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## Three new *Rhyacophila* subspecies from France

(Insecta, Trichoptera, Rhyacophilidae)

By Füsün Sipahiler

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The following new *Rhyacophila* subspecies from France are described and illustrated: *R. martynovi tetensis*, subsp. nov., *R. simulatrix vinconii*, subsp. nov., *R. rupta erkakanae* subsp. nov. Sketched maps for the distributions of the *Rhyacophila* subspecies in the Pyrenees are given.

Dr. Füsün Sipahiler, Hacettepe Üniversitesi, Eğitim Fakültesi, Fen Bilimleri Bölümü, 06532 Beytepe, Ankara, Turkey.

### *Rhyacophila martynovi tetensis*, subsp. nov.

(Figs 1-3)

Holotype ♂: France, Pyrenees-Orientales, Massif du Canigou, ruisseau de la Llitera, affluent de la Tet, en dessous du chalet-hotel des Cortalets, 1900 m, 17.9.1988, leg. Vincon, coll. ZSM (Zoologische Staatssammlung München).

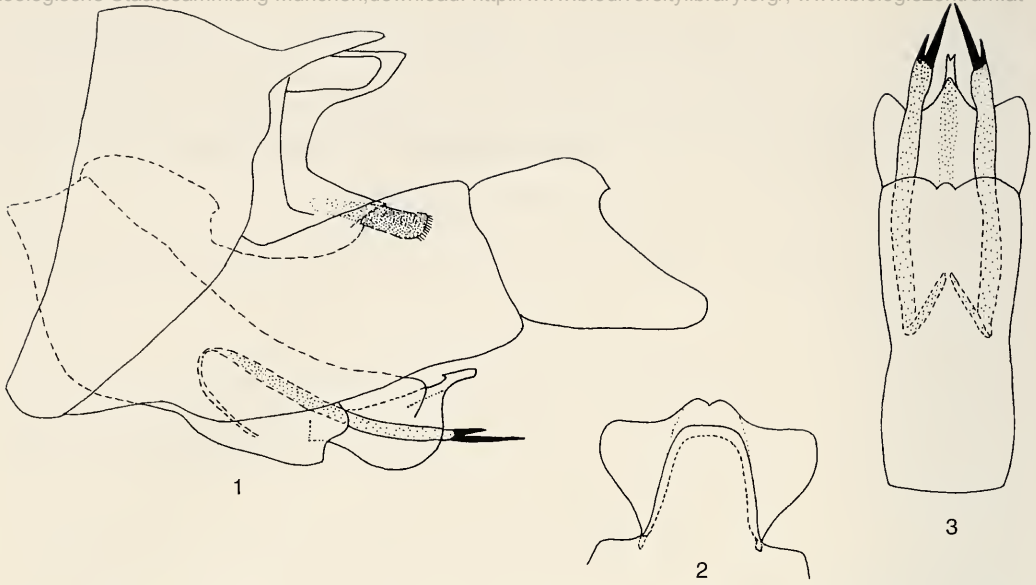
Antennae and legs yellowish, wings pale brown; head and thorax brown; length of the anterior wing of male 16 mm.

Male genitalia (Figs 1-3). Dorsal apical lobe of segment 9 large, slightly narrowed towards the apical edge; apical edge smooth; dorsal apical lobe of segment 9 shorter than preanal appendages. In dorsal aspect the preanal appendages are connected with the dorsal part of segment 10 medially, forming a large and rounded projection which is excised in the middle. Laterally the dorsal part of segment 10 pointed at apex. The pointed projection of the second segment of the inferior appendages directed somewhat ventrally. The ventral lobe of aedeagus strongly sclerotized, very large and rounded in lateral aspect. Parameres laterally straight and each both with one subdistal bristle. The length of the aedeagus reaches laterally to the tip of this bristle.

Female unknown.

*Rhyacophila martynovi tetensis*, subsp. nov. is well characterized by the shape of the preanal appendages and dorsal part of segment 10, which are connected medially by two rounded lobes on each side. In *R. martynovi martynovi* Mosely the preanal appendages are connected with the dorsal part of segment 10 forming a short and thin projection (Schmid 1970). In lateral view, the dorsal part of segment 10 is pointed at the apex in *R. m. tetensis*, subsp. nov., while it is rounded in the nominal form. In *R. m. tetensis* the apical projection of the second segment of the inferior appendages is directed towards ventral; in *R. m. martynovi* it is directed posteriorly. The aedeagus of *R. m. martynovi* is rather smooth and thin in lateral aspect; in *R. m. tetensis* the ventral lobe of the aedeagus is very large and ventrally rounded. In addition to these differences, the parameres of the new subspecies are shorter than those of *R. m. martynovi*.

According to the new material given below and also the literature records (Decamps 1967) *R. m. martynovi* inhabits the Pyrenees-Atlantiques. It is also found in Spain, Cantabrique (Picos de Europa). The diagnostic characteristics of the genitalia are very constant and show no variation. *R. m. tetensis* subsp. nov. inhabits the Pyrenees-Orientales (Fig. 4).

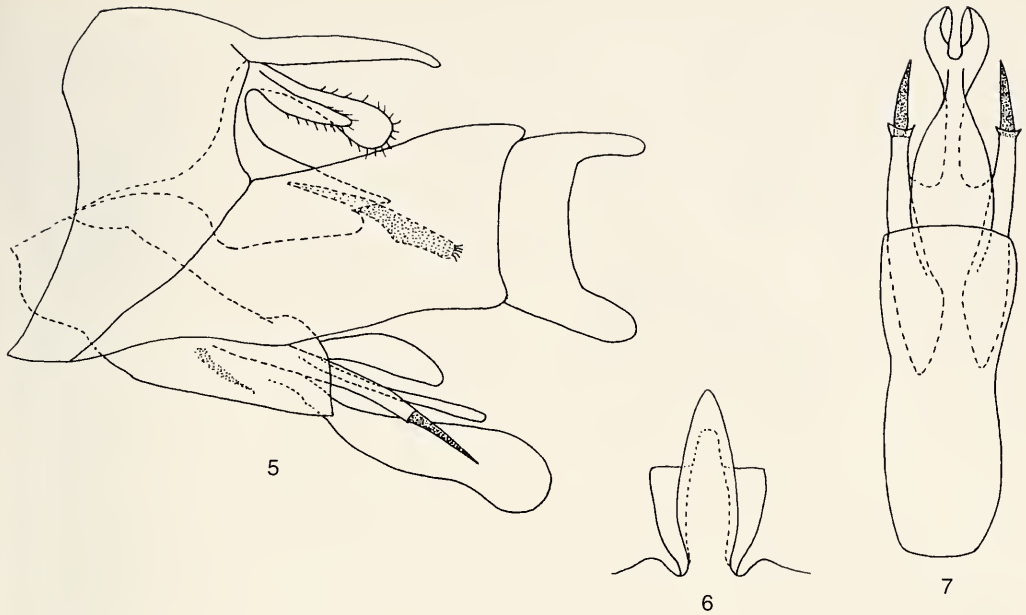


Figs 1-3. *Rhyacophila martynovi tetensis*, subsp. nov., male genitalia: 1. lateral. 2. dorsal. 3. aedeagus and parameres, ventral.

New localities for *R. martynovi martynovi* Mosely collected by Dr. G. Vincon: France, Pyrenees-Atlantiques, source affluent du Gave d'Issaux (vallee d'Aspe) au dessous du col qui va a la Pierre St. Martin 1200-1400 m, 29.6.1987, 1 ♂, coll. Sipahiler; France, Pyrenees-Atlantiques, ruisseau d'Esterenguibel, affluent de la Nive de Beherobie, 1100-1200 m, 6.8.1987 1 ♂, coll. ZSM; France, Pyrenees-Atlantiques, Nive de Arneguy, 245 m, 5.8.1987 1 ♂, coll. Sipahiler; Spain, Cantabrique, Picos Europa, rio Pomperi, 1200 m, 4.8.1988, 1 ♂ coll. Sipahiler; Spain Navarre, rio Urrobi, affluent du rio Aragon au-dessus de Ronclesvalles, 1300 m, 1.7.1987, 1 ♂, coll. Sipahiler.



Fig. 4. Distribution of the *Rhyacophila martynovi* subspecies in the Pyrenees: ●: subsp. *martynovi*, ○: subsp. *tetensis*.



Figs 5-7. *Rhyacophila simulatrix vinconi*, subspec. nov. male genitalia: 5. lateral. 6. dorsal. 7. aedeagus and parameres, ventral.

*Rhyacophila simulatrix vinconi*, subspec. nov.  
(Figs 5-7)

Types. Holotype ♂: France, Alpes, massif de la Grande Chartreuse, affluent de l'Isere, au-dessus du Sappey, 1000 m, 5.10.1986, leg. Vincon, coll. ZSM. - Paratypes: 2♂, France, Alpes de Haute Provence, affluent Bachelard, col. d'Allos, 1700-2000 m, leg. Vincon, in my collection.

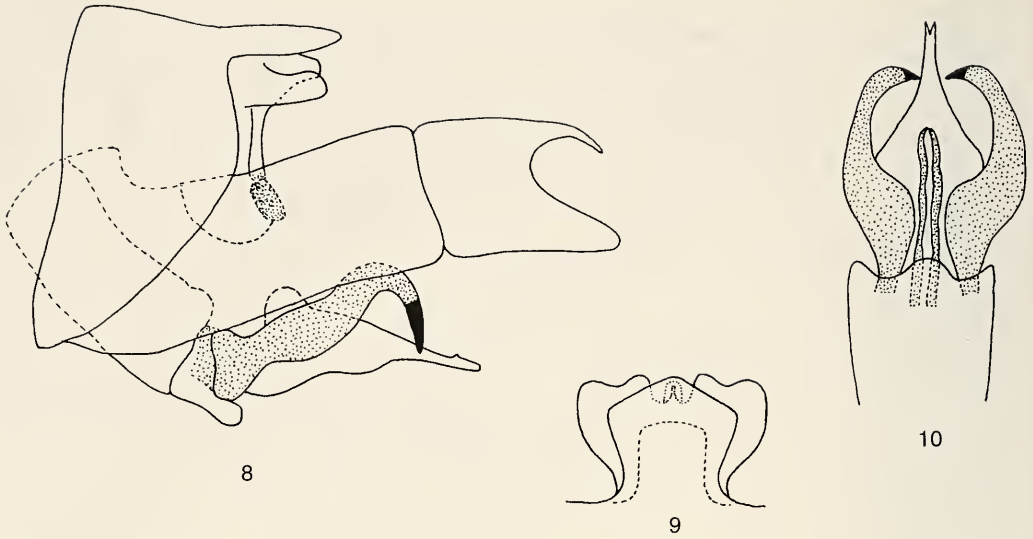
Antennae and legs yellowish; wings pale brown; length of the anterior wing of male 12.5-13 mm.

Male genitalia (figs 5-7). Dorsal apical lobe of segment 9 long and gradually narrowed towards the apex. Preanal appendages, seen dorsally, half as long as the dorsal apical lobe. Apical edges smooth; lateral edges somewhat dilated. Dorsal part of segment 10 large and rounded at tip. Dorsal and ventral projections of the second segment of the inferior appendages almost equal in length but the ventral projection is larger than the dorsal one. Parameres large at base and gradually narrowed towards apex, and shorter than ventral lobe of aedeagus when viewed ventrally. Seen laterally, aedeagus straight and as long as the parameres; its ventral lobe large and dilated at apex. Dorsal lobe of aedeagus long, somewhat shorter than the aedeagus and its ventral edge smooth in lateral aspect.

Female unknown.

*Rhyacophila simulatrix vinconi*, subspec. nov. is distinguished from *R. simulatrix simulatrix* McLachlan 1879 (Malicky 1983) by the following features: In dorsal aspect, the dorsal part of segment 10 is large in *R. s. vinconi*, subspec. nov., while it is very thin in *R. s. simulatrix*. The projections of the second segment of the inferior appendages are nearly equal in length in *R. s. vinconi*, while the upper projection is very short in *R. s. simulatrix*. In *R. s. vinconi*, when viewed laterally, the aedeagus and the parameres are straight, nearly equal in length; the ventral lobe of the aedeagus is longer than the parameres and dilated distally; in *R. s. simulatrix*, the aedeagus is curved upwards, the parameres are somewhat curved subdistally; they are as long as the ventral lobe of the aedeagus and longer than the aedeagus. In ventral view, the Parameres of *R. s. simulatrix* are dilated before the pointed projections; the ventral lobe is long and rather smooth on the distal part; in *R. s. vinconi* subspec. nov. the parameres are straight; the ventral lobe is small and rounded on the distal part.

This new subspecies is dedicated to Dr. Gilles Vincon.



Figs 8-10. *Rhyacophila rupta erkakanae*, subsp. nov., male genitalia: 8. lateral. 9. dorsal. 10. aedeagus and parameres, ventral.

*Rhyacophila rupta erkakanae*, subsp. nov.  
(Figs 8-10)

Types. Holotype ♂: France, Pyrenees-Orientales, Massif du Canigou, ruisseau de la Llitera, affluent de la Tet, en dessous du chalet-hotel des Cortalets, 1900 m, 17.9.1988, leg. Vincon, coll. ZSM. - Paratype ♂: same place and date, in my collection.

Antennae, legs and wings brown; head and thorax dorsally dark brown; length of the anterior wing of male 12 mm.

Male genitalia (Figs 8-10). Seen dorsally, dorsal apical lobe of segment 9 as long as its breadth; the apical edge expanded forming a large triangle. Preanal appendages larger than the dorsal apical lobe at their base; lateral margins somewhat rounded and the apical margin forms rounded lobes on each side of the dorsal part of segment 10. Apical edge of the second segment of the inferior appendages widely excised; the upper projection thin and somewhat bent towards ventral; the lower projection with smooth margin and rounded at tip. In lateral view, the ventral margin of aedeagus not smooth, but dilated at base and in middle; this part of the aedeagus is strongly sclerotized and seen ventrally as two sclerite bands. Parameres also strongly sclerotized and each possesses one apical projection; in lateral view, they are broad at base and strongly bent towards ventral before tip; lateral and dorsal margins dilated in the middle. Ventrally they are curved towards the inner side and very broad on their subdistal parts.

Female unknown.

*Rhyacophila rupta erkakanae*, subsp. nov. is distinguished from *R. r. rupta* McLachlan 1879 (Schmid 1970) by the following features of the male genitalia: In *R. r. erkakanae*, subsp. nov. the dorsal apical lobe of segment 9 expands on the apical margin, forming a large triangle; the apical margins of the preanal appendages form rounded lobes medially; in *R. r. rupta* the dorsal apical lobe and the preanal appendages are smooth on the apical margin. Ventrally, the parameres are curved inwards; each possesses one projection at the tip; the aedeagus is gradually narrowed towards the apex; in *R. r. rupta* the parameres are parallel to each other; each possesses two projections at the tips; the aedeagus is rounded at the base and suddenly narrowed towards the apex.

*R. r. erkakanae*, subsp. nov. inhabits the Pyrenees-Orientales. According to the new material given below and the literature records (Decamps 1967) *R. r. rupta* inhabits Haute-Garonne (Fig. 11).



Fig. 11. Distribution of the *Rhyacophila rupta* subpecies in the Pyrenees: ●: subpecies *rupta*, ○: subpecies *erkakanae*.

New localities for *R. rupta rupta* McLachlan collected by Dr. G. Vincon: France, Pyrenees, Haute-Garonne, torrent de la Pique, a l'Hospice de France, 1400 m, 27.6.1987 2 ♂ (1 ♂: in ZSM, 1 ♂ in author's collection); France, Haute-Garonne, Arillac, affluent Arize, 1200 m, 18.7.1989 1 ♂, coll. Sipahiler; France, Ariège, massif du Saint Berthelemy, ruisseau a sud du col de font Albe, affluent de Ariège, 1400 m, 4.7.1988, 1 ♂, coll. Sipahiler.

This new subpecies is dedicated to Mrs. Dr. Füsün Erkakan.

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Autor(en)/Author(s): Sipahiler Füsün

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