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A NEW GENUS OF PYRGOMORPHIDAE (Orthoptera: Acridoidea) FROM FIJI[1]

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Abstract: The previously known natural distribution of the Pyrgomorphidae extended no further east than New Caledonia. A new genus and species, *Fijipyrgus gracilis*, has been discovered in Fiji. This has morphological characters found in several different groups of presumably primitive stock, but does not fit into any known tribe. A new tribe, Fijipyrgini, is erected to contain it.

With the exception of *Atractomorpha sinensis* Bolívar, which occurs as an introduced species in the Hawaiian Islands, no member of the Pyrgomorphidae has hitherto been recorded east of New Caledonia. Recently, however, a series of specimens from Fiji, all but one of which, unfortunately, are immature, has extended the known natural distribution of the family to the Mid-Pacific.

Not unexpectedly, the species involved proves to belong to a new genus. In external characters, including the form of the prosternal tubercle, this is somewhat reminiscent of the more slender members of the Verduliini (genus *Verdulia* from New Guinea and the Moluccas). The phallic structures, however, show that the relationship is not close; they resemble those of the Mitricephalini (especially *Mitricephaloides* Kevan from Malaya and western Indonesia) in having divided aedeagal sclerites and the posterior parts of the ectophallic membrane strongly sclerotized to form a double hood-like structure enveloping the end of the cingulum and endophallus. The shape of the last, although much more slender, also resembles that found in *Mitricephaloides* more than in any other known genus. The ectophallus, however, apart from the "hood", is more like that of the Indomalayan Tagastini, which also have completely divided aedeagal sclerites, a primitive feature found otherwise, in Pyrgomorphidae, only in the Malagasy Pseudogeloiini. In lateral view, the apex of the aedeagus is abruptly kinked upwards and then backwards, a character seen in Verduliini and a few other apparently rather primitive genera, all of which, however have undivided aedeagal sclerites. The epiphallus has all the characters of the Pyrgomorphidae, but is highly specialized and unique in shape.

In external morphology, as well as in a few phallic characters, the new genus also bears a fair resemblance to the anomalous Brunniellini (genus *Brunniella* Bolívar from the Philippines), particularly in that the galeae of the maxillae are turned forwards as far as, or even

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slightly beyond the margin of the clypeus. This however is probably a functional adaptation related to feeding, and not of much phylogenetic significance, since the same feature is found in several unrelated slender acridoid genera (Kevan 1951) and is very strongly developed among Pyrgomorphidae in the Australian Psednurini. The external male genitalia are quite peculiar, the subgenital plate being trilobed, the only other genus having anything comparable being *Ambositracris* Dirsh (Orthacridini—Caprorhinina, from Madagascar).

The new genus thus combines features found in several different tribes, all of which are believed to be of more primitive stock, even if their members may show marked specialization in certain characters. It cannot be said, however, that the new genus falls into any one, or is intermediate between any two known tribes (Kevan & Akbar 1964), for it has its own peculiar characteristics. The only course of action open, therefore, is to erect a new tribe to contain it, for which the name Fijipyrgini, n. tribe (type genus *Fijipyrgus*, n. gen.) is proposed. This new tribe may briefly be characterized as follows:

Body cylindrical; fastigium of vertex rather long; frontal costa immediately below fastigium not sinuately excised in profile; galeae of maxillae turned forward to meet or slightly overlap margin of clypeus; pronotum without distinct tubercles; tegmina and hind wings present; prosternal tubercle transversely compressed, simple; metasternal pits large, open, close together, unconnected by a distinct anterior transverse suture; epiphallus with anterior projections very long and divergent, forming a V; aedeagal sclerites divided, the apical parts bent upwards and backwards; aedeagal valves slender, not denticulate.

The erection of this new tribe necessitates a modification of the key to the tribes of Pyrgomorphidae given by Kevan & Akbar (1964: 1514). Couplets 6 and 7 of the key should now read as follows and another couplet (7a) must be inserted[2].

6. Elongate and fully alate (or nearly so), or bacilliform and flightless, with relatively or very long fastigium of vertex and galeae of maxillae turned forward over, or at least as far as, lower margin of labrum; Australia, Fiji, Philippines only 7
   Not as above 8
7. Very slender, bacilliform; apterous or micropterous; prosternal tubercle very reduced; [epiphallus of conventional form; ectophallus with little or no dorsal cleft, ventral cleft reduced to a notch; endophallic apodemes without ventral processes; aedeagal valves with ventral subapical protuberances or subtruncate;] Australia ..... **Psednurini**
   Slender but not bacilliform; fully alate (or nearly so); prosternal tubercle strong, transversely compressed; [epiphallus of unusual form; ectophallus with well developed dorsal and ventral clefts; endophallic apodemes with

2. Slight corrections resulting from an examination of genera not studied by Kevan & Akber (*l. c.*) are incorporated here; modifications to other parts of the key will be published elsewhere. It may also be noted that the Madagascar genus *Uhagonia* Bolívar, tentatively placed in the Geloiini, should most probably be removed to the Gymnohippini. In couplet 3 of the key, therefore, the distinctly fusiform, depressed species which may have a long fastigium verticis should be removed from the Geloiini and placed in the second category; to accommodate the genus in the Gymnohippini (couplet 4) the absence of tegminal scales (present in one species of *Uhagonia*) and the shortness of the ovipositor should be deleted from the diagnostic characters.

ventral processes; aedeagal valves not as above;] not Australian..... 7a.

7a. Body somewhat compressed; prosternal tubercle trilobed apically; [epiphallus with long, expanded, wing-like lateral plates and long, irregularly toothed lophi, appendices simply lobed apically and rather small, anterior processes only moderately long, not forming a V; zygoma of ectophallus rather long with a deep semicircular terminal excavation; endophallic apodemes with ventral processes directed backwards; aedeagal valves short and blunt; aedeagal sclerites undivided; gonopore basal;] Philippines ..... **Brunniellini**

Body more cylindrical; prosternal tubercle not trilobed; [epiphallus with short, broad lateral plates of rather conventional form, lophi of normal form, strongly hooked and directed outwards, appendices large, rather elaborate and widely divergent; anterior processes very long, divergent, forming a V; zygoma shorter, only slightly emarginate terminally; endophallic apodemes with processes directed forwards; aedeagal valves rather slender, directed upwards and then backwards following the apices of aedeagal sclerites; latter divided; gonopore distal;] Fiji ..... **Fijipyrgini**

Genus **Fijipyrgus** Kevan, n. gen.

Having the characters indicated above for the Fijipyrgini; antennae very long with long segments, eyes rather prominent; fastigium of vertex moderately long, narrow and acute; frontal profile very strongly reclinate, frontal costa very weak, obsolescent towards clypeus; pronotum short, cylindrical, without longitudinal carinae; meso- and metasternal lobes nearly contiguous; tegmina and hind wings long and narrow; hind femur with external *arête* or "herring-bone" pattern moderately distinct, inferior and superior basal lobes subequal in length; tympanum absent; ♂ cerci rather hook-like; ♂ subgenital plate apically trilobed, with small tufts of long hairs; phallic structures of the form discussed above and illustrated for the type species. [♀ unknown].

Type species (here designated): *Fijipyrgus gracilis*, n. sp.

As already noted, this new genus combines characters found in several groups derived from somewhat primitive stock. It therefore would appear to have evolved in isolation since an early date.

Fijipyrgus gracilis Kevan, n. sp. Figs. 1, 2.

Holotype: ♂ (BISHOP 6812), Fiji, Viti Levu, Nandarivatu, 850 m, 8–13.III.1963, C. M. Yoshimoto.

Head: antennae very long, reaching back as far as basal 1/3 of the hind femur, cylindrical, with 18 segments in addition to scape and pedicel, 2 basal segments 1.5–2.0× as long as wide, next 12 segments 2.5–4.0× as long as wide, the basal and apical ones the shortest, 3 penultimate segments 1.0–1.5× as long as wide, terminal segment 2× as long as wide; eyes elliptical, about 2× as long as deep, rather prominent; vertex horizontal, slightly punctate without a distinct median carina, slightly convex about middle; fastigium of vertex narrow, a little longer than wide, with convergent sides, apex acutely triangular, median carinula absent; frons rather flat, punctate; median ocellus virtually lacking, pronotal ridge very narrow, obsolescent below the position of the ocellus, sulcate only im-

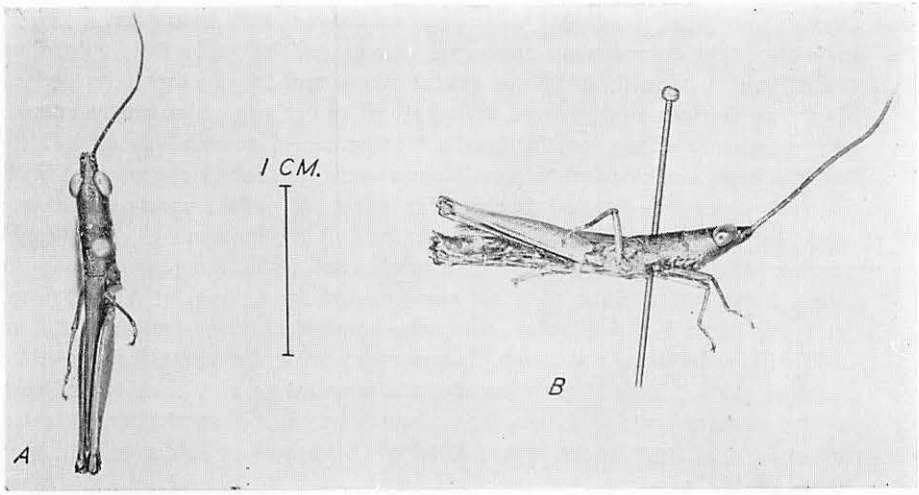

Fig. 1. *Fijipyrgus gracilis*, n. sp., ♂ holotype. A, dorsal; B, lateral.

mediately above this and just below the fastigium of vertex; lateral frontal carinae obsolescent; cheeks punctate, without a row of postocular tubercles; mandibles long and strong, clypeus large with a deep apical emargination; galeae of maxillae oblong, obliquely truncated and acutely pointed apically, right galea the larger, slightly overlapping margin of clypeus, left galea smaller, reaching but not overlapping clypeus. *Thorax*: pronotum cylindrical, punctate, anterior margin of disc very slightly biarcuate, posterior margin rounded-truncate, transverse sulci faint, typical sulcus straight, crossing disc at about 3/4 of its length, median sulcus sinuous placed about middle of disc, anterior sulcus arcuate, placed at about 1/5 of pronotal length; lateral pronotal lobe not much deeper behind than in front, anterior margin oblique, slightly concave, inferior margin sinuous, carinate but without submarginal tubercles or callous thickening, posterior margin distinctly concave, infero-anterior angle almost a right-angle, infero-posterior angle acute; prosternal tubercle broad and stout, slightly concave at apex; prosternal part of sternal lamina very distinctly marked off from the mesosternal part, wide, broadly rounded in front; mesosternal lobes as broad as long, contiguous, their interface reduced to a wide, somewhat triangular suture-like impression, metasternal pits large, open, oval, divergent. *Legs*: anterior and median femora slender, posterior femora fairly short, compressed, not reaching apex of abdomen; hind tibia shorter than hind femur; hind tarsus nearly 1/2 as long as tibiae, 1st and 3rd segments long, subequal, arolia large and round. *Wings*: tegmina narrowly lanceolate, rounded-acute apically, with subparallel anterior and posterior margins, barely reaching hind knees; hind wings narrow. *Abdomen*: terminalia of peculiar form illustrated in fig 2 D, E; *Phallic structures*: as indicated in fig 2 F–H.

Coloration: generally olivaceous green, bases of hind femur paler; antennae black with last 3 segments ochreous; eyes brown; dorsum of head and pronotum deeply infuscated, latter with small, mid-dorsal, yellowish flecks on anterior and posterior margins; abdominal terga brownish above; tegmina dark chestnut-brown; hind wings red; hind knees and apices of fore and middle tibiae blackish brown; hind tibia mostly of the same color, but paler

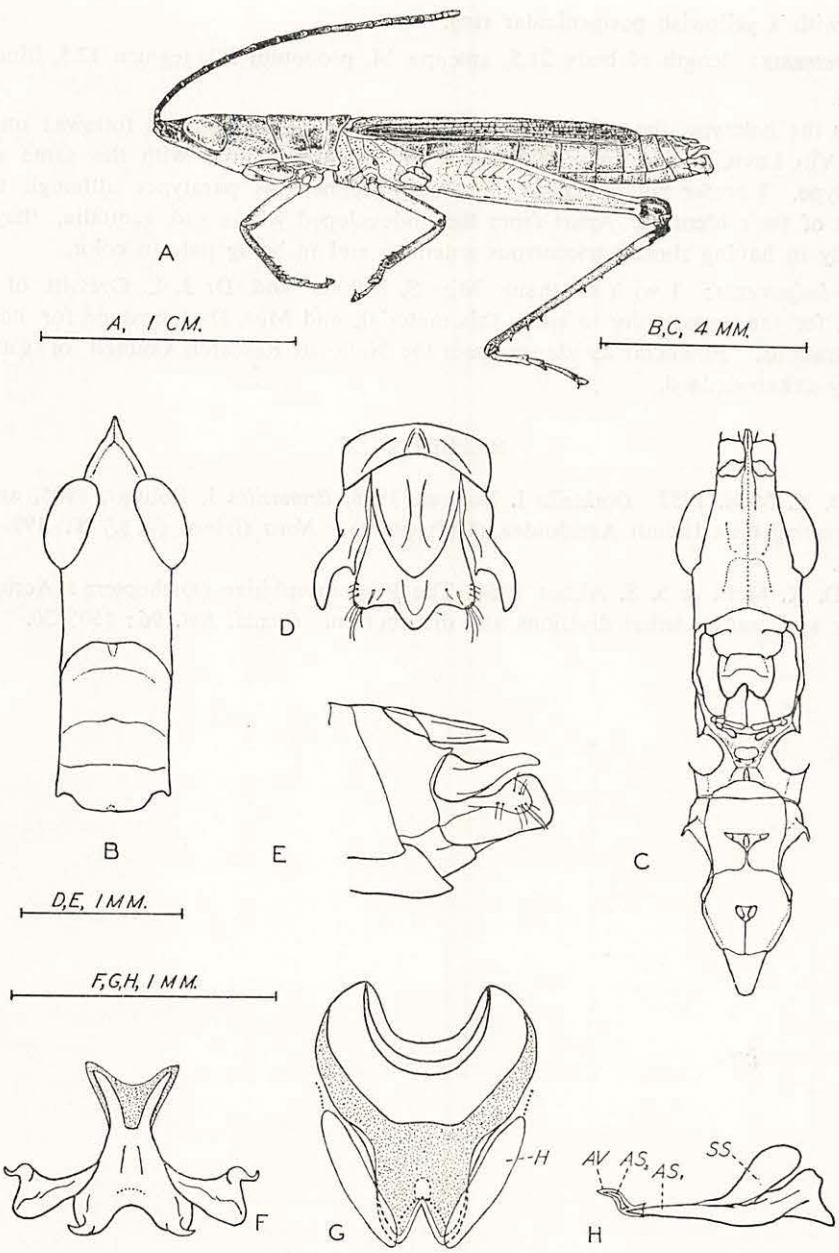

Fig. 2. *Fijipyrgus gracilis*, n. sp. A, ♂, lateral; B, head and pronotum, dorsal; C, frons and thoracic sterna, ventral; D, ♂ terminalia, dorsal; E, the same, lateral; F, epiphallus, dorsal; G, ectophallus, dorsal; H, endophallus, from right. AS_1, basal aedeagal sclerite; AS_2, apical aedeagal sclerite; *AV*, aedeagal valve; *H*, "hood"; *SS*, spermatophore sac.

apically with a yellowish postgenicular ring.

Measurements: length of body 21.5, antenna 14, pronotum 3.2, tegmen 12.5, hind femur 10.5 mm.

Besides the holotype, the only specimens known are 4 ♂ nymphs, as follows: one labelled Fiji, Viti Levu, Nandarivatu, X. 1937, J. M. Valentine, and 3 with the same data as the holotype. I prefer not to regard immature specimens as paratypes although there is no doubt of their identity. Apart from the undeveloped wings and genitalia, they differ principally in having shorter triquetrous antennae and in being pale in color.

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