

Rodzaj *Lysaphidus* Smith C. F. w Europie
(Hym., Aphidiidae)

The Aphidiid genus *Lysaphidus* Smith C. F. in Europe
(Hym., Aphidiidae)

napisał

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The Aphidiid genus *Lysaphidus* Smith C. F. was originally described in 1944 as a subgenus of *Aphidius* Nees from the Nearctic region where it is represented by the following four species: *L. adelocarinus* Smith C. F. 1944, *L. multiarticulatus* (Ashmead 1888), *L. ramithyrus* Smith C. F. 1944, *L. rosaphidis* Smith C. F. 1944. It has not been recognized outside this region till now.

The present paper includes descriptions of three new species of the quoted genus from Europe.

Genus: *Lysaphidus* Smith C. F.

Aphidius Nees (*Lysaphidus* Smith C. F.): Smith C. F., 1944, Ohio State Univ. Contr. Zoo. Ent. 6: 35, 72-73. — Muesebeck & Walkley, 1951, in U. S. Dept. Agric. Monogr. 2: 95. — Starý, 1958, Acta Faun. ent. Mus. Nat. Pragae 3: 56.

Lysaphidus Smith C. F.: Starý, 1960, Acta Soc. ent. Česosl. 57: 238, 250. Genotype: *Aphidius* (*Lysaphidus*) *adelocarinus* Smith C. F. (Orig. design.).

The genus *Lysaphidus* is related both to the genera *Aphidius* Nees and *Lysiphlebus* Förster. From *Aphidius* Nees it differs by the wing-venation — radial and median cells are incomplete

on the lower side as the intermedian vein (fused with part of median vein) is partly effaced. From *Lysiphlebus* Förster it differs by the following criteria: Metacarp short; anterior prong of valvulae 2 very large; propodeum more or less distinctly areolated or bearing carinae (very rarely with 2 divergent carinae in the lower part in *Lysiphlebus* Förster); tergite 1 practically parallel-sided.

Description: Head transverse to subcubical, wider than thorax at tegulae. Antennae filiform, with a variable number of segments (12-18). Notaulices distinct in the fore part of mesoscutum. Propodeum more or less distinctly areolated or at least bearing carinae in the lower part. Fore wing: Radial and median cells confluent, completed by more or less distinct interrarial vein on external side and incompletely limited by partly effaced intermedian vein (fused with part of median vein) on lower side. Hind wing with complete basal cell. Tergite 1 practically parallel-sided. Ovipositor sheaths wide, short, slightly curved upwards. Anterior prong of valvulae 2 very large.

General distribution: Palearctic and Nearctic regions.

Bionomics: Parasites of aphids. Pupation inside parasitized aphid.

KEY TO THE EUROPEAN SPECIES (♀♀)

1. Propodeum distinctly areolated, with small and narrow central pentagonal areola in lower part (Figs. 4, 14). 2
- Propodeum bearing carinae in the lower part only (Fig. 8) 3. *L. schimitscheki* sp. n.
2. Temple as wide as transverse eye-diameter. Eyes large. Antennae 13-segmented, only slightly thickened towards the apex, somewhat longer than head, thorax and tergite 1 together. Flagellar segment 2 somewhat more than three times as long as wide at apex. Head black brown; face, clypeus, mouthparts and genae yellow. Antennae brown,

basal half yellowish. Thorax brown black, prothorax mostly yellow 1. *L. arvensis* sp. n.

- Temple about $\frac{1}{3}$ wider than transverse eye-diameter. Eyes small. Antennae 12-segmented, somewhat thickened towards the apex, as long as head and thorax combined. Flagellar segment 2 twice as long as wide at apex. Head black brown; face, clypeus and mouthparts yellowish. Antennae brown; scape, pedicel and part of flagellar segment 1 yellowish. Thorax black brown, prothorax sometimes lighter

. 2. *L. erysimi* sp. n.

1. *L. arvensis* sp. n.

Differs from *L. erysimi* sp. n. by greater eyes, by longer and only slightly towards the apex thickened antennae and by coloration.

Description. Female: Head (Fig. 10) nearly sub-cubical as seen from above, wider than thorax at tegulae, smooth, shiny, sparsely haired. Occiput margined. Temple as wide as transverse eye-diameter. Gena as wide as $\frac{1}{5}$ of transverse eye-diameter. Clypeus oval, slightly convex, smooth, shiny, with about 6 hairs; arcuate and margined frontally; separated by shallow arcuate groove from face; with tentorial pit on each side. Relative distance between tentorial pit and orbit somewhat less than $\frac{1}{3}$ of the relative distance between the pits. Eyes large, oval, strongly convergent to the clypeus. Antennae 13-segmented, filiform, only slightly thickened to the apex, somewhat longer than head, thorax and tergite 1 together. Flagellar segments 1 and 2 of equal length, somewhat more than three times as long as wide at apex. Relative distance between antennal socket and orbit as the diameter of the socket.

Thorax smooth, shiny. Mesoscutum almost vertically falling to prothorax, without covering it when viewed laterally. Notaulices distinct in the fore part, crenulate, effaced on the disc. Propodeum (Fig. 14): areolated, with small narrow pentagonal central areola in the lower part; upper areolae with 2, lower areolae with single hair. Fore wing (Fig. 11): Pterostigma three times as long as wide; metacarp $\frac{1}{3}$ shorter than length

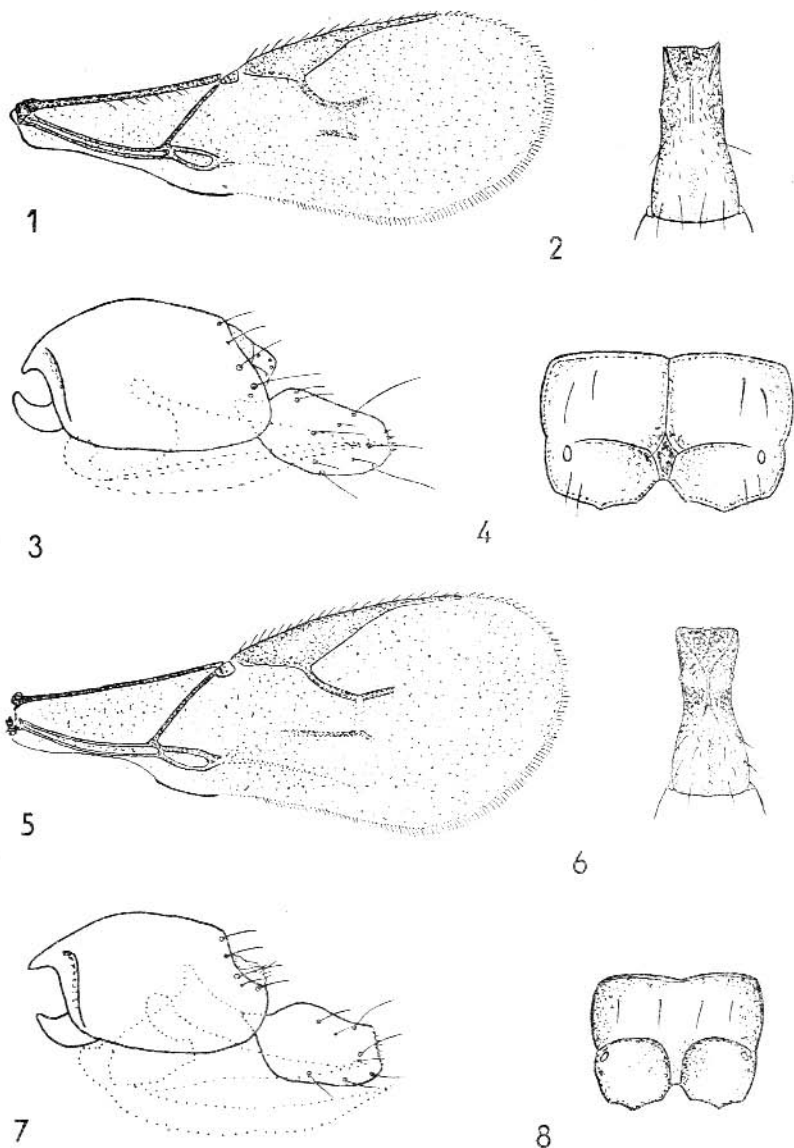


Fig. 1. *Lysaphidus erysimi* sp. n., fore wing; fig. 2 — tergite 1; fig. 3 — genitalia; fig. 4 — propodeum; fig. 5. *Lysaphidus schimitscheki* sp. n., fore wing; fig. 6 — tergite 1; fig. 7 — genitalia; fig. 8 — propodeum.

of pterostigma. Radial abscissa 1 somewhat longer than width of pterostigma.

Abdomen: Tergite 1 (Fig. 12) about three times as long as wide at spiracles, slightly dilated to the apex; with feeble and short central carina in the basal part, slightly rugose; with small lateral impressions beyond spiracular tubercles; with feeble central longitudinal impression in the hind part, nearly smooth, sparsely haired. Spiracular tubercles situated somewhat before the half of the segment. Genitalia figured (Fig. 13).
Coloration: Head brown black; face, clypeus, mouthparts, genae yellow. Antennae brown, basal half yellowish. Thorax brown black, prothorax mostly yellow. Wing venation light brown. Legs yellow; apexes of tarsi, hind femora and tibiae darkened. Abdomen dark brown; tergite 1 and central basal spot of tergite 2 yellow.

Length of body about 1.3-1.4 mm.

Male: Antennae brown. Thorax black brown, prothorax brownish. Legs brown, trochanters and bases of tibiae lighter. Abdomen dark brown, tergite 1 and base of tergite 2 yellowish. Otherwise like the female.

General distribution: Palearctic region (Europe — Czechoslovakia).

Material examined: Czechoslovakia — Bohemia: Kostelní Lhota, env. of Sadská, 12. VI. 1959 (bred from *Colorado achilleae* on *Achillea millefolium*; ♀ holotype, ♂ allotype, 7 ♀♀ paratypes, ♂ paratype), lgt. Holman.

Host: *Colorado achilleae* HRL. (on *Achillea millefolium*, Czechoslovakia).

Note: Material in the author's collection. 1 ♀ paratype in coll. Mackauer (Frankfurt M.), 1 ♀ paratype in USNM (Washington).

2. *L. erysimi* sp. n.

Differs from *L. arvensis* sp. n. by smaller eyes, by shorter and toward the apex slightly thickened antennae and by coloration.

Description. Female: Head (Fig. 9) subcubical as seen from above, wider than thorax at tegulae, smooth, shiny, some-



what wider behind than across the eyes. Occiput margined. Temple about $\frac{1}{3}$ wider than transverse eye-diameter. Gena as wide as $\frac{1}{5}$ of longitudinal eye-diameter. Clypeus oval, strongly convex, smooth, shiny, with about 5-6 hairs; margined frontally; separated by shallow arcuate groove from face; with deep tentorial pit on each side. Relative distance between tentorial pit and orbit somewhat less than $\frac{1}{3}$ of the relative distance between the pits. Eyes small, oval, strongly convergent to the clypeus. Antennae 12-segmented, filiform, slightly thickened to the apex, as long as head and thorax together. Flagellar segment 1 somewhat more than three times as long as wide at apex. Flagellar segment 2 twice as long as wide at apex. Relative distance between antennal socket and orbit equal to the diameter of the socket.

Thorax smooth, shiny. Mesoscutum falling comparatively vertically to the prothorax, without covering it when viewed from the side. Notaulices distinct in the fore part, crenulate, effaced on the disc. Propodeum (Fig. 4) areolated; with small narrow central pentagonal areola in the lower part; upper and lower areolae with 2 hairs on each side. Fore wing (Fig. 1): Pterostigma about four times as long as wide; metacarp about $\frac{1}{3}$ shorter than pterostigma; radial abscissa 1 about $\frac{1}{3}$ longer than width of pterostigma.

Abdomen: Tergite 1 (Fig. 2) almost three times as long as wide at spiracles, slightly dilated to the apex; with feeble central short longitudinal carina in the fore part, slightly rugose; nearly smooth in the hind part, with weak longitudinal impression in the centre; sparsely haired. Spiracular tubercles situated at the end of the first third of the tergite. Genitalia figured (Fig. 3).

Coloration: Head black brown; face yellowish similarly as clypeus and mouthparts. Antennae brown; scape, pedicel and part of flagellar segment 1 yellowish. Thorax black brown, prothorax sometimes lighter. Wing venation light brown. Legs yellow brown; praetarsi brown; hind coxae, apical part of hind femora and tibiae more or less brownish. Abdomen brown; tergite 1 yellow; base of tergite 2 and the suture between tergites 2 and 3 lighter.

Length of body about 1.4-1.5 mm.

Male: Antennae 14-segmented, longer than in the female. Coloration more darkened than in female.

General distribution: Palearctic region (Europe — Czechoslovakia).

Material examined: Czechoslovakia — Bohemia: Sušice, 12. VIII. 1958 (Bred from *Lipaphis erysimi* on *Erysimum erysimoides*; growth of various plants in a stony place near a road; ♀ holotype, ♂ allotype, 4 ♀♀ paratypes), lgt. P. Starý. Host: *Lipaphis erysimi* (Kalt.): (on *Erysimum erysimoides*, Czechoslovakia).

Note: All the material in the author's collection.

3. *L. schimitscheki* sp. n.

Differs from the other European species in having divergent carinae in the lower part of propodeum only. By the quoted character it seems to be related to the Nearctic species *L. adelocarinus* Smith C. F.

Description. Female: Head transverse, rounded, smooth, shiny, wider than thorax at tegulae. Occiput margined. Temple as wide as transverse eye-diameter. Gena as wide as $\frac{1}{5}$ of transverse eye-diameter. Clypeus oval, convex, smooth, shiny, sparsely haired; slightly arcuate and margined frontally; separated by shallow arcuate groove from face; with deep tentorial pit on each side. Relative distance between tentorial pit and orbit as $\frac{1}{3}$ of the relative distance between the pits. Eyes of middle size, oval, slightly prominent frontally, strongly convergent to the clypeus. Antennae 14-segmented, filiform, reaching about the half of abdomen. Flagellar segment 1 and 2 of equal length, about four times as long as wide at apex. Relative distance between the antennal socket and orbit less than diameter of the socket.

Thorax smooth, shiny. Mesoscutum falling almost vertically to the prothorax, without covering it when viewed laterally. Notaulices distinct in the fore part, slightly crenulate, effaced on the disc. Propodeum bearing two divergent carinae in lower part (Fig. 8); smooth, shiny, with about 4 hairs in the upper part. Fore wing (Fig. 5): Pterostigma about four times as long

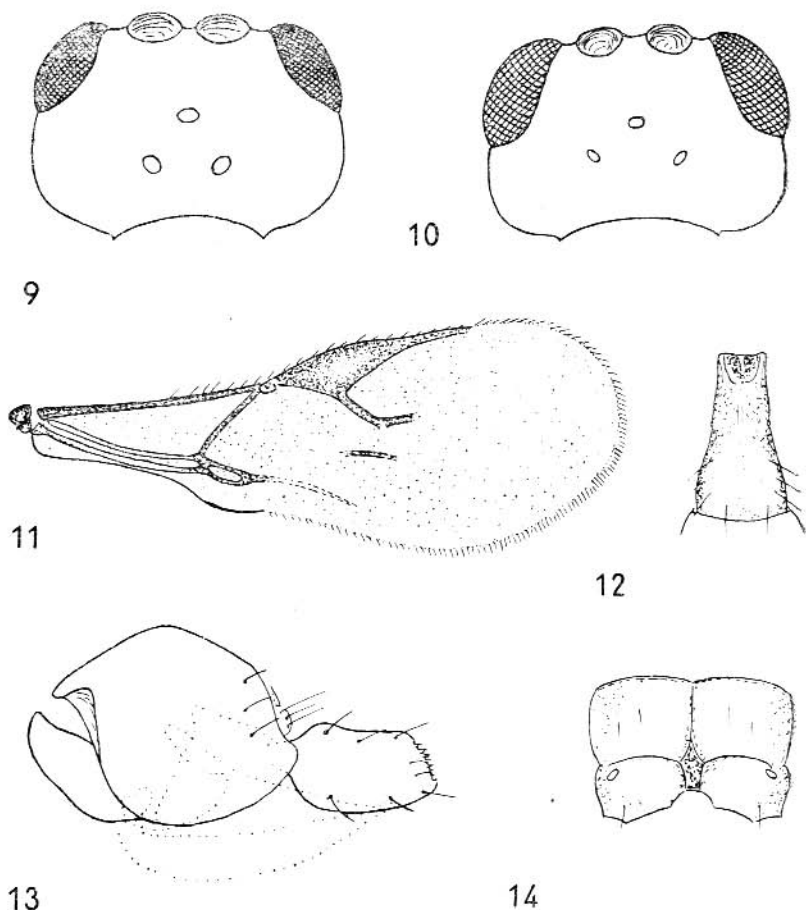


Fig. 9. *Lysaphidus erysimi* sp. n., head from above; fig. 10. *Lysaphidus arvensis* sp. n., head from above; fig. 11 — fore wing; fig. 12 — tergite 1; fig. 13 — genitalia; fig. 14 — propodeum. All figures drawn from females.

as wide; metacarp as long as half of length of pterostigma or somewhat shorter; radial abscissa 1 about half longer than width of pterostigma.

Abdomen lanceolate. Tergite 1 (Fig. 6) about 3.5 times as long as wide at spiracles, slender, slightly dilated to the apex; with short central carina in the fore part; with lateral

impressions beyond spiracular tubercles; with longitudinal impression in the centre of the hind part; shiny, slightly rugose, sparsely haired. Spiracular tubercles situated at the end of the first third of the tergite, very little visible. Genitalia figured (Fig. 7).

Coloration: Head dark brown; clypeus and mouthparts (except apices of mandibles) light brown. Antennae brown, somewhat lighter in the basal part. Thorax dark brown. Wings hyaline, venation light brown. Tegulae brown. Fore legs yellow brownish; coxae, femora, tibiae and apices of tarsi darkened. Middle and hind legs brown; trochanters, bases of tibiae and tarsi (except apices) yellowish. Abdomen brown; tergite 1 and base of tergite 2 lighter.

Length of body about 1.1-1.4 mm.

Male: Antennae 16-17 segmented. Otherwise like the female.

General distribution: Palearctic region (Europe — Germany).

Material examined: Germany — Schleswig-Holstein, 1958 (bred from *Elatobium abietinum* on *Picea sitchensis*, *Picea alba*, *Picea pungens*, *Picea excelsa*; ♀ holotype, ♂ allotype, paratypes); Gahrenberg bei Hann. Münden, 1958 (1 ♂ paratype, bred from *Elatobium abietinum*).

Host: *Elatobium abietinum* (Walk.): (on *Picea sitchensis*, *Picea alba*, *Picea pungens*, *Picea excelsa*, Germany).

Note 1: This species was quoted as *Aphidius (Lysiphlebus)* sp. in the Scheller's paper (1958) where also the figure of the parasitized aphid is added.

Note 2: ♀ holotype, ♂ allotype and paratypes deposited in „Forstzoologisches Institut d. Univ. Göttingen, Hann. Münden“. 1 ♀ paratype in the author's collection.

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STRESZCZENIE

Autor opisuje trzy nowe gatunki rodzaju *Lysaphidus* Smith C. F. z terenów Europy środkowej. Rodzaj ten był znany dotychczas tylko z obszaru nearktycznego.

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