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A review of the Asian species of Aldrichiomyza Hendel (Diptera: Milichiidae)*

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Abstract – Oriental and East Palaearctic species of the milichiid genus *Aldrichiomyza* HENDEL are studied. *A. koreana* sp. n. is described from North Korea. With 12 figures.

Key words – Diptera, Milichiidae, *Aldrichiomyza*, Oriental region, East Palaearctic.

This is a small genus of Milichiidae with four known species. All the classical literature about them are from FRIEDRICH HENDEL (1911, 1913, 1914, 1931), who described a new genus and species, *Aldrichiella agromyzina* from the USA (HENDEL 1911), which later was found to be a widespread Nearctic species. Two years later he described a species (*Aldrichiella elephas*) from Formosa (HENDEL 1913). Since *Aldrichiella* HENDEL, 1911 is a junior homonym of *Aldrichiella* VAUGHAN, 1903, he had to give it a new name, *Aldrichiomyza* HENDEL, 1914. Several years later he was who described the first African species, *Aldrichiomyza longirostris* HENDEL, 1931 from Egypt. Quite recently, IWASA (1997) described *A. flaviventris* from Japan.

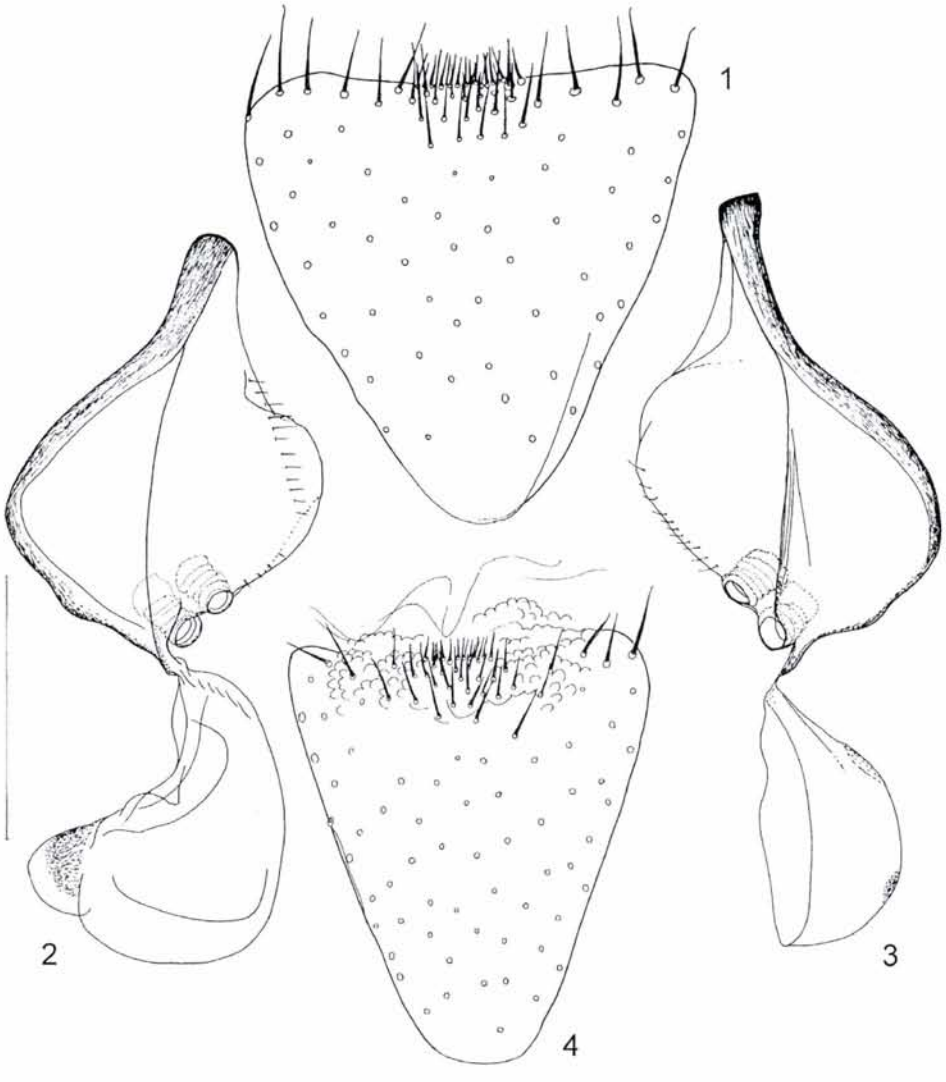
When checking acalyptrate dipterous specimens from Taiwan preserved in the collection of the Hungarian Natural History Museum (HNHM), I found that most of the *Aldrichiomyza* specimens from Korea belongs to a new species, which is described below.

Aldrichiomyza HENDEL, 1914

In her phylogenetic revision of the Milichiidae BRAKE (2000) analysed also the relationships of the phyllomyzine genera *Neophyllomyza* MELANDER,

* Zoological collectings by the Hungarian Natural History Museum in Korea, No. 138.

Paramyia WILLISTON, *Xenophyllomyza* OZEROV and *Aldrichiomyza* (the genus *Phyllomyza* and several other genera of the subfamily are not their close relatives). As for the relationships of those genera and *Aldrichiomyza*, their shared synapomorphies are: costa extending to R_{4+5}, proboscis very long, no strong vibrissae, veins R_{2+3} and R_{4+5} parallel and in cases close to each other, veins R_{4+5} and M di-



Figs 1–4. *Aldrichiomyza* spp., male abdomina. 1–3 = *A. koreana* sp. n., paratype: 1 = sternum 5, 2 = postabdominal sclerites, left view, 3 = postabdominal sclerites, right view; 4 = *A. elephas* (HENDEL), sternum 5. Scale: 0.2 mm for all

vergent. *Aldrichiomyza* and *Xenophyllomyza* share also the features that anterior *ors* are proclinate and both possess 2 pairs of katepisternals. The differentiating characters of *Xenophyllomyza* OZEROV (among others) are its normal pubescent arista, and the loss of dM-Cu cross-vein (and 1 or 2 *dc* pairs). The possible synapomorphies for the species of *Aldrichiomyza* are: thick arista with dense thick short setae, more dorsocentral pairs (including a presutural pair) and the retention of dM-Cu cross-vein. After all, it seems indispensable to regard also the details of male genitalia in order to clear up relations among three genera. This is why I would refer to all the results of the phylogenetic analysis recently published by BRAKE (2000).

Male preabdomen with S5 mediocaudally with a brush of medium-long bristles (Figs 1, 4). Postabdomen symmetrical or at least sub-symmetrical (? secondarily). T6 forms a symmetrical half-ring, which is short dorsally and extended laterally (Figs 2–3); T6 fused entirely with syntergosternite 7+8. Syntergosternite 7+8 composed of two symmetrical lateral sclerites, whose connection dorsally only membraneous in their own level but solid through T6. Spiracles 6 and 7 are symmetrically placed in the ventral edge of syntergosternite 6–8 (Figs 2–3). This is a first interpretation of the relations of the postabdominal sclerites, which needs criticism.

Subepandrial plate composed of a medial horizontal plate below cerci, joining cerci ventrally and two triangular plate joining dorsally to the hypandrial complex.

The differentiating characters of the three Oriental–East Palaearctic species are given in a key, where no genital features are mentioned; those are described and/or figures are given for them.

Aldrichiomyza elephas (HENDEL, 1913)
(Figs 4–5, 11–12)

Syntypes – 2 females: "Anping, Juni, und Taihupu, Juli" (DEI, seen formerly).

Material studied – 8 males, 14 females: Formosa Sauter (including 1 male and 1 female with "Aldrichiella elephas Hend det Kert. G/F): 7 males, 9 females: Takao 1907. V. 3.; 1 male: Taihoku 1912. IV.; 3 females: Anping, 1912. IV., 1911. V.(2); 1 female: Tainan, 1912. VI.; 1 female: Koshun 908. IX. North Korea: 2 males 1 female: 1 male: Nampo, 9.VII.1977, leg. Draskovits; 1 male: Sa Gam, 30–40 km N Pyongyan, water-basin, wood, 5.VII.1977, No. 347 – netting in grasses, Dely & Draskovits; 1 female: Prov. Kangwon, Mt. Kum-gang san, 9–28. VIII. 1971, leg. J. Papp & Horvatovich (all HNHM).

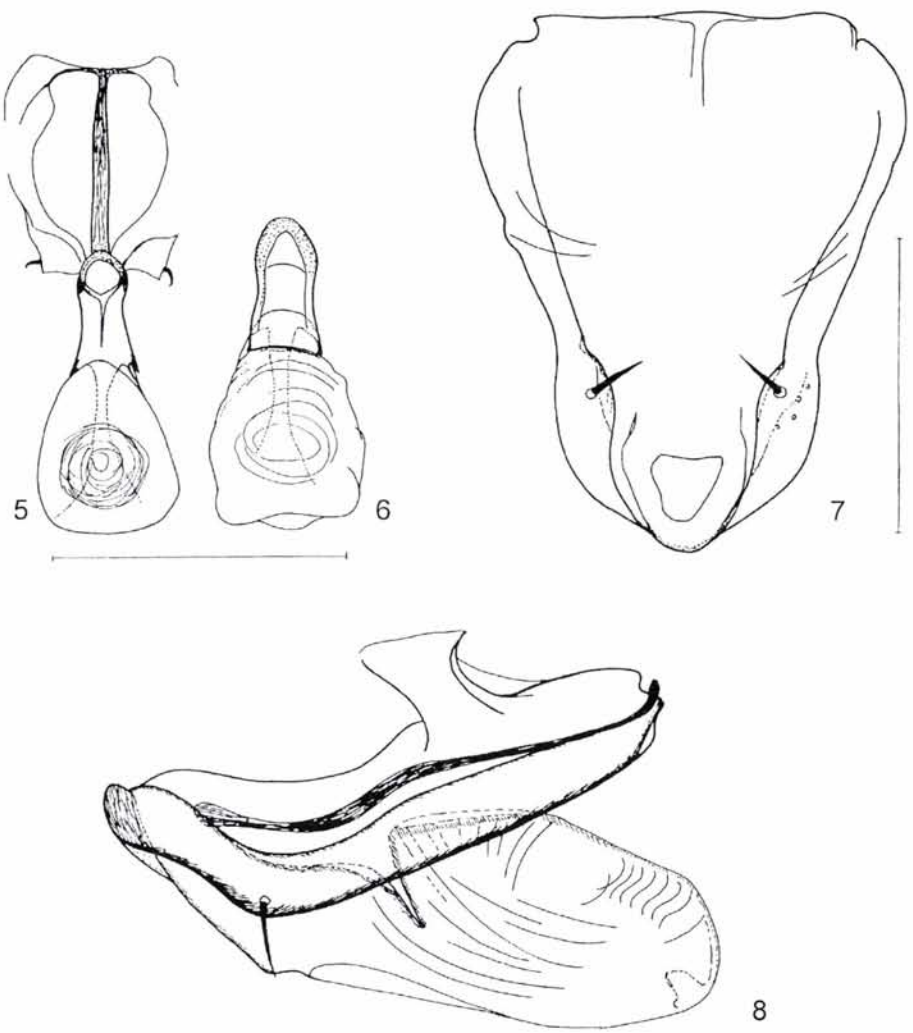
Body length 2.05–2.31 mm (males), 2.13–3.00 mm (females), wing length 2.13–2.31 mm (males), 2.33–2.90 mm (females), wing breadth 0.88–0.91 mm, 1.02–1.13 mm.

Facial plate of males black. Apical setae of palpi not longer than first tibial diameter at base. The male arista simple, i.e. with short setulae only and without long, thickly set setulae, which is characteristic also for *A. flaviventris* IWASA. Female arista with long, black, thickly set setulae.

Scutellum black. At least mid tibiae yellow.

Abdominal tergites completely dark (males) or at least their dorsal part dark (females).

Male abdominal sternum 5 (Fig. 4) narrower than in *A. koreana*, its medio-caudal setulae shorter. Male epandrium less high than in *A. koreana*. Male cerci somewhat shorter than those of *A.*



Figs 5–8. *Aldrichiomyza* spp., male genitalia. 5 = *A. elephas* (HENDEL), phallus with phallapodeme and parts of gonopods, dorsal view; 6–8 = *A. koreana* sp. n., paratype: 6 = phallus, dorsal view, 7 = gonopods and phallobase with parts of the hypandrial complex, ventral view, 8 = hypandrial complex, lateral view. Scales: Figs 5–6 = 0.2 mm, Figs 7–8 = 0.1 mm

koreana, whith shorter bristles (Fig. 12). Surstylus (Fig. 11) with larger caudal part (seen in profile), medially with thick black, peg-like setae. Distiphallus (Fig. 5) short, broadened apically.

Female cerci very narrow with 2 pairs of medium-long apical hairs.

The specimens listed above have not formerly been published, together with numerous other dipterous specimens from Taiwan, which were thought to have been published. These specimens from North Korea served as basis for the publication of the species from the Palaearctic region (PAPP 1984). I have to confess, that when making the Palaearctic Catalogue, I studied only one or two specimens of *Aldrichiomyza* from North Korea, which was/were conspecific with the specimens from Taiwan. A more careful study would have revealed the presence of the new species much earlier.

Aldrichiomyza flaviventris IWASA, 1997

Material studied – a male paratype: Japan, Miyagi Pref., Akiu-onsen, 13 June 1996, M. Iwasa.

Body lenght 2.5–3.0 mm, wing length ca 2.5 mm (IWASA 1997).

Head, except for occiput and ocellar tubercle, yellow. Gena broader than first flagellomere (fig. 2 of IWASA 1997). Male first flagellomere long and broad, broadest subapically. Male arista with short setulae, female arista with thick and long black setulae. Apex of palpi with 2 or 3 strong thick setae longer than first tibial diameter at base.

Scutellum, postpronotum, notopleura and also most of the postsutural area of mesonotum yellow (fig. 1 of IWASA 1997). Tibiae all black, fore tarsi black. In males knob of halteres blackish brown.

Abdominal tergites mostly yellow. Male surstylus very large and broadened caudally (fig. 4 of IWASA 1997)

Aldrichiomyza koreana sp. n.
(Figs 1–3, 6–10)

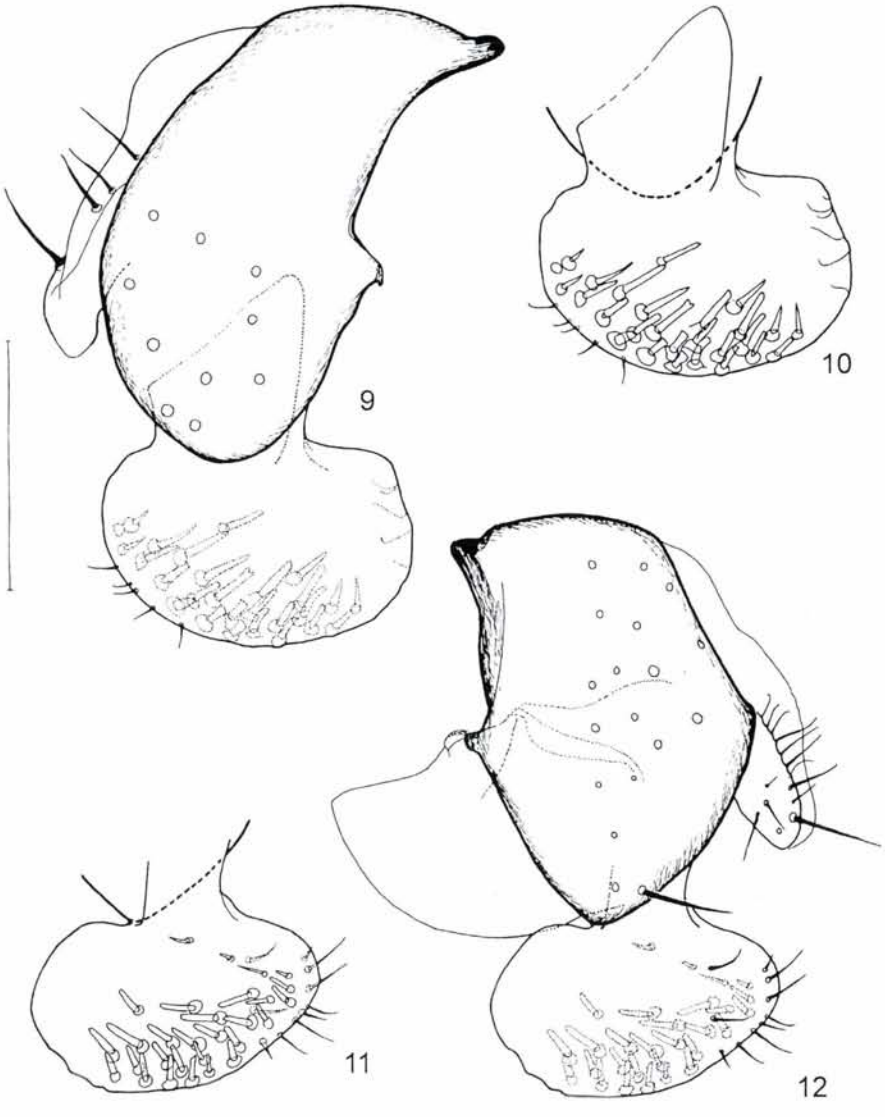
Holotype male – Korea: Prov. South Pyongan, De-sang, 12 km NE from Pyongyan – No. 145, 1971.VIII.7., leg. S. Horvatovich et J. Papp (HNHM).

Paratypes – 6 males, 20 females: same as for holotype; 1 male: ibid., Lyong-ak san, 14 km W from Pyongyan, 11. Aug., No. 160; 1 male, 4 females: ibid., Nung-ra-do (island), 17. Aug., No. 183; 5 females: same, 14. Aug.; 3 females: Pyongyan City, Mt. Daesong-san, 23.VII.1971; 2 females: ibid., 9–28.VIII.1971; 1 female: ibid., Mang-yong-dae, 5. Aug., No. 140; 1 female: Prov. Kengi, Bagyon-san, San-chon tong, about 20 km SE from Kaesong, 8 June 1970, Hung. Zool. Exp. I. in Korea, leg. Dr. S. Mahunka et Dr. H. Steinmann; 1 male: Prov. South Pyongan, 6–24.VII. 1982, leg. Forró, Ronkay (all HNHM).

Measurements (in mm): body length 2.10 (holotype), 1.79–2.18 (male paratypes), 2.10–3.19 (female paratypes), wing length 2.18 (holotype), 2.05–2.18 (male paratypes), 2.15–2.77 (female paratypes), wing breadth 0.90 (holotype), 0.83–091, 0.95–1.03 (paratypes).

Body mostly yellow, mesonotal colour pattern is similar to that of *A. flaviventris* IWASA.

Gena less broad than first flagellomere. Also male facial plate yellow, except for a pair of dark narrow vertical stripes at the bottom of antennal foveae. Male arista with long, thickly set black setulae, similar to the arista of all the females in this genus. Apex of palpi with 2 or 3 strong thick setae longer than first tibial diameter at base.



Figs 9–12. *Aldrichiomyza* spp., male genitalia. 9–10 = A. *koreana* sp. n., paratype: 9 = epandrium, cercus and surstylus, lateral view, 10 = surstylus, medial view; 11–12 = *A. elephas* (HENDEL): 11 = epandrium, cercus and surstylus, lateral view, 12 = surstylus, medial view. Scale: 0.1 mm for all

Scutellum and also the postsutural area of mesonotum yellow (see fig. 1 of IWASA 1997). Thoracic chaetotaxy similar to its congeners, i.e. 1+3 pairs of dorsocentrals and 2 pairs of katepisternals present. Fore leg and all femora black, mid tibiae and partly hind tibiae yellow, mid and hind tarsi yellow.

Wing veins yellow (costal, radial and cubital veins), or colourless. Knob of halteres yellow (all males), or light brownish in some females.

Abdominal tergites mostly yellow: unicolorous in males, and with a poorly defined light brown sagittal stripe in females. Male abdominal sternum 5 (Fig. 1) broad, its medio-caudal setulae longer than those of *A. elephas*. Epandrium (Fig. 9) high, male cerci large, with several thick setae. Gonopods (Figs 7–8) with a pair of medium-long thick subventral setae. Surstylus (Fig. 10) with smaller, more rounded caudal part (seen in profile), medially with thick black, peg-like setae (some of them are blunt or even slightly bifid). Distiphallus (Figs 5, 8) robust, apex truncated.ale cerci very narrow with 2 pairs of medium-long apical hairs, which are as long as 4th fore tarsomere (no differences was found to *A. elephas* females in this respect).

A key for the Oriental and East Palaearctic species of *Aldrichiomyza*

1(2) Scutellum black. Abdominal tergites completely dark (males) or at least their dorsal part dark (females). Apical setae of palpi not longer than first tibial diameter at base. At least mid tibiae yellow. Male arista with short setulae (Taiwan and North Korea) *A. elephas* (HENDEL, 1913)

2(1) Scutellum and also the postsutural area of mesonotum yellow (see fig. 1 of IWASA 1997). Abdominal tergites mostly yellow. Apex of palpi with 2 or 3 strong thick setae longer than first tibial diameter at base.

3(4) Mid tibiae and partly hind tibiae yellow. Gena less broad than first flagellomere. Knob of halteres yellow (males). Male arista with long, thickly set setulae (North Korea) **A. koreana** sp. n.

4(3) Tibiae all black. Gena broader than first flagellomere (see fig. 2 of IWASA 1997). Knob of halteres blackish brown (males). Male arista with short setulae, similar to *A. elephas* (Japan) *A. flaviventris* IWASA, 1997

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