

BRUNO MASSA

THE MIDDLE EASTERN GENERA *PRIONOSTHENUS* BOLIVAR,  
*OCNEROPSIS* UVAROV AND *OCNEROSTHENUS* NOV. GEN.  
(*Insecta Orthoptera: Pamphagidae*)

SUMMARY

The study of some specimens coming from Middle East (Syria, Lebanon, Israel and Jordan) and original descriptions of 10 species allowed the separation of three genera: *Prionosthenus* Bolivar, *Ocneropsis* Uvarov and *Ocnerosthenus* nov. The gen. *Prionosthenus* consists of three species, *P. syriacus* (Brisout 1855) [= *P. galericulatus* (Stal 1876) = *P. verrucosus* Brunner 1882) = *P. lebanicus* Dirsh 1950 = *P. guleni* Karabag 1956], *P. brunnerianus* (Saussure 1887) and *P. simulans* Bolivar 1911. *P. syriacus* (Brisout) is distributed over a large area including the mountain slopes of Israel, Jordan, Lebanon, Syria, and the Turkish mountain South of Antakya (there possibly represented by the subspecies *P. syriacus guleni* Karabag). *P. brunnerianus* (Saussure) should be distributed over the North-West of Syria and Turkish Armenia. Distribution of *P. simulans* Bolivar covers the mountains of North Central Lebanon. The gen. *Ocneropsis* is monospecific (*O. bethlebemita* Bolivar 1893, living only in a restricted area of Israel and Syria). Two species belong to gen. *Ocnerosthenus* nov.: *O. kneuckeri* Krauss 1909 and *O. lividipes* (Fishelson 1985) (they could be synonyms), which live on the mountains of Lebanon, Syria and on Mt. Hermon (Israel). Characters which allow the separation of the three genera are summarized in Tables I, II and Figs. 1-58.

RIASSUNTO

*I Generi Prionosthenus Bolivar, Ocneropsis Uvarov e Ocnerosthenus nov. gen. (Insecta Orthoptera: Pamphagidae).*

L'analisi delle descrizioni originali e l'esame di esemplari provenienti dalle Regioni medio-orientali (Siria, Libano, Israele e Giordania) ha consentito sulla base di numerosi caratteri la separazione di tre differenti generi: *Prionosthenus* Bolivar, *Ocneropsis* Uvarov e *Ocnerosthenus* nov. Al gen. *Prionosthenus* apparterebbero tre specie: *P. syriacus* (Brisout 1855) [= *P. galericulatus* (Stal 1876) = *P. verrucosus* (Brunner 1882) = *P. lebanicus* Dirsh 1950 = *P. guleni* Karabag 1956], *P. brunne-*

*rianus* (Saussure 1887) e *P. simulans* Bolivar 1911. *P. syriacus* (Brisout), molto variabile nella forma del pronoto e metanoto (soprattutto le femmine) è distribuito in un'ampia area che comprende le zone montuose di Israele, Giordania, Libano, Siria e la Turchia a sud di Antakya (ove forse è rappresentato dalla sottospecie *P. syriacus guleni* Karabag); vive anche in Egitto. *P. brunnerianus* (Saussure) vivrebbe nel nord-ovest della Siria e nell'Armenia turca. La distribuzione di *P. simulans* Bolivar interessa invece le montagne del Libano centro-settentrionale. Al gen. *Ocneropsis* appartiene una sola specie (*O. bethlehemita* Bolivar 1893), che sembra distribuita solamente in una ristretta area a cavallo tra Israele e Siria. Infine fanno parte del gen. *Ocnerosthenus* nov. due specie: *O. kneuckeri* Krauss 1909 e *O. lividipes* (Fishelson 1985) (quest'ultimo potrebbe essere sinonimo del precedente). Essi vivono nelle montagne del Libano, della Siria e dell'estremo nord di Israele. Il gen. *Ocnerosthenus* nov. si distingue nettamente dagli altri due per la forma generale del corpo, la forma del fastigio sia visto di profilo che da sopra, per la forma dei primi antenomeri, del pronoto, del metanoto e dei primi tergiti visti di profilo, e per altri caratteri riassunti nelle Tab. I, II e nelle Fig. 1-58.

In 1942 UVAROV described the genus *Ocneropsis*, transferring from *Prionosthenus* Bolivar 1878 to it *P. brunnerianus* (Saussure 1887), *P. kneuckeri* (Krauss 1909) and *P. bethlehemita* (Bolivar 1893); accordingly with his proposal, *P. galericulatus* (Stal 1876) (type species of *Prionosthenus*), *P. syriacus* (Brisout 1855), *P. verrucosus* (Brunner 1882) and *P. simulans* Bolivar 1911 were still belonging to the genus *Prionosthenus*. Some years later DIRSH (1950) reported the new opinion of Uvarov, who was convinced that only *P. galericulatus* belonged to the gen. *Prionosthenus*, the other species to the gen. *Ocneropsis* or another undescribed genus. Two more species of *Prionosthenus* had been described respectively by DIRSH (1950: *lebanicus*) and KARABAG (1956: *guleni*), another of *Ocneropsis* by FISHELSON (1985: *lividipes*); the last author proposed to consider just one species (*Prionosthenus galericulatus*) until a revision of the genus was carried out. I have dealt with this systematic problem and now report here my results.

Gen. *Prionosthenus* Bolivar 1878.

Body compressed laterally, fastigium strongly projecting between antennae, along a line above the superior border of the eye; front more or less vertical; antennal segments flattened at the base. Eyes oval. Pronotum more or less raised, posterior transverse sulcus generally distinct, close to posterior margin. Metanotum and abdominal tergites raised, especially in males. Metasternal interspace narrow. Prosternal process narrow with bilobate acute anterior apex and two small tubercles in the posterior surface. Tegmina 2.8-4.6 times as long as wide in males, 3.5-4.7 in the females. Male subgenital plate in lateral view convex and pointed, transversal sulcus of the plate in the posterior third. Postfemora robust, with small teeth in the upper border. Phallic complex curved, aedeagus sclerites fine and parallel in ventral view. Epyphallus with many spines arranged disorderly. (cf. BOLIVAR 1878 and Tab. I). The



Figure 1 — Pair of *Prionosthenus* depicted in Table 7 of the «Description de l'Égypte» by SAVIGNY (1809-1813).

genus is distributed in Syria, Turkey, Lebanon, Israel, Jordan and Egypt; in Egypt is known since 1809, being a pair surely belonging to this genus depicted in Table 7 of SAVIGNY (1809-1813: Fig. 1); it is also reported for Egypt by IHSAN & DONSKOFF (1988).

#### *Analysis of described species*

1) *P. syriacus* (Brisout 1855) (*Acridium syriacum* Brisout 1855, *Ann. Soc. Ent. France*, 3: LXXIII)

Type-locality: Syria (described only the female).

BRISOUT (1855) writes: «Tête très grosse, rugueuse, à front avancée entre les antennes, à face antérieure présentant une profonde dépression transversale vers l'ocelle médian; carènes du vertex très prononcées. Yeux grands. Antennes grosses, comprimées, subprismatiques. Prothorax rugueux, couvert de petits tubercles et de granules, tectiforme-caréné, à carène dorsale et médiane assez élevée, arquée, à carènes latérales bien moins saillantes; bord postérieur du prothorax un peu denticulé, largement échancré vis à vis de la termination de la carène dorsale... Abdomen caréné en dessus. Elytres... oblongues, très étroites... Jambes postérieures courtes, fortes, un demi-anneau noir inférieurement à la base, leur côté grisâtre, leur côté interne violacé».

At the time of the description, Syria politically included Lebanon, Israel and Jordan, thus a type-locality simply indicating «Syria» indicated a very wide area. I was not able to find the type and probably it has been lost, but the description allows to assign it to the genus *Prionosthenus*; even if only the female was described, it must be considered the first name to apply to species with arc-like pronotum and I presume that some of the following species are

junior synonyms of *P. syriacus*. DIRSH (1950) reports *sub Ocneropsis syriacus* specimens from Jebel Mazar, Mt. Cassius (Syria) and M. Hermon (Israel).

2) *P. galericulatus* (Stal 1876) (*Pamphagus galericulatus* Stal 1876, *K.Svenska Vetensk Akad.Handl.*, 4 (5): 28).

Type-locality: Tiberias (Israel). It is the type species of *Prionosthenus* (BOLIVAR 1878).

Compressed laterally, frons projecting forward between the antennae, straightening below median ocellus; evident lateral carinae on the fastigium. Antennal segments widened at the base, narrowing apically. Pronotum with median carina raised, arc-like; posterior transverse sulcus distinct, situated close to posterior margin, forming a short metazona. Abdominal tergites compressed laterally, forming a row of sharp protrusions along the dorsum. The colour of hind tibiae is purplish inside (or «*sordide-rufae*» according to BRUNNER 1882).

GIGLIO-TOS (1893) lists specimens of *P. galericulatus* coming from the following localities: Mt. Hermon (Israel), Furzol, Souk Wadi Barada (= Abila) (1500 m), Zebedani (1700-2000 m), Aleih (Lebanon), Jammuneh (Syria) and Es-Salt (Jordan). Among those examined by Giglio-Tos, preserved at MZUT, only specimens from Mt. Hermon (4 ♂♂ and 9 ♀♀) are clearly referable to the description both of *Prionosthenus galericulatus* and to *P. syriacus*, which are possible synonyms; hind tibiae, probably due to longtime light exposure, are decolored, but the two species show respectively tibiae purplish and violet inside, that is much similar to each other. DIRSH (1950) records it from Mt. Cassius (Syria), Lake Hula and Degania (Israel); at MCNM there are 3 ♂♂ and 6 ♀♀ from Syria, Lebanon (Beirut) and Israel (Jerusalem and Jarmaq = Atzmon) labelled as *P. galericulatus*. Assuming *P. galericulatus* (Stal 1876) = *P. syriacus* (Brisout 1855), the latter should become the type species of *Prionosthenus*.

3) *P. verrucosus* (Brunner 1882) (*Pamphagus verrucosus* Brunner 1882, *Prodr.Eur.Orth.*: 187).

Type-locality: Syria (described only the female).

BRUNNER (1882) wrote: «*Colore sordide-albido, corpore toto verrucosorugoso. Vertex aequae longus et latus... Antennae subtrigonae, 13 art., articulis singulis valde inaequalibus. Costa frontalis, infra ocellum, angulo obtuso sinuata. Pronotum tuberculis parvis obtusis, necnon verrucis majoribus valde inaequale, antice rotundato productum, postice late emarginatum, angulis humeralibus angulato expressis, margine postico tuberculis obtusis, majoribus obsito, crista haud elevata, tumescente, obtusa, a sulco transverso haud interrupta; tibiae posticae supra et latere interno violaceae. Segmenta addominalia dorsalia valde verrucosa, ad margine posticum, tuberculo tumescente obtusissimo instructa*». BRUNNER (1882) separates *P. verrucosus* from *P. galericulatus* by the presence of «*Pronotum cris-*

*ta parum elevata, a sulco transverso vix interrupta. Segmenta abdominalia dorsalia in tuberculum obtusum elevata»* in the former and «*Pronotum ante sulcum elevato-cristatum, pone sulcum acute dentatum. Segmenta abdominalia dorsalia in lobum elevatum producta»* in the latter. Dr. A.P. Kaltenbach kindly examined the type (female) preserved at NHMW, listing the following features: fastigium in lateral view protruding between antennae (as in Fig. 28), pronotum little compressed laterally, median carina raised and divided by the first sulcus (similar to Fig. 28), abdominal crista very evident (as in Fig. 28), hind tibiae colour with external face yellowish, internal face violet to blackish. Generally in the females of the genus *Prionosthenus* the shape of the pronotum (more or less raised, interrupted or not by the transverse sulcus) and of the abdominal tergites (more or less crested) is very variable and the examination of males is necessary. Consequently the female on which *P. verrucosus* was described could be a specimen of *P. syriacus*; the type-locality (Syria) does not allow to locate the area where it had been collected and the general characteristics of the type seem to fit *P. syriacus* more than *P. brunnerianus* (cf. infra). For these reasons I consider *P. verrucosus* (Brunner 1882) as a junior synonym of *P. syriacus* (Brisout 1855), as supposed by Brunner himself. Cf. also *P. simulans* Bolivar.

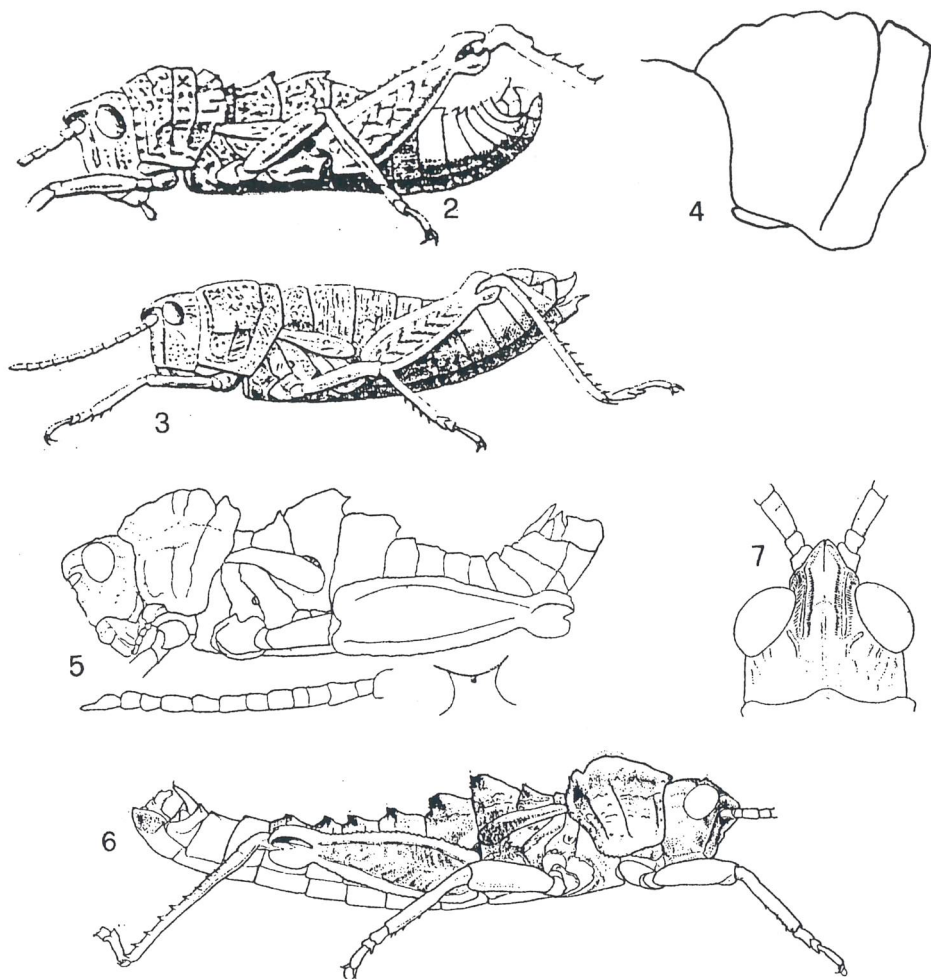
GIGLIO-TOS (1893) reported *sub P. verrucosus* several specimens from Mt. Hermon (Israel), Furzol, Zebedani (1700-2000 m), the Cedars (1900 m), Beirut and Jammuneh (Lebanon); in the MCNM there are 2 ♂♂ and 1 ♀ from Palestine, labelled *P. verrucosus* (V.Llorente, *pers.comm.*).

4) *P. brunnerianus* (Saussure 1887) (*Pamphagus brunnerianus* Saussure 1887, *Spicil.Ent.*, 2: 75)

Type-locality: Syria septentrionalis.

«*Antennae breves, filiformes, subdepressae, 12-14 articulatae, nec triquetrae nec basi dilatatusculae, quam pronotum ♀ breviores, ♂ longiores, extus submarginatae... Verticis rostrum ♀ trigonale, ♂ acutangulum... Crista ♀ humilis, tectiformis, tantum posterius arcuata, per sulcum typicum vix incisa; in prozona vix arcuata; ♂ elevatior, arcuata, per sulcum typicum distincte angulatim incisa; in prozona nonnumquam bisinuata. Metanotum carinatum, carina posterius elevatiore, dentem minutam in ♀ vix explicatam obferens... Tibiae post. intus et superne violaceae... Abdomen ♀ carinatum; carina humili, ad apicem segmentorum 2 subangulata, ♂ cristulatum; cristula segmentorum omnium, ultimo excepto, apice in dentem excurrente» (SAUSSURE 1887).*

The author considered it much related to *P. verrucosus*, separating it for some female characters (probably because only the female of *P. verrucosus* was described), namely the pronotum not wrinkled, with an evident transverse sulcus, and the abdomen crista absent. DIRSH (1950) supposed that the male



Figures 2-7 — *Prionosthenus* species: 2) *P. brunnerianus* male, *habitus* (from SAUSSURE 1887); 3) *P. brunnerianus* female, *habitus* (from SAUSSURE 1887); 4) lateral view of pronotum in the type of *P. simulans* Bolivar (original by V.Llorente); 5) *P. lebanicus* male, *habitus* (from DIRSH 1950); 6) *P. guleni* male, *habitus* (from KARABAG 1956); 7) *P. guleni* male, fastigium from above (from KARABAG 1956).

of *P. brunnerianus* was referable to a true *Prionosthenus*, while the female to the gen. *Ocneropsis*. Actually the *habitus* of the male in the paper of SAUSSURE (1887) is evidently that of a *Prionosthenus* (Fig. 2), that of the female, as regards the head shape, fits well *Prionosthenus* while, as regards both pronotum and abdomen, disagrees with it, in particular for the absence of an evident crista (Fig. 3). However Dr. B. Hauser of the MHNG kindly examined

the *syntipi* (3 ♂♂ and 4 ♀♀), confirming me that the head shape from above is that here depicted in the Figs. 13 and 14, that is of a *Prionosthenus*, both for males and females. I should conclude that *P. brunnerianus* is a good species, well separated from *P. syriacus* and much related to *P. simulans* Bolivar.

SAUSSURE (1887) also states: «*Var. Elytra angustiora ac breviora. Femora post. margine supero dense subtiliter crenulato, infero subtiliter serrulato (Armenia)*». The most south-western part of Armenia is in the mountainous area of Turkey, thus the area of distribution of the species should also cover this region.

5) *P. simulans* Bolivar 1911 (*Prionosthenus simulans* Bolivar 1911, *Bull. Soc. Rouen*, 47:37)

Type-locality: Bcharré, Cedars thicket (Lebanon) (described only the male).

BOLIVAR (1911) described the species as follows: «*Vertex angustus, elongatus, concavus. Antennae angustae, indistincte trigonae... Costa frontali infra ocellum distincte sinuata... Pronotum dorso minute griseo-granosum, crista compressa, arcuata antice posticeque aequaliter rotundata, postice magis compressa a sulco transverso haud interrupta, lobo postico prope cristam utrinque evidenter depresso... Elytra apicem versum sensim ampliata... Tibiae posticae fuscentes, spinis pallidis apice nigris. Segmenta abdominalia dorsalia vermiculata; segmentis singulis in crista compressa subproducta elevatis*».

According to V.Llorente, who kindly examined the type preserved at MCNM, the fastigium in lateral view consents to ascribe it to *Prionosthenus*, but it is less protruding than in *syriacus*, even if wide from above. Pronotum is less compressed laterally, median carina is less raised than in *syriacus*; moreover the pronotum shape does not fit the original description of Bolivar, being very slightly interrupted by the transverse sulcus. The mesosternal space is a bit wider than its length, metasternal space twice as wide as its length (V.Llorente, *pers. comm.*).

DIRSH (1950) recorded *sub Ocneropsis simulans* 3 specimens (1 ♂ and 2 ♀♀) from the type-locality, adding that the male agrees well with Bolivar's description. Among the material of MZUT there are specimens coming from Souk Wadi Barada (= Abila) (1 ♂ and 2 ♀♀) and Jammuneh (1 ♀) (Lebanon), reported by GIGLIO-TOS (1893) as *P. verrucosus*, as well as from Merdisch Ain (Lebanon) (1 ♀) and Syria (1 ♂ and 2 nymphs) not recorded by Giglio-Tos, which show features similar to the type of *P. simulans*. The shape of pronotum of the males matches more or less that of the type of *P. simulans* depicted by V.Llorente (Fig. 4) and abdomen in lateral view fits Bolivar's description; females show a pattern of pronotum and abdominal tergites different from Saussure's drawing of *P. brunnerianus*, really not very different from the description of *P. verrucosus* by BRUNNER (1882), of which we know neither the male characteristics nor the precise type-locality. In the impossibility to

ascertain if *P. verrucosus* is a good species and *P. simulans* is a junior synonym of *P. verrucosus*, I prefer now to regard *P. simulans* as a good species, related to *P. brunnerianus*.

6) *P. lebanicus* Dirsh 1950 (*Prionosthenus lebanicus* Dirsh 1950, *Eos*, 26: 65)

Type-locality: Aley (= Aleih) (the Lebanon) (described only the male).

«Frontal ridge strongly projecting forwards, strongly compressed... Fastigium of vertex elongate, concave, limited by sinuate, sharp, lateral carinulae... Antennae 13-segmented, shorter than head and pronotum together, thick and compressed... median carina high, strongly convex, laterally compressed, deeply and broadly dissected by third transverse sulcus... Upper margin of metanotum, in profile, irregularly curved, with a tooth shaped projection on the posterior margin... Abdomen strongly carinate... Mesosternal interspace as long as broad... Metasternal interspace twice as wide as long... Hind tibia above grey, inside grey-blue» (DIRSH 1950).

According to DIRSH (1950) it clearly differs from *galericulatus* and *brunnerianus* for the structure of pronotum and abdomen (Fig. 5), while it agrees with *brunnerianus* in the colour of hind tibiae. Nevertheless, the colour of hind tibiae alone is not a good character for the separation of two species; in the species mentioned by DIRSH (1950) it is very similar, namely purplish in *P. galericulatus*, violet in *P. brunnerianus* and grey-blue in *P. lebanicus*. One topotypic male, from Aleih, recorded by GIGLIO-TOS (1893) and preserved at MZUT, exhibits the same characteristics and the general *habitus* of *P. syriacus*, particularly the shape of head and pronotum. In conclusion *P. lebanicus* Dirsh 1950 could be regarded as one more junior synonym of *P. syriacus* Brisout 1855.

7) *P. guleni* Karabag 1956 (*Prionosthenus guleni* Karabag 1956, *Eos*, 32: 128)

Type-locality: Yayladagi-Hirsarcik (Hatay province, Turkey).

KARABAG (1956) description reports: «Antennae almost filiform... Fastigium of vertex elongate, pentagonal, apex triangular... Pronotum relatively short... median carina raised strongly and laterally compressed: its highest point being behind the middle... posterior margin with several strong spines... median carina of metanotum posteriorly raised and laterally compressed... First and second tergites with a strongly laterally compressed median carina; median carina on other tergites raised strongly and spined... hind tibia on the inside red, its upper surface pinkish-violet».

It has been reported only from the type locality (1 ♂ and 2 ♀♀; cf. also DEMIRSOY 1973), which is located in south-eastern Turkey near the Mediterranean border with Syria. Apart from the hind tibiae colour, its general characters (Figs. 6 and 7) do not allow its separation from *P. syriacus* Brisout, so it could be regarded as a subspecies of the latter. DIRSH (1950) recorded 1 ♀



of *P. galericulatus* from Mt. Cassius (Syria); considered the closeness of this locality to Turkish border, it should be interesting to check the colour of tibiae in the above mentioned specimen in order to ascertain if it is representative of a population characterized by the «*sordide-rufae*» tibiae colour recorded by BRUNNER (1882) for *P. galericulatus*.

*Comments on the species of the gen. Prionosthenus*

On the basis of the data reported above, the genus *Prionosthenus* possibly consists of three species, *P. syriacus* (Brisout 1855) (= *P. galericulatus* (Stal 1876) = *P. verrucosus* (Brunner 1882) = *P. lebanicus* Dirsh 1950 = *P. guleni* Karabag 1956), *P. brunnerianus* (Saussure 1887) and *P. simulans* Bolivar 1911, subdivided in more or less isolated populations. *P. syriacus* (Brisout) is distributed over a large area including the mountain slopes of Israel, Jordan, Lebanon, Syria, and the Turkish mountain South of Antakya (there possibly represented by the subspecies *P. syriacus guleni* Karabag). *P. brunnerianus* (Saussure) should be distributed over the North-West of Syria and Turkish Armenia. Distribution of *P. simulans* Bolivar covers the mountains of North-Central Lebanon. Considering the variability of some characters, much material, especially series of specimens from different localities of Syria, Lebanon and Israel, are needed to get a better idea whether the taxa listed above represent actually different species or belong just to different populations of three species.

On the basis of known localities it seems that the species of this genus are generally montane (with some exception, probably due to inaccuracy of labelling); in accordance with this kind of distribution, FISHELSON (1985), as regards *P. galericulatus*, writes: «*Inhabits rocky mountain slopes*». Hoppers appear at the beginning of winter, after the first rains, are found until May and seem able to survive at low temperatures for two months or longer; adults have been found from March-April to June-July. From the altitude of some localities it is clear that during wintertime the habitats must be covered by a lot of snow. According to some of the authors of the species, it seems that they are distributed along the mountain chain located along North-South direction from Syria and Turkey to Lebanon, North Israel and Jordan; they are probably relicts, separated in several populations survived under quite different climatic conditions without facing important changes of their phenotypes.

Gen. *Ocneropsis* Uvarov 1942

Body not compressed laterally, but distinctly depressed dorsoventrally. Antennae quite filiform; face as broad as high, fastigium of vertex strongly sloping forward, broadly triangular in lateral view. Pronotum very thick, obtusely tectiform, median carina moderately raised, thick. Abdomen in both sexes very stout, without the median crest. Mesosternal lobes in the male weak-

ly, in the female strongly transverse. Metasternal interspace in the male more than twice, in the female 3-4 times as broad as its length. Prosternal process much wider than in *Prionosthenus*, with bilobate anterior apex (much more obtuse than in *Prionosthenus*) and two small tubercles in the posterior surface. Tegmina 3.5 times longer than wide. Lateral view of the male subgenital plate regularly sloping backwards. Postfemora robust, with small teeth in the superior border. Phallic complex curved, aedeagus sclerites broad and sinuous in ventral view. Epyphallus with many spines arranged disorderly. (cf. UVAROV 1942 and Tab. I).

*Analysis of described species*

1) *O. bethlehemita* (Bolivar 1893) (*Pamphagus bethlehemita* Bolivar 1893, *Rev. Biol. nord Fr.*, 5: 484).

Type-locality: Hebron (= El-Khalil) (Israel). It is the type species of *Ocneropsis* (Uvarov 1942).

BOLIVAR (1893) wrote: «*Corpore ruguloso. Vertex subelongatus, concavus, granosus. Antennae indistincte trigonae, filiformes, articulis 13 compositae. Oculi parvi. Costa frontalis, infra ocellum subito depressa. Pronotum verruculosum ad marginem anticum pone oculos carinula flexuosa postice abbreviata instructum; antice obtuse productum, postice late atque parum profunde emarginatum; angulis humeralibus obtuse vel valde expressis, tuberculis subpliciformibus obsitis; crista obtusa a latere visa arcuata a sulco transverso longe pone medium sito distincte interrupta. Elytra angusta... Segmenta abdominalia dorsalia, rugulosa, medio obtuse carinata, utrinque ruga fluxuosa valde expressa*».

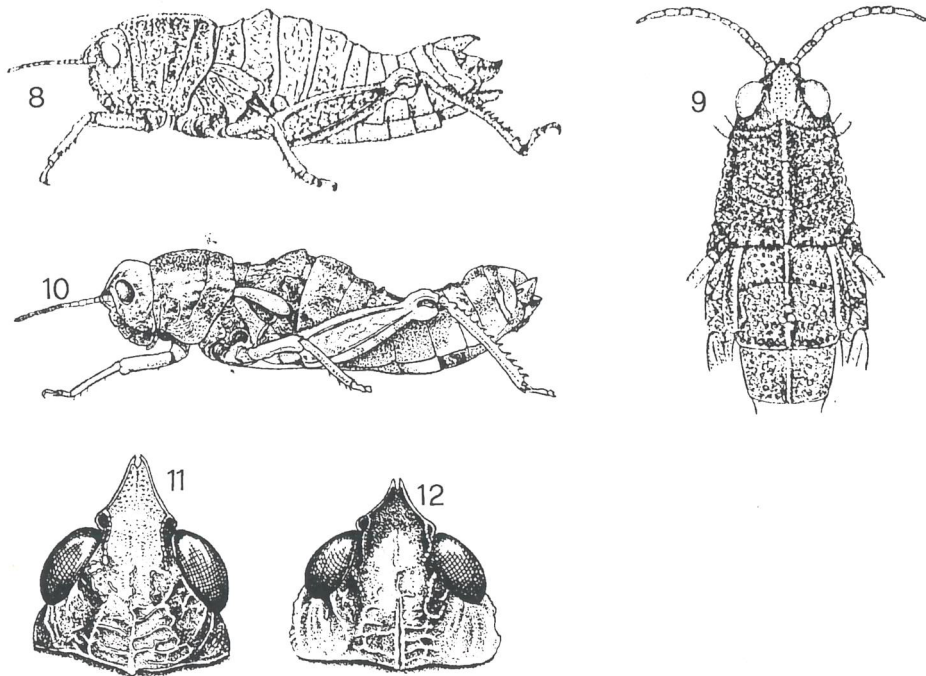
GIGLIO-TOS (1893) recording a couple of specimens collected at Fik, on Syrian mountains at the East side of the Tiberias Lake, identified them as *Pamphagus foreli* Saussure (= *Paracinipe foreli*: cf. DESCAMPS & MOUNASSIF 1972). UVAROV (1942) rightly supposed they could be *Ocneropsis bethlehemita*; the characters of these specimens (preserved at MZUT) match very well those of *bethlehemita*. It has also been reported from Umm es Charatite (Syria) by DIRSH (1950). At the MCNM there are 2 specimens, both females, coming from the Dead Sea and Palestine, but not the type (V.Llorente, *pers.comm.*).

Gen. **Ocnerosthenus** novum

Type species: *Pamphagus kneuckeri* Krauss 1909, *Verh. naturw Ver. Karlsruhe*, 21: 114.

*Derivatio nominis*. From its characteristics, intermediate between *Prionosthenus* Bolivar and *Ocneropsis* Uvarov.

*Description*. Body of male just compressed laterally, of female quite depressed dorso-ventrally. Antennae of 11-14 segments, filiform. Fastigium



Figures 8-12 — *Ocnerosthenus* species: 8) *O. kneuckeri* female, *habitus* (from Krauss 1909); 9) *O. kneuckeri* male, *habitus* dorsal view (from KRAUSS 1909); 10) *O. lividipes* female, *habitus* (from FISHELSON 1985); 11) *O. lividipes* male, head from above (from FISHELSON 1985); 12) *O. lividipes* female, head from above (from FISHELSON 1985).

of vertex sloping forward and rounded, with evident lateral carinae, just projecting anteriorly above the median ocellus, clearly below a line along the superior border of the eye; front more or less opisthognathous, sloping backwards. Eyes oval. Area between vertex carinae wider than in *Prionosthenus*, so that the ratio between the head width (including eyes) and the distance between vertex carinae is 3.2-3.8 in males and 2.5-2.7 in females (in *Prionosthenus* 4-4.4 and 2.8-3.2, in *Ocneropsis* 3.9 and 3). Pronotum thick, median carina regularly curved, more or less sinuous in males, not raised and projecting inwards, interrupted or not by the transverse sulcus. Posterior border of pronotum straight or slightly curved inwards, with some small teeth. Mesosternal lobes right; mesosternal space 1-1.5 times as wide as long; metasternal space 1.6-2.3 times as wide as long in males, 2-3.3 times in females. Prosternal process wider than in *Prionosthenus* (but less than in *Ocneropsis*), with bilobate anterior apex (more obtuse than in *Prionosthenus*, but less than in *Ocneropsis*) and two small tubercles in the posterior surface. Abdomen stout, just tuberculated in the

Table I  
*Differences among the gen. Prionosthenus Bolivar,*  
*Ocnerosthenus nov. and Ocneropsis Uvarov (in brackets references to Figures).*

<i>Prionosthenus</i>	<i>Ocnerosthenus</i>	<i>Ocneropsis</i>
<b>Body</b> more compressed laterally	just compressed laterally (male) depressed dorsoventrally (female)	depressed dorsoventrally
<b>Fastigium</b> protruding between antennae (27, 28, 32), along a line above the eye; from above wider (13, 14)	sloping forward below the eye border (25, 26, 29, 31); from above narrow (17, 18)	distinctly sloping forward, broadly triangular (34, 36), from above narrow (21, 22)
<b>Head width (included eyes): distance between vertex carinae</b> male: 4.0-4.4 female: 2.8-3.2	3.2-3.8 2.5-2.7	3.9 3.0
<b>Eyes</b> oval	oval	round
<b>First antennal segments</b> flattened at the base, expanded at the apex (15, 16)	filiform (19, 20)	filiform (23, 24)
<b>Pronotum</b> more compressed, median carina raised and more or less divided by transverse sulcus or two sulci (males); posterior margin with some small teeth (27, 28, 32)	thick, median carina regularly curved or sinuous and just raised, not always interrupted by transversal sulcus; posterior margin with some small teeth (25, 26, 29, 31)	thick, obtusely tectiform, median carina interrupted by transverse sulcus or two sulci (male); posterior margin distinctly curved inwards (34, 36)
<b>Mesosternal space (male)</b> 1-1.4 times as wide as long	1-1.5 times as wide as long	1.2 times as wide as long
<b>Mesosternal space (female)</b> 1-1.3 times as wide as long	1.1-1.3 times as wide as long	1.5-1.9 times as wide as long
<b>Metasternal space (male)</b> 1-2 times as wide as long	1.6-2.3 times as wide as long	>2 times as wide as long
<b>Metasternal space (female)</b> 1.4-2.3 times as wide as long	2-3.3 times as wide as long	3-4.1 times as wide as long
<b>Abdominal crista</b> very evident (28, 32)	only in the first tergites (26, 31)	first tergites with a small tubercle (36)
<b>Tegmina (male)</b> 2.8-4.6 times longer than wide (37)	2.7-3.2 times longer than wide (38, 39)	2.5 times longer than wide (40)
<b>Tegmina (female)</b> 3.5-4.7 times longer than wide	3.1-3.6 times longer than wide	3.5 times longer than wide
<b>Subgenital plate (male)</b> pointed at the apex (33)	pointed at the apex (30)	regularly sloping backwards (35)
<b>Aedeagus sclerites (ventral view)</b> fine and parallel (44, 45, 55)	fine and crossed (41, 42, 43, 52, 53, 54)	broad and sinuous (46, 56)

Table II

Biometrics of the genera *Prionosthenus*, *Ocnerosthenus* and *Ocneropsis*.

TL = total length measured from the vertex to the apex of hind femora; LP = length of pronotum;  
HP = height of pronotum; LFP = length of hind femora; HFP = height of hind femora.

males	TL	LP	HP	LFP	HFP
<i>Prionosthenus syriacus</i>	23.5-26.5	5.2-6.2	6.0-7.7	11.3-12.8	3.8-4.5
<i>Ocnerosthenus kneuckeri</i>	26.0-28.8	6.8-7.4	7.0-8.1	12.0-13.8	4.0-4.5
<i>Ocneropsis bethlehemita</i>	26	6.2	7.0	13.5	4.5
females	TL	LP	HP	LFP	HFP
<i>Prionosthenus syriacus</i>	39.0-46.5	11.2-12.8	12.0-14.2	17.0-20.0	5.0-6.5
<i>Ocnerosthenus kneuckeri</i>	43.5-47.5	11.5-12.7	12.5-13.8	18.0-20.0	5.8-6.5
<i>Ocneropsis bethlehemita</i>	46.5	11.8	13.6	20.5	6.0

first tergites of males. Tegmina just broadened apically (2.7-3.2 times as long as wide in males, 3.1-3.6 in females). Lateral view of the male subgenital plate convex and pointed, transversal sulcus of the plate in the posterior third. Post-femora robust, with small teeth in the superior border. Phallic complex curved, aedeagus sclerites of different length, crossed at the apex in ventral view. Epyphallus with many spines arranged disorderly. Teguments wrinkled.

*Analysis of described species*

1) *O. kneuckeri* (Krauss 1909)

Type-locality: Sannin (2500 m.) (Lebanon)

«*Statura et colore P. Brunneriano Sauss. Syriam septentrionalem habitanti persimilis differt antennis brevioribus, crista pronoti in ambobus sexibus humili, parum arcuata, per sulcum typicum vix incisa... marginem posticum tergiti primi haud attingentibus, tergitis abdominalibus ♂ apice distali carinulatis sed haud in dentem excurrentibus*» (KRAUSS 1909) (cf. Figs. 8 and 9). According to FISHELSON (1985) hind femurs and tibiae are bluish, tarsi pale orange.

KRAUSS (1909) records that the types (1 ♂, 4 ♀♀, 1 ♀ nymph) were collected in June at 2500 m, in the region of the alpine flora. FISHELSON (1985) writes that it lives on Mt. Hermon between 1600 and 2100 m, adults and copulating pairs are found in July-August, younger stages mainly in May-June,

and from October-November, overwintering as nymphs. Adults were collected by E. Festa on 18 June on Mt. Hermon and labelled as *P. verrucosus* by Giglio-Tos in the MZUT (where 3 ♂♂ and 2 ♀♀ from Hermon (Israel), 1 ♀ from Furzol (Lebanon) and 1 ♂ labelled «Siria», referable to *Ocnerosthenus kneuckeri* are preserved).

DIRSH (1950) identified as *Ocneropsis kneuckeri* material from Besharre-Baalbek Pass (= Bcharré) (Lebanon) and Mt. Hermon (Israel). One Syrian specimen is also preserved at MCNM (V. Llorente, pers. comm.).

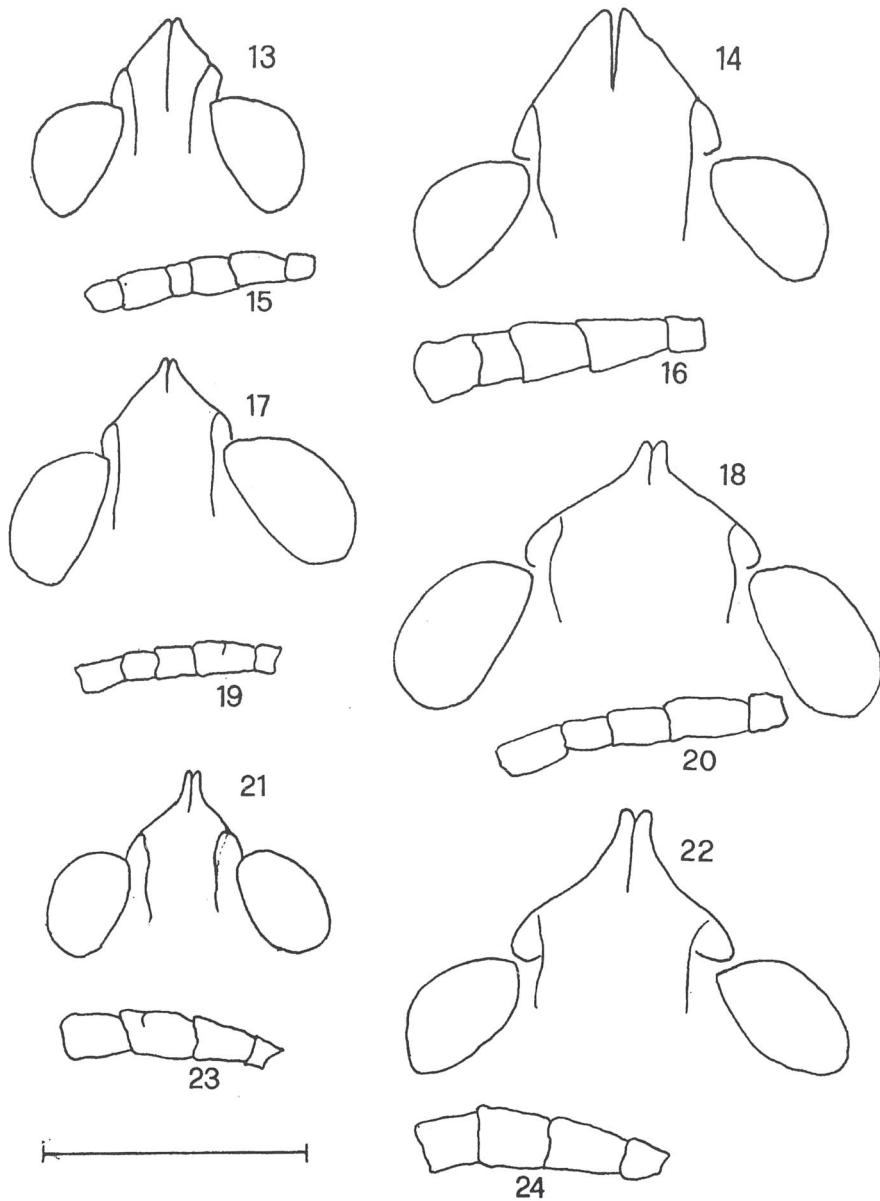
2) *O. lividipes* (Fishelson 1985) (*Ocneropsis lividipes* Fishelson 1985, *Fauna Palestina. Orthoptera*, 103).

Type-locality: Mt. Hermon (2200 m) (Israel).

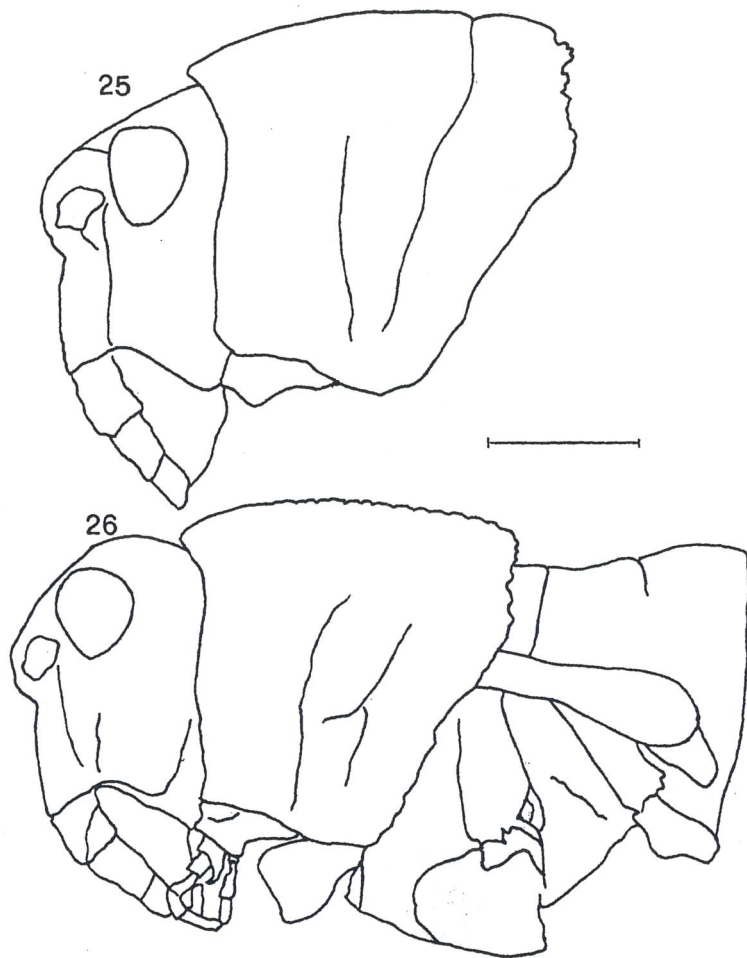
«Frontal ridge slightly concave, intersected below median ocellus by a transverse groove. Occiput with a network of carinulae on both sides of median carina. Antennae with 11 or 12 segments... Eyes oval... median carina of pronotum granulate, posterior margin straight or slightly curved inwards; transverse sulcus shallow... First three abdominal terga with ridges, granulate and with a central crest on the posterior margin, crest and ridges also present on the other terga in the male. Hind tibiae dark blue or blue, tarsi pale yellowish» (FISHELSON 1985).

The author separates *lividipes* from *kneuckeri* for the network of carinulae in the occiput, the flat pronotum behind the transverse sulcus (Figs. 10, 11 and 12) and blackish-blue inner surface of hind femurs. I had on loan 1 specimen of this species from the Department of Zoology of Tel Aviv University (Mt. Hermon, 2000 m, 6.VII.87, J. Kluger); comparing it with the specimens of MZUT, above listed *sub O. kneuckeri*, I was not able to check the tibiae colour, due to decoloration of them in the specimens of MZUT, but apart from this character, I did not find any differences between *O. kneuckeri* and *O. lividipes*, aedeagus sclerites included. More specimens of *O. kneuckeri* are needed to establish if *O. lividipes* should be regarded as a separate species or not, but the network of carinulae is a very variable character, which I found in one specimen of *O. kneuckeri* coming from Syria and more or less evident in specimens of Mt. Hermon (labelled by Giglio-Tos as *P. verrucosus*).

Table I summarizes features which characterize the genera *Prionosthenus*, *Ocnerosthenus* and *Ocneropsis*; Table II reports some original biometrics. For a better comparison see Figs. 1-58. Localities quoted through the text are indicated in Fig. 59.

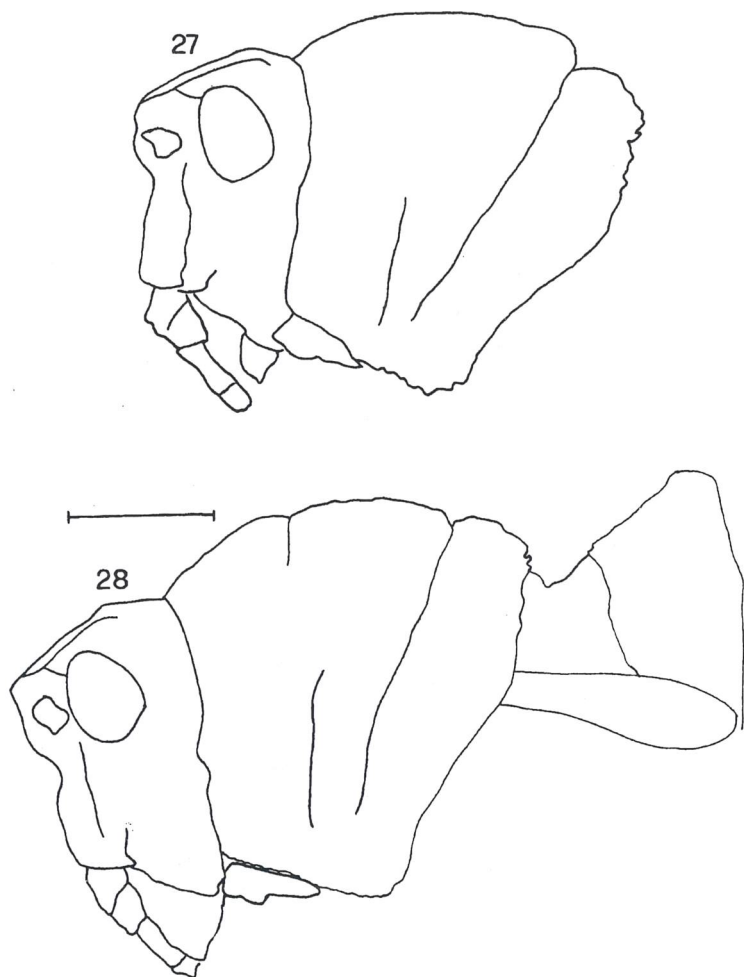


Figures 13-24 — Head from above and first antennal segments in: 13) *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel), male; 14) idem, female; 15) *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel), male; 16) idem, female; 17) *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel), male; 18) idem, female; 19) *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel), male; 20) idem, female; 21) *Ocneropsis bethlehemita* (Bolivar) from Fik (Syria), male; 22) idem, female; 23) *Ocneropsis bethlehemita* (Bolivar) from Fik (Syria), male; 24) idem, female. Scale: 5 mm.

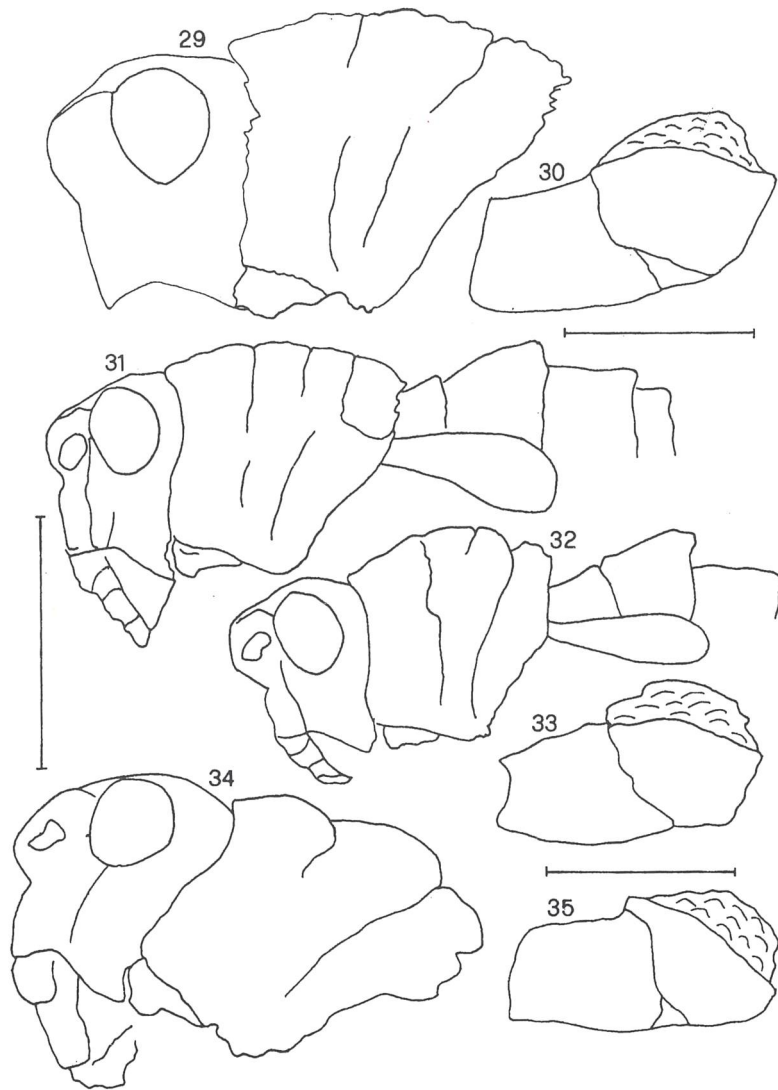


Figures 25-26 — 25) Head and pronotum of *Ocnerothenus kneuckeri* (Krauss) from Furzol (Lebanon), female; 26) Head, pronotum, metanotum and first abdominal tergite of *Ocnerothenus kneuckeri* (Krauss) from Mt. Hermon (Israel), female. Scale: 5 mm.

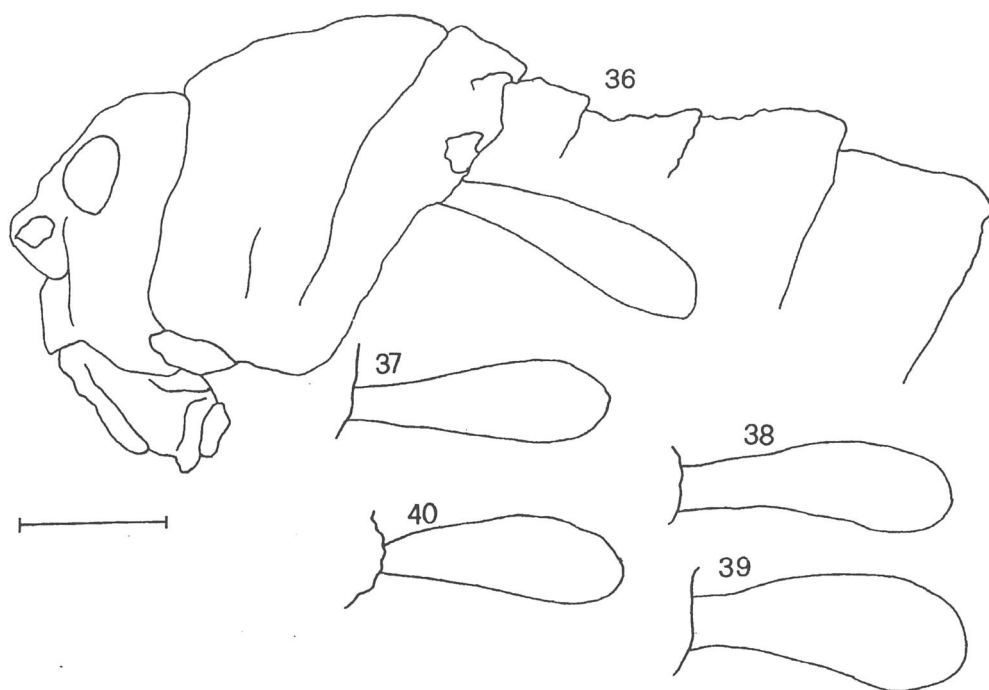




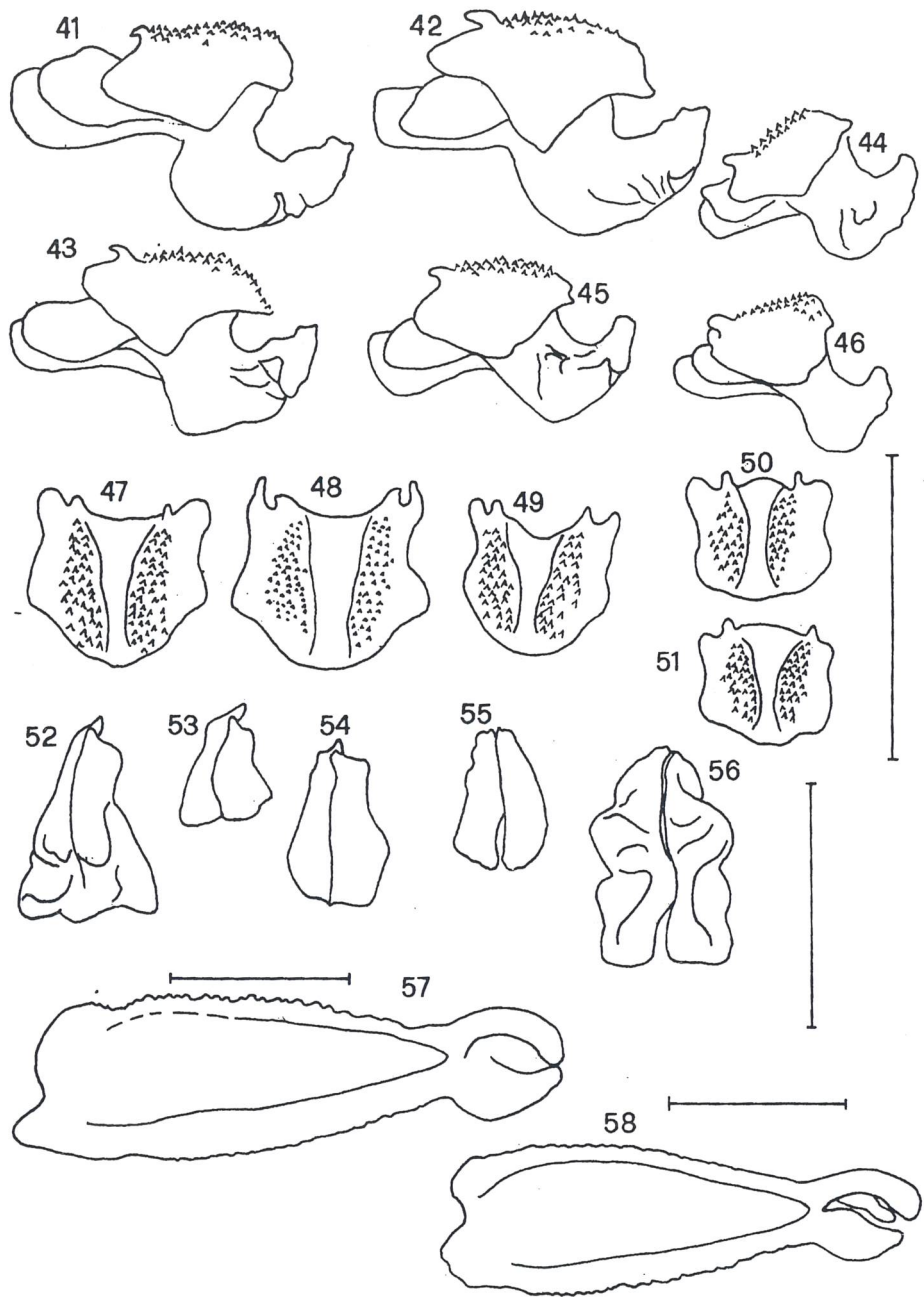
Figures 27-28 — 27) Head and pronotum of *Prionosthenus syriacus* (Brisout) from Jammuneh (Lebanon), female; 28) Head, pronotum, metanotum and first abdominal tergite of *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel), female. Scale: 5 mm.



Figures 29-35 — 29) Head and pronotum of *Ocnerothenus kneuckeri* (Krauss) from Syria, male; 30) Subgenital plate of *Ocnerothenus kneuckeri* (Krauss) from Mt. Hermon (Israel), male; 31) Head, pronotum, metanotum and first abdominal tergites of *Ocnerothenus kneuckeri* (Krauss) from Mt. Hermon (Israel), male; 32) Head, pronotum, metanotum and first abdominal tergites of *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel), male; 33) Subgenital plate of *Prionosthenus syriacus* (Brisout), male; 34) Head and pronotum of *Ocnerothis bethlehemita* (Bolivar) from Fik (Syria), male; 35) Subgenital plate of *Ocnerothis bethlehemita* (Bolivar) from Fik (Syria), male. Scale: head and pronotum 5 mm; subgenital plate 3 mm.



Figures 36-40 — 36) Head, pronotum, metanotum and first abdominal tergites of *Ocneropsis bethlehemita* (Bolivar) from Fik (Syria), female; 37) Elytron of *Prionosthenus syriacus* from Mt. Hermon (Israel), male; 38) Elytron of *Ocnerosthenus kneuckeri* (Krauss) from Syria, male; 39) Elytron of *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel), male; 40) Elytron of *Ocneropsis bethlehemita* (Bolivar) from Fik (Syria), male. Scale: 5 mm.



Figures 41-58 — Phallic complex, lateral view: 41) and 42) *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel); 43) *Ocnerosthenus kneuckeri* (Krauss) from Syria; 44) *Prionosthenus syriacus* (Brisout) from Souk Wadi Barada (Lebanon); 45) *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel); 46) *Ocneropsis bethlehemita* (Bolivar) from Fik (Lebanon). Scale: 5 mm. Epyphallus, dorsal view - 47) *Ocnerosthenus kneuckeri* (Krauss) from Syria; 48) *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel); 49) *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel); 50) idem from Souk Wadi Barada (Lebanon); 51) *Ocneropsis bethlehemita* (Bolivar) from Fik (Syria). Scale: 5 mm. Aedeagus sclerites, ventral view - 52) *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel); 53) *Ocnerosthenus kneuckeri* (Krauss) from Syria; 54) *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel); 55) *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel); 56) *Ocneropsis bethlehemita* (Bolivar) from Fik (Syria). Scale: 2 mm. Male hind femora: 57) *Ocnerosthenus kneuckeri* (Krauss) from Mt. Hermon (Israel); 58) *Prionosthenus syriacus* (Brisout) from Mt. Hermon (Israel). Scale: 5 mm.

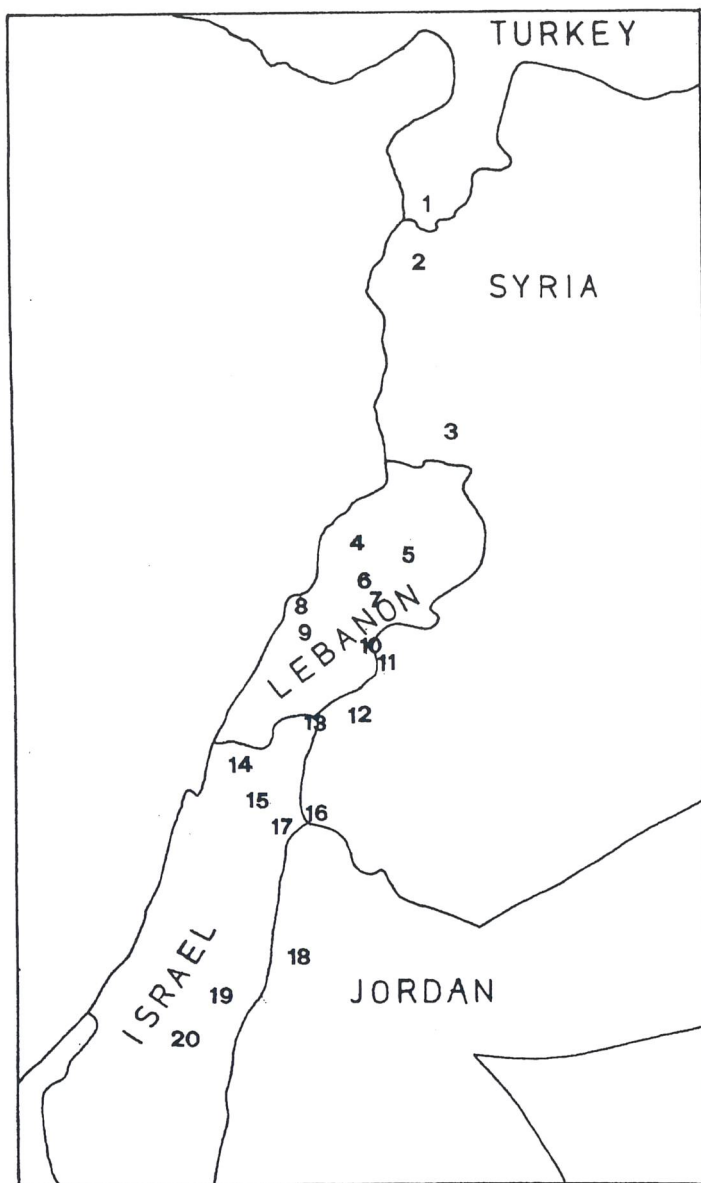


Figure 59 — Collecting localities quoted in the text, numbered as follows: 1: Yayladagi-Hirsarcik (Turkey); 2: Mt. Cassius (Syria); 3: Souk Wadi Barada (Abila) (Syria); 4: Bcharré (The Cedars) (Lebanon); 5: Jammuneh (Lebanon); 6: Sannin (Lebanon); 7: Furzol (Lebanon); 8: Beirut (Lebanon); 9: Aleih (Lebanon); 10: Zebedani (Lebanon); 11: Djebel Mazar (Syria); 12: Umm es Charatite (Syria); 13: Mt. Hermon (Israel); 14: Jarmaq (Atzmon) (Israel); 15: Tiberias (Israel); 16: Fik (Syria); 17: Degania (Israel); 18: Es Salt (Jordan); 19: Jerusalem (Israel); 20: Hebron (Israel).

*Abbreviations used for Museums:* MCNM = Museo Nacional de Ciencias Naturales de Madrid; MHNG = Museum d'Histoire Naturelle de Genève; MZUT = Museo di Zoologia dell'Università di Torino; NHMW = Naturhistorisches Museum Wien.

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