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REMARKS ON THE TETTIGOMETRIDÆ
(FULGOROIDEA)

By C. F. BAKER

Dean, College of Agriculture, University of the Philippines

ONE PLATE

Among the Fulgoroidea no family is more isolated and peculiar than the Tettigometridæ.¹ The strongly jassoid aspect, the entirely unarmed hind tibiae, the ocelli placed not beneath the eyes but approximate to the inner apical angle of eyes and usually mesad of the inner margin, the highly modified second antennal joint, broad propleuræ, very large tegulæ, with other characters of head, tarsi, tegmina, and apparently also of genitalia, combine to give these insects a most distinctive appearance and character.

A few species live in ant nests. More live on plants in an ordinary way, and some are of economic importance. *Tettigometra* (sens. lat.) is confined to Europe, North Africa, and western and northern Asia. Other genera are distributed through South and Central Africa, and Indo-Malayan regions. Only one of these extra-European genera (*Isthmia* || = *Hilda*) was known at the time of Signoret's review in 1865² or of Fieber's review in 1876.³ The old genus *Tettigometra* Latr. gradually became highly heterogeneous through the addition of very diverse forms. Signoret defined subgenera which may not all represent natural groups, though they appear mostly to represent distinct genera. I am not acquainted with any attempt thoroughly to systematize the group on the basis of the anatomy in general. Certain it is that such species as *brunnea* Sign., *impressifrons* M. R., *longiceps* Sign., and *lucida* Sign., are not congeneric with *obliqua* Panz., the type of the genus *Tettigometra*.

¹ A complete bibliographic history of the family was given by Horvath, Ann. Mus. Nat. Hung. 9 (1911) 32.

² Ann. Soc. Ent. Fr. 6 (1866) 139 et seq.

³ Rev. Mag. Zool. (1876) 111-153.

In all Tettigometridæ known to me the outer basal margins of tegmina are strongly deflexed and retracted beyond the subcostal vein, the actual costal margin at base not being visible from above. There are thus formed very distinct and characteristic epipleuræ which vary in shape in the different species and genera, and which may extend to nearly half the length of the tegmina.

The following synopsis represents merely a tentative review, and indicates clearly the great need of thorough revisional work. It serves to show the general relations of Indo-Malayan forms within the family.

Synopsis of subfamilies of Tettigometridæ.

- a¹. Vertex always broader between eyes than long; face medially plane or protuberant; head distinctly narrower than pronotum.
- b¹. Antennal second joint not extending beyond eyes (dorsal view); head but little narrower than pronotum; outer posterior angles of eyes (dorsal view) not touching pronotum, being separated by the thickened posterior margin of vertex which extends (postocular process) more or less beyond eye laterally; face nearly plane (in profile) Tettigometrinæ.
- b². Antennal second joint extending strongly beyond eyes in dorsal view; head conspicuously narrower than pronotum; outer posterior angles of eyes (dorsal view) touching pronotum; face umbonate or more or less angulate at middle (in profile) Egropinæ.
- a². Vertex longer than broad between eyes and narrowly acute apically; face medially depressed; head nearly as wide as pronotum.

Megaloplastinxinæ.

TETTIGOMETRINÆ

*Synopsis of genera of the subfamily Tettigometrinæ.**

- a¹. Postocular callosities not or very slightly extended laterally beyond eyes; outer margins of tegmina in repose, more or less distinctly converging caudad.
- b¹. Head large, long triangular, its length subequalling half breadth, longer than pronotum, its greatest width about five-sixths that of pronotum; mesonotum far shorter than head and pronotum together; antenniferous tubercles very strongly developed; eyes small, not prominent (fide Signoret)..... Mitricephalus Signoret.
(Type, *longiceps* Sign.)
- b². Head small and subangular anteriorly or broad, short, and broadly arcuate anteriorly; mesonotum always distinctly longer than head and pronotum together.
- c¹. Head subangulate anteriorly between eyes, distinctly longer at middle than eyes, its width not more than three-fourths that of pronotum, usually less; lateral margins of vertex distinctly ex-

*This purely tentative synopsis does not include *Eurychilella* or *Eurychilopterella* of Reuter, the descriptions of which are not available to me.

- a*¹. Legs very long and slender; in dorsal view, antennæ surpassing eyes by more than twice eye width; width of head about two-thirds width of pronotum..... *Mesegropa* g. nov.
(Type, *sumatrensis* sp. nov.)

Genus EGROPA Melichar

This genus is exceedingly homogeneous throughout its range in the Orient. Even the arrangement of its very beautiful color pattern is closely similar through all of the species. There may be a high degree of sexual dimorphism, either in color or structure or both, and there is usually a high degree of variation in shades of color. Distant's color descriptions, without even sex being stated, have made it very difficult to do anything more with Indo-Malayan species until the types have been reexamined.

The species from West China, described by Melichar³ as *Isthmia fusca*, was referred to the Tettigometrinæ by Haupt.²

In all *Egropa* the tegmina are thick and coriaceous with obscured venation. There are usually three quite distinctly raised, bullate, more or less vitreous areas, a large one at base of corium, another just apicad of the middle of the transverse band which it sometimes invades, and a small one just beyond apex of clavus; the entire apical area beyond level of point of clavus is strongly convex and more or less vitreous.

Synopsis of species of Egropa Melichar.

- a*¹. Vertex relatively shorter and more broadly arcuate, and little deflected; umbo very obtuse angulately prominent (in profile).
*b*¹. Face basally pale, unicolorous, without black markings; umbo far from apex of vertex, the basal area of face thus nearly as long as wide, the lower area (in profile) nearly parallel to vertex (fide Melichar)..... *E. inusta* Melichar.
*b*². Face basally black or black marked, this area apically pale margined, or all below pale; umbo proportionally nearer to apex of vertex.
*c*¹. Legs largely piceous; face with basal area entirely black, beyond chocolate brown..... *E. davaoensis* sp. nov.
*c*². Legs pale ochraceous; face pale ochraceous with three large subquadrate black spots at base in both sexes.
*d*¹. Large, length 5.5 millimeters; inner apical area of tegmina with a row of small ocellate spots, at least in male.
E. tenasserimensis Distant.

¹Ann. Mus. Zool. St. Petersb. 7 (1902) 20.

²Wiener Ent. Zeits. 36 (1917) 262.

- ♂. Small, length 4 millimeters; inner apical area without ocellate spots in either sex..... *E. fici* sp. nov.
- a'. Vertex relatively longer, obtusely subangulate between eyes, and more or less strongly deflected; facial umbo usually strongly angulate and sometimes produced.
- b'. Facial umbo of female similar to that of male, more or less acute angled (in profile).
- c'. Basal area of face clear black or piceous in male, ochraceous in female with three large subquadrate black spots; face below umbo pale, unicolorous..... *E. breviceps* Stål.
- c'. Basal area of face black in both sexes, with two or four small subcircular pale spots, the black area apically with a conspicuous pale border; face below umbo broadly pale banded, then black across apex..... *E. malayensis* Distant.
- b'. Facial umbo strikingly different in the sexes, in female produced to twice or more the length of that in male, and longer than distance from umbo to apex of vertex; lower part of face strongly transversely banded, whitish below umbo and black across apex; the basal black area with two small subcircular, submedian, pale spots.
E. jacobsoni Bierman.
E. bengalensis Distant.

Egropa inusta Melichar.

The original figures of this species, published by Melichar,¹⁰ are so diagrammatic that it is impossible to make exact comparisons with other Indo-Malayan species. The coloration, as described, appears to distinguish it from any other Indo-Malayan species. The species was unknown to Distant; he merely copied¹¹ the description and figure of Melichar. More material of this species is greatly needed.

Egropa davaoensis sp. nov. Plate 1, fig. 1.

Male, length, 3.5 millimeters. Vertex dark ferruginous, the anterior border and entire basal area of face blackish; anterior portion of face ferruginous, paler apically. Pronotum, mesonotum, and middle portion of clavus olive green; anterior and posterior margins of pronotum narrowly white cretaceous (easily rubbed off), and within the posterior white border narrowly blackish. Clavus ferruginous on basal area, the olive green on median area separated by a white line and sordid whitish on apical area, separated by a ferruginous line. Corium (Plate 1, fig. 1) uniformly castaneous, the triangular costal spot shining white, bordered proximad and distad by ferrugi-

¹⁰ Homop. Ceylon (1903) pl. 3, f. 13.

¹¹ Fauna Brit. Ind. Rhynch. 3 (1906) 368.

This species occurs occasionally in large colonies on the twigs of *Ficus ulmifolia*. It is apparently the palest-colored species in the genus, and is nearest to *E. tenasserimensis* Distant.

Egropa breviceps Stål.

Remarks on this species were presented by me in 1915.¹³ After noting that the colonies of this *Egropa* were intermingled on *Anona* with colonies of *Gargara*, the wholly inexcusable error was made later of figuring the nymph of the *Gargara* for that of *Egropa*. In that paper, therefore, the description and figure of nymph should be credited to *Gargara* sp. This species is the largest and stoutest of the Philippine species.

Egropa malayensis Distant. Plate 1, fig. 3.

Of this well-marked species we have specimens from Penang, from Sandakan, and from Puerto Princesa, Palawan. It is one of the most richly and intensely colored species when fresh. The facial umbo is slightly more prominent in the female than in the male (Plate 1, fig. 3, c). We have no females as long as 5 millimeters (fide Distant), the largest being 4.5 millimeters; the males, 4.25; but size varies considerably in both sexes in all of the species.

Vertex (Plate 1, fig. 3, a) of the longer, subangulate type, the width between eyes slightly less than twice length, concavity broad and shallow, minutely irregularly wrinkled. Genital segment of female apically narrowly bilobed. The small white spot on costal margin at three-fourths of tegminal length is conspicuously bordered proximad with a dark ferruginous line which is indistinctly sinuately extended across disk. The large triangular costal spot (Plate 1, fig. 3, e) is purer white laterally, outside bordered with heavy ferruginous lines; on corium near apex of clavus with several dark subquadrate spots in a longitudinal row, in male only; these spots are variable and may have whitish centers.

Egropa bengalensis Distant. Plate 1, fig. 4.

Specimens taken in Calcutta and sent to me from the Indian Museum evidently belong to this species, described by Distant in 1909¹⁴ and figured in 1916.¹⁵ None of the characters indicated as diagnostic in the last paragraph are really so, since

¹³ Philip. Journ. Sci. § D 10 (1915) 137-140.

¹⁴ Ann. Mag. Nat. Hist. 3 (1909) 41.

¹⁵ Fauna Brit. Ind. Rhynch. 6 (1916) f. 79.

ILLUSTRATION

PLATE 1.

- FIG. 1. *Egropa davaoensis* sp. nov.; *a*, vertex, pronotum, and mesonotum; *b*, side view of head; *c*, tegmen, showing outlines of markings.
2. *Egropa fici* sp. nov.; *a*, vertex, pronotum, and mesonotum; *b*, basal part of face, axial view; *c*, tegmen, showing outlines of markings.
3. *Egropa malayensis* Distant; *a*, vertex, pronotum, and mesonotum; *b*, basal area of face, axial view; *c*, side view of head; *d*, female genitalia; *e*, tegmen, showing outlines of markings.
4. *Egropa bengalensis* Distant; *a*, vertex, pronotum, and mesonotum; *b*, basal area of face, axial view; *c*, side view of female head; *d*, side view of male head; *e*, male genitalia; *f*, female genitalia; *g*, tegmen, showing outlines of markings.
5. *Mesegropa sumatrensis* sp. nov.; *a*, vertex and pronotum; *b*, side view of head; *c*, clypeus, loræ, and rostrum; *d*, antenna; *e*, fore-leg; *f*, male genitalia, the hooked gonapophyses pulled out from under plates.

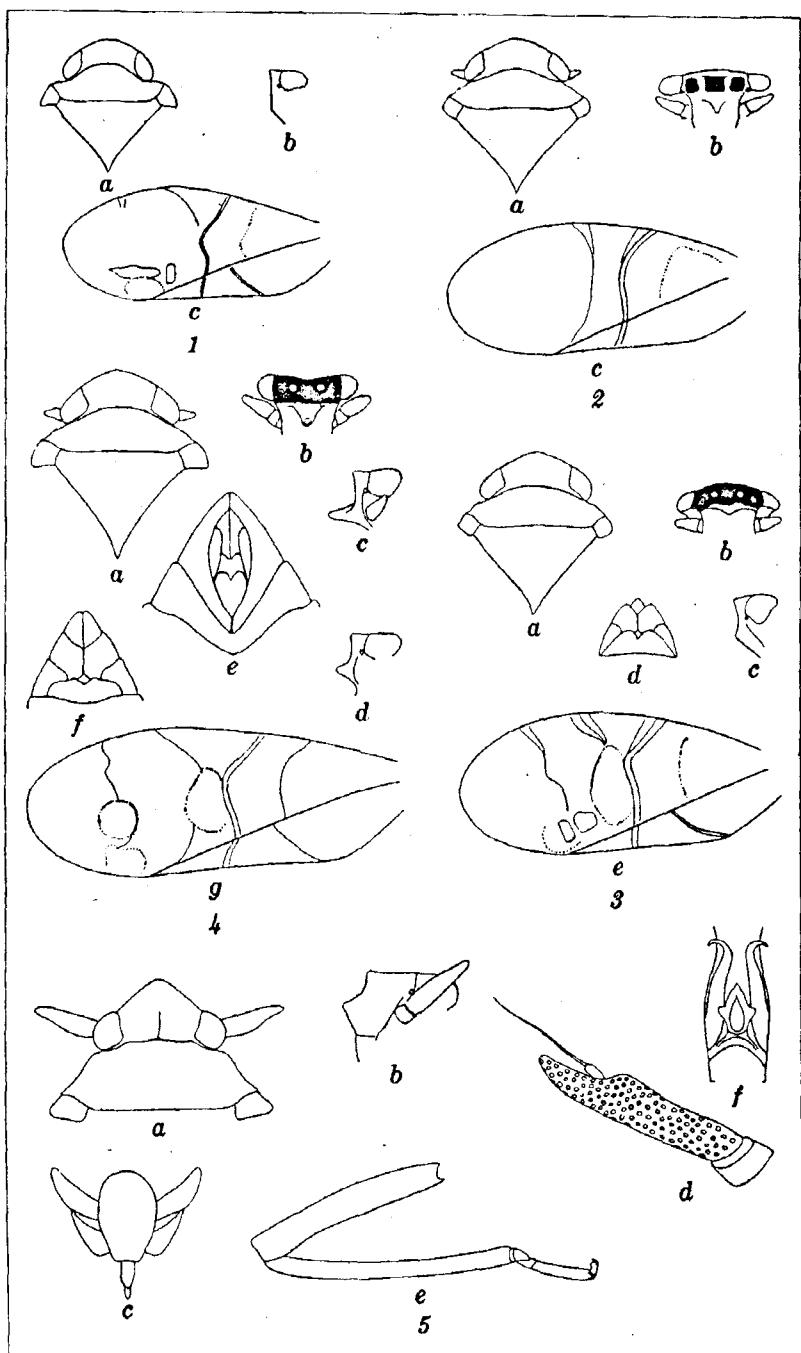


PLATE 1.