

# The *Hydraena (Haenydra) gracilis* GERMAR species complex

(Insecta: Coleoptera: Hydraenidae)

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## Abstract

The *Hydraena gracilis* GERMAR complex is defined and revised taxonomically. *Hydraena nike* sp.n. from Greece is described. A lectotype is designated for *Hydraena gracilis* var. ♂ *balcanica* d'ORCHYMONT. *Hydraena anatolica* JANSENS is recognized as a valid species and *H. gracilis* var. ♂ *balcanica* is upgraded to subspecies level. A map, showing the geographical distribution of all 7 taxa of the *H. gracilis* complex, is included.

**Key words.** Hydraenidae, *Hydraena gracilis*, taxonomy, new species.

## Zusammenfassung

Der *Hydraena gracilis* GERMAR Artenkomplex wird definiert und taxonomisch revidiert. *Hydraena nike* sp.n. aus Griechenland (Insel Samothrake) wird beschrieben. Ein Lectotypus wird für *Hydraena gracilis* var. ♂ *balcanica* d'ORCHYMONT designiert. *Hydraena anatolica* JANSENS, von JÄCH (1992) als mögliches Synonym von *H. gracilis* betrachtet, wird hier als species propria und *H. gracilis* var. ♂ *balcanica* als Subspezies von *H. gracilis* anerkannt.

## Introduction

*Hydraena (Haenydra) gracilis* GERMAR is the type species of the subgenus *Haenydra* REY and it is obviously the most common and most widespread member of its genus in Europe. Since KNISCH (1924) it has been treated in more than 70 publications. Attempts towards subspecific separations within *H. gracilis* were made by d'ORCHYMONT (1930), but his concept was rejected by PRETNER (1931) and subsequent authors.

Following study of more than 100 aedeagi of the *Hydraena gracilis* complex I am now able to distinguish quite clearly between different species and subspecies.

## Acknowledgements and abbreviations

The material used for this study is deposited in the following institutions and private collections (abbreviations are used to refer to collections in the text):

CBB	Coll. Boukal, Ceske Budejovice	CKH	Coll. Kahlen, Hall in Tirol
CBG	Coll. Bellstedt, Gotha	CNU	Coll. Nilsson, Umeå
CBKB	Coll. Brandstetter, Bürs (incl. Coll. Kapp, Rankweil)	CPE	Coll. Pütz, Eisenhüttenstadt
CHD	Coll. H. & F. Hebauer, Deggendorf & Rain	CPL	Coll. Pretner, Ljubljana (B. Drovnik)
		CVH	Coll. Vondel, H.I. Ambacht

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HUB	Museum der Alexander Humboldt Universität, Berlin (F. Hieke)	MNG	Museum der Natur, Gotha (R. Bellstedt)
ISNB	Institut royal des Sciences naturelles de Belgique, Bruxelles (K. Desender)	MTD	Museum für Tierkunde, Dresden (R. Krause, O. Jäger)
IZI	Institut für Zoologie der Universität Innsbruck (W. Schedl)	NMW	Naturhistorisches Museum, Wien
MGL	Musée Guimet d'Histoire naturelle, Lyon (J. Clary)	PAW	Polska Akademia Nauk, Warszawa (S. Slipinsky)
MHNG	Muséum d'Histoire naturelle, Genève (I. Löbl)	OLL	Oberösterreichisches Landesmuseum, Linz (F. Gusenleitner)
MKB	Museum Alexander König, Bonn (H. Roer)	TMB	Természettudományi Múzeum, Budapest (O. Merkl, G. Szél)
		ZMH	Universitetets Zoologiska Museum, Helsingfors (H. Silfverberg)

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## Taxonomy

### *Hydraena gracilis* complex

The six species and one subspecies (*H. anatolica* JANSEN, *H. crepidoptera* JÄCH, *H. gracilis gracilis*, *H. gracilis balcanica* d'ORCHYMONT, *H. graciloides* JÄCH, *H. elisabethae* JÄCH and *H. nike* sp.n.) here regarded as members of the *H. gracilis* complex are characterized by the aedeagal morphology: the distal lobe is more or less identical in all 7 taxa; it consists basically of 3 parts which were described and illustrated by BERTHELEMY (1964: Fig. 9); the main piece is divided into an apical and a basal half: apical half flattened and blade-like, gently sinuate, with 3 setae inserted on left side near basis; basal half of main piece cylindrical and strongly curved, phallobasis symmetrical.

Three species of the complex (*H. anatolica*, *H. gracilis* and *H. nike* sp.n.) are more or less indistinguishable externally, while the 3 remaining species (*H. crepidoptera*, *H. elisabethae* and *H. graciloides*) differ externally.

The aedeagi of 5 species (*H. anatolica*, *H. gracilis*, *H. graciloides*, *H. elisabethae* and *H. nike* sp.n.) are very similar and differ only slightly in shape and size of the main piece (see Figs. 3 - 36), while the main piece of *H. crepidoptera* (see JÄCH 1992: Fig. 6) is quite different. For distinction of these 5 species and their subspecies direct comparison of several aedeagi (including well determined reference specimens) placed on one microscopic slide is strongly recommended (see Fig. 1).

Three of the 6 species of the complex (*H. gracilis*, *H. graciloides*, *H. elisabethae*) are phylogenetically united by the development of a characteristic hump near subapical 0.16 of the dorsal margin of the main piece.

According to Diaz Pazos (unpublished data) females of *Hydraena gracilis*, *H. elisabethae*, *H. nike* sp.n. and *H. anatolica* cannot be distinguished by the shape of the pygidial sclerites or the spermatheca.

The distribution of the *H. gracilis* complex is confined to Europe, Turkey and (probably) Armenia (see Fig. 37).

## 1. *Hydraena (Haenydra) gracilis* GERMAR

- Hydraena gracilis* GERMAR, 1824: 94.  
*Hydraena elongata* CURTIS, 1830: 307.  
*Hydraena concolor* WATERHOUSE, 1833: 293.  
*Hydraena monticola* REY, 1884: 30.  
*Hydraena cibrata* REY, 1886: 103.  
*Hydraena obscuripes* GERHARDT, 1900: 69.  
*Hydraena gracilis* ssp. *balcanica* d'ORCHYMONT, 1930: 369.

Type locality: "Habitat in territorio Rheni bavarico" (GERMAR 1824). The type material was very probably collected by Phillip-Wilbrand-Jacob Müller (1772 - 1851) near Odenbach an der Glan, Pfalz [= Palatinate], Rheinland-Pfalz, southwest Germany.

Type material: According to PRETNER (1931: 82) there are no syntypes of *H. gracilis* in the Halle University and only one syntype, a female labelled "Odenbach, P.W.F.Müller \ gracilis" is in the HUB. According to the same author, this female belongs to *H. belgica* d'ORCHYMONT. During my visit to the HUB in 1986 I was not able to find this specimen nor did I find any of the alleged 10 syntypes which are listed in the catalogue of the historical collection ("10756 *Hydraena gracilis* Müll. Germ. 10. German., Müll."). An intensive search by F. Hieke (curator of the Coleoptera collection of the HUB) in 1993 was also fruitless (letter of September 13th, 1993). Thus it seems possible that the syntypes of *H. gracilis* are destroyed. The original number of syntypes is not known, but according to the catalogue of the historical collection (see above) it is quite obvious that *H. gracilis* was described from at least 10 specimens and it is very probable that at least some of the specimens which GERMAR (1824) used for the description of *H. gracilis* represented the species nowadays regarded as *H. gracilis*.

Synonyms: I have not examined the types of *H. elongata* and *H. concolor*, described from England. Their synonymy with *H. gracilis* was confirmed by several authors (e.g. BALFOUR-BROWNE 1958) and I have no reason to doubt the correctness of these synonymies since *H. gracilis* is the only member of the subgenus *Haenydra* hitherto recorded from the British Islands.

d'ORCHYMONT (1930) has designated a lectotype ♂ (MGL) for *H. monticola* (described from Switzerland) and established the synonymy with *H. gracilis*. I have examined this specimen and I confirm the synonymy.

I have seen the holotype ♂, by monotypy (MGL, Rey collection) of *H. cibrata*: "cibrata R. \ [small round grey label = southern France]". It is conspecific with *H. gracilis*.

The types of *H. gracilis* var. *obscuripes* were examined by PRETNER (1931: 83). The same author (PRETNER 1931) established the synonymy with *H. gracilis*. According to A. Slipinski (letters of 13.9.1986 and 20.1.1987) the collection of J. Gerhardt was destroyed during World War II.

Adegus (Figs. 7 - 21): Main piece 0.47 - 0.51 mm long; apex variable, acute or obliquely truncate (very rarely almost horizontally truncate - 1 ex. from Hungary, Matra Mts, NMW); dorsal margin slightly emarginate, straight or slightly convex in apical sixth, conspicuously "humped" at subapical 0.16, distinctly excised in middle (near insertion of distal lobe); basal half of main piece only moderately long, evenly curved; phallobasis symmetrical.

Distribution: Most of Europe (but very rare or absent in the south), incl. Ural Mts. The species does not occur in Anatolia. All specimens from Anatolia listed as *H. gracilis* by JÄCH (1988, 1992) belong to two other species (see below).

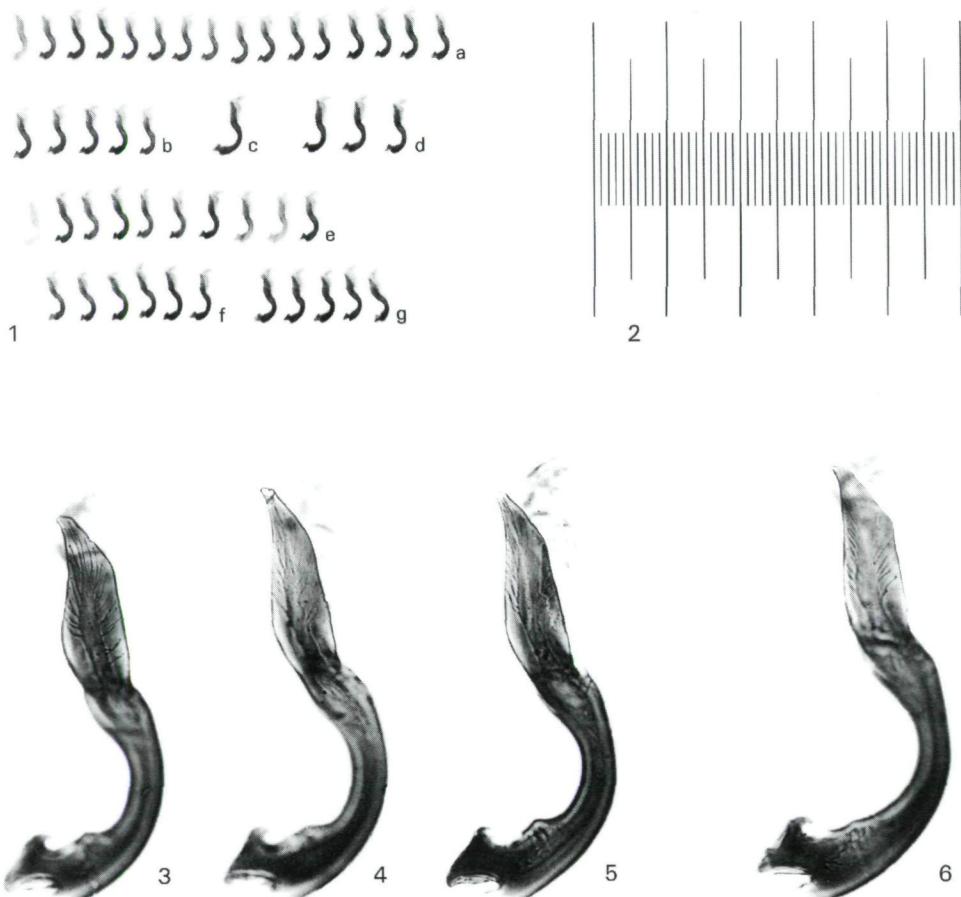


Fig. 1: Aedeagi of the *Hydraena gracilis* complex placed closely together on a microscopic concavity slide to allow direct comparison; a) *Hydraena gracilis gracilis*, b) *Hydraena gracilis* (specimens from the transition zone of the two subspecies), c) *H. graciloides*, d) *H. elisabethae*, e) *Hydraena gracilis balcanica*, f) *H. anatolica* and g) *H. nike* sp.n. The larger size and different proportions of *H. graciloides* (c) and *H. elisabethae* (d) in comparison to *H. gracilis* (a, b, e) is clearly discernible in that view.

Fig. 2: Scale (= 0.5 mm) for Figures 3 - 36.

Figs. 3 - 5: *Hydraena elisabethae*, aedeagus, lateral aspect; (3) holotype (NMW), (4, 5) 2 paratypes (NMW).

Fig. 6: *Hydraena graciloides*, aedeagus, lateral aspect, paratype (NMW).

**S u b s p e c i e s :** Based on specimens from Slovenia, Croatia, Bosnia and Bulgaria, d'ORCHYMENT (1930) described the "variété mâle *balcanica*" on account of the slightly deviating apex of the main piece. PRETNER (1931) who had obviously not seen enough specimens of the nomino-typical subspecies from western and northern Europe rejected the concept of d'ORCHYMENT (1930) and the name *H. g. var. balcanica* was not mentioned in any publication since.

I have examined the lectotype ♂, by present designation (ISNB): "♂ \ S L O V E N I A Javornia dans la Posser Ruiss 17 vii'29 (d'Orchym.) \ A.d'Orchymont det: *Hydraena Haenydra* gracilis Germar \ **TYPE** balcanica \ F<sup>a</sup> balcanica m." and 19 paralectotypes (ISNB), labelled as the lectotype. Number of syntypes not exactly known.

There is no doubt that the aedeagi of most specimens of *H. gracilis* from southeastern Europe (former Yugoslavia, Greece, Bulgaria, European Turkey; see Figs. 17 - 19) differ from those of most specimens from western and northern Europe (Great Britain, Spain, France, Germany, Scandinavia; see Figs. 7 - 11) in the shape of the dorsal margin of the main piece which is more or less straight, evenly convex or very slightly emarginate between apex and subapical hump (and not distinctly emarginate) in these southeastern populations. In addition, the apex of the main piece is more acute and less truncate than in typical *H. g. gracilis*. Although both of these characters are somewhat variable there is no doubt (after examination of more than 70 specimens) that a morphological difference does exist which justifies a subspecific separation.

Intermediate specimens (Figs. 12 - 16, 20, 21) and typical members of both subspecies are frequently encountered in Austria, Hungary and Slovakia.

As I have not examined enough material from Romania and the Ukraine I cannot say which subspecies dominates in these countries. But a situation similar to that of Hungary and Slovakia can be expected.

The single male (Fig. 11) from the Ural Mts. which I have examined represents *H. g. gracilis*.

#### Additional material examined:

**G R E A T B R I T A I N:** ENGLAND: Devon, Christow, leg. Champion (NMW).

**N O R W A Y:** "Norwegen", 1 ♂ (ISNB).

**S W E D E N:** BOHUSLÄN: Drust, Aknän, 1.III.1990 (CNU, NMW); VÄSTERBOTTEN: Fällforsonna, 1976, leg. Söderström (CNU, NMW); ÅSELE LAPPMARK: Baga, 9.VII.1977 (CNU, NMW); MEDEL-PAD: Alnön, Släda, 14.V.1986, leg. Nilsson (CNU, NMW); HELSINGLAND: Vinnfarån, 27.IV.1985, leg. Sjöberg (CNU, NMW); NORBOTEN: Lahnsuando, Tärendö, 24.VIII.1983, leg. Nilsson (CNU, NMW).

**F I N L A N D:** Tuovilanlaks (ZMH); Pallastunturi, 15.VII.1956, leg. Wegelius (ZMH).

**B E L G I U M:** Remouchamps, leg. Delève (ISNB); Rocherath, 12.IX.1982, leg. Vondel (CVH).

**F R A N C E:** "Nied. Pyrenäen" [= Pyrénées Atlantiques], coll. Grundmann (NMW); VOSGES: Vagney, 5.VII.1986, leg. Vondel (CVH); CHER: Vailly s. Sauldre, Cosne s. Loire, 16.VII.1985, leg. Vondel (CVH); AIN: Nantua, leg. Guillebeau (NMW); VIENNE: Limoges, coll. Grundmann (NMW); HAUTE VIENNE: St. Barbant (NMW); RHONE: St. Germain au Giers, 18.VIII.1925, leg. Hustache (NMW); ALLIER: Broût-Vernet, leg. Buysson (NMW).

**S P A I N:** "Alasua Spanien", coll. Grundmann (NMW); LEON: Vegacerneja, 27.VIII.1988, leg. Garrido Gonzales (NMW); Prioro, 14.VII.1986, leg. Garrido Gonzales (NMW); GERONA: Cataluña, Santa Coloma, 27.V.1984, leg. Hebauer (NMW, CHD); Tordera, 28.III.1984, leg. Hebauer (NMW); Arbucies, 29.IX.1981, leg. Malicky (NMW); SEGOVIA: La Granja (CPL); GUIPUZCOA: Villa Real (CPL); CADIZ: Algeciras, coll. Hauser (NMW).

**I T A L Y:** Padova, Colli Euganei, Torreglia, 20.X.1987, leg. Malicky (NMW).

**S W I T Z E R L A N D:** GENEVE: Allondon, 24.VI.1981, leg. Besuchet (MHNG).

**G E R M A N Y:** HAMBURG: Forst, Hanheide, 6.V.1934 (HUB); NIEDERSACHSEN: Bremen, leg. Budberg (NMW); RHEINLAND-PFALZ: Dürkheim, leg. Eppelsheim (NMW); Hunsrück, Kastellaun (HUB, MKB); NORDRHEIN-WESTFALEN: Solingen, 13.VIII.1966, leg. Gräf (CPE); BADEN-

WÜRTTEMBERG: Schwäbische Alb, 2.X.1919 (HUB); SACHSEN-ANHALT: Harz, Luppode, 2.VIII.1986, leg. Spaltenberg (CSS, NMW); HESSEN: Schlitz, Sengelbach (MKB); Hilders, 18.IX.1938 (HUB); TÜHRINGEN: Weimar (HUB); Kahle, 20.X.1967, leg. Uhlig (HUB); Ohrdruf (MNG); SACHSEN: Dresdner Heide, 5.VII.1905 (HUB); Dresden, leg. Czwalina, leg. Kiesenwetter, coll. Eppelsheim (NMW); Dresden, Rochwitz, 28.VII.1908 (MTD); Kl. Röhrsdorf, 29.IX.1907 (MTD); Sächsische Schweiz, Ottendorf, 7.V.1951, leg. Linke (MTD); BAYERN: München (HUB); Deggendorf, 26.VII.1990 (CNU, NMW); Garmisch (HUB); Allgäu: Mühlach NE Sinzwang, 15.VII.1926, leg. Kuntzen (HUB); Kalzhofen, Jugetbach, 18.VII.1926, leg. Kuntzen (HUB); Oberstaufen, 5.VII.1926 (HUB).

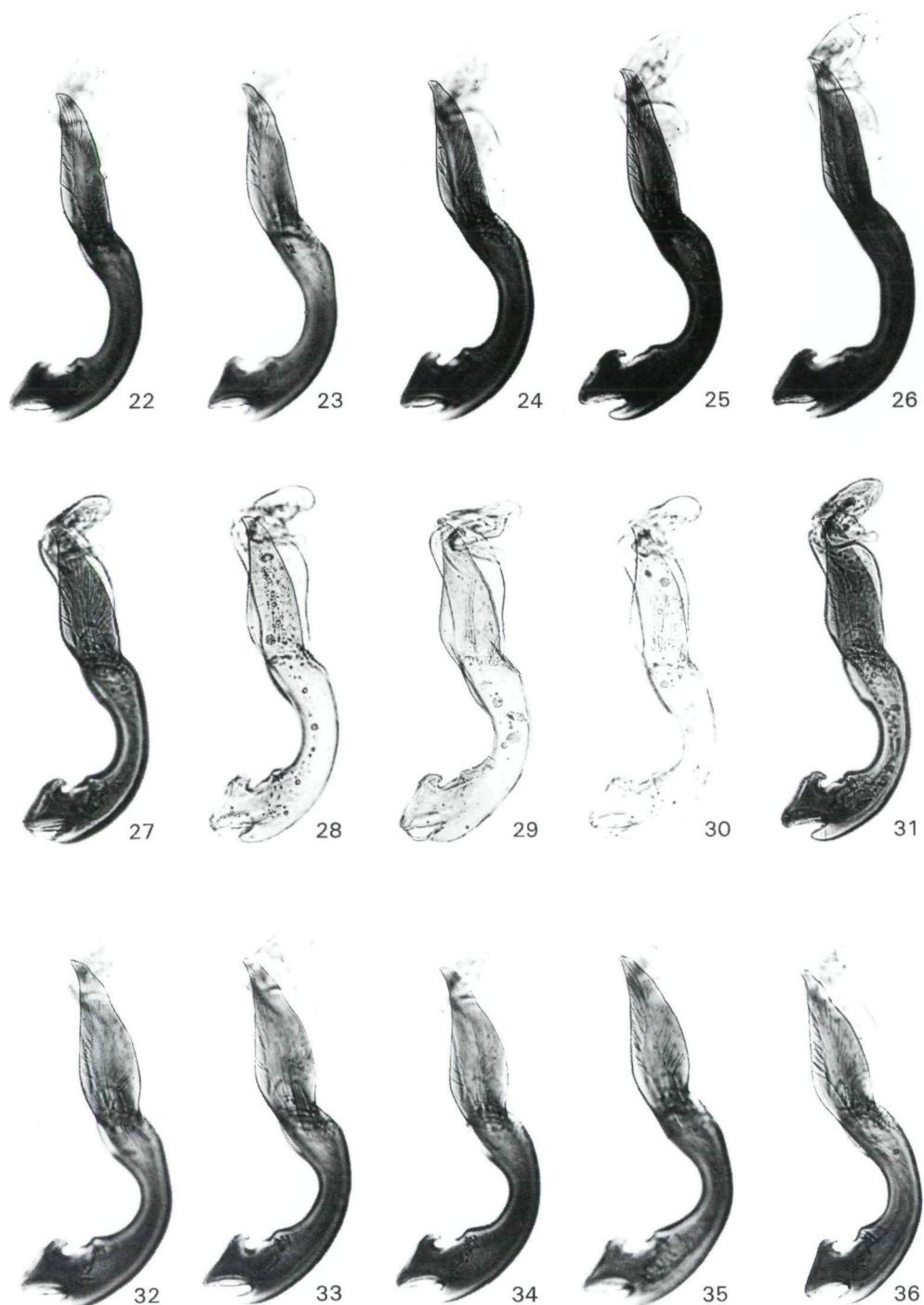
A U S T R I A: BURGENLAND: Sauerbrunn, 15.V.1983, leg. Jäch (NMW); Piringsdorf, Rabnitz, 29.V.1983, leg. Jäch (NMW); Stadtschlaining-Goberling, Tauchenbach, 18.V.1990, leg. Jäch (NMW); Purbach, Leithagebirge, 19.V.1990, leg. Jäch (NMW); Bez. Mattersburg, Loipersbach, 19.V.1990, leg. Jäch (NMW); WIEN: Dornbach, leg. Wingelmüller (NMW); Sievering (NMW); Gütenbach, 7.XI.1979, leg. Jäch (NMW); Wienerwald, IX.1929, leg. Prock (NMW); Kaltenleutgeben, 6.IX.1908 (NMW); Lainzer Tiergarten, 30.VI.1965, leg. Vogl (NMW); NIEDERÖSTERREICH: Gießhübl, leg. Moczarski (NMW); Rekawinkel, 1909, leg. Ganglbauer (NMW); Greifenstein (NMW); Winzendorf, 1.VIII.1908, leg. Curti (NMW); Hainfeld, leg. Curti (NMW); Schwechat, 14.VI.1980, leg. Jäch (NMW); Baden, leg. Stoltz (NMW); Hinterbrühl, Mödlingbach, 30.VII.1987, leg. Jäch (NMW); Michelbach, S Böheimkirchen, 400 m, 23.V.1993, leg. Ji (NMW); Mirafälle, 10.V.1896 (NMW); Gutenstein (NMW); Fürholz, 9.IV.1975, leg. Wagner (OLL); Upper course of Salza, NE Maria Zell, Gscheid, 950 m, 26.VI.1992, leg. Schillhammer (NMW); Bucklige Welt, Spratzbach, 29.V.1983, leg. Jäch (NMW); Rabnitz, upper course, 29.V.1983, leg. Jäch (NMW); Amstetten, Urlbach, 31.VI.1993, leg. Jäch (NMW); Ybbsitz, 1915 - 1917, leg. Pinker (NMW); Waidhofen/Ybbs, VII.1941, leg. Prock (NMW); 5 km E Steyr, 25.VII.1925, leg. Jäch (NMW); Bez. Scheibbs: Zarnsdorf, Kleine Erlaf, 31.VIII.1980, leg. Jäch (NMW); Perwarth, Kleine Erlaf, 26.VIII.1980, leg. Jäch (NMW); Schauboden, Erlaf, 18.VIII.1980, leg. Jäch (NMW); Koppendorf/Melk, 7.VI.1980, 15.VIII.1980, leg. Jäch (NMW); Purgstall, Schaubach, 28.VII.1979, 26.XII.1979, 1.III.1980, 8.III.1980, 3.VIII.1980, leg. Jäch (NMW); Schluechtenbach, 22.VIII.1980, leg. Jäch (NMW); Schlarassingbach, 23.VIII.1980, leg. Jäch (NMW); Reinsberg, Ewixengraben, Schaitten and Steinbach, 25.VIII.1980, leg. Jäch (NMW); Zehnbach, Erlaf, 17.VIII.1980, leg. Jäch (NMW); Saffen, Saffenbach, 20.IX.1979, 17.V.1980, 26.VIII.1980, leg. Jäch (NMW); Scheibbs, Lueggrabenbach, different localities, 10.II.1979, 25.II.1979, 19.III.1979, 19.IV.1979, 20.IX.1979, 15.XII.1979, 17-18.II.1980, 8.IV.1980, 12.IV.1980, 16.V.1980, 12.VI.1980, 19.VI.1980, 21.VI.1980, 27.VII.1980, leg. Jäch (NMW); Lueggraben, Gaißbergbach, 3.VIII.1979, leg. Jäch (NMW); Berneggbach, 19.IV.1979, 28.XII.1979, leg. Jäch (NMW); Neustift, Höferbach, 21.VIII.1979, 27.II.1980, leg. Jäch (NMW); St. Anton, Jeßnitz, 5.VIII.1980, leg. Jäch (NMW); Winterbach, spring, 19.IX.1980, leg. Jäch (NMW); Puchenstuben, Trefflingbach, 19.VIII.1980, leg. Jäch (NMW); Lunz, leg. Holdhaus (NMW); Lunz, Bodingbach, 26.VII.1925, leg. Sauruck (NMW); Lunz, Weißenbach, 2.IX.1925, leg. Sauruck (NMW); Lunz, Stockgrund, 26.VII.1925, leg. Sauruck (NMW); Lunz, Stgr. Seefried, 20.IV.1961 (NMW); Kothbergbach, 24.VII.1980, leg. Jäch (NMW); Waldviertel: Ysperbach, 13.IV.1981, leg. Jäch (NMW); Weitenbach, 14.IV.1981, leg. Jäch (NMW); Hartenstein, Krems, 3.XI.1984, leg. Jäch (NMW); Krems, Reisperbach, 25.V.1925, 4.VI.1925, leg. Bachinger (NMW); Senftenberg, Krems, 3.XI.1984, leg. Jäch (NMW); Krems, Alautal, 9.V.1925, leg. Bachinger (NMW); Rosenburg, leg. Minarz (NMW); Gars, Kamp, leg. Minarz (NMW); Rosenburg, Kamp, 18.X.1980, leg. Jäch (NMW); Karlstein, Thaya, 6.X.1984, leg. Jäch (NMW); Hardegg, Thaya, 7.X.1984, leg. Jäch (NMW); Waldhausen, Purzelkampf, 14.X.1984, leg. Jäch (NMW); Komau, Kamp, 27.X.1984, leg. Jäch (NMW); Arbesbach, Kamp, 27.X.1984, leg. Jäch (NMW); Stift Zwettl, 7.IV.1980, leg. Jäch (NMW); Retzbach, upper course, 7.X.1984, leg. Jäch (NMW); OBERÖSTERREICH: Linz, 3.VIII.1911, leg. Kloiber (OLL); Linz, Hornbachgraben, leg. Kloiber (OLL); Linz, Donauau, VI.1903, leg. Priesner (OLL);

Figs. 7 - 11: *Hydraena gracilis gracilis*, aedeagus, lateral aspect; (7) England, Devon (NMW), (8) Spain, Algeciras (NMW), (9) Austria, Tyrol (NMW), (10) Sweden, Västerbotten (NMW), (11) Russia, Ural (ISNB).

Figs. 12 - 16: *Hydraena gracilis*, specimens from the transition zone of the two subspecies, aedeagus, lateral aspect; (12) Austria, Lower Austria, Krems, (13) Austria, Lower Austria, Scheibbs, (14) Austria, Lower Austria, Lunz, (15) Austria, Styria, Maria Zell, (16) Slovakia, Muran. All specimens deposited in the NMW.



Figs. 17 - 21: *Hydraena gracilis balcanica* (17 - 19) and specimens from the transition zone of the two subspecies (20, 21), aedeagus, lateral aspect; (17) lectotype, Slovenia (ISNB), (18) Turkey, Istranca Mts. (NMW), (19) Greece, Mt. Pangaeon (NMW), (20) Austria, Styria, Herberstein (NMW), (21) Ukraine, Carpathian Mts. (NMW).



Figs. 22 - 26: *Hydraena anatolica*, aedeagus, lateral aspect, Turkey; (22) Istanbul, Ömerli, (23) same locality, different specimen, (24) Istanbul, Agva, (25) Gümüşhane, Zigana Pass, (26) Bitlis, Mutki. All specimens deposited in the NMW.

Linz, leg. Priesner (NMW); Linz, Diessenleiten, 10.VIII.1911, leg. Kühnelt (NMW); Rottenegg, 20.VIII.1911, leg. Kloiber (OLL); Zell, Zellhof, 500 m, leg. Moser (OLL); Wendbach, leg. Petz (OLL); St. Lorenz, 27.VII.1976, leg. Wagner (OLL); Freistadt, Gutau, 13.VII.1976, leg. Wewalka (NMW); Zwettl, Rodlbach, 22.VI.1988, leg. Jäch (NMW); Rottenegg, Kl. Rodl, 22.VI.1988, leg. Jäch (NMW); Zell, Zellhof, 500 m, leg. Moser (OLL); SALZBURG: Wildmoos, 27.VII.1976, leg. Wagner (OLL); STEIERMARK: Maria Zell, small stream near Lake Hubertus, 23.V.1983, leg. Ji (NMW); Aflenz (NMW); Eibiswald, Saggabach, 24.VI.1988, leg. Jäch (NMW); Peggau, coll. Konschegg (NMW); Graz, leg. Gridelli, leg. Penecke (NMW); Göss, leg. Meschnigg (NMW); Gratwein, leg. Meschnigg (NMW); Mühlbachgraben, Rein, 29.VI.1906, leg. Tax (NMW); Hochlantsch, 1904, leg. Meixner (NMW); Turnau, VII.1931, leg. Prock (NMW); Herberstein, Feistritz, 24.VI.1988, leg. Jäch (NMW); St.Lorenz VI.1973, leg. Wagner (CWW); Knittelfeld, coll. Grundmann (NMW); Kainachtal, coll. Konschegg (NMW); KÄRNTEN: Bad Vellach, leg. Meschnigg (NMW); Ebriach, coll. Grundmann (NMW); Wolfsberg, coll. Grundmann (NMW); Velden, 3.VIII.1968, leg. Wewalka (NMW); Arriach, leg. Meschnigg (NMW); Wolfsberg, Lavant (NMW); TIROL: Innsbruck, Thaur, leg. Pechlaner (NMW); Kufstein, VI.1927, leg. Pechlaner (NMW); Terfens, 18.X.1908, leg. Wörndl (NMW); Terfens, 18.X.1908, leg. Wörndl (IZI); Innsbruck, 4.X.1911, leg. Wörndl (IZI); Wörgl, Mariastein, 15.VII.1964, leg. Kahlen (CKH); Hall, Gnadenwald, 5.IV.1969, leg. Kahlen (CKH); Tannheim, 22.VIII.1952, leg. Rief (CKH); Unterinntal, Breitenbach, Schönau, 1.V.1977, leg. Kahlen (CKH); Unterinntal, Dreibrünnengjoch, 4.VI.1978, leg. Kahlen (CKH); Thaur, 18.IV.1926, leg. Ratter (CKL); Amras, Schönruh, 2.X.1911, leg. Ratter (CKL); Terfens, Gungl, 20.III.1927, leg. Ratter (CKL); Stubai, 1.V.1927, leg. Ratter (CKL); Seefeld, 17.X.1932, leg. Ratter (CKL); Oetz, 16.VIII.1907 (HUB); VORARLBERG: Feldkirch, leg. Moosbrugger (NMW); Bregenz, Gebhardsberg, 550 m, 24.IX.1990, leg. Häammerle & Brandstetter (CBKB); Bregenz, Fluh, 720 m, 16.XI.1991, leg. Schabel (CBKB); Sulzberg, Fahl, 9.V.1992, leg. Brandstetter (CBKB).

CZECH REPUBLIC: BOHEMIA: Benešov nad Cernou, Cerne Udoli, 30.VI.1990, leg. Boukal (CBB); Nove Hrady, Stropnice river, 5.VIII.1985, leg. Snizek (CBB); Cesky Krumlov, Cerveny Dvur, 3.XI.1985, leg. Snizek (CBB); Petrikov, Stropnice river, 9.IX.1984, leg. Snizek (CBB); Ceske Budejovice, Borek, 2.IV.1985, leg. Snizek (CBB); MORAVIA: "Schlesien, Freiwaldau" [= Jesenik], coll. Grundmann (NMW); Paskau, coll. Grundmann (NMW); "Aussee" (NMW); "Mährisch Weisskirchen" [= Hranice], 1896, leg. Schuler (NMW); "Mor. Rotwasser" [= Cervena Voda], VIII.1926, leg. Stolz (NMW); Adamov, N Brno, 16.X.1993, leg. Jäch (NMW).

CZECH REPUBLIC or POLAND: "Silesia Teschen" [= Cesky Tesin (= Cieszyn)], leg. Wanka (NMW).

POLAND: "Silesia", coll. Gerhardt (NMW); "Hirschberg Silesia" [= Jelenia Gora, SW Wroclaw] (MTD); "Danzig" [= Gdansk] (PAW); Tarnava, 25.V.1947, coll. Klapacz (PAW); Szczawnica, 9.VIII.1928, coll. Tenenbaum (PAW); Ojeow, 1912, coll. Eichler (PAW); Zakopane, 13.VII.1931, coll. Kinel (PAW); Kosów, 1929, coll. Kinel (PAW); Srebrna Gora, 3.VII.1946, coll. Klapacz (PAW); Bednarka, 13.VIII.1942, coll. Klapacz (PAW); Rybnik, 3.VII.1934, coll. Klapacz (PAW).

SLOVAKIA: SE Zvolen, 19.X.1991, leg. Jäch (NMW); Hrdzava NR, NW Muran, 700 m, 17.X.1991, leg. Zettel, leg. Jäch (NMW); Slovakia or., Stakcin, Cirocha river, 4.VII.1990, leg. Boukal (CBB); Slovakia or., Vihorlat, Vinne jaz., 30.VI.1989, leg. Boukal (CBB); Slovakia or., Vihorlat, Remetske Hamre, 6.VII.1989, leg. Boukal (CBB); Slovakia or., Bukovske vrchy, Nova Sedlica, 4.VII.1989, leg. Boukal (CBB); Slovakia or., Ulic, 12.V.1986, leg. Janata (CBB); Ruzomberok, 5.VIII.1986, leg. Janata (CBB); Slov. kras, Zadielska dolina, 2.VII.1985, leg. Snizek (CBB).

Figs. 27 - 31: *Hydraena nike* sp.n., aedeagus, lateral aspect; (27) holotype and (28 - 31) 4 paratypes. All specimens deposited in the NMW.

Figs. 32 - 36: *Hydraena nike* ? ssp., aedeagus, lateral aspect, Turkey; (32) Ordu, Gölköy, (33, 34) same locality, different specimens, (35) Gümüşhane, Vaukdagi Pass, (36) Artvin, Borcka. All specimens deposited in the NMW.

H U N G A R Y: Matra Mts., Parad (NMW); Bükk-hegys., Nagyvisnyo Elzalak 12.VI.1956, leg. Kaszab & Szekessy, 30 exs. (TMB); Bükk N.P., Miskolc, 250 m, leg. Adam & Itamori, 2 exs. (TMB); Bükk N.P., Bükkzserec, 300 m, leg. Merkl & Szel, 3 exs. (TMB); Ubanya (TMB); Bartfa (TMB); Szandelői (TMB); Magosmart (TMB); Jalna (TMB); Saskovaralija (TMB); Agfalva (TMB); Dragan (TMB); Bucsecs (TMB); Kassa (TMB); Köszegi hegys (TMB); Szamos (TMB); Kaszon (TMB); Körmöcbanya (TMB); Dömös (TMB); Gyertianliget (TMB).

U K R A I N E: Carpathians, 26.VI.1939 (NMW); Worochta (PAW); Zaleszayki (PAW).

R U S S I A: Ural, "Slatoust" [= Zlatoust], 1 ♂ (ISNB).

S L O V E N I A: 20 km N Kranj, 27.VI.1988, leg. Jäch (NMW); Lucnica, Luce, 28.VII.1983, leg. Jäch (NMW); Lipnica, 11.IV.1970, leg. Drovenik (NMW); Zelezniki, 23.VI.1984, leg. Jäch (NMW); Kamna Gorica, leg. Pretner (NMW); Branica [= Branik], VIII.1919, leg. Pretner (NMW).

C R O A T I A: Fuzine, leg. Curti (NMW).

B O S N I A: Pazaric, Krupa Valley, leg. Apfelbeck (NMW).

Y U G O S L A V I A: SERBIA: Kosovo: Sar planina, S Doganovic, 19.VII.1988, leg. Jäch (NMW); CRNA GORA: Savnik, 1.VII.1958, leg. Pretner (NMW).

M A K E D O N I A (former Yugoslav republic): Bitola, Pelister, 21.VII.1988, leg. Jäch (NMW); Lake Prespa, stream, 20.VII.1988, leg. Jäch (NMW); Treska River, 50 km N Ohrid, 19.VII.1988, leg. Jäch (NMW); NW Gevgelija, 12.VIII.1988, leg. Jäch (NMW); Babuna River, SW Titov Veles, 13.VIII.1988, leg. Jäch (NMW).

R O M A N I A: "Brasso" [= Brasov] (NMW); "Kronstadt" [= Brasov] (NMW); "Marmaros" [= Maramures], VIII.1876, leg. Friv. & Pavel (NMW); Aleu-Valley (Bihor), 21.X.1961, leg. Ienistea (CWW).

B U L G A R I A: W Mladenschko, 15.VI.1980, leg. Malicky (NMW); S Jasne Poljana, 18.VI.1980, leg. Malicky (NMW); 7 km N M.Turnovo, 16.VI.1980, leg. Malicky (NMW); Katundere, 15.VI.1980, leg. Malicky (NMW); Veleke, 17.VI.1980, leg. Malicky (NMW); Sugarewo streamlet nr Melnik, 20.VIII.1989, leg. Weigel (CBG).

G R E E C E: Aliakmon, Trigono, V.1986, leg. Sattmann (NMW); Makedonia: Paikon, 1200 m, 10.VI.1989, leg. Malicky (NMW); E Katafito, NE Serre, 10.VIII.1988, leg. Jäch (NMW); Kato Vrontou, NE Serre, 10.VIII.1988, leg. Jäch (NMW); Pangaeon, 26.VII.1988, leg. Jäch, leg. Schödl (NMW); Drama - Livadero, IX.VIII.1988, leg. Jäch (NMW); Dipotama, 8.VIII.1988, leg. Jäch (NMW); Thrakia: E Mt. Sapka, 30.V.1989, leg. Malicky (NMW).

T U R K E Y: KIRKLARELI: Istranca Mts., different localities near Karacadag and Demirköy, 28-29.VII.1988, leg. Jäch (NMW).

## 2. *Hydraena (Haenya) elisabethae* JÄCH

*Hydraena elisabethae* JÄCH, 1992: 81.

D i a g n o s i s : Males of *H. elisabethae* are distinguished from *H. gracilis*, *H. anatolica* and *H. nike* sp.n. by the widely explanate margin (especially near the apex) of the elytra. Females of *H. elisabethae* are distinguished from these species by the more prominent and more distinctly projecting elytral tips.

A e d e a g u s (Figs. 3 - 5): Main piece 0.54 - 0.57 mm long, thus distinctly longer than in *H. gracilis*; apex more or less truncate (always slightly less acuminate than in *H. gracilis*); dorsal margin straight in apical sixth; subapical hump present; proximal half of main piece distinctly longer than in *H. gracilis*.

D i s t r i b u t i o n : Endemic to the Island of Thassos, northern Greece.

### 3. *Hydraena (Haenydra) graciloides* JÄCH

*Hydraena graciloides* JÄCH, 1988: 766.

**D i a g n o s i s :** Males of this species are characterized by the widely explanate elytral margins (even wider than in *H. elisabethae*) and by the distinctly truncate elytral apex. Females are characterized by the strongly produced (more than in *H. elisabethae*) elytral apices.

**A e d e a g u s (Fig. 6):** Very similar to that of *H. elisabethae*, but main piece 0.59 mm long, thus longer than that of any other species of the *H. gracilis* complex; apex obliquely (not horizontally) truncate; proximal half of main piece longer.

**D i s t r i b u t i o n :** So far known only from the Turkish province Bolu.

### 4. *Hydraena (Haenydra) anatolica* JANSSENS

*Hydraena anatolica* JANSSENS, 1963: 146. - JÄCH 1988. - JÄCH 1992.

**T y p e l o c a l i t y :** Small streams at Lake Abant, 1400 m, Bolu Province, northwestern Turkey.

**T y p e m a t e r i a l :** Holotype ♀ (by monotypy): "Anatolie Centrale : Bolu Lac d'Abant, alt 1.440m 1-3-IX-1962 Em. Janssens" (ISNB). I have examined this specimen which is definitely a member of the *H. gracilis* complex. Four species of the *Hydraena gracilis* complex occur in northern Turkey. Two of these, *H. graciloides* and *H. crepidoptera*, can be excluded due to the deviating external morphology of the females. Although I have no proof as to which of the two remaining species the holotype of *H. anatolica* belongs I suppose that it is a member of the more common one (known from 7 Turkish provinces). The second species (*H. nike* sp.n., described below) is so far known only from the Greek island Samothraki and from northeastern Turkey (3 provinces). Confirmation of this supposition must wait until additional material from the type locality of *H. anatolica* is examined. My search at Lake Abant in 1987 remained fruitless.

**A e d e a g u s (Figs. 22 - 26):** Main piece 0.47 - 0.53 mm long, its shape quite constant; apex pointed or obliquely truncate (as in *H. g. balcanica*), rarely almost horizontally truncate; apical half of main piece very long and slender (distinctly more slender than in *H. g. balcanica*), its dorsal margin usually gently curved in apical tenth, but without distinct hump near apical 0.16; proximal half of main piece slightly longer and more slender than in *H. g. balcanica*.

**D i s c u s s i o n :** The easternmost population of *H. gracilis balcanica* (Istranca Mts., European Turkey) is separated from the westernmost population of *H. anatolica* (Ömerli near Istanbul, Asian Turkey) by a remarkably narrow gap of only 140 km. The shape of the main piece is very constant in both of these populations and I found no trace of any morphological overlap. Thus I consider *H. anatolica* as a distinct species rather than a subspecies of *H. gracilis*.

**D i s t r i b u t i o n :** Northern and eastern Anatolia. Two ♀♀ recorded from Armenia by JANSSENS (1968) probably refer to *H. anatolica* as well.

**A d d i t i o n a l m a t e r i a l e x a m i n e d :**

**T U R K Y:** ISTANBUL: Ömerli, 18.V.1987, leg. Jäch (NMW); Agva, 19.V.1987, leg. Jäch (NMW); ERZINCAN: SE Refahiye, 10.VI.1989, leg. Jäch (NMW); GÜMÜSHANE: Zigana Pass, 30.V.1989, leg. Schödl (NMW); ERZURUM: Ovitdagı Pass, 2000 m, 31.V.1989, leg. Jäch (NMW); KARS: Sarikamis, 8.VI.1989, leg. Jäch (NMW); BITLIS: Mutki, 11.VI.1987, leg. Jäch (NMW); HAKKARI: 20 km W Semdinli, 3.VI.1987, leg. Jäch (NMW).

### **5. *Hydraena (Haenydra) nike* sp.n.**

**T y p e l o c a l i t y :** Fonias [= murderer] River, ca. 3 km SE Therma, Samothraki Island, Thrakia, northern Greece.

**T y p e m a t e r i a l :** Holotype ♂ (NMW): "GR - Samothrake 3 km SE Therma 14.6.1993 leg.M.Jäch (1)". Paratypes: 27 specimens labelled as holotype (NMW, CAN, MHNG, CHD).

**D i a g n o s i s :** 2.1 - 2.2 mm long. Externally not distinguishable from *Hydraena gracilis* and *H. anatolica*.

**A e d e a g u s** (Figs. 27 - 31): Main piece 0.45 - 0.47 mm long, thus shorter than in other species of the *H. gracilis* complex; apex obliquely (almost horizontally) truncate; apical half of main piece approximately as wide as in *H. gracilis*, thus distinctly wider than in *H. anatolica*; dorsal margin of apical half of main piece entirely evenly convex or slightly emarginate posterior to middle; thus a hump may appear near the middle of the dorsal margin of the apical half of the main piece, but never near the apical third which distinguishes the new species from *H. gracilis* and *H. elisabethae*; proximal half of main piece rather short (as in *H. gracilis*). Distal lobe as in the other species of the same group.

**D i s c u s s i o n :** Twenty specimens from northeastern Turkey (see below, under "additional material") agree with the type specimens of *H. nike* sp.n. in the shape of the apical half of the main piece of the aedeagus (see also JÄCH 1992: 82). However, their aedeagi (Figs. 32 - 36) differ from those of the type specimens in the considerably larger size (main piece of Turkish specimens: 0.48 - 0.52 mm long) and in the usually distinctly longer and more strongly curved proximal half of the main piece. Only 1 of the 9 Turkish aedeagi which I have examined has the proximal half of the main piece as short as the type specimens from Samothraki (see Fig. 36). Provisionally, I regard these specimens as conspecific with *H. nike* sp.n. However, it should be taken into consideration that they might represent a very closely related species which replaces *H. nike* sp.n. in Anatolia (cf. *H. gracilis* - *H. elisabethae*). More material from more Anatolian populations has to be examined.

**D i s t r i b u t i o n :** Samothraki Island (northern Greece), ? northeastern Turkey (Ordu, Gümüşhane, Artvin).

**E t y m o l o g y :** Named for Nike, the ancient Greek goddess of victory, a superb statue of which was found on Samothraki.

**A d d i t i o n a l m a t e r i a l :**

NE - T U R K E Y: ORDU: Gölköy, 28.V.1989, leg. Jäch, leg. Schödl (NMW); GÜMÜSHANE: Vaukdagi Pass, 1.VI.1989, leg. Jäch (NMW); ARTVIN: Artvin-Borcka, 4.VI.1989, leg. Jäch (NMW); W Borcka, 4.VI.1989, leg. Jäch (NMW).

### **6. *Hydraena (Haenydra) crepidoptera* JÄCH**

*Hydraena crepidoptera* JÄCH, 1992: 80.

**D i a g n o s i s :** Externally (see JÄCH 1992: Figs. 55, 56) and genitalically (see JÄCH 1992: Fig. 6) this species is quite different from the remaining species, but the morphology of the distal lobe clearly denotes it as a member of the *H. gracilis* complex.

**D i s t r i b u t i o n :** So far known only from two Turkish provinces: Sinop, Kastamonu.



Fig. 37: Known geographical distribution of the members of the *H. gracilis* complex; *Hydraena gracilis gracilis* (\\\\\\), *Hydraena gracilis balcanica* (||||), transition zone between *H. g. gracilis* and *H. g. balcanica* (XXXX), *H. elisabethae* (○), *H. nike* sp.n., including Turkish populations (△), *H. anatolica* (●), *H. graciloides* (★), *H. crepidoptera* (▲).

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