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NEW SPECIES AND SUBSPECIES OF TRICHOPTERA FROM TURKEY (GLOSSOSOMATIDAE; HYDROPTILIDAE; LIMNEPHILIDAE)

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Abstract. The following new taxa from Turkey are described and illustrated: Agapetus hadimensis sp.n., Hydroptila varla sp.n., H. abantica sp.n., Drusus muchei kazdagensis ssp.n. and D.m. ilgazensis ssp.n.

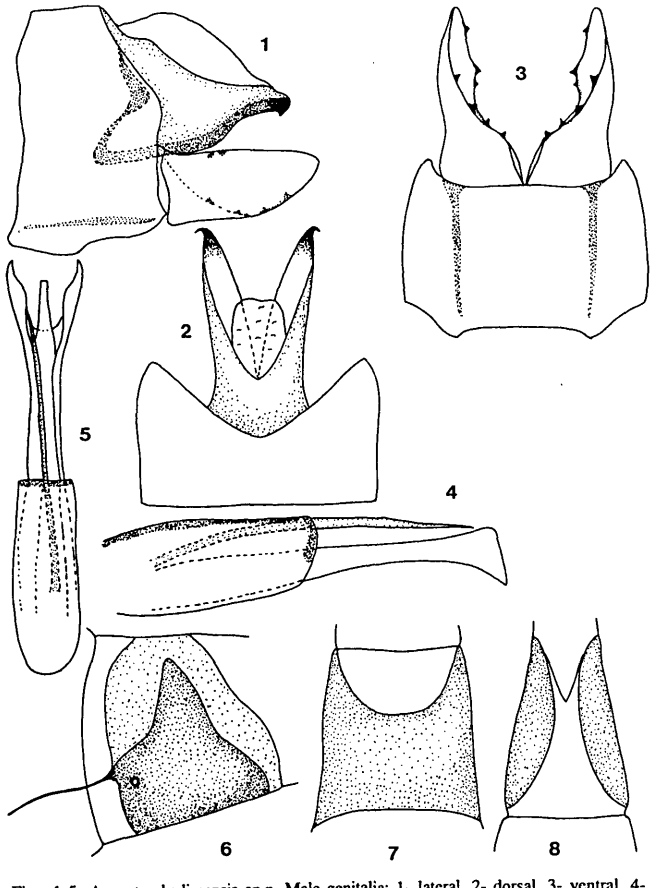
Agapetus hadimensis sp.n. (Glossosomatidae)

Antennae, legs and thorax brown; wings and abdomen pale brown; genital segments dark brown. The median appendage of sternite 6 is very long and thin. Length of the anterior wings of male 3.5-4 mm, of female 3.5 mm. Male genitalia (Figs.1-5): Segment 9 is broad ventrally and narrower dorsally. Segment 10 is long; in dorsal view, deeply V-shaped excised; the sclerotized basal portion is narrow; the sides are strongly sclerotized at the pointed apex, curving on the sides; median part is membranous; in lateral view, segment 10 is strongly narrowed towards the apex, bearing a projection, curved ventrally; the sinuous ventral margin with sclerotized stripe; No preanal appendages. The inferior appendages are slightly longer than segment 10 and nearly oval in lateral view; in ventral view, the ventral margin is sinuous and bears four triangular spines; the dorsal margin bears three spines. The apical edge of the phallobase is sclerotized; the aedeagus is long and narrow distally; the lateral processes are longer and broad distally; in lateral view, the apex is dilated ventrally in a triangular shape; the paramere is long, thin and sharply truncated distally.

Female genitalia (Figs.6-8): In dorsal view, segment 9 is slightly sclerotized; largely U-shaped excision on the posterior edge; in ventral view, the posterior edge V- shaped excised; the median part is not sclerotized; in lateral view the inner part of segment 9 is strongly sclerotized forming a sharp triangle towards the dorsal edge.

Holotype ♂, allotype ♀ and paratypes 7 ♂♂. Turkey, Konya, Hadim, Çamiçi Köyü, Cirlasun- Asartepe arasi, Gevne Çayi, 36° 46´ N, 32° 23´ E, 1000 m, 9.5.1995, leg. and coll. Sipahiler.

Agapetus hadimensis sp.n., found in western Taurus Mountains in southern Anatolia, is closely related to A. beredensis Dakki and Malicky (Dakki & Malicky, 1980) from Maghreb and A. incertulus McLachlan 1884 (Malicky, 1983;32), distributed in Maghreb and Iberian Peninsula. The shape of segment 10 resembles that of A. beredensis, which also has long lateral sclerotized parts, curving ventrolaterally at the apex, which is longer than the inferior appendages and the ventral margin is straight; in A. hadimensis sp.n. segment 10 is shorter than the inferior appendages and the sinous ventral margin is sclerotized. The aedeagus shows similarities to that of A. incertulus; the differences in the shape of the lateral process of the aedeagus and the paramere, which is long in A. hadimensis, are evident.



Figs. 1-5: Agapetus hadimensis sp.n. Male genitalia: 1- lateral, 2- dorsal, 3- ventral, 4- aedeagus, lateral, 5- aedeagus, dorsal.

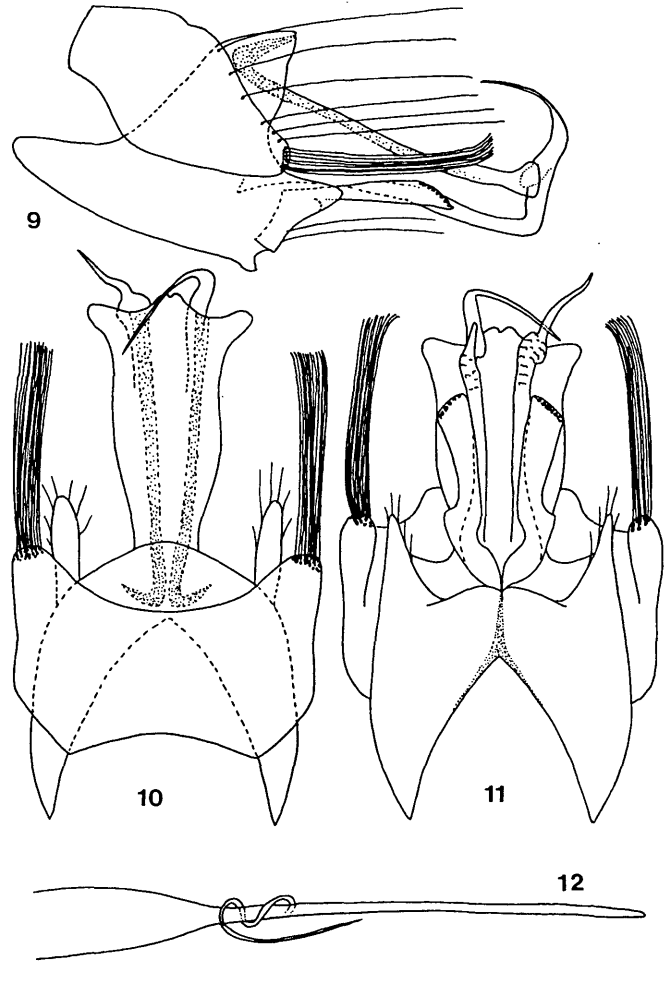
Figs. 6-8: Agapetus hadimensis sp.n. Female genitalia: 6- lateral, 7- dorsal, 8- ventral.

Hydroptila varla sp. n. (Hydroptilidae)

Antennae, palps, wings and legs yellowish pale brown; head and thorax brown. Length of the anterior wings of male 1.5-2 mm. Male genitalia (Figs.9-12): In dorsal view, tergite 8 is roundly excised on the posterior margin; in lateral view, the sides of the posterior edge of tergite 8 are prolonged as rounded lobes above segment 9 and bear a groupof very long thickened dark brown hairs; it is narrower on the anterior edge; the apical margin possesses a few long but thin yellowish hairs; segment 9 is deeply excised dorsally and ventrally on the anterior part, so that the sides appear as long prolongations, becoming obtusely narrower on the anterior end; the posterior margin of segment 9, in lateral view, is prolonged ventrally forming broadly triangular projection; in dorsal view the posterior margin is rounded. Segment 10 is long; in dorsal view, it is narrow at the base and dilated towards the apical margin; which is slightly excised in the middle, forming two small lobes medially; the sides of the apical margin are rather deeply and roundly excised forming rounded lobes on the sides; there is a pair of sclerite stripes, curving on the sides at the base, ending at the apical margin. The lateral prolongations of segment 10 ("parameres") are long and asymmetrical; in lateral view, the left prolongation is almost parallel to segment 10 up to the level of its apical margin, then is curved upward with a right angle, it becomes very thin towards the tip, curving anteriorly; there is a rounded lobe in the middle of the subdistal part of the anterior edge, which appears as narrow and obtuse projection in ventral aspect the right prolongation is also long and continues parallel to segment 10; in dorsal view, it is dilated at the level of the apical margin of segment 10, then suddenly narrowed and is curved to the side. The inferior appendages are narrow at the base and somewhat dilated towards the apex; in ventral view, they are curved on the sides at the base, forming acute projections on the outer margins. The aedeagus is long and thin. The female is unknown.

Holotype ♂ and paratypes ♂♂. Turkey, Kastamonu, Pinarbasi, Varla Mahallesi, Devrekani deresi (at light), 16.7.1994, leg. Sipahiler, holotype in ZSM (Zoologische Staatssammlung München), paratypes in my collection. *Paratype ♂: Gümüshane, Bayburt, 19.7.1989, leg.J.A.W.Lucas, coll.Malicky.*

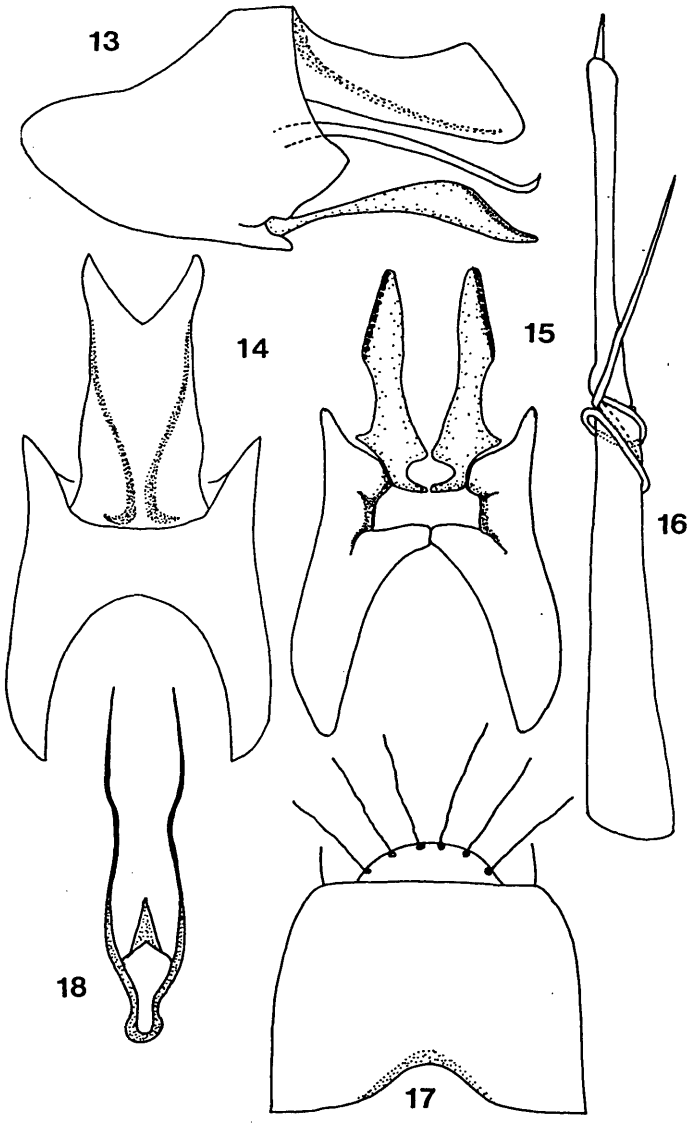
Hydroptila varla sp.n. belongs to the occulta- group and well characterized by the shape of several parts of the male genitalia, especially the shape of tergite 8 and asymmetrical prolongations of segment 10. It is the fifth species in the occulta- group, having the asymmetrical prolongations. Besides the three Levantine species, H. palaestinae Botosaneanu & Gasith 1971, H. libanica Botosaneanu & Dia 1983 (Dia & Botosaneanu, 1983) and H. fonsorentina Botosaneanu & Moubayed 1985 (Moubayed & Botosaneanu, 1985), there is a species in southern Anatolia, H. alara (Sipahiler, 1994), which has also asymmetric prolongations. In all these species the left prolongation is bifurcated; in H. varla sp.n. the furcation is reduced to a short lobe. The inferior appendages resemble those of H. alara, more than the Levantine species, but differ in the shape of segment 9 and 10 and the prolongations. It is a unique species in this group, with the differences in tergite 8.



Figs. 9-12: Hydroptila varla sp.n. Male genitalia: 9- lateral, 10- dorsal, 11- ventral, 12- aedeagus, lateral.

Hydroptila abantica sp.n. (Hydroptilidae)

Antennae and palps are pale brown; wings legs and thorax brown; length of the anterior wings of both sexes 3-3.5 mm. Male genitalia (Figs.13-16): Segment 9 is deeply excised dorsally and ventrally; in lateral view, the sides are prolonged and broadly oval on the anterior margin; posterior margin protrudes as a triangular projection; in ventral view, there is a trapezoidal cavity in the middle; segment 10 is long; in dorsal view the apical margin is deeply V-shaped excised in the middle; the sides are rounded; there is a pair of sclerotized stripes, which are curved and close to each other at the base, directed on the sides towards the apical margin. The lateral prolongations of segment 10 are very thin; as long as the inferior appendages; gradually narrower towards the tips, curving dorsad on the distal part. In lateral view, the inferior appendages are very narrow at the base, dilated dorsally in the middle and narrow at the tips; in ventral view, they appear broad at the base, then narrower in the middle; the outer margins are dilated subdistally and narrow at the apex. The aedeagus is long, the apex is rather round, ending with an acute projection.



Figs. 13-16: Hydroptila abantica sp.n. Male genitalia: 13- lateral, 14- dorsal, 15- ventral, 16- aedeagus, lateral.

Figs. 17-18: Hydroptila abantica sp.n. Female genitalia: 17- ventral, 18- inner basal process, ventral.

Female genitalia (Figs.17-18): Sternite 8 with a large, rounded median lobe on the apical margin, which bears six long setae; posterior margin is roundly excised medially. The internal structure with long and thin lateral arms and narrow at the base. There are no median ventral sclerites.

Holotype ♂ allotype ♀ and paratypes (3 ♂♂, 1 ♀): Turkey, Bolu, Abant, 24.6.1995, 1400 m. (from the spring), leg. and coll. Sipahiler.

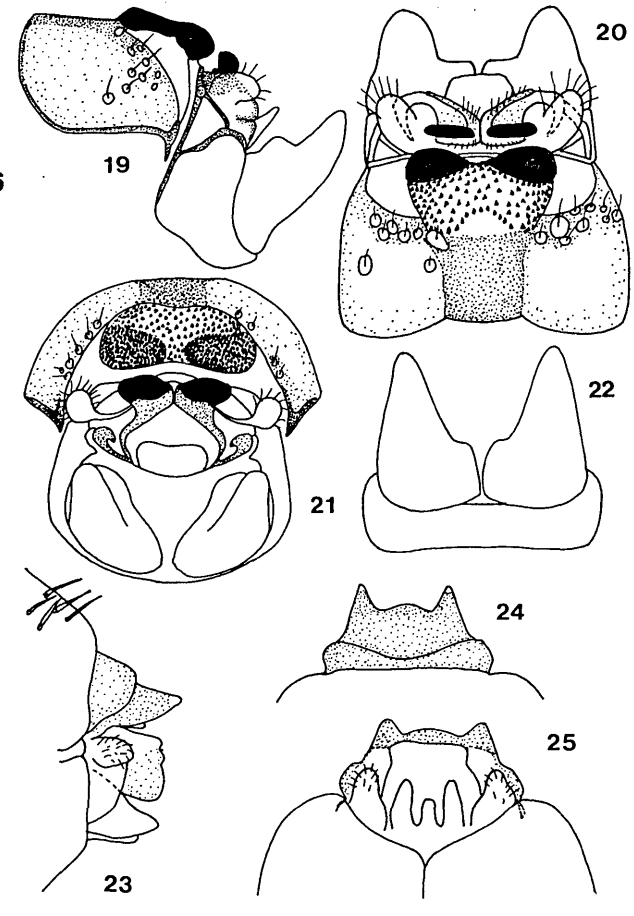
This new species belongs to the occulta-group and is closely related to H. ovacikensis Sipahiler (Sipahiler & Malicky, 1987), found in eastern Anatolia. The following differences are seen in the male genitalia: in H. ovacikensis segment 9 is long, becoming very narrow on the anterior end; in H abantica sp.n. segment 9 is shorter, the anterior end is broader; in H. abantica sp.n. the lateral prolongations of segment 10 are very narrow, curving dorsad at the tips in lateral view, while they are broad in the subdistal part in H. ovacikensis; the inferior appendages of H. abantica sp.n. are very narrow at the base and also in the distal part in lateral view; while they are broad at the base and the apex; the aedeagus of H. abantica sp.n. is rather broad and rounded at the apex and possesses an acute projection; in H. ovacikensis it is pointed at the apex.

Drusus muchei kazdagensis ssp.n. (Limnephilidae)

Antennae, palps and wings brown;legs pale brown; spurs both sexes 1.3.3. Length of the anterior wings of male 9-10 mm, of female 10 mm. Male genitalia (Figs.19-22): the spinulose zone of tergite 8 is very large; in dorsal view, the posterior edge broadly bilobed, densely covered in black spines, which are sparse in the rest of the zone. Segment 9 is dorsally very narrow; in lateral view, the sides are dilated anteriorly; the dorsal part of the anterior edge is straight; the posterior edge is roundly excised in the ventral half. The preanal appendages are nearly oval. The dorsal portions of the intermediate appendages are large and close to each other; in dorsal view, the sclerotized parts appear as narrow long lobes, bearing densely black spinules; the ventral portions are hook-shaped curved on the sides and possess stout bands below the dorsal portion; in caudal view; the dorsal parts are narrow oval. In lateral view, the inferior appendages are long, the dorsal margin with a step-shaped dilatation at the base; ventral margin somewhat excised at the base; in ventral view, the inferior appendages are broad basally, then suddenly narrow, forming a step on the inner margin.

Female genitalia (Figs.23-25): In dorsal view,the tubular piece of segment 10 conical in shape; the median part of the apical margin roundly dilated. In caudal view, the median lobe of vulvar scale is narrower than the lateral one, rounded at the tip and reaches half the length of the lateral lobes; the lateral lobes are parallel to each other and rounded at the apex.

Holotype ♂, allotype ♀ and paratype 1♂. Turkey, Balikesir, Evciler, Kazdagi Milli Parki, Ayazma, 6.8.1994 (at light), 500m, leg.and coll. Sipahiler.



Figs. 19-22: Drusus muchei kazdagensis ssp.n. Male genitalia: 19- lateral, 20- dorsal, 21- caudal, 22- inferior appendages, ventral.

Figs. 23-25: Drusus muchei kazdagensis ssp.n. Female genitalia: 23- lateral, 24- dorsal, 25- ventral.

Drusus muchei ilgazensis ssp.n. (Limnephilidae)

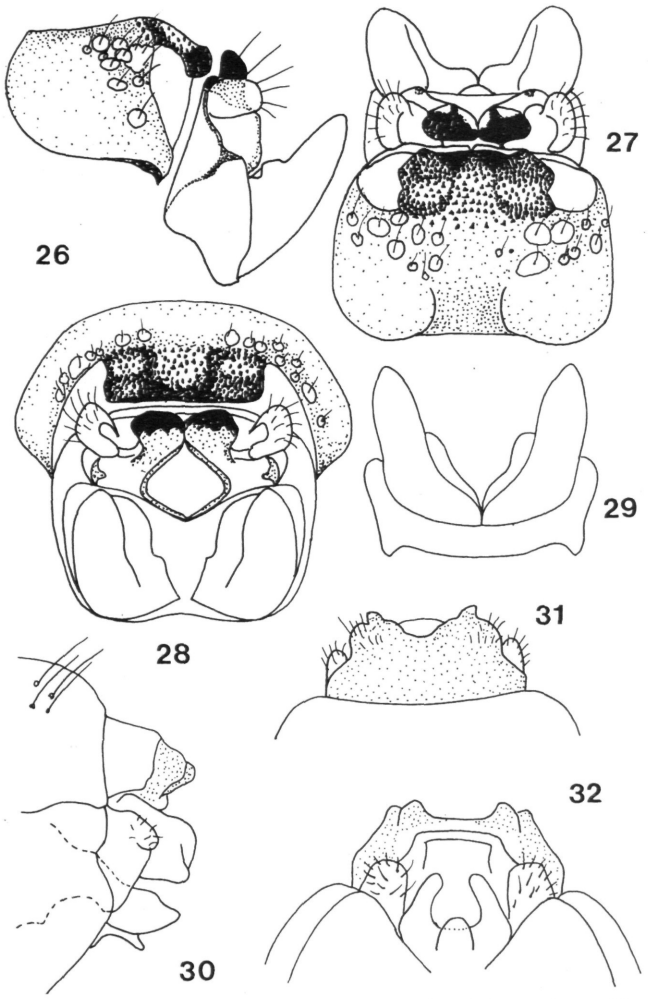
Antennae, palps, and legs brown; wings pale brown-yellowish; spurs in both sexes 1.3.3. Length of the anterior wings of male 8-8.5 mm, of female 8 mm. Male genitalia (Figs. 26-29): tergite 8 brownish; the spinulose zone is large and almost quadrangular in shape; in dorsal view, the median part is smooth; the sides are concave and form triangular lobes on the apical sides; the lateral edges are excised below the apical lobes. Segment 9 is ventrally narrow and expands anteriorly on the sides; the anterior edge is smooth in the dorsal part; the posterior edge is straight. The preanal appendages are broadly oval. Dorsal parts of the intermediate appendages are almost rounded in dorsal view; in caudal view, they are close to each other in the middle and become broader towards the sides. The inferior appendages are long and oval; in lateral view, with a small dilatation at the base of the dorsal edge.

Female genitalia (figs.30-32): The tubular pieces of segment 10 are rounded on the subdistal parts; distally with small lobes, which are directed to the sides. In ventral view, the median lobe of the vulvar scale is short and broad; broader than the lateral lobes; the lateral lobes are directed inwards.

Holotype ♂, allotype ♀ and paratypes 3 ♂♂. Turkey, Kastamonu, Ilgaz Dagi, Küçük Hacet Tepesi, 2 km N of Geyik Geçidi, 1950 m, 14.7.1994 leg. and coll. Sipahiler.

Remarks: Drusus muchei Malicky (Sipahiler & Malicky, 1987) described from Turkey, is found in Bozdag in western Anatolia. D. m. kazdagensis ssp.n. found in north western

Anatolia, in Kaz Dagi, near the Aegean See, 170 km from the nominate species. The second subspecies D.m. ilgazensis ssp.n. is found in northern Anatolia, 500 km from D. muchei. The differences are seen in the male genitalia especially in the shape of the spinulose zone, which is narrow in D. m. muchei, broad in D.m. kazdagensis ssp.n. and broad with side excisions in D.m. ilgazensis ssp.n.; the intermediate appendages of D. m. muchei are rounded on the apical margin and narrow on the sides in caudal view, while they are broad and rounded in D. m. ilgazensis ssp.n., narrow and dilated on the sides in D. m. kazdagensis ssp.n. D. m. muchei differs from the new subspecies, having strong dilatation on the anterior margin of segment 9. The inferior appendages of D. m. ilgazensis ssp.n. differs from the related subspecies, having a small dilatation on the dorsal edge of the inferior appendages. The differences in female genitalia are also evident.



Figs. 26-29: Drusus muchei ilgazensis ssp.n. Male genitalia: 26- lateral, 27- dorsal, 28- caudal, 29- inferior appendages, ventral.

Figs. 30-32: Drusus muchei ilgazensis ssp.n. Female genitalia: 30- lateral, 31- dorsal, 32- ventral.

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REFERENCES

Botosaneanu, L., & Gasith, A., 1971, Contributions taxonomiques et ecologiques à la connaisance des Trichopteres (Insecta) d'Israel.- Israel J.Zool. 20:89-129.

Dakki, M., & Malicky, H., 1980, Drei neue Köcherfliegen (Trichoptera) aus Morokko.- Z.Arbgem. Öst. Ent., 31:103-106.

Dia,.A., & Botosaneanu, L., 1983, Six especes nouvelles de Trichopteres du Liban.- Bull.zool.Mus. Amsterdam 9(14):125-135.

Malicky, H., 1983, Atlas of European Trichoptera.- Ser.Ent. 24: Junk, The Hague, X+298 pp.

Moubayed, Z., & Botosaneanu, L., 1985, Recherches sur les Trichopteres du Liban et principalement des bassins superieurs de l'Oronte et du Litani.- Bull.zool.Mus.Amsterdam 10(11):61-76.

Sipahiler, F., 1994, Three new species of Trichoptera from southern Anatolia.- Braueria 21:12-14.

Sipahiler, F., & Malicky, H., 1987, Die Köcherfliegen der Türkei (Trichoptera).- Entomofauna (Linz) 8:77-167.

LIST OF RESEARCH WORKERS ON TRICHOPTERA

Victoria L.NATIONS, B.S., M.S., PhD student of Ralph Holzenthal; Dept.of Entomology, University of Minnesota, St.Paul, MN 55108 USA. - Research subject: revision of Phylloicus and Banyallarga (Calamoceratidae) and reconstructing the phylogenetic relationships in the family at the generic level. Interested in the systematics and ecology of aquatic insects in general.

Alejandra del Carmen VALVERDE, Licenciada en Ciencias Biologicas; Facultad de Ciencias Exactas y Naturales, UBA, Departamento de Biologia - Entomologia, Ciudad Universitaria, Pab.II, 4to Piso, (1428) Argentina. - Research subject: Bionomia de los Trichoptera de America del Sur, todas las familias, especialmente larvas. - Previously studied: Morfologia larval de Polycentropus joergenseni, Helicopsyche muelleri, Protoptila dubitans. - Willing to identify for other workers: Neotropicales. - Wanted:: Material de America del Sur; Bionomia de Trichopteros, desarollo y morfologia larval. - Other interests: Heteropteros acuaticos, especialmente Belostomatidae.

Hui-ju WU, student. Laboratory of Insect Conservation, Dept.of Plant Pathology & Entomology, National Taiwan University, Taipei, Taiwan. - Research subject: Helicopsychidae & Calamoceratidae of the Oriental area. - Material & Information wanted of the same.

Photographs from the 8th Trichoptera Symposium, Lake Itasca, July 1995

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