

**A survey of the European species of *Apanteles* Först.
(Hymenoptera, Braconidae: Microgastrinae),
VI. The *laspeyresiella*-, *merula*-, *falcatus*- and *validus*-group**

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Abstract — A key to the species of the *laspeyresiella*- (= *mycetophilus*-group sensu PAPP, 1976), *merula*-, *falcatus*- and *validus*-group. The four species-groups comprise all the European (18) and some extra-European (1 East Palaearctic, 2 African and 2 Nearctic), a total of 23 *Apanteles* species. The following new synonymies were established: 1. *A. merula* REINHARD, 1880: ? = *A. etiellae* VIERECK, 1911; 2. *A. lacteoides* NIXON, 1965: = *A. memorabilis* ALEXEEV, 1971, syn. n.; 3. *A. turanicus* TELENGA, 1955: = *A. subtilis* ALEXEEV, 1971, syn. n.; 4. *A. falcatus* (NEES, 1834): ? = *A. neomexicanus* MUESEBECK, 1920. All species are enumerated in alphabetical order within their respective species-group. With 57 figures (on 4 tables).

The *LASPEYRESIELLA*-group
(= *mycetophilus*-group sensu PAPP, 1976)

The following features characterize the species of the *laspeyresiella*-group: 1. Margin of the vannal lobe of hind wing beyond its widest point either straight (Fig. 4) or slightly concave.—2. First tergite wide at base, thus relatively broad, about one-third longer than wide at base (Figs. 1, 3, 5, 17, 20, 23).—3. Stigma pellucid yellow or bright yellow, alar venation with whitish to pale yellowish pigmentation (Figs. 6, 8, 10, 14). — 4. Postaxille reaching two-thirds of scutellum.

The species-group comprises 6 European, 1 African (Cape Verde Islands) and 1 East Palaearctic, altogether 8 species.

The hosts of the species of the *laspeyresiella*-group cover the lepidopterous family of Tortricidae.

KEY TO THE SPECIES OF THE *LASPEYRESIELLA*-GROUP

Females

- 1 (8) Nervellus of hind wing almost straight, i. e. never distinctly incurved (Figs. 2, 4↓).
- 2 (5) First tergite unusually wide, 1.2–1.3 times longer than wide at base (Figs. 1, 3).
Hind tibia and tarsus black.
- 3 (4) Penultimate joint of antenna subcubic, i. e. hardly longer than broad. Mesonotum with discrete and even punctation, interspaces shiny and about equal in size with punctures. Ovipositor sheath one-fifth shorter than hind tibia. Second tergite less tranverse, first tergite 1.3 times longer than wide at base (Fig. 1). Face (together

with clypeus) slightly though distinctly wider than high; head in frontal view also slightly, i.e. 1.25 times, wider than high. Stigma bright yellow. ♀ : 3.1 mm.—Finland

A. argante NIXON, 1976 (!!)*

- 4 (3) Penultimate joint of antenna 1.4 times longer than broad. Mesonotum with dense and even punctation, interspaces subshiny to dull and rather smaller in size than punctures. Ovipositor sheath as long as hind tibia. Second tergite transverse, first tergite 1.2 times longer than wide at base (Fig. 3). Face (together with clypeus) quadrate, i.e. as wide as high; head in frontal view almost round, i.e. minutely wider than high. Stigma pellucid yellow. ♀ : 3.1 mm.—Korea

A. oppugnator PAPP, 1974 (!)

- 5 (2) First tergite 1.4–1.5 times longer than wide at base (Figs. 5 and 38). Hind tibia at base with a distinct yellow ring.
- 6 (7) Propodeum without a medio-longitudinal keel. Stigma distinctly thrice, i. e. 3–3.3 times, as long as wide; metacarp distinctly longer than stigma; *D* 1.1–1.2 wider than high, *d1* and *d2* equal in length or *d1* minutely shorter (Fig. 6). Nervellus of hind wing perpendicular to *n. anal.* (Fig. 4). First tergite less long, 1.4 times longer than wide at base (Fig. 5). Ovipositor sheath 1.5 times as long as hind tibia. Mesonotum with crowded to contiguous punctation, interspaces dull and distinctly smaller in size than punctures. Stigma pellucid pale yellow. ♀ ♂ : 3–3.2 mm. — Hungary, Austria, Bulgaria, European USSR

A. laspeyresiella PAPP, 1972 (!)

- 7 (6) Propodeum with a distinct though weak medio-longitudinal keel. Stigma 2.4–2.5 times as long as wide; metacarp somewhat shorter than stigma; *D* 1.3 times wider than high, *d2* nearly one-third longer than *d1* (Fig. 37). First tergite long, 1.5 times longer than wide at base (Fig. 38). Ovipositor sheath as long as hind tibia. Mesonotum with dense though separated punctation, interspaces shiny and about equal in size with punctures. Stigma bright yellow. ♀ : 2.8 mm. A member of the *merula* group with few transitional features towards the *laspeyresiella*-group.—Cape Verde Islands

[**A. salensis** HEDQVIST, 1965 (!)]

- 8 (1) Nervellus of hind wing distinctly incurved, i.e. never straight (Figs. 7 and 13).
- 9 (14) Metacarp at most as long as stigma (Figs. 8 and 10).
- 10 (11) Margin of the vannal lobe of hind wing convex. Mesonotum densely punctated. Penultimate joint of antenna cubic. First tergite parallel-sided, but narrowing at its hind third. *r1* and *cuq1* about equal in length. Ovipositor sheath as long as hind tibia. Stigma yellow. ♀ : 3 mm. ♂ : 2.3 mm. A member of the *metacarpalis*-group with some features transitional towards the *laspeyresiella*-group.—Armenia (USSR)

[**A. verae** TOBIAS, 1976]

- 11 (10) Margin of the vannal lobe of hind wing straight or faintly concave.
- 12 (13) Metacarp one-quarter shorter than length of stigma, latter issuing radial vein distinctly distally, *r1* and *cuq1* equal in length (Fig. 8). Mesonotum shiny, with small, superficial, dense and discrete punctation, interspaces as long as, or smaller than punctures, notaulix indistinct. Head in dorsal view twice as broad as long; eye only somewhat longer than temple; hind imaginary tangent to anterior ocellus close before posterior pair of ocelli (Fig. 9). Penultimate joint of antenna 1.4 times as long as broad. Ovipositor sheath one-quarter shorter than hind tibia. Legs, except coxae, yellow. ♀ : 3–3.2 mm.—Transylvania (Romania)

A. nagy PAPP, 1975 (!)

*(!) = Either the holotype or the paratype(s) studied.

(!) = I studied authentic specimen(s), i.e. specimen(s) named by MARSHALL, NIXON, REINHARD, TELENGA, TOBIAS, WILKINSON (Palearctic species), and MARSH, MASON, MUESEBECK (East Palearctic and Nearctic species)

- 13 (12) Metacarp almost as long as stigma, latter issuing radial vein less distally, r_1 about 1.5 times longer than *cuqul* (Fig. 10). Mesonotum dull to subshiny, with small, superficial and more or less confluent punctation, interspaces smaller in size than punctures; notaulix indicated by crowded punctation. Head in dorsal view slightly more transverse than in previous species; eye distinctly 1.5 times as long as temple; hind imaginary tangent to anterior ocellus transecting posterior pair of ocelli (Fig. 11). Penultimate joint of antenna cubic. Ovipositor sheath as long as hind tibia. Legs black, fore tibia + tarsus and middle tarsus yellow. ♀ ♂: 2.5–2.8 mm.—Azerbaijan (USSR)

A. subcamilla TOBIAS, 1976 (!!)

- 14 (9) Metacarp distinctly longer than stigma (Figs. 14, 18, 21).
 15 (16) Mesonotum with very fine to superficial and rather widely placed punctation, interspaces shiny to polished and usually greater in size than punctures, notaulix indistinct. Ocelli relatively small, hind tangent to anterior ocellus before posterior pair of ocelli. Hind half of first tergite more narrowing, nearly twice wider basally than apically (Fig. 15). Penultimate joint of antenna 1.4–1.5 times as long as broad. Head in dorsal view behind eyes more rounded (Fig. 16). Ovipositor sheath about as long as hind tibia. Middle and hind legs black, tibiae with a basal yellow ring. Stigma bright yellow. ♀ ♂: 2.8–3 mm.—Hungary, USSR (European part, Kazakhstan, Azerbaijan)

A. albinervis TOBIAS, 1964 (!!)

- 16 (15) Mesonotum with dense, rather shallow and more or less confluent punctation, interspaces dull and smaller in size than punctures, notaulix distinct by crowded punctation to rugulosity. Ocelli relatively large, hind tangent to anterior ocellus either touching or transecting posterior pair of ocelli. Hind half of first tergite less narrowing, about one-fourth to one-fifth wider basally than apically (Figs. 17 and 20). Penultimate joint of antenna subcubic, i.e. hardly longer than broad.
 17 (18) Ovipositor sheath in lateral view one-quarter longer than hind tibia, relatively wide (Fig. 19). d_1 and d_2 equal in length. Propodeum medially rugose-rugulose, laterally smooth. First tergite slightly more narrowing posteriorly, 1.4 times wider at base than at apex (Fig. 17). Stigma 2.9 times as long as wide, r_1 distinctly one-third longer than *cuqul* and meeting each other more angularly (Fig. 18). Stigma pellucid yellow. ♀ : 3.5 mm, ♂ : 3 mm.—Hungary

A. nephus PAPP, 1974 (!!)

- 18 (17) Ovipositor sheath in lateral view almost twice longer than hind tibia, relatively less wide. d_2 nearly twice as long as d_1 . Propodeum smooth and shiny, with very small and dispersed hair-punctures on its upper or horizontal part. First tergite less narrowing posteriorly, 1.3 times wider at base than at apex (Fig. 20). Stigma 2.5–2.6 times as long as wide, r_1 almost twice longer than *cuqul* and meeting each other less angularly (Fig. 21). Stigma bright yellow. ♀ : 3.2 mm.—Cape Verde Islands

A. robustus HEDQVIST, 1965 (!!)

THE SPECIES OF THE *LASPEYRESIELLA*-GROUP

(Synonyms are in italics, numbers refer to couplet-numbers)

albinervis TOBIAS 15 (16)
argante NIXON 3 (4)
laspeyresiella PAPP 6 (7)
nagyi PAPP 12 (13)

nephus PAPP 17 (18)
oppugnator PAPP 4 (3)
robustus HEDQVIST 18 (17)
subcamilla TOBIAS 13 (12)

TRANSITIONAL SPECIES TOWARDS THE *LASPEYRESIELLA*-GROUP

(Respective species-group in parenthesis, numbers refer to couplet-numbers)

salensis HEDQVIST 7 (6)

(merula-group)

verae TOBIAS 10 (11)

(metacarpalis-group)

The *MERULA*-group

The following features characterize the species of the merula-group: 1. Propodeum with a medio-longitudinal and usually strong keel.—2. Margin of the vannal lobe of hind wing concave, nervellus usually perpendicular to anal vein (Figs. 39 and 42).—3. First tergite distinctly narrowing posteriorly, usually its hind half.—4. Postaxille reaching base of scutellum, furrow between scutellum and polished postaxille relatively narrow and with very fine crenulation.—5. Stigma usually bright to pellucid yellow, metacarp dark and venation whitish except in three species.

The species-group comprises 10 European, 1 African (Cape Verde Islands) and 2 Nearctic, altogether 13 species.

The hosts of the species of the merula-group cover the following lepidopterous families: Coleophoridae, Gracilariidae, Olethreutidae and Phycitidae.

KEY TO THE SPECIES OF THE *MERULA*-GROUP

Females

- 1 (6) Stigma evenly brown to blackish brown.
- 2 (3) Anterior or horizontal half of propodeum dull and densely rugo-rugulose; its posterior corner raised; posterior or declivous half propodeum shiny, with few and rather transverse rugosities. Metacarp distinctly longer than stigma, four times longer than distance between its distal end and tip of radial vein. Head behind eyes less constricted, rounded (Fig. 22). Penultimate joint of antenna subcubic, 1.1 times (8:7) longer than broad. First tergite 1.3 times longer than wide at base, hind half of tergite strongly narrowing (Fig. 23). Mesonotum strongly and densely punctate, notaulix indicated by rugulosity. Ovipositor sheath almost as long as hind tibia. Tegula pale yellow to yellow. Stigma evenly blackish brown. ♀: 3.2–3.5 mm. —Italy, Hungary, Bulgaria, USSR (Georgia, Daghestan), Korea
A. vindicius NIXON, 1965 (!)
- 3 (2) Propodeum smooth or at most uneven to a few rugulae above lunule, shiny to polished. Metacarp less than four times as long as distance between its distal end and tip of radial vein (Fig. 24). Head behind eyes more constricted (Fig. 25).
- 4 (5) Metacarp 2.5 times longer than distance between its distal end and tip of radial vein (Fig. 24). Punctures of mesonotum somewhat less dense, more sharp, interspaces more or less shiny. Antennal joints 16–17 cubic or almost cubic. First tergite anteriorly parallel-subparallel-sided, posteriorly distinctly narrowing (Fig. 26). First tergite evenly black. ♀ ♂: 3–3.2 mm. —Europe, ?North America. (? = *etiellae* VIERECK, 1911, !)*

A. merula REINHARD, 1880 (!)

*In the Hungarian Natural History Museum, Budapest, a pair (1 ♀ + 1 ♂) of *A. etiellae* VIERECK are housed identified by C. F. W. MUESEBECK. The specimens are quite similar to the representatives of *A. merula* REINHARD originating from several countries of Europe and examined by me. I consider the synonymy only provisional, a type-examination is needed to finally settle this problem.

- 5 (4) Metacarp 3–3.25 times longer than distance between its distal end and tip of radial vein (Fig. 27). Punctures of mesonotum very dense, almost confluent, interspaces dull. Antennal joints 16–17 1.2–1.3 times longer than broad. First tergite slightly broadening basally and from here subparallel-sided, its posterior half narrowing (Fig. 28). First tergite black, frequently reddish to rusty at base. ♀ ♂: 3–3.2 mm. — Turkey, Jordan, Romania (Transylvania)

A. meruloides NIXON, 1965(!)

- Mesonotum with fine punctation, interspaces shiny and about size of punctures. First tergite almost evenly narrowing posteriorly. Legs reddish yellow or yellow, hind coxa black (legs of previous three species black with a more or less extensive yellow pattern). ♀ ♂: 3–3.2 mm. — North America

A. sesiae VIERECK, 1912 (!)*

- 6 (1) Stigma evenly yellow to opaque yellow, at most its fore margin dark.
7 (8) Propodeum without a medio-longitudinal keel, though here with dense rugulosity. Metacarp almost as long as stigma (Fig. 10). Mesonotum with shallow and almost confluent punctation, shiny to subshiny. First tergite moderately narrowing at its hind half (Fig. 12). Ovipositor sheath in lateral view as long as hind tibia. Antennal joints 16–17 subcubic. Hind tibia blackish except its yellow base. Tegula black. ♀ ♂: 2.5–2.8 mm. A member of the *laspeyresiella*-group with some resemblance to the *merula*-group. — Azerbaidzhan (USSR)

[**A. subcamilla** TOBIAS, 1976 (!!)]

- 8 (7) Propodeum with a distinct medio-longitudinal keel.
9 (14) Head in frontal view only slightly to indistinctly broader between eyes than high in the middle, i.e. head relatively somewhat elongate and cheek straight in its outline (Fig. 29).
10 (11) Head in frontal view only somewhat broader than high, i.e. not distinctly transverse, cheek arched in its outline (Fig. 2, in KOTENKO 1981, p. 27). Ovipositor sheath 2.2–2.5 times longer than hind tibia. Hind femur thrice as long as wide. POL 2.5 times as long as greatest diameter of fore ocellus. Penultimate joint of antenna 1.4–1.6 times longer than broad. Metacarp about as long as stigma. ♀: 3–3.5 mm. — Ukraine (USSR)
A. meratus KOTENKO, 1981**
11 (10) Head in frontal view slightly to indistinctly broader than high, cheek straight in its outline (Fig. 29, compare with Fig. 30). Ovipositor sheath at most 1.5–1.6 times longer than hind tibia. Hind femur four times as long as wide. POL twice as long as greatest diameter of fore ocellus.
12 (13) Body 3.5–4 mm long. First tergite less narrowing posteriorly, its basal width 1.7–2 times greater than its apical width (Fig. 31). Medio-longitudinal keel of propodeum strong as usually. Mesonotum and scutellum with pubescence unusual in the *merula*-group. Ovipositor sheath in lateral view 1.5–1.6 times as long as hind tibia. *r1* twice as long as *cuq1*, metacarp as long as stigma, latter issuing radial vein distally from its middle (Fig. 32). Mesonotum shiny and distinctly punctate, punctures somewhat crowded along notaulix. Scutellum smooth, shiny, with extremely small and scattered punctures. Stigma opaque yellow, metacarp dark, venation whitish. Tegula pale yellow. — Sweden, Germany, Hungary, Turkey, USSR (Ukraine, Armenia, Azerbaidzhan, Kazakhstan), Mongolia. (= *memorabilis* ALEXEEV, 1971, !!, *syn. n.*)

A. lacteoides NIXON, 1965 (!!)

*I know *A. sesiae* VIER. through a pair (1 ♀ + 1 ♂) of this species identified by DR. P. M. MARSH (Washington) and deposited in the Hungarian Natural History Museum, Budapest.

**I know this species on the basis of its original description (KOTENKO 1981). It seems rather more related to *A. lacteoides* NIXON than to *A. myeloenta* WILKINSON (l.c.).

- 13 (12) Body 2.5 mm long. First tergite strongly narrowing posteriorly, its basal width 3–4 times greater than its apical width. Medio-longitudinal keel of propodeum less strong, rather weak. Mesonotum and scutellum without pubescence. Ovipositor sheath in lateral view 1.3 times as long as hind tibia. Otherwise agreeing with the previous species. — USSR (Azerbaijani, Tadzhikistan)

A. masallensis ABDINBEKOVA, 1969*

- 14 (9) Head in frontal view about one-fourth broader between eyes than high in the middle, i.e. head relatively transverse and cheek arched in its outline (Fig. 30).
15 (16) Head in frontal view only somewhat, i.e. less than one-fourth broader than high (Fig. 2, in KOTENKO 1981, p. 27). Mesonotum weakly punctate, shiny. First tergite strongly narrowing apically, smooth to polished. Further details see at couplet 10 (11)

A. meratus KOTENKO, 1981

- 16 (15) Head in frontal view distinctly transverse (Fig. 30, compare with Fig. 29).
17 (20) Nervellus of hind wing directed inward, i.e. not perpendicular to *n. med.* or to *n. anal.* (Fig. 33). *D* one-quarter wider than high (see arrows on Figs. 34 and 37); metacarp more or less shorter than stigma (Figs. 34 and 37). Ovipositor sheath as long as hind tibia, never longer.

- 18 (19) Metacarp only somewhat longer than half length of stigma (20:35–40), *r1* only somewhat longer than *cuq1* (Fig. 34). Mesonotum shiny with fine and small punctation to micropunctation. First tergite 1.6–1.7 times as long as wide at base, more narrowing apically, i.e. more than twice wider at base than at apex; second tergite thrice wider behind than long medially (Fig. 35). Propodeum polished. Apical end of ovipositor sheath truncate (Fig. 36). Hind tibia yellow, its distal half to third infuscate to blackish. ♀: 2.5–3 mm. — USSR (Turkmenia, Tadzhikistan). (= *subtilis* ALEXEEV, 1971, *syn. n.*)

A. turanicus TELENGA, 1955 (!)

- 19 (18) Metacarp only somewhat shorter than length of stigma (33:36), *r1* one-third longer than *cuq1* (Fig. 37). Mesonotum subshiny with dense punctation. First tergite 1.5 times as long as wide at base, less narrowing apically, i.e. less than twice wider at base than at apex; second tergite four times wider than long medially (Fig. 38). Upper or horizontal part of propodeum finely punctated. Hind tibia blackish except its yellow base. ♀: 2.8 mm. — Cape Verde Islands

A. salensis HEDQVIST, 1965 (!)

- 20 (17) Nervellus of hind wing almost perpendicular to *n. med.* or to *n. anal.*, i.e. not directed inward (Figs. 39 and 42). *D* only slightly wider than high (Fig. 43, see arrows). Ovipositor sheath hardly (*A. aeolus*) or distinctly longer (*A. isus* and *A. myeloenta*) than hind tibia. Metacarp longer than stigma (Figs. 43 and 47). Medio-longitudinal keel of propodeum strong.

- 21 (22) Mesonotum dull, with fine, dense and more or less confluent punctation. Head in dorsal view behind eyes constricted (Fig. 40). Nervellus of hind wing below curved (Fig. 39†), margin of vannal lobe conspicuously concave (Fig. 39†). Ovipositor sheath twice as long as hind tibia. *d2* one-third to twice as long as *d1*. Penultimate joint of antenna one-third longer than broad. First tergite distinctly narrowing posteriorly, its apical corner slightly produced, medio-laterally punctated, apically aciculate-rugulose, otherwise shiny to polished; second tergite relatively less wide (Fig. 41). Ocelli large, distance between fore and a hind ocelli shorter than greatest diameter of hind ocellus; imaginary posterior tangent to fore ocellus just transecting hind pair of ocelli. Tegula and fore + middle tarsal joints 1–3(–4) pale yellow. ♀ ♂: 3.5–4 mm. — Cyprus, Turkey

A. myeloenta WILKINSON, 1937 (!)

*I know this species only on the basis of its description (ABDINBEKOVA 1975) and through the keys given by TOBIAS (1976) and KOTENKO (1981).

- 22 (21) Mesonotum shiny, its punctation less dense, interspaces in size about the size of punctures. Head in dorsal view behind eyes rounded (Fig. 44). Nervellus of hind wing below less curved (Fig. 42). Ovipositor sheath at most one-third longer than hind tibia. *d2* usually as long as *d1*, at most somewhat longer (Fig. 43).
- 23 (24) Metacarp less long, only somewhat longer than stigma, or 2.5–2.6 times longer than distance between its end and tip of radial wing (Fig. 43). Penultimate two joints of antenna subcubic to cubic (Fig. 46). Ovipositor sheath one-fourth to one-third longer than hind tibia. First tergite somewhat more narrowing apically, i.e. distinctly twice wider basally than apically (Fig. 45). Hind tibia rather yellow, apically infusate. ♀♂: 3–3.5 mm. — Hungary, USSR (Armenia, Uzbekistan)

A. isus NIXON, 1965 (!)

- 24 (23) Metacarp distinctly longer than stigma, or thrice longer than distance between its end and tip of radial vein (Fig. 47). Penultimate two joints of antenna 1.4–1.5 times longer than broad (Fig. 49). Ovipositor sheath slightly longer than hind tibia. First tergite less narrowing apically, i.e. at most nearly twice wider basally than apically (Fig. 48). Hind tibia rather reddish yellow, apically blackish. ♀: 3.8–4 mm. — Germany, USSR (Ukraine, Armenia, Russia: Moscow region)

A. aeolus NIXON, 1965 (!)

THE SPECIES OF THE *MERULA*-GROUP

(Synonyms are in italics, numbers refer to couplet-numbers)

<i>aeolus</i> NIXON 24 (23)	<i>merula</i> REINHARD 4 (5)
<i>setiellae</i> VIERECK 4 (5)	<i>meruloides</i> NIXON 5 (4)
<i>isus</i> NIXON 23 (24)	<i>myeloenta</i> WILKINSON 21 (22)
<i>lacteoides</i> NIXON 12 (13)	<i>salensis</i> HEDQVIST 19 (18)
<i>masallensis</i> ABDINBEKOVA 13 (12)	<i>sesiae</i> VIERECK 5 (4)
<i>memorabilis</i> ALEXEEV 12 (13)	<i>subtilis</i> ALEXEEV 18 (19)
<i>meratus</i> KOTENKO 10 (11), 15 (16)	<i>turanicus</i> TELENGA 18 (19)
	<i>vindicus</i> NIXON 2 (3)

TRANSITIONAL SPECIES TOWARDS THE *MERULA*-GROUP

(Respective species-group in parenthesis, number refer to couplet-number)

<i>subcamilla</i> TOBIAS 7 (8)
(<i>laspeyresiella</i> -group)

The *FALCATUS*-group

The following features characterize the species of the *falcatus*-group: 1. Hypopygium strongly sclerotized, i.e. without lateral creases (Fig. 53). — 2. Second tergite subrectangular, 1.5–1.7 times wider behind than long medially; first tergite narrowing posteriorly, otherwise parallel-sided (Fig. 50). — 3. Ovipositor sheath in lateral view falcate (Fig. 53). — 4. Male clasper large and truncate.

The hosts of the species of the *falcatus*-group cover the following lepidopterous families: Aegeriidae, Geometridae, Hepialidae, Noctuidae, Pterophoridae and Tortricidae.

The species-group comprises but a single species in Europe:

- Ovipositor sheath in lateral view evenly falcate, wide and about as long as hind tibia. First tergite parallel-sided, weakly narrowing before its hind end (Fig. 50). Mesonotum shiny, with fine and discrete punctation. Penultimate joint of antenna (1.3–)1.4–1.5 times longer than broad. Metacarp longer than stigma, *r1* and *cu1* usually equal in

length and meeting angularly (Fig. 51). Nervellus of hind strongly incurved (Fig. 52). Tegula rusty brown to reddish yellow. Legs, except black coxae, reddish yellow. ♀♂: 3–4(–4.5) mm. — Palaearctic and ?Nearctic Region. (= *equestris* HALIDAY, 1834; = *gladiator* SZÉPLIGETI, 1901; ? = *neomexicanus* MUESEBECK, 1920; = *priapus* GAUTIER et CLEU, 1927)

A. falcatus (NEES, 1834) (!)

The *VALIDUS*-group

The following features characterize the species of the *validus*-group: 1. Every claw of tarsi pectinate (Fig. 54). — 2. Margin of vannal lobe of hind wing convex, at most almost straight, with a fringe of hairs. — 3. Hypopygium strongly sclerotized, i.e. laterally without creases. — 4. Propodeum smooth to uneven, without carination.

Host(s) of the species of the *validus*-group unknown.

The *validus*-group comprises a single species in Europe:

- Body glistening. Penultimate joint of antenna 1.5–1.6 times as long as broad, flagellum conspicuously hairy. Areolet or $r1+cu_{qu1}+cu3$ somewhat reminding *Microgaster-Protomicroplitis*, metacarp longer than stigma (Fig. 55). Furrow between mesonotum and scutellum shallow and narrow, rather suturiform. Mesonotum with discrete, rather dense and posteriorly gradually weakening punctation. First tergite parallel-sided, behind narrowing; second tergite one-third shorter than third tergite (Fig. 56). Ovipositor sheath in lateral view half to two-thirds as long as hind tibia; hypopygium pointed (Fig. 57). Wings brownish fumous. ♀♂: 3.5–4.5 mm. — Sweden, England, Holland, France, Slovakia (ČSSR)

A. validus THOMSON, 1895 (!!)

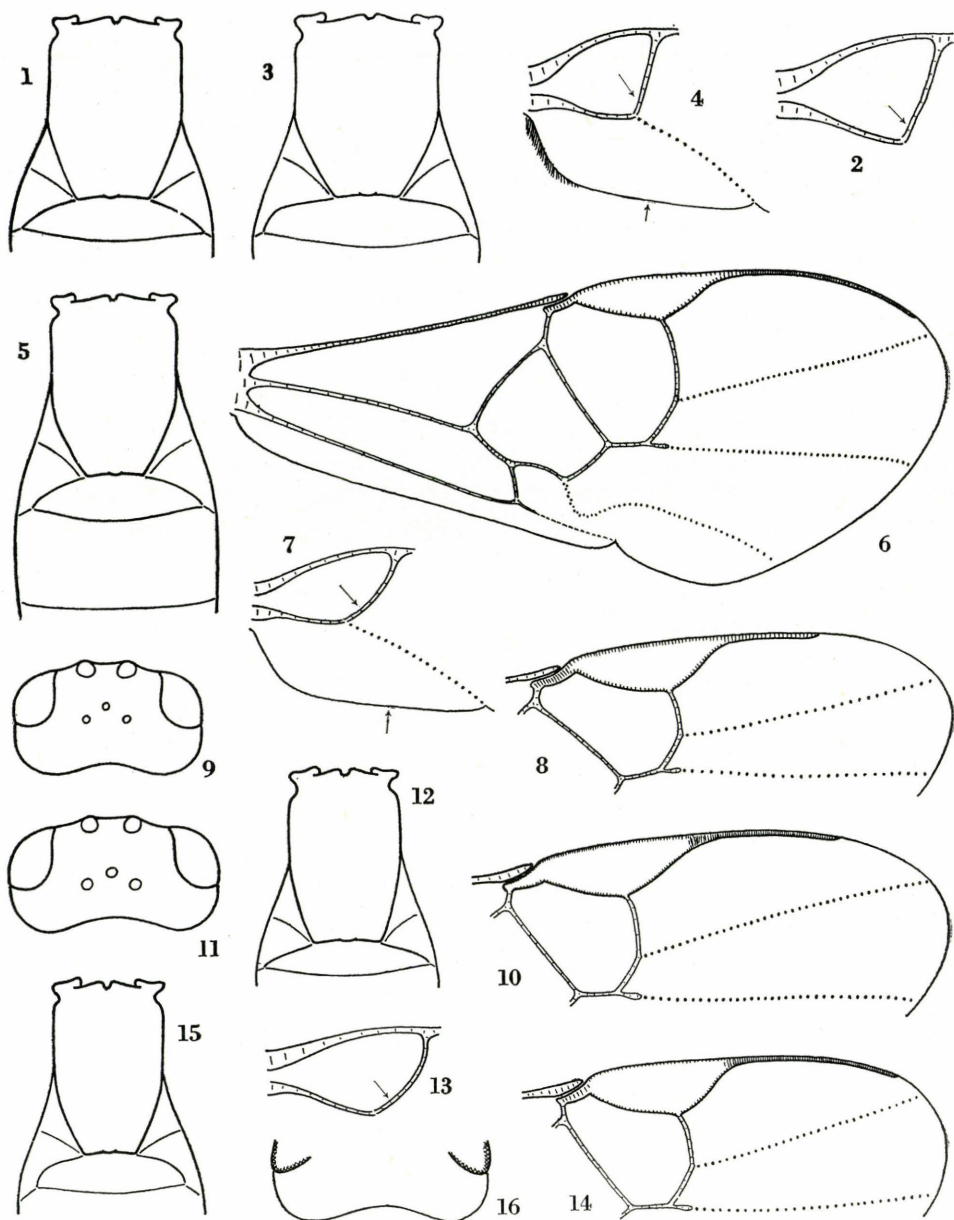
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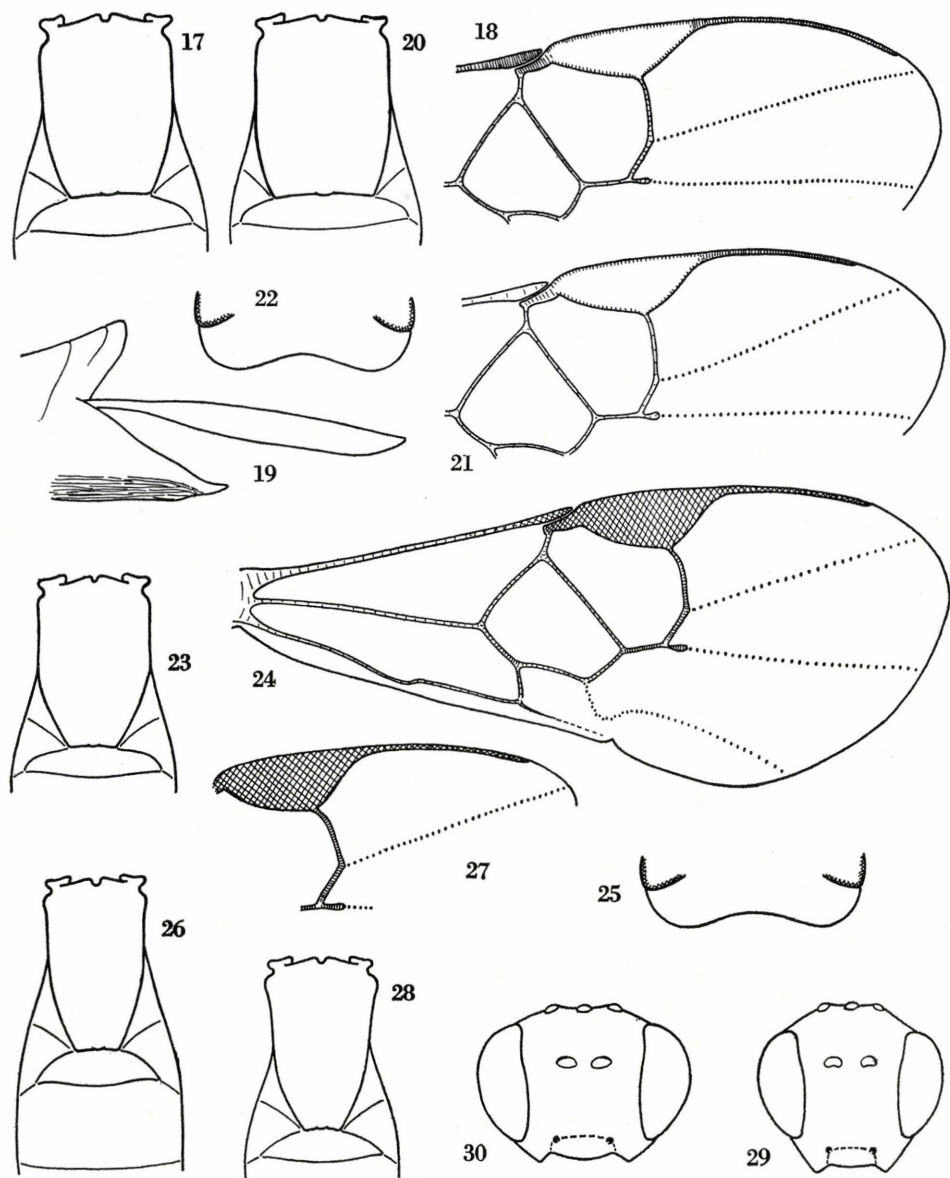
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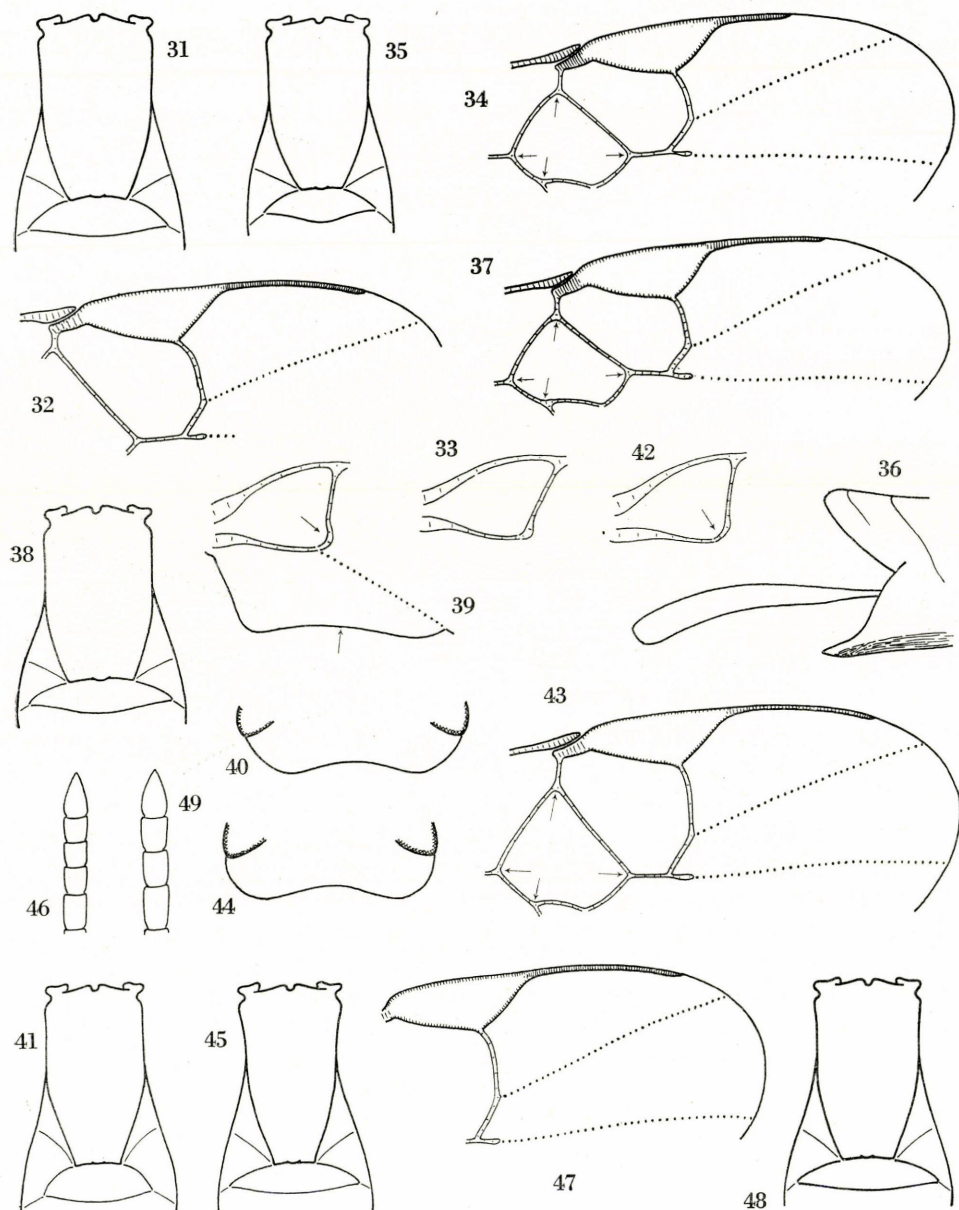
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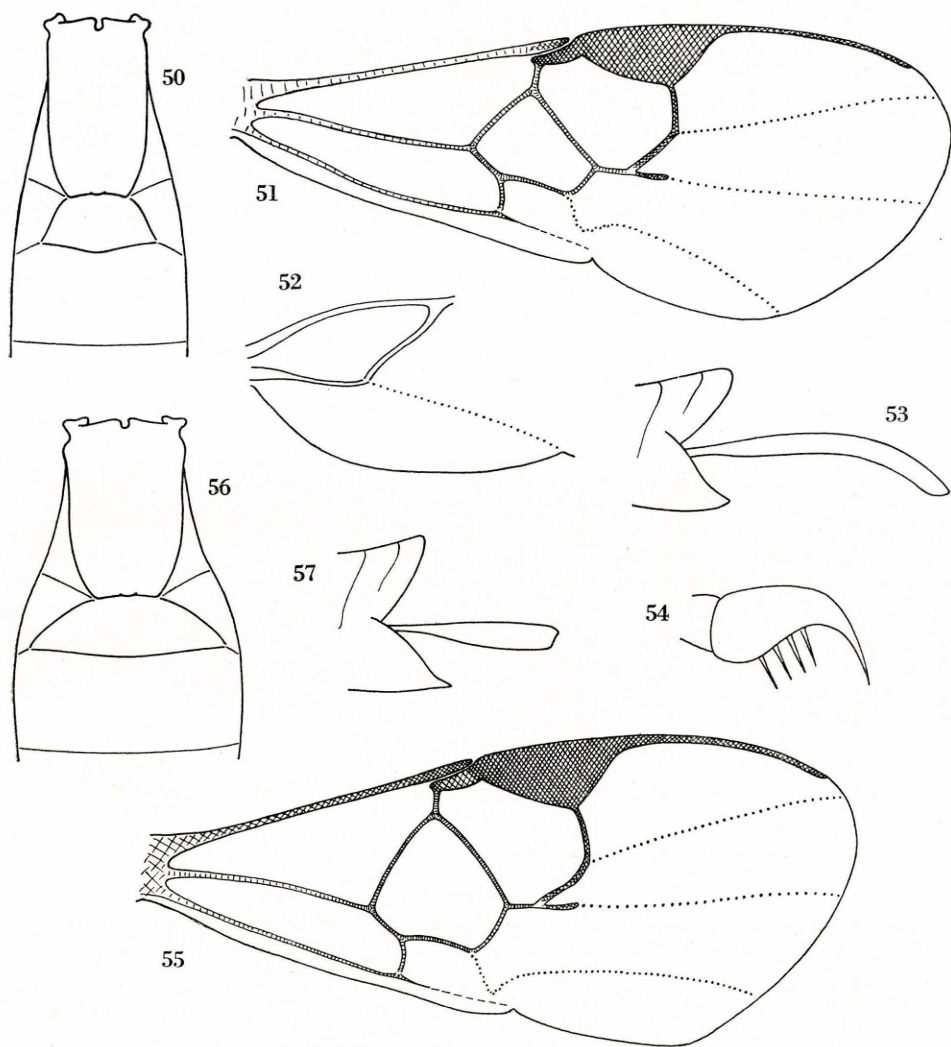
Figs. 1-2. *Apanteles argante* NIXON: 1 = tergites 1-2, 2 = nervellus of right hind wing. — Fig. 3. *A. oppugnator* PAPP: tergites 1-2. — Figs. 4-6. *A. laspeyresiella* PAPP: 4 = nervellus and vannal lobe of right hind wing, 5 = tergites 1-3, 6 = right fore wing. — Figs. 7-9. *A. nagy* PAPP: 7 = nervellus and vannal lobe, 8 = distal part of right fore wing, 9 = head in dorsal view. — Figs. 10-12. *A. subcamilla* TOBIAS: 10 = distal part of right fore wing, 11 = head in dorsal view, 12 = tergites 1-2. — Figs. 13-16. *A. albinervis* TOBIAS: 13 = nervellus of right hind wing, 14 = distal part of right fore wing, 15 = tergites 1-2, 16 = head behind eyes in dorsal view



Figs. 17-19. *Apanteles nephus* PAPP: 17 = tergites 1-2, 18 = distal part of right fore wing, 19 = posterior end of metasoma with hypopygium and ovipositor sheath. — Figs. 20-21. *A. robustus* HEDQVIST: 20 = tergites 1-2, 21 = distal part of right fore wing. — Figs. 22-23. *A. vindicius* NIXON: 22 = head behind eyes in dorsal view, 23 = tergites 1-2. — Figs. 24-26. *A. merula* REINHARD: 24 = right fore wing, 25 = head behind eyes in dorsal view, 26 = tergites 1-3. — Figs. 27-28. *A. meruloides* NIXON: 27 = distal part of right fore wing, 28 = tergites 1-2. — Fig. 29. *A. lacteoides* NIXON: head in frontal view. — Fig. 30. *A. isus* NIXON: head in frontal view



Figs. 31-32. *Apanteles lacteoides* NIXON: 31 = tergites 1-2, 32 = distal part of right fore wing. - Figs. 33-36. *A. turanicus* TELENGA: 33 = nervellus of right hind wing, 34 = distal part of right fore wing, 35 = tergites 1-2, 36 = posterior end of metasoma with hypopygium and ovipositor sheath. - Figs. 37-38. *A. salensis* HEDQVIST: 37 = distal part of right fore wing, 38 = tergites 1-2. - Figs. 39-41. *A. myeloenta* WILKINSON: 39 = nervellus and vannal lobe of right hind wing, 40 = head behind eyes in dorsal view, 41 = tergites 1-2. - Figs. 42-46. *A. isus* NIXON: 42 = nervellus of right hind wing, 43 = distal part of right fore wing, 44 = head behind eyes in dorsal view, 45 = tergites 1-2, 46 = antennal joints 14-18. - Figs. 47-49. *A. aeolus* NIXON: 47 = distal part of right fore wing, 48 = tergites 1-2, 49 = antennal joints 15-18



Figs. 50-53. *Apanteles falcatus* (NEES): 50 = tergites 1-3, 51 = right fore wing, 52 = nervellus and vannal lobe of right hind wing, 53 = posterior end of metasoma with hypopygium and ovipositor sheath. — Figs. 54-57. *A. validus* THOMSON: 54 = tarsal claw with pectinate spines, 55 = right fore wing, 56 = tergites 1-3, 57 = posterior end of metasoma with hypopygium and ovipositor sheath

