but distinctly sulcate throughout, thickly punctate, margins obtuse. The *lateral facial carina* practically straight.

Pronotum moderately elongate, thickly reticulo-punctate. *Disc* more or less flat, anterior border slightly convex otherwise straight, hind margin broadly obtusely biconvex; median carina low but distinct; lateral borders straight, slightly diverging posteriorly, more apparent than real carinæ, *typical sulcus* placed well behind the middle. *Lateral lobes* as in the other species.

Prosternal tubercle moderately long, gradually tapering to a subacuminate tip, anterio-posteriorly compressed, its anterior aspect somewhat convex but its posterior surface is flat and somewhat impressed. *Mesosternal lobes* transverse, *interspace* longer than broad. *Metasternal lobes* contiguous.

Hind femora reaching to near the tip of abdomen; knee lobes strongly convex ventrally, tip acute-angular, forming a fine sharp spine. *Hind tibiæ* with 8 outer spines (including apical one) and 10 inner spines.

Metanotum and *abdomen* with dorsal keel.

Supra-anal plate triangular, medially grooved, with a transverse ridge near the middle. *Valves of ovipositor* serrated with short teeth. *Cerci* not extending beyond the broad podical plate, tapering to an acuminate tip. *Subgenital* plate shallowly depressed medially in posterior half, hind margin converging to two submedial short and blunt projections.

Allotype: ♂. Locality and date same as type.

Smaller than the female. *Antennæ* as long as head and prozona and half of metazona taken together. *Compound eyes* oval, somewhat oblique, its height a little more than twice the infra-orbital distance, its width a little less than twice of latter; inter-orbital distance above about half of the horizontal width of eye and twice the width of frontal costa. *Fastigium* triangular, $1\frac{1}{2}$ times broader than long, slightly sloping, apex obtusely rounded.

Elytra extending slightly beyond the first abdominal segment, more than twice as long as broad, costal border more convex than posterior, tip more or less parabolic.

The *10th tergum of abdomen* interrupted by a short incision in the dorso-meson and a minute short triangular process at each side of incision. *Supra-anal plate* shield-shaped, the two side borders very convex, converging to an almost right-angular tip, surface with a median groove. *Cerci* rather thick, cylindrical, tapering to a subacuminate tip, extending a little beyond podical and supra-anal plates. Subgenital plate conical, tip obtuse.

General coloration brown with distinct brown post-ocular stripes which extend through the elytra on to the abdomen. Hind tibiæ blue in color, spines tiped in black.

	♂	♀
Length of pronotum	5.2 mm.	6.1 — 6.7 mm.
Length of prozona	3.45	4.0 — 4.25
Length of metazona	1.75	2.1 — 2.45

Length of elytra	4.7	5.1 — 5.5
Width of elytra	2.0	2.5 — 2.7
Length of hind femora	13.0	15.5
Length of antennæ	9	8.0
Length of body	24	31 — 33

I have before me in addition to the holotype and allotype, four female paratypes from Tienmu-shan, all of which are placed in Musée Heude. It is very closely related to *C. omeiensis* but is well differentiated by its shorter and less projecting fastigium and by its distinctly shorter antennæ.

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Plate. I.

1. Dorsal view of **Phymateus asiaticus** sp, nov. (♂).
2. Side view of head and pronotum of **Phymateus asiaticus** sp, nov. (♂).
3. Prosternal spine of **Caryanda sinensis** sp, nov. (♀).
4. Cross-section of Prosternal spine of **Caryanda sinensis** sp, nov. (♀).
5. Prosternal spine of **Caryanda methiola** sp, nov. (♀).
6. Cross-section of Prosternal spine of **Caryanda methiola** sp, nov. (♀).
7. Dorsal view of head and pronotum of **Caryanda sinensis** sp, nov. (♀).
8. Dorsal view of head and pronotum of **Caryanda omeinsis** sp. nov. (♀).
9. Dorsal view of head and pronotum of **Caryanda methiola** sp, nov. (♀).

Pl. I.

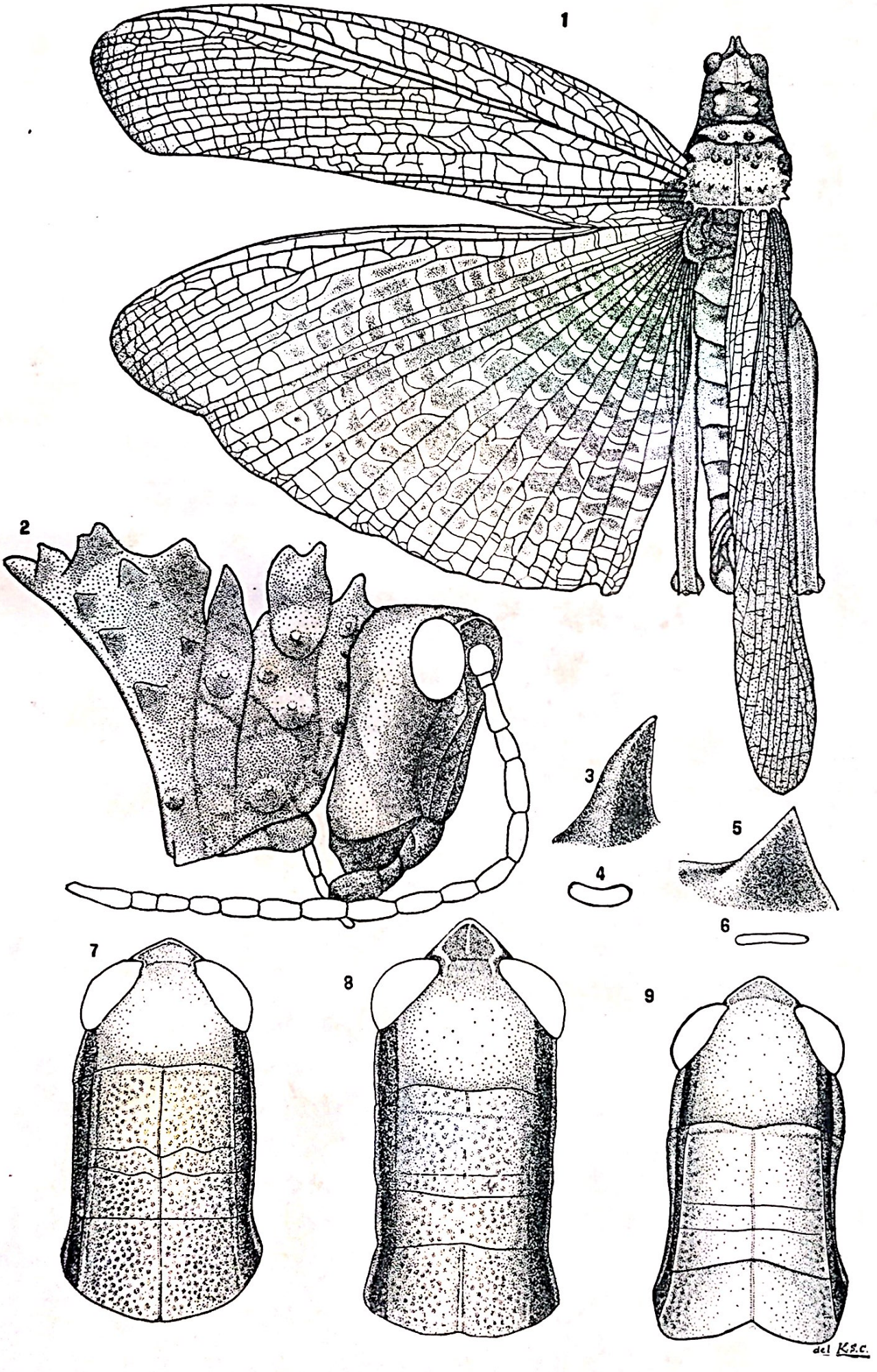

Plate. II.

1. Dorsal view of head and pronotum of **Caryanda pieli** sp, nov. (♀).
2. Dorsal view of head and pronotum of **Chorthippus chapini** sp, nov. (♂).
3. Dorsal view of head and pronotum of **Dasyhippus peipingensis** sp, nov. (♂).
4. Dorsal view of head and part of pronotum of **Caryanda pieli** sp, nov. (♂).
5. Side view of head and pronotum of **Chorthippus chapini** sp, nov. (♂).
6. Side view of head and pronotum of **Dasyhippus peipingensis** sp, nov. (♂).
7. Side view of tip of abdomen of **Dasyhippus peipingensis** sp, nov. (♀).
8. Antennæ of **Dasyhippus peipingensis** sp, nov. (♂).
9. Side view of tip of abdomen of **Dasyhippus peipingensis** sp, nov. (♂).
10. Side view of tip of abdomen of **Chorthippus chapini** sp, nov. (♂).

Pl. II.