

Taxonomic review of the subfamily Pseudophloeinae (Hemiptera: Coreidae) from Egypt

Hayam El Hamouly, Rabab F. Sawaby* & Hassan H. Fadl

Entomology Department, Faculty of Science, Ain Shams University, Abbassia, Cairo, Egypt.

Abstract

The members of subfamily Pseudophloeinae of Egypt were studied. Keys, descriptions, synonyms, distributions and host plants were given to clarify the status of each species. Eight genera and 14 species are recorded of this subfamily from Egypt. Scanning electron microscopy was used to compare between the subfamilies Pseudophloeinae and Coreinae.

Keywords: Coreinae, *Bathysolen*, *Strobilotoma*, *Arenocoris*, *Ceraleptus*, *Microtelcerus*, *Coriomeris*, *Loxocnemis*, *Bothrostethus*, electron microscopy, scent glands..

Introduction

The Coreidae (the leaf-footed bugs) is a large family in order Hemiptera, represented by 2200 species belonging to 500 genera in the world, and 344 species belonging to 84 genera in the Palaearctic region (Dolling 2006). Most coreids are fairly large (ca. 4 cm), relatively heavy-bodied insects, usually robustly elongate or broadly elliptical, characterized by many parallel veins in the membrane of the forewings, four segments to the antennae and rostrum, two ocelli, three-segmented tarsi, scent glands on the thorax between the mid- and hind-coxae, and a head narrower and often shorter than the pronotum (Schuh & Slater 1995, Dolling 2006). Steinbauer (1996) reported that most species are phytophagous, although occasional coprophagy is known. Globally, coreids cause significant loss of grain legumes, cucurbit crops and soft fruits and nuts. They are known to feed on plant vessels and its reproductive parts (Kumar 1966), but a few are reported to be predaceous.

The Coreidae was established by Leach (1815) to include the Rhopalinae and Alydinae, retained as subfamilies for many years. Fracker (1918) divided the family into five subfamilies: Merocorinae, Pseudophloeinae, Corizinae, Alydinae and Coreinae. The phylogenetic scheme of Ahmad (1970) recognized as subfamilies the Coreinae, Colpurinae, Phyllomorphae, Hydarinae, Pseudophloeinae and Procamptoninae. The superfamily Coreidea was reviewed by Baraka (1989), but she did not divide the Coreidae into subfamilies. The present review divides the family into two subfamilies, Coreinae and Pseudophloeinae.

The Pseudophloeinae are generally small and dull in colour; the head is produced anteriorly in front of the bases of the antennae; the pronotum is steeply inclined; and the pronotum, scutellum and hemelytra are roughly granulate, with each granule bearing small adpressed setae (Schuh & Slater 1995). In the present work we modified the existing keys which depend on the ratios of the antennal segments, supported by illustrations to clarify the taxonomic characters of each taxon.

Materials & Methods

Specimens were collected by sweeping and beating nets from their habitats. The collected specimens were pinned, labeled and identified. Some adult pinned specimens were photographed using a binocular microscope and digital camera. The species belonging to the subfamily preserved in Egyptian collections were examined and drawn. These collections are: Ain Shams University collection, Faculty of Science, Entomology Department (ASUC); Alfieri collection, El Azhar University, Faculty of Agriculture (ALFC); Cairo University collection, Faculty of Science, Entomology Department (CUC); Egyptian Entomological Society collection (EESC); and Ministry of Agriculture collection, Plant Protection Institute, Identification section (MAC).

* Author for correspondence email : rabab_sawaby@yahoo.com

Scanning electron microphotographs revealed the head, legs and metathoracic scent glands of the two subfamilies Coreinae and Pseudophloeinae. These structures were dissected and dehydrated in ethanol. After drying, the materials were mounted on stubs, coated with gold and photographed with a JEOL JEM-100 scanning electron microscope operating at an accelerating voltage of 25 KV.

Diagnoses and keys

The subfamily Pseudophloeinae (Hemiptera, Heteroptera: Coreidae) are plant-feeding bugs inhabiting herbs and shrubs. It is represented in Egypt by 8 genera with 14 species. The main characteristic features of the Pseudophloeinae are as follows: oval, elongate species; head without a median sulcus; tylus and juga prominent and gently declivent (Fig. 3A); rostrum at rest reaching metasternum; posterior angles of 7th abdominal segment prominent in both sexes; tibiae not sulcate (Fig. 1B); hind femur with one or more spines on the distal third of the ventral surface (Fig. 1C); metathoracic scent-gland ostioles with a single large or two nearly fused auricles (Fig. 1D).

The metathoracic glands are composed of a reservoir and a pair of lateral glands connected to the reservoir by a duct. They open to the outside through paired ostioles located between the 2nd and 3rd coxae, surrounded by an evaporative area composed of mushroom-like elements (Figs. 1E, 2E).

Key to subfamilies of Coreidae

- 1 Head lacking median sulcus before eyes (Fig. 1A); hind femur with one or several subapical teeth (Fig. 1C), tibiae not sulcate on outer surface (Fig. 1B) metathoracic scent gland orifices with a single large or two nearly fused auricles (Fig. 1D) Pseudophloeinae Stål
- Head with median sulcus before eyes (Fig. 2A); hind femur without teeth or with two rows of small denticles (Fig. 2C); tibiae sulcate on outer surface (Fig. 2B); metathoracic scent gland not as above (Fig. 2D) Coreinae Leach

Key to genera of subfamily Pseudophloeinae

- 1 Body oval in shape; hind femora with at least a one conspicuous spine (Fig. 3B); 2nd antennal segment shorter than or as long as one half of the 3rd 2
- Body almost oblong and sometimes oval or elongated; hind femora with several spines (Fig. 3C); 2nd antennal segment as long as or slightly shorter than the 3rd 4
- 2 Lateral margins of pronotum smooth (Fig. 3D); head and pronotum without humps or tubercles; 4th antennal segment oviform, shorter than 3rd (Fig. 3I) *Bathysolen* Fieber
- Lateral margins of pronotum and head with spines and tubercles (Fig. 4A) 3
- 3 3rd antennal segment tuberculate, with spreading bristles, about twice longer than the 2nd one, 4th one oviform and nearly as long as 3rd one (Fig. 3J) *Strobilotoma* Fieber
- 3rd antennal segment sulcate, with short thorns, about 3 times longer than the 2nd; 4th fusiform and shorter than 3rd (Fig. 3K,L) *Arenocoris* Hahn
- 4 Hind coxae closely approximated (Fig. 3G) 5
- Hind coxae for apart (Fig. 3H) 6

- 5 Body oblong; membrane with many-branched costa; 4th antennal segment spindle-shaped, somewhat shorter than the 1st (Fig. 3M); hind femora with 3-5 apical spines *Ceraleptus* Costa
 - Body oval; membrane with few-branched costa; 4th antennal segment fusiform, usually the shortest segment; hind femora with 2 apical spines *Microtelcerus* Reuter
- 6 Body elongated; pronotum trapezoidal in shape, its posterior angles at the sides of scutellum produced into a spine (Fig. 3E,F); antennal segments 1-3 nearly equal in length (Fig. 3N,O) *Coriomeris* Westwood
 - Body oblong; pronotum hexagonal, its posterior angles not produced into a spine; antennal segments 1-3 not nearly equal in length 7
- 7 Fore femora with spines; 4th antennal segment longer than the 3rd, 2nd as long as 3rd (Fig. 3P) *Loxocnemis* Fieber
 - Fore femora without spines; 4th antennal segment shorter than the 3rd, 2nd slightly shorter than 3rd (Fig. 3Q) *Bothrostethus* Fieber

Genus: *Arenocoris* Hahn, 1834

Arenocoris Hahn, 1834: Die wanzen. Ins. 2(5): 109.

Atractus Laporte, 1834: sensu Curtis, legend to pl. 500.

Pseudophloeus Burmeister, 1835: Handb. I & II: 301, 302, 308.

Ammocoris Agassiz, 1848: Nom. Zool. Si. Ind. Univ., 48: 94.

Psammocoris Marshall (1868) Ent. Mon. Mag., 4: 281.

Boudicca Kirkaldy, 1909: Can. Ent. 41: 30

Type species: *Coreus falleni* Schilling, by subsequent designation of Blanchard, 1842: 312.

Diagnosis: Body strongly depressed, ovate; body and appendages conspicuously granulated, head distinctly longer than pronotum, its lateral margins with spines and tubercles; antennifers divergent; 1st antennal segment much shorter than width of head, strongly incrassate except for its base, segments 2-3 slender, 2nd segment much shorter than 1st, 3rd about 3-4 times as long as 2nd, 4th short, fusiform; rostrum at rest reaching to posterior margin of mesosternum; anterior lateral margins of pronotum with short spines, posterior margin almost straight; lateral margins of scutellum elevated anteriorly, apex bilobed; fore and middle femora without subapical spines; hind femora with a single large tubercle or blunt spine subapically; abdomen margin evenly rounded, posterolateral angles of sternites obtuse or right-angled, not prominent; connexivum considerably expanded in middle.

This genus is represented in Egypt by 3 species.

Note: Named *Pseudophloeus* by Burmeister (1835), used until Priesner & Alfieri (1953); in 1961, Priesner & Wagner changed *Pseudophloeus* Burmeister to *Arenocoris* Hahn, 1834; they also synonymized *Pseudophloeus angustus* Reuter, 1891 with *Arenocoris intermedius* (Jakovlov, 1883). Dolling (1986) synonymized *Pseudophloeus gestroi* Bergevin, 1930 with *Arenocoris intermedius* (Jakovlov, 1883). Baraka (1989) did not mention these changes.

Key to species

- 1 Pronotum without humps; 3rd antennal segment thickened and dark in its distal part (Fig.3L), outer apical process of antennifer porrect *A. walti* (Herrich-Schaeffer)
- Pronotum with two longitudinal granular humps; 3rd antennal segment little or not thickened in its distal part (Fig. 3K), outer apical process of antennifer deflexed 2

- 2 1st antennal segment longer, length of incrassate part 0.46 or more times width of head including eyes *A. intermedius* (Jackovlev)
- 1st antennal segment shorter, length of incrassate part less than 0.46 times width of head including eyes *A. falleni* (Schilling)

***Arenocoris falleni* (Schilling, 1829)**

(Fig. 5A)

Coreus falleni Schilling, 1829: Beitr., I: 46.

Atractus lituatus Curtis, 1834: Brit. Ent. Pl. 10, Fig. 500.

Kind of type: syntype.

Diagnosis: Body length 6-6.5 mm; variable in colour; 1st antennal segment bristly tuberculate, 3rd segment 3-3.5 times as long as 2nd, with parallel sides; pronotum very rugose above, raised posteriorly, humped with very granulated tubercles, its lateral borders rather deeply sinuate and denticulate; membrane turbid brown, the veins spotted with rare brown points; connexivum brown with a clear medium band; femora with spiny granules.

Distribution: central south Europe; western Asia; Canary Islands and North Africa.

Host plant: low vegetation of steppe formations

Note: This species is not represented in the Egyptian collections. It was reported from Egypt by Priesner & Alfieri (1953).

***Arenocoris intermedius* (Jakovlov, 1883)**

(Figs. 4A,5B)

Pseudophloeus intermedius Jakovlov, 1883: Bull. Soc. Imp. Nat. Moscou 57 (3): 98-112.

Pseudophloeus angustus Reuter, 1891: Rev. D. Ent. x: 139.

Pseudophloeus gestroi Bergevin, 1930: Ann. Mus. Civ. St. Nat. Genova, 55: 32.

Kind of type: holotype.

Sex of type: male.

Diagnosis: Body length 5.5-7.5 mm; colour pale yellowish-brown, usually with dark-brown mottling; head as long as wide including eyes; antennifers strongly divergent, their outer apical processes deflexed; antennae with 1st segment abruptly incrassate from a slender base, incrassate part tuberculate, 4th shortly ovate-fusiform, nearly as thick as 1st and with apical sensory area occupying about one-half of its length, segments 1-3 usually pale yellowish-brown throughout, 3rd never darkened at apex, 4th always black; lateral margins of pronotum with 3 or 4 prominent tubercles, veins white with short streaks.

Distribution: Algeria, Egypt, Libya, Morocco, South of Chad and Ethiopia, Iraq, Palestine, Kuwait, Saudi Arabia; Turkey, Great Britain, Malta, Portugal, Spain, and Cyprus.

Host plants: The herbaceous plants belonging to Poaceae.

Specimens examined: Magadlah 7.10.1931 (1), Kafr Hakim 13.12.1933 (1), Abu Rawash 20.1.1938 (1) (MAC); Beni Souef 25.9.1923 (1) (ALFC).

***Arenocoris waltii* (Herrich-Schaeffer, 1834)**

Coreus walti Herrich-Schaeffer, 1834: Faun. Germ.: 127.

Pseudiphloeus hispanus Rambur, 1842: Faun. Andalus. II: 134

Pseudophloeus auriculatus Fieber, 1861: Europ. Hemip.: 217.

Kind of type: syntype.

Sex of type: male & female.

Diagnosis: Body length 7-7.5 mm; blackish, below dirty reddish, sometimes dense black-spotted, with distinct clear lateral stripe; head length equal to width including eyes, outer apical process of antennifer porrect; 3rd antennal segment incrassate, blackish at apex, nearly 4 times as long as 2nd, 4th fusiform, black with brown apex; pronotum widened posteriorly, its anterior angles blunt, rather granulate and toothed; scutellum carinate at apex only; membrane smoky brown, veins brown, interrupted with small white spots; tibiae spiny bristly on edges, with apex and base brown.

Distribution: North Africa, western Asia, Belgium, France, Great Britain, Germany, Greece, Italy, Portugal, Romania, Russia, Spain, Switzerland, Yugoslavia, Afghanistan, Iran, Iraq, Palestine, Jordan, Syria and Turkey.

Host plant: *Bromus* sp.

Note: This species is not represented in our collections, but was reported from Egypt by Priesner & Alfieri (1953).

Genus: *Bathysolen* Fieber, 1860

Bathysolen Fieber, 1860: Europ. Hemip.: 216.

Type species: *Coreus nubilus* Fallen, 1807.

Diagnosis: Body oval; head short, thick, smoothly arched, pentagonal from above; antennal tubercles short, blunt; 4th antennal segment oviform, much shorter than 3rd, which is 4 times longer than 2nd; pronotum hexagonal, its lateral margin smooth, its anterior and posterior margins smoothly curved; head and pronotum without humps or tubercles; femora especially the middle pair ridged, hind femora with one spine on its distal part.

This genus is represented in Egypt by one species.

***Bathysolen nubilus* (Fallen, 1807)**

Coren nubilus Fallen, 1807: Monog. Cim. Snec.:58.

Kind of type: holotype.

Sex of type: female.

Diagnosis: Body length 5.5-6 mm; blackish brown; head and pronotum heavy granulated with dispersed large white hard granules; 1st antennal segment swollen, dark brown, 2nd and 3rd segments brownish yellow, 4th fusiform, black with a brown end; pronotum broad with pale sides, scutellum with a pale tip; femora with brown spots in bands; tibiae pale with brownish base, below with 2 brown lateral bands.

Distribution: Egypt, central Asia, England and Sweden.

Host plant: different host plants and their seeds.

Note: Oshanin (1912) recorded it from Egypt, but it is not represented in Egyptian collections.

Genus: *Bothrostethus* Fieber, 1860

Bothrostethus Fieber, 1860: Europ. Hemip. : 222

Type species: *Merocoris annulipes* (Costa, 1847).

Diagnosis: Body oblong, the whole surface above granulated, with short appressed setae; head pentagonal from above; 1st antennal segment nearly as long as head, 3rd sometimes rather longer than 2nd, 4th cylindrical, scarcely thicker and nearly 2/3 length of 3rd; pronotum hexagonal, with large pointed granulated punctuation, posterior border without spines; fore-femora unarmed, mid-femora with one tooth, hind-femora thick clubbed, compressed, with two curved teeth on the hind half, with a few small pectinate teeth behind; membrane with net-

shaped branched veins run downwards from the transverse vein; lateral margins of abdomen slightly swollen and extended beyond the hemielytra (dorsal view).

This genus is represented in Egypt by only one species.

***Bothrostethus annulipes* (Costa, 1847)**

(Figs. 3Q,5C)

Merocoris annulipes Costa, 1847: Cim-regni Neap.: 19

Bothrostethus denticulatus Fieber, 1860: Eur. Hemip.: 222

Kind of type: holotype.

Diagnosis: Body length 9-10 mm; dark brown to black; antennae long and pubescent, 1st segment dark brown, elongated, with 4-5 strong spines on the outside, 2nd and 3rd reddish brown, 4th black with reddish-brown base; pronotum humped posteriorly, with 6 tooth-shaped hard granules, dorsal surface brown, with raised light regions; connexivum blackish, with yellow wider band; femora reddish brown with yellow spots; tibiae pale, its base, tip and middle with a brown ring; abdomen marble.

Distribution: Austria, France, Germany, Greece, Hungary, Italy, Portugal, Romania, Russia (Central and South European Territory), Algeria, Egypt, Turkey and Iran.

Host plant: *Bromus* sp. and other Fabaceae.

Note: It was recorded from Egypt by Priesner & Alfieri (1953), but is not represented in our collections.

Genus *Ceraleptus* Costa, 1847

Ceraleptus Costa, 1847: Cim-regi. Neap. Centur. 2a: 11.

Type species: *Coreus gracilicornis* (H.-S., 1839).

Diagnosis: Body oblong; head thick, slender at the end, pentagonal from above; the distance between ocelli larger than the distance between them and eyes; rostrum with thick segments, basal rostral segment shorter than the head and as long as 2nd segment; 1st antennal segment nearly as long as 2nd, 3rd rather longer, 4th spindle-shaped, somewhat shorter than 1st; metathorax hexagonal, with a flat groove; humeral pronotal angles rounded; membrane with many branched veins; hind femora armed with 3-5 large teeth below near distal ends, hind coxae closely approximated.

This genus is represented in Egypt by one species.

***Ceraleptus obtusus* (Brulle, 1838)**

(Figs. 3G, M, 4B, 5D)

Coreus obtusus Brulle, 1838: Cat. Gen. Hemip.: 94.

Coreus aegyptius Westwood, 1842: in Hope cat. II.

Ceraleptus squalidus Costa, 1847: Cim. Reg. Neap. 22: 12.

Ceraleptus leptocerus Fieber, 1860: Europ. Hemip.: 219.

Kind of type: syntype.

Diagnosis: Body length 10-11 mm, bright brown; antennal tubercles short, 1st-3rd antennal segments brownish yellow, 2nd and 3rd bar-shaped, 4th brownish red; anterior angles of pronotum prolonged forward in a sharp point, humped posteriorly, with tubercles on anterior half of lateral borders, posterior half straight; clavus and corium regularly granulated; connexivum brown, white spotted, with a large whitish spot near base of each segment; legs golden; apical half of femora with regular fine brown granules, hind femora with 5 large teeth at apex, the 3rd tooth longer than others; mid-femora without teeth; tibiae spiny with brown granules.

Distribution: East Europe, Algeria, Egypt, Morocco, Cyprus, Iran, Iraq, Palestine, Syria, Turkey.

Host plant: *Scorzonera* sp.

Specimen examined: Kafr Hakim 17.12.1951 (1), Kom Osheim 1.8.1953 (1) Kerdasa 15.10.1984 (1) (ASUC); Helwan 24.5.1932 (1) (CUC); Egypt 1927 (2) (EESC); Kafr Hakeim 14.2.1934 (1); Mansouriah 4.3.1934 (2); Borgash 6.12.1934 (1) (MAC).

Genus: *Coriomeris* (Westwood, 1842)

Coriomeris Westwood, 1842

Coreus Fabricius, 1803: Syst. Rhyn.: 191.

Merocoris Hahn, 1834: Wanz. Ins. II: 105.

Dasycoris Dallas, 1852: List II: 484.

Coriomeris Reuter, 1900: Ofv. Fin.Vet. Soc. Forh.42: 268.

Type species: *C. hirticornis* (Fabricius, 1794)

Diagnosis: Body elongated, clothed with dense woolly pubescence; head subquadrate; eyes globular and prominent; ocelli nearly as far apart as eyes; antennae hairy, finely spiny, nearly half as long as body, antennal segments 1-3 nearly equal in length, 4th a little shorter, pointed at end; pronotum trapezoidal, its lateral borders spiny and dented, posterior border with pointed spine on each side lateral to scutellum, posterior angles of pronotum prominent; hemielytra opaque, membrane with small longitudinal parallel veins, forked, showing some cells; abdomen with flat borders, slightly exceeding the elytra on each side; legs strong and hairy, posterior ones a little longer than others; femora thick, posterior ones armed below distally with curved spine and several small teeth.

Note: This genus was represented by 3 species in the revision of Baraka (1989). Dolling (2006) added *Coriomeris hirticornis* (Fabricius 1794) to the Egyptian fauna, so the genus is represented in Egypt by 4 species.

Key to species

- 1 Rostral plates small, rounded, invariably shorter than the part of the 1st rostral segment; posterior angles of connexival segments with small denticles *C. pallidus* Reuter
- Rostral plates pointed apically, or if rounded, then narrow and elongate, invariably longer than the part of the 1st rostral segment; posterior angles of connexival segments with sharp denticles of different length 2
- 2 Body broad; pronotum with dark longitudinal stripes, its lateral margins straight, humeral spine thicker and shorter, pubescent; denticles on posterior angles of connexival segments short; rostral plates neither narrow nor elongate *C. vitticollis* Reuter
- Body elongate; pronotum bordered with distinct light stripes extending to posterior margins, its lateral margins slightly notched, humeral spine slender, long; denticles on posterior angles of connexival segments sharp, long; rostral plates narrow, elongate 3
- 3 First antennal segment much shorter than head, with long clear setae; humeral angle of pronotum slightly rounded *C. hirticornis* (Fabricius)
- First antennal segment not or slightly shorter than head, with darker setae shorter than the previous species; pronotum clearly narrowed anteriorly *C. affinis* (Herrich-Schaeffer)

***Coriomeris affinis* Herrich-Schaeffer, 1839**

(Figs. 3E, N, 4C, 5E)

Coriomeris affinis H.-S., 1839: Wanz. Ins., 4, Nurnberg: 97.

Merocoris spinpla Costa, 1844: Cim. Neap. Cent.I: 33.

Coreus hirticornis Feiber, 1861: Dei Europ. Hemip. Vienna: 221.

Dasycoris pilicornis Mulsant & Rey, 1870: Hist. Nat. D. Pun.fr., 3: 53.

Coriomeris affinis aegyptius Schmidt, 1939: Bull. Soc. Fouad 1er Ent. 22: 351.

Kind of type: syntype.

Diagnosis: Body length 8.7 mm, slender; antennal segments red-brown, except 4th darker, 1st antennal segment elongated, thick, 2nd and 3rd nearly equal in length; eyes small, prominent; rostral plates narrow, elongate, often pointed; pronotum broader basally, its lateral margins and basal corners with tooth-shaped hard granules, humeral spine slender and long; hind femora with a row of 4-5 teeth apically, 1st longer than the others; lateral margins of connexivum with sharp long denticles on posterior angles of segments.

Distribution: Albania, France, Greece, Hungary, Italy, Portugal, Romania, Spain, Switzerland, Yugoslavia, North Africa, Cyprus, Iran, Iraq, Israel, Lebanon, Syria and Turkey.

Host plant: *Bromus* sp., halfa grasses and *Pinus halepensis*

Specimens examined: Benha 1.6.1953 (3), Suez Road 11.3.1954 (1), Marsa Matrouh 15.9.1957 (3), Aswan 3.3.1984 (3), El Fayoum 24.10.1984 (1) 25.5.1994 (2), Wadi Hoff 19.4.1985 (1), Pyramids 11.6.1986 (9), Rafah 25.5.1992 (5) (ASUC); El Mallah 28.6.1932 (1), Mansouriah 11.7.1933 (1) (MAC); Helwan 4.3.1939 (1), El Marg 28.2.1956 (2) (CUC); Ezbet El Nakhl 3.6.1917 (1), Meadi 6.6.1920 (2); El Marg, Egypt 1927 (14) (EESC).

***Coriomeris hirticornis* (Fabricius 1794)**

(Fig. 3F)

Coreus hirticornis Fabricius, 1794: Ent. Syst. IV :138.

Kind of type: holotype.

Sex of type: unsexed adult.

Diagnosis: 1st antennal segment much shorter than the head, with long clear setae, setae of 2nd and 3rd erect, as long as or longer than diameter of segments; humeral angle of pronotum slightly rounded; hind femora with three or four spines, humeral spine long and directed backwards.

Distribution: Albania, Austria, France, Italy, Russia, Spain, Algeria, Egypt, Morocco, Afghanistan, Cyprus, Iran, Iraq, Palestine, Jordan Lebanon, Syria and Turkey.

Host plant: *Setaria* sp.

Note: Not represented in Egyptian collections, but recorded from Egypt by Dolling (2006).

***Coriomeris pallidus* Reuter, 1900**

(Figs. 4D, 5F)

C. pallidus Reuter, 1900: Ofv. Fin. Vet. Soc. Forh., 42:272

Kind of type: lectotype.

Sex of type: male.

Diagnosis: Body length 8.9-9.3 mm, often light yellowish, sometimes brownish or grayish; antennal segments 1-3 covered with short dark, and dense light, slender hairs; rostrum not reaching mid-coxae; rostral plates small, rounded, invariably shorter than the part of 1st rostral segment not covered by them laterally; pronotum sometimes with indistinct longitudinal dark hairs, its lateral margins straight; posterior angles of connexival segments bearing small denticles.

Distribution: Russia (South European Territory), Afghanistan, Kazakhstan, China, Iran, Lebanon, Syria, Tajikistan, Turkey and Egypt.

Host plants: Herbaceous Poaceae and associated with *Medicago* (Leguminosae) and other genera of similar growth habit.

Specimens examined: Kerdasa 20.9.1931 (10), Magadlah 7.9.1931 (10), Mansouraih 3.12.1933 (1) (MAC).

***Coriomeris vitticollis* Reuter, 1900**

(Figs. 3C, H&4E&5G)

C. vitticollis Reuter, 1900: Ofv. fin. vet. soc. forh., 42: 270

Kind of type: lectotype.

Sex of type: male.

Diagnosis: Body length 8.5 mm; grey, brownish, rarely reddish; head with long light hairs, tubercle on longitudinal median line, imperceptible posteriorly; rostral plate pointed apically, neither narrow nor elongate; antennae and legs longer and thick; pronotum with dark longitudinal stripes, often very indistinct, sometimes with 5 longitudinal dark spines, its lateral margins straight, spiny, humeral spine large; connexivum broad, denticulate on posterior angles of segments; abdomen dorsally light or brown, partially black.

Distribution: Egypt, Iraq, Syria, Morocco, Turkey, Ukraine and Cyprus

Host plants: Found on halfa grasses, legumes, *Medicago*, *Trifolium* and *Glycyrrhiza glabra*.

Specimens examined: Burg El Arab 8.7.1934 (1), Mansouriah 11.8.1935 (1) (MAC).

Genus: *Loxocnemis* Fieber, 1860

Loxocnemis Fieber, 1860: Europ. Hemip. 1.

Type species: *Lygaeus dentator* (Fabricius, 1794).

Diagnosis: Body oblong, pubescent; 1st antennal segment thick, nearly spindle-shaped, 2nd shorter than 1st, segments 2-3 equal in thickness and length, 4th cylindrical, pointed, nearly as long as 1st; pronotum oblong, its sides blunt, subspiny, posterior border without spines; mesothorax arched, with wide groove behind; metathorax arched, almost octagonal; fore femora with a large spine and smaller ones in the distal third of ventral surface, hind tibia curved below; abdomen trimmed at base.

This genus is represented in Egypt by one species.

***Loxocnemis dentator* (Fabricius, 1794)**

(figs. 3A, P&4F&5H)

Lygaeus dentator Fabricius, 1794: Ent. Syst. IV: 138.

Coreus alternans H.-S., 1835: Faun. Germ.: 135

Menocoris brevicornis Rambur, 1842: Faun. Andulas II: 133.

Menocoris dufouri Lucas, 1849: Expl. Alg. II: 49

Kind of type: syntype.

Sex of type: unsexed adult.

Diagnosis: Body length 9-10 mm, dull black to yellowish brown, hairy; head stout, in front with a yellowish band; antennal tubercles pointed; each segment of connexivum in front with a yellowish flat elucidative band.

Distribution: Central and southern Europe, North Africa and Asia Minor.

Host plant: Fabaceae and Lamiaceae.

Specimens examined: Egypt, 1927 (1) (EESC).

Genus: *Microtelocerus* Reuter, 1900

Microtelocerus Reuter, 1900: Kat. Palaerk. Hemip.: 23

Type species: *Microtelocerus testaceus* Reuter, 1900

Diagnosis: Body oval, depressed, almost glabrous; head as long as pronotum; granulate throughout; 1st antennal segment distinctly shorter than head width across eyes, stout, narrowed toward base, 2nd nearly as stout as and slightly longer than 1st, slightly tapering toward apex, 3rd about half as long as 2nd, slightly narrower at base than its apex, tapering toward apex, segments 1-3 densely granulate, 4th the narrowest and the shortest, fusiform, granulate on basal half; rostrum reaching to posterior margin of mesosternum; bucculae occupying about 1/3 length of head; pronotum strongly granulate, anterior and lateral margin smooth except in region of posterolateral angles; scutellum equilateral, granulated; hind coxae closely approximated, femora granulate, fore- and mid-femora without subapical spine, hind- with well-developed basal tubercle and with two major subapical spines; abdomen broad; connexivum extending well beyond costal margin of hemelytra at rest.

Note: This genus was represented by only one species in the revision of Baraka (1989), but Priesner & Wagner (1961) added *Microtelocerus testaceus* Reuter, 1900 to the Egyptian fauna, collected from Wadi El-Lega, Sinai; so this genus is represented in Egypt by 2 species.

Key to species

- 1 Testaceous insects, lateral margin of connexivum with brown spots, basal segment of connexivum without dark apex *M. linnavourii* Dolling
- Flavo-testaceous insects, lateral margin of connexivum not as above, basal segment of connexivum narrow, with dark apex *M. testaceus* Reuter

***Microtelocerus linnavourii* Dolling, 1979**

Microtelocerus linnavourii Dolling, 1979: Ent. Mon. Mag. 114:100-101.

Kind of type: holotype (Egypt, Sinai, Gebal Serbal)

Sex of type: female.

Diagnosis: Body length 11.3 mm; testaceous; head, antennae, labium, thoracic pleura, mesosternum, anterior quarter of pronotum, basal half and apex of scutellum and legs heavily infuscate; disc of corium with a small brown spot, membrane colorless, transparent, veins marked intermittently with brown; lateral margin of connexivum with brown spots.

Distribution: Egypt.

Note: This species is not represented in our collections. It was collected from Egypt by Dolling (1979).

***Microtelocerus testaceus* Reuter, 1900**

Microtelocerus testaceus Reuter, 1900: Kat. Palaerk. Hemip.: 23.

Kind of type: syntype.

Sex of type: female.

Diagnosis: Flavo-testaceous, head and anterior part of prothorax with white granules; 1st-3rd antennal segments slender and granulated, with short bristles, upper surface of 2nd and 3rd sulcate; head with ferruginous longitudinal lines; the corners of basal margin of pronotum punctuate, anterior margin at middle fuscous, its posterior part delicate with fuscous punctures; scutellum and hemelytra slightly punctuate with fuscous concolored punctures; basal segment of connexivum narrow, with dark apex; base and apex of posterior tibia slightly fuscous.

Distribution: Turkestan, Iran, Egypt.

Specimens examined: Wadi El-Lega, Sinai 6-9-1941 (CUC).

Genus: *Strobilotoma* Fieber, 1860

Strobilotoma Fieber, 1860: Europ. Hemip.: 218.

Type species: *Coreus typhaecornis* (Fabricius, 1803).

Diagnosis: Body oval; head stout, pentagonal from above, central portion blunt, almost truncate from the side; 3rd antennal segment tuberculate, with spreading bristles, about twice as long as 2nd, 4th oviform, acute at apex, nearly as long as 1st and 2nd together; rostrum reaching the mesothorax; pronotum trapezoidal, its hind edge with pointed lobes, all its sides straight, produced with pectinate rather curved bristles, posterior border with a tooth on a side of scutellum; mesothorax deeply narrow-grooved; metathorax nearly pentagonal, narrowly trimmed and grooved, backwards angular; femora armed, fore-femora with one single strong spine, mid- with one strong spine between small ones, hind- clubbed with several decreasingly curved spines; membrane with 6-7 veins, sometimes branched.

This genus is represented in Egypt by one species.

Strobilotoma typhaecornis (Fabricius, 1803)

(Figs. 3J&5I)

Coreus typhaecornis Fabricius, 1803: Syst. Rhyngota. 19.

Coreus clavicornis Fabricius, 1803: Syst. Rhyngota: 198.

Coreus dentator Ahrens, 1812: Faun. Ins. Eur. , I: 23

Atractus genei Spinola, 1837: Ess. Hemip. : 212.

Pseudophloeus obscura Herrich-Schaeffer, 1842: Wanz. Ins., VI: 4-5.

Kind of type: syntype.

Diagnosis: Body buff or cinnamon brown; rostrum and pronotum onwards with erect spines, pronotum densely white granulated at middle; 1st antennal segment swollen, dark brown, 3rd and 4th with erect spines, 4th black; corium and clavus with erect dentate hard granules, hemelytra granulated punctate, with dispersed small granules and filled with fine appressed small hairs; membrane brownish, veins with whitish unequal spots; abdomen yellow, with black roll and black triangular spot at border; legs brown; tibiae yellowish.

Distribution: Southern Europe and Egypt.

Note: This species is not represented in our collections. It was reported from Egypt by Priesner & Alfieri (1953).

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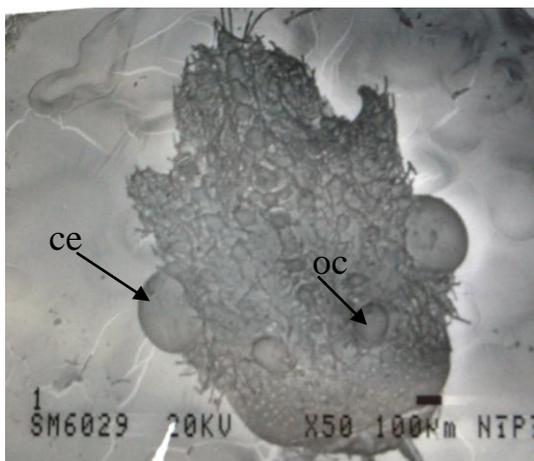
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الملخص العربي

مراجعة تصنيفية لتحت فصيلة *Pseudophloeinae* (فصيلة نصفية الأجنحة: كوريدى) في مصر

هيام الحامولى - رباب صوابى - حسن فضل
قسم علم الحشرات - كلية العلوم - جامعة عين شمس - القاهرة - مصر

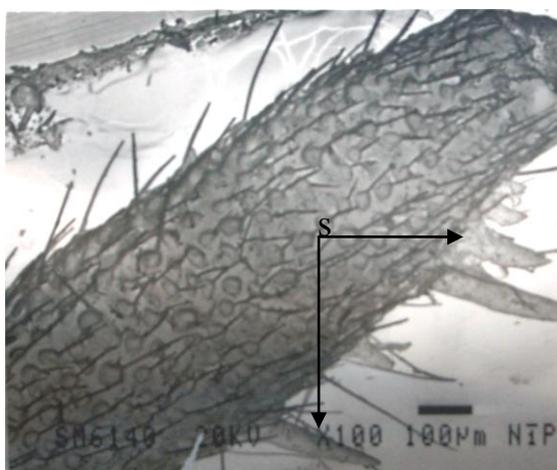
تم دراسة الأنواع المختلفة لتحت فصيلة *Pseudophloeinae* في مصر. تم عمل المفاتيح التصنيفية وأوصاف الأنواع ومرادفات أسمائها وتوزيعاتها والنباتات العائلة لها وذلك لتوضيح حالة كل نوع. تم تسجيل ثمانية أجناس يتبعهم 14 نوع من تحت الفصيلة محل الدراسة في مصر. كما تم استخدام المجهر الإلكتروني للمقارنة بين تحت الفصيلتين وهما: *Pseudophloeinae* و *Coreinae*



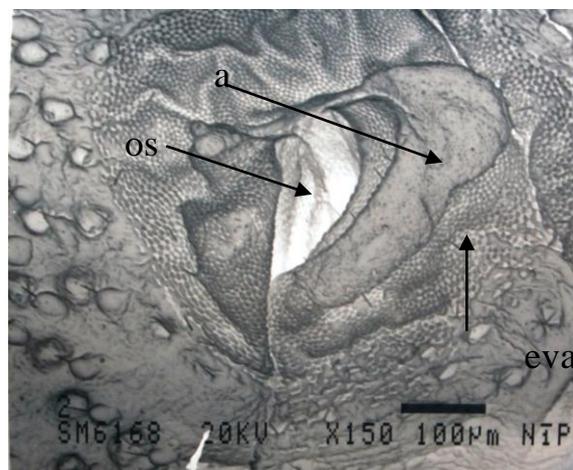
(A)



(B)



(C)

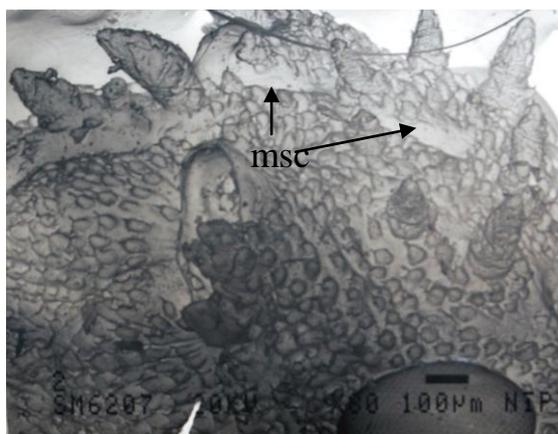


(D)

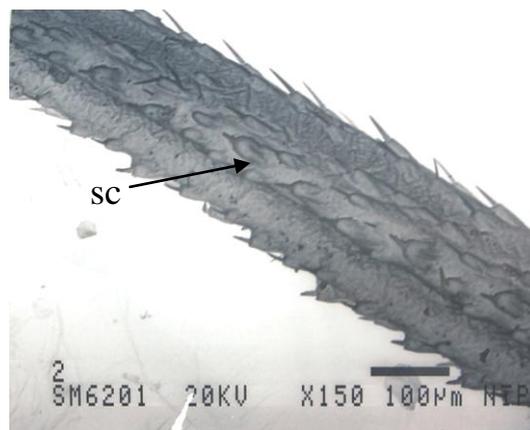


(E)

Fig. 1 *Coriomeris affinis* Herrich-Schaeffer: (A) dorsal view of head, (B) hind tibia, (C) hind femur, (D) scent gland, (E) evaporative area.
Abbreviations: a, auricle; ce, compound eye; eva, evaporative area; oc, ocelli; os, ostiole; s, spines.



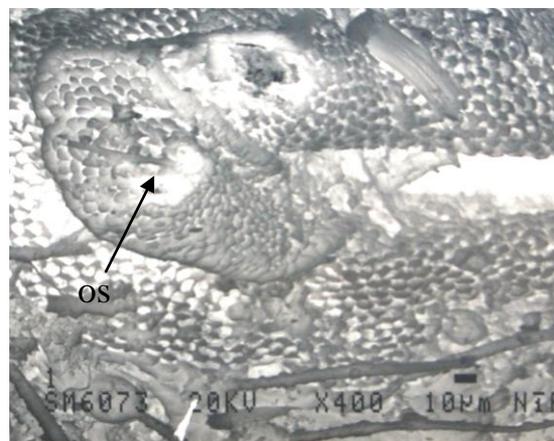
(A)



(B)



(C)



(D)



(E)

Fig. 2 *Centrocoris variegates* Kolti.: (A) lateral view of head, (B) hind tibia, (C) hind femur, (D) scent gland, (E) evaporative area.

Abbreviations: msc, median sulcus; os, ostioles; sc, sulcus.

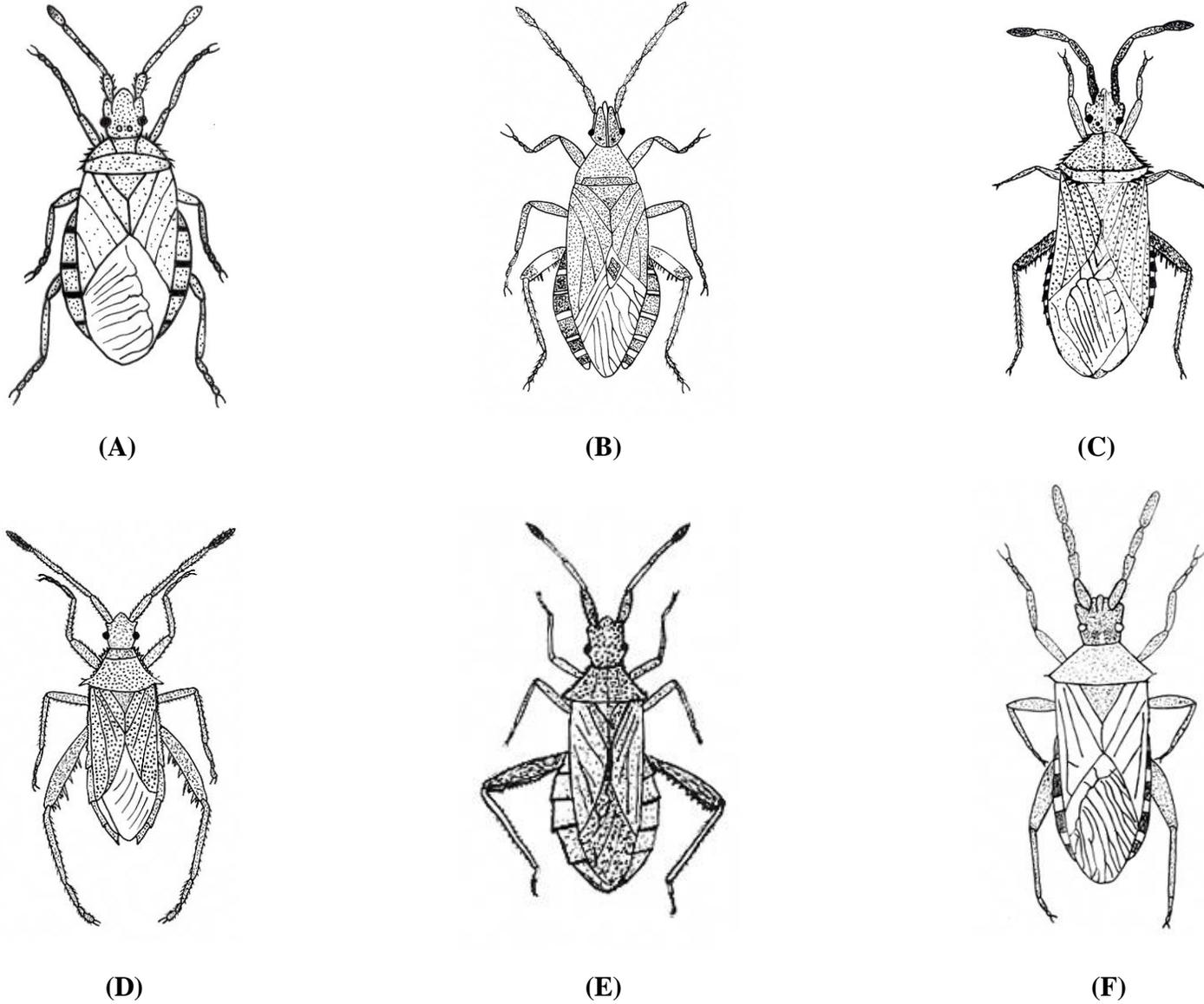


Fig. 4: (A) *Arenocoris intermedius* (Jakovlov), (B) *Ceraleptus obtusus* (Brulle), (C) *Coriomeris affinis* Herrich-Schaeffer, (D) *Coriomeris pallidus* Reuter, (E) *Coriomeris vitticollis* Reuter, (F) *Loxocnemis dentator* (Fabricius).

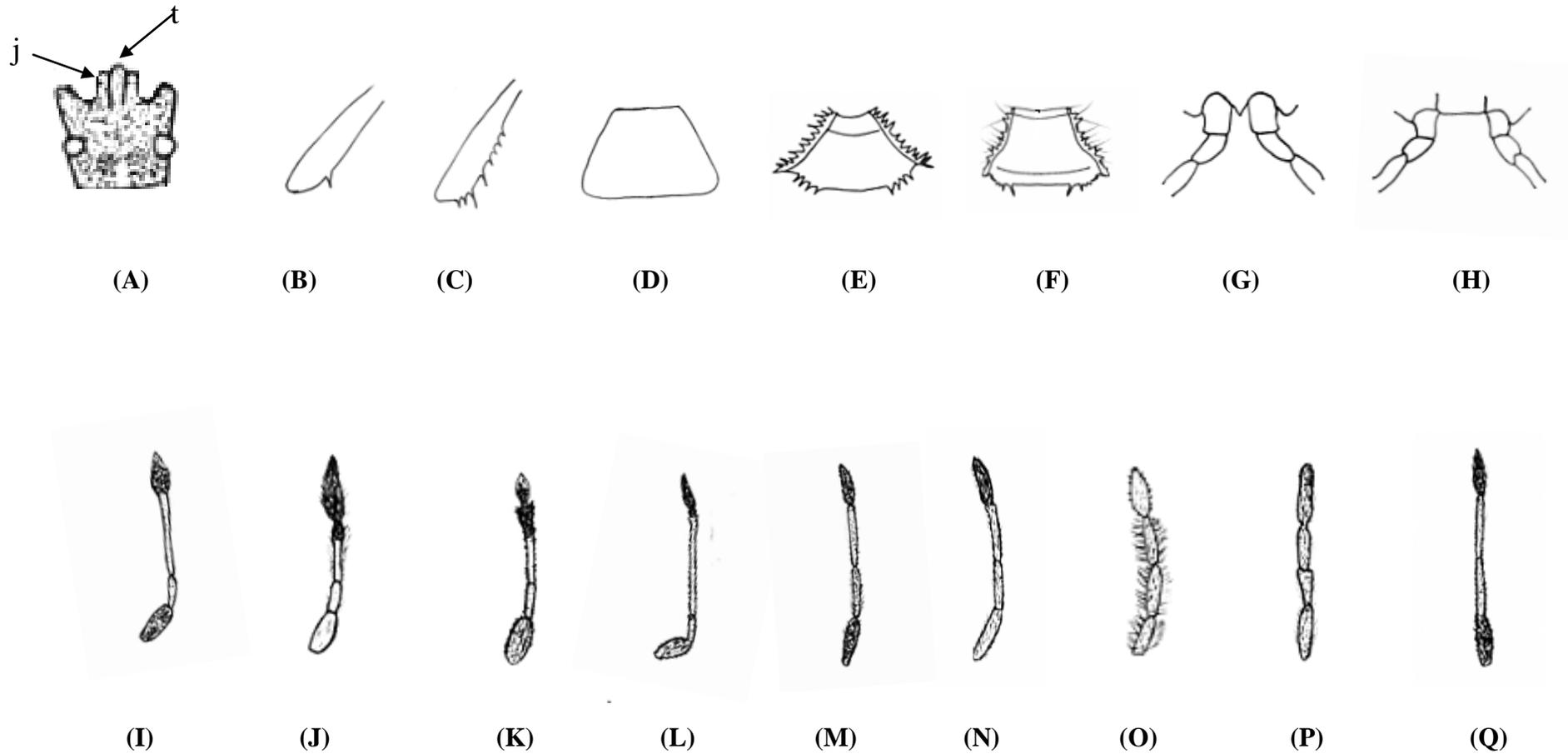


Fig. 3: (A) Head of *Loxocnemis dentator* (Fabricius), (B) Hind femur of *Arenocoris intermedius* (Jakovlov), (C) Hind femur of *Coriomeris vitticollis* Reuter, (D) Pronotum of *Bathysolen nubilus* (Fallen), (E) Pronotum of *Coriomeris affinis* Herrich-Schaeffer, (F) Pronotum of *Coriomeris hirticoris* (Fabricius), (G) Hind coxae of *Ceraleptus obtusus* (Brulle), (H) Hind coxae of *Coriomeris vitticollis* Reuter, (I) Antenna of *Bathysolen nubilus* (Fallen), (J) Antenna of *Strobilotoma typhaecornis* (Fabricius), (K) Antenna of *Arenocoris falleni* (Schilling), (L) Antenna of *Arenocoris walti* (Herrich-Schaeffer), (M) Antenna of *Ceraleptus obtusus* (Brulle), (N) Antenna of *Coriomeris affinis* Herrich-Schaeffer, (O) Antenna of *Coriomeris hirticoris* (Fabricius), (P) Antenna of *Loxocnemis dentator* (Fabricius), (Q) Antenna of *Bothrostethus annulipes* (Costa). Abbreviation: j, juga; t, tylus.

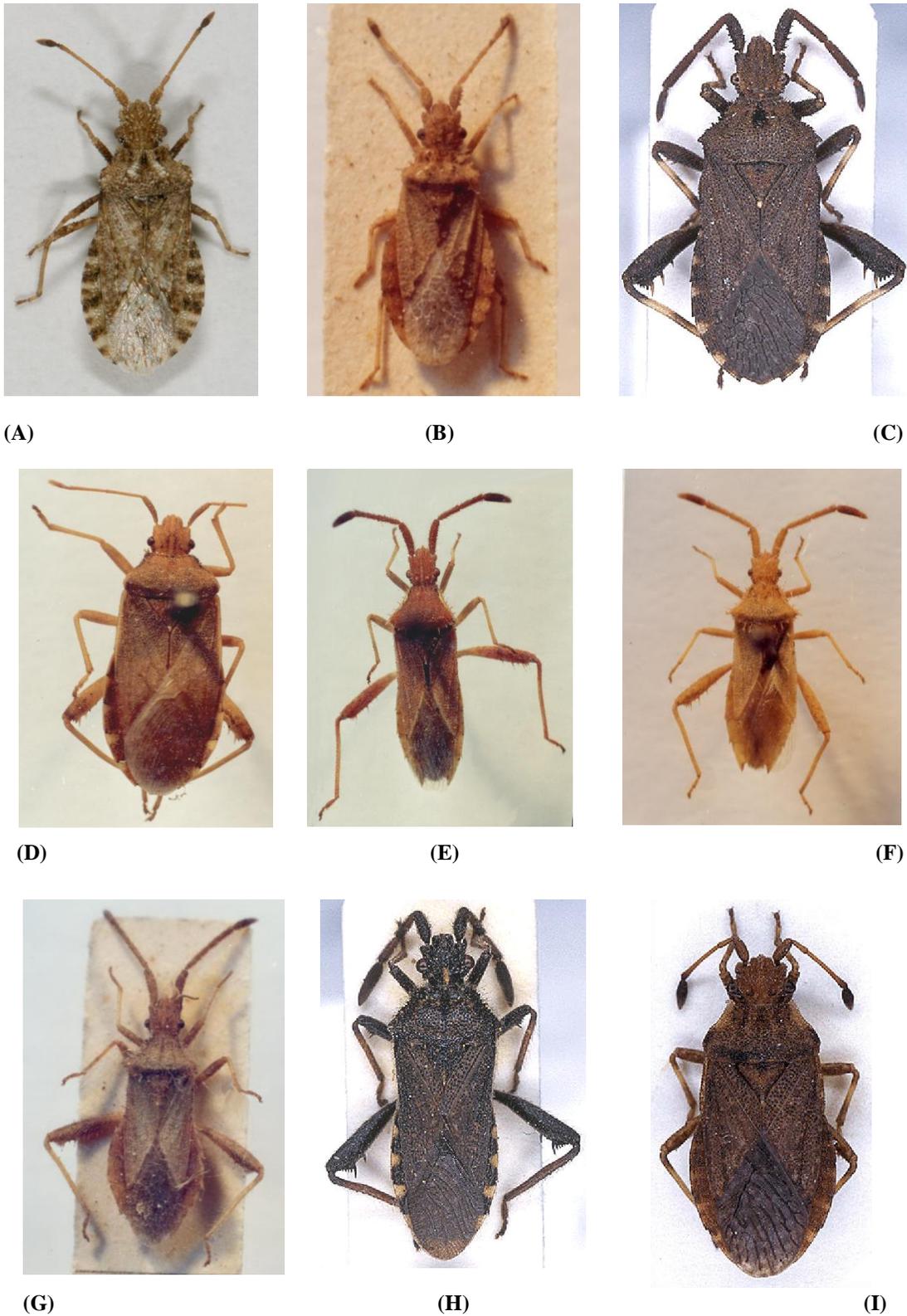


Fig. 5: Adults of (A) *Arenocoris falleni* (Schilling), (B) *Arenocoris intermedius* (Jakovlov), (C) *Bothrostethus annulipes* (Costa), (D) *Ceraleptus obtusus* (Brulle), (E) *Coriomeris affinis* Herrich-Schaeffer, (F) *Coriomeris pallidus* Reuter, (G) *Coriomeris vitticollis* Reuter, (H) *Loxocnemis dentator* (Fabricius), (I) *Strobilotoma typhaecornis* (Fabricius).