

Neotrichoporoides nyemitawus (Rohwer) comb. n.

(Figs 95, 107, 548)

Tetrastichus nyemitawus Rohwer, 1921: 131-132. Holotype ♀, INDIA: Coimbatore, 8.viii.1916 (Ramakrishna Ayyar) (USNM) [examined].

♀. Antenna (Fig. 95) with scape 0.97 length of eye, reaching well above vertex; pedicellus plus flagellum 1.70-1.75 times breadth of mesoscutum; flagellum very slender, virtually filiform; F1 2.2-2.4 times length of pedicellus and 5.2-5.5 times as long as broad, as long as or slightly longer than the clava, F2 nearly 4 times as long as broad, F3 about 3 times; clava 4.0-4.7 times as long as broad; sensilla very numerous, in tip of hypopygium situated at 0.35-0.40 length of gaster.

Head and thorax mainly bright or blue-green; gaster bronze-green to green, with hind margin of tergites more or less broadly lilac to purplish. Legs yellowish, with mid coxae sometimes slightly darkened at base and about proximal half of hind coxa dark. Length 2.8-3.3 mm.

♂. Differs from that of *mediterraneus* in having malar space on average slightly longer, 0.60-0.65 length of eye; antenna (Fig. 107) with scape a little longer, about 1.2 times as long as eye; funicular segments more elongate, F1 slightly shorter than F2 but twice or more than twice length of pedicellus, 3-4 times as long as broad, following segments subequal in length, each 3.7-4.0 times as long as broad; clava 8.2-9.0 times as long as broad, about as long as, or slightly longer than, F3 plus F4, its segments separated by strong constrictions, subequal in length or decreasing very slightly, each about 3 times as long as broad; spine slender, 0.25-0.35 length of C3; whorled setae of funicular segments reaching somewhat beyond the tips of the segments that bear them, but not so far beyond as in *mediterraneus*. Gaster oblong, somewhat shorter than but nearly as broad as thorax, without ventral plica. Genitalia (Fig. 548) very elongate, about 7 times as long as broad; aedeagus acutely pointed, with a pair of minute, subcircular, transparent lobes at its tip; length of gaster 43, of genitalia 27.

Colour as in ♀. Length 2.1-2.5 mm.

MATERIAL EXAMINED

5 ♂, 9 ♀. Kenya: 1 ♀, Nairobi, from *Atherigona conigera* Emden on *Melinis minutiflora* (Gramineae), 15.x.1978; 1 ♀, from *A. soccata* Rondani on *Sorghum*, 5.ii.1979; 1 ♂, 1 ♀, from same host on *Sorghum bicolor*, 15.xii.1979; 1 ♀ from same host, 25.ii.1981 (A. Delobel); 1 ♂, Kibos, near Kisumu, 26.x.1979 (A. Delobel); 2 ♀, M'Bitia, from *A. soccata* on *Sorghum bicolor* (A. Delobel) (ICIPF). India: 3 ♂, 3 ♀, Tamil Nadu, Coimbatore, 7.vii.1916, 9.vii.1916, 8.viii.1916 (holotype) (Ramakrishna Ayyar) (USNM). Thailand: 1 ♂, 1 ♀, Suwan Farm, from *Atherigona soccata*, 19.vii.1977 (K. Yasumatsu) (BMNH).

Hosts. *Atherigona soccata* Rondani and *A. conigera* Emden.

Neotrichoporoides szelenyii (Erdős) comb. n.

(Fig. 96)

Geniocerus szelenyii Erdős, 1951: 230-232. Lectotype ♀, HUNGARY: Soltvadkert, 14.viii.1945 (J. Erdős) (TM), here designated [examined].

Aprostocetus szelenyii (Erdős) Graham, 1961a: 50.

Tetrastichus szelenyii (Erdős) Domenichini, 1966a: 141; 1966b: 50.

Geniocerus szelenyii is represented in the Erdős collection by 4 females. The single ♀ from Soltvadkert is designated as lectotype.

♀. Differs from that of *mediterraneus* in having antennal scape (Fig. 96) 0.90-0.97 length of eye, reaching slightly above vertex, F1 about twice as long as pedicellus and slightly shorter than clava, 4.0-4.5 times as long as broad, F2 2.8-3.3 times, F3 2.2-2.9 times as long as broad; clava about as long as F3 plus half of F2; forewing SM with 5-7 dorsal setae. Length 2.4-2.7 mm.

♂. Differs from that of *nyemitawus* in having antennal flagellum slightly shorter (pedicellus plus flagellum 1.55-1.65 breadth of mesoscutum) and rather less slender, funicular segments relatively shorter, F1 relatively shorter in proportion to the pedicellus.

MATERIAL EXAMINED

7 ♀. Crete: 1 ♀, Irákion, Festós (Messurás), 16.x.1972 (A. C. & W. N. Ellis) (ITZ). Hungary: 1 ♀ (lectotype), Soltvadkert, on edge of a saltmarsh, 14.viii.1945; 1 ♀, Tompa, in sandy field, 9.ix.1948, 1 ♀, 11.ix.1948, 1 ♀, 14.v.1949 (Erdős) (TM) (paralectotypes). Portugal: 1 ♀, Estremadura, Oeiras, 7.ix.1979 (A. van Harten) (ITZ). U.S.S.R.: 1 ♀, Azerbaijan, Baku, 2.vii.1967 (Bouček) (BMNH).

Host. Unknown, but probably some species of *Atherigona* associated with grasses. Erdős (1951: 232) stated that it appeared to be associated with *Andropogon* [= *Dichanthium*] *ischaemum* (Gramineae).

Neotrichoporoides intaminatus (Walker) comb. n.

Entedon intaminatus Walker, 1872: 127. Lectotype ♀, MADEIRA (Wollaston) (BMNH), designated by Graham (1979: 283) [examined].

Tetrastichus intaminatus (Walker) Graham, 1979: 283-284.

♀. Differs from ♀ of *szelenyii* in the characters given in the key to females (couplet 8). Antenna with scape equal in length to eye, reaching distinctly above vertex; pedicellus plus flagellum 1.8-1.9 times breadth of mesoscutum; pedicellus about half as long as F1; funicle very slender, very slightly stouter than pedicellus, its segments decreasing slightly in length, F1 4.0-4.3 times, F2 3.7-4.0 times, F3 3.0-3.5 times as long as broad; clava very slightly broader than F3, about 1.2 times length of F1, 4.0-4.5 times as long as broad. Gaster lanceolate-ovate, about twice as long as broad, acute but not acuminate (apical angle about 65°); last tergite a little broader than long; ovipositor sheaths not or hardly projecting beyond tip of last tergite.

Body bright blue-green (propodeum less bright greenish); head yellow, in lectotype with a blackish spot on each side of frons between median ocellus and toruli, also middle of frons infuscate; ocellar triangle and a broad band on occipital surface above foramen magnum black; in Canary Is ♀ with only face, genae, and inner and outer orbits yellow. Upper angle of mesopleuron yellow, in lectotype also edges of sides of pronotum, prosternum and prepectus. Antennal scape yellow with dorsal edge narrowly darkened; pedicellus fuscous, yellow beneath and at tip; flagellum brown. Legs yellow; mid coxae fuscous basally, hind coxae mainly black; pretarsus and fourth tarsomere of all legs brown. Tegulae yellow. Wings hyaline, venation yellow. Length 2.3-2.4 mm.

♂. Unknown.

MATERIAL EXAMINED

2 ♀. Madeira: 1 ♀ (lectotype), unlocalized (T. V. Wollaston). This specimen may be the only one actually taken, though proof is lacking. Canary Is: 1 ♀, Tenerife, Santa Ursula, 1.vii.1979 (M. Báez) (MJC).

Host. Unknown but probably some species of *Atherigona* on coarse grass.

COMMENTS. I did not find this species when collecting in Madeira. Possibly Wollaston's specimen may have been introduced with some cultivated grass. Many forms closely related to *intaminatus*, some of which are certainly valid species, occur in Africa and Asia; several of them parasitize species of *Atherigona* which are found on coarse grasses, especially genera of the tribe Andropogoneae which include *Saccharum* (sugar-cane), *Sorghum* and others. Several of these grasses have been introduced to Madeira during the last 500 years.

Neotrichoporoides mediterraneus Graham

(Figs 91, 97, 106, 549)

Tetrastichus sp. near *szelenyii* (Erdős); Graham, 1981: 18.

Neotrichoporoides mediterraneus Graham, 1986: 6. Holotype ♀, MADEIRA: São

21.v.1980 (Graham) (BMNH) [examined].

GRAHAM, M. W. R. (1987). A reclassification of the European *Tetrastichus* (Hymenoptera: Eulophidae) with a revision of *antaeus* genus. Bull. Br. Mus. (Nat. Hist.) Entomol., 55: 1-392.

Body black, with distinct metallic tints as in *pausiris*; at most upper angle of mesopleuron testaceous. Antennae with flagellum testaceous to fusco-testaceous; tip of pedicellus sometimes pale. Legs coloured much as in *pausiris*; tibiae testaceous or more or less infuscate medially. Tegulae testaceous, hind edge sometimes darkened. Length 1.2–1.6 mm.

♂. Antenna (Fig. 458) with scape 0.85 length of eye, at least slightly less than twice as long as broad, with ventral plaque about 0.7 length of scape and placed mainly in upper half; pedicellus plus flagellum 1.1 times breadth of mesoscutum; pedicellus about 1.5 times as long as broad, longer than F1; F1 hardly as stout as pedicellus, distinctly shorter than the following segments, slightly transverse; F2, F3 and F4 subequal in length, as stout as pedicellus, not or only slightly longer than broad; clava slightly broader than F4, 2.3–2.5 times as long as broad; flagellum normally without whorls of long dark setae but clothed with short, somewhat outstanding setae. I have examined one ♂, however, with abnormal antennae in which 2 or 3 of the setae on the dorsal surface of each funicular segment are much longer than usual, nearly as long as the whorled setae of ♂ *aristaeus* (Fig. 494). Genitalia (Fig. 605).

Antennal scape black or mainly so; pedicellus blackish proximally, antenna otherwise testaceous. Coloration otherwise much as in ♀.

MATERIAL EXAMINED

13 ♂, 12 ♀. Czechoslovakia, Great Britain, Hungary.

Host. Probably some species of Diptera: Cecidomyiidae on grass. I have examined specimens reared from inflorescences of foxtail grass (*Alopecurus pratensis*) though the host was not ascertained.

Aprostocetus (Aprostocetus) occidentalis sp. n.

(Figs 231, 495, 602)

♀. Antenna (Fig. 231) with F3 1.4–1.7 times as long as broad; clava with conspicuous spine which is fully half as long as C3, with apical seta about 0.33 length of spine; other features as in *pausiris*. Thorax 1.60–1.65 times as long as broad. Anterior setae of scutellum usually slightly shorter than posterior setae. Propodeal callus with 4–6 setae. Gaster 1.9–2.5 times as long as broad; longest seta of each cercus about 1.5 times length of next longest, slightly kinked. Other structural characters as in *pausiris*.

Body black with moderately strong green to blue-green metallic tints; mouth-edge usually narrowly testaceous. Antennal scape and pedicellus black, the tip of the latter often reddish; flagellum fuscous. Coxae, and femora mainly, black with metallic tints; trochanters partly to mainly fuscous; tips of femora, and tibiae wholly or mainly, testaceous, the hind tibiae often narrowly to broadly infuscate medially, mid tibiae sometimes with a narrow to broad brown or fuscous postmedian band; fore tarsi brown to fuscous, mid and hind tarsi testaceous with fourth tarsomere and pretarsus fuscous, third tarsomere sometimes brown. Tegulae black. Wings hyaline, venation testaceous to brownish. Length 1.8–2.4 mm.

♂. Antenna (Fig. 495) with scape about 3 times as long as broad, shorter than eye but reaching median ocellus, with ventral plaque about 0.33 length of scape; pedicellus plus flagellum about 1.85 times breadth of mesoscutum; pedicellus 2.2 times as long as broad, hardly shorter than F1; funicle filiform, slightly stouter than pedicellus; F1 shorter than following segments but nearly twice as long as broad, following segments subequal in length, each about 3 times as long as broad; clava not broader than funicle, about as long as F3 plus F4, about 5.5 times as long as broad, with C1 and C2 each about twice, C3 1.5 times, as long as broad. Genitalia (Fig. 602).

MATERIAL EXAMINED

1 ♂, 49 ♀. Holotype ♀, Spain: Granada, Nerja, 3.vii.1974 (*Bouček*) (BMNH).

Paratypes. Canary Islands: 7 ♀, La Gomera, Chejelipes and Lomo Frágoso, north-west of San Sebastián, 20.i.1981 (*A. C. & W. N. Ellis*); 1 ♀, Tenerife, San Marcos, 26.iii.–2.iv.1968 (*B. van Aartsen*) (ITZ). Sardinia: 3 ♀, Villasimius, vi. 1975 (*Bouček*) (BMNH). Spain: 27 ♀, Barcelona, Calella de la Costa, vi. 1971 (*Bouček*) (BMNH); 1 ♂, Castellón, Benicassim, 13–15.vi.1973 (*Bouček*) (BMNH); 4 ♀, Alicante, Moraira, 17.vi.1973 (*Bouček*) (BMNH); 6 ♀, Tarragona, Salou, 11.vi.1973 (*Bouček*) (BMNH).

Host. Unknown.

Aprostocetus (Aprostocetus) larzacensis sp. n.

(Figs 214, 215)

♀. Differs from ♀ *pausiris* as follows. Antenna (Fig. 215) with pedicellus plus flagellum slightly greater than breadth of mesoscutum; pedicellus slightly shorter than, or almost as long as F1; funicle rather more slender than in *pausiris*, with rather longer segments, F1 1.9–2.2 times, F2 1.6–1.8 times, F3 1.1–1.5 times as long as broad; clava 2.2–2.5 times as long as broad; sensilla less numerous. Setae of scutellum slightly shorter. Propodeum strongly transverse, about 3 times as broad as long (breadth measured as distance between spiracles; length measured at level of spiracles). Gaster (Fig. 214) with ovipositor sheaths well exerted, projecting part of sheaths plus postcercal at least 0.5 length of hind tibia.

Body blue-green to blue with at most mouth-edge and upper angle of mesopleuron yellow; antennae, legs and wings coloured as in dark *pausiris*.

♂. Unknown.

MATERIAL EXAMINED

14 ♀. Holotype ♀, France: Aveyron, Causse du Larzac, near Couvertoirade, 11.viii.1975 (*Graham*) (BMNH).

Paratypes. France: 1 ♀, same data as holotype; 1 ♀, Gorges du Trévèzel, 31.vii.1974; 6 ♀, Dordogne, Simeyrols, near Souillac, 2.viii.1974, 3 ♀, Les Eyzies, 4.viii.1974, 1 ♀, Castels, 5.viii.1974 (*Graham*) (BMNH). U.S.S.R.: 1 ♀, Moldavia, Kishinev, 15.viii.1963 (*Bouček*) (BMNH).

Host. Unknown.

COMMENTS. The ♀ of *larzacensis* superficially resembles that of *longicauda* from which it differs in its shorter ovipositor, propodeum longer medially, and subequal cercal setae.

I name this species with respect for the people of the Causse du Larzac, who have striven so courageously to preserve it and their way of life.

Aprostocetus (Aprostocetus) aartseni sp. n.

(Fig. 216)

♀. Propodeum as in *pausiris*, narrowly and weakly emarginate, medially very slightly longer than dorsellum. Ovipositor sheaths plus postcercal 0.55 length of hind tibia. Antenna (Fig. 216). Other structural characters as in *larzacensis*.

Colour as in *larzacensis* but face below antennae yellow, also lower part of gaster, outer orbits extremely narrowly, a wedge-shaped mark at each anterior corner of mid lobe of mesoscutum, touching the notaulus, and the whole dorsellum.

♂. Unknown.

MATERIAL EXAMINED

2 ♀. Holotype ♀, Greece: Corfu, Dassia, 'eind mai' 1971 (*B. van Aartsen*) (ITZ).

Paratype. 1 ♀, same data as holotype (MJG).

Host. Unknown.

Aprostocetus (Aprostocetus) levadiensis sp. n.

(Fig. 217)

♀. Antenna (Fig. 217). Structurally resembles *pausiris* but differs in having scutellum fully 1.5 times as broad as long, the space enclosed by its submedian lines only 1.6 times as long as broad; femora slightly stouter; forewing with *M* fully 5 times length of *ST*; gaster with tip of hypopygium situated distinctly beyond the middle; ovipositor sheaths plus postcercal about 0.7 length of hind tibiae, projecting part of sheaths about 2.5 times length of postcercal.

Black with weak olive metallic tinge, extensively marked with yellow as follows: head except middle of frons, ocelli and most of occipital surface, sides of pronotum; mid lobe of mesoscutum except a semicircular area in front; axillae except an external spot; scutellum except sides and anterior third;

25.viii.1954, 3 ♂, 8 ♀, reared viii.1954–vii.1955 (*Bouček*); 1 ♀, Praha, vi.1952, from *Urophora solstitialis* (L.) on *Cirsium* sp.; 1 ♀, Velký Vřešlov, viii.1953 (*Bouček*) (BMNH). France: 1 ♀, Basses Alpes, Col des toutes Aures, 17.vii.1975 (*Gijswijt*) (MJG). Great Britain: 1 ♂, England, Middlesex, Southgate, 17.iv.1972, 1 ♂, 23.iv.1972, 2 ♂, 1 ♀, 26.iv.1972, 1 ♀, 29.iv.1972, 2 ♀, 10.v.1972, all from *Terellia serratulae* (L.) in heads of *Cirsium lanceolatum* (*Graham*) (BMNH); 3 ♀, Cambridgeshire, Wicken Fen, 12.vi.1934, from heads of *Centaurea nigra*, 3 ♂, 2 ♀, 29.iii.1954, from *Urophora jaccana* (Hering) (*G. C. Varley*) (UM). Greece: 1 ♀, Kikladés, Mikonos, Psarou, 19.iv.1974 (*A. C. & W. N. Ellis*) (ITZ). Italy: 1 ♀, Aosta, Quart, 13.ix.1969 (*Bouček*) (BMNH).

HOSTS. *Urophora solstitialis* (L.), *Terellia serratulae* (L.) and *Urophora jaccana* (Hering).

COMMENTS. The species of *Centaurea* from which Varley's specimens were reared is noted on his labels as *nigra*. However, he informed me that it was really *memoralis* (now regarded as a subspecies of *debauxi*, see *Flora Europaea* 4: 293–294).

Aprostocetus (Aprostocetus) rumicis sp. n.

(Figs 239, 500)

Tetrastichus sp. near *tompanus* Erdős; Williams, 1969: 131–133, figs 10–15.

♀. Differs from those of *serratularum* and *venustus* in the characters given in the key to females, couplet 44. Antenna (Fig. 239) with scape about 0.85 length of eye, just reaching lower edge of median ocellus; pedicellus 2.2–2.4 times as long as broad, at least very slightly shorter than F1; funicle proximally very slightly stouter than pedicellus, thickening slightly distad, its segments tending to decrease very slightly in length, F1 2.0–2.3 times, F2 1.6–1.8 times, F3 1.3–1.5 times as long as broad; clava slightly broader than F3, nearly or just as long as F2 plus F3, pointed, with C1 slightly longer than broad and occupying nearly half the total length, C2 and C3 progressively much shorter, spine as in *serratularum*; sensilla moderately numerous, in one row (irregular on funicular segments and on C1), of moderate length, rather slender, decumbent with hardly developed blades; setae mostly short and nearly straight, standing out somewhat. Mid lobe of mesoscutum with 4–6 adnotaular setae on each side. Propodeal callus usually with 3 (sometimes 4 or 5) setae. Forewing: *M* 3.7–4.6 times length of *ST*.

Body black with moderately strong green to blue-green tints and with yellow markings as follows: a large spot on each side of clypeus, extending to malar sulcus, more often these spots joined across the clypeus; or whole face below toruli yellow; most often inner orbits, in paler specimens also a transverse line on vertex behind lateral ocelli, and the outer orbits more or less. Thorax: yellow are upper angle of mesopleuron; nearly always sides of dorsellum or its whole surface; usually a pair of spots at hind edge of mid lobe of mesoscutum, often joined, in pale specimens covering the posterior half of the sclerite, often a pair of spots in front angles of this sclerite, sometimes spreading along notauli and uniting with the posterior spots; sometimes small to large sublateral spots on pronotum. In very pale specimens the prepectus dorsally, and the posterior part of the scutellum, are more or less yellow. Gaster: basal tergite most often with a pair of yellow sublateral spots; in paler specimens up to five of the proximal segments may have similar spots, in very pale specimens the spots of the basal segment enlarge and almost unite; gaster ventrally with yellowish sublateral spots on basal segment and often on additional segments, the spots sometimes joined to form 2 longitudinal bands. Antenna fuscous to black; radicle, sometimes tip of scape and tip of pedicellus very narrowly yellowish. Legs yellow with at least hind coxae black, mid and fore coxae often more or less so; at least hind femora with a black mark at base, most often all femora black at base or up to half their length; fore tarsi brownish, mid and hind tarsi becoming brown apically. Tegulae yellow, or dark posteriorly. Wings hyaline, venation yellowish. Length 1.50–2.05 mm.

♂. Differs from those of *serratularum* and *venustus* in the characters given in the key to males, couplet 64. Antenna (Fig. 500).

MATERIAL EXAMINED

3 ♂, 20 ♀. Holotype ♀, Great Britain: Berkshire, Windsor Forest, 8.vi.1976, swept from *Rumex acetosa* (*Graham*) (BMNH). Paratypes. France: 2 ♂, Aveyron, La Pezade, 12.vii.1977; 1 ♀, Bouches du Rhône, Fonscolombe, 7.vi.1982; 1 ♂, Vaucluse, Combe de Veaux, near Malaucène, 23.vii.1978 (*Graham*) (BMNH). Great Britain: 1 ♀, Berkshire, Silwood Park, 14.viii.1963, 1 ♀, 30.ix.1963, reared from *Apion* sp. in stem of *Rumex* (*P. Williams*) (BMNH); 11 ♀, Berkshire, Windsor Forest, 8.vi.1976 (*Graham*) (BMNH); 1 ♀,

Middlesex, Southgate, 6.vii.1966, 1 ♀, 19.vi.1967, 1 ♀, 28.vi.1967 (*Graham*) (BMNH). Netherlands: 1 ♀, Hilversum, 19.v.1974 (*Gijswijt*) (MJG); 1 ♀, Noord Brabant, Herpen, 19.viii.1965 (*S. van Heijnsbergen*) (MJG).

HOSTS. *Apion curtirostre* Germar and *A. violaceum* Kirby in stems of *Rumex acetosa*, ectoparasitic on the host larvae (Williams, 1969). The egg and larva of the present species were described and figured by Williams (1969).

Aprostocetus (Aprostocetus) venustus (Gahan) comb. n.

(Figs 241, 245, 609)

[? *Eulophus brevicornis* Panzer; Nees, 1834: 163. Misidentification.]
Tetrastichus venustus Gahan, 1914: 168; Burks, 1943: 576–577 (♀); Peck, 1951: 450; 1963: 154–155; Burks, 1979: 1002. Holotype ♀, U.S.A.: California, Corcoran (*T. D. Urbahnus*) (USNM) [examined].
 [*Tetrastichus brevicornis* (Nees); Nikol'skaya, 1933: 124–125. Misidentification.]
 [*Tetrastichus eurytus* (Walker); Széleányi, 1941: 411–412. Misidentification.]
 [*Geniocerus eurytus* (Walker); Erdős, 1954: 355. Misidentification.]
Tetrastichus aneurytus Erdős, 1969: 44, 1971: 230. [Replacement name for *eurytus* auctorum.] Syn. n.

Through the kind co-operation of Eric Grissell, I was able to examine the holotype ♀ and two paratypes ♀ of *Tetrastichus venustus*. Fig. 241 (antenna) and Fig. 245 (forewing) are drawn from the holotype.

This species has several times been misidentified. Nikol'skaya (1933) used the name *brevicornis* (Nees) for it; however, the Nees name is invalid, being a misidentification of the earlier *brevicornis* (Panzer). Burks (1943: 577) remarked of *venustus* 'This species may be a synonym of the European species, *T. brevicornis* (Panzer). Nikol'skaya held the same opinion'. As the name *brevicornis* (Nees) is invalid, *venustus* Gahan can be used for the present species.

The material reared from lucerne seed-pods, referred to *eurytus* (Walker) by Széleányi (1941), was destroyed in 1945 (Széleányi, pers. comm.). Széleányi later reared, from seeds of the same plant, other material which I was able to examine. I have also examined the material in the Erdős collection (TM) which Erdős referred to *aneurytus*.

♀. Head as in *serratularum*. Antenna (Fig. 241) with scape as in *serratularum*; pedicellus 1.75–2.20 times as long as broad, from hardly shorter, to very slightly longer, than pedicellus; clava 1.9–2.4 times as long as broad, not quite or just as long as F2 plus F3. Mid lobe of mesoscutum with 3–6 adnotaular setae on each side. Propodeal callus with 3–4 (–5 in one specimen) setae. Forewing (Fig. 245) with *M* 3.1–3.5 times length of *ST*. Other structural features as in *serratularum*.

Body coloured as in *rumicis* but normally with more extensive yellow markings. Head with at least the whole face, inner and outer orbits, lower part of genae, and a transverse band on vertex, yellow; sometimes the whole head yellow except the ocellar triangle and middle of occipital surface. Thorax in dark specimens with yellow markings as in the palest examples of *rumicis*, but prepectus wholly yellow or at most dark ventrally, dorsellum wholly yellow; in paler specimens the scutellum is yellow posteriorly, or mainly with only a dark anterior median spot, or wholly yellow. The yellow pronotal spots sometimes join, the scapular flanges and the outer part of the scapulae may become yellow, whilst yellow spots sometimes appear on the inner part of each axilla. Occasionally the sides of the propodeum, mesopleuron and prosternum are more or less yellow. The gaster dorsally is sometimes coloured as in dark specimens of *rumicis* but most often has several yellow sublateral spots which tend to be more conspicuous on the 2 or 3 posterior tergites; in pale specimens the last tergite is sometimes wholly yellow and the spots of the preceding tergite or tergites joined to form transverse bands. Ventrally the gaster is more richly yellow-marked than in *rumicis*, sometimes mainly yellow. Legs sometimes wholly yellow, more often with hind coxae more or less black; hind femora often more or less black proximally or up to half their length, fore and mid femora sometimes black proximally. Length 1.1–2.0 mm.

♂. Differs from ♂ of *rumicis* only in the characters noted in the key to males, couplet 64. Genitalia (Fig. 609).

MATERIAL EXAMINED

10 ♂, many ♀. Canary Is., Czechoslovakia, France, Germany, Hungary, Spain, Yugoslavia, U.S.S.R., U.S.A.

HOSTS. *A. venustus* has frequently been reared from seeds of *Medicago sativa* (lucerne or alfalfa) both in Europe and the U.S.A., also from seeds of *Onobrychis* in Europe. Burks (1979: 1002) stated 'exact host not established'. Szélényi (1941) considered that the host in lucerne-seeds was *Bruchophagus gibbus* (Bohemian), which was no doubt *Bruchophagus roddi* (Gussakovskii), a species associated with lucerne; *B. gibbus* is now known to be attached to clovers. Erdős (1969: 44; 1971: 230) mentioned *Eurytoma* (= *Bruchophagus roddi* and *E.* (= *B.*) *onobrychidis* (Nikol'skaya) as hosts. Further research is desirable to determine the exact host-relationships.

COMMENTS. Burks (1943: 576) stated that the male of *venustus* was 'usually almost entirely iridescent brownish green'. All the males I have examined are obviously yellow-marked. I have seen another species reared from *Medicago sativa*, the male of which is not yellow-marked; the males referred to *venustus* by Burks may belong to this other species.

Aprostocetus (Aprostocetus) biorrhizae (Szélényi) comb. rev.

(Figs 242, 243)

Tetrastichus biorrhizae Szélényi, 1941: 412-414. Holotype ♀, HUNGARY: Budapest, Svábhegy, iii.1933 (Szélényi) (TM) [examined].

Geniocerus biorrhizae (Szélényi) Erdős, 1954: 354.

Aprostocetus biorrhizae (Szélényi) Graham, 1961b: 50.

Tetrastichus biorrhizae Szélényi; Domenichini, 1966a: 144; 1966b: 20; Erdős, 1971: 228; Kostjukov, 1978b: 444.

♀. Head slightly broader than mesoscutum, about 2.5 times as broad as long; POL about 1.8 OOL, OOL about 1.6 OD. Eyes as in *serratularum*. Malar space about 0.7 length of eye, sulcus slightly curved, with minute fovea. Mouth about 1.2 malar space. Antennae (Fig. 243) with scape about 0.85 length of eye, not nearly reaching median ocellus; pedicellus plus flagellum 1.10-1.22 breadth of mesoscutum; pedicellus 1.80-2.35 times as long as broad, very slightly shorter than F1; funicle proximally distinctly stouter than pedicellus, thickening very slightly distad, its segments decreasing a little in length, F1 1.6-2.0 times, F2 1.40-1.75 times, F3 1.25-1.45 times as long as broad; clava somewhat broader than F3, as long as or hardly longer than F2 plus F3, 1.9-2.2 times as long as broad, with C1 as long as or slightly longer than broad, C2 and C3 progressively shorter, spine about 0.2 length of C3. Thorax 1.55-1.65 times as long as broad; propodeal slope 50°-60°. Pronotum short. Mid lobe of mesoscutum about as broad as long, moderately convex, rather dull, with excessively fine superficial reticulation having most areoles 2-3 times as long as broad; median line often more or less indicated in posterior half but sometimes obsolete; 4-5 adnotaular setae on each side. Scutellum slightly broader than long, moderately convex, a little more finely sculptured than mesoscutum; submedian lines placed as in *serratularum*, enclosing a space 2.4-2.7 times as long as broad; setae equal, their length 0.7-0.8 distance between submedian lines, anterior pair usually slightly behind, rarely in the middle. Dorsellum and propodeum as in *serratularum*; propodeum usually a little longer than, sometimes only as long as, dorsellum, shiny, with extremely fine superficial reticulation; median carina fine; callus with 3-6 setae. Hind coxae slightly more than twice as long as broad, shiny, with extremely fine superficial reticulation; hind femora 4.5-5.0 times as long as broad; spur of mid tibia slightly shorter than basitarsus, fourth tarsomere slightly shorter than basitarsus. Forewing 2.05-2.25 times as long as broad; costal cell slightly shorter than *M*, 9.0-11.5 times as long as broad, lower surface with row of setae; *SM* with 3-5 dorsal setae; *M* rather thin, 3.0-4.0 times length of *ST*, its front edge with 11-15 setae; *ST* at about 60°, rather thin proximally, expanding slightly distad to form a small stigma; *PM* rudimentary or a short stub; speculum moderate-sized, extending as a narrow wedge below *M* nearly to *ST*, closed below or open at extreme base; wing beyond it moderately thickly pilose, more thickly distad; cilia 0.25-0.35 length of *ST*. Hindwing obtuse or subobtuse; cilia 0.15-0.35 breadth of wing. Gaster (Fig. 242) short-ovate, at most as long as thorax, usually slightly broader than thorax, 1.4-1.8 (-2.0) times as long as broad, acute and sometimes very slightly acuminate; last tergite short, 1.5-2.5 times as broad as long; ovipositor sheaths usually projecting very slightly, sometimes by as much as 0.3 length of last tergite; tip of hypopygium at or hardly beyond half length of gaster.

Body black with distinct bluish to greenish blue tints; disc of gaster extensively bronze; the following parts yellow: clypeus, lower part of genae, sides of face, sides or whole of dorsellum, upper angle of mesopleuron, scapular flanges, often a spot in each anterior angle of mid lobe of mesoscutum, in paler specimens each spot extending along the notaulus; sometimes orbits, in very pale specimens also the genae and almost whole face, yellow; occasionally there are irregular yellow marks on sides of pronotum and rarely hind edge of scutellum. Antennae black. Coxae black, legs otherwise yellow with fore femora

usually black at base, mid and hind femora with proximal third to half back; fore tarsi brown to fuscous, fourth (and occasionally third) segment of mid and hind tarsi brown. Tegulae yellow, hind edge sometimes brown. Wings hyaline, venation yellowish to brown. Length 1.4-1.9 mm.

♂. Unknown.

MATERIAL EXAMINED

18 ♀. France: 1 ♀, Vnucliise, Brantes, 29.iv.1975; 1 ♀, Mont Ventoux, Col de Perrache, 6.vi.1980; 14 ♀, Beaumont-du-Ventoux, 29.iv.-25.v.1980, all reared from galls of *Biorhiza pallida* (Olivier) on *Quercus pubescens* (Graham) (BMNH). Hungary: 1 ♀ (holotype), Budapest, Svábhegy, iii.1933 (Szélényi); 1 ♀, Matra, 27.vi.1952 (Erdős) (TM).

Also recorded from Austria and Italy (Domenichini, 1966a: 144).

HOST. Possibly some inquiline in the gall of *Biorhiza pallida* (Olivier).

The *lycidas*-group

Antenna with 4 anelli in ♀, 3 in ♂; with 3 funicular segments in ♀, 4 in ♂; clava normally 3-segmented but the second and third segments in ♀ often indistinctly separated; rarely (*gratus*) the clava apparently unsegmented; row of setae on front margin of ♀ scape (not counting the subapical seta) usually extending to above the middle. Except in *flavifrons*, *nubigenus* and *domenichinii*, each segment of the ♂ funicle bears a compact subbasal whorl of long dark setae which reach at least nearly to the tip of the segment which bears them, but nearly always beyond (usually far beyond) this; ♂ scape with ventral plaque in most species placed mainly to wholly in upper half, though extending most of the length of the scape in *orithyia* and *calamarius*. Mesoscutum moderately to conspicuously shiny, with delicate, engraved or occasionally superficial reticulation which is usually excessively fine (Figs 278-280); nearly always with 1 row of adnotaular setae on each side (with 2 rows in some *xanthopus*). Digitus of ♂ genitalia with a single spine (or occasionally a short tooth) on its hind margin. One seta of each cercus 1.3-2.0 times as long as the next longest seta and usually more or less kinked or sinuate about the middle of its length, usually dark. Submedian lines of scutellum nearly always distinct, rarely very weak or absent. Median lobe of propodeum in ♀ usually about equal to length of dorsellum, occasionally slightly greater, rarely a little less. Body most often non-metallic, sometimes weakly metallic, occasionally (*orithyia* and related species) strongly metallic. Propodeum shiny, with fine reticulation which is generally weak or obsolete, rarely moderately strong; spiracles, unless otherwise stated, moderate-sized, oval, very close to metanotum, the outer part of their rim partly covered by a raised flap of the callus (Figs 54, 71, 91-93, 294-295, 396); callus in most species with 2 setae placed laterad of the spiracle (with 3 or more in *strobilanae*, *pachyneuros*, *grylli*, *rufiscapus*, *incrassatus*, *escherichi*, *neglectus*, *coccidiphagus* and some *phineus*). Spur of mid tibia normal, in ♀ with its length either more than half length of basitarsus or, if the latter is elongate, then distinctly greater than the breadth of the tibia; in ♂ with its length greater than breadth of tibia. Mesosternum, in front of the trochantal lobes, flat or nearly so, nearly always of moderate length (very short in *constrictus*, *rufiscapus* and *verticalis*). Hind coxae with engraved or superficial reticulation except in *boreus* where it is slightly raised. Head in front view slightly broader than high (except in *vieira*), subtrapeziform with vertex slightly to moderately convex, genae converging moderately and slightly curved or straight. Eyes, unless otherwise stated, with extremely short and sparse pubescence. Pronotum usually very short or short, rarely as much as one-third length of mesoscutum, with a row of setae near hind margin and some shorter setae at sides. Scapulae nearly always deeply excised posteriorly, with flanges elongate-triangular to sublinear; rarely somewhat less deeply excised and with flanges more broadly triangular (*glandicola*, some species of *fulvipes*-complex). Forewing: costal cell with a row of setae on its lower surface; speculum closed below. Gaster of ♀ very variable in shape; ovipositor sheaths occasionally not projecting but usually projecting slightly to very far, the setae clothing them usually forming a slight subapical tuft, as seen in dorsal view. Gaster of ♂ most often oblong or sublinear, nearly as long as but narrower than thorax, with a ventral plica.

HOSTS. Most often Diptera: Cecidomyiidae, rarely Agromyzidae; occasionally Hymenoptera: Cynipidae, Hemiptera: Coccidae, leaf-mining Lepidoptera or Coleoptera; rarely other Coleoptera, or parasitic Hymenoptera.

This is the largest of all the species-groups of *Aprostocetus* and is found in all zoogeographical regions. Possibly it needs further subdivision as a few species are slightly discordant elements, such as *xanthopus*, *neglectus*, *calvus*, and the *ceroplastae*-complex.