

REVISION OF THE GENUS *BUCEPHALOPTERA* EBNER (*ORTHOPTERA*, *TETTIGONIIDAE*)

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This interesting genus was established by Ebner for a single species. *Thamnotrizon bucephalus* Br. W. In 1926, Uvarov (EOS, iii : 243) revised the genus and described the second species, *B. ebneri*, while Ramme described *B. cypria* in 1933 and *B. bucephala jannonei* in 1939.

After studying the material of this genus in the British Museum and also that kindly sent to me by Dr. Beier and Dr. Ebner from the Vienna Museum, I was able to establish two new species of the genus, and to present a revision. This work has been made easier by the study of male titillators, of which there proved to be two pairs in this genus. The only other Tettigoniid genus in which two pairs of titillators are known is *Gampsocleis* (Brunner, 1876, Die morphologische Bedeutung der Segmente bei den Orthopteren, S. 9).

KEY TO SPECIES

- 1 (6). ♂: Cercus with a tooth at the base (figs. 4, 9, 12); ♀: subgenital plate with a deep angular excision (figs. 6, 11, 16).
- 2 (3). ♂: Appendages of the last tergite large, flat, bifurcate, overlapping, not spined (fig. 1); tooth of the cercus, short, slender, straight, but strongly curved near the apex (fig. 4); first titillators wide, divergent, each with 1-2 spinules on the inside near the apices (fig. 2); second titillators broad, narrowed near the apices, which have 8-9 spinules on the outer side (fig. 3); ♀: subgenital plate pentagonal, apical lobes acute (fig. 6)..... *bolivari* sp. n.
- 3 (2). ♂: Appendages of the last tergite not bifurcate and armed with a few spinules (figs. 10, 13); ♀: subgenital plate not pentagonal, apical lobes rounded, or subacute (figs. 11, 16).

- 4 (5). ♂: Tooth of the cercus short, inflated and strongly curved upwards (fig. 9); first titillators convergent, armed with many irregular spinules (fig. 7); second titillators with the serrate portion long (fig. 8); ♀: subgenital plate longer than wide, apical lobes rounded (fig. 11). Size larger: 22-24 mm..... *ebneri* Uv.
- 5 (4). ♂: Tooth of cercus long and slender, slightly curved (fig. 12); first titillators divergent, unarmed or with a line of 1-4 spinules on the outer side (fig. 14); second titillators with the serrate part short (fig. 15); ♀: subgenital plate wider than long, apical lobes subacute (fig. 16). Size smaller: 15-18 mm..... *cypria* Rme.
- 6 (1). ♂: Cercus with a tooth near, but not at, the base (figs. 20, 24); ♀: subgenital plate with a round excision (fig. 25).
- 7 (8). ♂: First titillators long, slender, convergent, unarmed, or with one spinule (fig. 18); second titillators with serrate part long and expanded (fig. 19); appendage of last tergite strongly incurved (fig. 17). *convergens* sp. n.
- 8 (7). ♂: First titillators wide, strongly divergent (fig. 22); second titillators with the serrate part short and less expanded (fig. 23); appendage of last tergite less incurved (fig. 21); ♀: subgenitale plate with a rounded excision (fig. 25)..... *bucephala* Br. W.

***Bucephaloptera bolivari* sp. n. (Figs. 1-6).**

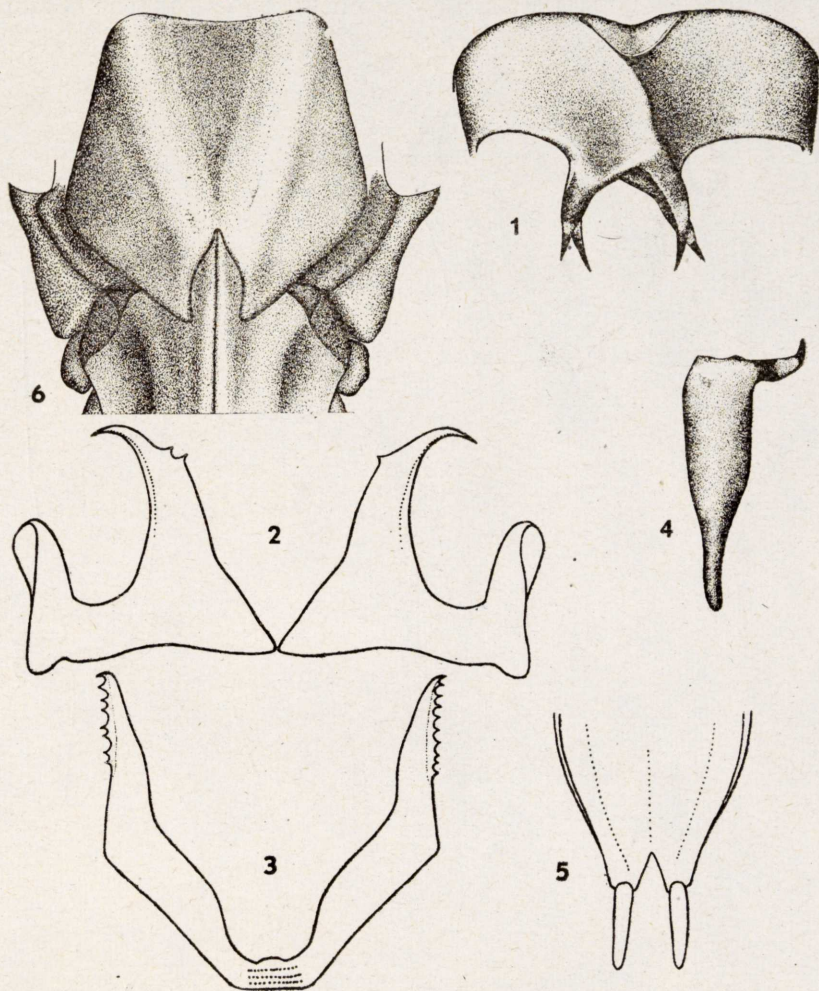
♂ (type). A large species. General coloration brown; sides of head and pronotum lighter; hind margin of the lateral lobe with a black spot; abdomen with a broad black lateral fascia, and with black dots on the posterior margin of each tergite.

Elytra rounded, brown, one third visible from above.

Last tergite divided in two parts, its appendages with transverse black and light pattern, flat, bifurcate, overlapping, without spines (fig. 1). First titillators wide, divergent, each with 1-2 spinules on the inside near the apices (fig. 2); second titillators broad, narrowed near the apices, which have 8-9 spinules on the outer side (fig. 3); cercus with a short, slender basal tooth, which is straight, but strongly curved near the apex (fig. 4). Subgenital plate relatively long and narrow, with a deep acutangular excision (fig. 5).

♀. Colour as in ♂. A very small part of elytra visible from above. Hind femur long and robust, outer side light coloured, without a black basal spot, which is typical in other species. Subgenital plate pentagonal, with a deep acutangular excision and acute lobes (fig. 6). Ovipositor longer than head and pronotum together, slightly upcurved.

Length of body: ♂ 20.5, ♀ 25.2; pronotum ♂ 9.7, ♀ 10; elytra ♂ 1.8, ♀ 0.4 (visible part); hind femur ♀ 24.4; hind tibia ♀ 22.6; ovipositor ♀ 19.5 mm.



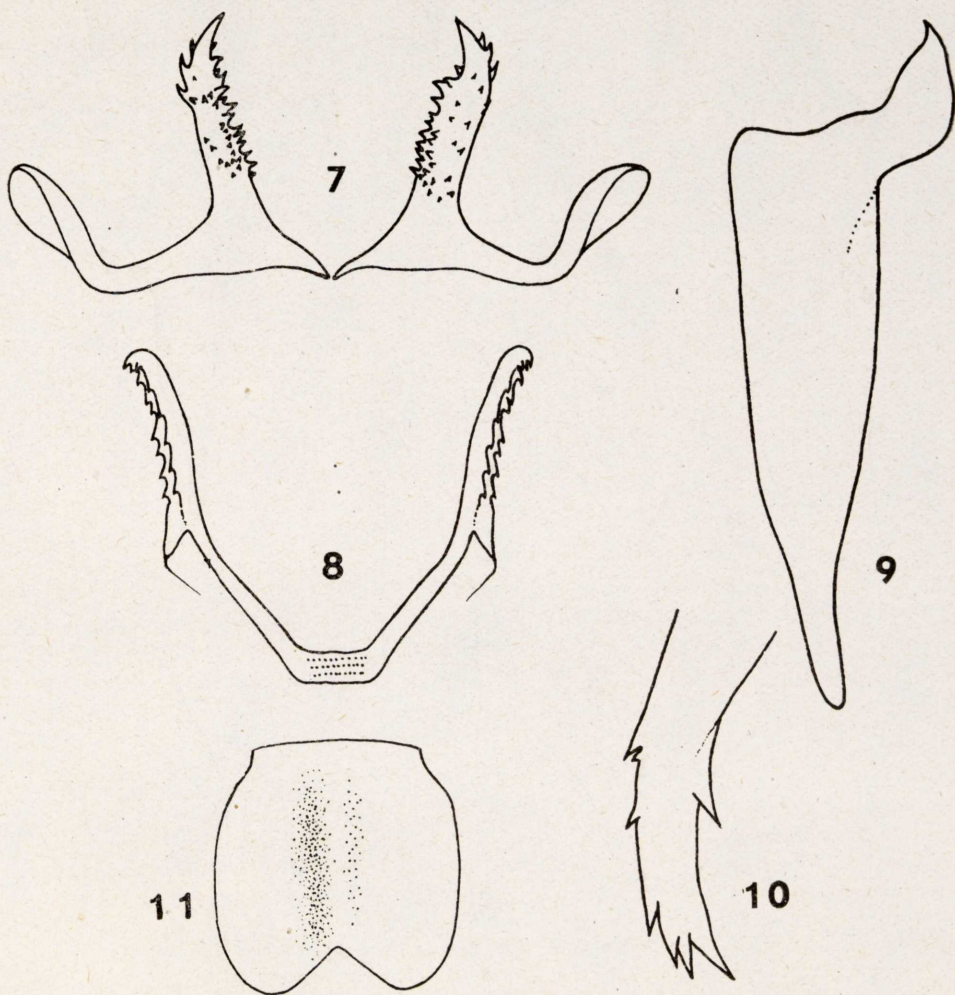
Figs. 1-6.—*Bucephaloptera bolivari* sp. n. 1: ♂ end of last tergite; 2: ♂ first titillators; 3: ♂ second titillators; 4: ♂ left cercus; 5: ♂ subgenital plate; 6: ♀ subgenital plate and base of ovipositor.

South Turkey: Mersin, 8.xi.1949, 1 ♂, 1 ♀ (T. Karabag).
Named in the memory of Ignacio Bolívar, the author of a classical paper on Turkish Orthoptera.

The type and paratype are in the British Museum (Natural History).

Bucephaloptera ebneri Uv. (Figs. 7-11).1927. *Bucephaloptera ebneri* Uvarov, Eos, III: 245.

This species differs strikingly from all others in the structure of both titillator pairs (fig. 7, 8).



Figs. 7-11.—*Bucephaloptera ebneri* Uv. 7: ♂ first titillators; 8: ♂ second titillators; 9: ♂ left cercus; 10: ♂ left appendage of the last tergite; 11: ♀ subgenital plate.

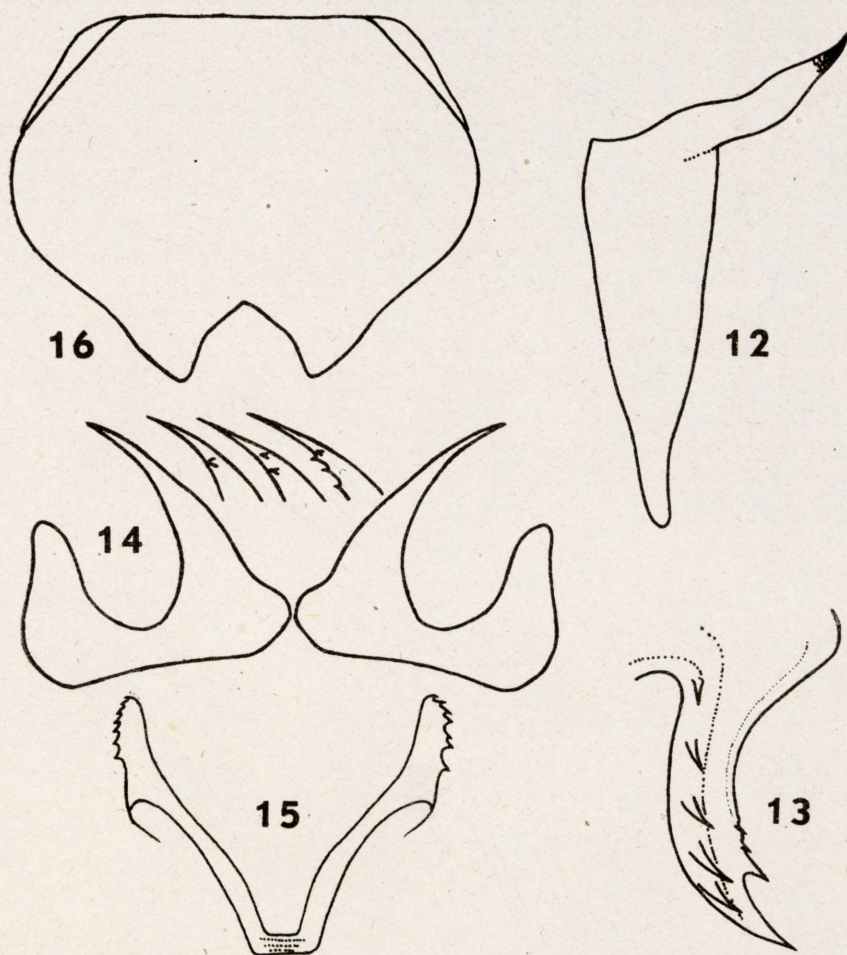
♀ (not described before). Subgenital plate (fig. 11) narrowed at the base, with acutangular excision and rounded lobes. Ovipositor slightly upcurved.

Length of body ♀ 24; pronotum 10; elytra 2.7 (visible part); hind femur 23.8; hind tibia 21.6; ovipositor 21.1 mm.
Distribution: Palestine.

***Bucephaloptera cypria* Ramme. (Figs. 12-16).**

1933. *Bucephaloptera cypria* Ramme, Mitt. Zool. Mus. Berlin, 18 : 425.
1939. *Bucephaloptera cypria* Ramme, Mitt. Zool. Mus. Berlin, 24 : 126.

This is the smallest species of genus, and it is well characterised by the cercus (fig. 12) and titillators of male (figs. 14, 15),



Figs. 12-16.—*Bucephaloptera cypria* Rme. 12: ♂ left cercus; 13: ♂ left appendage of the last tergite; 14: ♂ first titillators and variation of spinules; 15: ♂ second titillators; 16: ♀ subgenital plate.

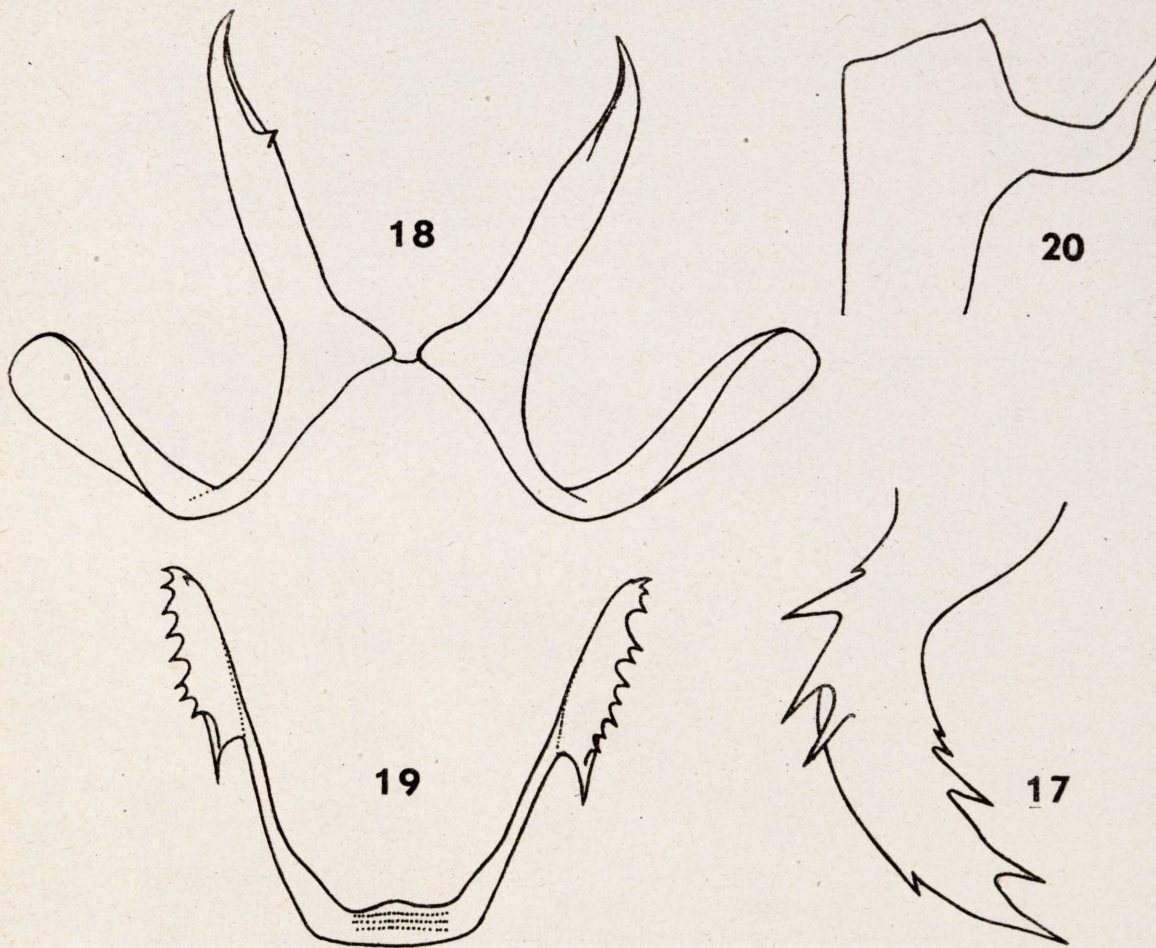
and the subgenital plate of female (fig. 16). In some individuals first titillator has a few spinules on the outer side (fig. 14), but generally it is unarmed.

Distribution: Cyprus.

***Bucephaloptera convergens* sp. n.** (Figs. 17-20).

1882. *Thamnotrizon bucephalus* Brunner von Wattenwyl, Prodr. europ. Orthop. : 338 (*partim*).

♂ (type). A large species. General coloration light castaneous, face lighter, with a black spot on each side of fastigium; abdomen with a broad black lateral fascia.



Figs. 17-20.—*Bucephaloptera convergens* sp. n. ♂. 17: left appendage of the last tergite; 18: first titillators; 19: second titillators; 20: left cercus (end part broken).

Elytra extend to the middle of second tergite. Hind femur with a black spot at the base above and below.

Last tergite deeply and narrowly incised, its appendages strongly curved, black, armed with a few long subapical and apical spines (fig. 17). First titillators long, slender, convergent, on one side with a strong spine (fig. 18); second titillators with the serrate part long and expandad (fig. 19). Cercus with a slender subbasal tooth, which is straight, but strongly curved in the apical half (fig. 20).

Length of body 21.8; pronotum 8.1; elytra 2.1; hind femur 22.4; hind tibia 20 mm.

South Turkey, Taurus mountains, Gülek (Külek on the label) coll. Br. W.

This species has been sent to me from the Vienna Museum with other co-typic specimens of *B. bucephala* Br. W, but it proved to be quite distinct in the structure of titillators. The type has been returned to the Vienna Museum.

***Bucephaloptera bucephala* (Br. W.) (Figs. 21-25).**

1882. *Thamnotrizon bucephalus* Brunner von Wattenwyl, Prodr. europ. Orth. : 338 (partim).
 1922. *Psorodonotus riveti* Berland et Chopard, Bull. Mus. Nat., Paris, 230.
 1926. *Bucephaloptera bucephala* Ebner, Wien. Ent. Zeit., 43 : 93.
 1936. *Bucephaloptera jannonei* Ramme, n. nud. Boll. Labor. Zool. Ist. Portici, vol. xxix : 135.
 1939. *Bucephaloptera bucephala jannonei* Ramme (syn. nov.), Mitt. Zool. Mus. Berlin, 24 : 125.

This is variable species, specimens from same locality differing greatly in morphological characters.

The number of spinules of the last tergite is very variable (fig. 21 A-F), and this is not a specific character.

The titillators (figs. 22-23) and cercus (fig. 24) are similar in specimens from different countries.

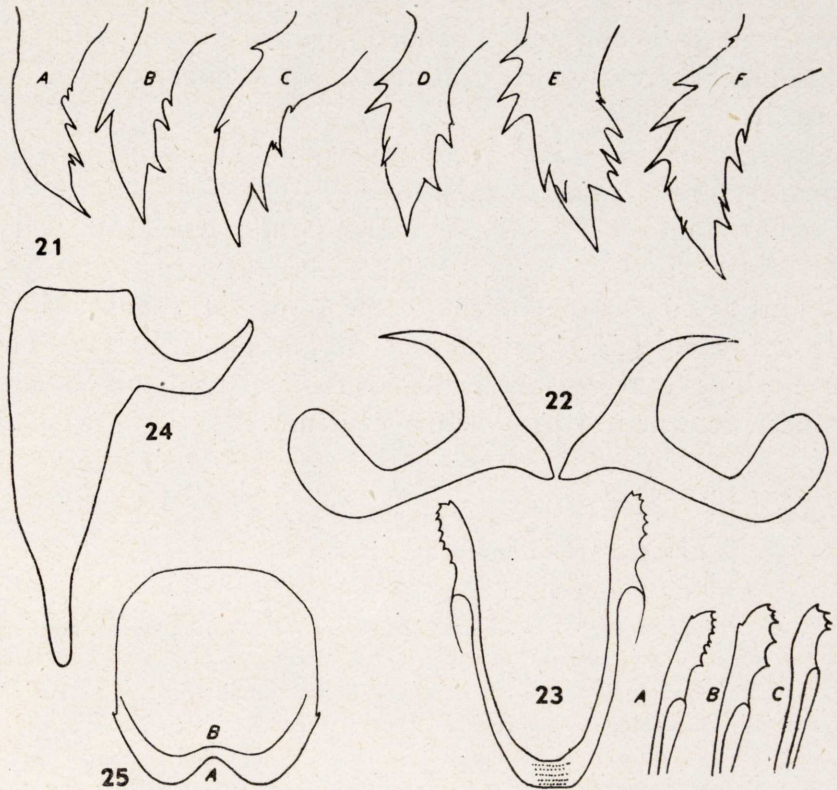
Female subgenitale plate in some individuals more deeply excised than in others (fig. 25 A-B).

The body length also varies from country to country. The largest specimens are from West and South Turkey; medium

sized ones are from Istanbul, Greece, Mytilene; the smallest occur in Rumania and south Serbia.

Distribution: Rumania, Macedonia, Greece, South Serbia, Turkey, Mytilene, Rhodos.

Brunner described this species from specimens from Külek



Figs. 21-25.—*Bucephaloptera bucephala* Bt. W. 21: ♂ left appendage of last tergites, A: Ankara, B: Tire (Izmir), C: Mytilene, D: Bornova (Izmir), E: Tire, F: Aliaga (Izmir). 22: ♂ first titillators. 23: ♂ second titillators and variation of the serrate part, A: Demirci (Manisa, Turkey), B: Menemen (Izmir), C: Ephesus. 24: ♂ left cercus. 25: ♀ subgenital plate, A: Izmir, B: Tire.

(= Gülek in the Taurus), Smyrna (Izmir) and Ephesus, and I have selected a male from Ephesus (Brunner's coll. N: 16852) as the type. The Gülek male is very distinct species, described above as *B. convergens*.

B. jannonei has been described by Ramme from Rhodos as a distinct subspecies only because of a slightly different spinulation of the last tergite, but this character has no taxonomic value.