A contribution to the knowledge of Trichoptera of France
(Insecta, Trichoptera)

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Abstract

A new species of Trichoptera, Drusus ingridae sp. nov. (holotype male, paratype males: France, Massif Central, Montagne Noire, 14.10.1989), is described and illustrated. Drusus alpimar BOTOSANEANU & GIUDICELLI, 1983 is stated as a synonym of Cryptothrix nebulicola McLACHLAN, 1867. Drusus ravizzai MORETTI, 1991 is newly recorded for France. A redescription of D. ravizzai and a faunistic list of Trichoptera for the French Pyrenees and Alps is given.

Zusammenfassung

Introduction

There are few publications on the distribution of the Trichoptera species in France. The first knowledge obtained on the French Trichoptera fauna is based mainly on the faunistic list of species published by Berland & Mosely (1936, 1937). In 1967, an article on the Trichoptera of the French Alps and Massif Central was published which included the descriptions of four new species (Vailant 1967). Vailant later (1982) stated one of these new species, Beraea alticola, to be a synonym of B. pullata Curtis, but Ernades botosaneanui, also described in the same paper as a new species, is probably a synonym of E. vicinus McLachlan, 1879. The other new species described by Vailant in 1967 are very similar to the each one given together: Synagapetus degrangae = S. iridipennis McLachlan, 1879, Rhyacophila caussica = R. dorsalis Curtis, 1834, Plectrocnemia limosa = P. conspersa Curtis, 1834. He also indicated the figure as being Rhyacophila simulatrix McLachlan, but it seems to be R. vulgaris Pictet, 1834. Decamps (1967, 1967a) worked on the ecology and fauna of Trichoptera of the Pyrenees and described a new species. He listed 204 species and subspecies of Trichoptera collected in the northern slopes of the Pyrenees as well as of the collections of the Paris Museum and the British Museum. Other faunistic studies were done on limited districts by Vernaux (1971) and Baudoin (1986). Malicky (1990) gave the distribution of the species of Melampophylax in France. Later on, we see the description of a number of new species from French fauna (Decamps 1972; Botosaneanu 1980; Botosaneanu & Giudicelli 1983; Malicky 1980; Schmid 1971; Sipahiler 1992, 1992a).

The present study deals with the material collected intensively by Dr. Gilles Vincon especially from the French Pyrenees and the Alps in the period from 1987 to 1990. Although the list of species given below is far from being a complete one, it provides a better understanding of the distribution of the species which inhabit the important refuge areas in zoogeographical aspect.

Rhyacophila ravizzai Moretti, 1991 (figs.1-8)

Recently a new Rhyacophila species from north eastern Italy (Piemonte) was published (Moretti 1991) showing only a side view of the male genitalia with a short description and the Bursa copulatrix for the female genitalia. A detailed description of both sexes is given below. This species is also found in the eastern part of the Alpes-Maritimes and is new to the French fauna.

Antennae, legs and wings brown; anterior wing with dark brown spot on pterostigma; length of the anterior wing of male 11-13 mm, of female 14-15 mm.

Male genitalia (figs.1-3): Dorsal apical lobe of segment 9 is very large; the sides are dilated subapically; the apical margin is slightly curved. Preanal appendages are located completely under the dorsal apical lobe; the apical margin produces two median and two lateral rounded lobes. In lateral view the second segment of the inferior appendages is short and rounded on the dorsal part; the edge is gradually rounded towards the ventral margin; the ventral margin is also slightly rounded. The ventral lobe of the aedeagus is distally very large and rounded; parameres are large at base and narrow subdistally, in ventral view they are curved at sides.
Female genitalia (figs.4-8): Segment 8 is largely sclerotized; in ventral view the lateral sclerite part is longer on the ventral edge and apically rounded; the dorsal edge forms a right angle on the apical edge. Seen dorsally the lateral sclerite parts are connected by a band which is thin medially. In ventral aspect they are widely diverged at base. Dorsally there is a pointed projection in the middle of segment 8.


Rhyacophila ravizzai Moretti belongs to the vulgaris-group and is closely related to R. obliterata McLACHLAN, 1863 (SCHMID 1970) and distinguished from the related species by following features in male genitalia: In R. ravizzai the preanal appendages are connected in the middle by forming two lobes on each side; in R. obliterata the apical edge of the preanal appendages is slightly excised in the middle without forming lateral lobes; in R. ravizzai the parameres are curved and the ventral lobe of the aedeagus is very large on the distal part; in R. obliterata the parameres are straight and the ventral lobe of the aedeagus is small.

Drusus ingridae sp. nov. (figs.9-11)

Antennae, legs and wings yellowish brown, thorax dorsally brown; posterior wing of male with an androconial pocket. Spurs 1.3.3. Length of the anterior wing of male 9-12 mm.

Male genitalia (figs.9-11): The spinulose zone of tergite 8 is very large and short; in dorsal view the apical edge medially somewhat dilated and rounded on each side. Segment 9 is ventrally narrow and laterally dilated on the anterior margin. Preanal appendages are rounded. Dorsally the intermediate appendages are large with strongly sclerotized lateral dilatations, which are almost triangular in shape; the apical edge is smooth in the middle; in lateral view the upper part of the intermediate appendages is large, the posterior edge is rounded; caudally there is no connection between the lower parts. Inferior appendages are long; seen laterally the ventral and the dorsal margin are nearly parallel to each other before the subdistal part; dorsally and caudally the inferior appendages are curved at the sides especially on the subdistal parts. The aedeagus and the parameres are slender as is usual in this genus.

The female is unknown.


Drusus ingridae sp. nov. is closely related to D. rectus McLACHLAN, 1868 (SCHMID 1956) and distinguished by the following features: In D. rectus the spinulose zone of tergite 9 is long and quadrangular in shape; the preanal appendages with dorsal lobe on the dorsal margin. In D. ingridae sp. nov. the spinulose zone is short, very large and possesses lateral dilatations; the preanal appendages are rounded. In D. rectus the inferior
appendages are gradually directed to the sides from the base; in *D. ingridae* sp. nov. they are distinctly directed to the sides on the subdistal parts.

This new species is dedicated to Ms. Ingrid HARTMANN.

**Cryptothrix nebulicola** McLACHLAN, 1867

*Cryptothrix nebulicola* McLACHLAN, 1867, is well characterized by the dark brownish-black colouring, the relatively short body length and especially by the shape of the male genitalia: namely the quadrangular spinulose zone of tergite 8, anterior dilatation of segment 9, elongated preanal appendages with subdistal projection on dorsal margin, bilobed intermediate appendages, short inferior appendages whose ventral edges are widely excised in lateral aspect and the lateral sclerites of the phallotheca (Schmid 1956). According to the literature records this species inhabits Savoie (Berland & Moseley 1936-37). According to the new records given in the list below, *C. nebulicola* also inhabits the Hautes-Alpes, Houte-Provence, Savoie and Alpes-Maritimes in France and in the Swiss Alps (versant sud du col Simplon, ruisseau affluent de la Divaria). In 1983 *Drusus alpimar* from the Alpes-Maritimes was described as a new species (Botosaneanu & Giudicelli 1983). I think that this species is clearly a synonym of *C. nebulicola*: *Drusus alpimar* Botosaneanu & Giudicelli, 1983 *syn. nov. = Cryptothrix nebulicola* McLachlan, 1867.

**List of Localities**

The species given in the list of species were collected from following localities which are numbered in the list in brackets.

**French Alps**

**Alpes Maritimes**

1 - Massif du Marguareis, ruisseau affluent rive gauche du Refrei, 1700 m, 27.9.1988.
2 - idem, 1900 m, 2.9.1988.
4 - Affluent de la Roya, a cote de la chapelle de Notre Dame des Fontaine, 850 m, 30.4.1990.
5 - idem, 29.8.1988.
12 - Versant sud col de Tende, ruisseau affluent de la Roya, en amont du poste douane, 1400 m, 2.9.1988.
15 - Massif du Marguareis, ruisseau affluent du torrent de Refrei, 1900 m, 2.9.1988.
16 - Ruisseau de Caramagne affluent rive droite de la Roya, 1200 m, 13.5.1988.
17 - Versant sud du Col de la Cayolle, affluent du var, 2100 m, 14.5.1988.

**Hautes-Alpes**

20 - Montagne Viso, 2500 m, 26.9.1988.
21 - Montagne Viso, Echalp, 1900 m, 4.9.1988.
27 - idem, affluent Chagne, 12.5.1988.
30 - Col de Vars, ruisseau affluent du torrent de Dhagne au-dessus des Claux, 1900 m, 3.9.1988.

**Alpes-de-Haute-Provence**

36 - idem, 18.10.1987.

**Jura**

Savoie
40 - Ruisseau affluent du Bens, affluent de Breda, affluent de l'Isère, à Valepelouse près d'Allevard, 1400 m, 7.6.1987.
41 - Ruisseau affluent de l'Arc, au-dessous de Bonneval-sur-Arc, 1850 m, 6.10.1990.
42 - Haute-Savoie, col de Montets versant suisse, ruisseau affluent de l'Eau-Noire, 1450 m, 9.10.1990.
43 - Massif du Beaufortin, le Planey au-dessous de Areches, 1300 m, 9.10.1990.
45 - Savoie, l'Isère près du Pont Saint Charles, 2000 m, 6.10.1990.

Isère
48 - Montagne Noire, affluent Clamaux-Calrestine, 350 m, 3.2.1990.
49 - idem, Citau, 400 m, 11.11.1989.
50 - Vercors Comane-Calamalac, 500 m, 30.6.1989.
54 - Massif de l'Oisans, ruisseau affluent de la Romanche au-dessous du Freney d'Oisans (hameau de la Grange), 1000 m, 4.6.1987.
55 - Ruisseau affluent du Flumet, affluent de la Romanche, au dessus de Vaujany, 1400 m, 10.5.1987.
56 - idem, 11.10.1986.
57 - Massif du Taillefer, ruisseau affluent de la Romanche, deversoir du lac Fourchu, 1600 m, 11.10.1986.
58 - Montagne de Jocou, ruisseau affluent de l'Ebron, à la station de ski de Lalley-de-Jocou (col de la Croix Haute), 1500 m, 29.8.1988.
64 - Ruisseau affluent de la Romance, au-dessous du Freney d'Oisans, hameau de la Grange, 1000 m, 14.6.1987.
65 - idem, ruisseau de Rif Fournel, 1000 m, 10.11.1986.
66 - Furon (Vercors), 1300 m, 8.6.1987.
67 - Massif du Vercors, ruisseau d'Archiane, 1300 m, 31.7.1990.
68 - Archiane, au-dessous village Vercors, 7.5.1990.
69 - Sarenne, affluent Romanche, 1900 m, 14.6.1987.
71 - Ruisseau le Ferrand, affluent rive droite de la Romanche, 2300 m, 19.8.1987.
72 - Tenoison, affluent Ivernen, 1200 m, 9.9.1989.

Massif Central
73 - Sud du Massif Central, Aude, Montagne Noire, ruisseau affluent de l'Argent Double, 850 m, 1.7.1989.
74 - idem, 800 m, 14.10.1989.
75 - Ruisseau de l'Aiguette, affluent de l'Aude, 2000 m, 10.7.1987.

French Pyrenees

Pyrenees Orientales
76 - Ruisseau affluent de l'Ariege, avant de Pas de la Case, 1900 m, 22.8.1988.
78 - Ruisseau d'Err, affluent du Serge, 2200 m, 3.7.1988.
79 - idem, 2250 m, 16.9.1988.
80 - Ruisseau de Courtal-Rousso, affluent du torrent de Carol, 2100 m, 4.7.1988.
82 - Massif du Canigou, ruisseau de la Llitera, affluent de la Tet, en dessous de chalet-hotel des Cortales, 1900 m, 7.7.1987.
84 - Massif du Canigou, ruisseau du Cady, affluent de la Tet, 2200 m, 8.7.1987.
85 - Ruisseau de la Llipodere, affluent de la Tet, 1650 m, 8.7.1987.
86 - Ruisseau d'Eyne, affluent de la Tet, 2200 m, 28.7.1987.
87 - Plane, 1930 m, 28.7.1987.
88 - Massif du Carlit, affluent Grave, affluent de la Tet, 2450 m, 27.7.1987.
89 - Massif du Carlit, ruisseau de la Coume des Fourats, 2400 m, 27.7.1987.
90 - Ruisseau affluent de la Grave, affluent de la Tet, en dessous du Pic Peric, 2425 m, 27.7.1987.
91 - Vars nord Col d'Ares, affluent rio Rilart, 1400 m, 1.7.1988.
93 - Ruisseau d'En Garcia, 2200 m, 4.7.1988.

Haute-Garonne
94 - Torrent de la Pique, a l'Hospice de France, 1400 m, 27.6.1987.
95 - idem, 2100 m, 22.10.1989.
96 - Ruisseau du Rossignol, affluent du Ger, 1300 m, 3.5.1987.
98 - Ruisseau affluent du Ger (Massif du Cagire), 1300 m, 27.6.1987.
99 - Arillac, affluent Arize, 1200 m, 18.7.1989.
100 - Source affluent de la Pique au-dessous du Port de Venasque, pres de la Cabane de l'Homme, 2100 m, 22.10.1989.
Ariège

102 - idem, 8.10.1989.
104 - idem, 2100 m, 4.7.1988.
105 - Riu Sant Josep, affluent rive gauche de l'Ariège, 2200 m, 19.7.1989.

Aude


Pyrenees-Atlantiques

110 - Gave de Broussel (vallee d'Ossau), 1340 m, 29.9.1987.
111 - Source affluent du Gave de Bious, vallee d'Ossau, 1590 m, 11.11.1984.
112 - Source affluent du Gave d'Issaux (vallee d'Aspe), au dessous du col qui va a la Pierre St. Martin, 1200-1400 m, 7.8.1987.
116 - Ruisseau et source affluent d'Olhadoko, pres du port de Larreau, 1300 m, 1.7.1987.
118 - Ruisseau d'Esterenguibel, affluent de la Nive de Beherobie, 1100-1200 m, 6.8.1987.
119 - Nive de Arbeguy, 245 m, 5.8.1987.
120 - idem, 1000 m, 1.7.1987.

Other Places

121 - Manche, ruisseau coulant a Mortain les Cascades, 300 m, 12.4.1988.

List of the Species

Rhyacophilidae

Rhyacophila aquatanica McLACHLAN (73).
R. dorsalis CURTIS (121, 122).
R. eatoni McLACHLAN (112, 114, 118, 119).
R. fasciata HAGEN (48).
R. intermedia McLACHLAN (1, 18, 20, 30, 33, 71, 76, 79, 83, 92).
R. kelnerae Schmid (6, 11, 12, 13, 14).
R. leavis Pictet (91, 113, 118, 119).
R. obliterata McLachlan (102).
R. martynovi martynovi Mosely (113, 118, 119).
R. martynovi tetensis Sipahiler (83).
R. philopotamoides centralis Schmid (52, 73, 98).
R. preamorsa McLachlan (38, 58, 72, 77, 91).
R. pubescens Pictet (23, 56, 57, 60).
R. rupta erkakanae Sipahiler (83).
R. simulatrix vinconi Sipahiler (33, 53).
R. ravizzai Moretti (11, 14) - new to France.
R. tristis Pictet (9, 34, 78, 81, 86, 91, 98, 105, 114, 118).
R. vandeli Despax (76, 81, 82, 83, 84, 93, 117).
R. vulgaris Pictet (6, 20, 36, 41, 42, 65).

Glossosomatidae
Agapetus fuscipes Curtis (48, 74).
Synagapetus insons McLachlan (94, 95, 99).
S. placidus Navas (76, 77, 86).
S. serotinus Navas (91).

Hydrophilidae
Ptilocolepus granulatus Pictet (9, 10, 52, 78, 93, 94, 112, 116, 118).

Philopotamidae
Philopotamus ludificatus McLachlan (9, 11, 12, 17, 31, 33, 38, 40, 69, 70).
P. montanus Donovan (48, 73, 76, 78, 85, 86, 89, 91, 94).
P. variegatus Scopoli (108).
Wormaldia copiosa McLachlan (6, 32, 67).
W. occipitalis Pictet (42, 52, 65, 70).

Polycentropodidae
Plectrocnemia letabilis McLachlan (99).

Psychomyidae
Tinodes assimilis McLachlan (116).
T. dives Pictet (15, 34).
T. foedella McLachlan (118).
T. rostrocki McLachlan (91).

Hydropsychidae
Diplectrona felix McLachlan (73).
Thremmatidae

*Threma gallicum* McLACHLAN (76, 105, 118).

Goeridae

*Lithax niger* HAGEN (37, 63, 69).
*Silu graellsi* E.PICTET (105).

Limnephilidae

*Acrophylax zebreus* BRAUER (19, 22).
*Allogamus antennatus* McLACHLAN (20, 41).
*A. auricollis* PICTET (76).
*A. hilaris* McLACHLAN (21, 36, 47).
*A. mendax* McLACHLAN (2, 8, 12, 14, 20, 25, 28, 33, 36, 42, 45).
*A. uncatus* BRAUER (14, 25, 33, 36).
*Anisogamus diffformis* McLACHLAN (82, 84, 85).
*Anmitella pyranea* NAVAS (95).
*Anomalopteryx chauviniana* STEIN (76, 77, 93).
*Apotania eatoniana* McLACHLAN (73, 112, 118).
*A. fimbriata* PICTET (28, 29, 71, 76, 88, 106).
*Chaetopterygopsis maclachlani* STEIN (102).
*Chaetopteryx villosa* FABRICIUS (73).
*Cryptothrix nebulicola* McLACHLAN (3, 6, 7, 25, 30, 32, 33, 43, 44).
*Consorophylax consors* McLACHLAN (20, 25, 33).
*Drusus annulatus* STEPHENS (38, 64).
*D. chrysotus* RAMBUR (63).
*D. discolor* RAMBUR (3, 28, 29, 76, 84, 86, 105).
*D. ingridae* sp. nov. (49, 74).
*D. marinettae* SIPAHILER (84, 86, 88, 107).
*D. rectus rectus* McLACHLAN (78, 85, 86, 87, 94).
*D. rectus thibaulti* DECAMPS (116, 120).
*D. spelaeus* ULMER (45).
*D. vinconi* SIPAHILER (115).
*Enoicyla pusilla* BURMEISTER (110).
*Halesus rubricollis* PICTET (2, 15, 28, 55).
*Limnephilus affinis* CURTIS (60).
*M. mucoreus* HAGEN (25, 36, 95, 100, 102).
*Metanoea flavipennis* PICTET (7).
*M. malickyi* SIPAHILER (23, 58, 59, 61, 62, 67).
*Micropterna nycterobia* McLACHLAN (25).
*Monocentra lepidoptera* RAMBUR (5, 9, 21, 35).
*Parachionia picicornis* PICTET (63, 66).
*Potamophylax cingulatus* STEPHENS (86).
*P. nigricornis* PICTET (99, 105, 118).
*Pseudopsilopteryx zimmeri* McLACHLAN (42, 44, 50).
Rhadicoleptus alpestris spinifer McLachlan (78, 93, 94, 105, 107, 113, 116).
Stenophylax vibex Curtis (104).

Sericostomatidae
Schizopelex furcifera McLachlan (114).
Sericostoma personatum Spence (52).

Odontoceridae
Odontocerum albicorne Scopoli (12, 39, 50, 74, 84, 91, 92, 114).

Beraeidae
Beraea maurus Curtis (114, 118, 119).
B. pullata Curtis (98).
Ernodes articularis Pictet (113, 120).

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Figs. 1-3 *Rhyacophila ravizzai* MORETTI male genitalia: 1) lateral; 2) dorsal; 3) aedeagus and parameres, ventral.
Figs. 4-8 *Rhyacophila ravizzai* MORETTI female genitalia: 4) lateral; 5) dorsal; 6) ventral; 7) bursa copulatrix, lateral; 8) bursa copulatrix, ventral.
Figs. 9-11 *Drusus ingridae* sp. nov. male genitalia: 9) lateral; 10) dorsal; 11) caudal.
References


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Buchbesprechung


Ein Kritikpunkt fällt beim Lesen des Titels ins Auge, denn der Autor verwendet hier eine konservative Nomenklatur. Die Blattflöhe werden heute allgemein als "Psyllina" zu den "Sternorrhyncha" gestellt, die aus der Trennung der früheren "Homoptera" in die "Auchenorrhyncha" und "Sternorrhyncha" hervorgingen.

Ansonsten kann dem ausgezeichneten Bestimmungsschlüssel und den vorbildlichen morphologischen Abbildungen nur uneingeschränktes Lob gezollt werden. Ganz besonders sind die Bemühungen zu betonen, auch für die Larven brauchbare Bestimmungsschlüssel zu erarbeiten. Ein umfangreiches Literaturverzeichnis ermöglicht dem Interessierten den tieferen Einstieg in die Materie.

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