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***Pseudophilotes bavius casimiri*, the most differentiated subspecies of the *P. bavius* species-group. *Pseudophilotes fatma*, a distinct species (Lepidoptera: Lycaenidae, Scolitantiditi)**

John G. Coutsis

Abstract. *Pseudophilotes bavius casimiri* (Hemming, 1932) is shown, on the basis of its male genitalia, to be the most differentiated subspecies within the *Pseudophilotes bavius* (Eversmann, 1832) species-group, and it is suggested, pending DNA sequencing, that it may eventually be shown to represent a distinct species. *Pseudophilotes fatma* (Oberthür, 1890) is being separated at species level from *P. bavius* on the basis of pronounced differences in the valvae and falces.

Samenvatting. *Pseudophilotes bavius casimiri*, de meest afgescheiden subspecies van de *P. bavius* soortengroep. *Pseudophilotes fatma*, een aparte soort (Lepidoptera: Lycaenidae, Scolitantiditi).

Op basis van kenmerken in de mannelijke genitalia wordt aangetoond dat *Pseudophilotes bavius casimiri* (Hemming, 1932) de meest afgescheiden subspecies is in de soortengroep van *Pseudophilotes bavius* (Eversmann, 1832). Misschien zal DNA-onderzoek zelfs aantonen dat het om een aparte soort gaat. *Pseudophilotes fatma* (Oberthür, 1890) wordt als aparte soort afgescheiden van *P. bavius* op basis van belangrijke verschillen in de valvae en falces.

Résumé. *Pseudophilotes bavius casimiri*, la sous-espèce la plus différenciée dans le groupe d'espèces de *P. bavius*. *Pseudophilotes fatma*, une bonne espèce (Lepidoptera: Lycaenidae, Scolitantiditi).

Se basant sur des différences dans les genitalia mâles, l'auteur considère *Pseudophilotes bavius casimiri* (Hemming, 1932) comme la sous-espèce la plus différenciée dans le groupe d'espèces de *Pseudophilotes bavius* (Eversmann, 1832). Des recherches de DNA pourront certainement montrer qu'il s'agit d'une espèce différente. *Pseudophilotes fatma* (Oberthür, 1890) est considéré comme espèce distincte basée sur des différences dans les valvae et les falces.

Key words: Lycaenidae – Scolitantiditi – *Pseudophilotes* – *bavius* – *casimiri* – *fatma* – male genitalia – androconia – Greece – Pelopónnisos – Algeria – Morocco.

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Introduction

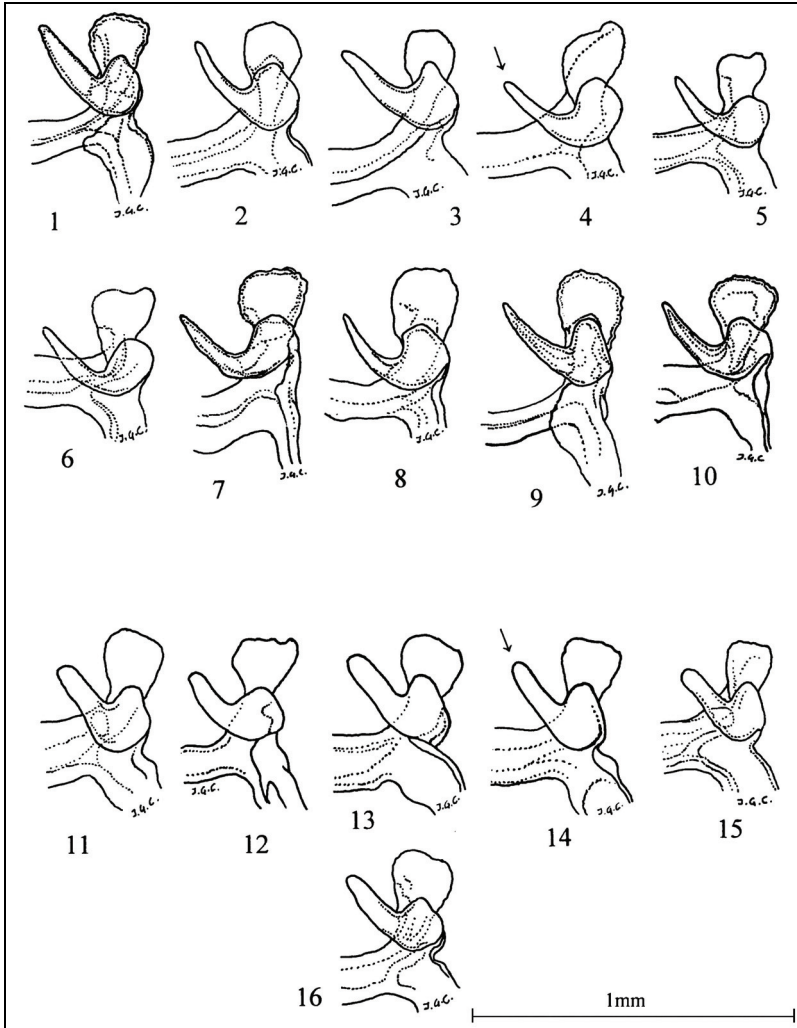
The species-group taxon *Pseudophilotes bavius* (Eversmann, 1832), has been subdivided into the following subspecies: The nominal *bavius*, from European Russia (TL Bashkiria, South Ural Mts.) and Kazakhstan; *hungaricus* (Diószeghy, 1913), from Hungary, Romania, and according to Nekrutenko (1995), Crimea; *macedonica* (Schulte, 1958), from the Republic of Macedonia and Northern Greece; *casimiri* (Hemming, 1932), from Pelopónnisos, Southern Greece; *egaea* (Herrich Schäffer, [1852]), from West and Central Anatolia, and according to Tuzov *et al.* (2000), provisionally also from the Caucasus; *vanicola* Koçak, 1977, from Van, Hakkâri and Şırnak Provinces, Turkey; *eitschbergeri* Koçak, 1975, from Urfa and Mardin Provinces, Turkey, as well as from Syria [Descriptions, colour figures and distribution maps for the latter three subspecies are given in Hesselbarth, van Oorschot & Wagener (1995)]; *onalpe* Koçak, 1975, from Ankara Province, Turkey; *fatma* (Oberthür, 1890), from Algeria and Morocco. Some of these subspecies have since been lumped together, but irrespective of the actions taken all but one of the taxonomic decisions concerning the group have been based solely on external wing characters. The exception relates to *fatma*, for which the male genitalia have also been taken into consideration.

Male genitalia

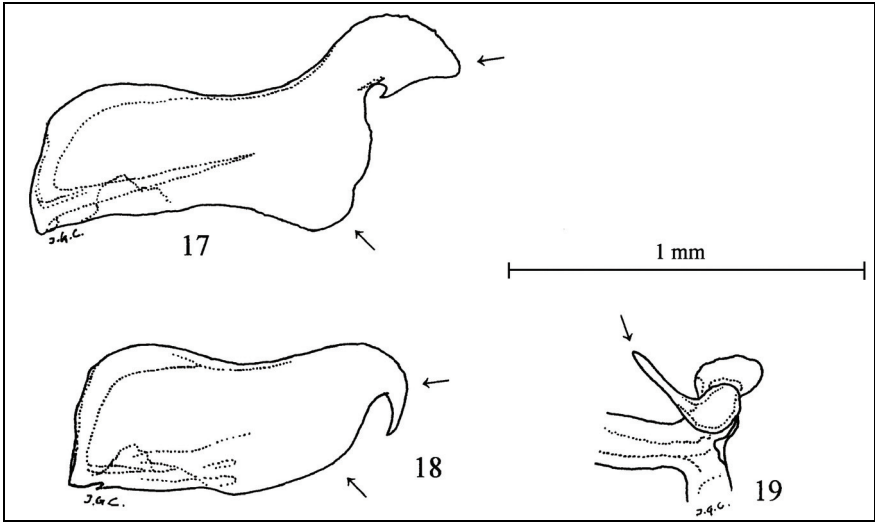
Drawings were made of the falces of all the subspecies listed above with the exception of those of nominal *bavius*, which have been studied in the past but not drawn, and of *onalpe*, which were never made available. Subspecies *bavius*, *hungaricus*, *macedonica*, *egaea*, *vanicola* and *eitschbergeri*, have identical to each other genitalia in all respects, and are characterized, among others, by the shape of the falces, which usually are narrow and always gradually taper to a very narrow distal extremity (figs. 1–10). In subspecies *casimiri* the falces are wide and their sides are just about parallel to each other, resulting in a wide and blunt distal extremity (figs. 11–16). Subspecies *fatma*, already known to possess different genitalia (Higgins 1975), differs to such an extent from the other members of the group both in the shape of the valva, as well as in the extreme narrowness of the falces, that it becomes clear that it deserves to be treated as a separate species. In *fatma* the valval dorso-distal process is in the form of a prominent, downwards-pointing hook, and the distal part of the valval ventrum is evenly curved towards the valval distal edge; in all the subspecies of *bavius* the valval dorso-distal process possesses a small ventral spine that is surmounted by a massive, dorsally convex and distally pointed prominence, and the distal part of the valval ventrum forms a right angle with the valval distal edge (figs. 17–19).

Androconia

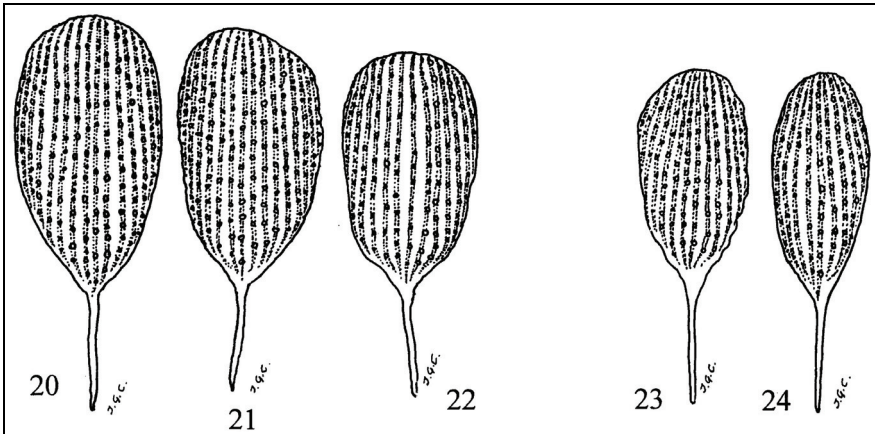
Androconia samples taken from *casimiri* as well as from Greek examples of *macedonica* showed that those of the former are considerably smaller and narrower than those of the latter (figs. 20–24).



Figs. 1–16. Ventral view of right half of tegumen, together with right labis and falx. 1. *Pseudophilotes bavius hungaricus*, Hungary, Vicze, Com. Szamos, 23.iv.1935. 2–4. *Pseudophilotes bavius macedonica*. 2. Republic of Macedonia, Treska Gorge. 3, 4. Greece, Makedonia, Kozáni Distr., near Siátista, 800–1000 m. 3. 10.v.1989. 4. 19.v.1990. 5, 6. *Pseudophilotes bavius egea*. Turkey. 5. Konya Province, 15 km S of Karaman, 1200 m, 22–23.vi.1982. 6. Antalya Province, Güzelbağ, 300–500 m, 15–16.v.1988. 7–9. *Pseudophilotes bavius vanicola*, Turkey. 7, 9. Hakkâri Province, Dez Valley, 20 km NE of Hakkâri, 1500–2000 m, 3–10.vii.1992. 8. Van Province, 8–32 km N of Çatak, 1900–2200 m, 13–19.vi.1990. 10. *Pseudophilotes bavius eitschbergeri*, Syria, Ain Khadra, 900–1050 m, 24.iv.1997. 11–16. *Pseudophilotes bavius casimiri*, Greece, Pelopónnisos. 11–15. Ahaía Distr., Zahlorou, near Kalávríta, 600 m. 11. 23.v.1990. 12. 5.v.1971. 13, 15. 27.v.1975. 14. 27.v.1979. 16. Arkadía Distr. vic. of Trípolis, 750 m, 24.v.1989.



Figs. 17–19. *Pseudophilotes* male genitalia. 17, 18. Side view of outer face of left valva. 19. Ventral view of right half of tegumen, together with right labis and falx. 17. *Pseudophilotes bavius macedonica*, Republic of Macedonia, Treska Gorge. 18, 19. *Pseudophilotes fatma*, Morocco, Middle Atlas, Ifrane, 1700 m, 15–17.v.1988.



Figs. 20–24. Androconia of Greek *Pseudophilotes* drawn to same scale. 20–22. *Pseudophilotes bavius macedonica*, Makedonia, Kozani Distr., near Siátista, 800–1000 m, 10.v.1989. 23, 24. *Pseudophilotes bavius casimiri*. Pelopónnisos, Ahaia Distr., Zahlorouí, near Kalávrita, 600 m, 23.v.1990.

Discussion

The constant differences between the male genitalia of subspecies *casimiri* and those of all the other subspecies of *bavius*, coupled with differences present in wing characters (the male of the former always has bright orange sub-marginal markings on HW upper-side in s1c, s2 and s3, while in all the other subspecies these markings, when present, are reduced in number and are not as bright), clearly suggest that the geographically isolated *casimiri* has diverted itself from the norm to a point where it may conceivably be shown in the future, and through DNA sequencing, as representing a distinct species. It is also interesting to note that *casimiri* is unjustly being totally ignored by Higgins & Riley (1970).

The distinct specific position of *fatma*, as explained above, is based on extensive genitalic differences. These were recorded in Higgins (1975), but were obviously deemed not important enough to warrant its separation at species level.

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References

- Hesselbarth, G., van Oorschot, H. & Wagener, S. 1995. *Die Tagfalter der Türkei*, 3 vols. pp. 1–1354, 1–847, pls. 1–141, maps I–IV, 1–342. — Selbstverlag S. Wagener, Bocholt (Germany).
- Higgins, L. G. 1975. *The Classification of European Butterflies*. — Collins, St. James's Place, London, 320 pp.
- Higgins, L. G. & Riley, N. D. 1970. *A Field Guide to the Butterflies of Britain and Europe*. — Collins, St. James's Place, London, 384 pp., 63 colour plates, 384 distribution maps.
- Nekrutenko, Y. P. 1985. Булавоусые чешуекрылые Крыма. Определитель. — Киев: Наук. Думка, 152 pp., 24 colour plates. (In Russian).
- Tuzov, V. K., Bogdanov, P. V., Churkin, S. V., Dantchenko, A. V., Devyatkin, A. L., Murzin, V. S., Samodurov, G. D. & Zhdanko, A. B. 2000. *Guide to the Butterflies of Russia and Adjacent Territories (Lepidoptera, Rhopalocera)*. — Pensoft, Sofia-Moscow, Vol. 2, 580 pp. 88 colour plates.