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# Revision of the genus Brachyleptus Motsch. (Coleoptera, Nitidulidae)

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In the present paper are revized species of the genus *Brachyleptus* Motsch. Keys to identification of the genus have been published by Reitter (1896, 1919), but they have been based chiefly on colour and secondary sexual characters of males, making thus identification of some variable specimens and females uncertain. Study of other characters including also male genitalia made it possible not only to avoid some of those troubles and to establish some new synonymies, but also to establish principal evolutionary trends and relationships within this apparently very uniform genus.

It is my pleasant duty to express my thanks to the following entomologists and institutions who enabled me to complete this paper by loans of material including necessary type-specimens: Dr. C. Bésuchet, Natural History Musem, Genève (MHNG), Dr. A. Descarpentries, National Museum of Natural History, Paris (MHNP), late Dr. G. Frey, Museum G. Frey, Tutzing b. München (MFM), Dr. R. Gaedicke, Institute for Plants Research, Dept. of Insect taxonomy, Eberswalde (DEI), Dr. F. Hieke, Zoological Museum, Humboldt University, Berlin (MNM), Dr. O. L. Kryzhanovsky, Zoological Institute, Academy of Sciences of USSR, Leningrad (ZIN), Dr. C. Leonardi, Museum of Natural History, Milano (MSNM), Dr. N. Lodos, Faculty of Agriculture, Egean University, Izmir-Bornova (CL), Dr. M. Meinander, Zoological Museum of the University, Helsinki (MZUH), prof. A. Pfeffer, Praha (CP), Dr. C. Wewalka, Wien (CW), Dr. W. Wittmer, Natural History Museum, Basel (NMB) und National Museum, Praha (NMP).

## **Brachyleptus** Motschulsky, 1845

*Brachyleptus Motschulsky*, 1845, Bull. Moscou 18:54.
Type species: *Brachyleptus canescens* Motschulsky, 1845 = *Brachyleptus quadratus* (Sturm, 1844), by monotypy.

Head without distinct temples, slightly constricted behind the large rounded eyes. Short rudiment of the frontoclypeal sulcus usually distinct. Front and clypeus closely and coarsely, mostly rugosely punctate. Labrum broadly roundly bilobed, divided by straight transverse edge in smooth, impunctate proximal portion and punctate, pubescent distal one. Mandibles with simple tips. Maxilla as in all Cateretinae bilobed with 4-segmented palpus, terminal segment of the palpus long, narrowly conical. Mentum trapezoidal, paraglossae roundly trian-

gular, widely separated. Maxillary palpi 3-segmented, terminal segment wider than the preceding ones, oval.

Pronotum more or less transversely oval, distinctly narrower than the combined width of elytra. Anterior margin of pronotum straight, not bordered, anterior angles roundly obtuse, rarely distinctly angulate, posterior ones broadly rounded, indistinct, the arcuate sides passing fluently into the basal margin. Sternopleural sutures distinct, prosternum and hypomera rather strongly punctate, prosternal process narrow, strongly longitudinally convex, neither prolonged nor dilated behind procoxae.

Scutellum large, subtriangular to more or less trapezoidal. Prepectus distinctly separated only on mesosternum, which is normally punctate, in the middle canaliculate. Mesepisterna and mesepimera subtriangular, punctate, mesepisterna reaching the very corner of the mesocoxal cavities. Elytra abbreviate, each elytron obliquely truncate at the apex, in lateral portions strongly transversely convex, so that the lateral margins are not visible from above. Outer posterior angles of elytra broadly rounded, sutural ones obtuse. Surface of elytra closely and coarsely punctate and pubescent.

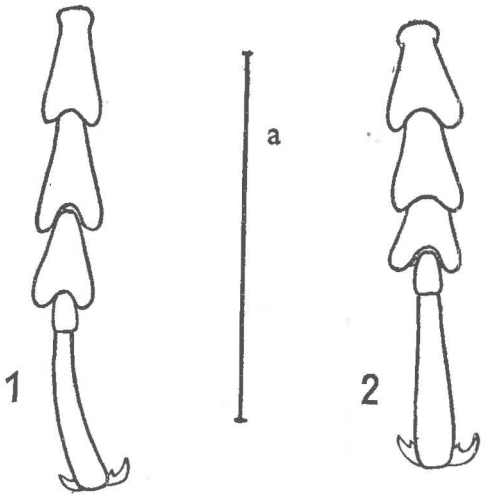
Metasternum without axillary spaces, punctate, with smooth median longitudinal stripe or furrow. Metacoxae twice as far apart as mesocoxae, posterior margin of metasternum between them with widely V-shaped excision. In males is metasternum more or less deeply impressed in the posterior half between metacoxae, sometimes with pair of oval roughly punctate and pubescent areas besides the smooth median strip.

The exposed tergites VI. and VII. distinctly closely punctate, well sclerotized, pubescent. Apical margin of the female pygidium bordered by nearly semicircular, especially in lateral portions distinctly raised edge. Tergite VIII. in ventroapical position fully exposed in males. Sternites punctate and pubescent, the first visible sternite without distinct axillary spaces. Sternite IV. in males of some species at the middle of its posterior margin with roughly tomentose semicircular area analogous to those of metasternum. Sternite V. in the middle shallowly impressed, hairs in the impression sometimes of different colour than the sorrounding ones.

Antennae 11-segmented with 3-segmented subcylindrical club, slender, especially segments III.—V. rather long. Legs rather slender, three basal segments of 5-segmented tarsi dilated, bilobed. Tarsal claws strongly dentate.

Phallobase between parameres cuneiform. Parameres heavily sclerotized. Aedeagus asymmetrical as in all Cateretinae. Ovipositor long, slender, with very short but distinct styli.

By their general appearance and size of body species of *Brachyleptus* resemble especially those of the essentially sympatric genus *Anamartus* Jelínek. However, some characters like the dentate tarsal claws, distinct rudiments of the frontoclypeal sulcus, form of pronotum and the cuneiform phallobase in males suggest rather close relationships between *Brachyleptus* Motsch. and *Brachypterus* Kugel. This relationship is further suggested by parallel development of the puncturation of front, which is rugose, more or less confluent in almost all species of *Brachyleptus* as well as in most species of *Brachypterus* with rounded posterior angles of pronotum. In the males of some *Brachypterus* discovered recently Spornraft (in litt.) metasternal structures apparently analogous to the tomentose areas in males of Brachyleptus.




Figs. 1–2: Posterior tarsus of *Brachyleptus tomentiventris* Reitt. (1) and *B. quadratus* (Sturm), (2). Scale a = 0,7 mm.

Species of the genus *Brachyleptus* may be divided into three distinct groups. Two principal evolutionary lineages within the genus are characterized by different form of posterior tarsi (Fig. 1–2), basic form of parameres and somewhat different development of the ventral tomentose areas in males. Probable old origin of this basic division is suggested by the fact, that the primitive forms of the both indicated lineages still lack the tomentose ventral areas in males. The first lineage is represented by *B. tomentiventris* species-group. It is characterized by slender posterior tarsi and exceedingly short and broad parameres. Ventral tomentose areas in males – if present – occur always on the fourth sternite, sometimes also on metasternum. To this group belong *B. argenteolus* Reitt., *B. notavitentris* Reitt., *B. algiricus* Grouv., *B. tomentiventris* Reitt. and *B. aurosus* Reitt.

The second lineage is characterized by comparatively wider basal segments of posterior tarsi (Fig. 2). It contains two species groups: (i) *B. bicoloratus* species-group (incl. *B. bicoloratus* Reitt. and *B. discolor* Reitt.) with long, narrow, less sclerotized parameres and without ventral tomentose areas in males (both probably plesiomorphic characters), and (ii) *B. quadratus* species-group (incl. *B. quadratus* (Sturm) and *B. papaveris* Grouv.) with comparatively wider, heavily sclerotized parameres more or less emarginate on their inner sides and with ventral tomentose areas in males developed only on metasternum.

Geographic distribution: Most species of the genus occur in eastern Mediterranean and Middle Asia. Two species occur in North Africa and one expanded in the stepic zone of southeastern Europe. Present center of distribution is in the Middle East.

Characteristic feature of the genus *Brachyleptus* Motsch. is existence of the pairs of closely related, more or less allopatric species, illustrating process of speciation within the genus. In some cases the allopatric taxa are so similar that their specific status may seem doubtfull (especially *B. notativentris* Reitt. and *B. algiricus* Grouv., but also *B. discolor* Reitt. and *bicoloratus* Reitt.). However, with respect to many gaps in our present knowledge of actual distribution and bionomy of these forms it seems me to be premature and/or arbitrary to change their present taxonomic status.

Species of *Brachyleptus* are attached to the host plants of the family Papaveraceae. Adult beetles occur frequently in flowers of poppies (Papaver spp.) as mentioned by Grouvelle (1912) and verified by my own observations. Larves of *B. algiricus* Grouv. have been found by Peyerimhoff (1921) boring in ovaries of Papaveraceae Roemeria hybrida D. C. and Papaver hybridus L. in Algeria.

Identity of the type species: *Brachyleptus* has been described by Motschulsky (1845) as a monotypic genus containing single species *B. canescens* Motschulsky, 1845, from Caucasus. As already stated by Reitter (1919), the original description does not contain but the common generic characters. True identity of this species cannot be established by revision of type-material, since according to Kelejnikova (1975, in litt.) the type of *B. canescens* Motsch. in the Zoological Museum of the Moscow State University has been completely destroyed. Nevertheless, *B. canescens* Motsch. has been interpreted in the sense corresponding with that of *B. quadratus* (Sturm) by Reitter (1896) and considered as a junior synonym of the latter species by Ganglbauer (1899) and Reitter (1919). This opinion – most probably correct one – is accepted also in this paper.

## Key to identification of species of the genus *Brachyleptus*

1 (10) Posterior tarsi slender, second segment nearly 1.7 times longer than wide. (Fig. 1).

2 (3) Puncturation of front simple, not rugose, particular punctures distinctly separated, spaces between them smooth and shining. Black with close whitish pubescence. Male without ventral tomentose areas. Length 3.9–4.1 mm. Middle Asia, Afghanistan. *B. argenteolus* Reitt.

3 (2) Front coarsely rugosely punctate, dull.

4 (7) Anterior angles of pronotum distinct, obtuse. Elytra between punctures smoot and shining. Male: sternite VI. with tomentose area, metasternum without similar structures. Smaller species (3.0–3.5 mm), black, antennae and legs pitchy black, pubescence long, whitish.

5 (6) Pronotum widest at its anterior third, less transverse, about 1.23 times wider than long. Parameres somewhat shorter, apex of aedeagus comparatively narrow, in lateral view less distorted (Figs. 18–20). Length 3.5 mm. South Turkey. *B. notativentris* Reitt.

6 (5) Extremely similar to the precending species. Pronotum widest at its midlength, more transverse ,about 1.3 times wider than long. Parameres somewhat longer, apex of aedeagus comparatively wider, regularly rounded, in lateral view more strongly distorted (Figs. 21–23). Length 3.1–3.2 mm. North Africa. *B. algiricus* Grouv.

7 (4) Anterior angles of pronotum rounded. Male: metasternum and sternite IV. with tomentose areas. Larger species (3.5–5.0 mm).

8 (9) Larger species (3.7–5.0 mm), mostly black, antennae and legs pitchy black, pubescence whitish grey. Entire mesepisterna irregularly punctate, between punctures almost smooth. Male: apex of aedeagus in dorsal view strongly curved to right, broadly rounded with more or less angulate left margin (Fig. 25). Greece, Turkey, Middle East, Middle Asia, Afghanistan. *B. tomentiventris* Reitt.

9 (8) Smaller species (3.5–3.8 mm). Black, elytra sometimes brown, legs and antennae yellowish to pitchy brown, pubescence golgen. Posterior portion of metepisterna usually impunctate, distinctly reticulate. Male: parameres little pigmented, yellowish brown. Apex of aedeagus narrow with less curved left margin (Fig. 28). Turkey, Izrael, Iran. *B. aurosus* Reitt.

10 (1) Posterior tarsi wider, second segment less than 1.5 times longer than wide.

11 (12) Surface of elytra between punctures completely closely isodiametrically reticulate, dull. Sides of pronotum distinctly angulate. Black, elytra sometimes brownish, pubescence grey, thin, rather inconspicuous. Male: metasternum with pair of tomentose areas. Parameres long, heavily sclerotized and pigmented, black, on the inner side arcuately emarginate (Fig. 11). Length 4.2—4.5 mm. North Africa. *B. papaveris* Grouv.

12 (11) Surface of elytra between punctures with more or less distinct traces of reticulation, but never completely densely reticulate.

13 (14) Larger species (4.0—5.2 mm). Black, rarely with brown elytra, legs and antennae pitchy brown to black. Pubescence thin, grey, not much conspicuous. Male: metasternum with paired tomentose spots. Parameres heavily sclerotized, black, with emarginate inner sides, considerably shorter than those of B. papaveris (Fig. 14). Southeast Europe, Turkey, Middle East, Caucasus. *B. quadratus* (Sturm)

14 (13) Smaller species (3.2—4.6 mm), black, elytra, legs and antennae yellowish to pitchy brown. Pubescence more or less golden, rather conspicuous. Male: ventral surface without tomentose areas. Parameres narrow, long, weakly pigmented.

15 (16) Pronotum strongly narrowed posteriorly, somewhat hearth-shaped, 1.25—1.33 times wider than the head with eyes. Punctures of elytra very coarse, larger than the eye-facets. Smooth flat median longitudinal stripe on metasternum nearly as wide as II. antennal segment. Length 3.4—4.6 mm. Turkey, Izrael, Caucasus. *B. discolor* Reitt.

16 (15) Sides of pronotum more regularly arcuate, pronotum rather transversely oval, 1.16—1.26 times wider than the head with eyes. Punctures of elytra finer, equal in size to the eye-facets. Metasternum with narrow median longitudinal furrow, which is hardly as wide as antennal flagellum. Length 3.2—4.0 mm. Middle Asia, Afghanistan. *B. bicoloratus* Reitt.

Note: The hitherto available keys (Reitter, 1896, 1919) are based — apart from the secondary sexual characters of males — chiefly on colour of legs, antennae and elytra. The colour characters could not be fully omitted also in the above key, but they are subject of considerable variation. I have seen specimens of e. g. *B. aurosus* Reitt. with quite dark, pitchy blackish brown elytra and legs and similar variation may be observed also in the other species, especially in *B. bicoloratus* Reitt. On the contrary, specimens with distinctly paler, brown elytra may be observed also in otherwise black species like *B. quadratus* (Sturm) or *B. tomentiventris* Reitt. The most constant is colour of antennae, at least so that in species with pale antennae (according to Reiter, 1919) antennal flagellum is usually if not red, then at least distinctly lighter than the black basal segment.

## **Brachyleptus discolor** Reitter, 1896

*Brachyleptus discolor* Reitter, 1896, Ent. Nachr. 22:295.
Types in MNM Budapest.

Head coarsely rugosely punctate. Pronotum widest in the anterior third, transverse, 1.20—1.29 times as wide as long and 1.25—1.33 times wider than the head with eyes, strongly narrowed posteriorly. Anterior angles roundly obtuse, visible simultaneously from above, posterior ones broadly fluently rounded, indistinct. Sides arcuate, not sinuate, more strongly curved anteriorly than posteriorly. Punctures of pronotum nearly equal in size to eye-facets, coarse and close, separated mostly by less than one diameter. Spaces between them reticulate, in the anterior half of the disc more or less rugose. Scutellum large, broadly rounded at the apex.

Punctures of elytra very large, around scutellum somewhat larger than the eye-facets, separated by 0.5—1 diameter, becoming slightly finer and sparser posteriorly (at the apex separated mostly by one diameter). Spaces between them rather shining with very obsolete traces of reticulation. Punctures of exposed tergites by half finer than those of elytra, separated by 1—2 diameters, spaces between them obsoletely reticulate. Metasternum in three posterior fourths with flat impunctate median longitudinal stripe, which is usually rather wide, nearly as wide as the second antennal segment. Punctures of metasternum very coarse, mostly separated by one diameter in the middle, becoming finer laterally. Spaces between them rather shining.

Black, elytra, legs and antennae — except the black segment I. — yellowish brown. Elytra infuscate at the base, along suture and at the apical margin, also antennal club sometimes infuscate. Intermediate and posterior legs often darker than the anterior ones, even chestnut brown. Pubescence recumbent, close, long, yellowish.

Parameres narrower than in other species of the genus except *B. bicoloratus* Reitt. Apex of aedeagus in lateral view straight, abruptly curved ventrad, in dorsal view more or less distinctly truncate (Figs. 3—5).

Length 3.4—4.6 mm, width 1.6—2.1 mm.

*B. discolor* Reitt. differs from similar species *B. bicoloratus* Reitt. and *B. aurosus Reitt.* by the shape and comparative width of pronotum, from the former one also by coarser puncturation of elytra and wider, not furrowed median longitudinal stripe on metasternum. From *B. aurosus* Reitt. it differs further by completely punctate mesepisterna and in the male sex by absence of tomentose areas on the ventral surface as well as by quite different genitalia.

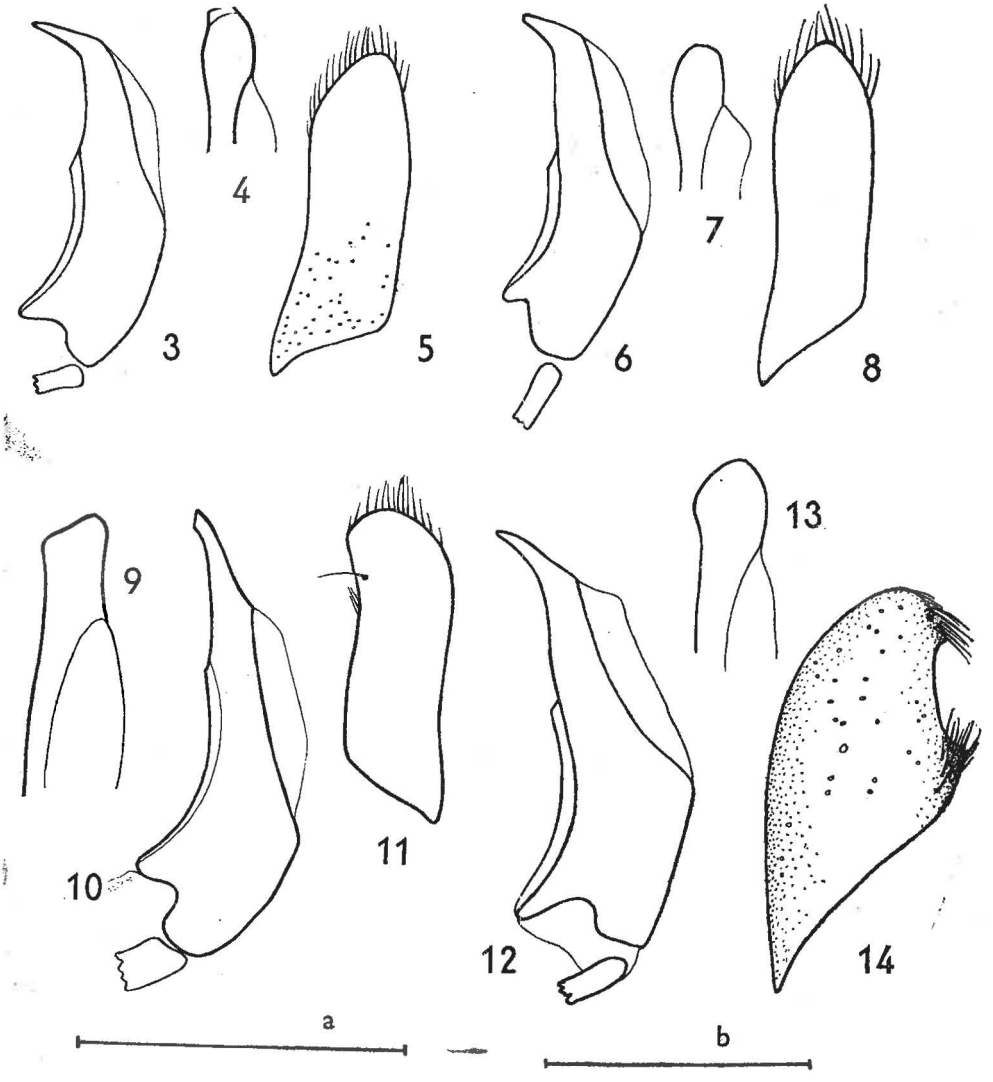
Material examined: Turkey: Gölbaşi, 17. V. 1969, Wewalka leg., 1 ♂, 3 ♀♀ (CW, NMP) — Adana, Reitter, 2 ♂♂ (MFM), 2 ♂♂ (NMP) — Akbes,1 ♂,1 ♀ (NMP), dtto, 1 ♀ (DEI) — Silifke, V. 1976, Wittmer leg., 1 ♀, (MHNG) — Osmaniye Pass-Gaziantep, 15. V. 1969, Wittmer leg., 1 ♀ (NMB) — Gaziantep-Maraş, 16. V. 1969, Wittmer leg., 1 ♂, 3 ♀♀ (NMB) — Kilik, Taurus, Namrun, 8. VI. 1968, Wewalka leg., 1 ♂ (CW) — „Taurus" 1 ♀ (NMP) — „Turquie sud-est", V. 1967, Wittmer leg., 1 ♀ (MHNG) — „Asia Minor", 1 ♀ (NMP) — „Arménie, Césarée" (Kayseri?), 1 ♂, 1 ♀ (MFM); Cyprus: Karavas, IV. 1969, Pfeffer leg., 1 ♂, 1 ♀, dtto, V. 1973, 1 ♂, 2 ♀♀ (CP, NMP). Cyprus, 1 ♂ (NMP); Libanon; Jounich, Liban, 2 ♂♂ (MHNP); Izrael: Tabgha-Tiberias, 13. IV. 1914, Schmitz leg., 1 ♂, 1 ♀ (NMP) — Jerusalem 1 ♀ (DEI), dtto, 26. IV. 1933, Koch leg., 1 spec. (MSNM) — Kiryath Anavim, 25. IV. 1933, Koch leg., 1 spec. (MSNM) — Haifa, Mt. Karmel, 14. and 19. III. 1933, Schatzmayr leg., 2 spec. (MSNM) — „Kaifa" (sic!, Haifa?), 1 ♂ (NMP), dtto, 1 ♂, 1 ♀ (ZIN), dtto, 2 ♂♂ (DEI); USSR: Georgian SSR: Tbilisi („Tiflis"), 4. V. 1880, coll. S. Sievers, 1 ♂ (ZIN) — Armenian SSR, valley of Araxes („Araxestal"), 1 ♂, 1 ♀ (NMP) — „Caucasus", 1 ♂ (ZIN), dtto, Veselý leg., 1 ♂ (NMP).

## **Brachyleptus bicoloratus** Reitter, 1896

*Brachyleptus bicoloratus* Reitter, 1896, Ent. Nachr. 22:295.
Types in MNM Budapest.

Head coarsely rugosely punctate, anterior margin of clypeus with narrow smooth border. Pronotum moderately transverse, nearly oval, widest in the anterior half, sides rather regularly arcuate, not angulate. Anterior angles roundly obtuse, not visible simultaneously from above because of strongly transversely vaulted anterior portion of pronotum. Posterior angles indistinct, broadly rounded. Pronotum 1.18—1.26 times wider than long, only slightly, 1.16—1.26

times wider than the head with eyes. Punctures of pronotum in the anterior half close but distinctly separated by less than one diameter, not rugose, becoming gradually sparser laterally, sparser and larger posteriorly, at the base and sides of pronotum separated by nearly one diameter. Spaces between them rather shining with obsolete traces of reticulation especially distinct at the anterior margin. Scutellum large with broadly rounded apex.




Figs. 3–14: Paramera, lateral view of aedeagus and dorsal view of the apex of aedeagus in *Brachyleptus discolor* Reitt. (3–5), *B. bicoloratus* Reitt. (6–8), *B. papaveris* Grouv. (9–11) and *B. quadratus* (Sturm) (12–14). Scale a = 0.7 mm (Figs. 3–4, 6–7, 9–13), scale b = 0.3 mm (Figs. 5, 8 and 14).

Punctures of elytra resembling those on the disc of pronotum, in the anterior half separated by less than one diameter and becoming sparser posteriorly. Spaces between them with rather obsolete traces of reticulation. Punctures of exposed tergites considerably finer than those of elytra, separated by 1—2 diameters, spaces between them obsoletely reticulate. Punctures of the ventral surface equal in size to those of pronotum. Mesepisterna in a broad zone along their inner margins impunctate, obsoletely reticulate, mesepimera sparsely punctate. Metasternum with shallow median longitudinal furrow, which is mostly hardly as wide as antennal flagellum. Punctures along it feebly granular, close, separated by less than one diameter, becoming gradually larger posteriorly and sparser laterally. Spaces between them in the middle with traces of reticulation, in lateral portions smooth, rather shining.

Black, elytra usually chestnut brown, infuscate at the base. Legs and antennae except the black basal segment usually yellowish brown, antennal club sometimes infuscate. Pubescence close, recumbent, greyish yellow.

Male genitalia very similar to those of *B. discolor* Reitt., but apex of aedeagus in lateral view distinctly shorter and stronger that in the latter species, in dorsal view rounded (Figs. 6—8).

Length 3.2—4.0 mm, width 1.4—1.8 mm.

Material examined: Afghanistan: Kushk, Aris leg., 1 ♂ (NMP) — Bala Murghab, 3.—15. IV. 1964, Jakeš leg., 1 ♂, 1 ♀ (NMP); USSR: „Turkestan", 3 ♂♂, 1 ♀ (NMP), 1 ♂, 1 ♀ (DEI) — Turkmen SSR, Bairam Ali, 1 ♂ (MFM) — Uzbek SSR, env. of Samarkand, Barshtshevsky leg., 1 ♂ (ZIN) — Tadzhik SSR, Zeravshan, 1 ♂ (NMP) — Fakhrobod, 9. VI. 1966, Jelínek leg., 40 spec. (NMP), dtto, 20. V. 1974, Pfeffer leg., 1 ♂, 1 ♀ (CP) — Kirghiz SSR: Tian Shan Mts., Musart, Hauser leg., 1 ♂, 1 ♀ (MFM), dtto, 1 ♂ (NMP) — Tian Shan Mts. Naryn-Kol, 1 ♂ (MFM) — Kazakh SSR, Zailiiski Alatau Mts., Issyk, 1756 m, 29. V. 1974, Pfeffer leg., 1 ♀ (CP).

## **Brachyleptus quadratus** (Sturm, 1844)

*Brachypterus quadratus* Sturm, 1844, Deutschl. Fauna Ins. 15:19.
*Brachyleptus canescens* Motschulsky, 1845, Bull. Moscou 18:54.
Type in ZMB, Berlin.

Head closely rugosely punctate. Pronotum transverse, 1.25—1.34 times wider than long, widest at the anterior third and there 1.22—1.39 times wider than the head with eyes. Puncturation of pronotum rugose, punctures nearly equal in size to eye-facts, spaces between them extremely narrow, dull. Anterior angles roundly obtuse, hardly visible simultaneously from above, sides abruptly curved at the anterior third of pronotum, almost angulate, converging rather strongly both anteriorly and posteriorly. Posterior portion of sides almost straight, posterior angles broadly rounded, indistinct. Scutellum large, subtrapezoidal.

Punctures of elytra slightly larger than those of pronotum, separated by less than one diameter, spaces between them with feeble traces of reticulation, slightly shining. Prosternum and especially hypomera rather sparsely punctate. Mesepisterna and mesepimera regularly punctate. Metasternum with feebly canaliculate median longitudinal stripe which is nearly as wide as antennal flagellum. Punctures of metasternum separated by at least one diameter. Spaces between them smooth, shining, along the metasternopleural suture with traces of reticulation. Metasternum of male deeply impressed in the posterior half

between metacoxae, with two longitudinally oval reddish brown tomentose areas besides the median stripe. Punctures of sternites somewhat finer than those of metasternum, separated mostly by one diameter. Spaces between them rather shining. Sternites in both sexes without tomentose areas.

Black, sometimes legs – especially anterior and intermediate tibiae – pitchy brown or elytra more or less brownish. Pubescence thin, recumbent, grey, less conspicuous than in most other species.

Parameres rather short, heavily sclerotized, black, their inner margin rather deeply arcuately emarginate. Apex of aedeagus in dorsal view almost straight, feebly dilated and broadly rounded, in lateral view almost straight (Figs. 12–14).

Length 4.0–5.2 mm, width 1.8–2.5 mm.

Material examined: Czechoslovakia: Štúrovo, V. 1951, Strejček leg., 1 ♀, dtto, VI. 1957, 1 ♂, dtto, 29. V. 1959, 1 ♂, dtto, V. 1957, Gottwald leg., 1 ♀ (NMP); Hungary: without further data, 1 ♂ (DEI), 2 ♂♂ (NMP), 1 ♀ (ZMB) – Budapest, Kuthy leg., 2 ♂♂ (ZMB), dtto, Diener leg., 2 ♀♀ (DEI) – Péczel, 3 ♀♀ (DEI) – Szeged, Stiller leg., 1 ♂, 1 ♀ (DEI); Romania: without further data, 1 ♀ (DEI) – Dobrudja, 1 ♂ (DEI) – Dobrudja, Tekir Ghiol, VI. 1932, Worel leg., 1 ♂ (NMP) – N. Bogsán, Merkl leg., 1 ♂ (ZMB); Yugoslavia: Serbia, 1 ♂ (DEI) – Bačka, Torža, 1 ♂, 1 ♀ (NMP) – Dalmatia, Hopffgarten leg., 1 ♀ (ZMB) – Macedonia, Langasá-Göl, Schatzmayr leg., 1 ♀ (NMP) – Skoplje, V. 1937, Meyer leg., 9 ♂♂, 5 ♀♀ (NMP), dtto („Üsküb"), IV. 1917, Schulze leg., 1 ♀ (ZMB) – Štip, V. 1937, Mayer leg., 1 ♀ (NMP); Bulgaria: Provedla, 25. V. 1909, Rambousek leg., 1 ♂, 1 ♀ (NMP); Greece: Kephallenia, 2 ♂♂, 1 ♀ (NMP) – Kephallenia, Charakti, 1908, Hilf leg., 1 ♂ (NMP) – 30 km E. Agrinion, 4. V. 1971, Wewalka leg., 1 ♂ (CW) – Alexandrupolis, coll. Bartoň, 2. V. 1937, 3 ♂♂ (NMP); Turkey: without further data, 3 ♂♂, 1 ♀ (DEI) – Edirne („Adrianopel"), V. 1894, Flach leg., 1 ♂, 1 ♀ (NMP), dtto, 1 ♂ (MNM), dtto, Wewalka leg., 18. V. 1968, 2 ♂♂, 1 ♀ (CW), dtto, 28. V. 1969, Wittmer leg., 1 ♂ (NMB) – Istanbul, Kraatz leg., 1 ♂ (DEI), dtto, 18. V. 1968, Wawelka leg., 1 ♂ (CW) – Instanbul-Kadiköy, 1 ♀ (NMP) – S. Stefano pr. Istanbul („Constantinopel"), 27. IV. 1902, Gottwald, leg., 1 ♂ (ZMB) – Erdek, 20. V. 1973, Lodos leg., 1 ♂ (CL) – Pazaryeri, 25. V. 1971, Lodos leg., 1 ♂, 1 ♀ (CL) – Demirci, 8. VI. 1973, Lodos leg., 1 ♂ (CL) – Izmir, 22. IV. 1969, Wewalka leg., 1 ♂, 1 ♀ (CW) – Izmir-Bornova, 20. IV. 1962, Lodos leg., 1 ♂, 1 ♀ (CL) – Bayindir, 24. IV. 1973, 1 ♂, 1 ♀, Lodos leg. (CL) – Ödemis, 24.–25. IV. 1973, Lodos leg., 4 ♂♂, 8 ♀♀ (CL, NMP) – Pirinci-Ödemis, 13. V. 1969, Lodos leg., 1 ♂ (CL) – Uşak, 29.–30. IV. 1973, Lodos leg., 1 ♂, 4 ♀♀ (CL, NMP) – Gümüldür, 9. IV. 1973, Lodos leg., 1 ♂ (CL) – Honazdağı pr. Denizli, 450––1200 m, 29. IV. 1969, Wittmer leg., 1 ♀ (NMB) – Konya, 1 ♂ (MFM) – Silifke, 10. V. 1969, Wittmer leg., 1 ♂ (NMB) – Tarsus, coll. Kraatz, 1 ♂ (DEI), dtto, V. 1967, Wittmer leg., 1 ♀ (MHNG) – Adana, 1906, 1 ♂ (NMP), dtto, 2. V. 1967, Wittmer leg., 1 ♀ (MHNG) – Kale (vil. Gümüshane), 18. VI. 1968, Brignoli leg., 1 ♂ (Zool. Inst. Univ. Roma); Cyprus: Larnaka, Grastner leg., 1 ♀ (MNM); Syria: Halab („Aleppo"), 2 ♂♂ (MFM); Libanon: Beirut, 1 ♂ (NMP), dtto, 2 ♂♂, 1 ♀ (MHNP); Izrael: „Judea", U. Sahlberg leg., 1 ♂ (MZUH) – Jerusalem, 26. IV. 1933, Koch leg., 1 spec. (MSNM); USSR: env. Saratov (Sarepta), 1 ♂ (DEI) – N. Caucasus, Nogai-Steppe, Koenig leg., 1 ♂ (NMP) – Caucasus, 4 ♂♂, 5 ♀♀ (ZIN), dtto, Leder leg., 2 ♂♂, 2 ♀♀ (NMP) – Georgian SSR, Tbilisi, V. 1966, Pfeffer leg., 1 ♂ (CP).

## **Brachyleptus papaveris** Grouvelle, 1912

*Brachyleptus papaveris* Grouvelle, 1912, Bull. Soc. ent. Fr. 1912:96.
Types in MHNP, Paris.

Pronotum strongly transverse, 1.25–1.34 times wider than long, widest at the two anterior fifths and there 1.28–1.33 times wider than the head with eyes. Anterior angles roundly obtuse, visible simultaneously from above. Sides rather strongly curved, more or less angulate at the two fifths of the pronotal length, almost in straight line and rather strongly converging both anteriorly and poste-

riorly. Puncturation coarse and somewhat rugose, at sides sparser. Punctures larger than eye-facets, separated by less than one diameter, spaces between them with traces of reticulation, dull. Scutellum large with rounded apex.

Disc of elytra almost flat. Punctures of elytra nearly equal in size to those of pronotum, separated by one diameter, becoming somewhat smaller and sparser posteriorly. Spaces between them completely very closely regularly reticulate, dull. Punctures of the exposed tergites at least by half finer than those of elytra, separated by 2—3 diameters. Spaces between them obsoletely reticulate, feebly shining. Hypomera not as closely punctate as in other species, punctures separated by nearly one diameter. Spaces between them moderately reticulate. Mesepisterna and mesepimera irregularly punctate. Metasternum rather finely punctate, punctures separated by one to almost two diameters. Spaces between them hardly reticulate, moderately shining. Median longitudinal, shallowly canaliculate stripe in the three posterior fourths of metasternum nearly as wide at the second antennal segment. Metasternum in male with two oval, reddish brown coarsely tomentose areas besides that stripe. Sternites with punctures finer that those of metasternum and separated by more than one diameter, between them obsoletely reticulate, moderately shining, without tomentose areas in both sexes.

Black, elytra slightly brownish, anterior legs pitchy blackish brown, remaining legs and antennae pitchy black. Pubescence long, fine, recumbent, grey.

Parameres long, heavily sclerotized, black, moderately curved inwards, their inner margins shallowly arcuately emarginate. Apex of aedeagus in lateral view straight, in the dorsal view straight, narrow, subtruncate (Figs. 9—11).

Length 4.2—4.5 mm, width 2.2—2.3 mm.

Material examined: Algeria: Teniet el Haad, Bedel leg., 3 ♂♂, 2 ♀♀ (Syntypes, one male designated as Lectotype — MHNP). — Laverdure 14. V. 1927, Mařan leg., 1 ♀ (NMP).

## **Brachyleptus argenteolus** Reitter, 1896

*Brachyleptus argenteolus* Reitter, 1896, Ent. Nachr. 22:295.
Types in MNM, Budapest.

Punctures of the head very close, but not rugose, separated by much less than one diameter, spaces between them smooth and shining. Pronotum almost regularly transversely oval, widest at its anterior third and there 1.25—1.30 times wider than long and 1.34—1.40 times wider than the head with eyes. Punctures nearly equal in size to eye facets, becoming somewhat finer and feebly granular laterally, separated by 0.5—1 diameter. Spaces between them not at all rugose, smooth and shining. Scutellum flatly rounded at the apex.

Punctures of elytra nearly equal in size to eye facets, separated by 1—1.5 diameter, spaces between them smooth and shining. Punctures of the exposed tergites nearly by half smaller than those of elytra, separated by about 1.5 diameter, spaces between them obsoletely reticulate. Metasternum in both sexes only shallowly impressed in the posterior half between metacoxae. Smooth median longitudinal stripe on metasternum in its anterior half as wide as the second antennal segment, but considerably narrowed posteriorly, not canaliculate. Punctures of metasternum separated by 0.5—1 diameter besides the median stripe and between metacoxae, becoming much sparser laterally. Spaces

between them smooth and shining. Punctures of abdominal sternites somewhat finer than those of metasternum. Metasternum and sternites in both sexes without distinct tomentose areas.

Black, pubescence recumbent, rather close, whitish, sometimes with slight golden reflection.

Parameres short and broad, broadly rounded. Aedeagus in lateral view strongly curved with very short and blunt apex. That in dorsal view very narrow, subtruncate (Figs. 15–17).

Length 3.9–4.1 mm, width 1.8–1.9 mm.

Material examined: Afghanistan: Bala Murghab, 470 m, 20. III.–1. IV. 1964, Jakeš leg., 1 ♂, 2 ♀♀, dtto, 550 m, 3. IV.–15. IV. 1964, 1 ♂ (NMP); USSR: Kyzyl-kum, 1. IV. 1871, 1 ♂, 1 ♀ (ZIN) – Tadzhik SSR, Hissar Mts., Takob, 2200–2400 m, 21.–22. V. 1974, Pfeffer leg., 2 ♂♂, 1 ♀ (CP, NMP).

## **Brachyleptus tomentiventris** Reitter, 1896

*Brachyleptus tomentiventris* Reitter, 1896, Ent. Nachr. 22:294.
*Brachyleptus quadratus*; Reitter, 1896, Ent. Nachr. 22:294 (nec Sturm, 1844)
*Brachyleptus reitteri* Ganglbauer, 1899, Käfer Mitteleur. 3:457 syn. n.
Types in MNM, Budapest (Lectotypus designated).

Externally very similar to *B. quadratus* (Sturm) apart from different form of posterior tarsi and different secondary sexual characters in males. Pronotum comparatively narrower than in *B. quadratus* (Sturm), 1.16–1.26 times wider than long, with sides almost regularly arcuate and equally converging both anteriorly and posteriorly. Metasternum in males is widely depressed in its posterior half between metacoxae, with pair of oval tomentose areas. Analogous semicircular tomentose spot is situated at the posterior margin of the fourth abdominal sternite.

Black, elytra rarely somewhat brownish, pubescence grey, recumbent, not much conspicuous.

Parameres very short and broad, broadly rounded at the apex, heavily sclerotized and dark pigmented. Left margin of the apex of aedeagus in dorsal view S-shaped, apex in dorsal view dilated, oval, rounded, in lateral view arcuately curved ventrad. (Figs. 24–26).

Lenght 3.7–5.0 m, width 1.8–2.3 mm.

*Brachyleptus tomentiventris* Reitt. has been described by Reitter (1896) according to two males from Turcmenia, deposited in MNM. According to the original description it differs from *B. reitteri* Ganglb. (= *B. quadratus* sensu Reitter, 1896, nec Sturm, 1844) from Greece and Asia Minor by comparatively wider head. I have examined the type material together with another male from Afghanistan. Rate of the width of head to the width of pronotum ranges in these specimens from 1.23 to 1.28 whilst ranging from 1.30 to 1.37 in most specimens from Greece and Middle East (however, values as low as 1.21 and 1.28 have been found in the latter ones, too). All these values fall within the range of variability of *B. reitteri* Ganglb. ($\bar{x} \pm 3\,s = 1.33 \pm 0.12$). Also male genitalia are identical in all examined specimens. Therefore specimens from Mediterranea, Middle East and Middle Asia should be considered as conspecific and *B. reitteri* Ganglb. must consequently be regarded as junior synonym of *B. tomentiventris* Reitt.

Material examined: Greece: without further data, 1 ♂ (DEI) – Kephallenia, Moczarski leg., 3 ♂♂, 1 ♀ (MFM) – Kephallenia, Charakti, Hilf leg., 1 ♂ (DEI) – Kephallenia, Argostoli, 1908, Hilf leg., 1 ♂, 1 ♀ (DEI) – env. Athens, 1 ♂ (MFM) – Alexandrupolis, 2. V. 1937, coll. Bartoň, 3 ♂♂, 2 ♀♀ (NMP) – Pelopponesos, Kalavryta, Pfeffer leg., 1 ♂ (CP) – Naxos, 1 ♂ (MFM); Turkey: without further data, 1 ♂ (DEI) – Bayindir, 24. IV. 1973, Lodos leg., 2 ♂♂ (CL) – Usak, 29. IV. 1973, Lodos le., 1 ♂ (CL) – Konya, 1 ♂ (NMP) – Ankara („Angora"), 13. VI. 1925, Biró leg., 1 ♀ (MNM) – Akbes, 2 ♀♀ (NMP) – Maraş-Gölbaşi, 18. V. 1969, Wittmer leg., 1 ♀ (NMB); Syria: Halab („Aleppo"), 1 ♂, 1 ♀ (MFM); Izrael: Jerusalem, 26. IV. 1933, Koch leg., 1 spec. (MSNM); USSR: Caucasus, 9 ♂♂, 1 ♀ (ZIN) – Caucasus, Aresch, Shelkovnikov leg., 1 ♂ (DEI) – Azerbeijan SSR, Bezh Barma pr. Baku, 19. V. 1975, Olexa leg., 1 ♀ (NMP) – „Turcmenia", Reitter, Leder, 2 ♂♂ (Syntypes of *B. tomentiventrais* Reitt., one designated as Lectotype, MNM); Afghanistan: Bužba, 800 m, 6. V. 1964, Jakeš leg., 1 ♂ (NMP).

## **Brachyleptus aurosus** Reitter, 1885

*Brachyleptus aurosus* Reitter, 1885, D. Ent. Zeitschr. 24:377.
*Brachyleptus auripubens* Reitter, 1896, Ent. Nachr. 22:294 syn. n.
Types of both species in MNM, Budapest.

Head rugosely punctate. Pronotum widest at two anterior fifths and there 1.18–1.26 times wider than long and 1.25–1.31 times wider than the head with eyes, little more narrowed posteriorly than anteriorly. Anterior angles roundly obtuse, visible simultaneously from above, sides rounded to feebly angulate. Punctures of pronotum coarse, equal in size to eye facets, extremely dense, separated by much less than one diameter, surface rugose, dull. Scutellum more or less trapezoidal.

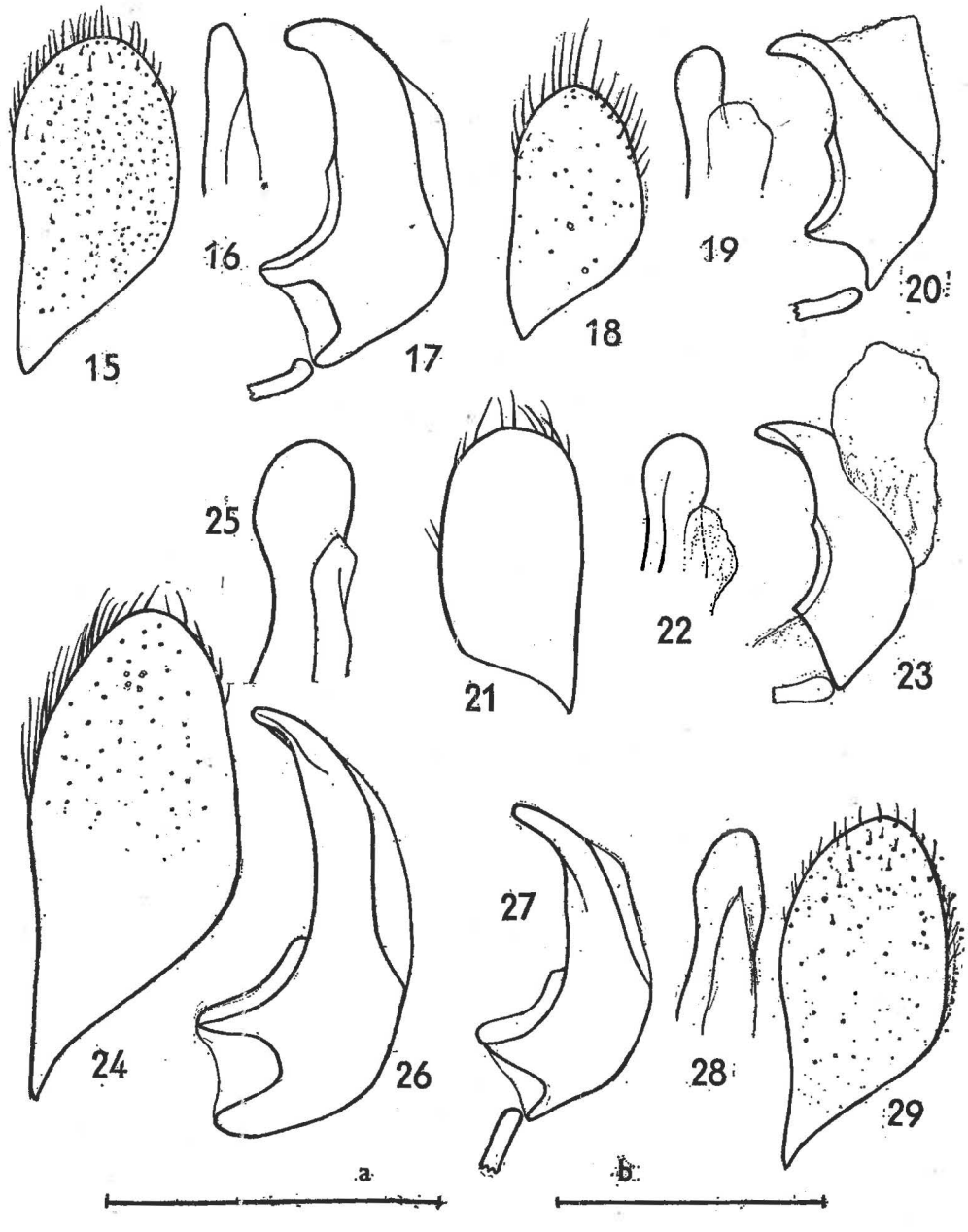
Elytra shallowly impressed besides scutellum, puncturation equal in size to that of pronotum, punctures separated by less than one diameter in the basal half, becoming sparser, separated by nearly one diameter posteriorly. Spaces between them more or less distinctly reticulate, general appearance of elytra dull. Punctures of tergites separated by one to two diameters, spaces between them obsoletely reticulate. Prosternum and hypomera closely punctate, rather dull. Mesepisterna in the examined specimens in their posterior half impunctate, finely reticulate. Metasternum with flat smooth median longitudinal stripe nearly as wide as the second antennal segment. Punctures of metasternum separated by more than one diameter, becoming distinctly closer laterally. Spaces between them smooth, rather shining, at sides duller with feeble traces of reticulation. Metasternum in males in posterior half between metacoxae deeply impressed, besides the median stripe, with two small, reddish black tomentose areas, analogous blackish semicircular area is situated at the posterior margin of the fourth sternite. Puncturation of sternites equal to that of tergites.

Black, elytra brown to pitchy blackish brown. Antennae – except black basal segment – and legs yellowish to pitchy brown. Pubescence long, recumbent, yellowish, rather conspicuous.

Male genitalia similar to those of the preceding species, but apex of aedaegus rather long, bluntly pointed with moderately S-shaped left margin, in lateral view gently curved ventrad. Parameres lighter pigmented, yellowish brown, very broad and short (Figs. 27–29).

Length 3.5–3.8 mm, width 1.8–1.9 mm.

*Brachyleptus auripubens* Reitt. has been described by Reiter (1896) according to three females from "Syria, Akbés" (now South Turkey), deposited in MNM,




Figs. 15—29: Paramera, lateral view of aedeagus and dorsal view of the apex of aedeagus in: *Brachyleptus argenteolus* Reitt. (15—17), *B. notativentris Reitt.* (18—20), *B. algiricus* Grouv. (21—23), *B. tomentiventris* Reitt. (24—26) and *B. aurosus* Reitt. (27—29). Scale a = 0.7 mm (aedeagi), scale b = 0.3 m (parameres)

Budapest. They are – as well as one similar female from Akbés, also labelled as Type of *B. auripubens* and deposited in coll. Grouvelle, MHNP – but dark specimens of *B. aurosus* Reitt. This conclusion could be confirmed by dissection of similar, darkly coloured males from Turkey. *B. auripubens* Reitt. must therefore be regarded as junior synonym of *Brachyleptus aurosus* Reitt. It seems, that darker specimens prevail in western part of range of this species.

Material examined: Turkey: Denizli, 30. IV. 1969, Wewalka leg., 1 ♂ (CW) – Eskisehir, 5. V. 1969, Holzshuh leg., 1 ♂ (CH) – Aksehir, 1900, Korb leg., 2 ♂♂ (DEI) – Isparta, 2. V. 1972, Lodos leg., 2 ♂♂, 2 ♀♀ (CL, NMP) – Konya, 1899, Korb, leg. 1 ♂, 1 ♀ (ZMB) – Ankara („Angora"), 13. VI. 1925, Biró lag., 2 ♂♂ (MNM) – Akbes, Reitter, 3 ♀♀ (Syntypes of *B. auripubens* Reitt., one designated as Lectotype, MNM), 1 ♀ (MHNP) – Gerede (prov. Bolu), 1360 m, 28. IV. 1975, Holzschuh and Ressl leg., 1 ♂ (CH); Izrael: Jerusalem, 26. IV. 1933, Koch leg., 1 spec. (MSNM); Iran: Sultanabad, Bodemeyer leg., 1 ♂ (ZMB) – Golhak pr. Tehran, 1400 m, III.–V. 1961, Klapperich leg., 1 ♂ (MNM) – 130 km W Bodjnurd, 26. IV. 1974, 1100 m, Holzschuh and Ressl leg., 1 ♀ (CH).

## **Brachyleptus algiricus** Grouvelle, 1912

*Brachyleptus algiricus* Grouvelle, 1912, Bull. Soc. ent. Fr. 1912:97.
Types in MHNP (Lectotypus designated).

Head rugosely punctate. Pronotum transversely oval, widest at its midlength and there 1.30–1.31 times wider than long and 1.35–1.42 times wider than the head with eyes. Anterior margin of pronotum straight, anterior angles distinct, obtuse, sides regularly arcuate. Punctures of pronotum deep, markedly larger than eye facets, separated by much less than one diameter, becoming slightly finer anteriorly and laterally. Spaces between them almost without traces of reticulation, shining. Scutellum broadly and flatly arcuate at the apex.

Elytra feebly transversely depressed at the obliquely truncate apex, 1.28 times wider than long. Punctures of elytra equal in size to those of the anterior portion of pronotum, separated by less that one diameter. Spaces between them smooth, shining. Punctures of the depressed apex of elytra distinctly finer, separated by 1–1.5 diameter, spaces between them closely and finely reticulate. Punctures of exposed tergites by half smaller than those on the disc of elytra, slightly oblong. Spaces between them with obsolete traces of reticulation. Apex of pygidium coarsely granular, dull.

Prosternum and hypomera closely deeply punctate. Punctures fairly equal in size to the eye facets, separated by less than one diameter. Spaces between them rather shining, with sparse traces of reticulation. Mesepisterna rather finely and sparsely punctate, closely reticulate. Punctures of metasternum between metacoxae large, equal in size to those of elytra, separated by one diameter or less, becoming somewhat finer laterally. Spaces between them smooth, strongly shining, at sides with feeble traces of reticulation. Metasternum lightly depressed in the posterior third between metacoxae in both sexes, with shining smooth median longitudinal stripe, which is nearly as wide as antennal flagellum. Anterior end of this stripe in male is slightly raised to small tubercle. Two small, raised tubercles are situated at the posterior margin of male metasternum, opposing trochanters of metacoxae.

Puncturation of the first sternite analogous to that of metasternum, but generally somewhat finer. Following sternites with fine punctures separated by

one diameter or less, between them with feeble traces of reticulation. In male there is large, semicircular reddish brown tomentose area at the posterior margin of the fourth sternite. Analogous tomentose area on the fifth sternite, described by Grouvelle (1912) has not been observed.

Black, tarsi pitchy blackish brown. Pubescence fine, long, recumbent, whitish grey.

Parameres broad, broadly rounded, dark pigmented. Aedeagus in lateral view short, regularly arcuate with strongly distorted apex. Apex of aedeagus in dorsal view moderately dilated, broadly regularly rounded (Figs. 21—23). Very closely related to the following species, may be only its geographic race.

Material examined: Algeria: Lalla-Maghnia, 1 ♂ designated here as Lectotype (MHNP) — Bou Kanefis, Vauloger leg., 1 ♀, Paratypes (MHNP) — Tebessa, J. Sahlberg leg., 1 ♂ (MZUH); Morocco: Muley Reshid, Melilla, Pardo Alcaide leg., 1 ♂ (NMP); Tunisia: Sousse, 1 ♂ (MNM).

## **Brachyleptus notativentris** Reitter, 1902

*Brachyleptus notativentris* Reitter, 1902, D. Ent. Zeitschr. 1901:188.
Types in MNM.

Generally extremely similar to *B. algiricus* Grouv., from which it differs by following characters: puncturation of the upper surface a little finer and apparently closer. Pronotum widest at nearly anterior third and there less transverse, 1.23 times wider than long and 1.42 times wider than the head with eyes. Sides of pronotum rather abruptly curved at anterior third. Elytra comparatively wider, 1.33 times wider than long. Parameres somewhat shorter and the tip of aedeagus narrower, in lateral view less distorted than in *B. algiricus* (Figs. 18—20).

Length 3.5 mm, width 1.8 mm.

Material examined: Turkey: Adana, 1 ♂ (NMP), dtto, 2. V. 1967, Wittmer leg., 1 ♂ (MHNG).

## Conclusions

In the present paper is given review and key to identification of hitherto known species of the genus *Brachyleptus* Motsch. Male genitalia of all species are figured for the first time. New synonymies are proposed: *Brachyleptus tomentiventris* Reitter, 1896 = *B. reitteri* Ganglbauer, 1899 (syn. n.) and *Brachyleptus aurosus* Reitter, 1885 = *B. auripubens* Reitter, 1896 (syn. n.).

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