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A study of the genus *Paracaloptenus* I. Bolívar, 1876 (Orthoptera, Acridoidea, Calliptaminae)

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ABSTRACT

In the revision of the genus *Paracaloptenus* by Uvarov (1942), two species were recognized: the type-species *P. caloptenoides* (Brunner v. W., 1861) from southeast Europe, and *P. bolivari* Uvarov, 1942, from southwest Europe. A third species is described here, *P. cristatus* sp. n. from northwest Yugoslavia. In *P. caloptenoides* three subspecies are distinguished: the nominate form, geographically restricted to southeast Europe except northwest Yugoslavia and the Peloponnese, *P. brunneri* (Stål, 1876) from west Anatolia, and *P. moreanus* ssp. n. from the Peloponnese. A key to the species and subspecies is given.

INTRODUCTION

Prior to Uvarov's revision (1942), *Paracaloptenus* I. Bolívar, 1876, was thought to contain but one species, *P. caloptenoides* (Brunner v. W., 1861), occurring in southeast and southwest Europe. Uvarov clearly indicated the differences in the material from these widely separated areas, and, *P. caloptenoides* having been described after specimens from southeast Europe, named the southwest European species *P. bolivari*. Newly collected material from the Balkans served as a basis for the present critical study.

For a discussion of the position of the genus among other genera of the Calliptaminae reference is made to Jago (1963).

Within the genus reliable specific characters are scarce. To be mentioned are the hind margin of the pronotal disc, the shape of the elytra, and, to some extent, the coloration. Among the phallic components, stability is found in the apex of the phallus, and its morphology provides good specific and subspecific characters. The female genitalia are uniform throughout the genus.

It was a surprise to find that material from the northwestern part of Yugoslavia, previously identified as *P. caloptenoides*, proved to belong to a new species, *P. cristatus* sp. n., quite distinct from *P. caloptenoides*. The internal genitalia of the male of this new species prove to be quite unique within the

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genus. After having arranged the remaining material of *P. caloptenoides* according to its geographical origin, the existence of several subspecies became apparent. Nominate *P. caloptenoides* which was described from Serbia has the widest range. In the southeasternmost part of the range of the species, in west Anatolia, it is replaced by a subspecies to be named *P. caloptenoides brunneri* (Stål). A third subspecies, *P. caloptenoides moreanus* ssp. n., is described from the Peloponnese.

Previous records of *Paracaloptenus* in literature are numerous. As the material on which these records were based is partly untraceable and the identification doubtful, an extensive list and discussion of these records is omitted. Also, no attempt has been made to compile a survey of the previously recorded material. Instead, however, a comprehensive bibliography of *Paracaloptenus* is given at the end of the paper.

In addition to material in the author's collection (CW), material was borrowed from the institutions listed below (abbreviations used in the subsequent text are in parentheses). My thanks are due to the following people: Dr. A. Kaltenbach, Naturhistorisches Museum, Vienna (NMW); Dr. G. Kruseman and Dr. C. A. W. Jeekel, Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam (ZMA); Dr. D. Ragge, British Museum (Natural History), London (BMNH), and T. Kronstedt, Naturhistoriska Riksmuseet, Stockholm (NRS).

KEY TO THE SPECIES AND SUBSPECIES

1. Hind margin of pronotal disc not excised in the middle (fig. 4). Elytra apically angulate (figs. 9—10). Apex of phallus as in figs. 14, 18. (Spain, the Pyrenees) *P. bolivari* Uvarov, 1942
Hind margin of pronotal disc definitely excised in the middle (figs. 1—3). Elytra apically rounded (figs. 5—8) 2
2. Apex of phallus with a strong prominent crest medially, as in figs. 13, 17. (Northwestern Yugoslavia) *P. cristatus* sp. n.
Apex of phallus different, as in figs. 11—12, 15—16 3
3. Elytra elongate with widely rounded apex (figs. 7—8). Interocular distance and fastigium verticis wider. Apex of phallus usually elongate, as in figs. 12, 16. Hind margin of distended terminal abdominal tergite in male without black or dark brown. Colour of hind tibiae pink in male, and ranging from pink to pale violaceous in female. (Greece: the Peloponnese) *P. caloptenoides moreanus* ssp. n.
Elytra less elongate, apically narrowly rounded (figs. 5—6). Interocular distance and fastigium verticis narrower. Apex of phallus less elongate, as in figs. 11, 15 4
4. Hind tibiae bright red in both sexes. (Austria, Hungary, Czechoslovakia, Yugoslavia (excluding the northwestern part), Rumania, Bulgaria, Albania, Greece (excluding the Peloponnese), Moldavia and the European part of Turkey) . . . *P. caloptenoides caloptenoides* (Brunner v. W., 1861)
Hind tibiae in male pink, in female pink often with violaceous tinge. (West Anatolia) *P. caloptenoides brunneri* (Stål, 1876)

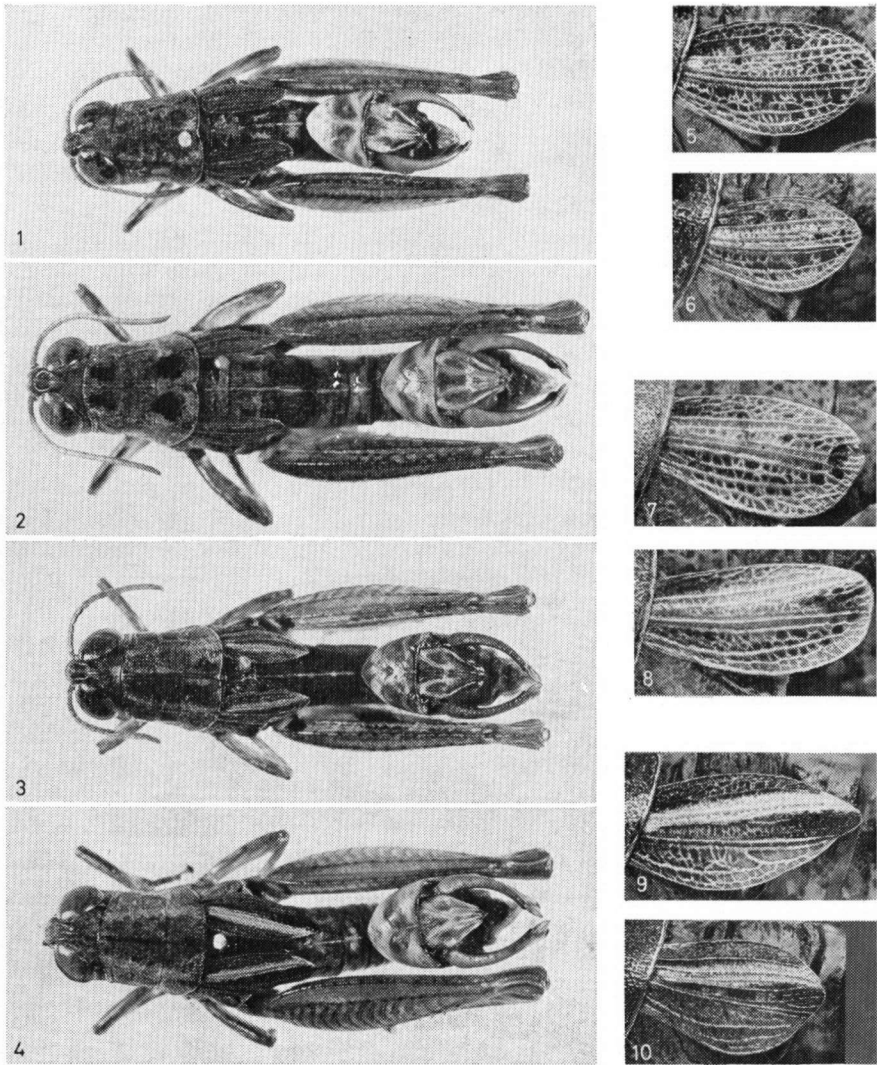


FIG. 1. *Paracaloptenus caloptenoides caloptenoides* (Br. v. W.), ♂ (Avala).
FIG. 2. *Paracaloptenus caloptenoides moreanus* ssp. n., ♂ (paratype from Karitena).
FIG. 3. *Paracaloptenus cristatus* sp. n., ♂ (paratype from Livno - Sujica).
FIG. 4. *Paracaloptenus bolivari* Uvarov, ♂ (Montesquin).
FIGS. 5—6. *Paracaloptenus caloptenoides caloptenoides* (Br. v. W.), left elytron of two females (Avala).
FIGS. 7—8. *Paracaloptenus caloptenoides moreanus* ssp. n., left elytron of two females (paratypes from Karitena).
FIGS. 9—10. *Paracaloptenus bolivari* Uvarov, left elytron of two females (9: Montesquin; 10: Saganta).

Paracaloptenus caloptenoides caloptenoides (Brunner v. W., 1861)
(Figs. 1, 5—6, 11, 15)

Platyphyma caloptenoides Brunner v. W., 1861a: 226; 1861b: 307, pl. 16 figs. 24A-B (partim).

Paracaloptenus typus I. Bolívar, 1876: 296 (partim).

Brunner described this species after material from several localities. One of these is within the area of the new species, *P. cristatus*. Therefore, designation of a type specimen of *P. caloptenoides* is necessary. Neither Brunner himself, nor Uvarov (1942) selected a type, although Uvarov indicated Beograd as type locality. In Brunner's collection the following three specimens are considered syntypes: 1 ♀ Karst b. Praewald Hofman 25. 7. 58 (see *P. cristatus* sp. n.); 1 ♀ Ofen (= Pest); 1 ♂ Brdjane Belgrad Prof. Pančić. The label of the male from Brdjani agrees with Brunner's reference in the first part of his paper (1861a): "aus Belgrad, Brdjane und vom M. Cemerno". However, in the second part of Brunner's paper (1861b) Beograd and Brdjani are recorded separately: "e Buda, Belgrado et alpbis Serbiae (Brdjane, M. Cemerno)". The original material from Beograd and Mt. Cemerno could not be traced. There is material from Beograd in Brunner's collection, but that was collected in 1881, many years after Brunner's publication. The male from Brdjani (some 95 km to the south of Beograd) is now designated lectotype of *P. caloptenoides*. The two labels of the specimen read as follows: Coll. Br. v. W. Brdjane Belgrad Prof. Pančić, det. Br. v. W. Paracaloptenus Brunneri Stål (NMW). It lacks both hind legs, and the tip of the abdomen is slightly damaged.

Description. As the species is well-known, only some additional data are given. The elytron is elliptical, the margins are gradually convex, the apex is narrowly rounded (figs. 5—6). The hind wings are rudimentary. The phallic complex has the general appearance as in most Calliptaminae. The apex of the phallus is small, its ventro-posterior outline almost as wide as long. The cingular valves are flattish. The apical penis valves are ear-shaped, with lateral extensions recurving towards the cingular valves (figs. 11, 15). Spermatheca and the dorsal aspect of the female subgenital plate simple.

General colour all shades of brown. Pronotal disc sometimes with black velvety areas and sometimes bordered with a yellow stripe laterally. Elytron of general colour, occasionally with a pale brown or yellow stripe over the cubital veins. Hind tibiae in both sexes always bright red. Tip of male abdomen paler than the general colour. Hind margin of the distended terminal abdominal tergite of the male in the middle and at the base of the cerci black. Tip of the supra-anal plate, upper margins and tip of the paraprocts and sometimes the medial side of the cerci black. Apex of the cerci with the ventral hook and the base of the dorsal lobe black. Ovipositor yellowish brown, outer margins black.

Measurements (mm)

	lectotype ♂	♂	♀
Length of body	16.9	14.8 — 18.2	22.0 — 34.0
„ „ pronotum	3.6	3.0 — 3.7	5.5 — 7.8
„ „ elytron	3.0	2.6 — 3.1	4.4 — 6.2
„ „ hind femur	—	9.0 — 10.6	14.9 — 19.1

General distribution: Austria, Hungary, Czechoslovakia, Yugoslavia (except for the northwestern part), Albania, Greece (except for the Peloponnese), Rumania, Moldavia, Bulgaria, and the European part of Turkey reaching just the Anatolian side of the Bosphorus.

Material studied (189 males, 214 females): Austria: Anninger, 1♂, 1♀ (NMW); Hungary: Ofen, 1♀ (paralectotype of *P. caloptenoides* Br.); Ruma-Zlidze, 21. VIII. 1898, M. Burr, 1♀ (BMNH); Igman Plan., 22. VIII. 1911, nia: Domogled, 3.IX.1890, Br. v. W., 1♂, 1♀ (NMW), 16—1800 m, 10.IX. 1941, Ramme, 1♂, 1♀ (CW), 1♂ (NRS); Yugoslavia: Bosnia: Igman near 1♀ (NMW); Pale b. Sarajevo, 29. IX. 1906, Slurany, 1♀ (NMW); Dobac b. Sarajevo, 10. VII. 1888, Br. v. W., 1♂, 1♀ (NMW); Sarajevo, Trebević, 1200 m, 10. VIII. 1965, Willemse, 7♂, 6♀ (CW); Rakovitsa, M. Burr, 1♂ (BMNH); Montenegro: Kosanica, 32 km S. of Plevlja, 1400 m, 10. VIII. 1968, Willemse, 1♀ (CW); Granica, NE of Plevlja, 1000 m, 11. VIII. 1968, Willemse, 5♂, 1♀ (CW); Velika, Andrijevica, 1500 m, 5. VIII. 1963, Willemse, 1♂, 2♀ (CW); Serbia: Belgrad, 1♀ (BMNH); Belgrad, 1881, Br. v. W., 2♂, 2♀ (NMW); Avala, Beograd, 500 m, 29. VII. 1969, 10. VIII. 1970 & 8. VIII. 1971, Willemse, 32♂, 47♀ (CW); Brdjane, Belgrad, Pančić, 1♂ (lectotype of *P. caloptenoides* Br.) (NMW); Biljanica, Pančić, 1♀ (NMW); Alt-Palanka, 25. VII. 1882, Br. v. W., 1♂, 1♀ (NMW); 6 km W. v. Kačanik, 1100 m, 4. VIII. 1965, Ent. Exc. Zoöl. Mus., 5♂, 12♀ (ZMA); Macedonia: Skoplje, Mt. Vodno, 300—400 m, 9. IX. 1964, Willemse & Karaman, 1♂, 3♀ (CW); Štip, 300 m, 12. VIII. 1963, Willemse, 4♂, 12♀ (CW), 23. VII. 1965, Ent. Exc. Zoöl. Mus., 6♂, 25♀ (ZMA); Teovo, 22 km ZW v. Titov Veles, 26. VII. 1965, Ent. Exc. Zoöl. Mus., 54♂, 31♀ (ZMA); Izvor, 17 km ZZW v. Titov Veles, 22. VII. 1965, Ent. Exc. Zoöl. Mus., 7♂, 9♀ (ZMA), 27. VII. 1965, Willemse, 2♀ (CW); 10—13 km E. of Resen, 10. VIII. 1963, Willemse, 1♀ (CW); Pelister, W. helling, 18 km W. v. Bitola, 1800—2000 m, 31. VII. 1965, Ent. Exc. Zoöl. Mus., 1♂ (ZMA), 1400 m, 20. VII. 1969, Willemse, 1♂ (CW); Trpejca-Oteševo, Ohrid, 1500 m, 23—24. VII. 1969, Willemse, 4♂, 3♀ (CW); Albania: nr. Durazzo, 19. VI. 1935, P. A. Buxton, 1♀ (BMNH); Elbasan, 9. VIII. 1918, Ebner, 2♂, 1♀ (NMW); Biza, 1918, Karny, 1♀ (NMW); Goasa, 1917, Karny, 1♀ (NMW); Greece: Lahanas, 2000', 29. VI. 1935, P. A. Buxton, 1♀ (BMNH); Pindos Mts., 3 km E. of Metsovon, 1300 m, 9. VIII. 1966, Willemse & Scherpbier, 17♂, 9♀, Mavrovuni, N. of Metsovon, 1800—2100 m, 3. VIII. 1971, Willemse, 7♂, 4♀, Papikon, below Mt. Tymfi, 1000 m, 31. VII. 1971, Willemse c.s., 1♀, Votossion, E. of Yoannina, 600 m, 2. VIII. 1971, Willemse c.s., 3♂, 4♀ (all

CW); Kalpakion, N. of Yoannina, 400 m, 2. VIII. 1971, Willemse c.s., 1 ♂, 3 ♀ (CW); Epirus, Erber, 1 ♂, 1 ♀ (NMW); Corfu, Erber, 1 ♂ (NMW); Kalesmenon, W. of Karpenision, 700 m, 30. VII. 1971, Willemse c.s., 10 ♂, 8 ♀ (CW); Bulgaria: Kostenetz, nr. Sofia, 700—1500 m, VIII. 1926, Miss. E. M. Edwards, 1 ♀ (BMNH); Rila, 8. VIII. 1882, Br. v. W., 1 ♀ (NMW); Vitos, 3. VIII. 1882, Br. v. W., 1 ♂, 1 ♀ (NMW); Turkey: Belgrader Wald, 26. VII. 1910, Fahringer, 1 ♀ (NMW); Giöksu, Bosphorus, 9. VI. 1867, Br. v. W., 1 ♂, 1 ♀ (NMW); Edirne, Halikoy, c. 150 m, 7. VII. 1962, Guichard & Harvey, 1 ♂ (BMNH); Edirne, Kesan area, 125 m, 6. VII. 1962, Guichard & Harvey, 2 ♂, 2 ♀ (BMNH); Bosphorus, Buyukdere, 100', 18. IX. 1959, R. M. Guichard, 2 ♂, 2 ♀ (BMNH); Istanbul, Yaloya S.L., 9. VIII. 1962, Guichard & Harvey, 1 ♀ (BMNH); Istanbul, Alacali, 100 m, 9. VII. 1962, Guichard & Harvey, 1 ♀ (BMNH); Istanbul, Bebek, 3. VII. 1935, M. Burr, 2 ♂ (BMNH); Anatolia: Poln. Tschiftlück (= Adampol), 15. VIII. 1909, Fahringer, 1 ♂ (NMW).

Discussion. Uvarov (1942) pointed out that I. Bolívar's renaming of Brunner's *Platyphyma caloptenoides* as *Paracaloptenus typus* was due to a wish to avoid the cumbersome combination *Paracaloptenus caloptenoides*. There is no need to designate a type specimen or to indicate a type locality of *P. typus* (the latter was done by Uvarov, 1942), because the name *typus* should be considered an objective synonym of *P. caloptenoides*. Bolívar's material (from Spain and Constantinople) was not available.

There is a considerable variation in measurements, shape of the pronotum, and in general colour. The more stable characters are mentioned in the key. The length and shape of the elytra are variable, but the general shape is similar, especially recognizable in larger series (figs. 5—6). The same is true for the apex of the phallus. The smallest specimens occur in the northernmost part of the range. The largest specimens are those from Albania (2 ♂, 4 ♀), Corfu (1 ♂), and the northwestern part of Greece, west of the Pindos Range (12 ♂, 12 ♀). The position of the material from the latter area is somewhat doubtful. The measurements, the coloration of the male terminal abdominal tergite, and the colour of the hind tibiae in both sexes are more like the Peloponnesian subspecies *moreanus*, but the shape of the apex of the phallus and of the elytra, and the coloration of the pronotum are as in nominate *caloptenoides*.

The typical habitat, as far as known to the author, are sunny, stony mountainslopes, with some, usually low, vegetation.

The general distribution as given above, needs confirmation in some points. No male specimen from Hungary was at hand, and also material from Moldavia (Adelung, 1906) and Czechoslovakia (Obenberger, 1926) was not available.

***Paracaloptenus caloptenoides brunneri* (Stål, 1876)**

Calliptenus Brunneri Stål, 1876: 13.

Paracaloptenus typus I. Bolívar, 1876: 296 (partim?).

Stål described his species after material from Brussa, west Anatolia. The

original specimens are at hand, being a male and a female. No type specimen having been selected, the male is hereby designated lectotype. It is labelled: Brussa, Brunner, 201, 160, Calliptenus Brunneri Stal, Paracaloptenus typus Brunn. Typ., Typus. The female paralectotype bears similar labels: Brussa, Brunner, and 161.

A comparison of these specimens and of other west Anatolian material with material from other areas, reveals a close relationship to *P. caloptenoides*. Morphological differences from the latter are slight, differences in coloration more distinct. Although previous authors (except Martinez) synonymized Stål's *brunneri* with Brunner's *caloptenoides*, Uvarov (1942) stated that *brunneri* may represent a distinct subspecies. The present author agrees with Uvarov's opinion and prefers to re-establish Stål's *brunneri* as a subspecies of *P. caloptenoides*.

Description. *P. caloptenoides brunneri* differs from the nominate form in coloration and in being slightly larger and more slender. The general colour is a rather uniform brown. Velvety areas on the pronotal disc are not present. Also the yellow stripes laterally on the pronotal disc and on the elytra are lacking. Besides the tip of the male abdomen shows no distinct black markings, except for the apex of the cercus. The hind tibiae are not bright red, but pink in the male and pink or violaceous pink in the female. The pronotum, the elytra, and the male and female genitalia are falling within the variation of the nominate form.

	Measurements (mm)		
	lectotype ♂	♂	♀
Length of body	18.2	18.2 — 20.1	27.0 — 32.2
.. .. pronotum	4.0	3.7 — 4.0	6.2 — 7.0
.. .. elytron	3.6	3.5 — 3.6	4.6 — 6.5
.. .. hind femur	10.9	10.2 — 10.9	16.2 — 19.0

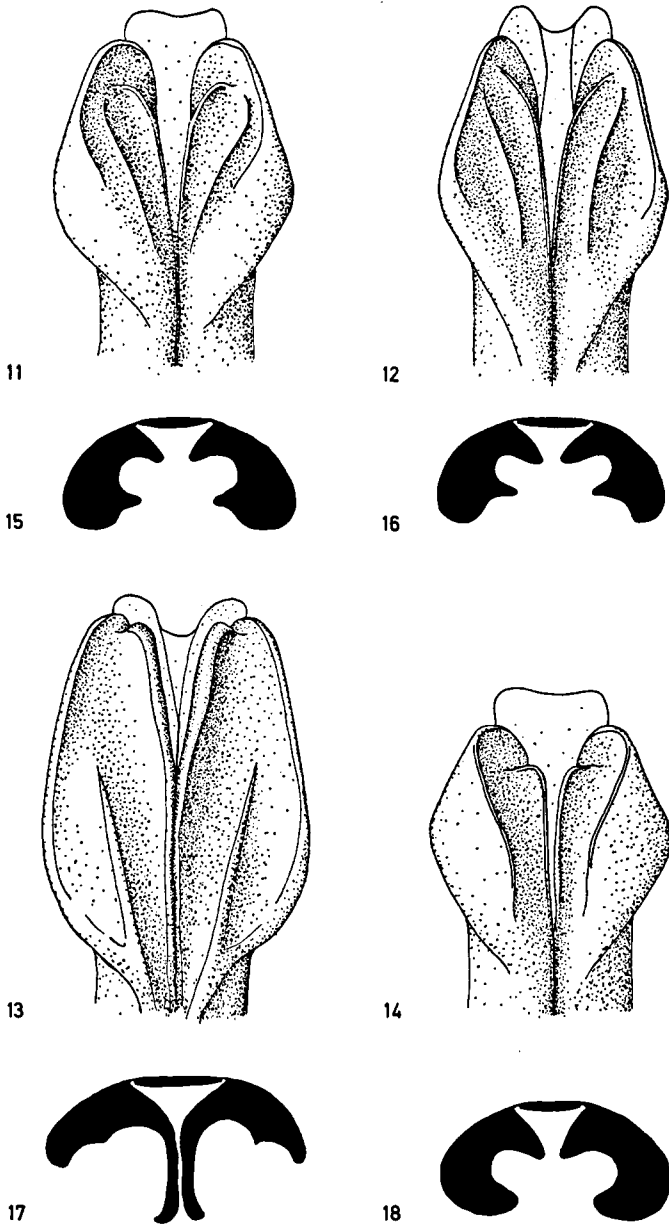
General distribution: West Anatolia.

Material studied (4 males, 9 females): Brussa, 1 ♂, 1 ♀ (NRS) (♂ lecto- and ♀ paralectotype); Brussa, 1863, Mann, 1 ♂, 1 ♀ (NMW); Bursa, Karacabey, 70 m, 3. VIII. 1962, Guichard & Harvey, 1 ♀ (BMNH); Bursa, Hara, 8 (♀), 18 (♂). VII. 1946, T. Karabag, 1 ♂, 1 ♀ (BMNH); between Demirchi & Simav, about 4000 ft., 5. VIII. 1931, B. P. Uvarov, 1 ♂, 2 ♀ (BMNH); Kutahya, Acem Dagh, 1700 m, 28. VII. 1962, Guichard & Harvey, 1 ♀ (BMNH); Mt. W. of Yakacik, nr. Istanbul, 21. IX. 1959, K. M. Guichard, 2 ♀ (BMNH).

Discussion. The coloration of the tip of the male abdomen and of the hind tibiae of both sexes resembles that of *P. caloptenoides moreanus*. However, the shape of the elytra, the apex of the phallus and the coloration of the pronotum are quite distinct from that subspecies.

The synonymy is discussed above under *P. caloptenoides caloptenoides*.

The range of nominate *caloptenoides* and the subspecies *brunneri* appears to adjoin just to the East of the Bosphorus. The record from Syria (Yakobson, 1902) certainly needs confirmation.



FIGS. 11—14. Apex of phallus in ventro-posterior aspect: (11) *Paracaloptenus caloptenoides caloptenoides* (Br. v. W.) (Avala); (12) *P. caloptenoides moreanus* ssp. n. (paratype from Karitena); (13) *P. cristatus* sp. n. (paratype from Mostar - Nevesinje); (14) *P. bolivari* Uvarov (Col de Millières).

FIGS. 15—18. Transverse section of apex of phallus: (15) *Paracaloptenus caloptenoides caloptenoides* (Br. v. W.) (Avala); (16) *P. caloptenoides moreanus* ssp. n. (paratype from Karitena); (17) *P. cristatus* sp. n. (paratype from Mostar - Nevesinje); (18) *P. bolivari* Uvarov (Saganta).

Paracaloptenus caloptenoides moreanus ssp. n.

(Figs. 2, 7—8, 12, 16)

Paracaloptenus caloptenoides: Werner, 1937: 151.

Paracaloptenus material from the Peloponnese is in many features slightly different from nominate *P. caloptenoides*. For instance, the apex of the phallus differs slightly. However, this character is not sufficiently stable to consider the Peloponnesian material a distinct species. A male from Karitena is selected holotype. It is labelled: Hellas, Peloponnisos, Karitena (Megalopolis) 500 m, 26. VII. 1970, Willemse & Scherpbier (CW).

Description. Male (fig. 2) resembling nominate *P. caloptenoides*, but larger and more robust. Fastigium verticis wider and more declive. Interocular distance larger. Pronotum longer, keels less raised, transverse sulci less deep. Elytra elongate, dorsal margin slightly convex, lower margin widely rounded towards the apex (figs. 7—8). Supra-anal plate more elongate. Apex of phallus larger, elongate, its ventro-posterior outline longer than wide (Figs. 12, 16).

General colour as in nominate *P. caloptenoides*. Pronotum of general colour, disc always with black velvety areas, often as four spots: one on each side between the anterior margin and the second ("first") transverse sulcus and one on each side on the metazona. Elytra of general colour, usually with a pale stripe along the cubital veins. Tip of abdomen paler than the general colour, black markings lacking except for tip of the cercus. Hind tibiae pink.

Female. As male, larger. Ovipositor, spermatheca and dorsal aspect of subgenital plate similar to nominate *P. caloptenoides*, slightly larger. Coloration as in male. Hind tibiae pink, often for greater part pale violaceous.

Measurements (mm)

	holotype ♂	♂	♀
Length of body	18.9	17.9 — 20.0	30.1 — 34.4
„ „ pronotum	4.3	3.9 — 4.4	7.3 — 7.9
„ „ elytron	3.4	3.2 — 3.5	6.0 — 6.9
„ „ hind femur	11.9	11.6 — 12.0	16.8 — 20.1

General distribution: Greece: the Peloponnese.

Material studied (28 males, 20 females): Hellas, Peloponnisos: Karitena (Megalopolis), 500 m, 26. VII. 1970, 15♂, 6♀ (1♂ holo- and 1♀ allotype); Kalavrita (Achaia), 700 m, 31. VII. 1970, 2♀; Kridarakia (S. of Patre), 500 m, 3. VIII. 1970, 1♂, 1♀; Lalas (Olympia), 400 m, 29. VII. 1970, 4♂, 3♀; Kalentzi (Erymanthos Oros), 1000 m, 3. VIII. 1970, 4♂, 3♀; above Kalentzi, Erymanthos Oros, 1100—1700 m, 4. VIII. 1970, 1♀; Marmara (Erymanthos River), 600 m, 30. VII. 1970, 1♂, 3♀; Vlachoï (Ladon River), 200 m, 29. VII. 1970, 2♂, all Willemse & Scherpbier (all CW); Xechori, Tayg., 7. VI. 1937, F. Werner, 1♂, 1♀ (NMW).

Discussion. Although the elytra vary in length and width, they are always widely rounded at the apex. In some males, the apex of the phallus does not

does not differ significantly from that in some males of nominate *P. caloptenoides*. The natural habitat is similar to that of nominate *P. caloptenoides*.

Except for the material from Xechori (Werner, 1937), previous records of *Paracaloptenus* from the Peloponnese are unknown to the author.

***Paracaloptenus cristatus* sp. n.**

(Figs. 3, 13, 17)

Platyphyma caloptenoides Brunner von Wattenwyl, 1861a: 226; 1861b: 307, pl. 16 fig. 24 A-B (partim).

A general study of the male genitalia in *Paracaloptenus* proved that in Yugoslavia there are two species of the genus. For the one with the largest range the name *caloptenoides* is available. The other one needs a new name. As the only distinct feature is a highly prominent medial crest of the apex of the phallus, the name *cristatus* is proposed here. A male from Mount Učka (Istria) is selected as holotype. It is labelled: Učka, 850—900 m, 20. VII. 1966, Jugoslavija, Istria, Ent. Exc. Zoöl. Mus. (ZMA). Material from this mountain (formerly Mte Maggiore) is present in several collections, the locality is easily accessible and its natural habitat is unlikely to be disturbed.

Description. Male (fig. 3). General appearance, external morphology, and coloration similar to nominate *P. caloptenoides*. Apex of phallus, however, strongly different and unique within the genus. The distal end of the apical penis valves is wide, strongly sclerotized and presents medially a strongly prominent crest (figs. 13, 17).

Female. Inseparable from nominate *P. caloptenoides*.

	Measurements (mm)		
	holotype ♂	♂	♀
Length of body	16.6	16.0 — 17.5	22.0 — 30.0
„ „ pronotum	3.7	3.2 — 3.6	6.2 — 7.1
„ „ elytron	2.9	2.6 — 3.2	5.1 — 5.9
„ „ hind femur	10.1	10.0 — 10.6	16.6 — 18.0

General distribution: Istria, Dinarian area.

Material studied (92 males, 61 females): Jugoslavija, Istra, Učka, 850—900 m, 20. VII. 1966, Ent. Exc. Zoöl. Mus., 6♂, 3♀ (1♂ holotype and 1♀ allotype) (ZMA), 700—1100 m, 15—16. VIII. 1972, F. Willemse c.s., 72♂, 52♀ (CW); Mt. Maggiore, Istrie Krauss, Ex. coll. de Bormans, ex Malcolm Dr. Krauss, Coll. Br. v. W., 13. X. 74, det. Br. v. W. *Paracaloptenus Brunneri* Stal, 1♂, 1♀ (NMW); Karny, Küstenland Mte Magg. Aug. 05, *Paracaloptenus caloptenoides*, 2♂ (NRS), 3. Aug. 05, determ. Karny *Paracaloptenus caloptenoides* ♂, Karny don. coll. R. Ebner, 1♂ (NMW); Coll. Br. v. W. Pod. Velez b. Mostar, Br. 18. 7. 88, 17.355, det. Br. v. W. *Paracaloptenus Brunneri* Stal, 1♂ (NMW); Jugoslavija, Bosna-Herc., Livno-Sujica 1100 m. 30. VII. 1968, F. Willemse c.s., 5♂, 2♀ (CW); Jugoslavija, Bosna-Herc., Mostar-Nevesinje 900 m, 1. VIII. 1968, F. Willemse c.s., 3♂, 2♀ (CW).

Additional material: Coll. Br. v. W. Karst b. Praewald Hofman 25. 7. 58. 270, det. Br. v. W. Paracaloptenus Brunneri Stal, 1 ♀ (paralectotype of *P. caloptenoides* Br.) (NMW); Coll. Br. v. W. Blagaj b. Mostar Br. v. W. 19. 7. 88, det. Br. v. W. Paracaloptenus Brunneri Stal, 1 ♀ (NMW); Senj (Adria), 4—500 m, Ende VIII. 1929, W. Ramme leg., 1 ♀ (NRS).

Discussion. Although material of this species has been known since more than a century, it has always been confused with *P. caloptenoides*. The female from Praewald, a paralectotype of Brunner's *Platyphyma caloptenoides*, is single. Without male, a definite identification is not yet possible. The same is true for the female from Blagaj and Senj. No geographical variation is observed. The range of *P. cristatus* appears not to be overlapped by that of *P. caloptenoides*. But more material from the adjoining regions is needed to define their respective ranges more exactly.

The habitat, as far as known to the present author, is similar to that of *P. caloptenoides*.

Paracaloptenus bolivari Uvarov, 1942

(Figs. 4, 9—10, 14, 18)

Paracaloptenus bolivari Uvarov, 1942: 87, 90, figs.

Paracaloptenus typus I. Bolívar, 1876: 296 (partim).

Description. Obvious characters are given in the key. Morphologically the apex of the phallus (figs. 14, 18) approaches that of nominate *P. caloptenoides*. As to the coloration, rather stable characters are the yellow stripe laterally on the pronotal disc and the yellow stripe over the cubital veins of the elytra. The tip of the male abdomen and the hind tibiae in both sexes are coloured as in nominate *P. caloptenoides*.

Length and shape of the elytra are quite variable (figs. 9—10). The hind margin of the pronotal disc may be very slightly excised in the middle. Otherwise, no geographical variation was observed in the available material.

Measurements (mm)

	♂	♀
Length of body	16.2 — 18.3	23.0 — 29.0
„ „ pronotum	3.8 — 4.3	5.5 — 7.0
„ „ elytron	3.3 — 4.9	5.0 — 6.7
„ „ hind femur	9.6 — 11.6	13.2 — 16.8

General distribution: The Pyrenees, Spain.

Material studied (13 males, 11 females): France, Pyr. Or., Col de Millières, 800 m, 17. VIII. 1961, G. Kruseman c.s., 5 ♂, 4 ♀ (ZMA); Espana, Huesca, Saganta 1, 22. VII. 1966, M. C. & G. Kruseman, 5 ♂, 4 ♀ (ZMA); Spain, Montesquin, 900 m, 14. VIII. 1957, 2 ♂, 2 ♀ (CW); Spain, Huesca, Ordesa, VII. 1934, E. Morales, 1 ♂, 1 ♀ (CW).

Discussion. The range of the species is quite disjunct from that of the other members of the genus. Apparently the paper by Uvarov (1942) has been overlooked by other authors (Harz, 1957; Weidner, 1969).

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