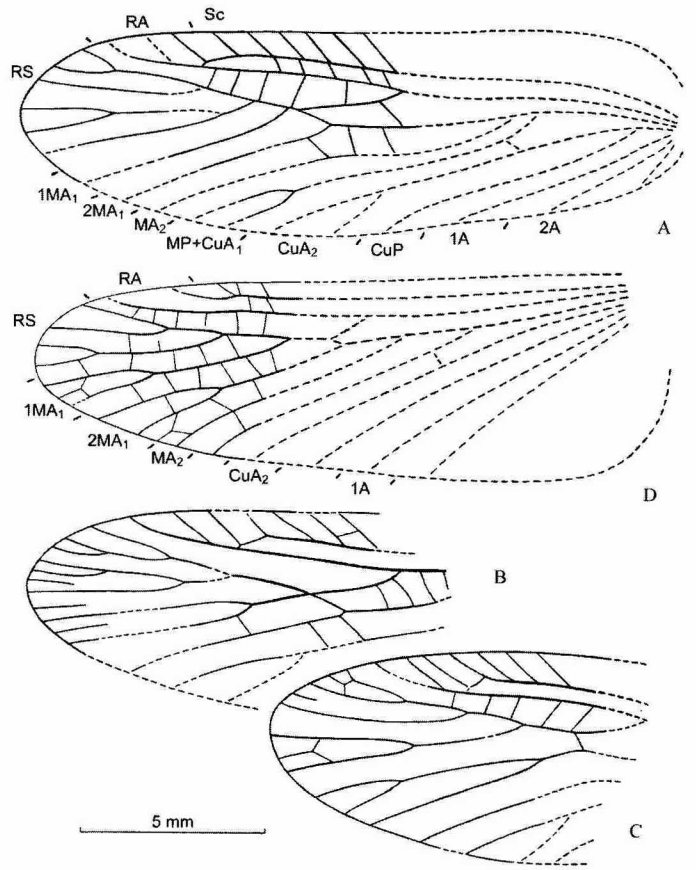
Order Orthoptera
by A.V. Gorochov
Family Thueringoedischiidae Zessin, 1997

The family Thueringoedischiidae was originally included in the suborder Ensifera without more exact determination of its systematic position (Zessin, 1997). Recently, this family was hypothetically put in the superfamily Permoraphidioidea (Gorochov & Rasnitsyn, 2002), which is one of two superfamilies of the infraorder Elcanidea (one of four infraorders of Ensifera) (Gorochov, 1995). Probably, Thueringoedischiidae is the most primitive family of Permoraphidioidea, as their wings have not any anastomosis of MA with proximal parts of MP and MP+CuA1 (Fig. 51) characteristic for two other families of this superfamily: Permoraphidiidae Tillyard 1932 and Pseudelcanidae Gorochov 1987 (nomenclature of wing veins is given under Sharov, 1968, but with some corrections by Gorochov, 1995). Moreover, Thueringoedischiidae may claim to be ancestral for both these families and all other Elcanidea, as their venation does not contradict it. On the other hand, the representatives of this family and all other Elcanidea are rather small insects with the both pairs of wings well adapted to flight unlike in other primitive Ensifera (infraorder Oedischiidea), which usually preserve the larger size and the tegmen-like fore wings. A new genus, considered below, is a third genus of very primitive Ensifera, which may be included in Thueringoedischiidae together with two other Early Permian genera: *Permoedischia* Kukalová 1955 (Czechia) and *Thueringoedischia* Zessin 1997 (Germany).

Genus *Hymenelcana* Gorochov, gen. nov.

Type species: *H. initialis* sp. nov.

Diagnosis. Fore wing with closed area between Sc and RA as in *Thueringoedischia*, but Sc much longer, its apex situated not far from apex of RA, and area between RA and costal edge of wing less narrow (distinctly wider than nearest part of area between RA and RS). From *Permoedischia*, this new genus distinguished by significant difference in width of some areas in fore wings: Sc-RA area much narrower than



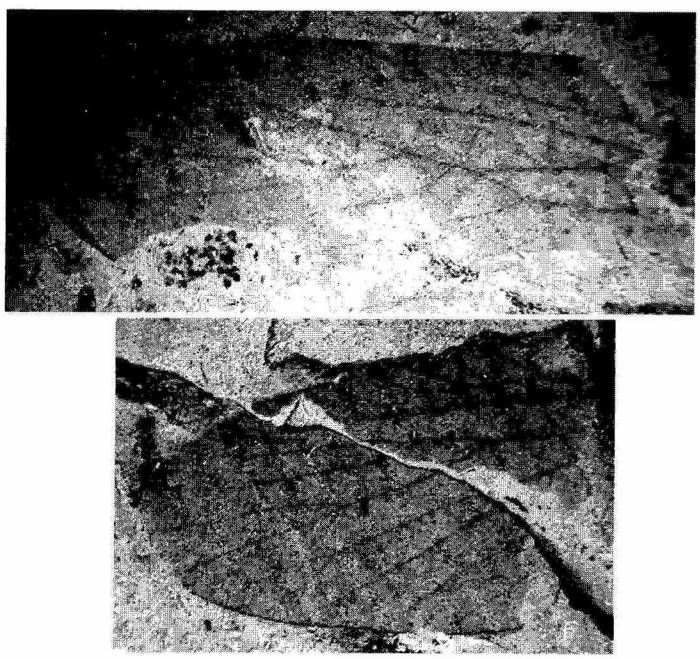


FIGURE 51. *Hymenelcana initialis* Gorochov, sp. n.: **A, B, C, E** –fore wing, holotype (A, E, restored), paratype (B, NMMNH P-36553), and aberrant specimen (C, NMMNH P-36570), **D, F** – supposed hind wing, NMMNH P-36572 (restored).

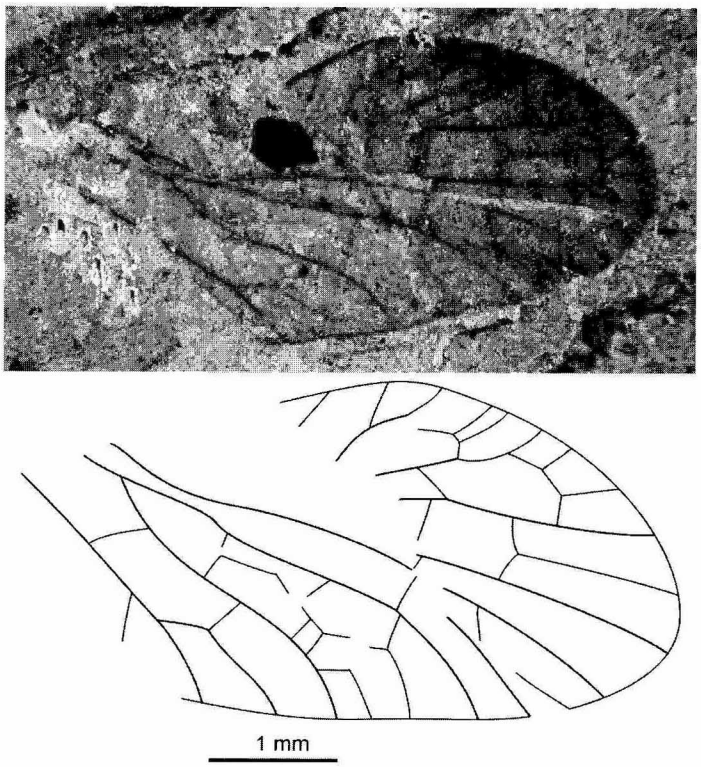


FIGURE 52. Insecta incertae sedis, specimen NMMNH P- 36557.

RA-RS area.

Species included. Type only.

Hymenelcana initialis Gorochov, sp. nov.

Figure 51

Referred material: holotype NMMNH P-36564, locality NMMNH L-3433, distal half of a fore wing; paratype NMMNH P-36553, locality NMMNH L-3433, distal half of a fore wing. Non-type material: 3 fragments possibly belonging to the same species: NMMNH P-36572, distal part of a possible hind wing; NMMNH P-36570, distal half of a fore wing with probably aberrant venation; NMMNH P-36623, small part of a fore or hind wing; all from locality NMMNH L-3433.

Description. Fore wing (holotype). Thickened crossvein between apical branch of Sc and proximal branch of RA more or less longitudinal; proximal part of RS (before anastomosis with 1MA1) rather long; proximal part of 1MA1 (before anastomosis with RS) almost longitudinal; distal parts of 1MA1 and 2MA1 alone or with short (apical) branches only (Fig. 51A). Length of fragment 11 mm; hypothetical length of wing 18-20 mm.

Variations. Paratype distinguished from holotype almost only by distal part of 1MA1 with two long branches (Fig. 51B). Other (aberrant?) fragment differs from holotype and paratype in more transverse thickened crossvein between apical branch of c and proximal branch of RA, in almost transverse proximal part of RS, and in presence of two long branches of distal part of 2MA1 (Fig. 51C).

Hind wing. Distal fragment of one of wings has proximal parts of costal and subcostal areas almost equal (unlike in tegmina); it may belong to hind wing of this species (Fig. 51D).

?Thueringoedischiidae indet.

Wing fragments NMMNH P-36576 and P-36623, both from locality NMMNH L-3433, might belong to Thueringoedischiidae but too incomplete to permit more precise identification.

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