

## ***Acrorrhinium* Noualhier and *Compsonannus* Reuter (Heteroptera, Miridae) in the Middle East**

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The article contains descriptions of four new taxa: *Acrorrhinium elegans* sp. n., *A. minutissimus* sp. n., *Compsonannus umbrosus* sp. n., and *C. atricornis* sp. n. from Yemen. The male genitalia of *Acrorrhinium conspersus* Noualhier are also illustrated.

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The article is based on field work carried out by the senior author in Iraq in 1979–1981 and in the Republic of Yemen in 1992. The biology, distribution and taxonomy of the Palearctic genus *Acrorrhinium* Noualhier (Phylinae, Hallodapini) are covered. A new unexpected disjunct distribution in SW Arabia was detected. The Eremian genus *Compsonannus* Reuter was also found as new for SW Arabia.

The collected material is the property of the American Museum of Natural History, but at present kept in the author's collection.

### **Genus *Acrorrhinium* Noualhier**

*Acrorrhinium* Noualhier 1895:176. Type species: *A. conspersus* Noualhier.

*Cinnamus* Distant 1909:441. Type species: *C. rhinoceros* Distant (Schuh 1974:66).

*Lutheriella* Poppius 1913:248. Type species: *L. oecophylloides* Poppius (Schuh 1984:103).

*Seversyia* DeLattre 1950:152–153. Type species: *S. lupa* DeLattre (Carvalho 1958:160).

Easily separated from all other hallodapine genera by the horn- or plug-like frontal process

and the nearly vertical, laterally compressed clypeus. Completely described in Schuh 1974:66–69.

The genus has a Palearctic distribution from South and East Africa and Madagascar (10 known species, descriptions in Odhiambo 1959: 673–676 and Schuh 1974:70–80) to the Indo-Pacific (8 known species, descriptions in Schuh 1984:103–110). One species is known from the Ivory Coast (DeLattre 1950:153). The only known Palearctic species *A. conspersus* Noualhier (Anatolian) undoubtedly represents a recent radiation from the Oriental Region, since it resembles several Oriental species of the genus in the short head and the long winding vesica with serrate apical processes. The South and East African species have a longer head with relatively small eyes, which are distinctly removed from the anterior margin of the pronotum. Moreover, the vesica is short and stout, broadly arcuate. The two new species from Yemen differ greatly from the other known representatives of *Acrorrhinium* in a number of derived characters (small size, pale coloring, reduction of pale setigerous tubercles on upper surface, presence of lateroapical process of theca, and long, gracile, apically falcate vesica), but since they otherwise display the

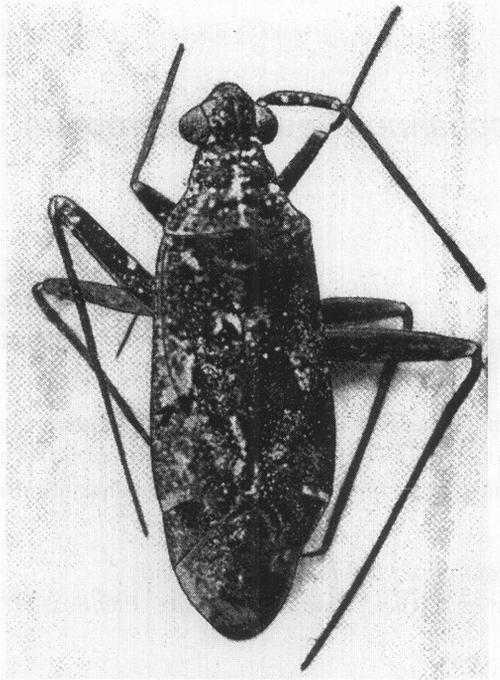


Fig. 1. *Acrorrhinium conspersus* Noualhier, female. — After Linnavuori 1965.

characteristic head structure of the genus, they are regarded as congeneric with the other taxa. They form an evolutionary lineage of their own which is adapted to desert life.

***A. conspersus* Noualhier**

Figs. 1–2

*Acrorrhinium conspersus* Noualhier 1895:176.

Material studied: Turkey: Gülek, 1 ex, 6.VIII.1963, Linnavuori. Iraq: Dukan, 1 ex, 12.VI.1980; Salahuddin, several exx, 12.VI.1980; Sarsang, 3 exx, 26–28.VIII.1980, Linnavuori; Shaqlawa, 1 ex, Kalalova-Di Lotti.

A complete description in Linnavuori 1965:53 and Wagner 1973:315–316.

Length 4.0–4.75 mm. Easily recognized by the dark coloring and short head with large eyes. A distinct conical frontal tubercle is also present in females. Wagner's opposite statement is based on a specimen with a deformed frontal tubercle. — Male genitalia in Fig. 2b–f. Pygofer elongately conical with a plug-like apical tubercle. Vesica long, robust and winding; apical part provided

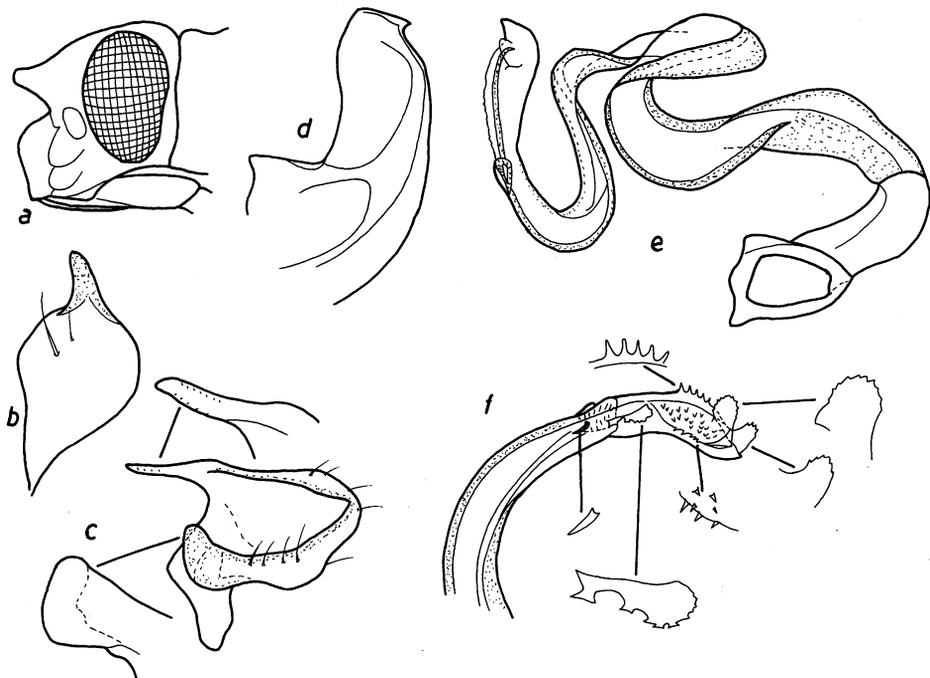


Fig. 2. *Acrorrhinium conspersus* Noualhier. a: male head, lateral view; b: right style; c: left style; d: theca; e: vesica in glycerine; f: apex of vesica in slide mount.

with minute dentation and three membranous, marginally dentate lobes, a spine-like process present at gonopore.

**Biology:** In Iraq found on bark of trunks and lower branches of large oaks. The specimen from Turkey was swept from *Juniperus*.

**Distribution:** Anatolian. Recorded from Syria, Northern Iraq, Turkey, and Bulgaria (Josifov 1986:44).

***A. elegans* sp. n.**

Figs. 3, 4a–k, 6a–c

**Material studied:** Yemen: Abyan, near Maifa'ah, ♂ holotype, several paratypes, 7.IV and 19.IV.1992, Linnavuori, in coll. Linnavuori (AMNH).

**Diagnosis:** Pale ochraceous. Pronotum brown with whitish pattern. Elytra unicolored with minute faint reddish dotting, Legs pale.

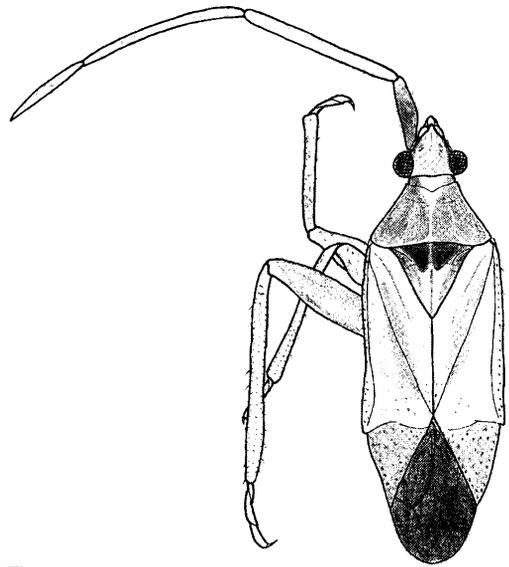


Fig. 3. *Acrorrhinium elegans* sp. n., male.

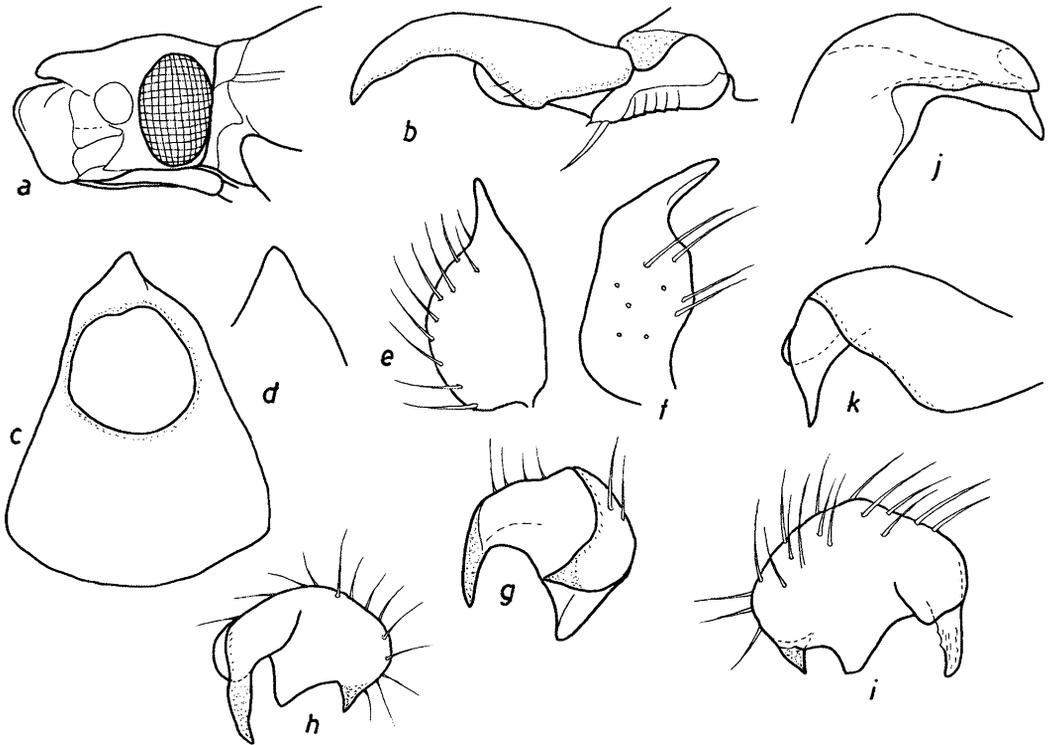


Fig. 4. *Acrorrhinium elegans* sp. n. a: male head, lateral view; b: claw; c: pygofer, dorsal view; d: apex of pygofer, ventral view; e–f: right style in glycerine and in slide mount; g–i: left style in lateral, dorsal and ventral view; j–k: theca.

Length 3.75–4.0 mm. Opaque. Pale ochraceous with slight orangish tinge. Frons with slight, broken reddish median line and indistinct fulvous lateral arcs; sides of vertex with faint fulvous tinge; eyes pale or brownish gray. Antennae pale ochraceous, 1st joint slightly infumed with pale irroration, 2nd joint with orangish tinge. Pronotum brown, lateral and basal margins narrowly, a median triramose figure and more or less broken longitudinal sublateral lines whitish. Middle of base of scutellum brown with slight reddish median line continuing on to the pale apical part. Elytra with fulvous tinge and minute faint reddish dotting, most distinct on costal margins; outer part of clavus and the adjacent area of mesocorium sometimes slightly infumed, cuneus more or less infumed; membrane with veins dark brown. Under surface with abundant reddish irroration. Legs pale ochraceous. Femora slightly infumed with pale irroration, tibiae with faint red dotting. — Macropterous. Body about 3.2–3.4 × as long as broad at base of pronotum. Hair covering: stiff, silvery appressed pubescence present on pale midline and near eyes on head, lateral margins and pale longitudinal lines on pronotum, sides and pale midline of scutellum, and in patches on clavus and the adjacent part of corium; elytra also with smooth golden hair covering; head with a few semierect brownish hairs. Head 0.63–0.66 (♂) or 0.56 (♀) × as broad as basal width of pronotum, in dorsal view about 1.26 (♂) or 1.14 (♀) × as broad as long, in lateral view about 1.45 × as high; vertex weakly convex, frons conical with plug-like apical process, clypeus protruding, laterally compressed; eyes large, touching both ventral margin of head and anterior margin of pronotum, ocular index 1.60–1.74 (♂) or 2.3–2.7 (♀). Proportions between antennal joints 42:80:70:40 (♂), 45:82:82:32 (♀); 1st joint 0.93–0.95 (♂) or 1.20–1.56 (♀) × as long as diatone, incrassate, with appressed brownish hairs and a few whitish erect bristles; 2nd joint about 0.8 (♂) or 2.15 (♀) × as long as diatone, 1.12 (♂) or 1.20–1.22 (♀) × as long as basal width of pronotum, hair covering pale, short and smooth. Rostrum extending to base of venter. Pronotum about 2.2 × as broad as long in middle, collar broad; lateral margins strongly diverging caudad, insinuated, callose, uneven, subacute, basal margin shallowly insinuated; calli faint, disc moderately convex,

sloping anterolaterad. Basal part of scutellum declining caudad, apical part with blunt median elevation. Elytra longer than abdomen. Venter with appressed pale hair covering. Femora with slight pale elevations on apical part. Tibial spines pale, delicate, about as long as tibial diameter. Hind tibia about 1.8 × as long as basal width of pronotum. Proportions between hind tarsomeres 7:11:12. Claw as in Fig. 4b. — Male genitalia in Figs. 4c–k, 6a–c. Pygofer elongately conical. Apical process of right style straight. Dorsal margin of left style evenly rounded, hypophysis falcate, apical process of sensory lobe short, triangular. Subapical process of theca narrowly triangular. Vesica long, gracile, winding, apical part broadly falcate, smooth.

Biology: On an unidentified Compositae shrub in a sandy habitat.

#### *A. minutissimus* sp. n.

Figs. 5, 6d–j, 8a–c

Material studied: Yemen: Ta'izz, 20 km S of Hais, ♂ holotype and several paratypes, 5. and 21.V.1982; Hajjah, Harad, 1 paratype, 19.V.1992; Ibb, Gadaba, 1 paratype, 10.IV.1992, Linnavuori; Ta'izz, 1 paratype, 19–20.X.1991, A. van Harten, in coll. Linnavuori (AMNH).

Diagnosis: Very small. Contrastingly bicolorous, pale yellow with reddish pattern. Females brachypterous.

Length 2.5 mm. Opaque. Pale ochraceous. Head and pronotum reddish brown or purplish with more or less spread pale mottling. Eyes reddish gray. 1st antennal joint purplish with pale mottling, other joints pale orangish with whitish bases. Base of scutellum brown with pale mottling. Apex of scutellum and elytra contrastingly whitish yellow; base of clavus and basal two-thirds or exocorium purplish with pale mottling; cuneus, basal inner angle especially, with purplish dotting; membrane (♂) with veins pale brownish gray. Under surface pale yellowish; sides of head, pronotum and base of venter purplish. Legs pale yellowish; apices of fore and middle femora with faint orangish mottling; apical half of hind femora purplish with pale mottling. Basal parts of tibiae with purplish spots. — ♂ macropterous, parallel-sided, ♀ brachypterous, elongately pyriform. Upper surface with stiff

appressed silvery pubescence and smooth yellow hairs, head and pronotum also with stiff erect pale bristles. Head 0.63 (♂) or 0.68 (♀) × as broad as basal width of pronotum, in dorsal view 1.4–1.5 × as broad as long, in lateral view 1.24 × as long as high; vertex moderately convex, frons convex, conical, with short conical apical tubercle, clypeus laterally compressed; eyes extending to anterior margin of pronotum, in ♂ also to near ventral margin of head; ocular index 2.0–2.3 (♂), 3.0–3.1 (♀). Proportions between antennal joints 21:42:46:28 (♂), 25:50:55:26 (♀); 1st joint 0.70–0.73 (♂) or 0.83–0.90 (♀) × as long as diatone, incrassate, with smooth dark hairs and a few erect pale bristles, 2nd joint about 1.4 (♂) or 1.7–1.8 (♀) × as long as diatone, 0.85–0.90 (♀) or 1.14–1.22 (♂) × as long as basal width of pronotum. Rostrum extending to hind coxae. Pronotum 2.4 (♂) or 2.0 (♀) × as broad as long in middle; collar broadish, lateral margins

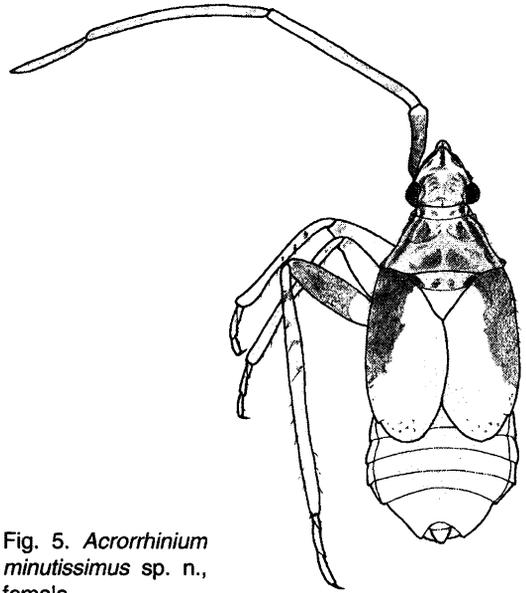


Fig. 5. *Acrorrhinium minutissimus* sp. n., female.

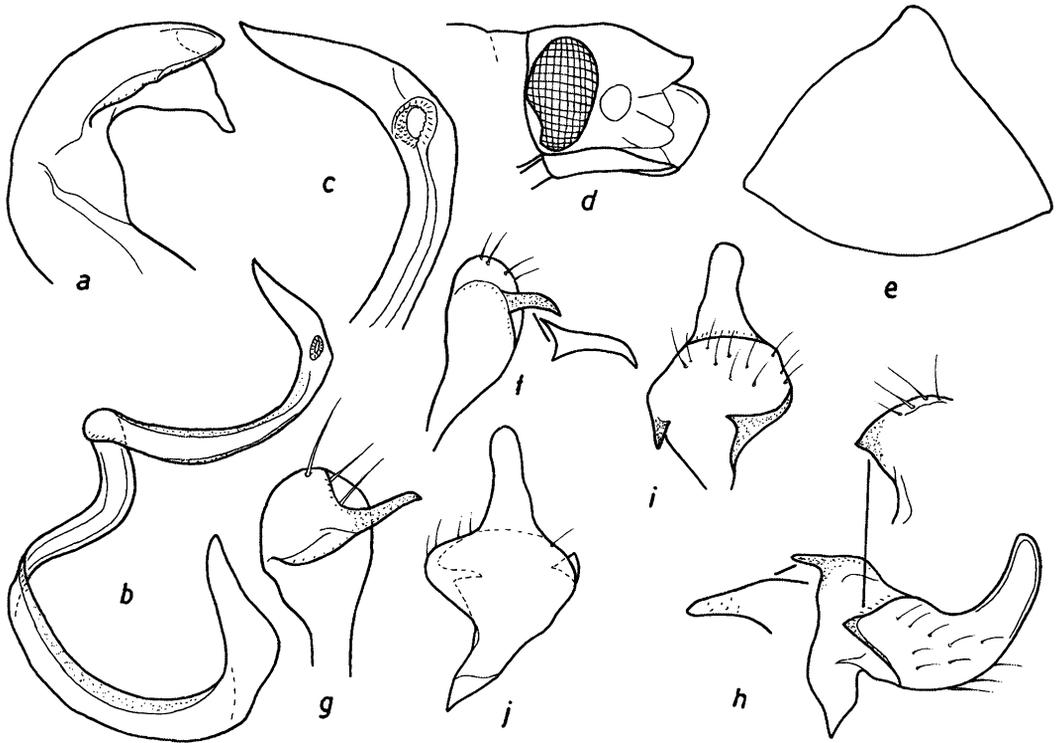


Fig. 6. *Acrorrhinium elegans* sp. n. a: theca; b: vesica in glycerine; c: apex of vesica, slide mount. — *A. minutissimus* sp. n. d: male head in lateral view; e: pygofer, ventral view; f–g: right style in glycerine and in slide mount; h–j: left style in lateral, inner and outer view.

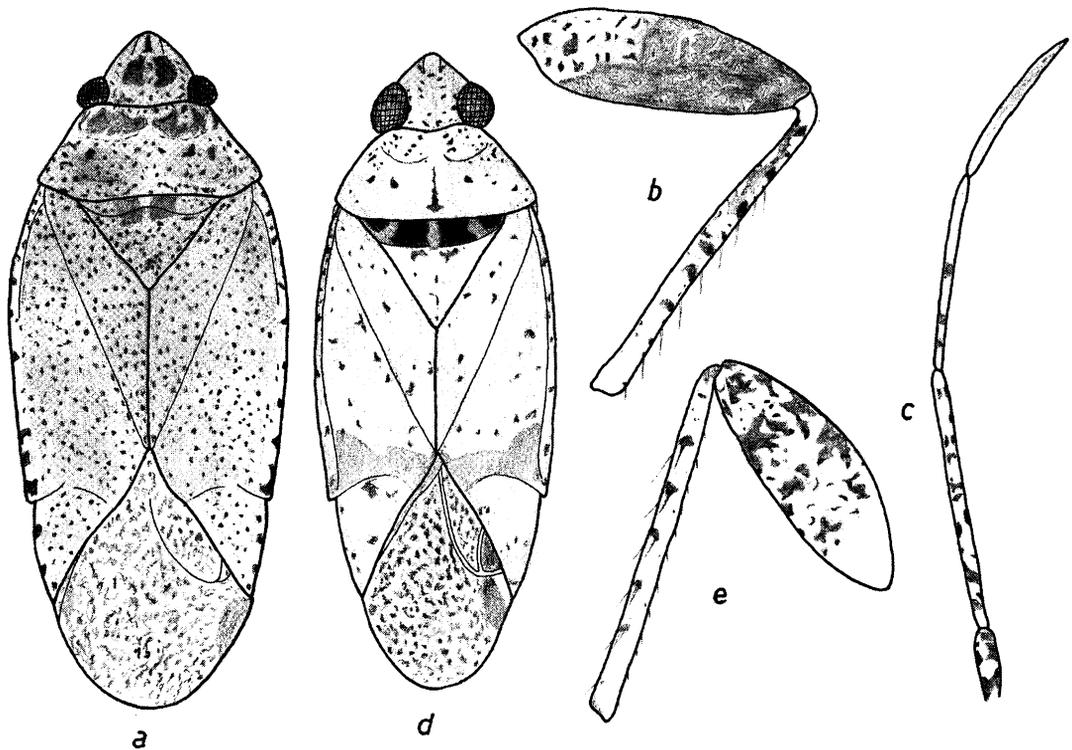


Fig. 7. *Compsonannus umbrosus* sp. n. a: dorsal view; b: hind leg; c: antenna. — *C. atricornis* sp. n. d: male, dorsal view; e: hind leg.

strongly diverging caudad, insinuated, humeral angles acute, hind margin slightly insinuated; calli weakly (♂) or distinctly (♀) elevated, disc moderately convex. Elytra in ♂ longer than abdomen, in ♀ elongately ovate, coriaceous, leaving apical part of abdomen uncovered. Venter with pale appressed pubescence. Hind femora with slight pale elevations. Hind tibia 1.6 (♂) or 1.3 (♀) × as long as basal width of pronotum; tibial spines delicate, pale. Proportions between hind tarsomeres 5:7:9. Claws as in the preceding species. — Male genitalia in Figs. 6e–j, 8a–c. Pygofer broadly conical. Apical process of right style claw-like, recurved laterad. Dorsal margin of left style strongly prolonged forming a high plug-like process, apical processes of hypophysis and sensory lobe short. Vesica as in the preceding species but apical part narrower.

**Biology:** Abundant on *Maerua crassifolia* near Hais; at Harad swept from *Tamarix*; at Gadaba found on an unidentified shrub in a hilly habitat.

### Genus *Compsonannus* Reuter

*Compsonannus* Reuter 1902:63. Type species *C. puncticornis* Reuter.

Revision in Linnavuori 1990:123–128. The genus, which contains five previously known species, is closely related to *Compsidolon* Reuter, but is readily distinguished by the maculate or black 2nd antennal segment and the strongly marmorate membrane of the elytra. Moreover, the vesica is robust, provided with one or two apical processes, in the latter case the lower process is dentate; sometimes the apex of the vesica is triangularly expanded, simple; gonopore close to apex. In *Compsidolon* the 2nd antennal segment is uniformly pale and the membrane of the elytra at most faintly mottled. The vesica is long and ends in a scythe-like apical part, and the gonopore is located far from the apex.

**Distribution:** Eremian, extending from Morocco to Palestine and the Arabian Peninsula.

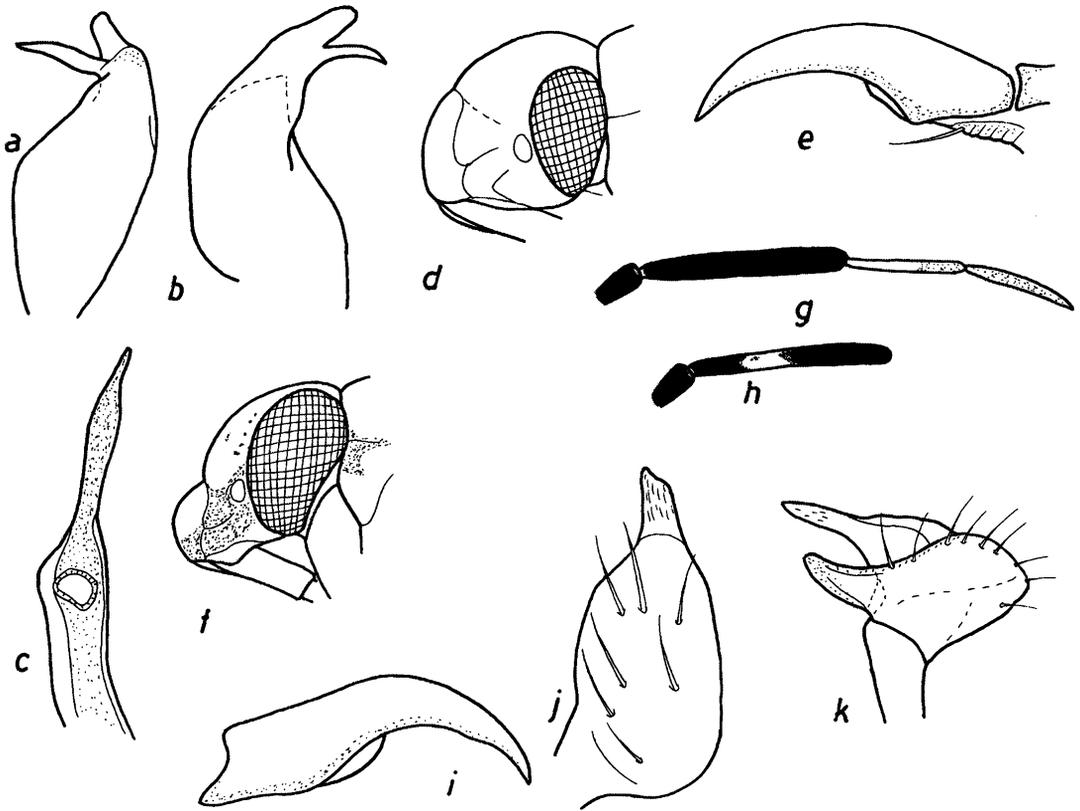


Fig. 8. *Acrorrhinium minutissimus* sp. n. a–b: theca; c: apex of vesica in slide mount. — *Componannus umbrinus* sp. n. d: female head in lateral view; e: claw. — *C. atricornis* sp. n. f: male head, lateral view; g–h: male and female antenna; i: claw; j: right style; k: left style.

***C. umbrosus* sp. n.**

Figs. 7a–c, 8d–e

Material studied: Yemen: Ta'izz, Al Mokha-Al Khawkah, ♀ holotype, 23.III.1992, Linnavuori, in coll. Linnavuori (AMNH).

Diagnosis: Dark, 2nd antennal joint with numerous, more or less confluent dark spots, 3rd joint also with 3 dark spots.

Length 3 mm. Ochraceous with abundant dark brown mottling. T-shaped median figure and sides of tylus blackish brown; frons with two longitudinal, irregular dark bands, interrupted by faint pale transverse arcs; pale areas on frons and vertex with abundant dark irroration; eyes grayish brown. 1st antennal joint ochraceous, with irregular dark brown transverse bands and mottling, 2nd whitish, with numerous, more or less confluent

ent dark brown spots, 3rd and 4th joints pale brownish, the former with 3 dark spots. Callal area of pronotum with two dark brown figures, rest of disc with dense, more or less confluent dark mottling. Scutellum with dense dark mottling. Elytra with dense, often confluent dark brown mottling, costal margins with largish black spots, otherwise nearly immaculate; cuneus with fine purplish dotting, lateral margin with 2 or 3 blackish spots; membrane grayish brown, appearing very dark owing to dense dark brown mottling, veins orangish. Under surface of thorax dark fuscous, segmental margins pale, rest of under surface with very dense dark mottling. Femora appearing blackish owing to very dense blackish brown pattern. Tibiae pale ochraceous, with distinct black setigerous spots and fine purplish dotting, spines pale. Tarsi pale ochraceous,

1st joints slightly darker. — Body robust,  $2.6 \times$  as long as broad at base of pronotum, ovate. Head  $0.7 \times$  as broad as basal width of pronotum, in apical view  $1.3 \times$  as broad as high, in lateral view  $1.35 \times$  as high as long; ocular index 2.3. Antennae long and gracile, hair covering semierect and pale, proportions between joints 18:67:54:31; 1st joint  $0.4 \times$  as long as diatone, 2nd  $1.5 \times$  as long as diatone,  $1.03 \times$  as long as basal width of pronotum. Rostrum extending to base of venter. Pronotum transverse,  $2.7 \times$  as broad as long in middle. Hind tibia  $1.6 \times$  as long as basal width of pronotum. Proportions between hind tarsomeres 9:15:14. Claws as in Fig. 8e.

Biology: On *Suaeda monoica* in a coastal salt marsh.

Discussion: Readily distinguished by the abundant dark pattern, dense and confluent black spotting of the 2nd antennal segment, maculate 3rd antennal joint (uniformly pale in the other species, and the blackish femora).

### *C. atricornis* sp. n.

Figs. 7d–e, 8j–k, 9a–c

Material studied: Yemen: Shabwah, Shabwah, ♂ holotype, 3 ♂ and 2 ♀ paratypes, 23–24.IV.1992, Linnavuori, in coll. Linnavuori (AMNH).

Diagnosis: 2nd antennal segment in ♂ uniformly black, in ♀ black with a pale ring.

Length 2.75 mm. Whitish gray with sparse purplish spotting. Lateral arcs on frons and a few small spots near eyes and in basal margin of vertex purplish; eyes gray. 1st and 2nd antennal segments black, 2nd in ♀ with a pale ring, 3rd and 4th joints pale brownish, base of 3rd whitish. Callal area and sides of pronotum with purplish dots, basal part of disc largely immaculate. Base of scutellum with 4 dark brown spots, apical part with a few purplish dots. Elytra with sparse purplish dotting, apical margin of corium more or less infumed; membrane grayish with dense dark mottling, veins pale. Sides of head and under surface of thorax sanguineous; venter sanguineous with pale mottling. Legs whitish ochraceous. Femora with dense, confluent dark brown mottling, tibiae with distinct black setigerous spots and fine purplish dots, spines pale. 1st and 3rd tarsomeres a little embrowned. — Small.

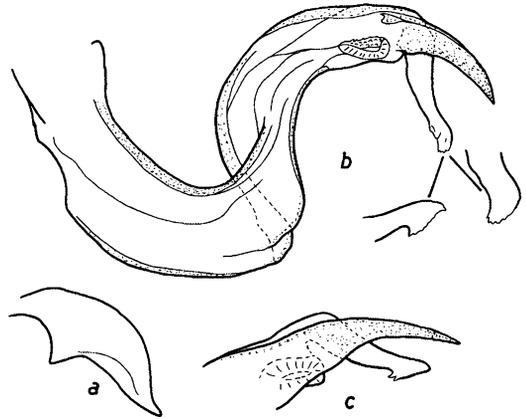


Fig. 9. *Compsonannus atricornis* sp. n. a: theca; b: vesica in slide mount; c: apex of vesica in glycerine.

Body nearly parallel-sided, about  $2.5 \times$  as long as broad at base of pronotum. Upper surface with pale appressed pubescence and longish semierect yellowish and dark hairs. Head about  $0.7 \times$  as broad as basal width of pronotum, in apical view  $1.35 \times$  as broad as long, in lateral view  $1.23 \times$  as high as long; ocular index 1.11–1.20 (♂), 2.0 (♀). Proportions between antennal joints 14:48:25:20 (♂), 11:44:24:20 (♀); hairs of 1st and 2nd joints black, on other joints pale, 1st joint  $0.30\text{--}0.33 \times$  as long as diatone, 2nd segment in ♂ remarkably incrassate, cylindrical, in ♀ more gracile and slightly expanding apicad,  $1.10\text{--}1.14$  (♂) or  $1.16$  (♀)  $\times$  as long as diatone,  $0.76\text{--}0.81$  (♂♀)  $\times$  as long as basal width of pronotum. Rostrum extending a little beyond hind coxae. Pronotum  $2.3$  (♂) or  $2.5$  (♀)  $\times$  as broad as long in middle. Hind tibia about  $1.4 \times$  as long as basal width of pronotum. Proportions between hind tarsomeres 8:13:9. Claws in Fig. 8i. — Male genitalia in Figs. 8j–k, 9a–c. Pygofer broadly conical. Vesica robust, with two apical processes, the upper falcate, the lower finely dentate apically.

Biology: On an unidentified tree in a desert wadi.

Discussion: Differing readily from the other known species of the genus in the coloring of the antennae. Erroneously resembling *Yotvata picticornis* (Horvath), which was also found in the same habitat. But the male genital structure clearly proves it to belong to *Compsonannus*. The genus

*Yotvata* Linnavuori displays specialized genital characters (peculiarly shaped left style, theca provided with processes or apical denticulation; structure illustrated in Linnavuori 1984:43–45).

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