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New and little known Palearctic species of the genus *Hydraena* (s.l.) KUGELANN (Coleoptera: Hydraenidae)

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Abstract

Twenty-eight new species and one new subspecies of the genus *Hydraena* (s.l.) are described: *H. (Haenydra) crepidoptera* sp.n. [Turkey], *H. (Haenydra) elisabethae* sp.n. [Greece], *H. (Haenydra) pangaei* sp.n. [Greece], *H. (Haenydra) septemlacuum* sp.n. [Turkey], *H. (Haenydra) septemlacuum sinope* ssp.n. [Turkey], *H. (s.str.) ancyræ* sp.n. [Turkey], *H. (s.str.) audisioi* sp.n. [Algeria], *H. (s.str.) cervisophila* sp.n. [Turkey], *H. (s.str.) corcyra* sp.n. [Greece], *H. (s.str.) coryleti* sp.n. [Turkey], *H. (s.str.) cryptostoma* sp.n. [Tadzhikistan], *H. (s.str.) falcata* sp.n. [Turkey], *H. (s.str.) fritzi* sp.n. [Turkey], *H. (s.str.) guentheri* sp.n. [Turkey], *H. (s.str.) hieki* sp.n. [Georgia], *H. (s.str.) janczyki* sp.n. [Turkey], *H. (s.str.) kasyi* sp.n. [Turkey], *H. (s.str.) lapsissectilis* sp.n. [Turkey], *H. (s.str.) mariannae* sp.n. [Turkey], *H. (s.str.) mylasæ* sp.n. [Turkey], *H. (s.str.) nivalis* sp.n. [Turkey], *H. (s.str.) pakistanica* sp.n. [Pakistan], *H. (s.str.) pamirica* sp.n. [Tadzhikistan], *H. (s.str.) prusensis* sp.n. [Turkey], *H. (s.str.) richardimbi* sp.n. [Turkey], *H. (s.str.) schoedli* sp.n. [Turkey], *H. (s.str.) schuelkei* sp.n. [Tadzhikistan], *H. (s.str.) terebrans* sp.n. [Turkey] and *H. (s.str.) wrasei* sp.n. [Tadzhikistan]. New synonymies: *Hydraena (Haenydra) caucasica* KUWERT (= *amarantina* JANSSENS syn.nov.), *Hydraena (s.str.) eichleri* ORCHYMONT (= *carducha* JANSSENS syn.nov.), *Hydraena (s.str.) levantina* SAHLBERG (= *samia* JÄCH syn.nov.), *Hydraena (s.str.) smyrnensis* SAHLBERG (= *pulsata* ORCHYMONT syn.nov., *sanctimontis* JANSSENS syn.nov.) and *Hydraena (s.str.) subinflata* ORCHYMONT (= *dryops* JANSSENS syn.nov., *belfiorei* AUDISIO & DE BIASE syn.nov.). *Hydraena (Haenydra) terraevastatae* JÄCH is regarded as a subspecies of *H. plastica* ORCHYMONT. Lectotypes are designated for *H. (Haenydra) integra* PRETNER and *H. (s.str.) eichleri*. A check list of the Turkish species of the genus *Hydraena* (s.l.) is given.

Key words: Hydraenidae, *Hydraena*, *Haenydra*, new species, taxonomy, Algeria, Greece, Turkey, Georgia, Tadzhikistan, Pakistan.

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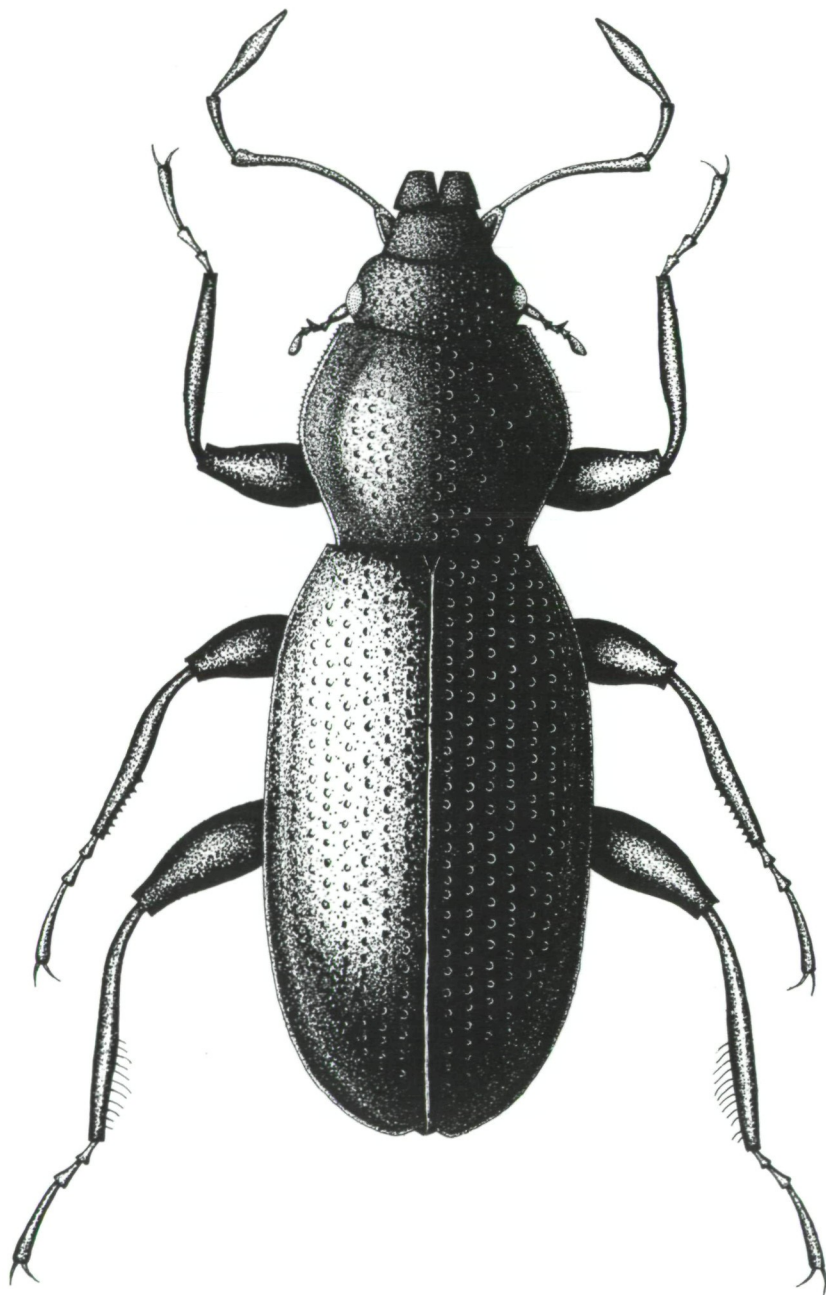


Fig. 1: *Hydraena elisabethae* sp.n., habitus

ACKNOWLEDGEMENT AND ABBREVIATIONS: The material used for this study was borrowed from the following institutions and private collections (abbreviations are used to refer to collections in the text):

BML	The Natural History Museum, London (E. de Boise) [= British Museum (Natural History)]
CAL	Coll. Balfour-Browne, Coll. Angus, London
CAN	Coll. Audisio, Napoli
CFL	Coll. Ferro, Lancenigo
CPL	Coll. Pretner, Ljubljana (B. Drovenik)
HUB	Museum der Alexander Humboldt Universität, Berlin (F. Hieke)
ISNB	Institut National des Sciences Naturelles, Bruxelles (K. Desender)
MHNG	Muséum d'Histoire Naturelle, Genève (I. Löbl)
MHNP	Muséum d'Histoire Naturelle, Paris (Y. Cambefort)
MNS	Staatliches Museum für Naturkunde, Stuttgart (W. Schawaller)
NMP	Národní Museum v Praze (J. Jelinek)
NMW	Naturhistorisches Museum, Wien
TMB	Természettudományi Múzeum, Budapest (O. Merkl, G. Szél)
ZMH	Universitetets Zoologiska Museum, Helsingfors (H. Silfverberg)
ZML	Zoological Museum, Lund (R. Danielsson)

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I. Subgenus *Haenydra* REY

In one of my previous papers (JÄCH 1988a) I adopted a generic level for the subgenus *Haenydra*, due to the deviating shape of the antennal cupule and the complete loss of parameres. There is no doubt, that *Haenydra* is a monophyletic taxon, with at least one basic synapomorphy: the loss of the parameres. The restricted and closed distribution also corroborates its monophyly. Several species related to *H. minutissima* WATERHOUSE, regarded as a distinct subgenus (*Hadrenya* REY) by several authors are more closely related to the subgenus *Hydraena* (s.str.) than to *Haenydra* (based on aedeagal and elytral characters). The metendosternite of *H. pygmaea* WATERHOUSE is morphologically intermediate between the metendosternites of *Haenydra* and that of *minutissima*. The reduction of the parameres in *minutissima* is clearly due to parallelism. The low number of elytral striae retained by some species (e.g. *minutissima*) is a plesiotypy which they share in common with the subgenus *Haenydra*. As I found no apotypic character present in all species of the *minutissima* group, there is no reason to regard them as a distinct subgenus any longer. They are here included in the subgenus *Hydraena* (s.str.). The question whether *Haenydra* should be treated as a subgenus or a genus is merely a technical one.

Hydraena (Haenydra) caucasica KUWERT

Hydraena caucasica KUWERT 1888: 121 (118). - KNISCH 1924. - ORCHYMONT 1935, 1943a (= *integra* PRETNER). - IENISTEA 1978.

Hydraena amarantina JANSSENS 1963: 21 (syn.nov.).

TYPE MATERIAL: Lectotype ♀ (designated by Orchymont 1935): "♀ \ Caucasus Meskisches Geb. [= N

Achalchiche] Leder (Reitter) \ Ex.Musaeo 1894 A.Kuwert \ TYPE \ A.d'Orchymont Rev. *Hydraena* (*Haenydra*) *caucasica* Kuwert Type"; deposited in the MHNP. One female paralectotype: "Kaukas O.Schneider \ ♀ \ Ex.Musaeo A.Kuwert 1894 \ Paratype \ A.d'Orchymont Rev. *Hydraena* (*Haenydra*) *caucasica* Kuwert ♀" is also deposited in the MHNP.

The two female type specimens of *caucasica* are very similar to females of *Hydraena amarantina* from Turkey, but elytra slightly longer, explanate margin slightly narrower in anterior half. The specimen from Georgia differs only in the very slightly shorter elytra. I am quite sure that these differences are within the limits of variability of *caucasica*. Thus I regard *amarantina* as a junior synonym of *Hydraena caucasica*.

ADDITIONAL MATERIAL EXAMINED:

T U R K E Y: GÜMÜŞHANE: Zigana pass, 30.V.1989, leg. Jäch (NMW); TRABZON: Maçka-Sumela, 30.V.1989, leg. Schödl (NMW); ARTVIN: W Borçka, 4.V.1989, leg. Schödl (NMW).

G E O R G I A: Achalchiche, coll. Müller (CPL) - 1 ♀ (probably a syntype of *integra* Pretner).

Hydraena (Haenydra) crepidoptera sp.n.

TYPE LOCALITY: Stream (2 - 3 m wide) on Diranaz Pass, north of Boyabat, 1000 m, Sinop Province, Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR-SINOP 27.5. Diranaz Paß lg.Jäch 89(13)". **Paratypes** (all deposited in the NMW): 1 ♀ from the type locality; 4 exs.: "TR-SINOP 27.5. w Yenikonak lg.Jäch 89 (11)"; and 1 ♂: "TR-KASTAMONU 89 İnebolu (9) leg. Jäch 25.5.". Six females from the type locality of *H. septemlacuum* ssp. *sinope* (Kastamonu), which I do not consider as paratypes (due to the lack of males) probably belong to *crepidoptera*.

DIAGNOSIS: 2.3 - 2.5 mm long. General habitus (Figs. 55, 56), colouration, structures of surface (punctuation, striation of elytra) as in other Turkish species of the subgenus.

Hydraena crepidoptera sp.n. deviates externally from other Turkish species in a few conspicuous characters: elytra considerably wider than in *gracilis* GERMAR, *cata* ORCHYMONT, *integra* PRETNER, *graciloides* JÄCH, *lazica* JANSSENS, *caucasica* KUWERT, *fontiscarsavii* JÄCH and *plastica* ORCHYMONT; explanate margin of elytra very wide and parallel-sided, wider than in *graciloides* and *caucasica*.

♂♂: Structure of legs as in *graciloides*, middle tibia straight, not emarginate in distal half, with ca. 7 - 12 small denticles along the inner margin, hind tibiae with long hairs along inner margin; elytra very long, apically truncate, with only a very small sutural excision.

♀♀: The 3 female paratypes differ from the males in the unmodified legs and in the more widely explanate elytral apices; sutural excision very small (as in male) in two of the specimens, deep and conspicuously U-shaped in the third female (type locality).

Aedeagus (Fig. 6): The main piece of *crepidoptera* sp.n. differs clearly from that of *gracilis* and related species (*H. graciloides* JÄCH, *H. cf. gracilis* from Gölköy) in the presence of a small, but very conspicuous preapical excision on the dorsal margin of the main piece; proximal half of the main piece longer than in *gracilis* and *H. cf. gracilis* (Gölköy), but shorter than in *graciloides*. Distal lobe quite similar to *gracilis*.

Due to the morphology of the aedeagus, *H. crepidoptera* is closely related to *H. gracilis*, *graciloides* and *czernohorskyi* MÜLLER. The widely explanate elytral margin and the excision in the main piece of the aedeagus are clearly apotypic character states.

DISTRIBUTION: So far known only from northern Turkey (Sinop, Kastamonu).

ETYMOLOGY: Greek, *crepis* (socle, basement) and *pteron* (wing). Refers to the widely explanate margin of the elytra.

Hydraena (Haenydra) elisabethae sp.n.

TYPE LOCALITY: Little spring (ca. 40 m long), above the village of Potamia, eastern Thassos, northern Greece.

TYPE MATERIAL: **Holotype** ♂ (NMW): "GR-Thassos 1991 Potamias(1) leg. M.Jäch 9.IX.". **Paratypes** (all deposited in the NMW): 3 ♂♂ + 7 ♀♀: "GR-Thassos 13.IX. Potamias (11) leg. M.Jäch 1991"; 1 ♀: "GR-Thassos (24) Prinos 16.10.80 leg. Malicky".

DIAGNOSIS: 2.3 - 2.5 mm long. General habitus (Fig. 1), colouration, structures of surface (shape of head and pronotum, punctuation, striation of elytra and modifications of hind and middle tibiae of male) as in *gracilis* and many other species of the subgenus.

♂♂ (Fig. 1): Males of *elisabethae* sp.n. differ from males of Greek *Hydraena gracilis* in the shape of the explanate margin of the elytra, which is distinctly developed and evenly wide from the shoulders to the elytral apex, which makes the elytra to appear longer and more parallel-sided and the elytral apex to appear wider than in *gracilis*.

Males of *H. saga* ORCHYMONT from Serbia and Romania are very similar to males of *elisabethae* sp.n.; they differ from *elisabethae* sp.n. mainly in the smaller pronotum, the slightly wider elytra and the posterior inner margin (area of the denticles) of the middle tibiae being completely straight (not slightly emarginate as in *elisabethae* sp.n. and *gracilis*).

♀♀: Elytral margin of females of *elisabethae* sp.n. wider than in *gracilis*, elytral apices slightly extended, thus elytral tips on either side of the excision more prominent and more distinctly projecting than in *gracilis*.

Aedeagus (Fig. 5): Differs from (Greek specimens of) *gracilis* only in the slightly longer proximal half of the main piece and the slightly more angulate dorsal margin of the apical half of the main piece; apex of main piece always truncate in *elisabethae* sp.n., acuminate in *gracilis*. Distal lobe not significantly different from *gracilis*.

DISTRIBUTION: Endemic to the island of Thassos (northern Greece), where it replaces the wide-spread *H. gracilis*.

ETYMOLOGY: Named for my friend Elisabeth M. Preuler, who "discovered" the type locality during our excursion to the mountains of Thassos and for providing the habitus illustration.

Hydraena (Haenydra) gracilis GERMAR

Hydraena gracilis is widely distributed (Spain and Great Britain to the Caucasus). Its external and aedeagal morphology is quite variable: shape and size of pronotum, width of elytra, shape of elytral apices of female, size of aedeagus, shape of apex of main piece.

Several populations (mainly from southern Europe) with slightly deviating characters clearly demonstrate genetic isolation: Most specimens from Turkey differ from European material (Fig. 2) in the longer and more strongly curved basal half of the main piece and in the dorsal margin of the apical half of the main piece being less sinuous. Specimens from the Pangaeon (Greece) differ from other populations from northern Greece in the distinctly smaller size and a more angulate dorsal margin of the apical half of the main piece. I have seen one specimen from Algeciras (Spain) which deviates in its shorter aedeagus (apical half of main piece stout and wide, dorsal side strongly sinuous before apex). I have examined only one male from Great Britain (Devon), which differs from Central European specimens in the wider pronotum (lateral margin more sinuous) and the slightly more sinuous apex of the main piece of the aedeagus.

All the specimens mentioned above probably do not represent more than isolated populations or subspecies as I was not able to find significant and constant distinguishing features within the same geographical area. At present I can separate only one species from *gracilis*, which differs

significantly in aedeagal characteristics and also in external features. This species is described herein as *H. elisabethae* sp.n. (Thassos, Greece). *Hydraena graciloides*, described by JÄCH (1988b) and *Hydraena crepidoptera* sp.n., described herein, also belong to the *gracilis* complex, but despite their aedeagal resemblance with *gracilis*, their external morphology is astoundingly different.

I have examined several males from a river near Gököl (Ordu, Turkey), one male from a stream at the Vaukdagi pass (Gümüşhane, Turkey) and one male from a stream near Borçka (Artvin, Turkey), which differ slightly but significantly from other Turkish specimens (Fig. 3) of *gracilis* in the shape of the main piece of the aedeagus (Fig. 4): dorsal margin of apical half of main piece evenly convex, thus apical half of main piece distinctly wider than in *gracilis*; ventral margin of proximal half of main piece not as evenly curved as in *gracilis*; concavity situated further distal; radius of concavity smaller. The distal lobe is not significantly different from *gracilis*. I could not find significant external differences between typical Turkish *gracilis* and the specimens mentioned above. The constant aedeagal differences in these males usually would suggest a specific separation. But I have examined one male from Borçka (Artvin, Turkey) with the apical half of the main piece just like the Gököl material, but the proximal half of the main piece more or less as in other Turkish specimens from the same area. More material must be examined to find out whether these aedeagal differences are sufficient to describe a new species.

The female holotype of *Hydraena anatolica* JANSSENS, described from a stream near Lake Abant definitely belongs to *Hydraena gracilis* (or to one of its - hitherto unrecognized - allies).

Hydraena (Haenydra) integra PRETNER

Hydraena integra PRETNER 1931: 110. - ORCHYMONT 1935. - IENISTEA 1978. - JÄCH 1988b.

Hydraena ponticola JANSSENS 1968b: 70. - JÄCH 1988b.

TYPE LOCALITY: Akhalzikhe, Georgia.

TYPE MATERIAL: As I have already published (JÄCH 1988b), the type series of *Hydraena integra* (1 ♂ and 2 ♀♀, all deposited in the CPL) consists of two different species. The single male (lectotype, by present designation) represents a widely distributed species (see below), whereas the two females (of which I have examined one) clearly belong to *Hydraena caucasica* (= *amarantina*).

I have examined the holotype ♀ (ISNB) of *Hydraena ponticola*, described from Artvin (Turkey), which undoubtedly belongs to *Hydraena integra*.

The single female ("Caucasus. Meskisch.Gb. [= N Akhalciche, Georgia] Leder Reitter") of the NMW, which was mentioned by PRETNER (1931: 113) and ORCHYMONT (1935: 4) belongs to *Hydraena integra*.

The original description of *H. integra* (PRETNER 1931) is provided with an exceptionally good illustration of the aedeagus.

Females of *integra* differ from females of *gracilis* in the distinctly wider body proportions and the rounded (not excised) elytral apices.

DISTRIBUTION: Northern Turkey. Apart from the material already mentioned by JÄCH (1988b) I have collected *integra* in the following Turkish provinces: Ankara, Erzincan, Erzurum, Artvin. The species was collected from sea level up to elevations of 2500 m.

Hydraena (Haenydra) pangaei sp.n.

TYPE LOCALITY: Little spring on Pangaeon Mountain, north of Domatia, northern Greece.

TYPE MATERIAL: Holotype ♂ (NMW): "GR-PANGAEON 26. 7.1988 (20) leg. M.Jäch". Paratypes (all deposited in the NMW): 8 exs. labelled as the holotype and one ♂: "26.7.1988, GR(20) PANGAEON, Südhang

n.Domatia, leg. Schödl".

DIAGNOSIS: This species is characterized by its large size (2.5 - 2.7 mm long), by the large and angulate pronotum, by the widely explanate elytra.

♂♂ (Fig. 57): Elytral apices slightly extended, together or separately rounded. Middle tibia straight, not emarginate in distal half, with ca. 5 - 8 small denticles along the inner margin, hind tibia with long hairs along inner margin.

♀♀ (Fig. 58): Elytral apices extended and separately gently rounded, not acuminate; degree of extension variable. Tibiae unmodified.

Aedeagus (Fig. 11): Proximal half of main piece angulate, apex of main piece rounded. Distal lobe resembling *H. emarginata* REY, *samnitica* FIORI, *saga* ORCHYMONT and related species, but considerably larger than in these species.

Hydraena pangaei sp.n. differs from Greek specimens of the *Hydraena excisa-exclusa* complex in the larger size and - in the male - in the slightly extended elytral apices and - in the female - in the more widely rounded and more distinctly explanate elytral tips.

Other Greek species of the subgenus differ clearly in the narrower body proportions.

From the phylogenetic and zoogeographic point of view this species is very interesting, as its closest relative (*H. samnitica*) lives in Italy.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Named in reference to the type locality.

Hydraena (Haenydra) planata KIESENWETTER

Hydraena planata KIESENWETTER 1849: 179. - KNISCH 1924. - PRETNER 1931. - ORCHYMONT 1935. - IENISTEA 1978.

TYPE MATERIAL: The lectotype ♂ (designated by ORCHYMONT 1935) of *Hydraena planata* is deposited in the ZMS. According to the original description, there should be two syntypes (collected by Kolenati in the province of Elisabethpol [= Kirovabad, Azerbaydzhan]): one in the "Berliner Museum" [= HUB] and one in the "Sammlung des Verfassers" [= today: ZSM]. The HUB contains three specimens of *planata* which were collected by Menetries and thus cannot be regarded as syntypes. Two males deposited in the NMW: ("Planata Kies angustata Kolen Elisabethpol \ Kolenati") agree very well with the original description and certainly belong to the same series of specimens as the two syntypes.

The aedeagus of *planata* was published by ORCHYMONT (1935). Females of *planata* are clearly distinguished from females of *caucasica* by the wider pronotum (sides angulate) and the longer, apically strongly acuminate elytra.

ADDITIONAL MATERIAL EXAMINED:

"Caucasus Swanetien, Leder, Reitter" (NMW).

G E O R G I A: Achalciche (CPL).

Hydraena (Haenydra) plastica ssp. *terraevastatae* JÄCH stat.nov.

Hydraena plastica ORCHYMONT 1943a: 3. - JANSSENS 1965. - IENISTEA 1978. - JÄCH 1988b.

Hydraena terraevastatae JÄCH 1988b: 768.

In 1988 I collected specimens of the "true" *Hydraena plastica* at the type locality (Ulu Dağ near Bursa, Turkey). The species which I had previously believed to be *plastica* (see JÄCH 1988b) turned out to be a new species and is described below as *Hydraena septemlacuum* sp.n. The "true" *plastica* is very similar to the specimens described by JÄCH (1988b) as *Hydraena terraevastatae* and can be treated as a subspecies.

The aedeagus of the ssp. *terraevastatae* (Fig. 10) differs from that of *plastica plastica* (Fig. 9)

mainly in the shape of the apex of the main piece, which is longer and narrower in *terraevastatae*; the dorso-apical projection is distinct and prominent in ssp. *plastica*, but small and inconspicuous in ssp. *terraevastatae*. I could not find significant external distinguishing characters between the two subspecies.

The subspecies *terraevastatae* is separated geographically from the nominate subspecies by a very wide gap (1000 km). *Hydraena plastica plastica* is only known from the Ulu Dağ near Bursa in western Turkey, while *H. p. terraevastatae* is widely distributed in eastern Turkey (Erzurum, Kars, Muş, Bitlis, Van, Hakkari). No specimens were so far collected in the Pontus or in the Taurus Mountains, which connect the mountains of western and eastern Turkey.

Hydraena (Haenydra) septemlacuum sp.n.

Hydraena plastica, JÄCH 1988b (not ORCHYMONT 1943a).

TYPE LOCALITY: Stream in Yedigöller National Park, Bolu Province, northwestern Turkey (Fig. 53).

TYPE MATERIAL: **Holotype** ♂ (NMW): TR 14.6.1987 Yedigöller bei Bolu, Jäch (78)". **Paratypes:** 7 exs. labelled as the holotype (6 exs. in NMW and 1 ex. in CAN); 1 ♂ (holotype of *Hydraena septemlacuum sinope* ssp.n.): "TR-ORDU 28.5. s.Gölköy (18) leg. Schödl 89" (NMW); 1 ♀: "TR-ORDU 28.5. Gölköy (18) leg. Jäch 1989" and 3 exs.: "TR-KASTAMONU (7) Kayneak Paß leg. Jäch 25.6.89" (in NMW). Two females from the type locality of *crepidoptera* (Sinop), which I do not consider as paratypes most probably belong to this species.

DIAGNOSIS: 2.3 - 2.5 mm long. General habitus, colouration, structures of surface (punctuation, striation of elytra) as in other Turkish species of the subgenus.

Although the morphology of the aedeagus suggests a phylogenetic relationship with *plastica*, the external morphology of *septemlacuum* sp.n. is very similar to *crepidoptera* sp.n. (described above). Elytra parallel-sided and widely explanate in both genders.

♂♂ (Fig. 59): Males of *septemlacuum* sp.n. differ from males of *crepidoptera* sp.n. mainly in the shape of the middle and hind tibiae, which are slightly but distinctly enlarged along the interior margin of the apical third. Elytra usually slightly more parallel-sided and less wide than in *crepidoptera* sp.n.

♀♀ (Fig. 60): Elytral apex of *crepidoptera* sp.n. usually longer (more distinctly extended) and sometimes not as wide as in *septemlacuum* sp.n.

Aedeagus (Fig. 7): Main piece stout and moderately long, apically widened, somewhat similar to the aedeagus of *plastica* and *khnzoriani* JANSSENS, but differs clearly in the more evenly rounded dorsal margin. Distal lobe quite complex, with a very long and strongly curled thin flagellum.

The aedeagus of the specimens from Gölköy (Fig. 8) and from the Kayneak Pass (subspecies *sinope* ssp.n.) differs in the shorter main piece; distal half of main piece more straight, dorso-apical projection very prominent.

Although I could not find external differences between the population from Bolu and those from Ordu and Kastamonu, I am convinced that the aedeagal differences justify a taxonomic separation. I regard the specimens from Ordu and Kastamonu as a distinct subspecies (*Hydraena septemlacuum sinope* ssp.n.). The ♂ from Gölköy is designated as holotype.

DISTRIBUTION: Northern Turkey (Bolu) - subspecies *septemlacuum* sp.n.; (Ordu, Kastamonu, Sinop) - subspecies *sinope* ssp.n.

ETYMOLOGY: Latin, septem (seven) and lacus (lake). Refers to the type locality: Yedigöller (Turkish) - seven lakes.

The name "sinope" refers to the Province of Sinop (ancient name: Sinope), which is one of the 3 provinces, where the new subspecies was found.

II. Subgenus *Hydraena* s.str. KUGELANN

II. 1. Little known species:

Hydraena (s.str.) *ariana* JANSSENS

Hydraena ariana JANSSENS 1962: 8.

TYPE LOCALITY: Bashgul Valley, 1100 - 1200 m, northeastern Afghanistan.

TYPE MATERIAL: Holotype (♂) in TMB, 27 paratypes in TMB and ISNB. I have seen 3 paratypes (ISNB).

DIAGNOSIS: 2.0 - 2.1 mm long. This species is very similar to specimens (NMW) which I believe to be *H. scythica* JANSSENS. Middle tibia of male hardly noticeably curved, with a very small subapical enlargement on the inner margin. Pronotum densely shagreened, elytra elongate, densely and coarsely punctate. There are a few differences in the shape of the pronotum (narrower and more heart-shaped in *ariana*) and in the elytral punctuation (more regularly aligned in *scythica*), but I have not seen enough material to decide which of these features are significantly different and which are variable.

Aedeagus (Fig. 47): Main piece strongly curved in basal third, then more or less straight; phallobasis more or less symmetrical, apex with 4 small inconspicuous setae. Parameres simple, subequal in length. Distal lobe short and sinuous.

DISTRIBUTION: So far known only from the type locality.

Hydraena (s.str.) *armeniaca* JANSSENS

Hydraena armeniaca JANSSENS 1968a: 111. - IENISTEA 1978.

Eight specimens which I collected in a stream on the Işıkdağı Pass (12.VI.1989, Ankara Province, Turkey) agree very well with the description of *H. armeniaca*, described from Armenia. I have not seen the holotype ♂ of *H. armeniaca*, which is deposited in the Khnzorian private collection (Yerevan, Armenia). Although the aedeagus of the holotype was crunched under a cover glass, it can be inferred from the photograph in the original description (JANSSENS 1968a, Fig. 2), that the differences (if there are any) between the aedeagus of the holotype and the aedeagus of the specimens from Ankara (Fig. 32) must be minimal. The apical half of the hind tibia of the holotype seems to be stronger than in the Işıkdağı specimens.

Aedeagus of the Ankara specimens (Fig. 32): Main piece strongly curved and twisted in apical half, with approximately 3 ventral and 5 dorsal setae. Distal lobe comparatively large, with several lobes, which are not very strongly sclerotized. Right paramere short, not reaching the apex of the main piece, apically enlarged; left paramere as long as main piece, apically spatulate.

Hydraena (s.str.) *carica* JÄCH

Hydraena carica JÄCH 1988a: 255.

Following study of about 100 specimens from 12 different localities in Turkey (Muğla, Antalya), I think that *carica* has to be regarded as a subspecies of *Hydraena griphus* ORCHYMONT. But the problem requires further detailed studies, which will be carried out later, as there seem to be additional subspecies in the more eastern provinces (Fig. 43).

***Hydraena* (s.str.) *colchica* JANSSENS**

Hydraena colchica JANSSENS 1963: 16. - JANSSENS 1968b. - IENISTEA 1978. - JÄCH 1987a (= *hiekei* sp.n.).

TYPE LOCALITY: Hamsi Köy, 1200 m, Trabzon, northern Turkey.

TYPE MATERIAL: The holotype ♂ and one male paratype are deposited in the ISNB. I have seen both specimens.

2.0 - 2.1 mm long. As I had not seen the holotype of *colchica* in 1987 and as the illustration of the aedeagus of the holotype of *colchica* depicted in the original description (JANSSENS 1963) had been crunched I have erroneously determined 5 specimens from Georgia as *colchica* (see JÄCH 1987a). These 5 specimens are described below as *Hydraena hiekei* species nova.

Aedeagus (Fig. 36): Main piece short and intricate, with two preapical and approximately 5 dorsal setae, apex more or less truncate. Distal lobe simple, with a short and blunt appendix. Right paramere short, its apex bluntly truncate, left paramere long and curved.

DISTRIBUTION: Northern Turkey (Trabzon, Gümüşhane, Artvin).

ADDITIONAL MATERIAL EXAMINED:

T U R K E Y: ARTVIN: Borçka, 4.VI.1989, leg.Jäch, leg.Schödl (NMW); GÜMÜŞHANE: Zigana Pass, 30.V.1989, leg. Jäch (NMW).

***Hydraena* (s.str.) *dolichogaster* JANSSENS**

Hydraena dolichogaster JANSSENS 1965: 92. - IENISTEA 1978.

TYPE LOCALITY: "Grèce", probably Greece.

According to HORN & KAHLE (1990) George Schramm (1870 - ?) worked mainly in Spain and Morocco. As *Hydraena dolichogaster* has not been found in Greece in recent years, the locality ("GRECE") may be due to incorrect labeling.

TYPE MATERIAL: Holotype ♀ (ISNB): "♀ \ G R E C E COLL. SCHRAMM [printed] \ TYPE \ E. Janssens det., 195 *Hydraena* s.str. *dolichogaster* E.JANSSENS".

The female holotype (Fig. 61) is somewhat teneral, 2.1 mm long and very similar to *Hydraena angustata* STURM, which is known from Slovenia and Croatia. Some old specimens labelled "Andalusia" (doubtful locality data) are deposited in the NMW. Elytral margin in both species finely denticulate in apical third. *Hydraena angustata* is a very variable species, elytra flat in some specimens, more convex in others. Length of the elytra and width of explanate elytral margin also quite variable in *H. angustata*.

Due to the variability of *H. angustata* there may be specimens which cannot be distinguished from the holotype of *H. dolichogaster* externally.

I have examined the last abdominal sclerites of the holotype of *H. dolichogaster* and one female of *H. angustata* from Croatia. Apex of last tergite excised in *dolichogaster*, entire in *angustata*. Apex of last sternite truncate (very slightly excised) in *angustata*, but evenly convex in *dolichogaster*. Due to these differences I think that *dolichogaster* is a species propria, closely related to *H. angustata*.

***Hydraena* (s.str.) *eichleri* ORCHYMONT**

Hydraena eichleri ORCHYMONT 1937: 217. - IENISTEA 1978. - JÄCH 1987a.

? *Hydraena carducha* JANSSENS 1980: 335 (= ? syn.nov.). - JÄCH 1988b.

TYPE MATERIAL: Lectotype ♂ (by present designation): "Tyflis, Caucas. 31.III.1918 Dr.W.Eichler \ 5521 \ TYPE \ A.d'Orchymont det. *Hydraena* (s.str.) *eichleri* m. ♂ \ Prep.Micr. No 658231 \ E.Janssens det., 195 *Hydraena* s.str. *eichleri* ORCHYMt."; deposited in the ISNB. The second syntype (♀): "5521 \ Tyflis, Caucas 21.V.1918" is housed in the PAW.

Although the aedeagus of the lectotype of *eichleri* was crunched under a cover glass and its original shape can only be assumed I am quite sure that it agrees in every detail with specimens which I collected in Kurdistan and I believe to be *carducha* (see JÄCH 1988b, Fig. 7). As long as I am unable to examine the holotype ♀ of *carducha* (since many years on loan in coll. Ienistea and thus inaccessible) I regard *carducha* as a junior synonym of *eichleri*.

Hydraena (s.str.) *filum* SAHLBERG

Hydraena filum SAHLBERG 1908: 28. - KNISCH 1924. - ORCHYMONT 1943b. - JANSSENS 1965. - JÄCH 1985, 1986. - SILFVERBERG 1987. - AUDISIO 1990.

TYPE LOCALITY: Lesbos, Greece.

TYPE MATERIAL: The lectotype ♂ and one paralectotype ♀ are deposited in the ZMH. One paralectotype ♀ is housed in the NMW. The first type designation for *H. filum* was made by ORCHYMONT (1943b), which makes the designation by JÄCH (1986) superfluous.

I have examined the aedeagus of the male lectotype (Fig. 22). It differs from *finita* in the more sinuous shape of the main piece, in the shorter distal lobe and in the shape of the apical third of the distal lobe.

DISTRIBUTION: So far known only from the island of Lesbos where this species is probably endemic. Orchymont collected more than hundred specimens at several localities. The single female from Ekis Dere (between Tire and Aydin) which ORCHYMONT (1943b) assigned to *filum*, almost certainly belongs to *Hydraena mylasae* sp.n., described below.

Hydraena (s.str.) *finita* ORCHYMONT

Hydraena finita ORCHYMONT 1943b: 3. - JANSSENS 1965. - JÄCH 1985. - AUDISIO 1990.

TYPE LOCALITY: Tachtali Köy, 400 m, near Buca, southeast of Izmir, Turkey.

TYPE MATERIAL: The holotype ♂ and ca. 200 paratypes are deposited in the ISNB. Two paratypes (♂ + ♀) are housed in the NMW.

Females of *finita* are easily recognized by the extended and acuminate elytral apices.

Aedeagus (Fig. 23): I have examined one aedeagus from the surroundings of Izmir (Tachtali Köy, ISNB) and two from Chios (Karyaes, NMW). The specimens from Chios differ from the Izmir specimen in their distal lobe, which is slightly more distinctly dilated before the apex.

DISTRIBUTION: So far known only from the island of Chios (Greece) and the surroundings of Izmir (Turkey), where I collected one ♀ in the Ayrancilar streamlet (ca. 20 km SW of Manisa).

Hydraena (s.str.) *janeceki* JÄCH

Hydraena janeceki JÄCH 1987b: 52.

Two specimens (♀ + ♂) were collected by Martens and Pieper in the Iran (Elburz, Mazandaran, 25 km S Amol, western tributary of Heraz, 490-560 m, 29.VI.1978), deposited in the MNS. The male differs from the paratype (♂) of the NMW in the narrower body form (pronotum and elytra) and the more distinctly acuminate elytra.

Hydraena (s.str.) *levantina* SAHLBERG

Hydraena levantina SAHLBERG 1907: 30. - KNISCH 1924. - ORCHYMONT 1943b. - JANSSENS 1965. - JÄCH 1985, 1986. - SILFVERBERG 1987. - AUDISIO 1990.

Hydraena samia JÄCH 1986: 254 (= syn.nov.). - AUDISIO, 1990.

TYPE LOCALITY: Lesbos, Greece.

TYPE MATERIAL: The lectotype ♂ and one paralectotype ♀ are deposited in the ZMH. The first type designation for *H. levantina* was made by ORCHYMONT (1943b), which makes the designation by JÄCH (1986) superfluous.

In May 1991 I examined a number of streams and rivers in western Turkey in order to find more material of *Hydraena levantina* and *H. samia*. Although I (together with 3 colleagues) spent about two weeks in that area I was unable to find any specimen.

Eventually I examined the aedeagus of the considerably teneral lectotype of *levantina*. This aedeagus is unexpectedly similar to that of *samia*, which is quite surprising since the two specimens are easily distinguished according to external characters: pronotum and elytra of *levantina* wider, elytra of *samia* distinctly longer, middle tibia of *levantina* curved. Despite the external differences *H. samia* must be considered a junior synonym of *levantina*.

Hydraena levantina is so far recorded from Lesbos (type locality), Chios, Izmir (one female paralectotype) and from Samos (? subspecies). It seems to be common only on the island of Chios, where Orchymont collected 63 specimens in 1933.

More material has to be examined to find out whether the population from Samos deserves subspecific ranking.

Hydraena (s.str.) *malickyi* JÄCH

Hydraena malickyi JÄCH 1989: 194. - AUDISIO 1990.

DISTRIBUTION: This species was described from Serifos (JÄCH 1989) and it was believed to be endemic to that island. In 1990 I found several populations on two other Greek islands: Sifnos and Milos. Thus the distribution of *H. malickyi* seems to be delimited by these 3 islands.

Hydraena (s.str.) *ovata* JANSSENS

Hydraena ovata JANSSENS 1961: 3.

TYPE LOCALITY: Ghorband Valley, southeast of Kabul, Afghanistan.

TYPE MATERIAL: I have seen the holotype ♀: "Khvajjah Ghar at Mazanah 13.5.1959. Alt.2360m \ Afghanistan K.Lindberg \ A. 821 \ TYPE \ E.Janssens det., 1961 *Hydraena* s.str. *ovata* n.sp." and one female paratype, which are deposited in the ZML. I did not examine the second paratype (♀), which should be housed in the ISNB.

DIAGNOSIS: General habitus (Fig. 81), shape and punctuation of pronotum and punctuation of elytra more or less as in *pakistanica* sp.n. (Fig. 80), which differs only in the less ovoid (more parallel-sided) and slightly more convex elytra (shoulders more or less reduced due to brachyptery) and in the slightly wider metasternal plaques. Elytra densely punctate, some of the striae slightly irregular. Interstices between elytral punctures flat and (partly) superficially reticulated in *ovata*, slightly convex and glabrous in *pakistanica* species nova.

Resembles *Hydraena schuelkei* sp.n. (general appearance, wide pronotum, irregular elytral punctures), from which it differs in the slightly larger size (2.1 mm), in the less distinctly cordiform pronotum (lateral margins of pronotum not distinctly concave behind middle), in the wider explanate margin of the elytra and mainly in the conspicuously wide metasternal plaques (separated by less than one diameter).

It differs from *Hydraena wrasei* sp.n. (among other characters) mainly in the wider metasternal plaques, wider pronotum and the less dense and less coarse elytral punctuation.

Male unknown.

Hydraena* (s.str.) *persica* JANSSENSHydraena persica* JANSSENS 1980: 333.

Nine specimens collected by Martens and Pieper in the Iran (Valley east of Fasham, 2350-2900 m, Elburz mts. north of Teheran; MNS, NMW) and one male (Elburz, Kendevan Pass, 3000 m, leg. Ebner, VII.1936; NMW) most probably belong to *persica*. This species was described from a single male, which is deposited in the NMP. The aedeagus of the holotype was crunched under a cover glass and mutilated (see original description, JANSSENS 1980: Fig. 1). But according to the characters mentioned in the original description I am quite sure that the ten specimens collected by Martens, Pieper and Ebner represent *Hydraena persica*.

The Fasham specimens differ from the single Kendavan male in the smaller size, in the narrower, apically more distinctly acuminate elytra and in the slender male hind tibia.

Hydraena persica is very closely related to *Hydraena eichleri*, from which it differs in the more distinctly curved hind tibia of the male.

Hydraena* (s.str.) *phallerata* ORCHYMONTHydraena phallerata* ORCHYMONT 1944a: 5. - JANSSENS 1965. - JÄCH 1988a, 1988b.*Hydraena byzantina* JANSSENS 1965: 42. - IENISTEA 1978. - JÄCH 1988a, 1988b.

TYPE LOCALITY: Dimirci Köy, north of Istanbul, European side of the Bosphorus, northwestern Turkey.

I have examined the holotype ♂ and 3 paratypes of *Hydraena phallerata* (ISNB) and I have seen the holotype ♂ of *byzantina* (ISNB), which is a junior synonym of *phallerata*.

Aedeagus (Fig. 17): Main piece long and slender, strongly curved in basal third, slightly sinuous in apical half, with one group of subapical and one group of dorsal (curved) setae (compare *H. philyra* ORCHYMONT). Distal lobe short, gently arched. Parameres almost as long as main piece, enlarged apically.

DISTRIBUTION: This species is so far known only from Istanbul (both sides of the Bosphorus), and probably endemic to that province.

ADDITIONAL MATERIAL EXAMINED:

T U R K E Y: ISTANBUL: Ağva, 19.V.1987, leg. Jäch (NMW); Şile - Ağva, 19.V.1978, leg. Jäch (NMW).

Hydraena* (s.str.) *phassilyi* ORCHYMONTHydraena phassilyi* ORCHYMONT 1931: 28. - ORCHYMONT 1944a. - CHIESA 1959. - JANSSENS 1965. - GEORGUIEV 1971. - IENISTEA 1978.

TYPE LOCALITY: Vlasia River, south of Hagios Vlasios, Peloponnesos, Greece.

TYPE MATERIAL: I have seen the holotype ♂ (ISNB): "♂ \ Morea H. Vlasios S. Tor. Vlasia Alt. 750m 30 IV 1930 d'Orchym. \ Type \ A. d'Orchymont det. Phassilyi d'Orchymont \ E. Janssens det., 195 *Hydraena* s.str. *phassilyi* Orchym." and 2 of the 39 paratypes (ISNB).

DIAGNOSIS: Due to its wide distributional range, this species displays some morphological variability. It differs from *pulchella* GERMAR generally in the somewhat darker colouration and in the male middle tibiae being more distinctly curved and more distinctly enlarged preapically. Length of maxillary palpi slightly variable in both species, but generally slightly longer in *pulchella*.

Aedeagus (Fig. 21): The aedeagus of *H. phassilyi* differs from *pulchella* (see BERTHELEMY 1964, Fig. 19) in the longer and more slender main piece and the shape of the distal lobe. The apical bunch of setae suggests a very close phylogenetic relationship between these two species.

DISTRIBUTION: Yugoslavia (Crna Gora), Greece (except islands), Turkey (Kırklareli, Balıkesir, Çanakkale, Muğla).

***Hydraena* (s.str.) *philyra* ORCHYMONT**

Hydraena philyra ORCHYMONT 1944a: 6. - JANSSENS 1965.

TYPE LOCALITY: Ermeni Köy, 75 m, Kapıdağ Peninsula, Balıkesir Province, northwestern Turkey.

Aedeagus (Fig. 18) very similar to that of *H. phallerata*, from which it differs in the shape of the apical half of the main piece (apex pointed) and in the longer distal lobe.

DISTRIBUTION: So far known only from two Turkish provinces (Balıkesir, Çanakkale).

MATERIAL EXAMINED:

T U R K E Y: BALIKESIR: Kapıdağ, 3.VIII.1988, leg. Jäch (NMW); ÇANAKKALE: W Kalkim, 3.VIII.1988, leg. Jäch (NMW).

***Hydraena* (s.str.) *pseudoriparia* ORCHYMONT**

Hydraena pseudoriparia ORCHYMONT 1945: 4. - JANSSENS 1965.

TYPE LOCALITY: Gök Dere, near Bursa, 280 m, northwestern Turkey.

TYPE MATERIAL: The holotype ♂: "ASIA MINOR occid. Bursa Gök Dere 280 m St.120.VI.'31 (Orch) \ A.d'Orchymont det: *Hydraena* (s.str.) *pseudoriparia* \ TYPE \ prépar.genit. No 1312631 \ E.Janssens det., 195 *Hydraena* s.str. *pseudoriparia* ORCHYMt." and two ♀ with similar labels are deposited in the ISNB.

In 1988 I collected 6 specimens (Turkey, Çanakkale Province: 5 km W of Yenice and near Kalkim) which are very similar to the types of *pseudoriparia*, which I have examined (structure of meso- and metatibia, metasternal plaques not visible in ♂), but differ slightly in a few characters: 1) colouration black, not brown, 2) punctuation of pronotum and elytra more dense, 3) elytral intervals elevated, last segment of palpi slightly asymmetrical.

The aedeagus of the holotype had unfortunately been crunched under a cover glass and its original shape can only be assumed (see JANSSENS 1965, Fig. 68). The aedeagus of the Çanakkale specimens (Figs. 27, 28) differs from the aedeagus of the holotype in the well developed dorsal step cut, which I could not observe in the holotype and in the apparently longer flagellum. The apex of the main piece seems to be more or less identical.

I believe that the Çanakkale specimens are specifically different from *pseudoriparia*. But due to the aedeagal similarity and the maltreatment of the holotype of *pseudoriparia* I refrain from a description of the apparently new species as long as no additional material of the "true" *pseudoriparia* is found.

***Hydraena* (s.str.) *scythica* JANSSENS**

Hydraena scythica JANSSENS 1974: 157.

TYPE LOCALITY: Komsomolabad, Vakhchich, 1000 m, Tadzhikistan.

TYPE MATERIAL: The holotype ♂, deposited in the Khnzorian private collection (Yerevan, Armenia), is not accessible at present. I have examined one female paratype (ISNB). A second paratype (♀) should be deposited in the Khnzorian collection.

I have examined two specimens, 1 ♂ and 1 ♀ (NMW): "Hissar, Boch. Coll. Hauser. " [= Gissar, Tadzhikistan], which may represent *Hydraena scythica* (due to the description of the aedeagus by JANSSENS 1974: Fig. 2) and the similarity of the external morphology of the two females). This species is quite similar to *Hydraena ariana*, a fact which had been neglected by JANSSENS (1974).

The middle tibia of the male (NMW) is very slightly arched, with a hardly noticeable preapical enlargement, not mentioned in the original description for *scythica*. The elytral punctuation of the NMW female is slightly more regular than in the female paratype (ISNB). Thus the two specimens of the NMW might well represent a new species, very closely related to *scythica*.

Aedeagus: (Fig. 51): Main piece less sinuous than in *cryptostoma* sp.n., apex pointed (shorter than in *cryptostoma* sp.n.), with two long apical bristles (third one broken off or very small). Distal lobe shorter than in *cryptostoma* sp.n. Right paramere longer than left one.

DISTRIBUTION: So far known only from Tadzhikistan.

Hydraena (s.str.) *smyrnensis* SAHLBERG

Hydraena smyrnensis SAHLBERG 1908: 31. - KNISCH 1924. - ORCHYMONT 1943b. - JANSSENS 1965. - JÄCH 1988a. - AUDISIO 1990.

Hydraena pulsata ORCHYMONT 1931: 28 (= syn.nov.). - ORCHYMONT 1943b. - CHIESA 1959. - GEOGUIEV 1971. - IENISTEA 1978.

Hydraena sanctimontis JANSSENS 1960: 15 (= syn.nov.). - JANSSENS 1965. - IENISTEA 1978.

TYPE LOCALITY: Izmir, western Turkey.

TYPE MATERIAL: I have examined the holotype ♂ (by monotypy) which is deposited in the ZMH. The aedeagus is somewhat teneral.

SYNONYMS: I have examined the holotype ♂ and two of the 3 paratypes (♀♀) of *Hydraena pulsata*, which are deposited in the ISNB: "♂ \ Makedonia, Negorci E.torrent 300 m 4 VI 1930 d'Orchym. \ A.d'Orchymont det. pulsata d'Orchymont \ Type \ E.Janssens det. 195 Hydraena s.str. pulsata Orchym. \ Prép.Micr. No 710614.7". The aedeagus of the holotype is unfortunately slide-mounted, the setae of the main piece and the apex of the distal lobe seem to be lost but there is no doubt that *pulsata* is a synonym of *smyrnensis*.

I have examined the holotype ♀ of *Hydraena sanctimontis* (ISNB): "Grèce: Mont Athos Pantokratoros 1-2-vi-1959 Em.Janssens \ R.I.Sc.N.B.I.G. 21.791 \ Type E.Janssens det., 195 Hydraena s.str. sancti-montis E.Janssens" which undoubtedly belongs to *Hydraena smyrnensis*.

REMARKS: This species is very variable (shape and length of elytra, elytral punctuation). Some specimens are very similar to *H. filum*, *finita* and *mylasae* sp.n., although the aedeagus does not prompt a very close phylogenetic relationship with these species.

Aedeagus (Figs. 15, 16): Main piece short, gently sinuous, strongly curved in basal third, dorso-ventrally flattened, with 4 subapical and approximately 6 dorsal setae. Distal lobe long and slender, attesting its distant phylogenetic relation to the *H. filum* complex.

DISTRIBUTION: Yugoslavia (Macedonia), northeastern Greece, Lesbos, western Turkey (Çanakale, Izmir).

ADDITIONAL MATERIAL EXAMINED:

Y U G O S L A V I A: MACEDONIA: 6 km W Bitola, 21.VII.1988, leg. Jäch (NMW).

G R E E C E: Dipotama, 8.VIII.1988, leg.Jäch (NMW); Sithonia-Sarti, 22.VII.1988, leg.Jäch (NMW); 30 km SW Kabala, 9.VIII.1988, leg.Jäch (NMW); 15 km N Alexandroupolis, 27.VII.1988, leg.Jäch (NMW).

T U R K E Y: ÇANAKKALE: S Ayvacik, 5.VIII.1988, leg.Jäch (NMW); 5 km W Yenice, 4.VIII.1988, leg.Jäch (NMW); Behramkale, 14.VII.1983, leg.Wewalka (NMW).

Hydraena (s.str.) *subinflata* ORCHYMONT

Hydraena subinflata ORCHYMONT 1944b: 6. - JANSSENS 1965. - IENISTEA 1978. - AUDISIO 1990.

Hydraena dryops JANSSENS 1969 (= syn.nov.). - IENISTEA 1978. - JÄCH 1989. - AUDISIO 1990.

Hydraena belfiorei AUDISIO & DE BIASE 1990: 386 (= syn.nov.).

SYNONYMS: I have seen the seven type specimens of *Hydraena dryops* (ISNB), described from Euboea and 3 paratypes of *belfiorei* (NMW), described from Astipalaia. They agree very well with specimens of *subinflata* from Paros (type locality).

REMARKS: The punctuation of the elytra varies from moderately dense to very dense (even in the same population). Males of *subinflata* differ from males of *subjuncta* in the more distinctly curved hind tibia.

The aedeagus shows some variability in the curvature of the main piece (ventral aspect), in the width of the main piece and in the shape of the apex of the main piece.

DISTRIBUTION: I have seen specimens from the following islands: Euboea, Andros, Tinos, Kea, Paros, Ios, Astipalaia. The species has not yet been found on the Greek mainland.

Hydraena (s.str.) *turcica* JANSSENS

Hydraena turcica JANSSENS 1965: 53. - JÄCH 1988a.

TYPE LOCALITY: Urnus Dere, near Denizli, southwestern Turkey.

This species was described after one female. In 1991 Stefan Schödl and I collected 33 specimens at 2 localities in southwestern Turkey.

Aedeagus (Fig. 19) very similar to *H. philyra*. It differs from the latter in the shape of the main piece (apex distinctly tapering) and in the shorter distal lobe.

DISTRIBUTION: So far known from two Turkish provinces (Denizli, Muğla).

MATERIAL EXAMINED:

T U R K E Y: DENIZLI: Akdağ, W Denizli, 700 m, 21.V.1991, leg. Jäch (NMW); MUĞLA: NW Karaçulha, 130 m, 22.V.1991, leg. Jäch, leg. Schödl (NMW).

Hydraena (s.str.) *verstraeteni* FERRO

Hydraena verstraeteni FERRO 1984: 69.

TYPE MATERIAL: I have examined the holotype ♂ (NMP): "S Iran Isin 26. 5. 1973 \ Loc. no. 213 Exp. Nat. Mus. Praha \ *Hydraena* s.str. *verstraeteni* det. FERRO 83 HOLOTYPUS".

2.4 mm long. Obviously closely related to *Hydraena orientalis* BREIT (see JÄCH 1987b). Pronotum and elytra narrower, elytra more parallel-sided. Tibiae very thin, expansion of hind tibia only very weakly developed.

Aedeagus (Fig. 41): Distal lobe with distinct flagellum, left paramere very long.

DISTRIBUTION: So far known only from the type locality.

Six species of *Hydraena* have been recorded from the Iran until now (*calcarifera* JANSSENS, *janeceki*, *orientalis* BREIT, *parysatis* JANSSENS, *persica* and *verstraeteni*). The real number of *Hydraena* species occurring in that country can be expected to be about 10 times greater.

II. 2. Description of new species:

II. 2. 1. Species from Algeria:

Hydraena (s.str.) *audisioi* sp.n.

TYPE LOCALITY: Akfadou, Bejaïa, northern Algeria.

TYPE MATERIAL: **Holotype** ♂ (NMW): "ALGERIA 27.V. For.de Akfadou leg. Audisio 1984". **Paratypes**: 17 exs. from the type locality in NMW and CAN.

DIAGNOSIS: 1.5 - 1.65 mm long. General habitus (Fig. 62), size and colouration as in *H. servilia* ORCHYMONT.

Legs of male unmodified, thus sexual dimorphism confined to the last abdominal segments, the metasternum and to the apical segment of the labial palpus, which is slightly flattened on the ventral side near the base in males, and unevenly spindle-shaped in female specimens. Middle of metasternum (area of metasternal plaques) more distinctly impressed in male.

Aedeagus (Fig. 13): Main piece strongly curved in basal half, then only gently sinuous, apex pointed, with 3 apical and one large dorsal seta. Distal lobe with a long amorphous part and a very long thin flagellum. Parameres simple, left one longer than right one. The shape of the main piece and the length of the flagellum clearly distinguish the aedeagus of *audisioi* from *servilia* (Fig. 14).

Hydraena audisioi sp.n. differs from *H. servilia* (of which I have examined only one ♂) in the slightly less coarsely punctate pronotum and elytra and in the pronotum being smaller (in relation to the elytra). The Spanish *Hydraena sharpi* REY, which resembles *Hydraena minutissima* WATERHOUSE, differs from *audisioi* sp.n. in the larger pronotum, the larger elytral punctures and the more regular elytral striae.

Both external and aedeagal morphology suggest a close phylogenetic relationship with *Hydraena servilia*, *Hydraena minutissima* and their allies. The 3 + 1 pattern in the chaetotaxy of the aedeagus is a primitive pattern within the group.

Hydraena audisioi sp.n. is the first species of the *minutissima* group known to occur in North Africa.

DISTRIBUTION: Known only from the type locality.

ETYMOLOGY: Named for my friend Paolo Audisio, who collected the new species.

II. 2. 2. Species from Greece:

Hydraena (s.str.) *corcyra* sp.n.

TYPE LOCALITY: Stream near Mesaria, 39°44'/19°44', 30 m above sea level, Corfu, western Greece.

TYPE MATERIAL: **Holotype** ♂ (NMW): "GR-KORFU 9.11.80 Mesaria leg. Malicky (36)". **Paratypes** (all deposited in the NMW): 5 ♀♀ labelled as the holotype.

DIAGNOSIS: 1.6 - 1.7 mm long. General habitus, size and colouration as in *phassilyi*. Although the aedeagus differs significantly from the aedeagus of *phassilyi*, these two species can hardly be distinguished externally. The last segment of the maxillary palpi seems to be slightly thicker in *phassilyi*, but this character tends to be variable in that species group.

Aedeagus (Fig. 20): Differs from *phassilyi* and *pulchella* mainly in the shape of the distal lobe, which forms a long flagellum. Main piece shorter and less curved than in *phassilyi*.

DISTRIBUTION: Known only from the island of Corfu, where it replaces the widespread *Hydraena phassilyi*.

ETYMOLOGY: Named in reference to the type locality. Corcyra was the Latin name for the island of Corfu.

II. 2. 3. Species from Turkey:

Seventy-four species have been recorded from Turkey. The eighteen species described herein raise the total number of Turkish species to 92. Numerous species are still undescribed. *Hydraena gracilis* is probably composed of several closely related species. A check list of the Turkish species is given at the end of this paper.

Hydraena (s.str.) *ancyrae* sp.n.

TYPE LOCALITY: Little stream, 1-2 m wide, flowing over volcanic rock, ca. 1600 m, Işık Dağı Pass, Çerkeş-Kızılcahamam, Çankırı Province, northwestern Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR-ANKARA 12.6. Isikdagi Paß leg. Jäch 89 (86)". **Paratypes** (all deposited in the NMW): 17 exs. (leg. Jäch) and one ex. (leg. Schödl) from the type locality; 6 exs.: "NW-ANATOLIEN(42) s Karamürsel leg. JÄCH 31.7.88"; 1 ♂: "TR-KASTAMONU 24.6. Ilgaz Paß (2) leg. Jäch 89 1500m".

DIAGNOSIS: 2.2 - 2.4 mm long. Habitus (Fig. 63). Size, colouration, general appearance (Fig. 75) and characters of the sexual dimorphism (palpi, meso- and metatibia) as in *H. pontica* JANSSENS. Pronotum, elytra and elytral apices usually very slightly wider in *pontica*. Elytra of female usually (not always) more distinctly acuminate in the new species.

Hydraena pseudoriparia differs in the last segment of the male labial palpus, which is unmodified in *H. pseudoriparia*. *Hydraena* cf. *pseudoriparia* from Çanakkale differs in the almost unmodified male palpi and the very densely punctate elytra.

Aedeagus (Fig. 26): Differs from *pontica* in the more rounded (less acuminate) apex of the main piece (ventral aspect), in the more slender main piece and in the less distinctly developed dorsal step cut in the main piece. Parameres and distal lobe more or less as in *pontica*.

DISTRIBUTION: Northwestern Turkey (Izmit, Çankırı, Kastamonu). Vicarious with the more eastern Turkish (Kars, Artvin, Rize, Erzurum, Ordu, Trabzon, Amasya) and Georgian *H. pontica*.

ETYMOLOGY: Named in reference to the type locality, which is not far from Ankara. Ancyra was the Latin name for Ankara, now capital of Turkey.

Hydraena (s.str.) *cervisophila* sp.n.

TYPE LOCALITY: Stream, ca. 3 m wide, in *Castanea* forest, 10 km west of Borçka, Artvin Province, northeastern Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR-ARTVIN 89 w. Borçka (45) leg. Jäch 4.6."

DIAGNOSIS: 1.55 mm long. Black, appendages brown, apical third of last segment of labial palpus darkened. Middle of clypeus very superficially reticulate, shining, sides densely shagreened; frons gently convex, densely punctate, smooth between punctures; sides of frons

densely shagreened. Pronotum only moderately wide; distinctly heart-shaped, sides broadly rounded and strongly constricted in posterior third; disc convex, moderately densely punctate, superficially shagreened or glabrous between punctures; sides more distinctly shagreened. Elytra short, shoulders well developed; elytral punctures large and not very densely arranged in more or less regular lines; intervals flat and glabrous; explanate margin well developed. Legs and palpi comparatively short and strong, unmodified.

Female unknown.

Aedeagus (Fig. 29): Main piece small, strongly curved in basal third, apex pointed, with 3 subapical and one dorsal seta, clearly denoting the species as a member of the *Hydraena riparia* group. Distal lobe moderately large, more or less amorphous, only the ventral margin being distinctly sclerotized. Parameres inconspicuous, almost symmetrical, apically enlarged.

Although the chaetotaxy of the aedeagus attests a phylogenetic relationship with the *H. riparia* species group, *Hydraena cervisophila* sp.n. is a rather deviating element in the genus *Hydraena*, with no apparent close relative. The small size and the peculiar habitus (Fig. 63) distinguish it from any other species known to me.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Latin, cervisia (beer) and Greek, philos (friend). Named for Michael M. Madl, who "disappeared" in the village of Borçka during our excursion, and was not "found" until a couple of hours later, when we screened all the beer bars in town. I am particularly thankful to several citizens of Borçka, for their discrete hints.

Hydraena (s.str.) *coryleti* sp.n.

TYPE LOCALITY: Little stream, ca. 5 km south of Inebolu, Kastamonu Province, northern Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR-KASTAMONU (8) s Inebolu leg. Jäch 25.6.89". **Paratypes** (deposited in the NMW, MHNG, ISNB): 18 exs. (leg. Jäch) and one ex. (leg. Schödl) from the type locality; 2 exs.: "TR-ORDU 28.5. s Hacıbeli P. leg. Jäch 89 (23)"; 3 ♀♀: "TR-SAMSUN 27.5. Hacilar Paß lg. Jäch 89 (25)"; 1 ♂: "TR-ANKARA 12.6. Isikdagi Paß leg. Jäch 89 (86)"; 1 ex.: "TR-AMASYA 11.6. Ladik-Sulova lg. Jäch 89 (84); 4 exs.: "TR-AMASYA 11.6. 30km nw Tasova lg. Jäch 89 (82)"; 1 ex.: "TR-SIVAS 11.6. Camlibel P. lg. Jäch 89 (80)"; 3 exs.: "TR-SINOP 27.5. w Yenikonak lg. Jäch 89 (11)"; 1 ex.: "TR-SINOP 27.5. w. Yenibonax [sic!] lg. Schödl 89(11)"; 3 exs.: "TR-GÜMÜSHANE 29.5. Kösedagi Paß leg. Jäch 89 (29)"; 1 ex.: "TR-GÜMÜSHANE 29.5. Kösedagi Paß 29 leg. Schödl 1989".

DIAGNOSIS: 2.9 - 3.1 mm (♂♂) and 2.5 - 2.7 mm (♀♀) long. Habitus (Figs. 84, 85). Closely related to the well-known *H. grandis* REITTER (Fig. 86), from which it differs externally in the body proportions and the male metatibia. Pronotum usually distinctly wider in the new species, elytra proportionally shorter, thus appearing more robust than in *grandis*. Metatibial tooth of male situated in the middle of the tibia in *grandis*, but slightly before the middle in the new species.

Due to the variability, females of the two species cannot always be distinguished easily.

Aedeagus (Fig. 44): Very similar to *grandis*. Border between main piece and distal lobe not well defined. Differs from *grandis* clearly in the considerably longer and thinner flagellum of the distal lobe and in a number of less obvious structural differences of the main piece and distal lobe. Parameres as in *grandis* and related species.

DISTRIBUTION: Northern Turkey (Çankırı, Kastamonu, Sinop, Samsun, Amasya, Ordu, Sivas, Gümüşhane).

Although *H. grandis* and *H. coryleti* sp.n. are widely distributed in northern Turkey, they were found consociate only in two localities (Amasya, Ladik-Sulova; Sivas, Camlibel Pass).

ETYMOLOGY: *corylus* (Latin) - hazelnut; the mountains of northern Turkey, where this species was found, are famous for their hazelnut plantations.

***Hydraena* (s.str.) *falcata* sp.n.**

TYPE LOCALITY: Small stream, Ilgaz Pass, ca. 1500 m, Kastamonu Province, northern Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR-KASTAMONU 24.6. Ilgaz Paß (2) leg. Jäch 89 1500m". **Paratype** ♂ (NMW): "TR-SINOP 27.5. Diranaz Paß lg. Jäch 89(13)".

DIAGNOSIS: 2.1 - 2.2 mm long. Size, colouration and general appearance (Fig. 64) as in *Hydraena avuncula* JÄCH. Pronotum strongly heart-shaped (as in *avuncula*), but degree of convergence of sides quite variable in the two specimens. Elytra somewhat more coarsely and less regularly punctate, elytra shorter, their apices more evenly rounded and wider than in *avuncula*. Metatibia gently curved, with a distinct and well developed preapical gibbosity on the inner side.

Female unknown.

Aedeagus (Fig. 31): Similar to *kurdistanica* JÄCH (see JÄCH 1988b, Fig. 6) and *avuncula* (see JÄCH 1988b, Fig. 3). Main piece moderately long and straight, strongly distorted, with 2 subapical, 3 ventral and 2 dorsal setae; phallobasis strongly asymmetrical. Distal lobe with several not very strongly sclerotized lobes, one of which is distinctly sickle-shaped. Right paramere not reaching apex of main piece, left one as long as main piece, enlarged apically.

According to the aedeagal and external morphology *Hydraena falcata* sp.n. is closely related to *H. avuncula*. The aedeagal similarities with *H. kurdistanica* is not paralleled by close external resemblance.

DISTRIBUTION: Northern Turkey (Kastamonu, Sinop).

ETYMOLOGY: Latin, *falcatus* (sickle-shaped, falcate). Refers to the falcate form of the distal lobe.

***Hydraena* (s.str.) *fritzi* sp.n.**

TYPE LOCALITY: Stream, 1 - 2 m wide, north of Yeniyol, 40 km north of Erzincan, Gümüşhane Province, northern Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR-GÜMÜSHANE 89 n Yeniyol (28) leg. Jäch 29.5.". **Paratypes** (NMW): 1 ♂ labelled as the holotype and 1 ♂: "MARAS 9.9.91 20km E Gökşun leg. Wewalka TR- 10".

DIAGNOSIS: 1.9 - 2.0 mm long. Very similar to *Hydraena colchica*. Colouration, general appearance (Fig. 68) and punctuation of pronotum and elytra more or less as in that species. *Hydraena fritzi* sp.n. differs from *H. colchica* mainly in the shape of the pronotum, which is distinctly narrower and less distinctly heart-shaped than in *colchica* and in the slightly smaller size. Metatibial enlargement less evenly gibbous than in *colchica*, but somewhat more angulate.

Female unknown, but probably will be found to differ from the female of *colchica* in the narrower pronotum.

Aedeagus (Fig. 37): Main piece strongly sinuous and angulate, with 2 subapical and 5 dorsal setae, two of which are comparatively long and sinuous. Distal lobe longer than in *colchica*, appendix furcate apically. Right paramere longer and thinner than in *colchica*, almost reaching the apex of the main piece; left paramere long and sinuous, widened in apical third.

DISTRIBUTION: Eastern Turkey (Gümüşhane, K.Maras).

ETYMOLOGY: Dedicated to the memory of the late Dr. Fritz Janczyk.

Hydraena (s.str.) *guentheri* sp.n.

TYPE LOCALITY: Thirty km north of Adıyaman, Adıyaman Province, eastern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "ADİYAMAN 8.9.91 30km N Adıyaman leg. Wewalka TR-6".

DIAGNOSIS: 2.2 mm long. Habitus (Fig. 82). This species is very similar and very closely related to *Hydraena platycnemis* JÄCH. Externally these two species agree in almost every detail and due to the variability known to exist in *H. platycnemis*, the only reliable distinguishing feature seems to be provided by the male metatibia. The laminate flat middle portion of the metatibia is more strongly developed and wider in the new species, and its inner margin is more tooth-like (see Figs. 82, 83).

Aedeagus (Fig. 42): Very similar to *H. platycnemis* (see JÄCH 1988b, Fig. 15), from which it can be distinguished by several features: dorsal side of main piece more or less evenly rounded (not distinctly concave) in the new species, length of dorso-apical bristles, shape of distal lobe.

DISTRIBUTION: Eastern Turkey (Adıyaman Province). *Hydraena platycnemis* is known from 4 different localities in the Turkish province of Hatay (= Antakya) and one locality in the southeast of the Gaziantep Province (near the border to Hatay). All these localities lie in the Nur (= Amanos) and Ziyaret (= Akra) Mountains, while the new species was collected in the northern part of the Province of Adıyaman, which belongs to the Taurus mountain chain. The two species are therefore most probably not sympatric but vicarious.

ETYMOLOGY: Named for Prof. Dr. Günther Wewalka, who collected the holotype.

Hydraena (s.str.) *jancyki* sp.n.

TYPE LOCALITY: Stream east of the Çam Pass, flowing over volcanic rock, ca. 2000 m, Artvin Province, northeastern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "TR-ARTVIN 6.6. Cam Paß 2000 m Jäch 1989 (56)". Paratype ♂ (NMW): "TR-ARTVIN 6.6. Cam Paß 2500m Schödl 89 (57)".

DIAGNOSIS: 2.2 mm long. Despite the aedeagal similarity with *colchica*, *fritzi* sp.n. and *hiekei* sp.n., *H. jancyki* sp.n. clearly differs from these species in external characters. Habitus (Fig. 69). Black, appendages brown, apical third of last segment of labial palpus darkened. Clypeus densely shagreened, anterior margin glabrous; frons densely punctate, smooth or superficially shagreened between punctures; sides of frons shagreened. Pronotum only moderately wide; disc convex, moderately densely punctate, superficially shagreened or glabrous between punctures; anterior margin, sides and posterointernal foveolae distinctly shagreened. Elytra long and parallel-sided, shoulders well developed; elytral punctures small and densely arranged in more or less regular lines; intervals glabrous; explanate margin well developed; apices evenly and separately rounded. Middle tibia of male straight and almost imperceptibly enlarged in apical third, hind tibia straight and very gently enlarged behind middle.

Female unknown.

Aedeagus (Fig. 35): Main piece stout and twisted, with two short subapical and approximately 5 dorsal setae; phallobasis strongly asymmetrical. Distal lobe comparatively small and inconspicuous; appendix moderately long, as in *colchica*. Right paramere short, its apex truncate; left paramere longer than main piece, enlarged apically. The aedeagus differs from that of *colchica* mainly in the shape of the main piece (apex acuminate) and in the subapical setae being very small.

Hydraena jancyki sp.n. is easily recognized by the long and parallel-sided elytra and the regular elytral striation. It differs from *armeniaca* in the almost obsolete metatibial gibbosity.

DISTRIBUTION: Northeastern Turkey (Artvin).

ETYMOLOGY: Dedicated to the memory of the late Dr. Fritz Janczyk.

***Hydraena (s.str.) kasyi* sp.n.**

TYPE LOCALITY: River, ca. 5 m wide, 40 km north of Kastamonu, Kastamonu Province, northern Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR-KASTAMONU (6) n.Kastamonu leg. Jäch 25.6.89". **Paratypes** (NMW): 4 ♂♂ labelled as the holotype.

DIAGNOSIS: 2.15 - 2.2 mm long. Habitus (Fig. 71). *Hydraena kasyi* sp.n. is very similar to *H. galatica* JANSSENS and *H. amidensis* JÄCH, from which it can hardly be distinguished without dissection of the aedeagus.

Elytral apices very slightly shorter and more widely rounded, mesotibia very slightly more distinctly arched, metatibial teeth less prominent than in *amidensis*.

Meso- and metatibia very slightly more arched, hairs on meso- and metatibia slightly less numerous, metatibial teeth less prominent than in *galatica*.

Hydraena bimagua from Europe differs in the mesotibia, which is slightly enlarged preapically and has a few distinct teeth.

Female unknown.

Aedeagus (Fig. 39): Very similar to the European *Hydraena bimagua* JÄCH (see JÄCH 1990: Fig. 2). Main piece more strongly sinuous and distal lobe more straight than in *bimagua*.

DISTRIBUTION: Northern Turkey (Kastamonu).

ETYMOLOGY: Dedicated to the memory of the late Dr. Fritz Kasy.

***Hydraena (s.str.) lapissectilis* sp.n.**

TYPE LOCALITY: Small stream, ca. 1 m wide, flowing over slate, 150 m, NW Selimiye, Muğla Province, southwestern Turkey.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TR - MUĞLA 29.V.1991 nw Selimiye, 150m leg. Jäch (56)".

DIAGNOSIS: 2.15 mm long. Black, appendages brown, apical third of last segment of labial palpus black. Clypeus densely shagreened, anterior margin glabrous; middle of frons slightly convex and moderately densely punctate, smooth between punctures; sides of frons shagreened. Pronotum moderately wide, hexagonal; disc convex, moderately densely punctate, glabrous or superficially shagreened between punctures; sides distinctly shagreened. Elytra elongate, shoulders well developed; elytral punctures small, rectangular, deeply impressed and densely arranged in regular lines; intervals more or less flat, glabrous; explanate margin moderately wide. Last segment of labial palpus very slightly asymmetrical (inner margin slightly more convex than exterior margin). Mesotibia straight, with ca. 4 recurved tooth-like spines on the inner margin in apical half, metatibia unnoticeably arched, without any conspicuous modifications.

Female unknown.

Aedeagus (Fig. 25): Main piece sinuous, apex pointed, with two small subapical setae (third one probably very small or hidden between main piece and distal lobe) and one large dorsal seta. Distal lobe moderately large, with a long and strongly sinuous flagellum. Parameres almost as long as main piece. The aedeagus of *H. lapissectilis* sp.n. differs from that of *H. speciosa* ORCHYMONT in the shape of the main piece (no distinct dorsal step cut in the new species) and in the shape of the flagellum.

Hydraena lapisectilis sp.n. is very similar and obviously closely related to *H. speciosa* and *sublamina* ORCHYMONT. It differs from these two species in the slightly asymmetrical labial palpus. The elytral apices are usually less strongly attenuate in *sublamina* and *speciosa*. Metatibia usually (not always) very slightly dilated apically in the two latter species. Elytral punctuation of the holotype of *H. lapisectilis* sp.n. more dense than is usual in the two other species.

DISTRIBUTION: Southwestern Turkey (Muğla).

ETYMOLOGY: Latin, lapis sectilis (slate). Refers to the geology (slate) of the type locality.

Hydraena (s.str.) *mariannae* sp.n.

TYPE LOCALITY: Forty km east of Elbistan, Karaman Maraş Province, eastern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "MARAS 8.9.91 40km E Elbistan leg. Wewalka TR-7". Paratypes (NMW): 17 exs. labelled as the holotype and 1 ♀: "MARAS 8.9.91 30km E Elbistan leg. Wewalka TR-8".

DIAGNOSIS: 2.2 - 2.5 mm long. Black, appendages dark brown, apical third of last segment of labial palpus black. Clypeus usually densely shagreened, anterior margin usually glabrous; middle of frons slightly convex and densely punctate, usually smooth between punctures; sides of frons shagreened. Pronotum moderately wide, hexagonal; disc convex, densely punctate, glabrous between punctures; sides distinctly shagreened. Elytra elongate, shoulders well developed; elytral punctures small, rectangular, deeply impressed and densely arranged in lines; intervals somewhat carinate, glabrous; explanate margin well developed. Metasternal plaques well developed, moderately wide and long, separated by approximately one diameter. Habitus (Fig. 73).

♂♂: Middle tibia hardly noticeably enlarged preapically. Inner side of metatibia gently and evenly enlarged in apical half, maximum width near distal one third. Elytral apices moderately long, evenly rounded.

♀♀: Elytral apices long and noticeably acuminate.

Aedeagus (Fig. 40): Main piece curved in basal third, then straight, apex reduced and hook-like, with 2 subapical and a group of approximately 6 dorsal setae. Distal lobe moderately long, with several appendages. Right paramere shorter than main piece; left paramere longer than main piece, with a group of scale-like structures on the inner surface.

Despite the considerable aedeagal differences, *Hydraena mariannae* sp.n. is very similar to *H. gressa* JANSSENS (dark colouration, punctuation of dorsal surface). Females are very difficult to distinguish. Elytra of *H. mariannae* sp.n. females longer, less ovoid and apically less abruptly constricted.

DISTRIBUTION: Eastern Turkey (K.Maraş).

ETYMOLOGY: Named for Mrs. Marianne Wewalka, who helped her husband collecting the type material.

Hydraena (s.str.) *mylasae* sp.n.

TYPE LOCALITY: Small stream, ca. 1 m wide, flowing over slate, 150 m above sea level, NW Selimiye, Muğla Province, southwestern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "TR - MUĞLA 29.V.1991 nw Selimiye, 150m leg. Jäch (56)". Paratypes: 29 exs. (leg. Jäch) and 31 exs. (leg. Schödl) from the type locality in NMW, BML, CFL, CAN, MHNG, ISNB, ZML, ZMH, HUB, CAL, coll. Fresneda (El Pont de Suert); 1 ♀ (NMW): "TR-IZMIR 20.V.1991 Aydin Berge s Tire, 900m leg. Jäch (14)".

DIAGNOSIS: 1.7 - 1.9 mm long. Head black, palpi brown, their tips darkened; pronotum dark brown to black, disc black; elytra dark brown; legs brown. Clypeus more or less shagreened,

front margin (and sometimes also middle of clypeus) smooth; middle of frons slightly convex and densely punctate, sides of frons shagreened. Pronotum moderately wide, heart-shaped, usually densely and coarsely punctate (a few specimens with only moderately densely punctate disc), area between punctures smooth, superficially or distinctly microreticulate. Elytra elongate, parallel-sided; shoulders well developed; elytral punctures coarse, large, deeply impressed and densely arranged in not very regular lines, approximately 5 striae between suture and shoulder; interstices between punctures convex and shining; explanate margin moderately wide; metasternal plaques moderately wide and long, separated by approximately one diameter.

Sexual dimorphism confined to last abdominal sternites and elytral apices which are very slightly more acuminate in females.

Aedeagus (Fig. 24): Differs from *filum* and *finita* clearly in the almost completely reduced left paramere (only a relict filament is visible), in the more angulate shape of the main piece, in the shape of the apex of the main piece, which is acute and (in ventral aspect) strongly curved to the right side in *mylasae* sp.n., but rounded and only gently curved in *finita*. The distal lobe is slightly longer in *finita*.

Hydraena mylasae sp.n. is very similar and closely related to *H. filum*, *H. finita* and *H. smyrnensis*. Punctuation of elytra usually more dense and less coarse in these three species. Females of *H. finita* differ clearly in the distinctly acuminate elytral apices. The elytral punctuation of *Hydraena smyrnensis* is extremely variable and sometimes very similar to that of the new species.

DISTRIBUTION: Southwestern Turkey (Muğla, Izmir). The distribution of *H. mylasae* sp.n. does not overlap with any of the related species (*H. filum*, *H. finita* and *H. smyrnensis*). *Hydraena finita* is only known from the mountains of central Izmir, while *H. mylasae* sp.n. was collected in the Aydin Mountains in southern Izmir (south of the Menderes Depression).

ETYMOLOGY: Named in reference to the type locality. Mylasa was the Latin name for Milas, a town not very far from the type locality.

Hydraena (s.str.) *nivalis* sp.n.

TYPE LOCALITY: Small streamlet, ca. 1 m wide, below Saklıkent, 1700 m, Antalya Province, southwestern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "TR-ANTALYA 23.V.1991 s Termessos, 1700m leg. Jäch (29)". Paratypes (NMW): 5 exs. labelled as the holotype.

DIAGNOSIS: 1.9 - 2.0 mm long. Very similar to *Hydraena colchica* and *fritzi* sp.n., colouration, general appearance (Fig. 66) and punctuation of pronotum and elytra more or less as in these species. *Hydraena fritzi* sp.n. differs from *H. colchica* mainly in the shape of the pronotum, which is less wide and less distinctly heart-shaped than in *colchica*, in the slightly smaller size, in the male mesotibia being gently arched and the gibbosity of the male metatibia being situated further proximal (near the middle). *Hydraena nivalis* sp.n. differs from *H. fritzi* sp.n. mainly in gently arched male mesotibia and in the evenly gibbous metatibial enlargement. *Hydraena* cf. *armeniaca* (from Ankara) differs in the straight mesotibiae, in the longer and more parallel-sided elytra and the more regularly aligned elytral punctures.

Aedeagus (Fig. 34): Main piece strongly curved, with two very small preapical, 3 ventral and 4 dorsal setae. Distal lobe comparatively large, composed of several appendages. Right paramere short, not reaching the apex of the main piece, apically enlarged; left paramere almost as long as main piece, apically enlarged. The aedeagus is quite similar to *H. cf. armeniaca* and *H. schoedli* sp.n., but differs from both in a number of characters (e.g. curvature of main piece, chaetotaxy, parameres).

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Latin, *nivalis* (snowy). Refers to the type locality (Saklıkent), which is the only skiing resort in southern Turkey.

***Hydraena* (s.str.) *prusensis* sp.n.**

TYPE LOCALITY: Stream near Oteller on Ulu Dağ, 1800 m, Bursa Province, northwestern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "NW-ANATOLIEN(47) Uludag s Bursa leg. Jäch 31.7.88".

DIAGNOSIS: 2.0 mm long. Size, colouration and general habitus (Fig. 65) quite similar to some other species from northern Turkey (*colchica*, cf. *armeniaca*, *fritzi* sp.n.). It differs from *colchica* in the narrower pronotum and elytra, in the slightly arched mesotibia and in the metatibial gibbosity being situated in the middle. It differs from *H. cf. armeniaca* (Ankara) in the less parallel-sided elytra, in the gently arched mesotibia and in the slightly more prominent metatibial gibbosity. It differs from *H. fritzi* sp.n. in the smaller elytral punctures and in the characters of the male meso- and metatibiae.

Female unknown.

Aedeagus (Fig. 30): Main piece strongly angulate, with two subapical, approximately 5 ventral and 3 dorsal setae; phallobasis strongly asymmetrical. Distal lobe comparatively large, with several lobes, partly strongly sclerotized. Right paramere thin, not reaching the apex of the main piece, apically strongly dilated.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Refers to the type locality. Prusa was the Latin name for the town of Bursa.

***Hydraena* (s.str.) *richardimbi* sp.n.**

TYPE LOCALITY: Stream flowing over volcanic rock, east of the Çam Pass, 2000 m, northwest of Ardahan, Kars Province, northeastern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "TR-Artvin 6.6. Cam Paß 2000 m Jäch 1989 (56)". Paratypes (NMW): 2 ♂♂ + 2 ♀♀, data as holotype.

DIAGNOSIS: 2.3 - 2.45 mm long. Colouration, punctuation of dorsal surface and general habitus (Fig. 72) as in *H. kasyi* sp.n., *galatica* and *amidensis*. Distinctly larger than these species. Mesotibia of male very slightly curved, with a few tiny, hardly noticeable subapical teeth. Metatibia of male very slightly arched, with ca. 3 small subapical teeth. Elytral apices of male more or less commonly rounded, almost truncate and wide; those of female acuminate.

Aedeagus (Fig. 38): Main piece very sinuous, with a group of dorsal setae; apex lamellate and semitransparent; distal lobe with a single appendix. Parameres inconspicuous, right one longer than left one.

Due to its aedeagal and external morphology, *Hydraena richardimbi* sp.n. clearly is a member of the *Hydraena rufipes* species group. The lamellate and semitransparent apex of the main piece of the aedeagus seems to be an apomorphy not represented in any other species of the group.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Dedicated to the memory of my friend Richard Imb.

***Hydraena* (s.str.) *schoedli* sp.n.**

TYPE LOCALITY: Karahasan Pass, Ermenek - Hadim, Konya Province, southern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "TR-KONYA 4.8.90 Karahasan Gecidi Ermenek/Hadim leg. Schödl (22)". One paratype ♂ (NMW), labelled as the holotype.

DIAGNOSIS: 2.0 mm long. Very similar to *Hydraena colchica*, *H. nivalis* sp.n. and *fritzi* sp.n.; colouration, general appearance (Fig. 67) and punctuation of pronotum and elytra more or less as in these species. *Hydraena schoedli* sp.n. differs from *H. colchica* mainly in the male mesotibia being gently arched, in the larger metatibial gibbosity and in the slightly narrower pronotum. *Hydraena nivalis* sp.n. and *H. fritzi* sp.n. differ in the less strongly developed metatibial gibbosity. *Hydraena* cf. *armeniaca* (from Ankara) differs in the straight mesotibiae, in the longer and more parallel-sided elytra and the more regularly aligned elytral punctures. *Hydraena tauricola* JÄCH differs in the slightly narrower pronotum, in the more elongate elytra and the more tooth-like (not evenly gibbous) metatibial enlargement.

Female unknown.

Aedeagus (Fig. 33): Main piece very strongly curved, with approximately 7 lateral setae. Distal lobe composed of several lobes. Right paramere almost reaching the apex of the main piece, slightly enlarged apically; left paramere almost as long as main piece, apically enlarged. The aedeagus is quite similar to that of *armeniaca* and *nivalis* sp.n., but differs from both in a number of characters (e.g. curvature of main piece, setation, parameres).

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: I take pleasure in nameing this species after my friend Stefan Schödl, in recognition of his marvellous contributions to the knowledge of the taxonomy of the genus *Berosus* LEACH.

***Hydraena* (s.str.) *terebrans* sp.n.**

TYPE LOCALITY: Small stream, ca. 10 km SE Refahiye, Erzincan Province, northern Turkey.

TYPE MATERIAL: Holotype ♂ (NMW): "TR-ERZINCAN 10.6. sō Refahiye leg.Jäch 89 (77)".

DIAGNOSIS: 2.45 mm long. Habitus (Fig. 74). Black, appendages brown, apical third of last segment of labial palpus black. Middle of clypeus more or less smooth, sides shagreened; middle of frons slightly convex and very densely punctate. Pronotum moderately wide, hexagonal; disc convex, densely punctate, central portion only moderately densely punctate, glabrous between punctures; sides shagreened. Elytra elongate, suboval, moderately wide; shoulders well developed; elytral punctures small, rectangular to round, deeply impressed and densely arranged in regular lines; intervals flat and glabrous; explanate margin well developed; elytral apices long, widely rounded.

♂♂: Metatibia very slightly arched, with 2 blunt subapical teeth. Metatibia as in *H. mariannae* species nova.

Female unknown.

Aedeagus (Fig. 12): Main piece long, strongly curved only in basal third, with 3 dorsal setae. Distal lobe composed of several lobes of various shape and a very long, strongly sclerotized (thus not flexible) flagellum-like appendage, resembling a cork-screw in its distal part; this structure is unparalleled in the genus.

Due to some aedeagal similarities and the morphology of the male meso- and metatibia, *H. terebrans* sp.n. seems to be distantly related to *mariannae* sp.n. and *gressa*. It differs from the two species in the paler legs and palpi and in the modifications of the meso- and metatibiae. In

fact there are no close relatives of *H. terebrans* described so far.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Latin, terebro (borer). Refers to the borer-like shape of the distal lobe.

II. 2. 3. Species from Georgia:

Hydraena (s.str.) *hiekei* sp.n.

Hydraena colchica, JÄCH 1987a: p. 3, Fig. 2 (not JANSSENS 1963).

TYPE LOCALITY: Novyy Afon, Abkhazya, northwestern Georgia.

TYPE MATERIAL: Holotype ♂ (HUB): "S - Kaukasus Nowij Afon 3.-4. 7.1968 leg. F.Hieke \ Zool. Mus. Berlin". Paratypes: 4 exs. labelled as the holotype (HUB, NMW).

DIAGNOSIS: 2.2 - 2.4 mm long, thus slightly larger than *colchica*. Habitus (Fig. 70). Colouration, punctuation of dorsal surface and general appearance (shape of pronotum and elytra) as in *H. colchica*. It differs from *colchica* mainly in the slightly larger size; elytral apices more regularly rounded in the new species (elytral margin terminating less abruptly). Modifications of male tibiae as in *colchica*.

Aedeagus (see JÄCH 1987a: Fig. 2): Differs from *colchica* distinctly in the shape of the main piece, with the apical half more round and less angulate and with the proportions somewhat different. Right paramere slightly longer, apically not enlarged; left paramere similar to that of *colchica*, but enlarged apical part proportionally shorter.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Named for Dr. Fritz Hieke, who collected the type material.

II. 2. 4. Species from Tadzhikistan:

Two species have hitherto been described from Tadzhikistan (*H. oxiana* JANSSENS 1974, *H. scythica* JANSSENS 1974) and four species have been described from northeastern Afghanistan (*ariana* JANSSENS, 1962, *bactriana* JANSSENS, 1962, *taxila* JANSSENS, 1962 and *ovata* JANSSENS, 1961). Four species were collected by David Wrase and Michael Schülke in Tadzhikistan in 1990, all of which are new to science.

Hydraena (s.str.) *cryptostoma* sp.n.

TYPE LOCALITY: Adshuk-Cleft near Varzob [= Warsob], 1200 m, north of Dushanbe, Tadzhikistan.

TYPE MATERIAL: Holotype ♂ (NMW): "Adshuk-Cleft near Warsob 1200 m, 1.-3.VII. 1990 leg. Schülke & Wrase \ USSR Asia cent. Tadzhikistan Pamir-Alai, Hissar-Mts.". Paratypes (NMW): 3 exs. labelled as the holotype.

DIAGNOSIS: 1.9 - 2.15 mm long. Habitus (Fig. 78). Very similar to *Hydraena scythica* (general appearance, aedeagus). It differs from *scythica* in the male middle tibia, which is distinctly arched and shows a well developed preapical enlargement on the inner side. According to the original description of *scythica* (JANSSENS 1974), the middle tibia of the male is unmodified: "aucune des trois paires de pattes ne présenté d'anomalies (renflement, ...)". Apical segment of maxillary palpi more distinctly darkened in *angistoma* sp.n., elytral punctuation more regularly aligned than in *scythica*, elytral punctures of *cryptostoma* sp.n. smaller.

Hydraena oxiana differs due to its considerably larger size (2.5 mm); the remaining species from Tadzhikistan differ mainly in their more or less unmodified male middle tibia.

Aedeagus (Fig. 52): Differs from *scythica* JANSSENS in the more strongly sinuous shape of the distal lobe (lateral aspect), in the longer apex of the distal lobe, in the longer left paramere and in the longer distal lobe.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Dedicated to my friend David Wrase (Berlin), who collected the type material. Named in reference to his admirable moustache.

Hydraena (s.str.) *pamirica* sp.n.

TYPE LOCALITY: Tshil-Dara, 1700 - 2300 m, northwestern Pamir, Tadzhikistan.

TYPE MATERIAL: Holotype ♂ (NMW): "USSR Asia centr. Tadzhikistan NW-Pamir, Peter-I.-Mts. \ Tshil-Dara 1700-2300 m 21.-24.VI.1990 leg. Schülke & Wrase". Paratypes: 9 exs. labelled as the holotype (NMW, HUB).

DIAGNOSIS: 1.75 - 2.15 mm long. General habitus (Fig. 79) and colouration as in many European or Turkish species of the *Hydraena riparia* group (*melas* DALLA TORRE, *pontica* JANSSENS, *wewalkai* JÄCH, ...). Macropterous, hind wings well developed. Black, appendages dark brown, apical half of last segment of labial palpus darkened. Clypeus usually densely shagreened, sometimes middle of clypeus glabrous; frons moderately densely punctate, smooth and glabrous between punctures; sides of frons shagreened. Disc of pronotum convex, moderately densely punctate, distinctly or superficially shagreened between punctures; lateral groove and sides distinctly shagreened. Shoulders of elytra well developed; elytral punctures small and densely arranged in regular lines; intervals smooth and glabrous; explanate margin well developed. Metasternal plaques moderately wide and long in both male and female. Legs and palpi of male unmodified.

Sexual dimorphism confined to last abdominal segments.

Aedeagus (Fig. 49): Main piece short, gently sinuous (lateral aspect), apex truncate and distinctly projecting ventrad; 3 short setae are inserted near the distal lobe and one seta is inserted on the dorsal side, a short distance further proximal.

Hydraena pamirica sp.n. differs from other species from Tadzhikistan and Afghanistan with well developed shoulders and regular elytral striae (*cryptostoma* sp.n., *scythica*) in the narrow pronotum and in the smooth elytral intervals. *Hydraena taxila* differs in the larger size and the smooth dorsal surface.

Hydraena pamirica sp.n. obviously represents a very primitive type within the *riparia* group.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Named in reference to the type locality.

Hydraena (s.str.) *schuelkei* sp.n.

TYPE LOCALITY: Adshuk-Cleft near Varzob [= Warsob], 1200 m, north of Dushanbe, Tadzhikistan.

TYPE MATERIAL: Holotype ♂ (NMW): "Adshuk-Cleft near Warsob 1200 m, 1.-3.VII. 1990 leg. Schülke & Wrase \ USSR Asia cent. Tadzhikistan Pamir-Alai, Hissar-Mts.". Paratypes (NMW): 4 exs. labelled as the holotype.

DIAGNOSIS: 1.7 - 2.0 mm long. Habitus (Fig. 76). Brachypterous, hind wings very short, not reaching apex of elytra. Black, appendages brownish, apex of last segment of labial palpus darkened. Middle of clypeus and frons moderately densely punctate, smooth and glabrous

between punctures; sides of frons and clypeus shagreened. Pronotum very wide and distinctly heart-shaped; antero- and posteroexternal foveolae well developed and deep; posterointernal foveolae almost obsolete; disc of pronotum moderately densely to sparsely punctate, smooth and glabrous or very superficially shagreened between punctures; lateral groove and sides shagreened. Elytra flat and comparatively small; shoulders very small; elytral punctures comparatively large, not very densely arranged, not aligned in regular rows; intervals smooth and glabrous; each elytral puncture with a small suberect seta, about one puncture diameter long; explanate margin well developed. Metasternal plaques small and narrow, widely separated in both male and female. Legs of male unmodified.

Sexual dimorphism: Obviously confined to the elytral apices, which are very slightly more acuminate in the female.

Aedeagus (Fig. 50): Main piece more or less straight, except basal curvature; dorsal side slightly emarginate; apex truncate, with 4 setae; phallobasis more or less symmetrical. Distal lobe rather short and straight. Parameres simple, right one longer than left one.

Hydraena schuelkei sp.n. differs from other *Hydraena* species from Tadzhikistan (except *H. wrasei* sp.n.) in the reduced hind wings (elytral shoulders thus more or less reduced) and in the large and wide, strongly heart-shaped pronotum. It differs from *H. ovata*, which is also brachypterous, in the wider, more strongly heart-shaped pronotum and in the less ovoid shape of the elytra and the narrower metasternal plaques. *Hydraena wrasei* sp.n. differs in the middle of the clypeus being distinctly shagreened in posterior half, in the narrower pronotum and in the more rugose elytral surface.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: Named for my friend Michael Schülke (Berlin), who collected (together with D. Wrase) 4 new species of *Hydraena* in Tadzhikistan.

Hydraena (s.str.) *wrasei* sp.n.

TYPE LOCALITY: Tshil-Dara, 1700 - 2300 m, northwestern Pamir, Tadzhikistan.

TYPE MATERIAL: **Holotype** ♂ (NMW): "USSR Asia centr. Tadzhikistan NW-Pamir, Peter-I.-Mts. \ Tshil-Dara 1700-2300 m 21.-24. VI. 1990 leg. Schülke & Wrase". **Paratypes**: 8 exs. labelled as the holotype (NMW, HUB).

DIAGNOSIS: 1.85 - 2.1 mm long. Habitus (Fig. 77). Brachypterous, hind wings very short, not reaching apex of elytra. Black, appendages brownish, apex of last segment of labial palpus darkened. Clypeus, except front margin, densely shagreened; middle of frons moderately densely punctate, smooth and glabrous between punctures; sides of frons shagreened. Pronotum wide and heart-shaped; disc of pronotum moderately densely punctate, smooth or shagreened between punctures; lateral groove and sides distinctly shagreened. Elytra flat; shoulders very small; elytral punctures comparatively small, densely arranged, not aligned in very regular rows; interstices between punctures microreticulate or shagreened, providing elytra with a somewhat rugose appearance; each elytral puncture with a small suberect seta, about one puncture diameter long; explanate margin well developed. Metasternal plaques small and narrow (slightly wider in female), widely separated in both male and female. Legs of male unmodified.

Sexual dimorphism as in *H. schuelkei* sp.n.

Aedeagus (Fig. 48): Main piece short and stout; apex truncate, with four short setae, of which two are difficult to see as they are inserted very close to the distal lobe; phallobasis more or less symmetrical. Distal lobe stout, not very long. Parameres simple, right one longer than left one.

Hydraena wrasei sp.n. differs from most other *Hydraena* species (except *H. schuelkei* sp.n.) from Tadzhikistan in the reduced hind wings (elytral shoulders thus more or less reduced). It differs from *H. ovata*, which is also brachypterous, in the narrow metasternal plaques, the narrower

body proportions (narrow pronotum, less ovoid elytra) and the less densely punctate elytra. *Hydraena schuelkei* sp.n. differs in the middle of the clypeus being smooth and glabrous, in the wider and more distinctly heart-shaped pronotum and in the less rugose elytral surface.

DISTRIBUTION: So far known only from the type locality.

ETYMOLOGY: This species is named for my friend David Wrase, who collected (together with M. Schülke) 4 new species of *Hydraena* in Tadzhikistan.

II. 2. 5. Species from Pakistan:

Only one species (*Hydraena taxila* JANSSENS) has hitherto been recorded from Pakistan (see JÄCH 1987b). Thirteen specimens of an unidentified *Hydraena* (BML) turned out to belong to an undescribed species.

Hydraena (s.str.) *pakistanica* sp.n.

TYPE LOCALITY: Upper Kagan Valley, Hazara, north of Islamabad, northern Pakistan.

TYPE MATERIAL: Holotype ♂ (BML): "Hazara, N.W.F. Prov., Upper Kagan Valley. 8,000 ft., II.iv.1927 \ H.G. Champion Coll. B.M. 1953-156." Paratypes (BML, NMW): 12 exs. labelled as the holotype.

DIAGNOSIS: 1.9 - 2.1 mm long. Very similar to *Hydraena ovata* from Afghanistan and some species from Tadzhikistan (*schuelkei* sp.n., *wrasei* sp.n., *pamirica* sp.n.). General habitus (Fig. 80), shape and punctuation of pronotum and punctuation of elytra more or less as in *ovata*. It differs from *ovata* in the less ovoid (more parallel-sided) and slightly more convex elytra (shoulders and hind wings well developed) and the slightly wider metasternal plaques. Elytra very densely punctate, some of the striae slightly irregular. Interstices between elytral punctures flat and (partly) superficially reticulated in *ovata*, slightly convex and glabrous in *pakistanica* sp.n.

Hydraena schuelkei sp.n. differs from *pakistanica* sp.n. in the more strongly cordiform pronotum, the reduced shoulders and the flatter, less regularly punctate elytra.

It differs from *Hydraena wrasei* sp.n. mainly in the well developed shoulders, the wider metasternal plaques, wider pronotum (lateral margin more distinctly angulate) and the less dense and less rugose elytral punctuation.

Hydraena pamirica sp.n. differs in the narrower, less glabrous pronotum, narrower elytral margin and the more regular elytral striation.

Sexual dimorphism: Last segment of maxillary palpi of male very slightly stronger, middle tibia of male almost unnoticeably arched (straight in female), middle tibia in some of the males with a hardly noticeable preapical enlargement on the inner margin, elytral apices slightly acuminate in female.

Aedeagus (Fig. 45): Not dissimilar to other Central Asian species (*scythica*, *ariana*, *cryptostoma* sp.n., *schuelkei* sp.n.). Main piece straight, except basal curvature; apex of main piece with three moderately long setae, which are quite difficult to see as they are inserted very close to the base of the distal lobe, a small fourth seta is situated further proximal, apex of main piece truncate, distinctly projecting ventrad; phallobasis more or less symmetrical. Distal lobe comparatively long, sinuate. Left paramere longer than right one; both parameres slender and simple, not conspicuously modified.

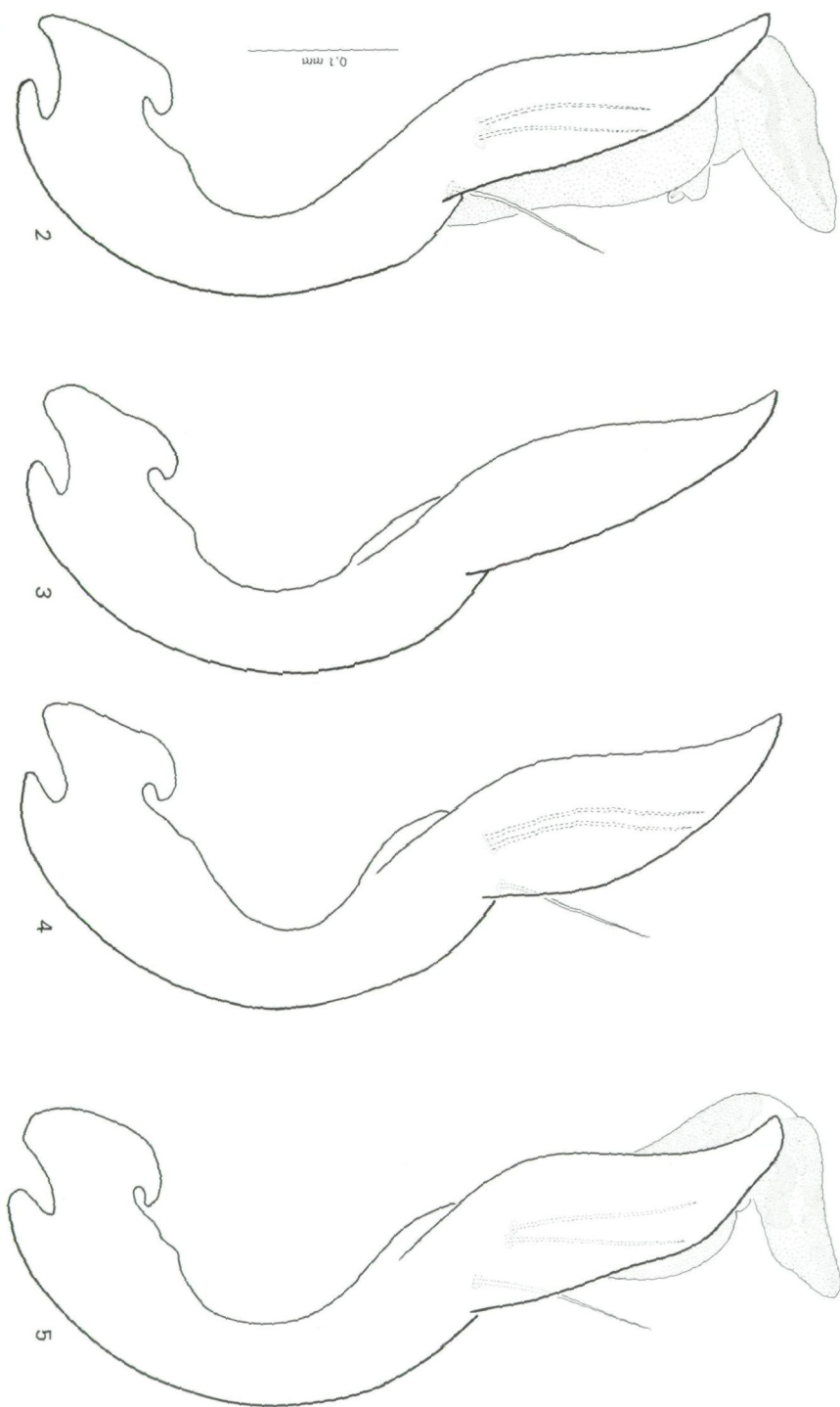
DISTRIBUTION: So far known only from the type locality.

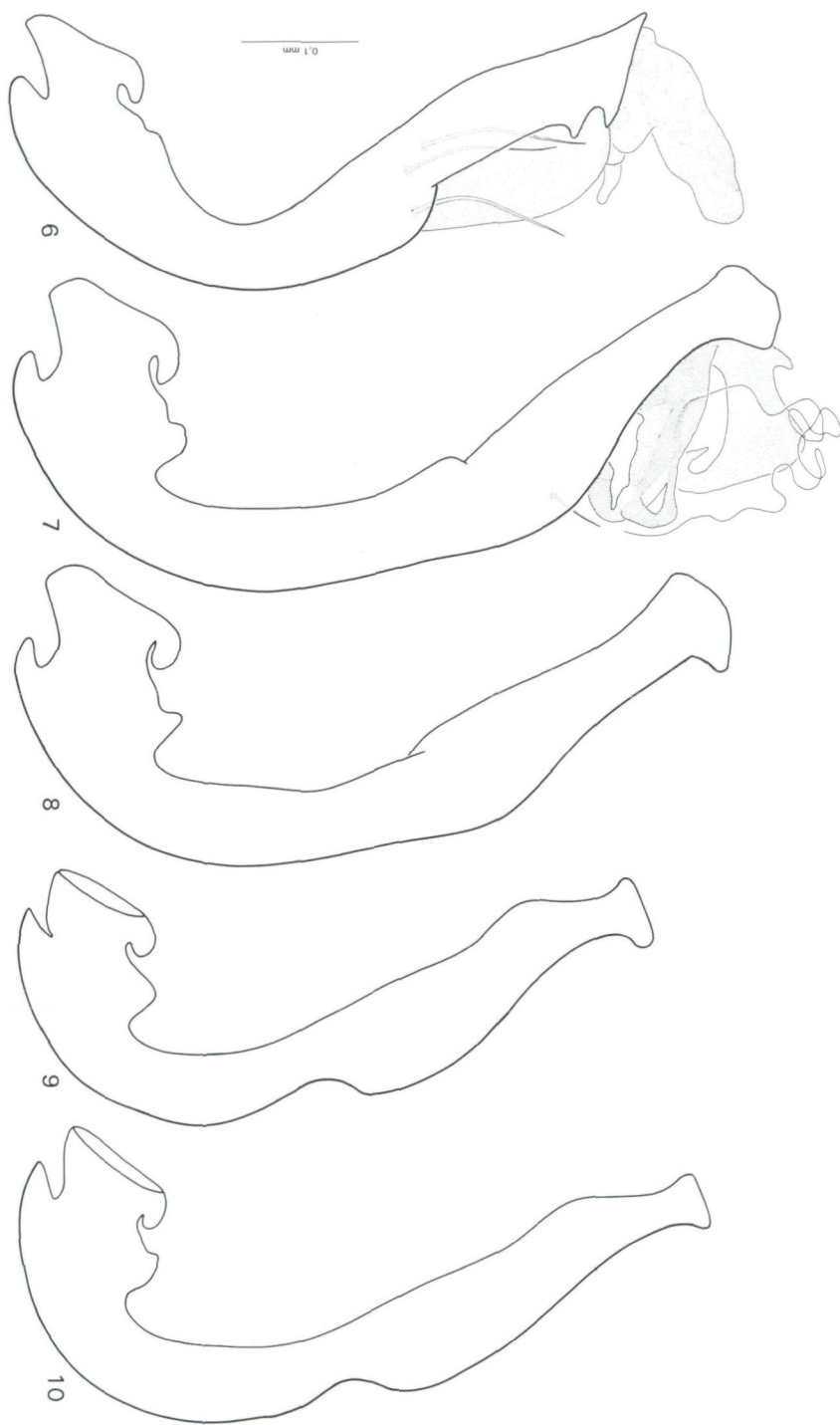
ETYMOLOGY: Named in reference to the type locality.

III. Check list of the Turkish species of the genus *Hydraena*

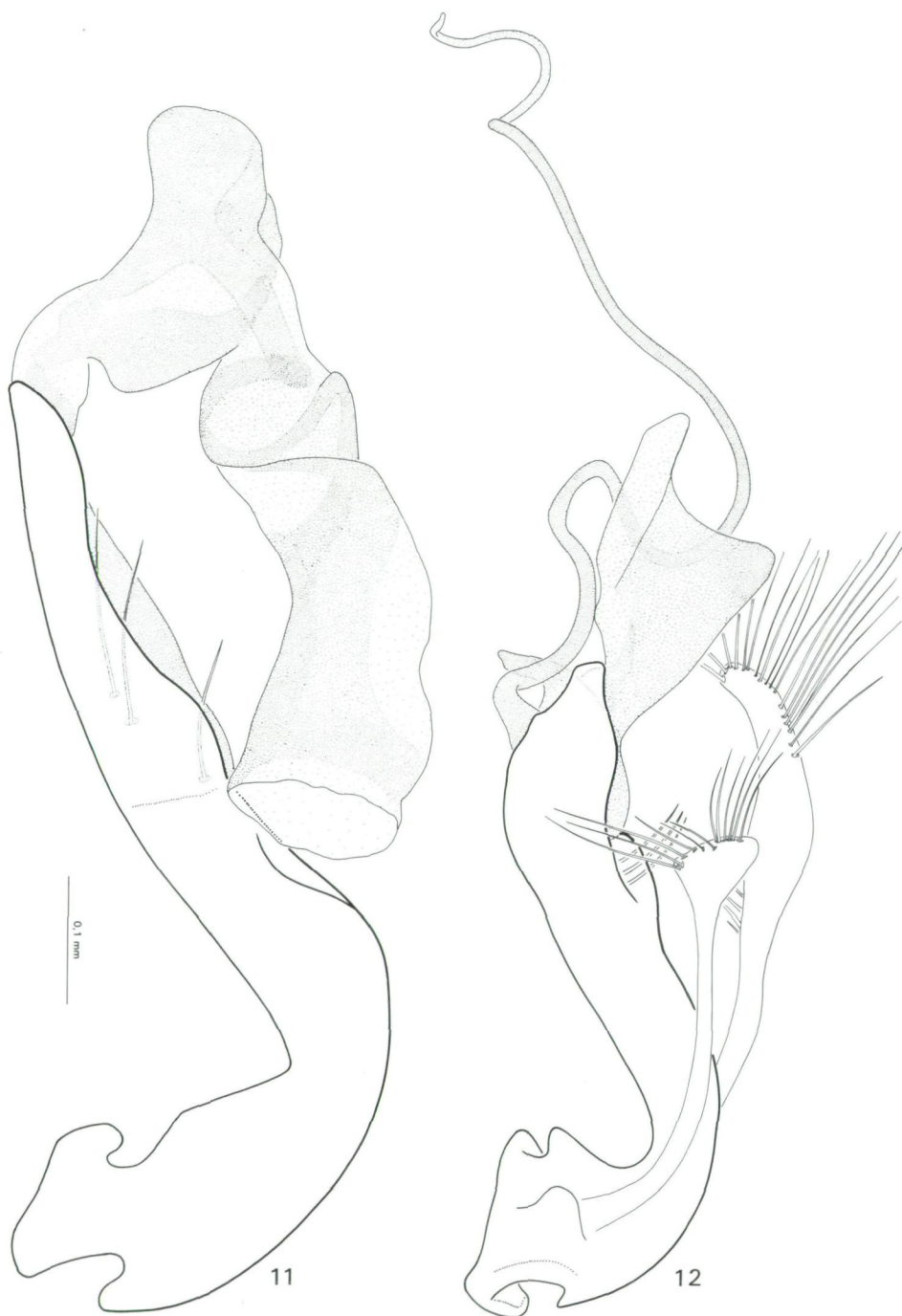
- 1) *H. (Haenydra) cata* ORCHYMONT
- 2) *H. (Haenydra) caucasica* KUWERT
(= *amarantina* JANSSENS)
- 3) *H. (Haenydra) crepidoptera* JÄCH
- 4) *H. (Haenydra) fontiscarsavii* JÄCH
- 5) *H. (Haenydra) gracilis* GERMAR - complex
(= *anatolica* JANSSENS)
- 6) *H. (Haenydra) graciloides* JÄCH
- 7) *H. (Haenydra) integra* PRETNER
(= *ponticola* JANSSENS)
- 8) *H. (Haenydra) nilguenae* JÄCH
- 9) *H. (Haenydra) lazica* JANSSENS
- 10) *H. (Haenydra) plastica* ORCHYMONT
H. (Haenydra) p. terraevastatae JÄCH
- 11) *H. (Haenydra) scitula* ORCHYMONT
- 12) *H. (Haenydra) septemlacuum* JÄCH
H. (Haenydra) s. sinope JÄCH
- 13) *H. (Phothydraena) paganetii* GANGLBAUER
- 14) *H. (s.str.) abbasigili* JÄCH
- 15) *H. (s.str.) amidensis* JÄCH
- 16) *H. (s.str.) ancyræ* JÄCH
- 17) *H. (s.str.) antiochena* JÄCH
- 18) *H. (s.str.) cf. armeniaca* JANSSENS
- 19) *H. (s.str.) attaleiae* FERRO
- 20) *H. (s.str.) aurita* JÄCH
- 21) *H. (s.str.) avuncula* JÄCH
- 22) *H. (s.str.) beyarslani* JÄCH
- 23) *H. (s.str.) bulgarica* BREIT
- 24) *H. (s.str.) canakcioglu* JANSSENS
(= *aydini* JANSSENS)
- 25) *H. (s.str.) cappadocica* JÄCH
- 26) *H. (s.str.) carica* JÄCH
- 27) *H. (s.str.) cervisophila* JÄCH
- 28) *H. (s.str.) ciliciensis* JÄCH
- 29) *H. (s.str.) colchica* JANSSENS
- 30) *H. (s.str.) coryleti* JÄCH
- 31) *H. (s.str.) dentipalpis* REITTER
(= *trapezuntina* JANSSENS)
- 32) *H. (s.str.) ebrimadli* JÄCH
- 33) *H. (s.str.) eichleri* ORCHYMONT
(= *carducha* JANSSENS)
- 34) *H. (s.str.) eucnemis* JANSSENS
- 35) *H. (s.str.) falcata* JÄCH
- 36) *H. (s.str.) finita* ORCHYMONT
- 37) *H. (s.str.) fritzi* JÄCH
- 38) *H. (s.str.) galatica* JANSSENS
- 39) *H. (s.str.) gnatella* ORCHYMONT
- 40) *H. (s.str.) gnatelloides* ORCHYMONT
- 41) *H. (s.str.) grandis* REITTER
- 42) *H. (s.str.) grata* ORCHYMONT
- 43) *H. (s.str.) gressa* ORCHYMONT
- 44) *H. (s.str.) griphus* ORCHYMONT
- 45) *H. (s.str.) guentheri* JÄCH
- 46) *H. (s.str.) hainzi* JÄCH
- 47) *H. (s.str.) helena* ORCHYMONT
(= *bithynica* JANSSENS)
- 48) *H. (s.str.) holdhausi* PRETNER
- 49) *H. (s.str.) janczyki* JÄCH
- 50) *H. (s.str.) kasyi* JÄCH
- 51) *H. (s.str.) kurdistanica* JÄCH
- 52) *H. (s.str.) lapsissectilis* JÄCH
- 53) *H. (s.str.) levantina* SAHLBERG
- 54) *H. (s.str.) ligulipes* JÄCH
- 55) *H. (s.str.) liriope* ORCHYMONT
- 56) *H. (s.str.) lycia* JÄCH
- 57) *H. (s.str.) macedonica* ORCHYMONT
- 58) *H. (s.str.) mariannae* JÄCH
- 59) *H. (s.str.) modili* JÄCH
- 60) *H. (s.str.) monscassius* JÄCH
- 61) *H. (s.str.) morio* KIESENWETTER
- 62) *H. (s.str.) muezziginea* JÄCH
- 63) *H. (s.str.) mylasæ* JÄCH
- 64) *H. (s.str.) nivalis* JÄCH
- 65) *H. (s.str.) olidipastoris* JÄCH
- 66) *H. (s.str.) phallerata* ORCHYMONT
(= *byzantina* JANSSENS)
- 67) *H. (s.str.) phassilyi* ORCHYMONT
- 68) *H. (s.str.) philyra* ORCHYMONT
- 69) *H. (s.str.) platycnemis* JÄCH
- 70) *H. (s.str.) platynaspis* JÄCH
- 71) *H. (s.str.) platysoma* JANSSENS
- 72) *H. (s.str.) prusensis* JÄCH
- 73) *H. (s.str.) pygmaea* WATERHOUSE
- 74) *H. (s.str.) pontica* JANSSENS
- 75) *H. (s.str.) pseudoriparia* ORCHYMONT
- 76) *H. (s.str.) richardimbi* JÄCH
- 77) *H. (s.str.) riparia* KUGELANN
- 78) *H. (s.str.) schilfii* JÄCH
- 79) *H. (s.str.) schillhammeri* JÄCH
- 80) *H. (s.str.) schoedli* JÄCH
- 81) *H. (s.str.) schoenmanni* JÄCH
- 82) *H. (s.str.) serpentina* JÄCH
- 83) *H. (s.str.) smyrnensis* SAHLBERG
- 84) *H. (s.str.) speciosa* ORCHYMONT
- 85) *H. (s.str.) subgrandis* JÄCH
- 86) *H. (s.str.) sublamina* ORCHYMONT
- 87) *H. (s.str.) sublapsa* ORCHYMONT
- 88) *H. (s.str.) tauricola* JÄCH
- 89) *H. (s.str.) terebrans* JÄCH
- 90) *H. (s.str.) turcica* JANSSENS
- 91) *H. (s.str.) virginalis* JANSSENS
- 92) *H. (s.str.) wewalkai* JÄCH

Figs. 2 - 5: *Hydraena*, aedeagus, lateral aspect, (2) *H. gracilis*, Austria, Niederösterreich, (3) *H. gracilis*, Turkey, Zigana Pass, setae and distal lobe omitted, (4) *H. sp. cf. gracilis*, Turkey, Ordu, Gökölü, distal lobe omitted, (5) *H. elisabethae* sp. n., holotype.





Figs. 6 - 10: *Hydraena*, aedeagus, lateral aspect, (6) *H. crepidoptera* sp.n., holotype, (7) *H. septemlacuum septemlacuum* sp.n., (8) *H. septemlacuum sinope* ssp.n., (9) *H. plastica plastica*, (10) *H. plastica terraevastatae* stat.nov. - Distal lobe omitted in Figs. 8 - 10.



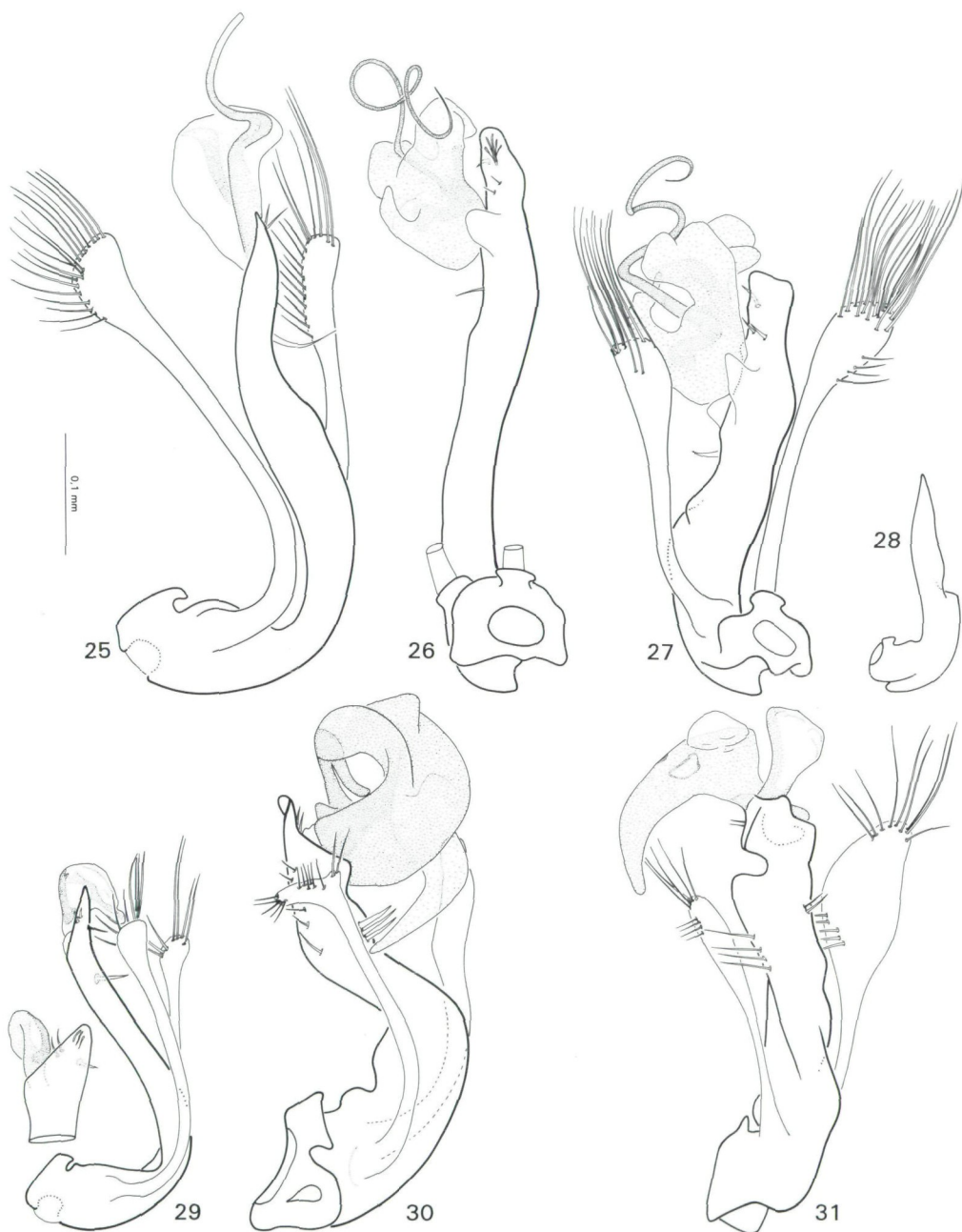
Figs. 11 - 12: *Hydraena*, aedeagus, lateral aspect, (11) *H. pangaei* sp.n., holotype, (12) *H. terebrans* sp.n., holotype.



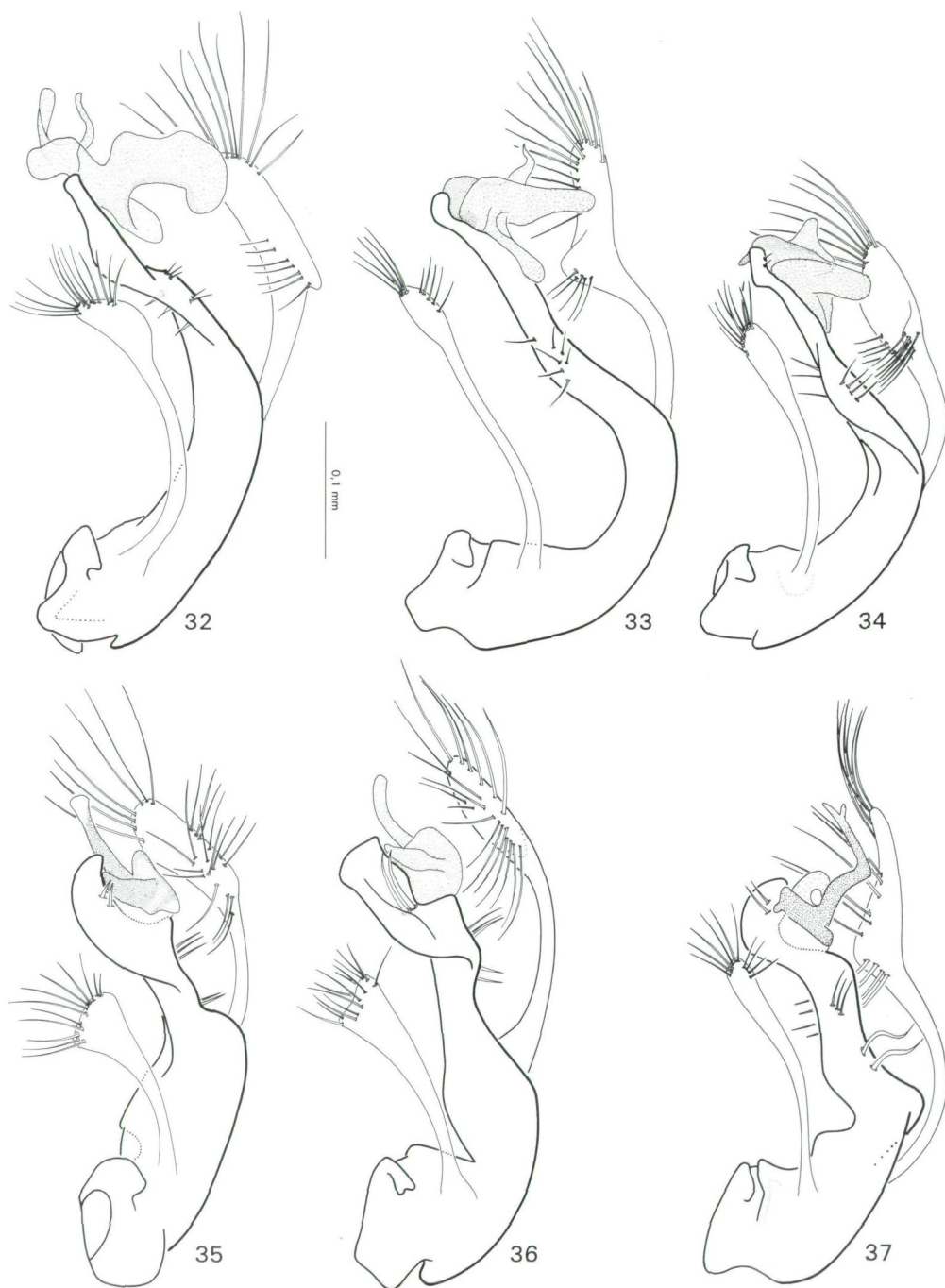
Figs. 13 - 18: *Hydraena*, aedeagus, (13) *H. audisioi* sp.n., paratype, (14) *H. servilia*, holotype, (15) *H. smyrnenis*, Greece, Kabala, (16) *H. pulsata*, (17) *H. phallerata*, Turkey, Istanbul, (18) *H. philyra*, Turkey. - Aedeagus of Fig. 16 in ventral aspect, all others in lateral aspect.



Figs. 19 - 24: *Hydraena*, aedeagus, lateral aspect, (19) *H. turcica*, Turkey, Denizli, (20) *H. corcyra*, holotype, (21) *H. phassilyi*, Turkey, (22) *H. filum*, Greece, Lesbos, (23) *H. finita*, Turkey, Izmir, (24) *H. mylasae* sp.n., holotype.



Figs. 25 - 31: *Hydraena*, aedeagus, (25) *H. lapisectilis* sp.n., holotype, lateral aspect, (26) *H. ancyræ* sp.n., paratype, ventral aspect, parameres omitted, (27) *H. ? pseudoriparia*, Turkey, Çanakkale, ventral aspect (28) same, lateral aspect, not to scale, (29) *H. cervisophila* sp.n., holotype, lateral aspect, inset: apex of same, ventral aspect, (30) *H. prusensis* sp.n., holotype, lateral aspect, (31) *H. falcata* sp.n., holotype.



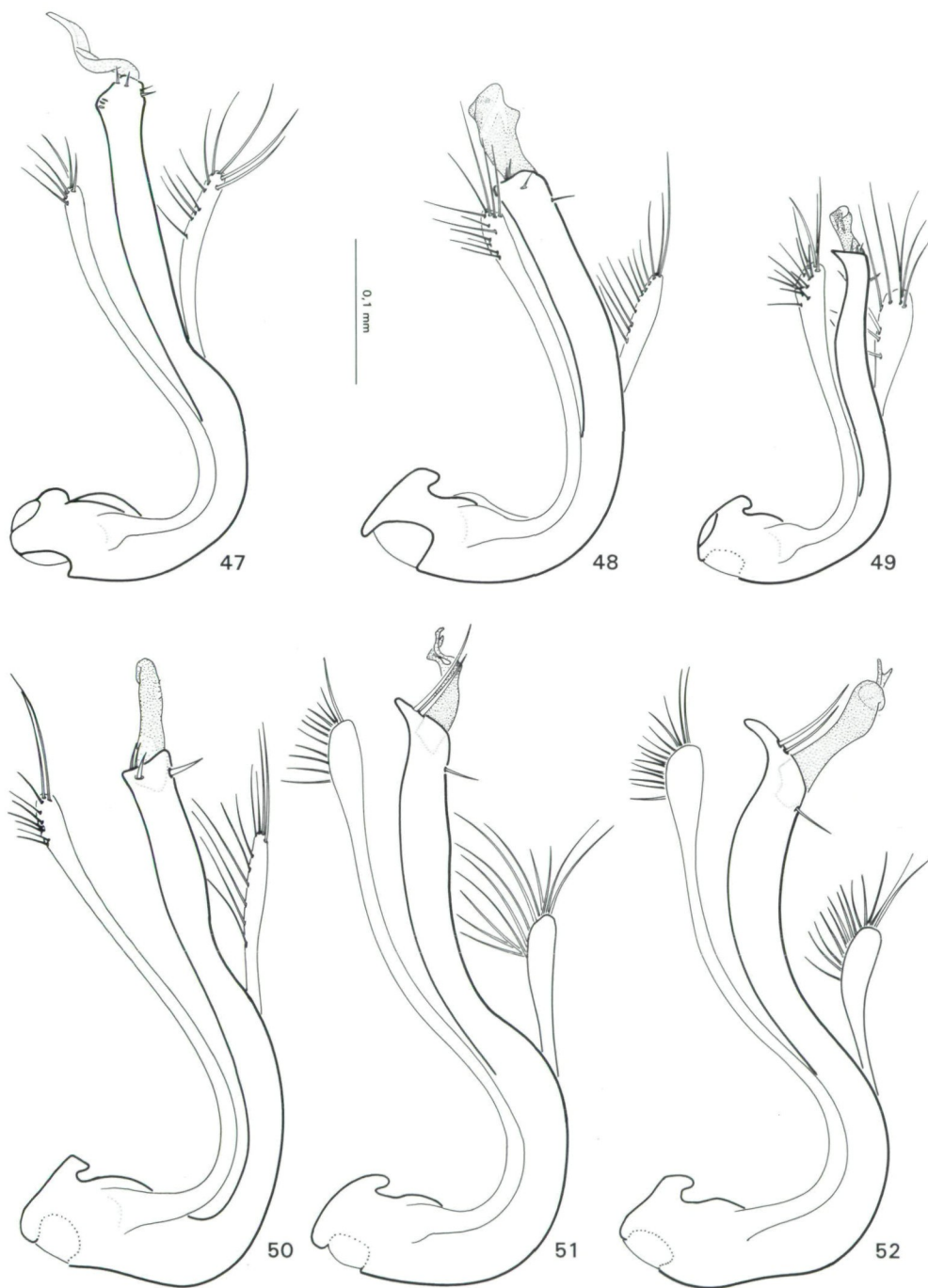
Figs. 32 - 37: *Hydraena*, aedeagus, lateral aspect, (32) *H. cf. armeniaca*, Turkey, Ankara, (33) *H. schoedli* sp.n., holotype, (34) *H. nivalis* sp.n., holotype, (35) *H. janczyki* sp.n., holotype, (36) *H. colchica*, Turkey, Artvin, (37) *H. fritzi* sp.n., holotype.



Figs. 38 - 42: *Hydraena*, aedeagus, lateral aspect, (38) *H. richardimbi* sp.n., holotype, (39) *H. kasyi* sp.n., holotype, (40) *H. mariannae* sp.n., holotype, (41) *H. verstraeteni*, holotype, left paramere detached, (42) *H. guentheri* sp.n., holotype, right paramere not depicted.



Figs. 43 - 46: *Hydraena*, aedeagus, (43) *H. griphus* ssp., Köprülü NP, eastern Antalya Province, ventral aspect, parameres not illustrated, (44) *H. coryleti* sp.n., ventral aspect, parameres not illustrated, (45) *H. pakistanica* sp.n., lateral aspect, (46) *H. grandis*, Greece.



Figs. 47 - 52: *Hydraena*, aedeagus, lateral aspect, (47) *H. ariana*, paratype, (48) *H. wrasei* sp.n., holotype, (49) *H. pamirica* sp.n., holotype, (50) *H. schuelkei* sp.n., holotype, (51) *H. ? scythica*, Tadzhikistan, (52) *H. cryptostoma* sp.n., holotype.

Fig. 53: Stream in Yedigöller National Park (Turkey, Bolu Province). Type locality of *H. septemlacuum* sp.n. [Photo: M.A. Jäch]

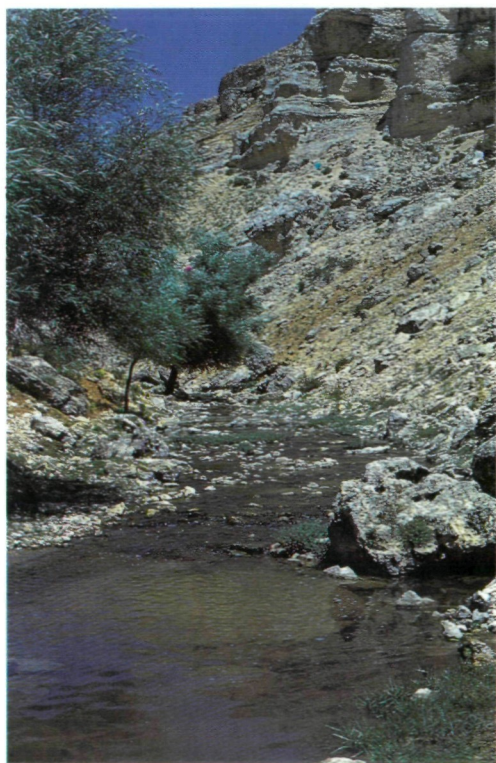
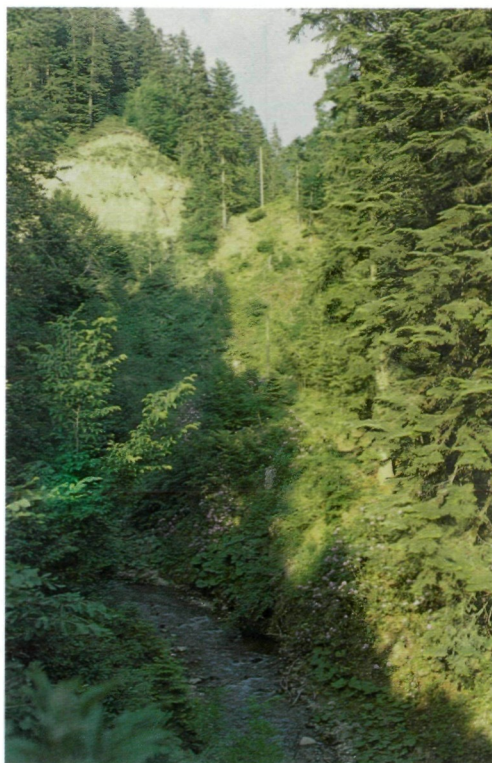
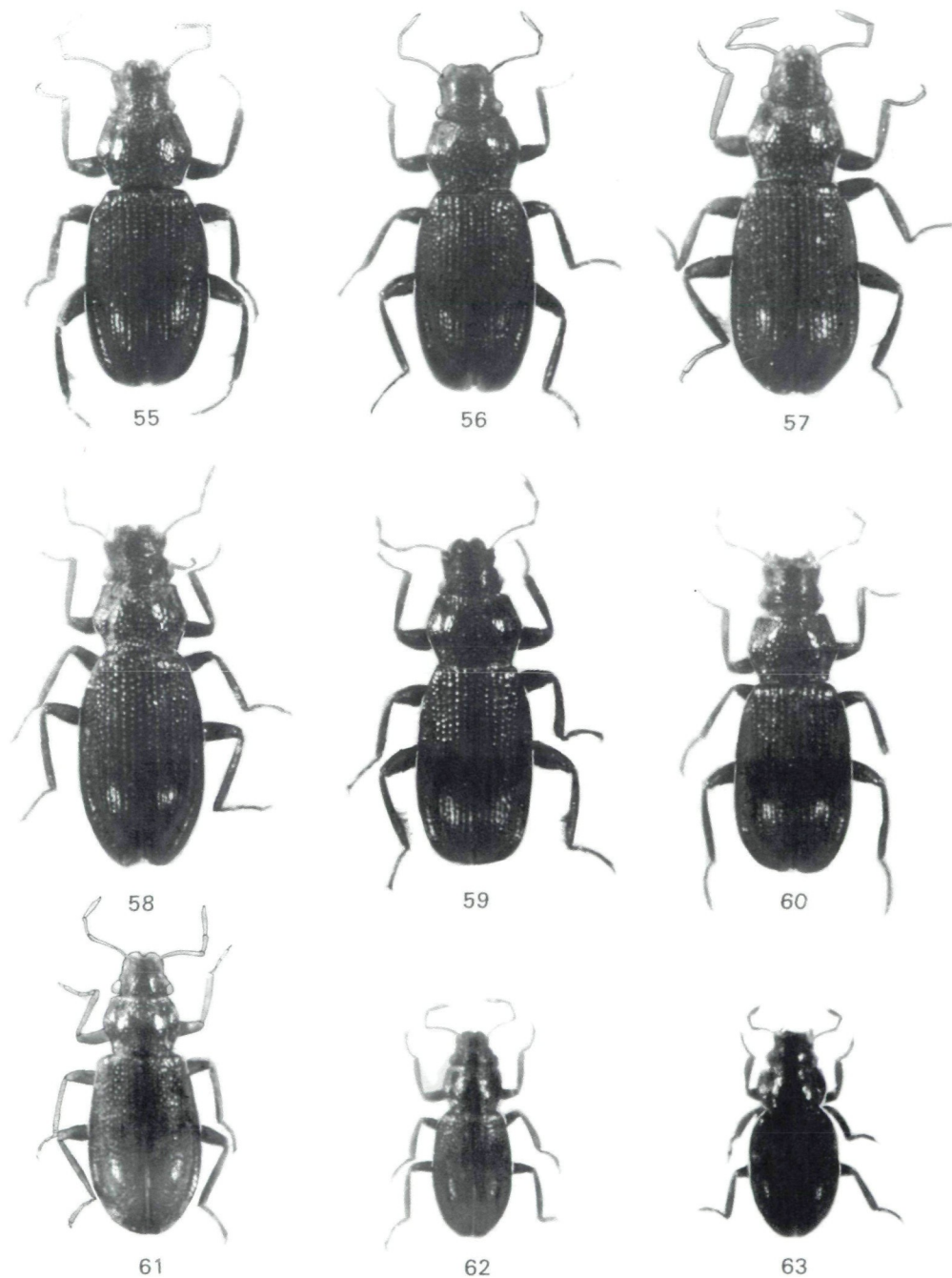
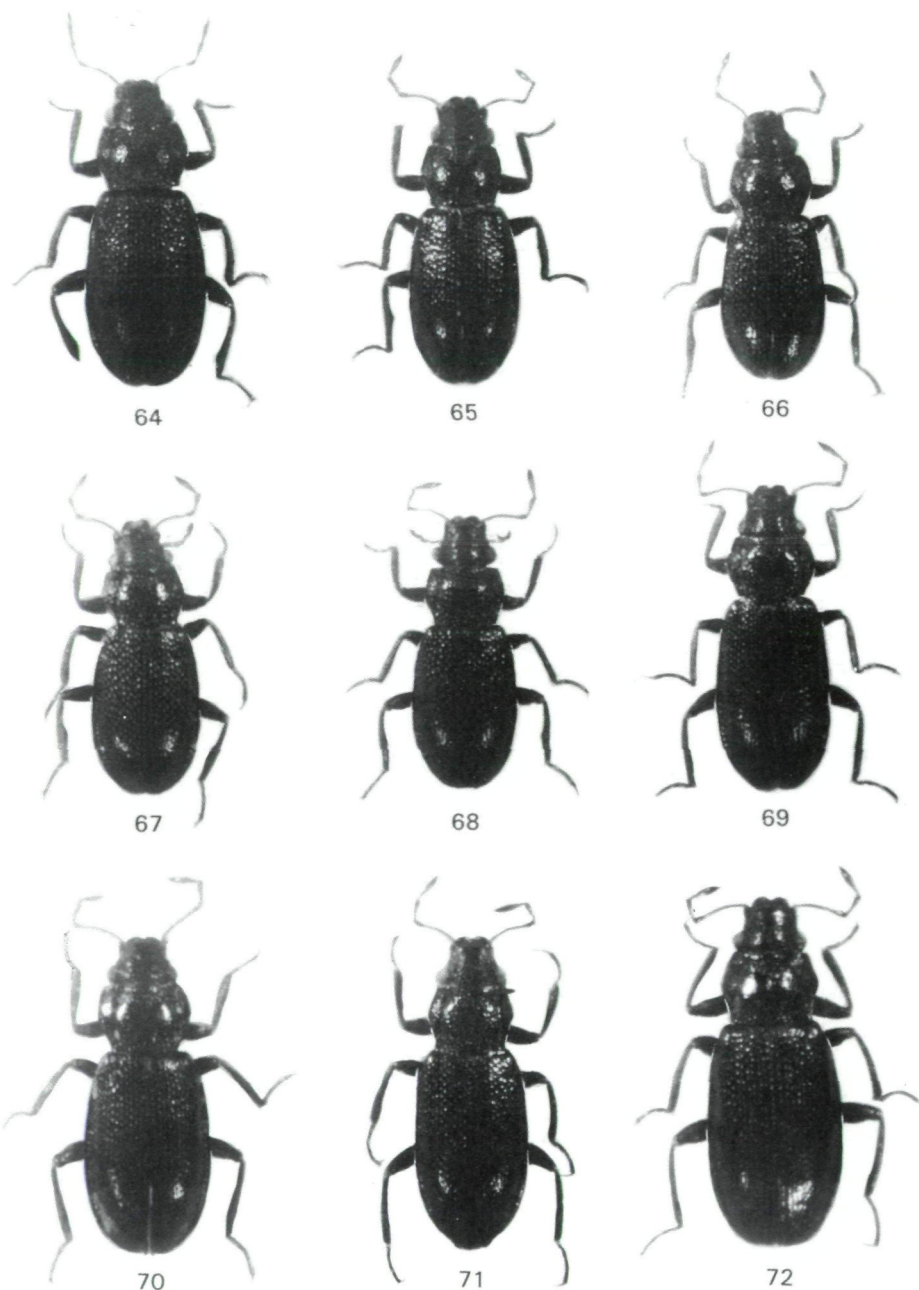


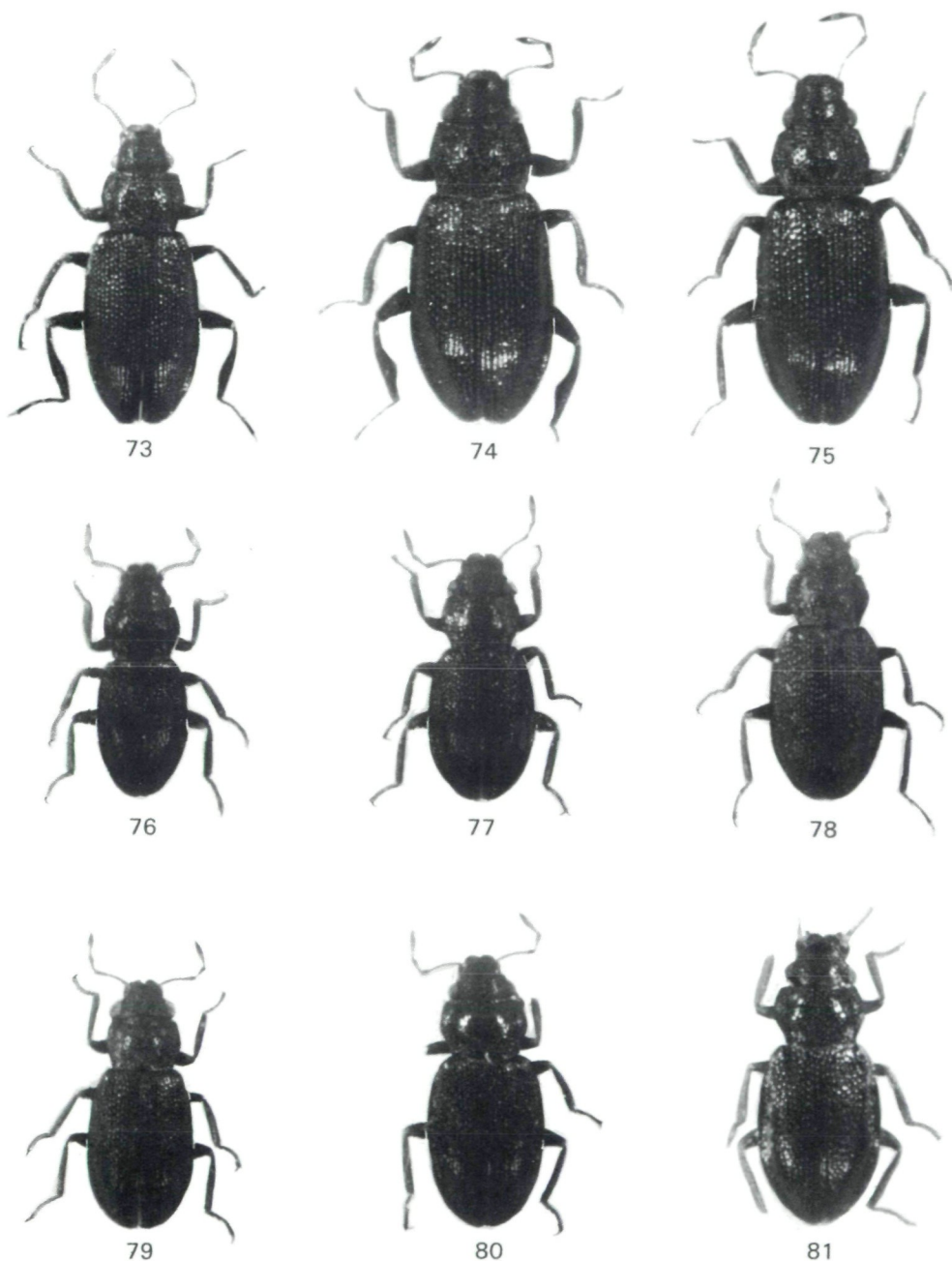
Fig. 54: Stream on Karahasan Pass, near Ermenek - Konya Province, southern Turkey. Type locality of *H. schoedli* sp.n. [Photo: St. Schödl]



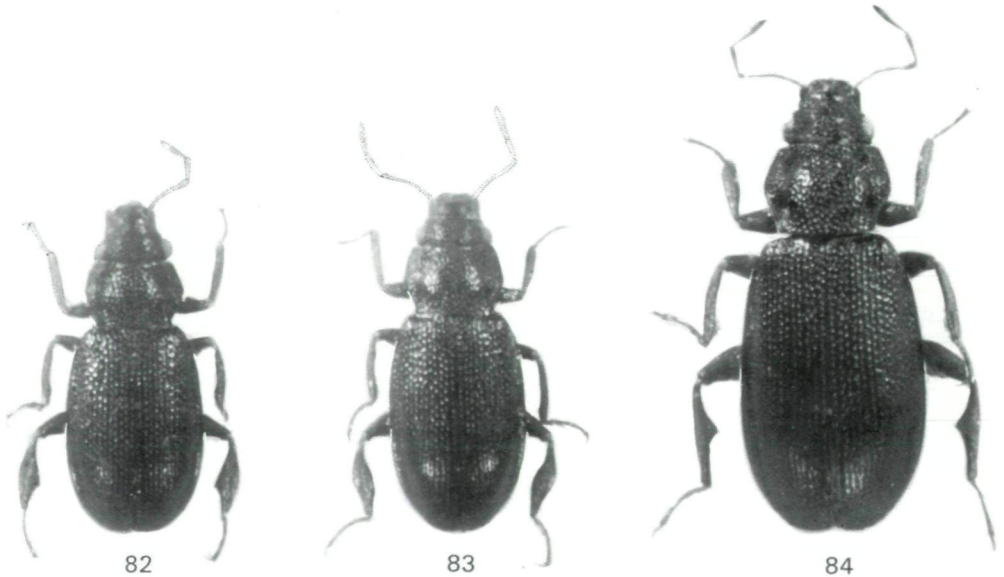
Figs. 55 - 63: *Hydraena*, habitus, (55) *H. crepidoptera* sp.n., paratype ♂, (56) same, ♀, (57) *H. pangaei* sp.n., paratype ♂, (58) same, paratype ♀, (59) *H. septemlacuum* sp.n., holotype ♂, (60) same, paratype ♀, (61) *H. dolichogaster* JANSSENS, holotype ♀, (62) *H. audisioi* sp.n., holotype ♂, (63) *H. cervisophila* sp.n., holotype ♂.



Figs. 64 - 72: *Hydraena*, habitus, (64) *H. falacata* sp.n., holotype ♂, (65) *H. prusensis* sp.n., holotype ♂, (66) *H. nivalis* sp.n., holotype ♂, (67) *H. schoedli* sp.n., paratype ♂, (68) *H. fritzi* sp.n., paratype ♂, (69) *H. janczyki* sp.n., holotype ♂, (70) *H. hiekei* sp.n., paratype ♂, (71) *H. kasyi* sp.n., paratype ♂, (72) *H. richardimbi* sp.n., paratype ♂.



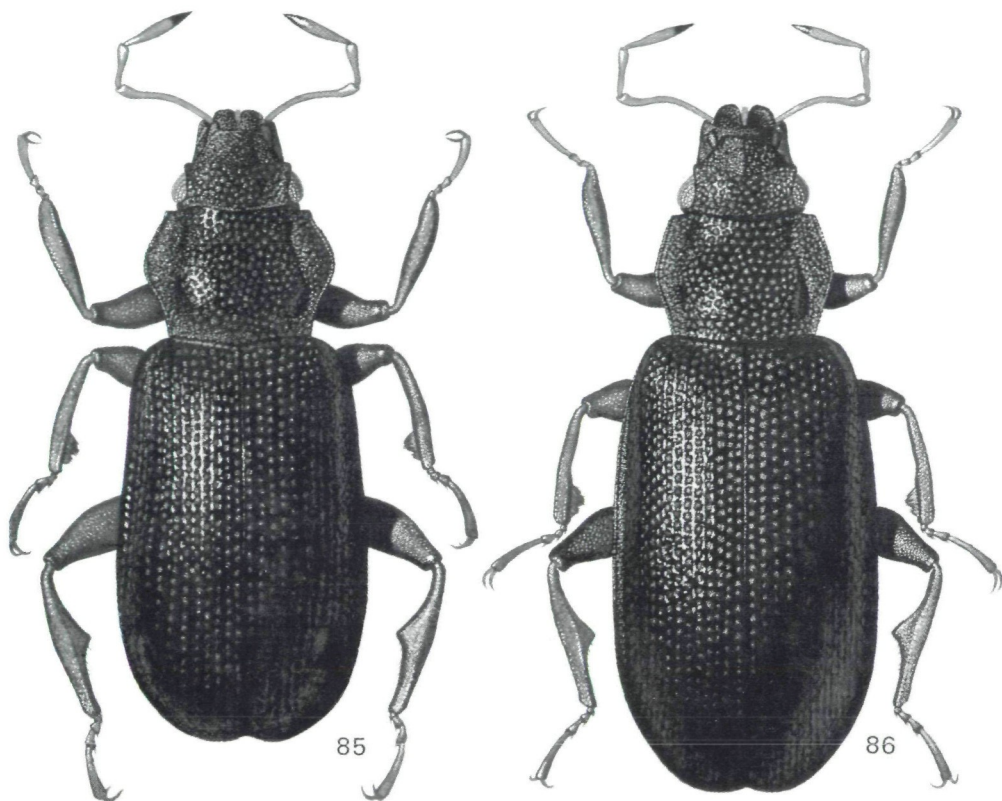
Figs. 73 - 81: *Hydraena*, habitus, (73) *H. mariannae* sp.n., holotype ♂, (74) *H. terebrans* sp.n., holotype ♂, (75) *H. ancyræ* sp.n., paratype ♂, (76) *H. schuelkei* sp.n., paratype ♂, (77) *H. wrasei* sp.n., paratype ♂, (78) *H. cryptostoma* sp.n., holotype ♂, (79) *H. pamirica* sp.n., paratype ♂, (80) *H. pakistanica* sp.n., paratype ♂, (81) *H. ovata* JANSSENS, holotype ♀.



Figs. 82 - 84: *Hydraena*, habitus, (82) *H. guentheri* sp.n., holotype ♂, (83) *H. platynemis* JÄCH, paratype ♂, (84) *H. coryleti*, holotype ♂.

Zusammenfassung

Achtundzwanzig Arten und eine neue Unterart der Gattung *Hydraena* (s.l.) werden beschrieben: *H. (Haenydra) crepidoptera* sp.n. [Türkei], *H. (Haenydra) elisabethae* sp.n. [Griechenland], *H. (Haenydra) pangaei* sp.n. [Griechenland], *H. (Haenydra) septemlacuum* sp.n. [Türkei], *H. (Haenydra) septemlacuum sinope* ssp.n. [Türkei], *H. (s.str.) ancyrae* sp.n. [Türkei], *H. (s.str.) audisioi* sp.n. [Algerien], *H. (s.str.) cervisophila* sp.n. [Türkei], *H. (s.str.) corcyra* sp.n. [Griechenland], *H. (s.str.) coryleti* sp.n. [Türkei], *H. (s.str.) cryptostoma* sp.n. [Tadschikistan], *H. (s.str.) falcata* sp.n. [Türkei], *H. (s.str.) fritzi* sp.n. [Türkei], *H. (s.str.) guentheri* sp.n. [Türkei], *H. (s.str.) hieki* sp.n. [Georgien], *H. (s.str.) janczyki* sp.n. [Türkei], *H. (s.str.) kasyi* sp.n. [Türkei], *H. (s.str.) lapsissectilis* sp.n. [Türkei], *H. (s.str.) mariannae* sp.n. [Türkei], *H. (s.str.) mylasae* sp.n. [Türkei], *H. (s.str.) nivalis* sp.n. [Türkei], *H. (s.str.) pakistanica* sp.n. [Pakistan], *H. (s.str.) pamirica* sp.n. [Tadschikistan], *H. (s.str.) prusensis* sp.n. [Türkei], *H. (s.str.) richardimbi* sp.n. [Türkei], *H. (s.str.) schoedli* sp.n. [Türkei], *H. (s.str.) schuelkei* sp.n. [Tadschikistan], *H. (s.str.) terebrans* sp.n. [Türkei] und *H. (s.str.) wrasei* sp.n. [Tadschikistan]. Neue Synonymien: *Hydraena (Haenydra) caucasica* KUWERT (= *amarantina* JANSSENS syn.nov.), *Hydraena (s.str.) eichleri* ORCHYMONT (= *carducha* JANSSENS syn.nov.), *Hydraena (s.str.) levantina* SAHLBERG (= *samia* JÄCH syn.nov.), *Hydraena (s.str.) smyrnensis* SAHLBERG (= *pulsata* ORCHYMONT syn.nov., *sanctimontis* JANSSENS syn.nov.) und *Hydraena (s.str.) subinflata* ORCHYMONT (= *dryops* JANSSENS syn.nov., *belfiorei* AUDISIO & DE BIASE syn.nov.). *Hydraena (Haenydra) terraevastatae* JÄCH wird als Subspezies von *H. plastica* ORCHYMONT betrachtet. Lectotypen werden für *H. (Haenydra) integra* PRETNER und *H. (s.str.) eichleri* designiert. Eine Liste der türkischen Arten der Gattung *Hydraena* (s.l.) wurde erstellt.



Figs. 85 - 86: *Hydraena*, habitus, (85) *H. coryleti* sp.n., (86) *H. grandis*.

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