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A survey of the European species of Apanteles Först. (Hymenoptera, Braconidae: Microgastrinae) IX. The glomeratus-group, 1.

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Abstract — A key to a part of the species of the *glomeratus*-group: *tibialis*- and *brevicornis*-subgroups, comprising 36 *Apanteles* species (i. e. 27 European, 1 East Palaearctic and 8 Nearctic species) is given. Original type-examinations revealed the following new synonymies: 1. *Microgaster analis* NEES, 1834 = A. leucaniae WILKINSON, 1937, syn. n.; 2. *Apanteles kariyai* WATANABE, 1937 = A. purgatus TELENGA, 1955, syn. n. 3. *Apanteles memnon* NIXON, 1974 = A. acutivalvis BALEVSKI, 1980, syn. n. 4. *Apanteles specularis* SZÉPLIGETI, 1896 = A. bulgaricus BALEVSKI, 1980, syn. n. 5. *Apanteles telengai* TOBIAS, 1972 = A. amabilis NIXON, 1974, syn. n. 6. *Apanteles tenebrosus* WESMAEL, 1837 = A. genalis TOBIAS, 1964, syn. n. 7. *Apanteles villanus* REINHARD, 1880 = A. rubroides PAPP, 1971, syn. n. All the species are enumerated in alphabetical order within their respective subspecies-groups. Neotype designation for the species *Microgaster analis* NEES, 1834 and *Microgaster ruficrus* HALIDAY, 1834. With 104 figures.

THE *GLOMERATUS*-GROUP

The following features characterize species of the *glomeratus*-group: 1. Hypopygium (of females) sclerotized rigidly, i. e. without a medio-longitudinal fold as well as lateral creases. 2. Propodeum always distinctly and (almost) entirely sculptured, usually scabrous to rugose, and frequently with a medio-longitudinal keel or cristula. 3. Mesonotum usually densely punctate to confluently punctate, notaulix more or less distinct by crowded punctation. 4. Third tergite usually 1.2–1.4 times longer than second tergite. 5. Colour of body black, at most metasoma with reddish yellow to reddish pattern, and exceptionally meso- + metasoma reddish yellow with more or less black pattern. Legs variable in colour.

The *glomeratus*-group comprises about 70–80 species in Europe (a precise number of the species will be given in the following part of my survey).

The hosts of the species of the *glomeratus*-group cover the lepidopterous families Geometridae, Lycaenidae, Noctuidae, Nymphalidae, Pieridae and with less importance Arctiidae, Hylophilidae, Lasiocampidae, Lymantriidae, Notodontidae, Pyraustidae, Satyridae, Thyatiridae and Zygaenidae.

KEY TO THE SUBGROUPS OF THE *GLOMERATUS*-GROUP

Females

1 (2) Outer side of hind coxa evenly or almost evenly rugose (Fig. 1), rugose-rugulose, rugulose or strongly punctate to punctate, i. e. always sculptured
tibialis-subgroup

2 (1) Outer side of hind coxa smooth or uneven, at most subrugulose, sculpture never evenly extended, i. e. restricted usually to its upper or anterior surface.

3 (4) Antennal joints 13–17 cubic (Figs 65, 72, 75) or at most subcubic: hardly longer than broad; antenna itself short, distictly shorter than body. First tergite less broadening posteriorly (Figs 62, 66, 79, 90–91).

brevicornis-subgroup

4 (3) Antennal joints 13–16 longer than broad, at most (16–)17th joint subcubic, antenna about length of body or longer. First tergite usually more broadening posteriorly

glomeratus-subgroup

THE *TIBIALIS*-SUBGROUP

The following features characterize species of the *tibialis*-subgroup: 1. Outer side of hind coxa sculptured in a variable quality and degree: scabrose, rugose (Fig. 1), rugose-rugulose to rugulose or less often strongly punctate to punctate; rugosity as well as punctation either even or nearly even on surface. 2. Mesonotum usually with distinct dense and rather even sculpture notaulix frequently indicated by rougher and denser sculpture. 3. Antenna of females at least as long as body, frequently longer (that of males always longer). 4. First tergite usually clearly broadening posteriorly, about as long as wide at hind, or less often somewhat longer.

The *tibialis*-subgroup comprises 15 species in Europe, 1 species from the Eastern Palaearctic Region and 7 species from the Nearctic Region are included.

KEY TO THE SPECIES OF THE *TIBIALIS*-SUBGROUP

Females

1 (12) Metasoma reddish yellow (sternites rather yellow) excepting tergites 1–2 or 1–3(–4). Legs also reddish yellow, hind coxa usually black(ish) basally to almost entirely.

2 (3) Mesosoma reddish yellow; propodeum and metapleuron always black, mesopleuron and middle lobe of mesonotum sometimes and with variable dark suffusion. Head in dorsal view cubic, somewhat though distinctly broader than mesonotum between tegulae (Fig. 2). *r1* shorter than *cuqul*, radial vein usually issuing distally from pterostigma (Fig. 3). Third tergite anteriorly roughened to rugose. Penultimate joint of antenna 1.5–1.35 times as long as broad. Inner spur of hind tibia distinctly shorter than half basitarsus. Legs reddish yellow to yellow. Tegulae yellow to pale yellow. ♀♂: (1.7–)2.5–3 mm. — England, Germany, Czechoslovakia, Hungary, European part of the USSR, Turkey

A. ferrugineus MARSHALL, 1885 (!)[1]

3 (2) Mesosoma entirely black, without reddish yellow colour. Head in dorsal view less cubic to transverse, never distictly broader than mesonotum between tegulae.

4 (7) Scutellum smooth and shiny, at most with a few and weak punctures. Mesonotum with rather discrete to strong punctation, interspaces shiny.

5 (6) Hind coxa usual in length, i.e. in lateral view distinctly shorter than half of metasoma. Two spurs of hind tibia subequal, inner spur distinctly shorter than half of basitarsus. First tergite relatively short, 1.1—1.2 times as long as wide at hind, its

[1] (!) = I have studied authenticated specimen(s), i. e. specimens identified by MARSHALL, NIXON, REINHARD, TELENGA, TOBIAS, WILKINSON (Palaearctic Region) and MARSH, MASON, MUESEBECK, WATANABE (Nearctic and East. Palaearctic Region).
(!!) = I have studied either the holotype or paratype(s).

two sides less narrowing basally (Fig. 4). Hypopygium apically rounded. Head in dorsal view usually somewhat less transverse, 1.7–1.8 times broader than long. Pterostigma opaque yellow or dark yellow. Metasoma reddish yellow to yellow, tergites 1–2 entirely, tergite 3 anteriorly more or less black, hind two tergites sometimes black to blackish. ♀♂: (2.2–)2.7–3.2 mm. — England, Nederland, Germany, Hungary.[2] (= *leucaniae* WILKINSON, 1937, !, **syn. n.**; = *praetextanus* HALIDAY, 1834)

A. analis (NEES, 1834)[3]

— Tergites black except reddish yellow tergites 3–4, sternites reddish yellow to yellow. Pterostigma brown with a distinct yellow basal spot. Face punctate and subshiny to dull (*A. analis:* rugulose to uneven). Otherwise agreeing with *A. analis*. ♀: 2.4 mm. — Bulgaria

A. intermixtus BALEVSKI, 1980[4]

— Sternites yellowish, tergites 3–4(–5) reddish yellow to dark red. Scutellum almost smooth, i.e. with indistinct punctation. Tergite 1 about as long as wide behind. Mesonotum with dense and rather confluent punctation, course of notaulix finely and densely rugose. Otherwise similar to *A. analis*. ♀♂: 2.2–2.8 mm. — Nearctic Region (Canada, USA)

A. autographae MUESEBECK, 1921 (!)

— Face smooth and shiny (*A. analis:* rugulose to uneven). Scutellum with a few and rather strong punctures. Penultimate joint of antenna 1.7–1.75 times as long as broad (*A. analis:* twice longer). Otherwise agreeing with *A. analis*. ♀♂: 2.5–3 mm. — Nearctic Region (USA)

A. crambi WEED, 1887 (!)

— Scutellum usually punctate, exceptionally weakly punctate giving a smooth impression. Mesonotum with crowded to confluent punctation giving a rugose impression, interspaces not shiny. First tergite about as long as wide at hind (Fig. 6). Further details see at couplet 11 (10)

A. kariyai WATANABE, 1937 (!)

6 (5) Hind coxa unusual in length, i.e. in lateral view as long as half of metasoma. Two spurs of hind tibia unequal, inner spur distinctly longer than half of basitarsus. First tergite relatively long, 1.3(–1.4) times as long as wide at hind, its two sides slightly more narrowing basally (Fig. 4). Hypoygium apically pointed. Head in dorsal view somewhat more transverse, 1.9(–2) times broader than long. Pterostigma brown to brownish. Colour of metasoma similar to that of *A. analis*. ♀: 2.7–3 mm. — Nederland, USSR (Azerbaidzhan, Georgia)

A. subordinanius TOBIAS, 1976 (!!)

7 (4) Scutellum more or less though distinctly punctate. Mesonotum with rather crowded to confluent punctation or rugose, interspaces less shiny or not shiny.

8 (9) Scutellum with a few and strong punctures. Metacarp as long as pterostigma. Further details see at couplet 6 (5)

A. intermixtus BALEVSKI, 1980

9 (8) Scutellum distinctly punctate.

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[2] Further countries listed in SHENEFELT's catalogue (1972: 440) should be verified.

[3] The synonymization of the two names (see also below) is based on my original examination and comparison of authenticated specimens (*A. leucaniae:* 1♀ +1♂) as well as my *A. analis* specimens identified with the help of the original description:

Microgaster analis NEES, 1834: Hym. Ichn. affin. Mon. 1: 180 ♀, type locality: „Prope Berolinum in horto botanico" (Germany), syntype(s) destroyed.

Apanteles leucaniae WILKINSON, 1937: Proc. R. ent. Soc. Lond. (B) 6: 69: ♀♂, type locality: „England, Suffolk", holotype (♀) in British Museum (Nat. Hist.) London, **syn. n.**

[4] I am familiar with this species from its original description only; supposedly there are further differences between the two species *A. analis* and *A. intermixtus*, however, they are not included in BALEVSKI's description. Disregarding the colour of the tergites as well as pterostigma, *A. intermixtus* seems very similar to *A. ofella* NIXON, 1974, too.

10 (11) First tergite usually slightly longer than wide at hind, in comparison to the next species *(A. kariyai)* somewhat more broadening distally (Figs 54–55). Second tergite one-fourth to one-fifth shorter than third tergite (Figs 54–55). Head in dorsal view somewhat more rounded behind eyes (Fig. 56). Hind coxa black and at most apically reddish yellow (in the specimens from temperate zone). Third tergite usually more or less, fourth tergite less usually with yellow to reddish yellow pattern. Black; tegulae yellow to vivid yellow, legs reddish yellow. ♀♂: 2–3.2 mm, usually 2.2–2.8 mm, variable in length and size. — Cosmopolitan; in Europe common to frequent. (= *antipoda* ASHMEAD, 1900; = *manilae* ASHMEAD, 1904; = *narangae* VIERECK, 1913)

A. ruficrus (HALIDAY, 1834) (!)

11 (10) First tergite at most as long as wide at hind, usually slightly shorter, in comparison to the previous species *(A. ruficrus)* first tergite somewhat less broadening posteriorly (Fig. 6). Second tergite slightly shorter than, and exceptionally as long as, third tergite (Fig. 6). Head in dorsal view somewhat less rounded behind eyes (Fig. 5). Hind coxa always reddish yellow. Tergites (1–)2–3(–4) either almost entirely or only tergites (2–)3(–4) reddish yellow. Black; tegula yellow to brownish yellow, legs reddish yellow, at most hind coxa basally with blackish suffusion., ♀♂: 2.5–3 mm. — USSR: Far East Territory, NE China: Mandzhuria, Taiwan, Korea, Japan. (= *purgatus* TELENGA, 1955, !, **syn. n.**)[5]

A. kariyai WATANABE, 1937 (!)

12 (1) Metasoma black, at most (in a few species) tergite(s) 3(–4) either laterally or posteriorly nearly entirely rusty to reddish, reddish yellow. Legs either reddish yellow or black with more or less light pattern; sometimes coxae 1–2 and usually 3 black, blackish to (dark) brown.

13 (14) Fore wing relatively short, usually not reaching posterior end of metasoma; together with hind wing evenly subfumous. In frontal view eyes small, their inner sides indistinctly convergent, face about 1.5 times wider than high, malar space distinctly longer than basal width of mandible (Fig. 7). In lateral view hypopygium reaching or somewhat surprassing tip of metasoma. Radial vein leaving pterostigma distinctly distally from its middle (Fig. 8). Head in dorsal view transverse, (1.9–)2 times broader than long, behind eyes somewhat more rounded (Fig. 9). Penultimate joint of antenna 1.4–1.5 times as long as broad. Black; tegula brownish yellow to blackish brown, third tergite laterally to almost entirely reddish yellow. Legs reddish yellow, hind coxa black, hind femur apically black(ish). ♀♂: 2.5–3 mm. — England, France, Germany, Hungary, Finland, Mongolia. (= *fasciatae* GAUTIER et DRESNAY, 1926; = *rubroides* PAPP, 1971, **syn. n.**)[6]

A. villanus REINHARD, 1880 (!!)

— Head in dorsal view less transverse, 1.7(–1.8) times broader than long, behind eyes somewhat less rounded (Fig. 5). Penultimate joint of antenna 2–2.5 times as long as broad. Fore wing usually not short, however, fore wing sometimes slightly narrow,

[5] *Apanteles kariyai* WATANABE, 1937: Ins. Matsum. 12 (1): 41 ♀♂ type-locality: "Yugakujô" (China: Mandzhuria), holotype (♀) in the Entomological Institute, Hokkaido University, Sapporo, Japan.

Apanteles purgatus TELENGA 1955: Фауна СССР Перепончатокрылые V (4): 32 (in key) and 107 (description) ♀, type-locality: "СССР: Владивосток" (USSR), holotype in the Zoological Institute, Leningrad; **syn. n.**

[6] *Apanteles villanus* REINHARD, 1880: Dt. ent. Z. 24 (2): 363 (in key) and 368 (description) ♀, type-locality: Germany, "Type" in the Zoologisches Museum, Berlin.

Apanteles rubroides PAPP, 1971: Annls hist.-nat. Mus. natn. hung. 63: 324 ♀, type-locality: "Uburchangaj aimak, Arc Bogd ul, about 20 km S of somon Chovd, 1760 m" (Mongolia), holotype deposited in the Természettudományi Múzeum, Budapest; **syn. n.**

i.e. wing usually 2.5–2.7 times longer than wide, specimens with narrow wing about thrice longer than wide. Legs together with hind coxa reddish yellow. For further details see at couplet 11 (10)

A. kariyai WATANABE, 1937 (!)

14 (13) Fore wing not short, usual in its length, i. e. distinctly surpassing posterior end of metasoma; wings hyaline. In frontal view eyes not small, i. e. usual in size, their inner margin more or less convergent (Fig. 19).

15 (20) Third tergite sculptured, either evenly and entirely rugose (*A. inductus*, Fig. 11) or antero-posteriorly with weakening sculpture, i. e. rugose-rugulose to almost smooth *(A. melanoscelus, A. tetricus)*.

16 (17) Penultimate joint of antenna cubic to subcubic, i. e. slightly longer than broad. Pterostigma (Fig. 10) wide, 2–2.2 times as long as wide, issuing radial vein less distal from its middle. Third tergite evenly and nearly entirely rugose, rugosity hardly weaker than that of tergites 1–2. First tergite conspicuously widening antero-posteriorly, about one-fourth wider at hind than long medially (Fig. 11). Inner spur of hind tibia as long as half basitarsus. Hind coxa always and rather evenly rugose. Black; scape and pedicel reddish yellow, flagellum dark brown to black or almost entirely black; legs reddish yellow, coxae black. Wings hyaline, pterostigma brownish black or black, basally with a more or less distinct pale spot. ♀: 2.8–3 mm. — Czechoslovakia (Slovakia), Hungary, Bulgaria, Turkey

A. inductus PAPP, 1973 (!!)

17 (16) Penultimate joint of antenna 1.3–1.5 times longer than broad. Pterostigma (Figs 12, 15) less wide, 2.3–2.5(–2.7) times as long as wide, issuing radial vein more distal from its middle. Third tergite neither evenly nor entirely sculptured, sculpture usually clearly weaker than that of tergites 1–2. First tergite broadening in usual size, about as long as wide at hind. Hind coxa rather exceptionally and not evenly sculptured (punctate to rugulose), usually nearly smooth. Species *(A. melanoscelus* and *A. tetricus)* belonging to the *glomeratus*-subgroup.

18 (19) Head in dorsal view less transverse, 1.7–1.8 times broader than long, temple slightly less rounded (Fig. 13). Mesonotum dull, punctate-rugose, along notaulic courses densely rugose. Discoidal cell one-fourth wider than high, *r1* and *cuqul* about equal in length (Fig. 12). Inner spur of hind tibia shorter than half basitarsus. Black; legs rather dark hind femur always black, hind tibia blackish to at least infuscate. Wings subhyaline, pterostigma opaque brownish. ♀♂: (2–)2.3–2.6 mm. — A frequent species in Europe. (= *opaculus* THOMSON, 1895, !; ? = *sessilis* FOURCROY, 1785; = *subcutaneus* LINNÉ, 1758 sensu ZETTERSTEDT, 1840, !)[7)]

A. tetricus REINHARD, 1880 (!!)

19 (18) Head in dorsal view transverse, 2–2.1 times broader than long, temple rounded as usually (Fig. 14). Mesonotum with dense to more or less confluent punctation, shiny to subshiny, notaulic courses faintly indicated by somewhat roughened punctation. Discoidal cell slightly wider than high, *r1* about 1.3–1.4 times longer than *cuqul* (Fig. 15). Inner spur of hind tibia half as long as basitarsus. Black; legs reddish

[7)] In my revision (PAPP 1976) of the European "*Microgaster* LATR." = *Lissogaster* BENGTSSON species I indicated that I had studied the species named by ZETTERSTEDT (1840) as *Microgaster subcutaneus* (LINNÉ, 1758). From among the 5 female specimens 3 proved to represent this species. Recently I could establish that the name *Apanteles tetricus* refers to the same species as *M. subcutaneus* (LINNÉ) sensu ZETTERSTEDT. Furthermore, the name *Ichneumon sessilis* FOURCROY, 1785 (= *Evania sessilis:* FABRICIUS, 1793; = *Ceropales sessilis:* FABRICIUS, 1804) seems also to refer to *A. tetricus*. The senior name is *A. subcutaneus* (LINNÉ), however, up to now its senior synonymy has not been verified, a task to be accomplished in the future. As long as synonymy is not detected, the name *A. tetricus* REINHARD is considered as a valid name for this species.

yellow, coxae black to brown, hind femur reddish yellow to almost black or black, sometimes its upper and lower sides with dark to blackish suffusion, middle femur with less variable darkening. Wings hyaline, pterostigma brown to blackish, basally with an indistinct pale spot. ♀♂: 2.5–3 mm. — Europe; Nearctic Region: U.S.A. (introduced). (= *solitarius* RATZEBURG, 1844)

A. melanoscelus (RATZEBURG, 1844) (!)

20 (15) Third tergite smooth, at most basally with weak to very weak sculpture, shiny.

21 (38) Scutellum smooth to almost smooth, shiny, at most with a few and weak to indistinct punctures.

22 (27) First tergite distinctly broadening posteriorly, about as long as wide at hind (Fig. 28).

23 (24) Temple in dorsal view rather constricted, i. e. head close behind eyes strongly rounded (Fig. 16). Radial vein directed somewhat outwards to tip of wing, i. e. *r1* oblique to fore margin of pterostigma (Fig. 17). Penultimate three joints of antenna subcubic, slightly longer than broad. Mesonotum strongly and densely punctate, notaulix indicated by crowding punctures. Hypopygium pointed apically, ovipositor sheath relatively long (Fig. 18) reminescent of that of *A. cupreus* LYLE. A dark-coloured species. Black; legs black, tibiae and tarsi blackish brown, hind tibia basally yellowish, brownish yellow. Wings subhyaline, pterostigma brownish black. ♀♂: 2.8–3 mm. — Switzerland

A. amesis NIXON, 1974 (!!)

24 (23) Temple in dorsal view rounded (Fig. 21). Radial vein not directed outwards, perpendicular to fore margin of pterostigma (Fig. 22). Penultimate three joints of antenna distinctly, at least 1.5–2 times, longer than broad. Mesonotum with other sculpture.

25 (26) Hind coxa rugose-rugulose, never punctate (Fig. 1). Inner spur of hind tibia minutely shorter than outer spur (Fig. 23) or less often two spurs of equal length; inner spur shorter than half basitarsus. Mesonotum with dense punctation, notaulix rugose forming a large rugose area behind. Tergites 1–2 roughly rugose to scabrous, without polished interspaces (Fig. 20). Hypopygium more truncate apically (Figs 24–25). Black; legs reddish yellow, hind femur variable in colour, either reddish yellow to yellow (late spring and early summer generation) or black to nearly black (summer generation). Male flagellum of dark-legged generation conspicuously yellowish distally, that of light-legged generation less obviously paler. ♀♂: 2–3.3, usually 2.5–3 mm. — Palaearctic Region, frequent to common. (= *atrator* CURTIS, 1830; = *claustratus* GAUTIER et BONNAMOUR, 1923; = *congestus* NEES, 1834; *globatus* BOUCHÉ, 1834; = *gracilipes* CURTIS, 1830; = *intricatus* HALIDAY, 1834; = *similis* SZÉPLIGETI, 1901; = *simulans* LYLE, 1917; ? = *xylinus* SAY, 1836[8])

A. tibialis (CURTIS, 1830) (!)

— Very similar to *A. tibialis;* its main distinctive features are as follows: first tergite less broadening posteriroly (Fig. 29), inner spur of hind tibia longer than outer spur, hypopygium in lateral view less truncate apically (Figs 30–31). For further details see at couplet 29 (30)

A. ofella NIXON, 1974 (!!)

— First tergite strongly broadening posteriorly, its hind width about one-fourth greater than median length. A dark-legged species, black, tibiae brown to yellowish brown. A rather robust species. ♀♂: 2.8–3.5 mm. — Nearctic Region (Northern Canada, Greenland)

A. halli (PACKARD, 1877) (!)

[8] The proposed synonymization of *Microgaster xylina* SAY, 1836 with *A. tibialis* (CURTIS, 1830) is based on my examination and comparison of authenticated specimens.

— First tergite distinctly broadening posteriorly, its hind width either minutely greater than median length or its hind width equal with length. Legs somewhat less dark, brown to reddish brown, tibiae rather yellowish brown. ♀♂: 2.5–3.2mm. Very similar to *A. tibialis*. — Nearctic Region (Canada, U.S.A.)

A. yakutatensis ASHMEAD, 1902 (!)

26 (25) Hind coxa usually almost smooth to smooth, shiny, sometimes distinctly punctate, i. e. with a few strong punctures giving an impression of sculptured surface (Fig. 27). Inner spur of hind tibia longer than outer spur and distinctly longer than half basitarsus (Fig. 26). Mesonotum punctate to subpunctate, notaulix indicated by somewhat crowded punctation. Tergites 1–2 rugose evenly with polished interspaces. Black; legs reddish yellow, coxae black(ish), hind femur and tibia apically black, hind tarsus frequently infumate. ♀♂: 2.6–3.2 mm. — Palaearctic Region, infrequent

A. rubripes (HALIDAY, 1834) (!)

27 (22) First tergite less distinctly broadening posteriorly, usually somewhat longer than wide at hind (Fig. 29, 32, 34).

28 (33) Hind coxa rugose, sometimes rugulose.

29 (30) Mesonotum with dense, rather rough and confluent punctation, small to very small interspaces distinct rather antero-medially and laterally; notaulix indicated by crowded punctation to rugosity, posteriorly rugosity extending in a rugose area, sometimes notaulix indicated only by crowded and rather strong punctation. Inner spur of hind tibia longer than outer spur, shorter than half basitarsus. Hypopygium in lateral view less truncate apically (Figs 30–31). Black; legs reddish yellow, coxae black. ♀♂: 2.5–3 mm. — England, Netherlands, Belgium, Germany, Hungary, Spain, Italy, Finland, European part of USSR. (? = *perspicuus* NEES, 1834)[9]

A. ofella NIXON, 1974 (!!)

The two species inserted below are very similar to *A. ofella:*

— First tergite somewhat more broadening posteriorly (Figs. 20, 28). Inner spur of hind tibia minutely shorter than outer spur (Fig. 23), or, less usually, two spurs of equal length. Hypopygium more truncate apically (Figs. 24–25). For further details see at couplet 25 (26)

A. tibialis (CURTIS, 1830) (!)

— Tergites 3–4 and sternites reddish yellow to yellow. Pterostigma brown with a distinct yellow basal spot. For further details see at couplet 6 (5) and 8 (9)

A. intermixtus BALEVSKI, 1980

30 (29) Mesonotum with less dense to disperse and rather weak punctation, interspaces distinct and shiny; notaulix faintly distinct by crowded punctures.

31 (32) Hind coxa rather exceptionally rugose, usually punctate to densely punctate, at most partly rugulose, shiny. Tergites 1–2 rugose without polished interspaces. Metacarp somewhat longer than pterostigma. Penultimate joint of antenna twice to almost twice as long as broad. Tegula brown to dark brown. Black; legs yellow, reddish yellow, coxae black. ♀♂: 2.8–3 mm. — Switzerland, Finland

A. berberis NIXON, 1974 (!!)

[9] I found specimens identified as "Microgaster nemorum Htg." (2 ♂) and "Micr. perspicuus" (8 ♀) in October 1979 in the Zoological Museum (Berlin), which proved to be *Apanteles ofella* (1 ♂ +1 ♀) during my revision. The specimens do not represent type material, consequently the synonymy is only a supposition. — Considering the name *Microgaster nemorum* HARTIG, 1838, this is a junior synonym of *Microgaster liparidis* BOUCHÉ, 1834, sen. syn. (see PAPP 1983 and WILKINSON 1945).

32 (31) Hind coxa rugose-punctate. Tergites 1–2 weakly rugose, rugulose to almost smooth, i. e. interspaces relatively large, polished. Metacarp as long as pterostigma. Penultimate joint of antenna 1.5 times as long as broad. Tegula yellow to brownish yellow. Black; legs reddish yellow, coxae black. ♀ : 2.2 mm. — Bulgaria

A. fluvialis BALEVSKI, 1980[10]

33 (28) Hind coxa punctate, subpunctate to almost smooth, rather exceptionally with crowded punctures, or at most partly subrugulose-rugulose, shiny.

34 (37) Inner spur of hind tibia distinctly longer than half basitarsus. First tergite less broadening posteriorly, somewhat longer than wide at hind. Head in dorsal view transverse, twice broader than long.

35 (36) Body less strong, rather gracile, 2.5–2.8 mm long. First tergite parallel-sided, at most indistinctly broadening posteriorly (Fig. 32). Pterostigma less wide, thrice longer than wide (Fig. 33). Mesonotum coarsely punctate, along notaulix punctures rather confluent. Tergites 1–2 rugose without polished interspaces. Tegula brown to yellowish brown. — England, Germany, Netherlands, Finland

A. orestes NIXON, 1974 (!!)[11]

36 (35) Body strong, not gracile, (3–)3.3 mm long. First tergite moderately broadening posteriorly (Fig. 34). Pterostigma wide, 2.3–2.5 times longer than wide (Fig. 35). Mesonotum with distinct and rather fine punctation, along notaulix punctures crowded. Tergites 1–2 rugose with polished interspaces. Tegulae blackish brown to black. — Palaearctic Region, sporadic to frequent. (= *dendrolimi* MATSUMURA, 1926)

A. ordinarius (RATZEBURG, 1844) (!)

37 (34) Inner spur of hind tibia shorter than half basitarsus. First tergite distinctly broadening posteriorly, about as long as wide at hind. Head in dorsal view less transverse, 1.8 times broader than long. Sternites pale yellow to yellow, tergites 3(–4) or 3–4(–5) more or less reddish yellow. A dark form of the nominate species. ♀♂: (2.2–) 2.7–3.2 mm. — England, Germany, Hungary, USSR (Armenia, Georgia, Irkutsk)

A. analis var. **leucaniae** (WILKINSON, 1937) (!!)[12]

38 (21) Scutellum densely punctate to punctate, or less often rugose-rugulose.

39 (40) A strongly built species, body 3.5–3.8 mm long (♀♂). Scutellum rugose, sometimes roughly rugose to rugose-punctate. Mesonotum also roughly and somewhat more densely rugose. Tergites 1–2 (Fig. 36) coarsely rugose to scabrose; first tergite strongly broadening posteriorly, second tergite nearly as long as third tergite. Metasoma posteriorly more or less compressed laterally. Hypopygium produced (Fig. 37). Hind coxae also with unusual coarse rugosity. Penultimate joint of antenna twice as long as broad. Hind femur varying from black to reddish yellow with dark suffusion above. Tegulae brown to black. — Switzerland, Austria, Hungary, Bulgaria

A. cynthiae NIXON, 1974 (!!)

40 (39) Body of usual size. Scutellum punctate in variable strength, medially rather less strong. Sculpture less coarse.

41 (44) Inner spur of hind tibia distinctly longer than half basitarsus. First tergite less broadening posteriorly, about 1.2–1.3 times longer than wide at hind (Figs 38, 40).

[10] My knowledge of this species is based on the original description, i. e. I have not seen any authentic specimens. Its taxonomic position will probably changed with re-examination of the type material within a revisionary work. On the basis of the description it seems an intermediate form between the species *A. tibialis*, *A. berberis*, *A. ofella* and *A. abjectus*, *A. isolde*.

[11] In several respects *A. orestes* similar to *A. geryonis*.

[12] Synonymization see at couplet 5 (6), p. 227.

42 (43) Hind coxa with even, discrete and sharp punctation. Mesonotum with sharp and dense punctation, notaulix indicated by crowded punctation (Fig. 39); scutellum with somewhat less sharp punctation. Metacarp long, 4–4.5 times longer than its distance from apical end of radial vein. Third tergite indistinctly longer than second tergite (Fig. 38). Black; sternites vivid yellow to yellow, apically darkening; tergites 3–5(–7) laterally reddish yellow, hind part of third tergite usually, that of fourth (and fifth) tergite(s) sometimes also reddish yellow. Tegulae and legs reddish yellow. Flagellum fulvous. ♀♂: 3–3.2 mm. — Yugoslavia

A. capucinae FISCHER, 1961 (!!)

43 (42) Hind coxa at most punctate-subpunctate to subrugulose with more or less smooth to polished fields. Mesonotum with less sharp and rather confluent punctation, notaulix indicated by rugose sculpture (Fig. 41); scutellum punctate to nearly smooth. Metacarp less long, about 3–3.5(–3.7) times longer than its distance from distal end of radial vein. Third tergite longer than second tergite (Fig. 40). Colour similar to that of previous species, though light pattern less vivid, and only tergite(s) 3(–4) with reddish yellow mark laterally and behind. Tegulae brownish. Flagellum black(ish). ♀♂: (2–)2.3–2.8 mm. — England, Germany, Switzerland, Italy, Hungary, Bulgaria

A. geryonis MARSHALL, 1885 (!)

44 (41) Inner spur of hind tibia shorter than half basitarsus (Fig. 42). First tergite usually more broadening posteriorly and about as long as wide at hind (Figs 43, 47, 49, 54–55, 61).

45 (46) Antenna of female relatively short, distinctly shorter than body; its penultinate two or three joints 1.3–1.5 times as long as broad (Fig. 44). Metacarp short, about twice as long as its distance from distal end of radial vein; *r1* + *cuqu1* somewhat thick (Fig. 45). First tergite (Fig. 43) strongly broadening posteriorly, third tergite polished and its few setae restricted rather laterally. Head in dorsal view less transverse, about 1.8 times broader than long. Hypopygium in lateral view rounded apically (Fig. 46). Black; legs dark-coloured, their light pattern brown(ish) to at most yellowish brown. ♀♂: 2–2.5 mm. — England, Nederland, Germany, Hungary, Poland, Bulgaria, USSR (European part, Armenia, Azerbaidzhan, Georgia, Soviet Middle Asia), Iran, Turkey, Algeria, Morocco. Supposedly a Palaearctic species. (= *amabilis* NIXON, 1974, !!, **syn. n.**)[13]

A. telengai TOBIAS, 1972 (!!)

— Scutellum smooth, shiny, at most with a few indistinct punctures. Hind margin of second tergite laterally somewhat curving forward. Flagellum black(ish), flagellar joints 1–2(–3) or 1–3(–4) more or less pale. Legs reddish yellow, hind coxae black. ♀♂: 2.2–2.5 mm. — Nearctic Region (Canada, U.S.A.)

A. griffini VIERECK, 1911 (!)

— Scutellum also smooth, shiny to polished. Hind margin of second tergite straight as usually. Flagellum usually entirely black(ish), flagellar joints 1–2 variably pale. Legs reddish yellow, hind coxae black. ♀♂: 2.3–2.7 mm. — Nearctic Region (Canada, U.S.A.)

A. laeviceps ASHMEAD, 1900 (!)

[13] *Apanteles telengai* TOBIAS, 1972: Труды Всес. Энт. Общ. 55: 279 ♀♂, type locality: "АрмССР Алапарс" (USSR), holotype (♀) in the Zoological Institute, Leningrad.

Apanteles amabilis NIXON, 1974: Bull. ent. Res. 64: 456 (in key) and 508 (description) ♀♂, type locality: "England: Kent, Sandhurst", holotype (♀) in the British Museum (Nat. Hist.), London; **syn. n.**

The above synonymization is based on examination of paratype materials of both species.

46 (45) Antenna of female not short, at least as long as body, usually somewhat and distinctly longer; at most its penultimate joint 1.5 times, usually 1.8–2 times, as long as broad, further joints about twice as long as broad (Fig. 57). Metacarp long, at least thrice as long as its distance from distal end of radial vein; *r1* + *cuqu1* not thick as usual (Figs 58–59).

47 (48) Second tergite more transverse, 2.7–3 times broader behind than long medially, third tergite distinctly 1.5–1.6 times longer than second tergite; first tergite somewhat more broadening posteriorly (Fig. 47). Hypopygium well developed, usually somewhat projecting beyond end of metasoma (Fig. 48). Head in dorsal view transverse, twice broader than long. Legs variable in colour, usually dark reddish yellow to brownish, coxae 1–2 black to brownish, coxae 3 black. Tegulae brown to yellowish brown. Third tergite behind sometimes with rusty to reddish yellow pattern. Wings hyaline, subhyaline. ♀♂: 2.5–3(–3.5) mm. — Ireland, England, France, Germany, Spain, Hungary, Turkey, USSR (European part, Azerbaidzhan, Kazakhstan, Soviet Middle Asia)

A. melitaearum WILKINSON, 1937 (!!)

48 (47) Second tergite less transverse, about (1.7–)2–2.3(–2.5) times broader than long, third tergite 1.2–1.4 times, and at most just 1.5 times, longer than second tergite; first tergite broadening in usual size posteriorly (Figs 49, 54–55, 61). Hypopygium less developed, usually not projecting beyond end of metasoma (Figs 50, 52). — The identification of the following 3 species is extremely difficult owing to the great variability of the specific features.

49 (50) First tergite, in comparison to next 2 species, somewhat less broadening posteriorly (Fig. 49). Punctation of mesonotum dense and discrete (Fig. 53). Hypopygium in lateral view variable in size, small and short (Fig. 50) to rather large and somewhat surpassing end of metasoma (Fig. 52), apically always rounded. Pterostigma usually wide, 2.1–2.5 times as long as wide, issuing radial vein less distally (Fig. 51). Pair of spurs of hind tibia equal in length and shorter than half basitarsus. Black; third tergite behind reddish yellow either laterally or along hind margin. Tegula yellowish brown. Legs reddish yellow, coxae 1–2 brown to blackish brown, coxa 3 black. Wings subhyaline. ♀♂: 2.5–3 mm. — France, Netherlands, Hungary

A. lycophron NIXON, 1974 (!!)[14]

— Head less transverse, 1.6–1.7 times broader than long (that of *A. lycophron* twice broader than long). *D1* less wide, about as wide as high. Otherwise quite similar to *A. lycophron*. — Nearctic Region (Canada, U.S.A.)

[**A. plathypenae** MUESEBECK, 1921 (!)[14]

50 (49) First tergite, in comparison to previous species, somewhat more broadening posteriorly (Figs 54–55, 61). Punctation of mesonotum dense and confluent, giving a rugose impression. Tegulae usually reddish yellow to vivid reddish yellow.

51 (52) First tergite slightly longer than wide at hind; second tergite less transverse, 1.7–2 times broader behind than long medially (Figs 54–55). Third tergite polished, fine setae arranged in a single transverse row before its hind margin; occasionally few setae also laterally. Coxae 1–2 reddish yellow, at most somewhat fuscous, coxa 3 black or blackish, at most apically fulvous to reddish yellow. Third tergite partly to (almost) entirely, fourth tergite anteriorly reddish yellow to yellow, further

[14] The two forms now considered as two species are very closely related to each other. Supposedly the examination and comparison of their types as well as a long series of sewpt and bred material from possibly many more localities of the Holarctics will lead to the conclusion that they represent but a single species.

tergite(s) 5(–6) exceptionally with reddish yellow pattern (in European representatives). Body rather gracile, ♀♂: 2–2.7 mm. — Cosmopolitan. Frequent to common in Europe. (= *antipoda* ASHMEAD, 1900; = *manilae* ASHMEAD, 1904; = *narangae* VIERECK, 1913)

A. ruficrus (HALIDAY, 1834) (!)

52 (51) First tergite as long as wide at hind; second tergite more transverse, 2.2–2.5 times broader behind than long medially (Fig. 61). Third tergite less polished, shiny, basally frequently subrugulose to uneven, fine setae scattered almost all over its surface. Coxae 1–2 brown to black(ish), coxa 3 black. Third tergite usually with a rusty to reddish yellow pair of spots laterally, which sometimes forming a band. Body rather strong, ♀♂: (2.5–)3–3.2 mm. — Palaearctic and Oriental Region (? = *vestalis* HALIDAY, 1834)[15]

A. plutellae KURDJUMOV, 1912 (!)

— Scutellum almost smooth, i.e. with indistinct punctation. Sternites yellowish, tergites 3–4(–5) reddish yellow to dark red. Coxae 1–2 reddish yellow. Fine setae of third tergite arranged in a transverse row before hind margin. Otherwise similar to *A. plutellae* and *A. ruficrus*. ♀♂: 2.2–2.8 mm. — Nearctic Region (Canada, U.S.A.)

A. autographae MUESEBECK, 1921 (!)

THE SPECIES OF THE *TIBIALIS*-SUBGROUP (*GLOMERATUS*-GROUP)

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

amabilis NIXON 45 (46)
amesis NIXON 23 (24)
analis (NEES) 5 (6)
analis var. leucaniae (WILKINSON) 37 (34)
antipoda ASHMEAD 10 (11), 51 (52)
atrator (CURTIS) 25 (26)
autographae MUESEBECK 5 (6), 52 (51)
berberis NIXON 31 (32)
capucinae FISCHER 42 (43)
claustratus GAUTIER et BONNAMOUR 25 (26)
congestus NEES 25 (26)
crambi Weed 5 (6)
cynthiae Nixon 39 (40)
dendrolimi MATSUMURA 36 (35)
fasciatae GAUTIER et DRESNAY 13 (14)
ferrugineus Marshall 2 (3)
fluvialis Balevski 32 (31)
geryonis Marshall 43 (42)
globatus BOUCHÉ 25 (26)
gracilipes (CURTIS) 25 (26)
griffini VIERECK 45 (46)
halli (PACKARD) 25 (26)
inductus PAPP 16 (17)
intermixtus BALEVSKI 6 (5), 8 (9), 29 (30)
intricatus (HALIDAY) 25 (26)
kariyai WATANABE 5 (6), 11 (10), 13 (14)
laeviceps ASCHMEAD 45 (46)
leucaniae WILKINSON 5 (6)
lycophron NIXON 49 (50)
manilae ASHMEAD 10 (11), 51 (52)
melanoscelus (RATZEBURG) 19 (18)
melitaearum WILKINSON 47 (48)
narangae VIERECK 10 (11), 51 (52)
ofella Nixon 25 (26), 29 (30)
opaculus THOMSON 18 (19)
ordinarius (RATZEBURG) 36 (35)
orestes NIXON 35 (36)
? *perspicuus* (NEES) 29 (30)
plathypenae MUESEBECK 49 (50)
plutellae KURDJUMOV 52 (51)
praetextanus (HALIDAY) 5 (6)
purgatus TELENGA 11 (10)
rubripes (HALIDAY) 26 (25)
rubroides PAPP 13 (14)
ruficrus (HALIDAY) 10 (11), 51 (52)
? *sessilis* FOURCROY 18 (19)
similis SZÉPLIGETI 25 (26)
simulans LYLE 25 (26)
solitarius (RATZEBURG) 19 (18)
? *subcutaneus* LINNÉ sensu ZETTERSTEDT 18 (19)
subordinarius TOBIAS 6 (5)
telengai TOBIAS 45 (46)
tetricus REINHARD 18 (19)
tibialis (CURTIS) 25 (26), 29 (30)
? *vestalis* (HALIDAY) 52 (51)
villanus REINHARD 13 (14)
? *xylinus* (SAY) 25 (26)
yakutatensis ASHMEAD 25 (26)

[15] The descriptions of *A. vestalis* (HALIDAY) given by several authors refer to the same species as that of *A. plutellae* KURDJUMOV. However, I refrain from the synonymization of the two names lacking type material of both species as well as authenticated representatives of *A. vestalis*.

THE *BREVICORNIS*-SUBGROUP

The following features characterizes species of the *brevicornis*-subgroup: 1. Antenna short, shorter than body, usually as long as head, mesosoma and fore third to half of metasoma; antennal joints 13–17 cubic to at most subcubic, i. e. hardly longer than broad (Figs 65, 72, 75). 2. First tergite usually moderately broadening posteriorly, somewhat longer than broad before its hind end (Figs 70, 74, 90–91). 3. Ovipositor sheath projecting distinctly from hypopygium (Figs 63, 71, 92), its length about half to two-thirds of basitarsus.

The *brevicornis*-subgroup comprises 7 species in Europe and 1 species from the Nearctic Region.

KEY TO THE SPECIES OF THE *BREVICORNIS*-SUBGROUP

Females

1 (4) First tergite parallel-sided or indistinctly broadening posteriorly (Figs 62, 66–67).

2 (3) Head in dorsal view less transverse, (1.7–)1.8 times broader than long. Second tergite less transverse, 1.6–1.7 times wider behind than long medially, first tergite fully parallel-sided (Fig. 62); hind half of first tergite and entire second tergite densely rugose, not shiny. Metasoma from third or fourth segment more or less compressed laterally. Hypopygium heavily sclerotized, in lateral view its hind margin distinctly arched, apically truncate (Fig. 63). Pterostigma 2.3–2.5 times longer than wide, issuing radial vein distinctly distally from its middle; *r1* and *cuqu1* about equal in length (Fig. 64). Black, legs dark coloured. Hind femur black, tibiae brownish to brown, proximally yellowish brown. Wings hyaline, pterostigma brown. A less strongly built species. ♀♂: 2.2–3 mm. — Sporadic to frequent in Europe as far eastwards as Azerbaidzhan in the USSR. (= *cleoceridis* MARSHALL, 1888)

A. brevicornis (WESMAEL, 1837) (!!)

— Very similar to *A. brevicornis*. Pterostigma 2.1–2.2 times longer than wide, issuing radial vein somewhat less distally from its middle. Black, legs reddish yellow, coxae 1–2 brown to blackish brown, coxa 3 black. ♀♂: 2.6–2.8 mm. — Nearctic Region; it seems to be a vicariant species with the Palaearctic (European) *A. brevicornis*

A. parastichtidis MUESEBECK, 1921 (!)

3 (2) Head in dorsal view transverse, 2–2.2 times broader than long. Second tergite transverse, at least twice wider behind than long medially; first tergite more or less rounded at its hind end (Figs 66–67). Tergites 1–2 weakly rugose, shiny. Metasoma from third or fourth segment at most somewhat compressed laterally. Hypopygium sclerotized as usual, in lateral view its hind margin less arched, apically pointed (Fig. 68). Pterostigma 2–2.1 times longer than wide, issuing radial vein less distinctly distally from its middle; *r1* longer than *cuqu1* (Fig. 69). Colour of body similar to previous species. Wings frequently whitish hyaline, pterostigma black, veins pale except brownish *r1+cuqu1*. A strongly built species, ♀♂: 2.5–3.7 mm, usually 2.8–3.2 mm. Last 3–4 joints of antenna usually somewhat longer than broad, less often cubic. — South Europe (Portugal, Bulgaria, Greece), Morocco, Turkey, Israel, USSR (European part, Transcaucasus, Soviet Middle Asia), Mongolia

A. kazak TELENGA, 1949 (!!)

4 (1) First tergite never parallel-sided, i. e. more or less broadening posteriorly (Figs 70, 74, 79, 82, 84, 90–91, 96).

5 (8) Hypopygium in lateral view large, surpassing angularly beyond end of metasoma; ovipositor sheath relatively long, projecting well from hypopygium and about as long as two-thirds of hind basitarsus or slightly longer than middle basitarsus (Fig. 71).

6 (7) Antennal joints 14–17 slightly though distinctly transverse, i. e. minutely shorter than broad; hairs of flagellar joints clearly upstanding and nearly half as long as breadth of joints (Fig. 72). Pair of spurs of hind tibia equal in length, inner spur as long as half basitarsus (Fig. 73). First tergite usually hardly longer than broad before its hind end (Fig. 70). Mesonotum usually somewhat more shiny. Black; hind femur black, hind tibia yellowish brown, apically infuscate to blackish. Wings hyaline. ♀♂: 3–3.2 mm. — England Germany, Sweden, Finland, Hungary, Italy (Sardinia), Bulgaria, Turkey, USSR (European Russia)

A. pilicornis THOMSON, 1895 (!!)[16]

7 (6) Antennal joints 14–17 cubic to subcubic, i. e. minutely longer than broad; hairs of flagellar joints less upstanding and distinctly shorter than half breadth of joints (Fig. 75). Pair of spurs of hind tibia slightly subequal to equal in length, inner spur somewhat shorter than half basitarsus (Fig. 76). First tergite usually 1.2 times longer than broad before its hind end (Fig. 74). Mesonotum usually somewhat less shiny. Black, colour of legs and wings similar to that of previous species. ♀♂: 2.8–3(–3.2) mm. — England, Germany, Italy (Lake Garda, Sardinia), Hungary, Yugoslavia, Bulgaria, Turkey, USSR (Armenia). (= *acutivalvis* BALEVSKI, 1980, !! **syn. n.**)[17]

A. memnon NIXON, 1974 (!!)[17]

8 (5) Hypopygium in lateral view not large and truncate, i. e. usual in its size and not surpassing end of metasoma; ovipositor sheath short (Figs 86, 89, 92).

9 (10) Tergites 1–2 weakly rugose, rugulose to uneven, shiny. Mesonotum shiny, weakly punctate to subpunctate, before prescutellar furrow smooth. First tergite either parallel-sided and rounded at hind, or somewhat broadening and also rounded behind; second tergite 2.2–2.5 times wider behind than long medially (Figs 66–67). For further details see at couplet 3 (2)

A. kazak TELENGA, 1949 (!!)

10 (9) Tergites 1–2 rugose, less frequently scabrous. Mesonotum usually with dense to confluent punctation.

11 (20) Metacarp either shorter than or at most as long as pterostigma (Fig. 77–78, 101). Antennal joints 14–17 usually longer than broad, at most subcubic except *A. specularis*.

12 (15) Malar space unusually long, 1.2–1.5 times longer than basal width of mandible. Eye in lateral view rather small, 1.5–2 times higher than wide (Figs 81, 99, 104); head in frontal view more transverse than usually (Figs 80, 100).

13 (14) First tergite usually as long as (Fig. 79), and at most somewhat longer than (Fig. 103), broad behind, moderately broadening posteriorly; second tergite slightly less transverse (Figs 79, 103). *r1* oblique to fore margin of pterostigma, metacarp shorter

[16] The two species, *A. memnon* and *A. pilicornis*, are very closely related. Frequently there are transitional forms in some respects which are difficult to identify. Perhaps the two forms considered now as two distinct taxa are but a single species with unusually variable features (?corresponding to ecoforms).

[17] *Apanteles memnon* NIXON, 1974: Bull. ent. Res. 64: 465 ♀♂, type locality: "England: Devon, Romansleigh", holotype (♀) in the British Museum (Nat. Hist.), London.

Apanteles acutivalvis BALEVSKI, 1980: Энт. Обозр 59: 355♀, type-locality: "6 км ЮЗ Марикостено, 80 м над ур. м., болото (рогоз, сныть), в пойше р. Струмы", holotype in the Zoological Institute, Leningrad; syn. n.

The above synonymization is based on my original examination and comparison of the paratypes of both taxa.

than pterostigma (Figs 77–78), *D1* hardly, i.e. 1.1–1.2 times wider than high. Head in frontal view relatively less transverse, i.e. 1.1 times broader than high (Fig. 80). Body relatively strong, ♀♂: 2.5–3 mm, usually 2.6–2.8 mm. — A frequent to common species in Europe. (?= *astrarches* MARSHALL, 1889;[20] = *genalis* TOBIAS, 1964, I, syn. n.;[18])

A. tenebrosus (WESMAEL, 1837) (!!)[19]

14 (13) First tergite 1.6 times as long as broad behind, hardly broadening posteriorly; second tergite slightly more transverse (Fig. 102). *r1* perpendicular to fore margin of pterostigma, metacarp shorter or about as long as pterostigma (Fig. 101), *D1* slightly though distinctly, i.e. 1.3 times, wider than high. Head in frontal view relatively more transverse, i.e. 1.2 times broader than high (Fig. 100). Body relatively less strong, ♀: 2.1–2.6 mm. — Norway, Hungary

A. arcticus THOMSON, 1895 (!!)[20]

15 (12) Malar space short as usually, shorter than or at most as long as basal width of mandible, eye in lateral view usual in size, about 2–2.2 times higher than wide; head in frontal view less transverse.

16 (17) Antennal joints 13–17 or 14–17 cubic to subcubic, i. e. hardly longer than broad. Pair of spurs of hind tibia equal in length, somewhat shorter to as long as half basitarsus. Third tergite entirely polished. Mesonotum weakly and rather densely punctate, shiny to subshiny. First tergite about as long as or slightly longer than wide before its hind end, moderately broadening posteriorly, apically rounded. Second tergite thrice wider behind than long medially (Fig. 82). Pterostigma, *r1*+*cuq1* (cf. Fig. 78) as well as hypopygium similar to that of *A. tenebrosus*. Black to blackish brown, light pattern of legs brown to brownish yellow, hind femur black. Wings subhyaline. ♀♂: 2.5–2.8(–3) mm. — German Democratic Republic, Hungary, Romania, Bulgaria, Turkey, Jordan, Iran. (= *balcanicus* BALEVSKI, 1980, **syn. n.**)[21]

A. specularis SZÉPLIGETI, 1896 (!!)

17 (16) Antennal joints 13–17 longer than broad, at most penultimate joint subcubic to cubic. Pair of spurs of hind tibia unequal in length, inner spur longer than half basitarsus. Third tergite basally frequently with fine aciculation or rugulosity.

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[18]) *Microgaster tenebrosus* WESMAEL, 1837: Nouv. Mém. Acad. Brux. 10: 51 ♀, type locality: "environs de Bruxelles" (Belgium), "Type" in the Institut Royal des Sciences Naturelles, Bruxelles.

Apanteles genalis TOBIAS, 1964: Труды Зоол. Инст. 34: 217 ♀, type locality: "Целиногр. обл.: 5-10 км сев. оз. Жарколб (южн.)" (USSR: Kazakhstan), holotype in the Zoological Institute, Leningrad; **syn. n.**

The above synonymization is based on my original examination and comparison of the "Type" *(M. tenebrosus)* and 1 ♀ paratype + 3 ♀ and 1 ♂ authentic specimens *(A. genalis)* of the two taxa.

[19]) The name *M. tenebrosus* was synonymized with *Ichneumon saltator* THUNBERG, 1822 by ROMAN in 1912. The two names refer to two species, thus the name *M. tenebrosus* WESMAEL, 1837 should be considered as **nom. rev.**

[20]) The name *A. arcticus* THOMSON was used by NIXON (1974) to the species *A. tenebrosus* WESMAEL which name is applied for this species in the present paper. Furthermore, NIXON put in synonymy the name *A. astrarches* MARSHALL with *A. arcticus* THOMSON, however, considering my new nomenclatural interpretation, Marshall's name seems also to refer to the species *A. tenebrosus* WESMAEL, sen. syn.

[21]) *Apanteles specularis* SZÉPLIGETI, 1896: Természetr. Füz. 19: 306 (in Hungarian) and 375 (in German) ♀ (= "♂"), type locality: Budapest: Sashegy (Hungary), lectotype in the Hungarian Natural History Museum, Budapest (Hym. Typ. No. 631) (2 ♀ paralectotypes with same data, of which 1 ♀ represents *A. tenebrosus* WESMAEL).

Apanteles balcanicus BALEVSKI, 1980: Энт. Обозр. 59 (2): 357 (in Russian), type locality: "16 км ССЗ Гоче Делчев, 850 м над ур. м., луг в пойме р. Туфча" (Bulgaria), holotype in the Zoological Institute, Leningrad; **syn. n.**

The above synonymization is based on my original examination and comparison of *A. balcanicus* (1 ♀ paratype) and *A. specularis* (lectotype ♀).

18 (19) First tergite 1.4–1.5(–1.6) times longer than broad behind, moderately broadening posteriorly; second tergite less transverse, 2–2.2 times wider behind than long medially (Fig. 84). Metasoma somewhat cylindrical, one-quarter longer than mesosoma. Clypeus narrow, about four times wider below than high (Fig. 85). Hypopygium heavily sclerotized (similar to that of *A. brevicornis*), in lateral view apically not pointed (Fig. 86). Black; metasoma brownish black, hind femur reddish yellow to rusty. Tegulae yellowish brown to brown. Wings subhyaline or faintly fumous. ♀♂: 2.3–2.6 mm. — Mongolia

A. tegerus PAPP, 1977 (!!)

19 (18) First tergite as long as wide at hind (minute deviation feasible), distinctly broadening posteriorly; second tergite transverse, 2.5–3 times wider behind than long medially (Fig. 87). Metasoma less cylindrical, at most slightly longer than mesosoma. Clypeus narrower, about five times wider below than high (Fig. 88). Hypopygium less heavily, i. e. usually sclerotized, in lateral view apically bluntly pointed (Fig. 89). Black; hind femur black or brownish black (south-eastern European forms). Tegula black. Wings hyaline, exceptionally subhyaline. ♀♂: 2–2.2 mm. — England, Germany, Hungary, Bulgaria, Turkey (? = *placidus* HALIDAY, 1834)[21]

A. laverna NIXON, 1974 (!!)

20 (11) Metacarp more or less longer than pterostigma (Fig. 93). Antennal joints 14–17 always cubic.

21 (22) First tergite less long, about as long as or slightly longer than wide before its hind end, moderately broadening posteriorly; second tergite thrice wider behind than long medially (Fig. 82). Ocelli relatively small, distance between fore and a hind ocelli as long as diameter of fore ocellus, sometimes minutely longer. Pair of spurs of hind tibia equal in length. Metacarp usually as long as pterostigma, rather exceptionally somewhat longer. In comparison to the following two species *(A. praepotens* and *A. eulipis)* a rather gracile species. For further details see at couplet 16 (17)

A. specularis SZÉPLIGETI, 1896 (!!)

22 (21) First tergite long, distinctly, i. e. one-third to one-fourth longer medially than broad before its hind end, less broadening posteriorly (Figs 90–91, 96). Ocelli large, distance between fore and a hind ocelli shorter than diameter of fore ocellus. Pair of spurs of hind tibia unequal in length, inner spur longer than outer one. Metacarp always distinctly longer than pterostigma.

23 (24) Head in frontal view more transverse, one-third wider than high; malar space long, somewhat longer than basal width of mandible (Fig. 100). Second tergite transverse, 2.7–2.9 times wider behind than long medially. Metacarp at most minutely longer than pterostigma (Fig. 101). Body relatively less strong, ♀: 2.1–2,6 mm. See also couplet 14 (13)

A. articus THOMSON, 1895 (!!)

24 (23) Head in frontal view less transverse, only somewhat wider than high; malar space short (Figs 94, 97). Second tergite more or less transverse, 2–2.7 times wider behind than long medially. Metacarp distinctly longer than pterostigma.

[21] Through DR. A. NEBOISS's kindness (Museum of Victoria, Abbotsford, Melbourne) I have seen a female specimen of *Microgaster placidus*. It is, however, in a very bad condition thus it is impossible to recognize its identity. My proposed synonymization is based on WILKINSON's remark (1945: 79) on the one hand, and on the descriptions of *M. placidus* given by HALIDAY and FAHRINGER on the other hand. Furthermore, I have seen a few spedimens in the Zoological Museum (Berlin) named as *A. placidus* (HALIDAY) identical with *A. laverna* NIXON.

25 (26) Inner margin of eyes somewhat though distinctly converging (Fig. 94). Second tergite less transverse, about twice wider behind than long medially (Figs 90–91). Penultimate 3–4 joints of antenna slightly transverse to cubic. Vannal lobe of hind wing bare, i. e. without short hairs beyond its widest point (Fig. 95). Pterostigma wide and issuing radial vein from its middle, or somewhat distally (Fig. 93). Black; hind femur black, light pattern of legs usually pale yellow. ♀♂: 2.7–3.3 mm, usually 3–3.2 mm. — Palaearctic Region, in Europe frequent to common. (= *brachycerus* THOMSON, 1895, !!; ? = *Microgaster sericeus* NEES, 1834 nec *Icheumon sericeus* FABRICIUS, 1793)

A. praepotens (HALIDAY, 1834) (!!)[22]

26 (25) Inner margin of eyes parallel or at most subparallel (Fig. 97). Second tergite transverse, 2.5–2.7(–3) times wider behind than long medially (Fig. 96). Penultimate 3–4 joints of antenna slightly though distinctly longer than broad. Vannal lobe of hind wing fringed with short hairs beyond its widest point (Fig. 98). Pterostigma usually less wide and issuing radial vein from its middle. Black; hind femur black to brownish black, light pattern of legs rather reddish to rusty yellow. ♀♂: 2.7–3 mm. — Scotland, Germany, Finland, Hungary

A. eulipis NIXON, 1974 (!!)

THE SPECIES OF THE *BREVICORNIS*-SUBGROUP (*GLOMERATUS*-GROUP)
(Synonyms are in italics, numbers refer to couplet-numbers)

acutivalvis BALEVSKI 7 (6)
arcticus THOMSON 14 (13), 23 (24)
?*astrarches* MARSHALL 13 (14)
balcanicus BALEVSKI 16 (17)
brachycerus THOMSON 25 (26)
brevicornis (WESMAEL) 2 (3)
cleoceridis MARSHALL 2 (3)
eulipis NIXON 26 (25)
genalis TOBIAS 13 (14)
kazak TELENGA 3 (2), 9 (10)
laverna NIXON 19 (18)
memnon NIXON 7 (6)
parastichtidis MUESEBECK 2 (3)
pilicornis THOMSON 6 (7)
? *placidus* (HALIDAY) 19 (18)
praepotens (HALIDAY) 25 (26)
? *sericeus* (NEES) nec (FABRICIUS) 25 (26)
specularis SZÉPLIGETI 16 (17), 21 (22)
tegerus PAPP 18 (19)
tenebrosus (WESMAEL) 13 (14)

* * *

APPENDIX

Subsequently I give the designation of the neotype for the species *Apanteles analis* (NEES) and *A. ruficrus* (HAL.).

Apanteles analis (NEES, 1834)

Microgaster analis NEES, 1834: Hym. Ichn. affin. Mon. 1: 180 ♀, type locality: „Prope Berolinum in horto botanico" (Germany), syntype(s) destroyed. Neotype in Zoologisches Museum, Berlin; present designation.

Apanteles analis (NEES, 1834): MARSHALL 1872 Cat. Br. Hym. p. 106, MARSHALL 1885 Trans. R. ent. Soc. Lond. p. 158 and 159 (in key) and p. 172 (description).

[22] The female "Type" specimen of this species was kindly sent to me on loan by DR J. P. O'CONNOR (National Museum of Ireland, Dublin) in 1983. His obliging assistance is gratefuly acknowledged here.

The name *A. analis* (NEES) is again representing a species within the genus *Apanteles* which remained rather unknown for the authors working after E. v. NEES. In October 1979 I have found a pair (♀♂) of specimens under the name-label *A. analis* NEES in the the Zoologisches Museum, Berlin. The female and male specimens belong to the Reinhard's Collection and, presumably, they were identified by REINHARD himself. Considering its latent taxonomic state for a long time as well as its very closely related species (*A. autographae* MUESEBECK, *A. crambi* WEED, *A. intermixtus* BALEVSKI), it seems reasonable to designate the female specimen in question as the neotype of the species *A. analis* (NEES). The data of the five labels attached to the neotype are given as follows: "England Fitch" (first label, handwriting) — "Coll. H. Rhd." (second label, printed) — "26929" (third label, printed) — "analis Ns." (fourth label, ?Reinhard's handwriting) — fifth label is my neotype label.

Apanteles ruficrus (HALIDAY, 1834)

Microgaster ruficrus HALIDAY, 1834: Ent. Mag. 2: 253 ♀♂, type locality: „British Isles" (WILKINSON 1932: 309), location of syntypes unknown (lost or destroyed?). Neotype in Zoologisches Museum, Berlin; designated by WILKINSON in litt.

Apanteles ruficrus (HALIDAY, 1834): MARSHALL 1872 Cat. Br. Hym. p. 106; REINHARD 1880 Dt. ent. Z. 24: 363 (in key) and 368 (description).

In 1938 D. S. WILKINSON designated a female specimen of *A. ruficrus* (HALIDAY) as the "Neotype" of this species, however, his designation was never published. The location of the types is unknown on one hand, and the species *A. ruficrus* (HALIDAY) is very similar to a few other species (*A. plutellae* KURDJUMOV, *A. melitaearum* WILKINSON, *A. autographae* MUESEBECK) on the other hand, thus I accepted his designation and below I cite the text of the five labels attached to it: "Neo Type DSW" (first round label with red frame, "Neo" and "DSW" = D. S. Wilkinson are Wilkinson's handwritings, "Type" printed) — "Coll. H. Rhd." (second label, printed) — "26923" (third label, printed) — "ruficrus Hal." (fourth label, ?Reinhard's handwriting) — "Apanteles" (printed) "ruficrus Hal." (Wilkinson's handwriting) "D. S. Wilkinson Det. 193"(printed)"8 Neotype" (Wilkinson's handwriting) (fifth label).

Flagellum of both antennae broken, i.e. only scape and pedicel present on the neotype specimen, otherwise neotype in a good condition. The neotype was selected from among the Reinhard's Collection preserved in the Zoologisches Museum, Berlin.

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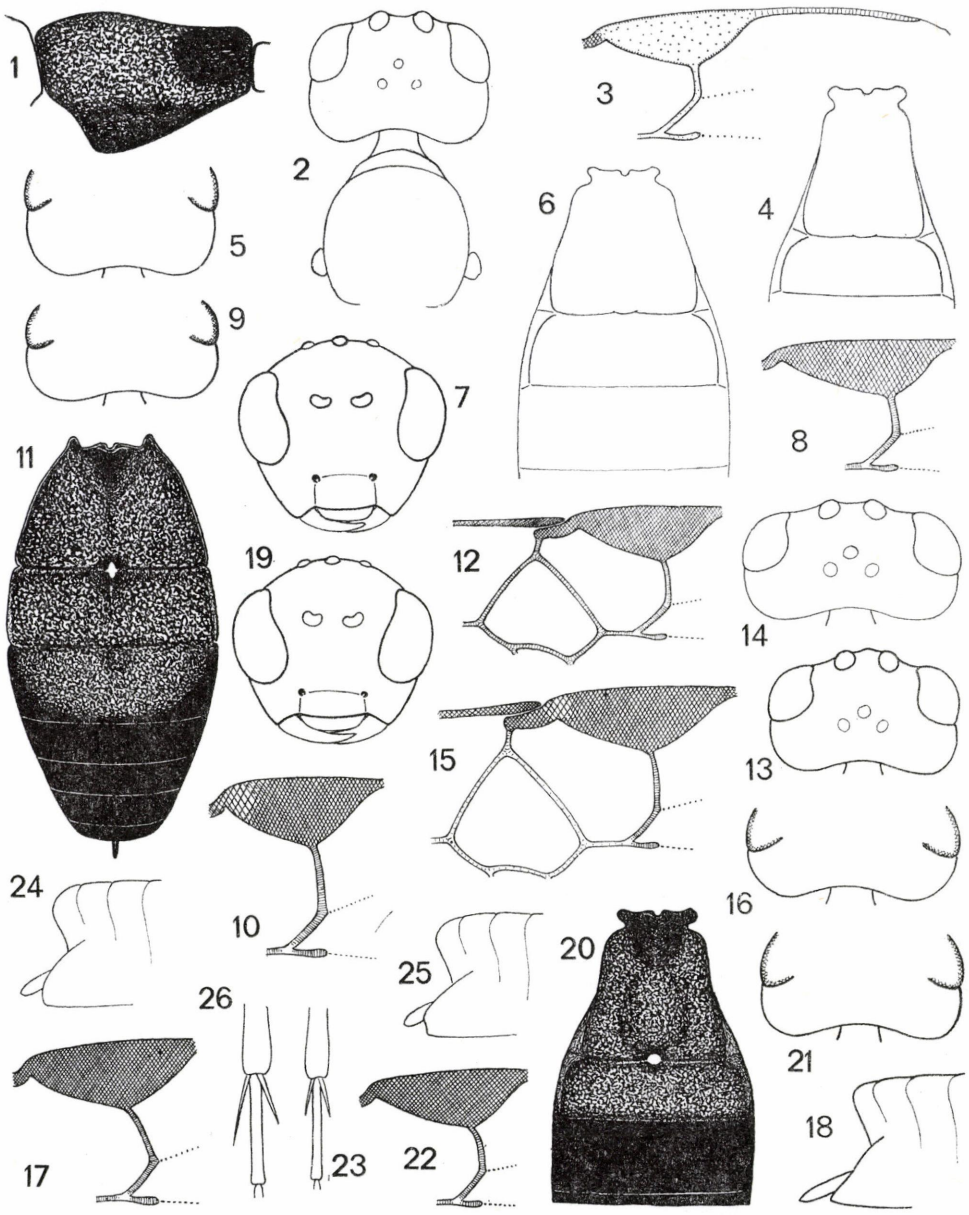


Fig. 1. *Apanteles tibialis* (CURTIS): outer side of hind coxa. — Figs 2–3. *A. ferrugineus* MARSHALL: 2 = head, pro- and mesonotum in dorsal view, 3 = distal part of right fore wing. — Fig. 4. *A. analis* (NEES): tergites 1–2. — Figs 5–6. *A. kariyai* WATANABE: 5 = head behind eyes in dorsal view, 6 = tergites 1–3. — Figs 7–9. *A. villanus* REINHARD: 7 = head in frontal view, 8 = pterostigma, *r1*+*cuqu1* and *cu3* of right fore wing, 9 = head behind eyes in dorsal view. — Figs 10–11. *A. inductus* PAPP: 10 = pterostigma, *r1*+*cuqu1* and *cu3* of right fore wing, 11 = metasoma in dorsal view. — Figs 12–13. *A. tetricus* REINHARD: 12 = distal part of right fore wing, 13 = head in dorsal view. — Figs 14–15. *A. melanoscelus* (RATZEBURG): 14 = head in dorsal view, 15 = distal part of right fore wing. — Figs 16–18. *A. amesis* NIXON: 16 = head behind eyes in dorsal view, 17 = pterostigma, *r1*+*cuqu1* and *cu3* of right fore wing, 18 = posterior end of metasoma with hypopygium and ovipositor sheath. — Figs 19–25. *A. tibialis* (CURTIS): 19 = head in frontal view, 20 = tergites 1–3 indicating sculpture, 21 = head behind eyes in dorsal view, 22 = pterostigma, *r1*+*cuqu1* and *cu3*, 23 = right hind tibia with spurs and basitarsus, 24–25 = posterior end of metasoma with hypopygium and ovipositor sheath. — Fig. 26. *A. rubripes* (HALIDAY): right hind tibia with spurs and basitarsus

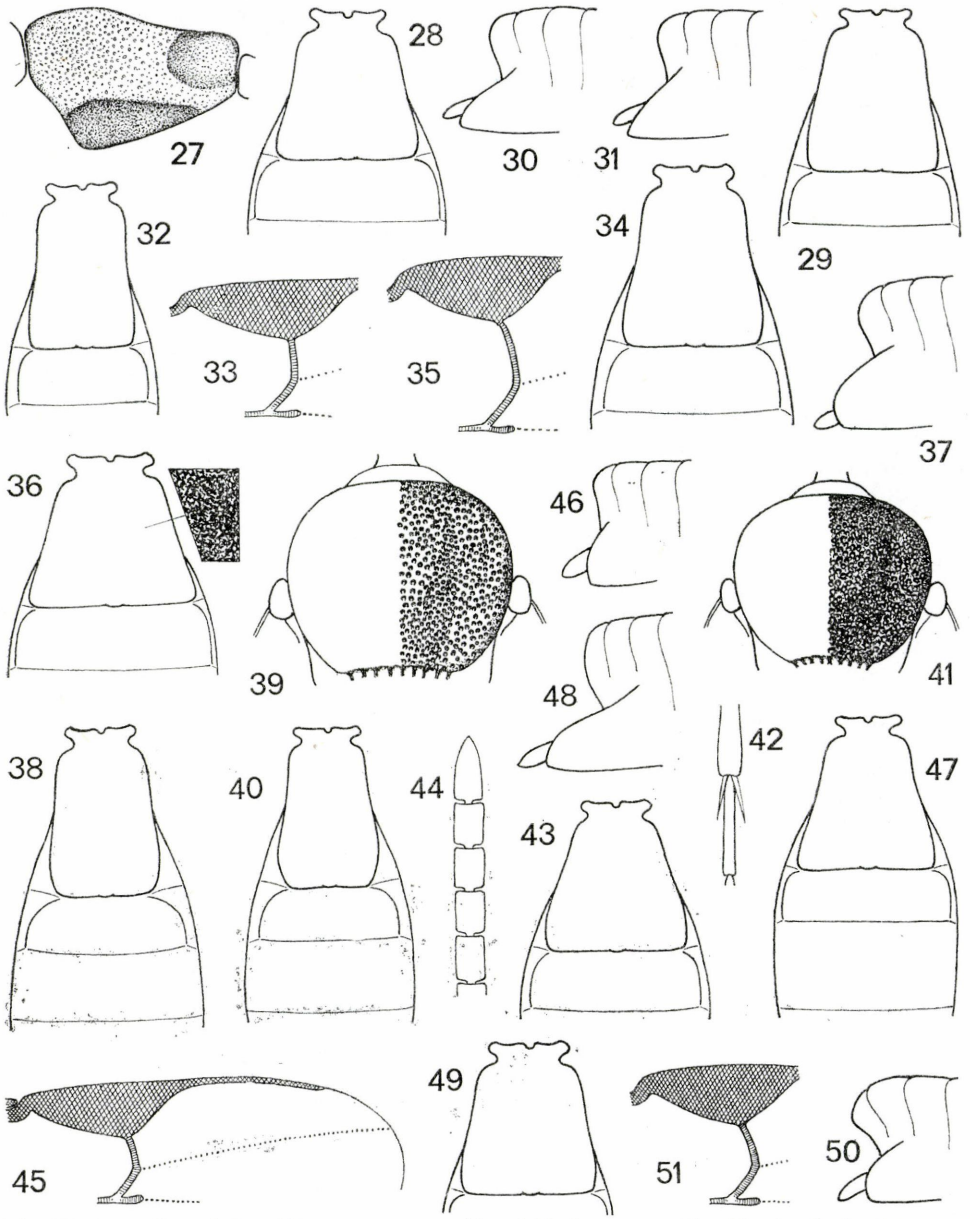
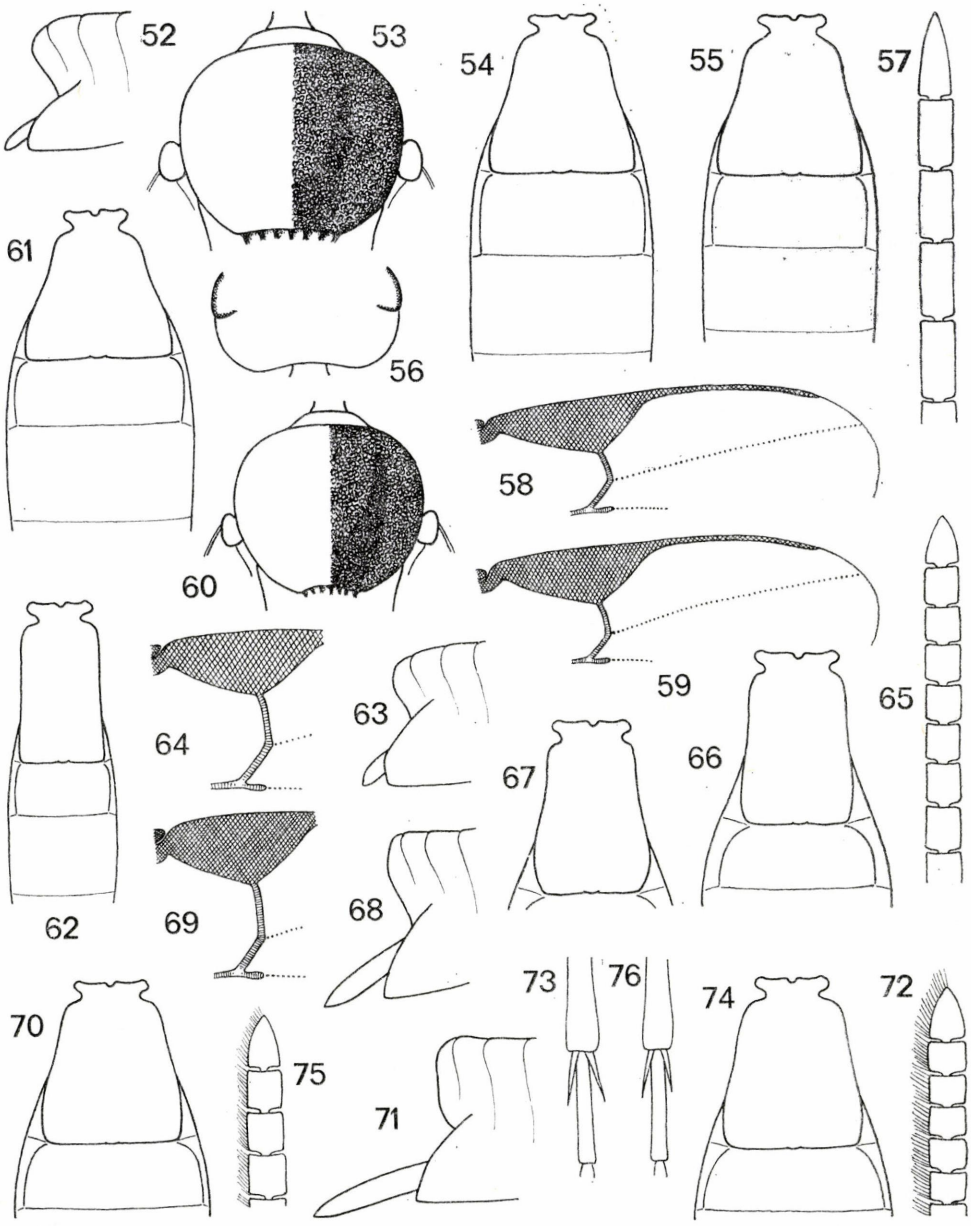
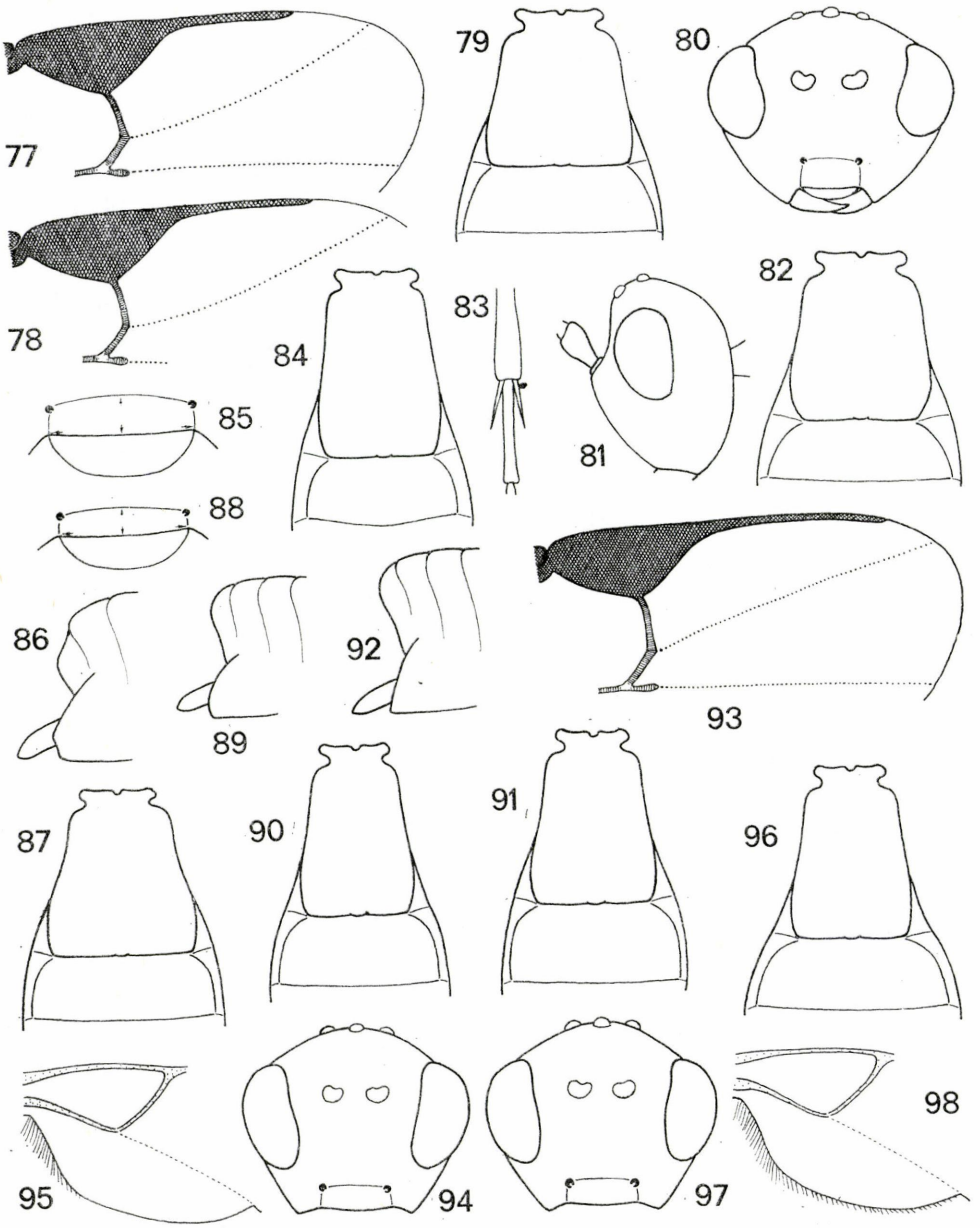


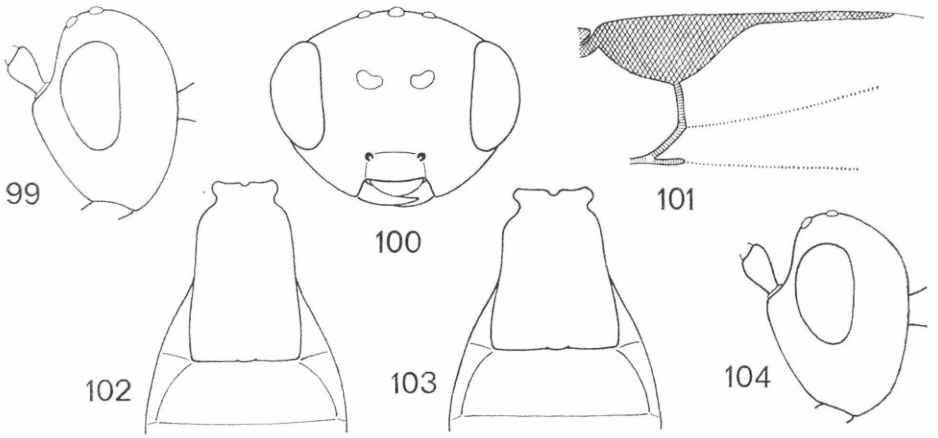
Fig. 27. *Apanteles rubripes* (HALIDAY): outer side of hind coxa. — Fig. 28. *A. tibialis* (CURTIS): tergites 1–2. — Figs 29–31. *A. ofella* NIXON: 29 = tergites 1–2, 30–31 = posterior end of metasoma with hypopygium and ovipositor sheath, — Figs 32–33. *A. orestes* NIXON: 32 = tergites 1–2, 33 = pterostigma, *r1*+*cuqu1* and *cu3* of right fore wing. — Figs 34–35. *A. ordinarius* (RATZEBURG): 34 = tergites 1–2, 35 = pterostigma, *r1*+*cuqu1* and *cu3* of right fore wing. — Figs 36–37. *A. cynthiae* NIXON: 36 = tergites 1–2 with indication of its sculpture, 37 = posterior end of metasoma with hypopygium and ovipositor sheath. — Figs 38–39. *A. capucinae* FISCHER: 38 = tergites 1–3, 39 = mesonotum with sharp and dense punctation. — Figs 40–41. *A. geryonis* MARSHALL: 40 = tergites 1–3, 41 = mesonotum with less sharp and rather confluent punctation. — Figs 42–46. *A. telengai* TOBIAS: 42 = right hind tibia with spurs and basitarsus, 43 = tergites 1–2, 44 = antennal joints 14–18, 45 = distal part of right fore wing, 46 = posterior end of metasoma with hypopygium and ovipositor heath. — Figs 47–48. *A. melitaearum* WILKINSON: 47 = tergites 1–3, 48 = posterior end of metasoma with hypopygium and ovipositor sheath. — Figs 49–51. *A. lycophron* NIXON: 49 = first tergite, 50 = posterior end of metasoma with hypopygium and ovipositor sheath, 51 = pterostigma, *r1*+*cuqu1* and *cu3* of right fore wing



Figs 52–53. *Apanteles lycophron* NIXON: 52 = posterior end of metasoma with hypopygium and ovipositor sheath, 53 = mesonotum with dense and discrete punctation. — Figs 54–60. *A. ruficrus* (HALIDAY): 54–55 = tergites 1–3, 56 = head behind eyes in dorsal view, 57 = antennal joints 14–18, 58–59 = distal part of right fore wing, 60 = mesonotum with dense and confluent punctation. — Fig. 61. *A. plutellae* KURDJUMOV: tergites 1–3. — Figs 62–65. *A. brevicornis* (WESMAEL): 62 = tergites 1–3, 63 = posterior end of metasoma with hypopygium and ovipositor sheath, 64 = pterostigma. *r1* + *cuqu1* and *cu3* of right fore wing, 65 = antennal joints 10–18. – Figs 66–69. *A. kazak* TELENGA: 66–67 = tergites 1–2, = posterior end of metasoma with hypopygium and ovipositor sheath, 69 = pterostigma, *r1*+*cuqu1* and *cu3* of right fore wing. — Figs 70–73. *A. pilicornis* THOMSON: 70 = tergites 1–2, 71 = posterior end of metasoma with hypopygium and ovipositor sheath, 72 = antennal joints 13–18, 73 = right hind tibia with spurs and basitarsus. — Figs 74–76. *A. memnon* NIXON: 74 = tergites 1–2, 75 = antennal joints 15–18, 76 = right hind tibia with spurs and basitarsus



Figs 77–81. *Apanteles tenebrosus* (WESMAEL): 77–78 = distal part of right fore wing, 79 = tergites 1–2, 80 = head in frontal view, 81 = head in lateral view. — Figs 82–83. *A. specularis* SZÉPLIGETI: 82 = tergites 1–2, 83 = right hind tibia with spurs and basitarsus. — Figs 84–86. *A. tegerus* PAPP: 84 = tergites 1–2, 85 = clypeus with labium, arrows indicate the width and height measurements, 86 = posterior end of metasoma with hypopygium and ovipositor sheath. — Figs 87–89. *A. laverna* NIXON: 87 = tergites 1–2, 88 = clypeus with labium, arrows indicate the width and height measurements, 89 = posterior end of metasoma with hypopygium and ovipositor sheath. — Figs 90–95. *A. praepotens* (HALIDAY): 90–91 = tergites 1–2, 92 = posterior end of metasoma with hypopygium and ovipositor sheath, 93 = distal part of right fore wing, 94 = head in frontal view with somewhat converging eyes, 95 = vannal lobe with submedian cell. — Figs 96–98. *A. eulipis* NIXON: 96 = tergites 1–2, 97 = head in frontal view with parallel eyes, 98 = vannal lobe with submedian cell



Figs 99–102. *Apanteles arcticus* THOMSON: 99 = head in lateral view, 100 = head in frontal view, 101 = distal part of right fore wing: pterostigma and *r1+cuqu1*, 102 = tergites 1–2. — Figs 103–104. *A. tenebrosus* (WESMAEL): 103 = tergites 1–2, 104 = head in lateral view