

The Orthoptera of Mount Athos, Greece, with description of *Poecilimon athos* sp. nov. (Orthoptera: Tettigoniidae)

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Abstract: For the first time faunistic data on the Orthoptera of Mount Athos, Greek Makedhonia, are given. The 20 species recorded include a new species, *Poecilimon athos* sp. nov. which is described and illustrated. *Poecilimon rufontens* Ingrisch & Pavicevic, 1985 is synonymised with *P. anatolicus* Ramme, 1933.

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Introduction

The southern part of Khalkidhiki in North-East Greece is divided into three narrow peninsulas: Kassandra, Sithonia and Akti. Akti is the easternmost and better known as Athos or Agion Oros (Holy Mountain). All three peninsulas, formerly islands, are nowadays connected with the mainland by isthmuses that do not rise much above sealevel (Ogilvie, 1945). The peninsula of Akti is about 45 km long and 8 km broad. Its backbone is a narrow crest that rises gradually beyond the isthmus. Reaching the end of the peninsula, however, the altitude increases abruptly to the summit of the steep-sided Mount Athos (2033 m). Mount Athos belongs to The Monastic Republic whose territory covers the peninsula of Akti. Entrance is restricted, as a rule permission is only given for a few days and exclusively to male persons.

Until now faunistic data on the Orthoptera of Athos have been lacking (Willemse, 1984). For this very reason the senior author visited this area in July 1983 and Luc Willemse in July 1986.

Faunistic part

All localities are close together and confined to Mount Athos. Unless otherwise stated the

material is deposited in the authors collections. Particulars of the localities and the numbers as used throughout the text are as follows:

1. between Skiti Timiou Prodhromou and Ayios Petros, 550 m, 30.vii.1983, J. Tilmans
2. between Kerassea and Ayios Petros, 750 m, 30.vii.1983, J. Tilmans
3. above Kerassea, 700 m, 30.vii.1983, J. Tilmans
4. Mt. Athos, 850-1150 m, 19.vii.1986, L. Willemse
5. Mt. Athos, below Panayia, 900-1200 m, 30/31.vii.1983, J. Tilmans
6. Mt. Athos, 1200-1500 m, 18.vii.1986, L. Willemse
7. Mt. Athos, below Panayia, 1300 m, 31.vii.1983, J. Tilmans
8. Mt. Athos, Panayia, 1500 m, 30/31.vii.1983, J. Tilmans
9. Mt. Athos, above Panayia, 1500-2000 m, 18.vii.1986, L. Willemse
10. Kerasia, 600 m, 18.vii.1986, L. Willemse
11. Ayios Annis - Kerasia, 300-600 m, 17.vii.1986, L. Willemse
12. Ayios Annis, 300 m, 17.vii.1986, L. Willemse

During the two visits to Mount Athos 20 Orthoptera species were collected, presumably only part of the Orthoptera fauna of Athos. Most of these species are widely distributed in continental Greece (Willemse, 1984). The list below represents the species collected and their precise localities. Where useful, comments are given.

ENSIFERA

Tylopsis lilifolia (Fabricius): 1, 5, 6, 8.
Acrometopa servillea (Brullé): 4, 11.
Poecilimon athos sp. nov.: 4, 5, 6, 7, 8, 9, 10.
 See systematic part below.

Tettigonia viridissima (Linnaeus): 6.
Platycleis (*P.*) *g. grisea* (Fabricius): 8.
Platycleis (*P.*) *i. intermedia* (Serville): 2, 5.
Platycleis (*Incertana*) *incerta* Brunner von Wattenwyl: 1.

Metrioptera (*Vichetia*) *oblongicollis* (Brunner von Wattenwyl): 5 (2♂, 1♀), 6 (2♂, 5♀), 8 (1♂, 1♀), 9 (1♂).

M. oblongicollis is widely spread throughout the Balkans and known from most of continental Greece except for a narrow area in central Greek Makedhonia which is covered by the range of *M. tsirojanni* Harz & Pfau, 1983 (Willemse, 1985). Morphological distinction between the two species is merely confined to the female genitalia. The Athos females agree perfectly with *M. oblongicollis*. The occurrence of this species in Mt. Athos is interesting as in adjacent Khalkidhiki *M. tsirojanni* is known to occur.

Pholidoptera stankoi Karaman: 4, 5, 6, 8, 9.
 This species is known from western Yugoslav Makedonia and the adjacent part of northern Greece from Mt. Smolikas, northern Ipiros, to Mt. Olimbos in central Greek Makedhonia; its occurrence in Mt. Athos extends its known range considerably more eastward.

Eupholidoptera smyrnensis (Brunner von Wattenwyl): 4, 5.

Saga c. campbelli Uvarov: 6.
 Mt. Athos fits in the known range of the nominate subspecies which is confined to eastern Greek Makedhonia and western Greek Thraki.

Ephippiger e. ephippiger Fiebig: 6, 7.
 One of the southernmost localities of this species in the Balkans.

Oecanthus p. pellucens (Scopoli): 2.

CAELIFERA

Tetrix (*Tetratetrix*) *tenuicornis* Sahlberg: 12.
Pezotettix giorna (Rossi): 1, 2.

Calliptamus italicus (Linnaeus): 2, 5, 6.
Oedipoda caeruleascens (Linnaeus): 2, 5.
Oedipoda germanica (Latreille): 2, 3, 5, 6, 8, 11.
Dociostaurus (*Kazakia*) *b. brevicollis* (Eversman): 8.

Chorthippus (*Glyptothorus*) sp.: 5 (10♂, 3♀), 6 (14♂, 7♀), 8 (12♂, 10♀), 9 (8♂, 10♀).

A common species on Mt. Athos, with uniform morphology and apparently representing a single species. It belongs to the *Ch. biguttulus*-group but its identification is not certain. A more detailed study, including its song is needed to establish its precise identity. Efforts in 1986 to make recordings of its song, unfortunately failed.

Systematic part

Poecilimon athos sp. nov.
 (figs. 1-5)

Types

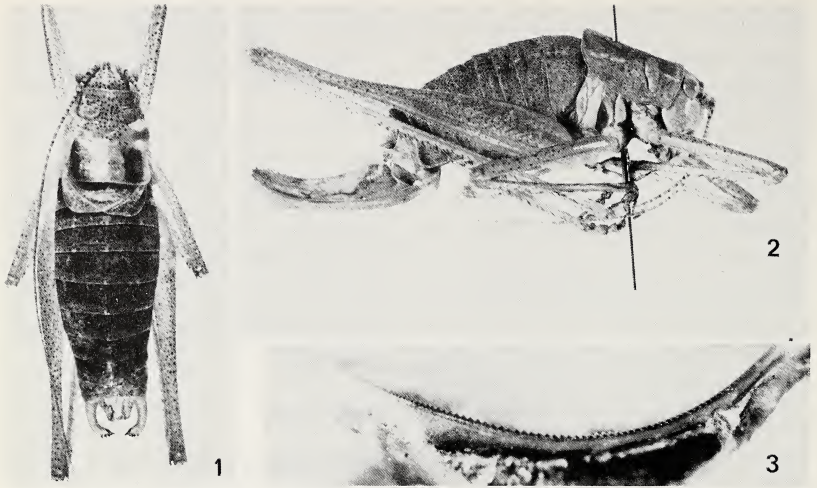
The type material is deposited in: collection Willemse (CW), collection Tilmans (CT), the British museum of Natural History, London (BMNH) and the Instituut voor Taxonomische Zoölogie, Amsterdam (ITZ). The locality labels read as follows. ♂ holotype (CT): "Hellas, Athos, 1500 m/Mt. Athos, Panayia, / leg. J. M. Tilmans, 30/31-VII-1983"; ♀ allotype (CW): "HELLAS (Athos)/Mt. Athos 1200-1500 m/L. Willemse 18-VII-1986"; paratypes: 1 ♂ (CT) labelled as holotype; 5 ♂, 1 ♀ (CW), 1 ♂, 1 ♀ (BMNH), 1 ♂ (ITZ) labelled as allotype; 3 ♀ (CT), 1 ♀ (ITZ) "Hellas, Athos, 900-1200 m/Mt. Athos, below Panayia, / leg. J. M. Tilmans, 30/31-VII-1983"; 1 ♀ (CT) "Hellas, Athos, 1300 m/Mt. Athos, below Panayia, / leg. J. M. Tilmans 31-VII-1983"; 3 ♂ (CW) "HELLAS (Athos)/Mt. Athos 850-1150 m/L. Willemse 19-VII-1986"; 2 ♂, 2 ♀ (CW) "HELLAS (Athos) 1500-/2000 m Mt. Athos ab. Panayia/L. Willemse 18-vii-1986"; 1 ♀ (CW) "HELLAS (Athos)/600 m Kerasia/ L. Willemse 18-VII-1986".

Description

Male (fig. 1): Comparatively small. Integument of head, thorax and legs moderately shiny, abdomen dull.

Head: Fastigium of vertex about half as wide as scapus, extending anteriorly, dorsally shallowly grooved; margins subparallel.

Thorax: Pronotum with transverse sulcus cutting median line at the middle of pronotal



Figs. 1-3. *Poecilimon athos* sp. nov. 1, ♂ holotype; 2, ♀ allotype; 3, stridulatory file of the left elytron, profile, distal end at the left, ♂ paratype.

length; metazona slightly widening posteriorly, scarcely raised above tegmina; hind margin almost straight, ventral margin scarcely sinuate in prozona, widely rounded in metazona. Elytra with basal two thirds covered by pronotum, apical margin reaching or slightly surpassing hind margin of first tergite. Stridulatory file of left elytron (fig. 3) slightly curved in profile and ventral view, almost reaching hind margin of elytron; shortest distance between most proximal and distal tooth ca. 2.75 mm, greatest width of the file in the middle of its length 0.08 mm; number of teeth ca. 80 including ca. 20 scarcely sclerotised teeth in the distal sixth; spacing of strongly sclerotised teeth 18-21 pro mm along entire length. Hind femur without spinules.

Abdomen: hind margin of tergites straight. Cercus (fig. 4) with proximal three fourth cylindrical and straight, apical fourth incurved with upper surface flattened and weakly impressed in the middle; margins of apical fourth straight, converging, inner margin apically with a low crest wearing 2-3 small teeth, outer margin apically with 4-5 larger teeth, terminal tooth being the very tip of the cercus. Subgen-

ital plate parallel, converging in apical third; hind margin either straight, slightly concave or slightly V-shaped.

Colouration. General colour yellowish green. Occiput, most of pronotum, abdomen and legs finely rusty-brown spotted. Antennae slightly annulated. Fastigium of vertex rusty-brown. Pronotum dorsally in pro- and metazona on either side with a yellowish lateral streak, in metazona bordered red-brown. Elytra yellowish, stridulatory area brown. Abdomen unicolourous yellowish green. Cercus yellowish, armature blackish.

Female (fig. 2). As the male. Pronotum in metazona not widened nor raised. Elytra scale-like, widely separated from each other, completely covered by pronotum. Basal fold of dorsal margin of lower ovipositor valve (fig. 5) well developed, stout, protruding downwards and divided into a small anterior and large posterior lobe; latero-dorsal surface impressed, forming with gonangulum a downwards directed groove.

Colouration. General colour green, finely spotted rusty-brown. Pronotum with lateral streaks as in male but paler.



Figs. 4-5. *Poecilimon athos* sp. nov. 4, dorsal view of the left cercus, ♂ paratype; 5, lateral view of the base of the ovipositor, ♀ paratype.

Measurements (length in mm). Body ♂ 15.2-18.2, ♀ 16.3-19.5; pronotum ♂ 4.0-5.3, ♀ 4.4-5.6; elytron ♂ 2.4-2.9, ♀ 0.0-0.1; hind femur ♂ 12.4-15.3, ♀ 13.3-16.4; ovipositor 7.7-9.0.

Distribution. Hitherto only known from Mt. Athos where adults have been found in July, from 600 up to 2000 m on low shrubs and herbs (a.o. *Sambucus ebulus* L.).

Differential diagnosis

Poecilimon athos sp. nov. is well defined by the following characters: shape and armature of the cercus, shape of pronotum and particulars of stridulatory file in the male as well as measurements and unicolorous abdomen in both sexes.

Using the size, shape and armature of the male cercus, *Poecilimon athos* can be arranged in a morphologically more or less well defined group of species. The male cercus of this group is characterized by an incurved apical part that tapers into a terminal tooth along a straight anterior (inner) and posterior (outer) margin, each of them provided with a series of denticles. Species of this group that occur in Greece are *P. thessalicus* Brunner von Wattenwyl, 1891, *P. chopardi* Ramme, 1933, *P. veluchianus* Ramme, 1933, *P. zimmeri* Ramme, 1933, *P. aegaeus* Werner, 1932, *P. anatolicus* Ramme, 1933, and *P. sp. cf. aegaeus* Heller, 1984. Another species that fits in this group is *P. rufonitens* Ingrisch & Pavicevic, 1985, described from eastern Greek Makedhonia. The description and a re-examination of the type-series prove that this taxon is identical to *P. anatolicus* Ramme, 1933 and should be consi-

dered a junior synonym of the latter (syn. nov.). The male cercus of *P. athos* differs from all the rest either in number or size of denticles, lesser apical incurvation or more robust appearance (compare figs. 71-74, 94-121 in Willemse, 1982; figs. 11-29 in Willemse, 1985).

Other features helpful to distinguish *P. athos* from the species listed above may be summarized. The metazona of the male pronotum in all the rest is more raised than in *P. athos*. Most species show also differences in the stridulatory file, referring both to the shape (e.g. incurvation) of the file and to number, spacing or structure of the teeth (compare figs. 42-45 in Willemse, 1985; figs. 20, 25 in Heller, 1984). The difference between the files of *P. veluchianus* and the new species, however, is not apparent and further analyses of the morphology of the file and the bioacoustics are needed. The male subgenital plate of *P. anatolicus* extends considerably beyond the cerci and is apparently longer than in the new species. The basal lobe of the dorsal margin of the lower ovipositor valve of the species listed above is also different, commonly being entire and not forming two lobes as in *P. athos*.

Additional distinct features are shown by the colouration. The integument of *P. thessalicus* and *P. aegaeus* is obviously more glossy than the new species. The abdomen of most males and some females of *P. thessalicus* and *P. aegaeus* as well as *P. chopardi*, *P. sp. cf. aegaeus*, *P. veluchianus* and *P. zimmeri* shows a black pattern and is not unicolorous as in *P. athos*. The male cercus of *P. anatolicus* is reddish instead yellowish as in the new species and the second abdominal tergite of the female has a yellow dorsal spot while this tergite in *P. athos* is coloured as the other tergites and without a spot. Similar differences with *P. athos* are shared by species with a similar type of male cercus and occurring outside Greece (e.g. *P. heinrichi* Ramme, 1951, *P. sureyanus* Uvarov, 1930, *P. similis* Retowski, 1889, *P. richteri* Ramme, 1933, *P. oligacanthus* and *P. djakovni* both Miram, 1938).

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References

- HELLER, K. G., 1984. Zur Bioakustik und Phylogenie der Gattung *Poecilimon* (Orthoptera, Tettigoniidae, Phaneropterinae). - *Zool. Jb., Syst.* 111: 69-117.
- INGRISCH, S. & D. PAVICEVIC, 1985. Zur Faunistik, Systematik und ökologischen Valenz der Orthopteren von Nordost-Griechenland. - *Mitt. münch. ent. Ges.* 75: 45-77.
- OGILVIE, A. G., 1945. North-eastern Greece. - *Geogr. Handbook Ser., Naval Intelligence Div. Greece* 3: 105-156.
- WILLEMSE, F., 1982. A survey of the Greek species of *Poecilimon* Fischer (Orthoptera, Ensifera, Phaneropterinae). - *Tijdschr. Ent.* 125: 155-203.
- WILLEMSE, F., 1984. Catalogue of the Orthoptera of Greece - *Fauna Graeciae* 1: i-xii, 1-275.
- WILLEMSE, F., 1985. Supplementary notes on the Orthoptera of Greece. - *Fauna Graeciae* 1a: 1-47.

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