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Miopyrgomorpha fischeri (HEER) — A Fossil Pyrgomorphid Bush-Hopper (Orthoptera : Acridoidea)

by

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In "Die Urwelt der Schweiz", HEER (1865) included a small sketch of a fossil acridoid from the Sarmatian deposits (Upper Miocene) of Oeningen, Lake of Constance (Bodensee) in southern Baden, South Germany. He named it *Oedipoda Fischeri*. His figure is inaccurate, however, and his text indicates only that the species is much smaller than *Oedipoda Haidingeri*, so that the correct systematic position of *fischeri* has been problematical. The French edition of the same work (HEER, 1872) and subsequent English and revised German editions (HEER, 1876; 1879) merely repeat the figure and the brief statement.

SCUDDER (1890), presumably because HEER (*ll. cc.*) placed it in the genus *Oedipoda*, and doubtless also because of the rather rounded form incorrectly shown for the head, continued to regard *O. fischeri* as an oedipodine, but suggested that it "looks somewhat like a *Chimarocephala*". Shortly afterwards he listed it under that genus (SCUDDER, 1891). HANDLIRSCH (1907) also listed the species, without comment, as (*Chimarocephala*) *Fischeri*. ZEUNER (1944), however, found himself unable to place the species in any group, let alone genus, of Acridoidea, but thought its "general aspect" to be "reminiscent of a *Pyrgomorpha*, but elytra too short and broad and hind femora too thick and short". Even although he had not seen the specimen, and was, indeed, uncertain of its whereabouts, he pointed out that the "thorax and head are obviously not accurately drawn". KEVAN (1959) refers very briefly to the species in discussing zoogeography of Pyrgomorphidae, but does not comment on its identity.

Recently it became possible for me to examine HEER's type, and, as a result, it was found that ZEUNER's guess was apparently correct. *Fischeri* is, in fact, "reminiscent of a *Pyrgomorpha*" and seems to be close to that genus. Because it had virtually no generic name, it has recently been placed in a new, related genus, *Miopyrgomorpha* (see

KEVAN and AKBAR, 1965). The diagnosis of this genus was, however, preliminary only, and opportunity is now taken to make further comment.

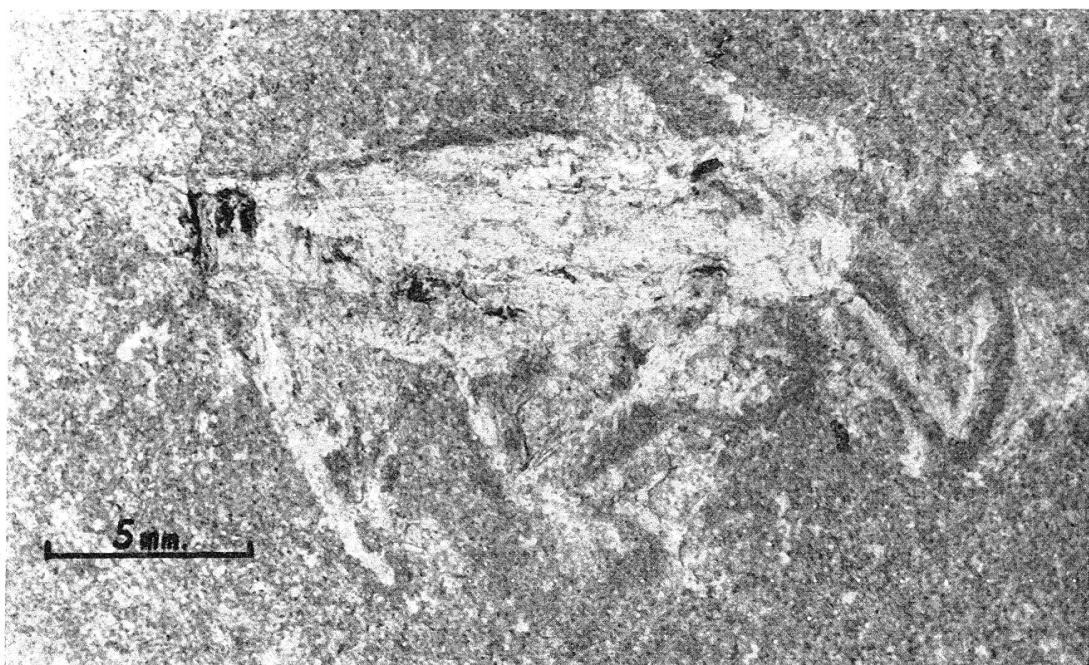


Fig. 1. *Oedipoda fischeri* HEER [= *Miopyrgomorpha fischeri* (HEER)], holotype *in situ*.

Miopyrgomorpha KEVAN

Miopyrgomorpha KEVAN in KEVAN and AKBAR, 1964: 1526.

ZEUNER's (1944) comments, that the tegmina of *fischeri* are too short and broad and that the hind femora are too thick and short for *Pyrgomorpha*, are not entirely justified if the genus as a whole is considered. Doubtless he had the type species, *P. conica* (OLIVIER) and its allies in mind, but many species of *Pyrgomorpha* have quite abbreviated tegmina, whereas HEER's figure correctly shows these as surpassing the hind kness. HEER's figure might perhaps suggest that the tegmina are wider than those of *Pyrgomorpha* species, but it is really only the apices which are shown to be broader, and, incidentally, much more rounded. The specimen is, however, insufficiently well preserved to be certain of the shape of the tegminal apices, and much of their apparent width and bluntness may be due to the position of the hind wings lying below them. Even so, the tegmina certainly appear to be more rounded apically than in *Pyrgomorpha*.

The hind femora of *fischeri* are indeed somewhat short for *Pyrgomorpha* and appear to be rather thick, but this latter may be largely due to flattening by pressure. In any event, some of the stouter species

of *Pyrgomorpha* have thicker, shorter hind femore than *P. conica*, with which ZEUNER was presumably making his comparison. HEER's figure, which was all ZEUNER knew, exaggerates the stoutness of the femora, does not indicate their proper shape, and shows a pattern on the external face which is not visible in the specimen! From what it is possible to distinguish of the hind femora, they seem to be definitely of a pyrgomorphid form, although rather thick for *Pyrgomorpha* and its allies.

The genus *Miopyrgomorpha* may therefore be defined as follows: Similar to *Pyrgomorpha* AUDINET-SEVILLE, 1838, but vertex a little less convex and frons rather less concave in profile; tegmina somewhat broader and more rounded apically (?); hind femora rather stouter, not reaching the apex of the abdomen, not longer than hind tibiae.

It is perhaps of some significance that the only recent European pyrgomorphid, other than *Pyrgomorpha conica*, *Pyrgomorphula serbica* (PANJIĆ in BRUNNER VON WATTENWYL) differs in the form of its head from *Pyrgomorpha* in the same way as does *Miopyrgomorpha*. The species is strongly brachypterous, but its tegminal vestiges are broad. It is a montane, presumably relict, species found in Yugoslavia and might conceivably be related to *Miopyrgomorpha*. Its nearest living relative appears to be *Pyrgomorphula turcica* (KARABAĞ), a smaller, probably similarly relict species from the mountains of southeast Turkey.

Miopyrgomorpha is monotypic; the type species is the following:

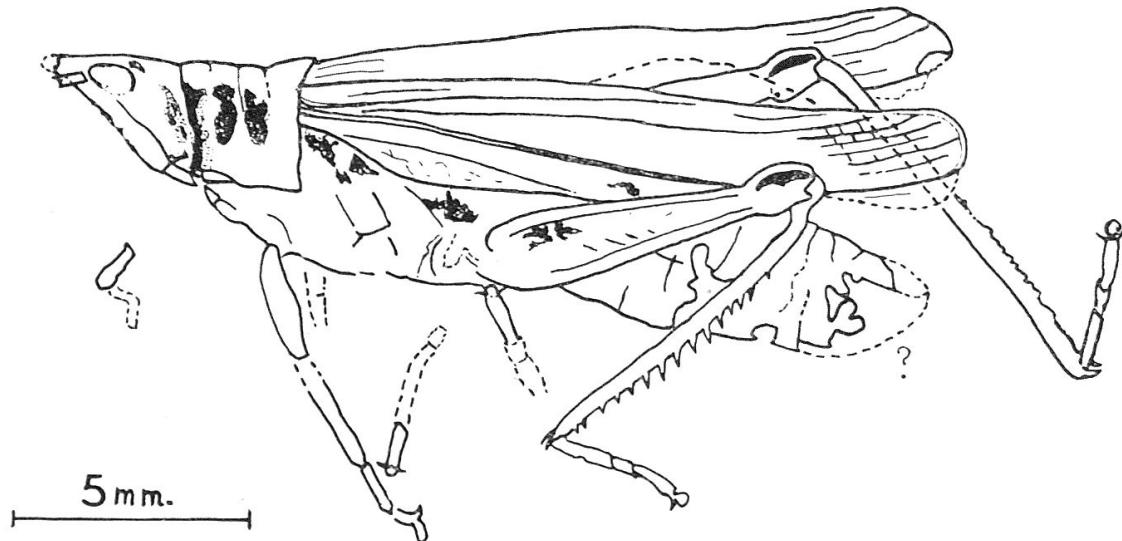


Fig. 2. Interpretation of fig. 1.

Miopyrgomorpha fischeri (HEER)

Oedipoda Fischeri HEER, 1865 : 366 (fig. 224), 367 ; 1872 : 449 (fig. 224), 450 ; 1876 : 20, 21 (fig. 224) ; 1879 : 391, 392 (fig. 265).

Oedipoda fischeri, SCUDDER, 1890 : 224 [as *O. fischeri* only] ; 1891 : 314.

Chimarocephala fischeri, SCUDDER, 1891 : 307.

(*Chimarocephala*) *Fischeri*, HANDLIRSCH, 1907 : 688.

Acrididae, gen. indet. *fischeri*, ZEUNER, 1944 : 365.

gen. et sp. indet., *fischeri*, KEVAN, 1959 : 210 [wrongly stated to be from Switzerland].

Miopyrgomorpha fischeri, KEVAN, in KEVAN and AKBAR, 1964 : 1526n. [Old names « *Oedipoda* » *fischeri* and *Chimarocephala fischeri* also noted].

Holotype : ? ♂, Germany, Baden, Oeningen (Upper Miocene, Sarmatian) [Geologisches Institut der Eidgenössischen Technischen Hochschule, Zürich — in a small flat wooden box with pencilled labels *Oedipoda Fischeri* and "614"].

The specimen is in a fair state of preservation and some fine detail is visible, traces of scleritin are still discernible as indicated in figs. 1 and 2. The apex of the abdomen is crushed and appears to be incomplete, but the specimen is probably a male. If this is correct, it represents rather a large species for a member of the Pyrgomorphini.

A detailed description would not seem to add much to what is indicated in the figures, but it may be noted that the head is fairly short and about equal to the pronotum in length, the vertex is almost horizontal and the frons strongly oblique, but not appreciably excised in profile ; the eye seems to be rather small, ovoid ; the pronotum is short with deep lateral lobes, the margins of which are only slightly sinuous, the infero-posterior angle being approximately a right-angle ; details of sternum and pleura are not discernible ; the anterior legs are long and strong (they seem to have broken away slightly from the body) ; the middle legs have become detached and are fragmentary ; the hind legs are intact, hind femora short and stout, without a distinct pattern on outer face, not reaching the apex of abdomen, about five times as long as their greatest width, not longer than the hind tibiae, the latter strong and stout with strong spines, tarsal arolia large ; tegmina rather broad, about six times as long as wide, tapering slightly towards the apices which are distinctly rounded, reaching or slightly surpassing the apex of the abdomen and distinctly surpassing the hind knees, venation (as far as can be determined) typically pyrgomorphid.

Measurements : length of body, ca. 26.5, head ca. 3.7, pronotum ca. 4.2, tegmen ca. 19, hind femur ca. 11, hind tibia ca. 11 mm.

The type is unique.

Acknowledgements

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