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Eotrama gen. nov. (*Aphididae, Homoptera*), a link between two aphid groups

by

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Abstract. *Eotrama* gen. nov., type-species *E. moerickei* spec. nov. from thistle roots in Lebanon, is described as a bridge between *Sinolachnus* H.R.L., type-species *Lachnus nitakayamensis* TAKAHASHI, and *Protrama* BAKER, type-species *Trama radicis* KLTB.

Eotrama gen. nov.

Type-species: *Eotrama moerickei* spec. nov. Head only ventrally with a median suture, like the rest of the body clothed with very numerous, fine hairs. Antennae of 6 segments, pale in apterae, black in alatae, with structure and sensoriation as in *Protrama*. Eyes compound with small triommatidium. Rostrum not much shorter than body, with subdivided last segment. Legs normal but hind coxae elongate and about twice as long as middle coxae; first tarsal joints of all legs similar in structure, dorsally hairless ventrally with shorter and longer hairs; second joints of hind tarsi not much longer than those of other tarsi. Siphunculi in apterae not on pigmented cones, in alatae on blackish, pigmented cones. Cauda as in *Protrama*. Fore wings with obliquely truncated stigma, sector radii slightly curved; media near base once furcated, like the sector radii paler than other veins.

First instar larvae with very reduced eyes of which only three ommatidia are indistinctly visible; with 4 antennal segments; with rostrum much longer than body; with small siphunculi; first tarsal joints with 8, 8, 5 hairs. Later instar larvae with flat compound eyes.

Discussion. In the key in BASU & HILLE RIS LAMBERS (1968, p. 13) this genus runs to *Sinolachnus* H. R. L. to which it is very nearly related. But in *Sinolachnus* the coxae of all legs are very similar in structure and size, while in *Eotrama* the hind coxae are elongated as in the group of genera related to *Trama* v. HEYD., though less strongly so. The general structure and the elongate hind coxae of adults, the reduced eyes of first instar larvae, and the host plant of the genotype strongly suggest that *Eotrama* is a sort of missing link between the relatives of *Lachnus* BURMEISTER and the relatives of *Trama* v. HEYDEN.

Eotrama moerickei spec. nov. (fig. 1)*Apterous viviparous female*

Colour in life : pale yellowish. In mounted specimens body about 3.40–4.20 mm long, broadly oval. Tergum membranous and pale, and only the head faintly brownish yellow. Hairs very numerous, very fine, 0.065–0.100 mm long, never with looped apices. Head without a distinct median suture, except ventrally. Antennae pale brownish yellow, of 6 segments, about $\frac{3}{8}$ of length of body ; segment III without, or mostly on distal portion, with up to 15 rimmed, slightly elevated rhinaria with very strongly bulging membranes, of strongly varying (diameter 0.005–0.021 mm) sizes ; segment IV with 4–10 rhinaria ; segment V with 3–6 secondary rhinaria ; segment VI with 0–2 small secondary rhinaria ; primary rhinaria not distinctly rimmed, bulging ; the accessory rhinaria on segment VI in a compact cluster laterad of the primary rhinarium ; processus terminalis only with 7–8 spiny hairs, not with normal antennal hairs ; the latter very numerous on segment III and as long as and shaped like the dorsal body

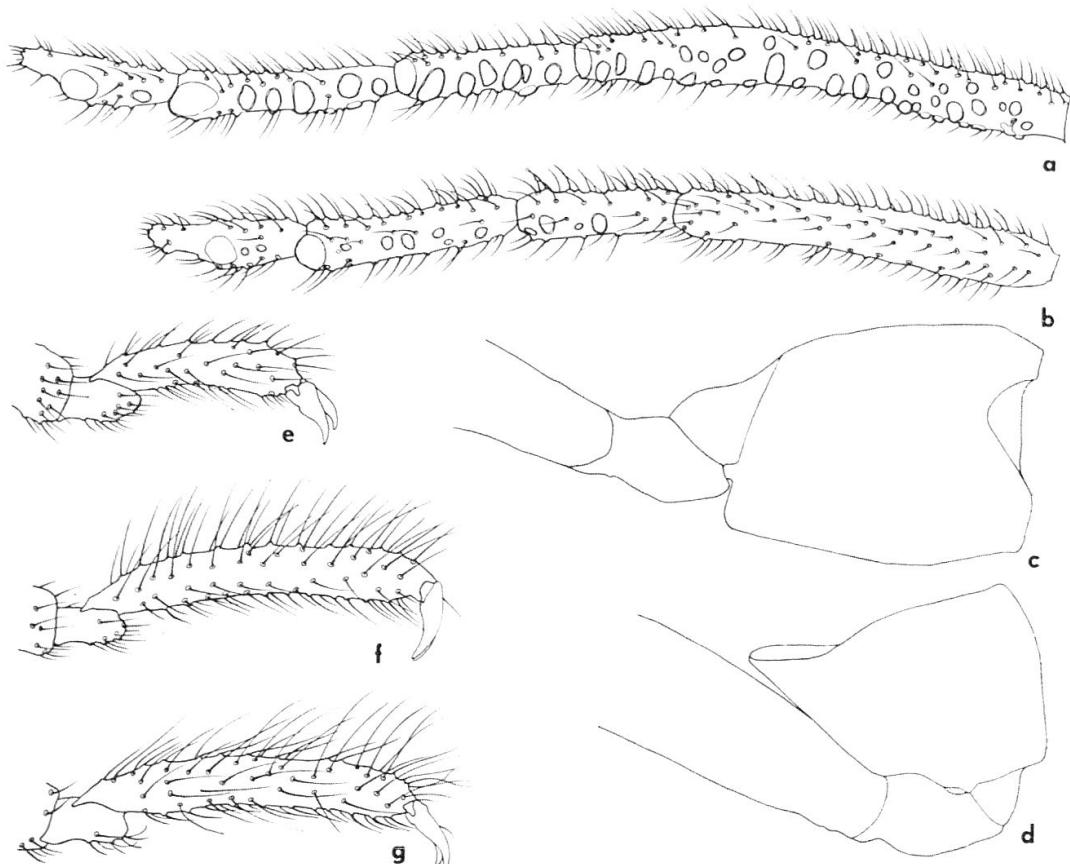


Fig. 1. — *Eotrama moerickei*. Alate viviparous female : a) flagellum ; e) fore tarsus ; f) hind tarsus. Apterous viviparous female : b) flagellum ; g) hind tarsus ; d) basal part of middle leg ; c) basal part of hind leg. All magnified. 73 times.

hairs. Eyes with many facets, curiously flat, and also the triommatium flat with the facets not in an equilateral triangle but in an almost straight line. All specimens with minute ocelli. Rostrum very long, when extracted (measure stylets !) reaching to posterior margin of abd. segment VI; last segment about 0.325 mm long, $7/10$ of second joint of hind tarsi; "segment V" about 0.071 mm long, onion-shaped; "segment IV" with about 6 pairs of hairs along the furrow, but in total with at least 30 hairs. Mesopleura dorsad of the pleural suture with a large fingertip-shaped process bearing many hairs and, on its anterior surface, about 8-18 organs resembling hair sockets. Legs pigmented like antennae but with brown tarsi; middle coxae about 0.24 mm long, but hind coxae about 0.43 mm long, at base not wider than middle coxae; second joint of hind tarsi about $1\frac{1}{2}$ times as long as that of middle tarsi; first tarsal joints all similar, ventrally nearly 5 times as long as dorsally, with 8 hairs of which two normal ones on fore and middle legs, 4 normal ones on hind legs; empodial hairs very short, at most 0.010 mm long on the fore and middle tarsi, but only 0.006 mm on hind tarsi. Siphunculi not on dark sclerotic cones, rather dark, about 0.10 mm in diameter. Cauda about $2\frac{1}{2}$ times as wide at base as its length.

Measurements in mm

No.	Length body	Ant. III	Ant. segments			VI	Rhin. on segments				VI	Cau.
			IV	V	VI		III	IV	V			
1	4.20	1.59	0.57	0.24	0.30	0.14 + 0.08	0	&	0	4 & 10	5 & 3	1 & 0 0.12
2	3.73	1.56	0.55	0.25	0.28	0.16 + 0.07	15	&	15	5 & 7	5 & 6	1 & 2 0.12
3	3.98	1.49	0.52	0.22	0.28	0.15 + 0.08	1	&	4	6 & 4	4 & 5	1 & 1 0.12
4	3.43	1.53	0.54	0.24	0.30	0.15 + 0.07	11	&	15	5 & 6	6 & 6	2 & 1 0.10

(1-4, from thistle roots, Lablouk, Lebanon, 6.IV.1966, leg. V. MOERICKE, No. 172.)

Alate viviparous female (from one specimen) (fig. 1)

Colour in life: head and thorax black, pruinose, abdomen light green, laterally brownish olive, slightly pruinose. In mounted specimen head and thorax black sclerotic, abdomen with the rather fragmentary marginal sclerites, small intersegmental sclerites, rather large siphuncular sclerites and subgenital plate all dark brown. Antennae black with only the very base of segment III pale, about $4/9$ of length of body; segment III with bulging rhinaria, most of them rather large, others small, the largest somewhat transversely oval, the rest round; segment IV and V with very few small rhinaria. Wings clear with dark brown subcosta and stigma; stigma with oblique, blunt, distal end; sector radii distinctly curved on basal half; media very much paler than cubitus and basalis, once furcated, and the fork very near the origin of the vein; none of the veins bordered. Legs black with only the very base of the femora on the underside with a paler spot; structure of legs as in apterae. Siphunculi on blackish brown cones of about

0.35–0.40 mm in diameter. Cauda, subanal plate and subgenital plate blackish brown.

Measurements in mm

Length body	Ant. III	Ant. segments IV	V	VI	III	Rhin. on segments IV	V	VI	Cau.
3.71 (with apterae Nos. 1-4).	1.74	0.71	0.26	0.32	0.16 + 0.06	35 & 36	7 & 8	7 & 5	1 & 2 0.09

First instar larva

(Vide diagnosis of genus *Eotrama*.)

Discussion. This aphid was collected together with a *Protrama* from the roots of a thistle at about 1 cm below ground level, where it was attended by *Lasius alienus*. Professor MOERICKE reared the alate from collected nymphs. In general aspect the aphids looked just like the *Protrama*, and it was a surprise that the hind tarsi were not elongated. But, as to shape of body, hairiness, structure of head, siphunculi and cauda, rostrum, etc., they might be the same species. If no alate had been available I might have mistaken this aphid for an unknown morph, e.g., the fundatrix of the *Protrama*.

The apterae all have extremely small ocelli, and therefore are more or less alatiform, but no other character indicates that they are not genuine apterae. Remarkable are the sensoriate processes on the mesothoracic pleura, structures which undoubtedly are homologous to those in the subgenus, later genus *Parastomaphis* PASEK, 1953. They might be rudiments of wings.

This aphid is named for Prof. Dr. V. MOERICKE of Bonn, Germany, whose brilliant work on aphid behaviour and especially colour vision of aphids has been, and still is of the greatest importance for agricultural economy.

Types. Holotype : apterous viviparous female (No. 1 of measurements), from thistle roots, road to Lablouk (1000 m a.s.l.), Lebanon, leg. V. MOERICKE. Paratypes : 3 apterous and 1 alate viviparous female with collecting data as for holotype. In the author's collection.

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