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A FOSSIL TERMITE FROM GERMANY.

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Some time ago, Mr. Heinrich Bauckhorn of Siegburg, Germany, forwarded to the senior author a very interesting fossil wing, labeled "Flügel von Phryganidae, gen. n. sp. (Meunier) Miocän, Rott." The well-known beds at Rott are ascribed by Handlirsch and others to the Upper Oligocene (Aquitanian), approximately equivalent in time to the upper part of the John Day Beds in Oregon. The wing referred to is evidently not that of a caddis fly, but is a termite. It is exquisitely preserved, but unfortunately the base is lacking. It is dilute reddish with brown veins; evidently it was more or less dusky or reddish in life.

The characters are as follows: Length as preserved 11 mm., probable length 12 mm.; width 4.2 mm.; radius heavy and conspicuous, media and cubitus weak as in living forms; membrane delicately wrinkled; costo-apical region with evident but incomplete reticulation; subcosta running extremely close to and parallel with costa, terminating beyond middle of wing or further, no branches between costa and subcosta; radius with three very oblique branches above, the first ending in subcosta, the second and third running parallel (their origins nearly 2 mm. apart) and ending in subapical region of costa; below, the radius has two oblique branches, leaving it at a larger angle, the first just beyond the last superior branch, the second 2.7 mm. beyond the first; end of radius curved downward, directed toward apex of wing; media with two very oblique long branches below, the first about 6.5 mm. long, the second a little over 6 mm.; cubitus with two divisions, each forked near its end; below the cubitus are two or three widely spaced parallel veins

visible, but the rest of the anal field has been obliterated. (Plate I, figs. 1–2.)

This termite can only be allied to Mastotermitinae, Termopsinae or Kalotermitinae. There is certainly a strong resemblance to *Mastotermes*, as shown by the inferior branches of the radius, but the media is less complex. *Termopsis* is much less similar and *Kalotermes* will not do at all. The really striking feature is that of the radius emitting superior and inferior branches from the same stem (and such a condition is feebly indicated in *Termopsis*), there being no separate radial sector.

The wing therefore appears to form a very distinct new genus, but apparently no new name is required. Meunier's *Ulmeriella bauckhorni* (Versl. Afd. Natuurk, XXII, 1919–20, pl. 1, f. 1) appears to be the very same species, though it was supposed to be Trichopterous. *Ulmeriella* Meunier is then a genus of Isoptera. Hagen long ago (Palaeontographica 10, p. 250, pl. 44, f. 1, 2) described *Calotermes rhenanus* from one winged and one deälated adult, from the Rott deposit. Kurt von Rosen (Trans. Second Entom. Congress, 1912, p. 323) found Hagen's insect in the British Museum, and gives notes on its characters, as well as a third larger winged adult from the Upper Oligocene, which he placed in *Hodotermes*. Handlirsch thought that Hagen's two figures might represent different species; the heads of these two adults appear differently shaped.

The termite *Ulmeriella bauckhorni* Meunier is larger than *Calotermes rhenanus* Hagen, the wings are darker colored and shorter in relation to their width. In *rhenanus* there are five oblique branches from the subcosta to the costa and the latter is close to and parallel to the costa; the median is near and parallel to the subcosta and apparently has no branches (doubtful because of indistinctness). In the remainder of the wing there are only some indistinct branches running to the lower margin of the wing. Even with a different (from Hagen's) interpretation of the venation, the radial sector is not branched as in *Ulmeriella*.

In the specimen found by Von Rosen and which he ascribed to *Hodotermes*, the radial sector has several branches to the inner margin. *Ulmeriella* certainly is not a *Hodotermes!*

Specimen deposited in the collection of Isoptera in the Division of Insects of the U. S. National Museum as a plesiotype.

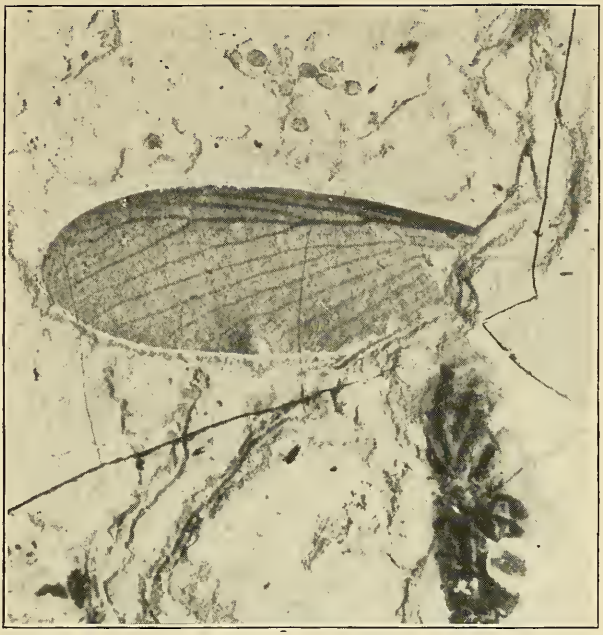

Plate I, fig. 1. Wing of the fossil termite *Ulmeriella bauckhorni* Meunier, from the Rott, Miocene, Germany. Photo. slightly over 5 ×.

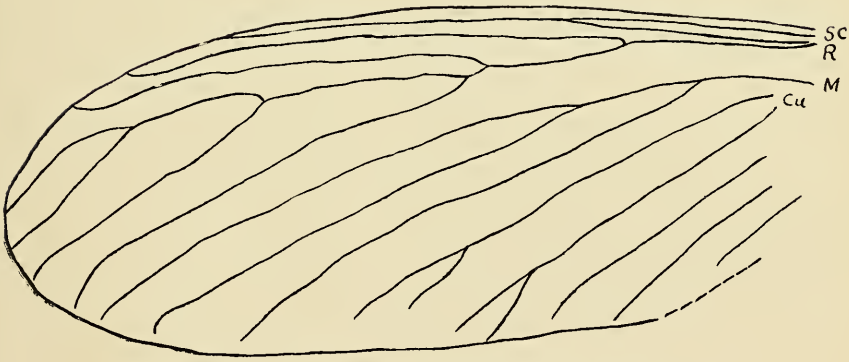

Plate I, fig. 2. Wing of the fossil termite *Ulmeriella bauckhorni* Meunier. (Camera lucida-Bausch & Lomb (Carl Zeiss) binocular, low power, no. 4 oculars, Leitz projector.)