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## A CATALOG OF THE HELICOPSYCHIDAE (INSECTA: TRICHOPTERA) OF THE WORLD

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### ABSTRACT

All 168 known species within the 6 genera of the caddisfly family Helicopsychidae are cataloged. Included are all synonyms, type localities, type depositories and species ranges. A historical summary of the taxonomy used within the family is given as well as the biology of the different life stages on generic level. Due to uncertain taxonomic position *Helicopsyche helicoidella* (Vallot, 1855), *Helicopsyche pupoidea* (Gould, 1864), *Helicopsyche scalaris* Hagen, 1864, *Helicopsyche thelidomus* Hagen, 1864, *Helicopsyche arenifera* (Lea, 1834), *Helicopsyche brasiliensis* (Swainson, 1840) and *Helicopsyche colombiensis* von Siebold, 1856 are not included in the catalog. *Helicopsyche fannii* Rougemont, 1879 was never described and is listed as nomen nudum. *Helicopsyche lustrica* (Say, 1821) is listed as a new synonym under *Helicopsyche borealis* (Hagen, 1861).

### INTRODUCTION

This work was initiated in the need of a summary of basic systematic knowledge and to present a platform for future studies on the family Helicopsychidae. The Helicopsychidae, or snail-case caddisflies, is a moderately large family, with altogether 168 valid species. Four extant genera are included in the family: *Helicopsyche* von Siebold, 1856; *Cochliopsyche* Müller, 1885, *Rakiura* McFarlane, 1973 and *Cochliophylax* Schmid, 1993.

*Helicopsyche* is the largest genus, including 145 extant species. It is known from all main faunal re-

gions sensu Bartholmew, Clarke & Grimshaw (1911) (Fig.1). The greatest diversity is found in tropical regions. Nearly all species have been recorded from relatively few areas, indicating that each species has a very restricted distribution. A few species are recorded from cooler areas, like *Helicopsyche borealis* (Hagen, 1861), which is widespread in the New World as far north as Labrador in eastern Canada. In Europe, *Helicopsyche crispata* (Benoit, 1857) has been recorded from Switzerland to southern Italy. *Cochliophylax* is the second largest genus with fourteen known species, all from the Oriental Region (Fig.2). *Cochliopsyche* is restricted to northern parts

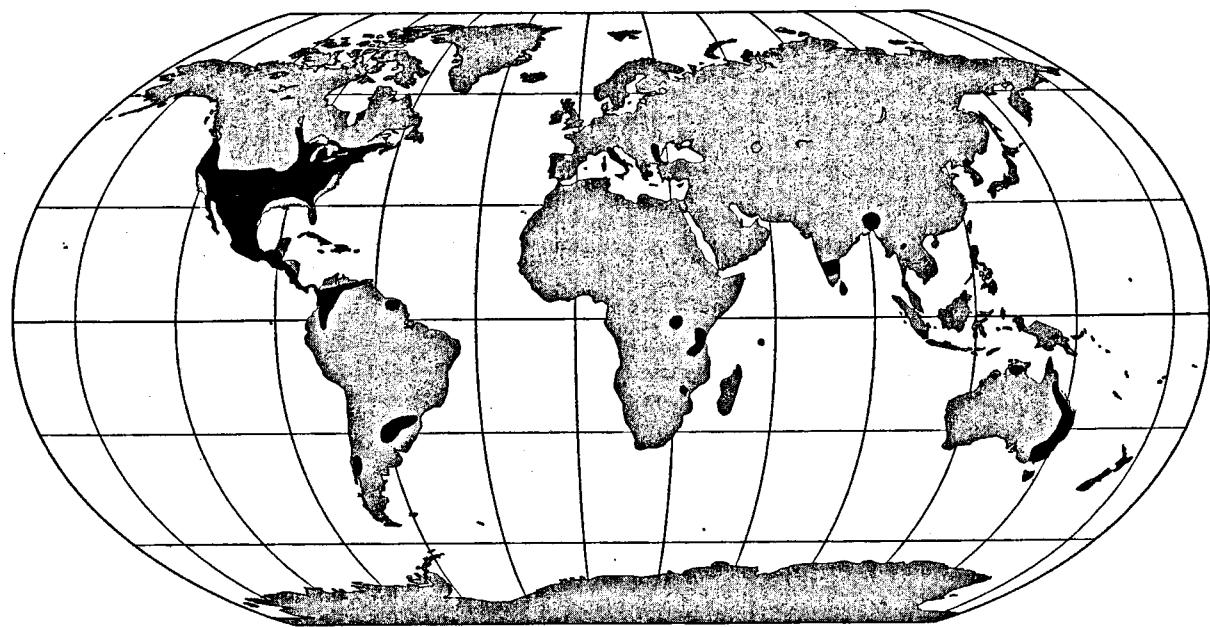


Fig. 1. The total range of the known extant *Helicopsyche* spp. is indicated with black areas on the map above.

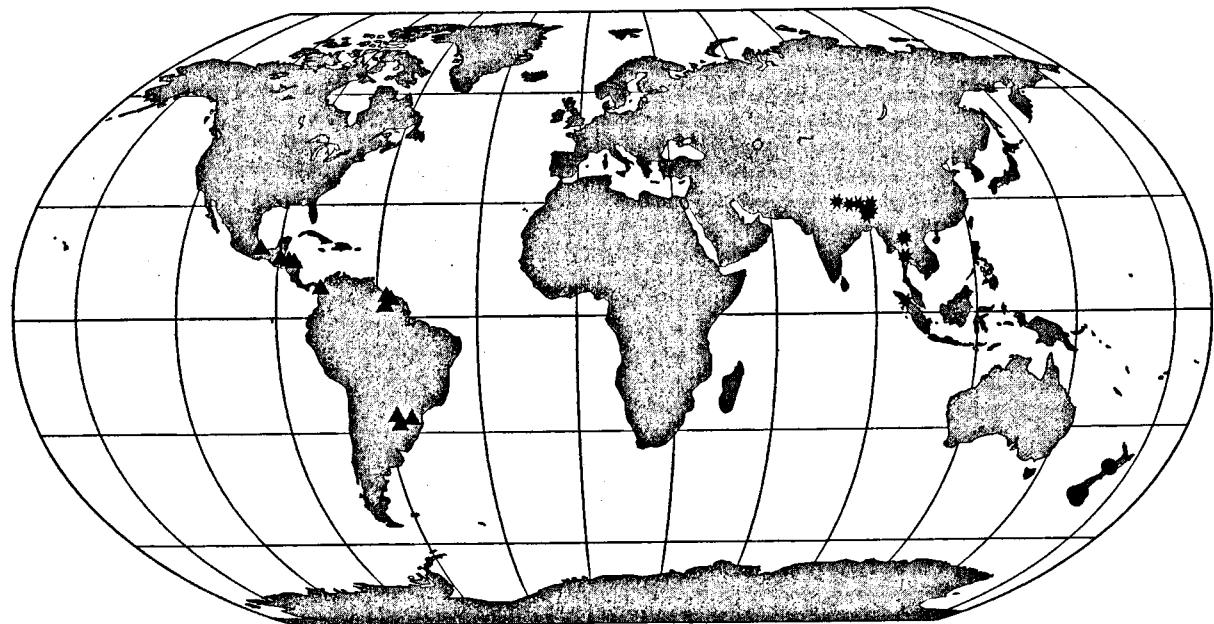


Fig. 2. The known records of the three genera *Cochliopsyche* spp. (▲), *Rakiura* sp. (●) and *Cochliophylax* spp. (\*) are indicated on the map above.

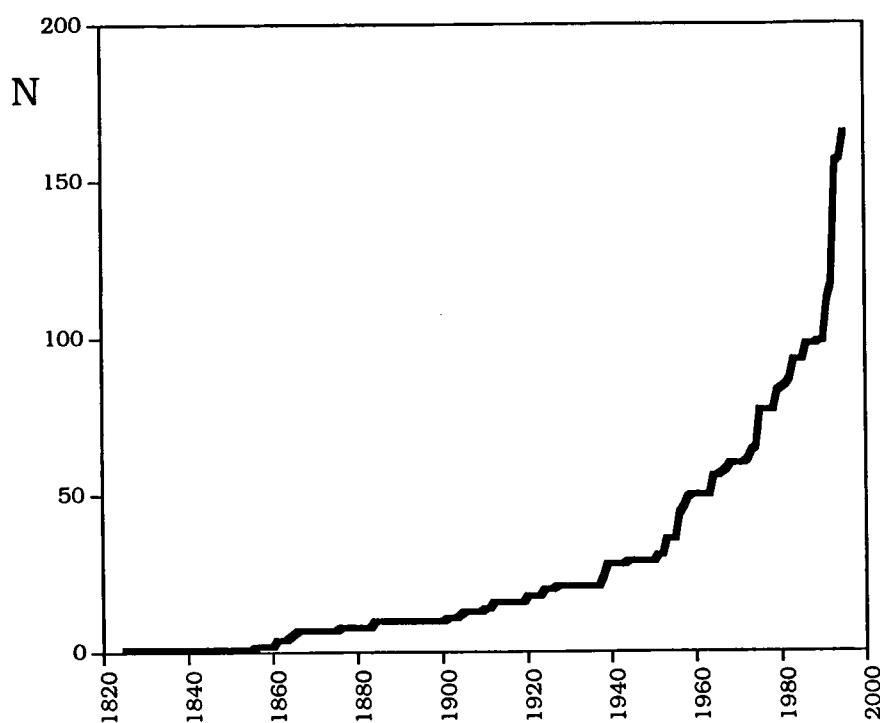


Fig. 3. The cumulative sum of species described within the family Helicopsychidae up to 1995. N = number of species described.

of the Neotropical Region (Fig. 2) and includes four described species. Finally, *Rakiura* is monotypic, represented by *Rakiura vernalis* McFarlane, 1973, which is endemic to South Island, New Zealand (Fig. 2).

The apparent absence of the family in Austro-Malayan Subregion need to be explained, particularly since the species number in Helicopsychidae southeast and northwest of this subregion is high compared to elsewhere (Johanson, 1995a). Wells (pers. comm.) suggests the absence of records from this area are due to sampling errors. Only two Helicopsychidae species are (so far) known from the eastern Palaearctic Region (i.e. *Helicopsyche yamadai* Iwata, 1927 from Japan, and *Helicopsyche coreana* Mey, 1991 from North Korea). The nearest records of other species are from Thailand and Burma in the south, and Canada and the United States in the east. No species are known from China or the former USSR. There are good reasons to believe that these circumstances are due to scarce collection efforts in these

areas. Unfortunately, a satisfactory understanding of the distribution patterns of the family cannot be achieved.

#### HISTORICAL REVIEW

Systematic changes and additions in any group of living organisms will never be completed, and the list of species presented in this catalogue is no exception. Our present knowledge indicates many more undescribed species, and many species probably have larger ranges than indicated in the literature. This assumption is confirmed as accumulation of species over time is presented in a simple diagram (Fig. 3). This tendency is not exceptional for the Helicopsychidae but applies to most other Trichoptera families as well.

The first known record of a Helicopsychidae species was the description of *Paludina lustrica* Say, 1821, which was based on the larval case. This species is now placed in synonym with *Helicopsyche borealis*.

Swainson (1840) described *Thelidomus brasiliensis* which was later transferred into *Helicopsyche*. The taxonomic position is uncertain. The coiled larval cases have great structural resemblance with snail shells and are due to the misidentifications.

The name *Helicopsyche* was first used in the literature by von Siebold (1856), who described *Helicopsyche colombiensis*, *Helicopsyche minima* and *Helicopsyche shuttleworthi* from larval cases.

In 1865, Brauer described *Saetotrichia ptychopteryx* from Australia. Neboiss (1986) assigned this species to *Helicopsyche*.

Ulmer (1905) described *Tetanonema clarum* from Brazil. Much later (1955), he considered this genus to be a synonym of *Cochliopsyche* (Müller, 1885).

In 1910, Ulmer described *Petrotrichia palpalis* as a Hydroptilidae from the Seychelles. This species was actually found to be a *Helicopsyche* by Marlier & Malicky (1979).

The genera *Helicopsyche*, *Tetanonema* and *Sae-totrichia* were separated by Ulmer (1912:270) from the rest of the sericostomatid genera and combined into the new subfamily Helicopsychinae, which was given family status by Ross in 1944.

No more than four fossil Helicopsychidae species are described, all from Baltic amber dating from late Eocene. Two of these were placed within *Helicopsyche* and described by Ulmer (1912). The two remaining, *Electrohelicopsyche taeniata* (Pictet, 1856) and *Palaeohelicopsyche serricornis* Ulmer, 1912, were described into distinct genera. Fossil *Helicopsyche* are also known from Dominican amber dated from early Miocene (Wichard 1988).

## BIOLOGY

Few details are known about the biology of most helicopsychid species. The best investigated species is *H. borealis* which larval stages have been extensively studied in North America. The females of *H. borealis* produce eggmasses composed of eggs within a gelatinous matrix. The eggmasses are transparent and contain 150-250 yellowish-green and grayish eggs of about 230 $\mu$  in diameter (Davis 1965; Vaughn 1985). The eggmasses of *Rakiura verna* consist of approximately 100 pale orange eggs of about 190 $\mu$

in diameter (Michaelis, 1973). The eggs of *Cochliopsyche* spp. and *Cochliophylax* spp. are unknown

The larval stages are known in 22% of the species. The larva of only one *Cochliopsyche* species (i.e. *Cochliopsyche vazquezae*) and one *Cochliophylax* species (i.e. *Cochliophylax angusta*) are known (Monson et al., 1988; Ulmer, 1955, respectively). The larva of *Rakiura verna* was described by Michaelis (1973). *H. borealis* larvae inhabit small streams, large rivers and even littoral zones of lakes. The larvae have been found in streams where the temperature rises to 34°C (Wiggins, 1977), they have also survived water temperatures of 36°C over short periods (Resh, Lamberti & Wood, 1984). The larvae have, furthermore, been found in highly polluted waters (Mackay & Wiggins, 1979). The European *H. bacescui* Orghidan & Botosaneanu, 1953, has also been reported to survive several hours on moist sand and in freezing iceblocks (Botosaneanu, 1956).

However, the larvae of most species are found in well aired, relatively small streams to moderately large rivers where they graze on periphyton, bacteria and detritus (e.g. Mecom 1972). Studies of *Helicopsyche murrumba* Mosely, 1953 indicate that larvae are active during day time, but inactive at night (Bailey, 1982). Some species are, however, less affected by light conditions, like *H. borealis* (Berger & Kaster, 1979).

The cases of all species are coiled dextrally as described by several authors. The number of whorls differs between species (5th instar cases), from 1 3/4 in *Rakiura verna*, 2 1/3 in *Cochliopsyche vazquezae* to 2 1/2-4 in *Helicopsyche* spp. The cases are constructed of fine or coarse sand grains, depending on species, glued together by silk. The first half of the whorl has an aperture for water circulation.

The larva of the leptocerid species *Leptecho helicotheca* Scott, 1958, from South Africa, and *Leptecho* sp. from Tanzania (Stoltze pers. comm.) build similar coiled larval cases. However, in *Leptecho* coiled cases are only made in the later instars while in Helicopsychidae they are made in the first or second instar.

At the end of the fifth instar, pupation activity is

initiated by anchoring the case with silk to the substrate. Descriptions of the pupa are given for only 17% of the species. Before emergence, the pupa escapes from the case, and can swim around for several hours (Hudson, 1904). Flint (1991) studied the seasonal flight activity of the Columbian species *Helicopsyche breviterga* Flint, 1991 and *Helicopsyche fistulata* Flint, 1991. He demonstrated that the number of specimens hatching throughout the year is related to yearly temperature and rainfall variations. A similar pattern was found for *Helicopsyche barbata* Johanson, 1993 and *Helicopsyche bifida* Johanson, 1993 in W. Usambara Mts, N.E. Tanzania (unpublished).

### THE CATALOGUE FORMAT

The valid taxa are listed in bold italic. Synonyms are listed in plain italic under the valid name. Type species and synonyms are cited with their original author(s) and date, regardless of present taxonomic status.

Type localities are taken from literature. Political changes have altered the names of several countries, and the range of each species is given with updated names on countries. References to country and state/territory records are limited to the earliest records from the area. Due to the better understanding of the zoogeography of the concerned species Both Islands Martinique and Guadeloupe are listed separately from France.

To shorten the quantity of references in the catalogue I commonly refer to Fischer (1970) who includes nearly all data up to 1959.

Type depositories and type localities are listed only if such information is available from literature.

### ABBREVIATIONS

The following symbols are used for known life history stages:

M = male, F = female, L = larva, P = pupa, C = larva case and E = egg.

In addition, the symbol {†} have been used to indicate extinct taxa.

### Abbreviations of institutions

The below listed abbreviations of institutions have

been used in this catalogue. Most of the abbreviations follow Arnett et al. (1986).

- AMNH = Department of Entomology, American Museum of Natural History, New York, USA.
- ANSP = Academy of Natural Sciences, Parkway, Philadelphia, USA.
- BPBM = Department of Entomology, Bernice P. Bishop Museum, Hawaii, USA.
- CAS = Department of Entomology, California Academy of Sciences, San Francisco, USA.
- CASM = Chicago Academy of Sciences, Museum of National History, USA.
- CINZ = Cawthon Institute, NEW ZEALAND.
- CMNZ = Canterbury Museum, Christchurch, NEW ZEALAND.
- CNCI = Canadian National Collection of Insects, Biosystematics Research Institute, Research Branch, Agriculture Canada, CANADA.
- CTFT = Centre Technique Forestier tropical, NEW CALEDONIA.
- CUCC = Department of Entomology, Clemson University, Clemson, USA.
- ETHZ = Entomologisches Institut, Eidgenossische Technische Hochschule-Zentrum, Zürich, SWITZERLAND.
- FSCA = Florida State Collection of Arthropods, Gainesville, USA.
- GMUK = Geological Museum of Kaliningrad, Kaliningrad, RUSSIA.
- GPHU = Geologisch-Paläontologisches Institut und Museum der Humboldt-Universität, Berlin, GERMANY.
- IJSM = Natural History Museum, Institute of Jamaica, JAMAICA.
- INHS = Illinois Natural History Survey Insect, Urbana, USA.
- ISNB = Collections nationales belges d'insectes et d'arachnides, Institut Royal des Sciences Naturelles de Belgique, BELGIUM.
- MANT = Museums and Art Galleries of the Northern Territories, Darwin, AUSTRALIA.
- MCZC = Entomology Department, Museum of Comparative Zoology, Harvard University, Cambridge, USA.
- MRBP = Museum Regni Bohemia, Prague, CZECHIA.
- MSNG = Museum der Senckenbergischen Naturforschenden Gesellschaft, Frankfurt a. M., GERMANY.
- MZLU = Museum of Zoology, Lund University, SWEDEN.
- MVMA = Museum of Victoria, Natural History, Abbotsford, VICTORIA, AUSTRALIA.
- NHMB = Entomology Department, Naturhistorisches Museum, Basel, SWITZERLAND.
- NHML = Natural History Museum, London, UNITED KINGDOM.
- NHMW = Naturhistorisches Museum Wien, AUSTRIA.
- NMNZ = Entomological Collection, National Museum of New Zealand, Wellington, NEW ZEALAND.
- NMPC = National Museum (Natural History), Prague, CZECHIA.
- NRS = Naturhistoriska Riksmuseet, Sektionen för entomologi, Stockholm, SWEDEN.
- ORST = Service Scientifique Central d'Entomologie Agricole, O.R.S.T.O.M., FRANCE.
- QMBA = Queensland Museum, Brisbane, AUSTRALIA.
- SESP = Servico Especial de Saúde Pública, Belo Horizonte, Minas Gerais, BRAZIL.
- SOFM = National Natural History Museum, Bulgarian Academy of Sciences, Sofia, BULGARIA.
- UCDC = The Bohart Museum of Entomology, University of

- California, Davis, California, USA.  
 UCRC = UCR Entomological Teaching and Research Collection, University of California, Riverside, USA.  
 UNAM = Colección Entomológica, Instituto de Biología, Universidad Nacional Autónoma de México, MEXICO.  
 USNM = Department of Entomology, National Museum of Natural History, Smithsonian Institution, Washington D.C. USA.  
 ZIKU = Zoological Institute, Kyoto Imperial University, JAPAN.  
 ZMBH = Museum für Naturkunde der Humboldt Universität zu Berlin, Bereich Zoologisches Museum, Berlin, GERMANY.  
 ZMA = Instituut voor Taxonomische Zoologie, Zoologisch Museum, Universiteit van Amsterdam, NETHERLANDS.  
 ZMPA = Museum of the Institute of Zoology, Polish Academy of Science, Warszawa, POLAND.  
 ZMUB = Entomological Collection, Museum of Zoology, University of Bergen, NORWAY.  
 ZMUC = Department of Entomology, Zoological Museum, University of Copenhagen, DENMARK.  
 ZMUH = Zoologisches Institut und Zoologisches Museum, Department Entomologie, Universität von Hamburg, GERMANY.

#### Abbreviations of Australian states and territories:

ACT = Australian Capital Territory; NT = Northern Territory; NSW = New South Wales; T = Tasmania; Q = Queensland; V = Victoria; WA = Western Australia.

#### Abbreviations of Canadian provinces:

MB = Manitoba; NS = Nova Scotia; ON = Ontario; PQ = Quebec.

#### Abbreviations of states of the USA:

AL = Alabama; AR = Arkansas; AZ = Arizona; CA = California; CO = Colorado; FL = Florida; GA = Georgia; IL = Illinois; IN = Indiana; KS = Kansas; KY = Kentucky; MA = Massachusetts; ME = Maine; MD = Maryland; MI = Michigan; MN = Minnesota; MO = Missouri; MT = Montana; NH = New Hampshire; NJ = New Jersey; NM = New Mexico; NY = New York; OH = Ohio; OK = Oklahoma; OR = Oregon; PA = Pennsylvania; PR = Puerto Rico; SC = South Carolina; SD = South Dakota; TN = Tennessee; TX = Texas; UT = Utah; VA = Virginia; VT = Vermont; WA = Washington; WI = Wisconsin; WV = West Virginia; WY = Wyoming.

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Botosaneanu (Institute of Taxonomic Zoology, University of Amsterdam, Amsterdam, The Netherlands), Mrs. Eli Amundsen (ZMUB), Dr. Endre Willassen (ZMUB), and Mr. Michael Stoltze (ZMUC) for giving valuable information and for critically reading the manuscript.

#### LIST OF SPECIES

- COCHLIOPHYLAX* Schmid, 1993  
 Type species: *Cochliophylax chrysothoe* Schmid, 1993 [by original designation]  
*admata* (Malicky & Chantaramongkol, 1992)  
*Helicopsyche admata* Malicky & Chantaramongkol, 1992: 21.  
*Cochliophylax admata* (Malicky & Chantaramongkol, 1992); Schmid, 1993: 90.  
 Type locality: Thailand, Doi Inthanon, 1600 m.  
 Holotype [♂]: In Malicky private collection.  
 Distribution: Thailand (Malicky & Chantaramongkol, 1992).  
 Known life history stages: M.  
*angusta* (Ulmer, 1951)  
*Helicopsyche angusta* Ulmer, 1951: 515.  
*Cochliophylax angusta* (Ulmer, 1951); Schmid, 1993: 90.  
 Type locality: Indonesia: Sumatra, Toba-Gebiet, Bach südlich von Balige.  
 Holotype [♂] & paratypes [6♂♂, 8♀♀]: ZMUH.  
 Distribution: Indonesia (Fischer 1970), Thailand (Malicky & Chantaramongkol, 1992).  
 Known life history stages: L, P, M, F.  
 Remarks: The larva, pupa and case were described by Ulmer (1955).  
*antinoe* Schmid, 1993  
*Cochliophylax antinoe* Schmid, 1993: 97.  
 Type locality: India, Assam, Cachar, Bandarkal.  
 Holotype [♂] & allotype [♀]: CNCI. Paratype [1♂]: ZMUA.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.  
*arsinoe* Schmid, 1993  
*Cochliophylax arsinoe* Schmid, 1993: 93.  
 Type locality: India, Assam, Manipur, Khanggai.  
 Holotype [♂] & allotype [♀]: CNCI. Paratypes [2♂♂, 2♀♀]: ZMUA.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.  
*astynome* Schmid, 1993  
*Cochliophylax astynome* Schmid, 1993: 93.  
 Type locality: India, Sikkim, Sirwani.  
 Holotype [♂] & allotype [♀]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.  
*chrysothoe* Schmid, 1993  
*Cochliophylax chrysothoe* Schmid, 1993: 90.  
 Type locality: India, Assam, NEFA, Kameng Frontier Division, Warongpang.  
 Holotype [♂] & allotype [♀]: CNCI. Paratypes [2♂♂, 1♀]: ZMUA.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.

- cleodoce* Schmid, 1993  
*Cochliophylax cleodoce* Schmid, 1993: 91.  
 Type locality: Nepal, Godaveri Botanical Garden.  
 Holotype [♂]: USNM.  
 Distribution: Nepal (Schmid, 1993).  
 Known life history stages: M.
- euryboe* Schmid, 1993  
*Cochliophylax euryboe* Schmid, 1993: 91.  
 Type locality: India, Assam, NEFA, Kameng Frontier Division, Rupa.  
 Holotype [♂] & allotype [♀]: CNCI. Paratypes [2♂♂, 2♀♀]: ZMUA.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.
- harmothoe* Schmid, 1993  
*Cochliophylax harmothoe* Schmid, 1993: 91.  
 Type locality: India, Assam, Lushai Hills, Ratu.  
 Holotype [♂]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M.
- hippothoe* Schmid, 1993  
*Cochliophylax hippothoe* Schmid, 1993: 95.  
 Type locality: India, Sikkim, Rapham.  
 Holotype [♂] & allotype [♀]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.
- itonoae* Schmid, 1993  
*Cochliophylax itonoae* Schmid, 1993: 93.  
 Type locality: India, Assam, Manipur, Mapum.  
 Holotype [♂]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M.
- laothoe* Schmid, 1993  
*Cochliophylax laothoe* Schmid, 1993: 95.  
 Type locality: India, Assam, United Jaintia and Khasi Hills, Syndai.  
 Holotype [♂]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M.
- phoebe* Schmid, 1993  
*Cochliophylax phoebe* Schmid, 1993: 97.  
 Type locality: India, Assam, Manipur, Sirohi Kashong.  
 Holotype [♂] & allotype [♀]: CNCI. Paratypes [2♂♂, 2♀♀]: ZMUA.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.
- xenothoe* Schmid, 1993  
*Cochliophylax xenothoe* Schmid, 1993: 95.  
 Type locality: India, Pauri Garhwal, Khumyara.  
 Holotype [♂] & allotype [♀]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.
- COCHLIOPSYCHE** Müller, 1885  
 Type species: *Tetanonema clara* Ulmer, 1905 [subsequently designated by Ulmer (1955): 589.]  
*Tetanonema* Ulmer, 1905: 17. Type species: *Tetanonema clarum* Ulmer, by monotypy.  
*clara* (Ulmer, 1905)  
*Tetanonema clarum* Ulmer, 1905: 18.  
*Cochliopsyche clara* (Ulmer, 1905); Ulmer, 1955: 589.  
 Type locality: Brazil, S. Catarina Lüderwald.
- Lectotype [♂] & paralectotype [19♂♂]: ZMPA. Paralectotypes [2♂♂]: MCZC.  
 Distribution: Argentina (Fischer, 1970), Brazil (Fischer, 1970).  
 Known life history stages: M, F.  
 Remarks: The male was redescribed by Flint (1966).
- lobata* Flint, 1983  
*Cochliopsyche lobata* Flint, 1983: 95.  
 Type locality: Argentina, Pcia. Misiones, Arroyo Piray Guazú, N San Pedro.  
 Holotype [♂] & paratypes [6♂♂, 19♀♀]: USNM.  
 Distribution: Argentina (Flint, 1983).  
 Known life history stages: M, F.
- opalescens* Flint, 1972  
*Cochliopsyche opalescens* Flint, 1972: 245.  
 Type locality: Argentina, Pcia. Misiones, Puerto Rico.  
 Holotype [♂] & paratypes [1♂♂, 3♀♀]: USNM.  
 Distribution: Argentina (Flint, 1972), Surinam (Flint, 1983).  
 Known life history stages: M, F.
- vazquezae* Flint, 1986  
*Cochliopsyche vazquezae* Flint, 1986: 214.  
 Type locality: Mexico, Chiapas, Río Tulijá, 48 km south of Palenque.  
 Holotype [♂] & paratypes [33♂♂, 89♀♀]: USNM. Paratypes [1♂♂, 3♀♀]: ZMBN.  
 Distribution: Colombia (Monson et al., 1988), Costa Rica (Monson et al., 1988), Honduras (Flint, 1986), Mexico (Flint, 1986).  
 Known life history stages: L, P, C, M, F.  
 Remarks: The case, larval and pupal stage were described by Monson, Holzenthal & Ahlstrand (1988).
- † **ELECTROHELICOPSYCHE** Ulmer, 1912  
 Type species: † *Electrohelicopsyche taeniata* (Pictet, 1856)  
 [monotypic]  
 † *taeniata* (Pictet, 1856)  
 † *Mormonia taeniata* Pictet, 1856: 103.  
 † *Lepidostoma taeniata* (Pictet, 1856); Handlirsch, 1906-1908: 918.  
 † *Electrohelicopsyche taeniata* (Pictet, 1856); Ulmer, 1912: 313.  
 Syntypes [16♂♂]: GPHU & GMUK.  
 Remarks: The species is known only from Baltic Amber dated to late Eocene (Fischer, 1970).
- HELICOPSYCHE** von Siebold, 1856  
 Type species: *Helicopsyche shuttleworthi* von Siebold, 1856 [subsequently designated by Flint (1964): 69]  
*Valvata* [misidentification] by many authors.  
*Notidobia* [misidentification] by many authors.  
*Paludina* [misidentification] by many authors.  
*Thelidomus* Swainson (1840): 353. Type species: *Thelidomus brasiliensis* Swainson, by monotypy.  
*Pikea* Allen, 1857: 1. Type species: *Pikea helicifex* Allen, by monotypy.  
*Saetotrichia* Brauer, 1865: 416. Type species: *Saetotrichia ptychopteryx* Brauer, by monotypy.  
*Petrotrichia* Ulmer, 1910: 43. Type species: *Petrotrichia palpalis* Ulmer, by monotypy.  
*Helycopsyche* [sic] Moretti et al. (1981): 250.  
*admata* Malicky & Chantaramongkol, 1992 see *Cochliophylax admata* (Malicky & Chantaramongkol, 1992)

- agglutinans* (Tassinari, 1858) see *Helicopsyche crispata* (Benoit, 1857)
- albescens* Tillyard, 1924  
*Helicopsyche albescens* Tillyard, 1924: 312.  
 Type locality: New Zealand, South Island, Purau Creek, Lyttelton Harbour.  
 Holotype [♂], allotype [♀] & paratypes [several ♂♂]: CINZ.  
 Distribution: New Zealand (Fischer, 1970).  
 Known life history stages: L, P, C, M, F.  
 Remarks: Descriptions of larva was given by Cowley (1978).
- albidella* Johanson, 1995  
*Helicopsyche albidella* Johanson, 1995a: ooo.  
 Type locality: Australia: West Australia, Kimberley, Mt Barnoff Stn., Manning Gorge ( $16^{\circ}39.27'S$ ,  $125^{\circ}55.41'E$ ) [P. S. Cranston]  
 Holotype [♂] and paratypes [1♂, 3♀♀]: MANT.  
 Distribution: Australia: WA (Johanson 1995a)  
 Known life history stages: M, F.
- aliciae* Johanson, 1995  
*Helicopsyche aliciae* Johanson, 1995a: ooo.  
 Type locality: Australia: Northern Territory, Kakadu National Park, Magela Creek, OSS Site/009 Lt. Tv. ( $12^{\circ}42'S$ ,  $132^{\circ}57'E$ ), [P. Dostine].  
 Holotype [♂] and paratypes [50♂♂, 25♀♀, 4 pupae, 1 larva]: MANT.  
 Distribution: Australia: NT (Johanson 1995a), WA (Johanson 1995a).  
 Known life history stages: L, P, C, M, F.
- altercoma* Botosaneanu & Flint, 1991  
*Helicopsyche altercoma* Botosaneanu & Flint, 1991a: 178.  
 Type locality: Dominican Republic, Dajabón Province, Río Massacre, Balneario El Salto, Loma de Cabrera.  
 Holotype [♂]: USNM. Paratypes [4♂♂, 33♀♀]: USNM & ZMUA.  
 Distribution: Dominican Republic (Botosaneanu & Flint, 1991a).  
 Known life history stages: M, F.
- amarawathi* Schmid, 1958  
*Helicopsyche amarawathi* Schmid, 1958b: 159.  
 Type locality: Sri Lanka, Niriella.  
 Holotype [♂] & paratypes [12♂♂, 2♀♀]: USNM. Paratype [1♂]: ZMUH.  
 Distribution: Sri Lanka (Fischer, 1970).  
 Known life history stages: C, M, F.
- angelae* Marlier, 1964 see *muelleri* Banks, 1920.
- angulata* Flint, 1981  
*Helicopsyche angulata* Flint, 1981: 37.  
 Type locality: Venezuela, Aragua, Maracay, Río Limón, Estacion Piscicultura.  
 Holotype [♂] & paratypes [17♂♂, 15♀♀]: USNM.  
 Distribution: Colombia (Flint, 1991), Ecuador (Flint, 1981), Venezuela (Flint, 1981).  
 Known life history stages: M, F.
- angusta* Ulmer, 1951 see *Cochliophylax angusta* (Ulmer, 1951)
- anna* Johanson, 1993  
*Helicopsyche anna* Johanson, 1993: 141.  
 Type locality: Tanzania: Iringa Region, Uzungwa Mts, Chita Forest Reserve, 1400 m.  
 Holotype [♂] & paratypes [2♂♂]: ZMUC.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M.
- annulicornis* Banks, 1904 see *borealis* Hagen, 1861
- apicauda* Flint, 1968  
*Helicopsyche apicauda* Flint, 1968b: 77.  
 Type locality: Dominica: Pont Casse, 5 miles south.  
 Holotype [♂], allotype [♀] & paratypes [15♂♂, 13♀♀, 18 pupae, 52 larvae]: USNM.  
 Distribution: Dominica (Flint, 1968b).  
 Known life history stages: L, P, C, M, F.
- arayar* Chantaramongkol & Malicky, 1986  
*Helicopsyche arayar* Chantaramongkol & Malicky, 1986: 530.  
 Type locality: Sri Lanka, Provinz Sabaragamuwa, Allerton, 1 mi SW von Rakwana.  
 Holotype [♂]: MZLU.  
 Distribution: Sri Lanka (Chantaramongkol & Malicky, 1986).  
 Known life history stages: M.
- arenaria* Ross, 1975  
*Helicopsyche arenaria* Ross, 1975: 77.  
 Type locality: New Caledonia, Stream, Val de l'Hermitage, 1 km. NE. of Terr. Route 1.  
 Holotype [♂]: INHS. Paratypes [9♂♂]: INHS, ORST, CTFT.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- arizonensis* Banks, 1907 see *mexicana* Banks, 1901
- asymmetrica* Ross, 1975  
*Helicopsyche asymmetrica* Ross, 1975: 70.  
 Type locality: New Caledonia, Stream on Mt. Pouedihi, 15 km. W. of Ouénarou Forest Station, on Eaux et Forêts Road.  
 Holotype [♂]: INHS.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- ategenta* Malicky & Chantaramongkol, 1992  
*Helicopsyche ategenta* Malicky & Chantaramongkol, 1992: 22.  
 Type locality: Thailand, Doi Suthep, Huay Koo Kao, 600 m.  
 Holotype [♂] & paratypes [3♀♀]: Malicky private collection.  
 Distribution: Thailand (Malicky & Chantaramongkol, 1992).  
 Known life history stages: M, F.
- bacescui* Orghidan & Botosaneanu, 1953  
*Helicopsyche bacescui* Orghidan & Botosaneanu, 1953: 425.  
 Type locality: Romania, springs at Greaca.  
 Orghidan & Botosaneanu (1953) gives no depository site.  
 Distribution: Bulgaria (Fischer, 1970), Greece (Malicky, pers. comm.), Romania (Fischer, 1970), Turkey (Malicky & Sipahilier, 1984).  
 Known life history stages: E, L, P, C, M, F.  
 Revised morphological information is given in Kumanski (1988).
- barbata* Johanson, 1993  
*Helicopsyche barbata* Johanson, 1993: 146.  
 Type locality: Tanzania, Tanga Region, W. Usambara Mts, Mazumbai, Kaputu Stream, 1680 m.  
 Holotype [♂] & paratypes [24♂♂, 81♀♀]: ZMBN.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M, F.
- bartona* Mosely, 1953  
*Helicopsyche bartona* Mosely in Mosely & Kimmins, 1953: 71.  
 Type locality: Australia: Tasmania, Hobart.  
 Holotype [♂]: NHML.  
 Distribution: Australia: T (Fischer 1970).  
 Known life history stages: M.
- bellangrensis* Johanson, 1995

- Helicopsyche bellangrensis* Johanson, 1995a: ooo.  
Type locality: Australia: New South Wales, Cockerawo Creek, 23 km WNW Bellangry, 730 m [G. Theschinger].  
Holotype [ $\sigma^1$ ] & paratypes [ $4\sigma^1, 5\varphi^1$ ]: MVMA.  
Distribution: Australia: NSW (Johanson 1995a).  
Known life history stages: M, F.
- bifida* Johanson, 1993  
*Helicopsyche bifida* Johanson, 1993: 149.  
Type locality: Tanzania, Tanga Region, W. Usambara Mts, Mazumbai, Kaputu Stream, 1540 m.  
Holotype [ $\sigma^1$ ] & paratypes [ $84\sigma^1, 62\varphi^1$ ]: ZMBN.  
Distribution: Tanzania (Johanson, 1993).  
Known life history stages: M, F.
- blancasi* Schmid, 1958  
*Helicopsyche blancasi* Schmid, 1958a: 209.  
Type locality: Peru, Rio Zapatilla.  
Holotype [ $\sigma^1$ ] & paratypes [ $2\varphi^1$ ]: USNM.  
Distribution: Peru (Fischer, 1970).  
Known life history stages: M, F.
- boniata* Malicky & Chantaramongkol, 1992  
*Helicopsyche boniata* Malicky & Chantaramongkol, 1992: 22.  
Type locality: Thailand, Phuket, Tonesai Wasserfall.  
Holotype [ $\sigma^1$ ] & paratypes [ $5\sigma^1, 3\varphi^1$ ]: Malicky private collection.  
Distribution: Thailand (Malicky & Chantaramongkol, 1992).  
Known life history stages: M, F.
- borealis* (Hagen, 1861)  
*Paludina lustrica* Say, 1821: 175. syn. n.  
*Paludina lusrica* [sic] Adams (1839): 392.  
*Phryganea lustrica* (Say, 1821); Bremi (1848): 63.  
*Notidobia borealis* Hagen, 1861: 271.  
*Helicopsyche lustrica* (Say, 1821); Hagen (1864b): 130.  
*Helicopsyche borealis* (Hagen, 1861); Hagen (1866): 253.  
*Helicopsyche glabra* Hagen, 1864; Hagen (1866): 253.  
*Helicopsyche lubrica* [sic] von Martens (1891): 83.  
*Helicopsyche californicus* [sic] Banks (1899): 210.  
*Helicopsyche annulicornis* Banks, 1904; Beiten (1934): 416.  
*Helicopsyche californica* Banks, 1899; Ross (1944): 266.  
Type locality: USA, Washington, St. Lawrence River.  
Lectotype [ $\sigma^1$ ]: MCZC [subsequently designated by Ross (1938): 42].  
Distribution: Canada\*: MB (Flannagan, 1977), NS (Fischer, 1970), ON (Fischer, 1970), PQ (Harper, 1990), Costa Rica (Bueno-Soria & Flint, 1978), Guatemala (Bueno-Soria & Flint, 1978), Mexico (Fischer, 1970), Panama (Bueno-Soria & Flint, 1978), USA: AR (Fischer, 1970), CA (Fischer, 1970), CO (Fischer, 1970), FL (Fischer, 1970), GA (Fischer, 1970), IL (Fischer, 1970), IN (Fischer, 1970), KY (Fischer, 1970), ME (Fischer, 1970), MD (Fischer, 1970), MA (Fischer, 1970), MI (Fischer, 1970), MN (Fischer, 1970), MO (Fischer, 1970), MT (Fischer, 1970), NH (Fischer, 1970), NJ (Fischer, 1970), NM (Molles & Nislow, 1991), NY (Fischer, 1970), OH (Fischer, 1970), OK (Fischer, 1970), OR (Fischer, 1970), PA (Fischer, 1970), SD (Fischer, 1970), TN (Fischer, 1970), TX (Fischer, 1970), VT (Fischer, 1970), VA (Fischer, 1970), WA (Fischer, 1970), WV (Tarter, 1990), WI (Fischer, 1970), WY (Fischer, 1970), Venezuela (Wiggins, 1977).  
Known life history stages: E, L, P, C, M, F.  
Remarks: The species probably is synonym to *H. lustrica* (Say, 1821). Due to this fact the name *borealis* should be listed as junior synonym under *H. lustrica* which must take the place as the valid senior synonym. The types of *H. lustrica* (2 larval case syntypes) are reported to be deposited at ANSP and should be examined before a conclusion to this taxonomic question is made.
- Early stages have been described for instance in Vorhies (1909); Elkins (1936); Davis (1965); and Wiggins (1977).*
- boulearia* Ross, 1975  
*Helicopsyche boulearia* Ross, 1975: 73.  
Type locality: New Caledonia, Mt. Stream up Boulearia R.  
Holotype [ $\sigma^1$ ] & paratypes [ $63\sigma^1$ ]: Probably all in: INHS.  
Distribution: New Caledonia (Ross, 1975).  
Known life history stages: M.
- braueri* Johanson, 1995  
*Helicopsyche braueri* Johanson, 1995a: ooo.  
Type locality: Australia: New South Wales, Watagan State Forest, nr Cessnock,  $37^{\circ}57'S, 151^{\circ}14'E$  [G. Theischinger].  
Holotype [ $\sigma^1$ ]: MVMA.  
Distribution: Australia: NSW (Johanson 1995a).  
Known life history stages: M.
- breviterga* Flint, 1991  
*Helicopsyche breviterga* Flint, 1991: 105.  
Type locality: Colombia, Dpto. Antioquia, Boquerón, source of Quebrada Potreros, W. La Fé.  
Holotype [ $\sigma^1$ ] & paratypes [ $4\sigma^1$ ]: USNM.  
Distribution: Colombia (Flint, 1991).  
Known life history stages: M.
- caledonia* Ross, 1975  
*Helicopsyche caledonia* Ross, 1975: 73.  
Type locality: New Caledonia, La Crouen.  
Holotype [ $\sigma^1$ ] & paratypes [ $48\sigma^1$ ]: INHS. Paratype [ $1\sigma^1$ ]: BPBM.  
Distribution: New Caledonia (Ross, 1975).  
Known life history stages: M.
- caligata* Flint, 1967  
*Helicopsyche caligata* Flint, 1967b: 67.  
Type locality: Chile, Prov. Valdivia, brook at Fundo Walper, near Valdivia.  
Holotype [ $\sigma^1$ ]: USNM.  
Distribution: Chile (Flint, 1967b).  
Known life history stages: M.
- californica* Banks, 1899 see *borealis* (Hagen, 1961).  
*californicus* Banks, 1899 see *borealis* (Hagen, 1961).  
*calliope* Schmid, 1993  
*Helicopsyche calliope* Schmid, 1993: 83.  
Type locality: India, Assam, Manipur, Khopum.  
Holotype [ $\sigma^1$ ]: CNCI.  
Distribution: India (Schmid, 1993).  
Known life history stages: M.
- callirrhoe* Schmid, 1993  
*Helicopsyche callirrhoe* Schmid, 1993: 82.  
Type locality: India, Assam, United Jaintia and Khasi Hills, Syndai.  
Holotype [ $\sigma^1$ ] & allotype [ $\varphi^1$ ]: CNCI. Paratype [ $1\sigma^1$ ]: ZMUA.  
Distribution: India (Schmid, 1993).  
Known life history stages: M, F.
- centrocubana* Botosaneanu & Flint, 1991  
*Helicopsyche centrocubana* Botosaneanu & Flint, 1991b: 212.  
Type locality: Cuba, Province Matanzas, Cuabales de Galindo, Valle de Yumuri.  
Holotype [ $\sigma^1$ ] & paratypes [ $3\sigma^1$ ]: ZMUA.  
Distribution: Cuba (Botosaneanu & Flint, 1991b).  
Known life history stages: M.
- ceylanica* Brauer, 1866  
*Helicopsyche ceylanica* Brauer, 1866: 26.

- Helicopsyche ceylonica* [sic] von Martens (1891): 82; Thienemann (1905): 66.  
Type locality: Sri Lanka, Adamspik.  
Lectotype [♀]: NHMV.  
Distribution: Sri Lanka (Fischer, 1970).  
Known life history stages: L, P, C, F.  
Remarks: Malicky (1973) described the female sex.
- chilensis* Flint, 1983  
*Helicopsyche chilensis* Flint, 1983: 91.  
Type locality: Chile, Pcia. Bío-Bío, Estero Huequecura, 25 km E Santa Bárbara.  
Holotype [♂] & paratypes [1♂, 2♀]: USNM.  
Distribution: Chile (Flint, 1983).  
Known life history stages: M, F.
- chionodoce* Schmid, 1993  
*Helicopsyche chionodoce* Schmid, 1993: 85.  
Type locality: India, Madras, Katalaimala.  
Holotype [♂] & allotype [♀]: CNCI. Paratypes [1♂, 2♀]: ZMUA.  
Distribution: India (Schmid, 1993).  
Known life history stages: M, F.
- cochleaetesta* Korboot, 1964  
*Helicopsyche cochleaetesta* Korboot, 1964: 34.  
Type locality: Australia, Queensland, Cedar Creek, Tamborine Mountains.  
Holotype [♂] & paratypes [2♂♂, 7♀♀]: QMBA.  
Distribution: Australia: NSW (Neboiss 1987), Q (Korboot 1964), V (Johanson 1995a).  
Known life history stages: L, C, M, F.  
Remarks: The male and female sexes were redescribed by Johanson (1995a)
- comosa* Kingsolver, 1964  
*Helicopsyche comosa* Kingsolver, 1964: 259.  
Type locality: Cuba, Aspiro-Rangel, Pinar del Rio Province.  
Holotype [♂] & paratype [1♂]: INHS.  
Distribution: Cuba (Kingsolver, 1964).  
Known life history stages: M, F.  
Remarks: The species was redescribed by Botosaneanu & Flint (1991a): 176.
- † *confluens* Ulmer, 1912  
† *Helicopsyche confluens* Ulmer, 1912: 307.  
Holotype [♀]: GMUK.  
Known life history stages: F.  
Remarks: The species is known only from Baltic amber dated to late Eocene (Fischer, 1970).
- coreana* Mey, 1991  
*Helicopsyche coreana* Mey, 1991: 360.  
Type locality: North Korea, Hyangsan, Myohyang-Gebirge.  
Holotype [♂]: ZMHB. Paratype [1♂]: SOFM.  
Distribution: North Korea (Mey, 1991).  
Known life history stages: M.
- corsica* Vaillant, 1953 see *shuttleworthi* von Siebold, 1856
- cotopaxi* Botosaneanu & Flint 1982  
*Helicopsyche cotopaxi* Botosaneanu & Flint 1982: 25.  
Type locality: Ecuador, Volcan Cotopaxi.  
Holotype [♂]: USNM. Paratypes [2 mature pupae]: ZMUA.  
Distribution: Ecuador (Botosaneanu & Flint, 1982).  
Known life history stages: L, P, C, M.
- crispata* (Benoit, 1857)  
*Valvata crispata* Benoit, 1857: f. 32, 33.  
*Helicopsyche crispata* (Benoit, 1857); Hagen (1864): 819.  
*Helicopsyche shuttleworthi* von Siebold, 1856; von Siebold (1856) [misidentification].
- Helicopsyche sperata* McLachlan, 1876: 269.  
*Helicopsyche separata* [sic] Steinmann (1973): 142; Spinelli Batta & Moretti (1988): 15.  
*Helicopsyche agglutinans* (Tassinari, 1858); Johanson (1995b): oo.  
Type locality: Italy: Sicily.  
Holotype [case]: not available.  
Distribution: France (Fischer, 1970), Italy (Fischer, 1970), Portugal (Fischer, 1970)[certainly in error], Switzerland (Fischer, 1970).  
Known life history stages: E, L, P, C, M, F.  
Remarks: Updated distributional information of the species is found in Moretti & Cianficconi (1981). The larval stage was described by Felber (1908a, 1908b). The pupal stage was described by Thienemann (1905). The male and female was redescribed by Johanson (1995b).
- cubana* Kingsolver, 1964  
*Helicopsyche cubana* Kingsolver, 1964: 259.  
*Helicopsyche cubana cubana* Kingsolver, 1964; Botosaneanu & Flint (1991b): 207.  
Type locality: Cuba, Moa, Oriente Province.  
Holotype [♂]: INHS.  
Distribution: Cuba (Kingsolver, 1964), Jamaica (Flint, 1968a).  
Known life history stages: L, P, C, M, F.  
Remarks: The male of the species was redescribed by Flint (1968a) and Botosaneanu & Flint (1991b). The female, larva, pupa and case were described by Flint (1968a).
- cubana occidentale* Botosaneanu & Flint, 1991 see *occidentale*  
Botosaneanu & Flint, 1991
- curva* Johanson, 1995  
*Helicopsyche curva* Johanson, 1995a: ooo.  
Type locality: Australia: Queensland, Upper Freshwater Creek, Witfield Range, nr Cairns [M.S. Moulds].  
Holotype [♂] & paratypes [20♂♂, 7♀♀]: MVMA.  
Distribution: Australia: Q (Johanson 1995a).  
Known life history stages: M, F.
- cymodoce* Schmid, 1993  
*Helicopsyche cymodoce* Schmid, 1993: 77.  
Type locality: India, Assam, United Jaintia and Khasi Hills.  
Holotype [♂] & allotype [♀]: CNCI. Paratypes [2♂♂, 2♀♀]: ZMUA.  
Distribution: India (Schmid, 1993).  
Known life history stages: M, F.
- dampfi* Ross, 1956  
*Helicopsyche dampfi* Ross, 1956: 398.  
Type locality: Mexico, Chiapas, Finca Germania.  
Holotype [♂]: INHS. Paratype [♀]: CASM.  
Distribution: Guatemala (Bueno-Soria & Flint, 1978), Mexico (Fischer, 1970), Nicaragua (Bueno-Soria & Flint, 1978).  
Known life history stages: M, F.
- demodice* Schmid, 1993  
*Helicopsyche demodice* Schmid, 1993: 77.  
Type locality: India, Assam, United Jaintia and Khasi Hills, Thangrain.  
Holotype [♂] & allotype [♀]: CNCI. Paratype [1♂]: ZMUA.  
Distribution: India (Schmid, 1993).  
Known life history stages: M, F.
- dominicana* Botosaneanu & Flint, 1991  
*Helicopsyche dominicana* Botosaneanu & Flint, 1991b: 200.  
Type locality: Dominican Republic, La Vega Province, Convento, 12 km S. of Constanza.  
Holotype [♂] & allotype [♀]: USNM. Paratypes [62♂♂,

- 42♀♂]: USNM & ZMUA.  
Distribution: Dominican Republic (Botosaneanu & Flint, 1991b).  
Known life history stages: M, F.
- edmundsi* Ross, 1975  
*Helicopsyche edmundsi* Ross, 1975: 70.  
Type locality: New Caledonia, Ile des Pins, stream on the Pic Meunier.  
Holotype [♂] & paratype [1♂]: INHS.  
Distribution: New Caledonia (Ross, 1975).  
Known life history stages: M.
- erigone* Schmid, 1993  
*Helicopsyche erigone* Schmid, 1993: 79.  
Type locality: India, Assam, United Jaintia and Khasi Hills, Syndai.  
Holotype [♂] & allotype [♀]: CNCI. Paratypes [2♂♂, 2♀♀]: ZMUA.  
Distribution: India (Schmid, 1993).  
Known life history stages: M, F.
- erythronoe* Schmid, 1993  
*Helicopsyche erythronoe* Schmid, 1993: 75.  
Type locality: India, Manipur, Kaiphundai.  
Holotype [♂]: CNCI.  
Distribution: India (Schmid, 1993).  
Known life history stages: M.
- euchloe* Schmid, 1993  
*Helicopsyche euchloe* Schmid, 1993: 87.  
Type locality: Sri Lanka, Gal. Dist. Udugama, Kanneliya Jungle, 400 ft.  
Holotype [♂]: USNM.  
Distribution: Sri Lanka (Schmid, 1993).  
Known life history stages: M.
- eurycrene* Schmid, 1993  
*Helicopsyche eurycrene* Schmid, 1993: 85.  
Type locality: India, Madras, Perumalmalai.  
Holotype [♂]: CNCI.  
Distribution: India (Schmid, 1993).  
Known life history stages: M.
- eyrynoe* Schmid, 1993  
*Helicopsyche eyrynoe* Schmid, 1993: 75.  
Type locality: India, Assam, Dhekiajuli.  
Holotype [♂] & allotype [♀]: CNCI.  
Distribution: India (Schmid, 1993).  
Known life history stages: M, F.
- extensa* Ross, 1956  
*Helicopsyche extensa* Ross, 1956: 397.  
Type locality: Peru, Santa Isabel, Valley of the Cosnipata, Department of Cusco.  
Holotype [♂] & paratype [♀]: INHS.  
Distribution: Peru (Fischer, 1970).  
Known life history stages: M, F.
- falcigona* Botosaneanu & Flint, 1991  
*Helicopsyche falcigona* Botosaneanu & Flint, 1991b: 210.  
Type locality: Cuba, Isla de Pinos, Santa Fé, Arroyo La Talega.  
Holotype [♂] & paratypes [13♂♂]: ZMUA. Paratype [1♂]: MCZC.  
Distribution: Cuba (Botosaneanu & Flint, 1991b).  
Known life history stages: M.
- fannii* Rougemont, 1879 = nomen nudum
- fistulata* Flint, 1991  
*Helicopsyche fistulata* Flint, 1991: 105.  
Type locality: Colombia, Dpto. Antioquia, Quebrada La Mos-
- ca, 1 km. W. Guarne.  
Holotype [♂] & paratypes [63♂♂]: USNM. Paratypes [2♂♂, 2♀♀]: ZMBN.  
Distribution: Colombia (Flint, 1991), Venezuela (Flint, 1991).  
Known life history stages: M.
- glabra* Hagen, 1864 see *borealis* Hagen, 1861
- granpiedrana* Botosaneanu & Sykora, 1973  
*Helicopsyche granpiedrana* Botosaneanu & Sykora, 1973: 402.  
Type locality: Cuba, Gran Piedra.  
Holotype [♂]: ZMUA. Paratypes [2♂♂]: Sykora private collection.  
Distribution: Cuba (Botosaneanu & Sykora, 1973).  
Known life history stages: M.
- grenadensis* Flint & Sykora, 1993  
*Helicopsyche grenadensis* Flint & Sykora, 1993: 61.  
Type locality: Grenada: Parish St. Andrews, Clabony.  
Holotype [♂]: FSC. Paratypes [1♂, 1♀]: USNM.  
Distribution: Grenada (Flint & Sykora, 1993).  
Known life history stages: M, F.
- guadeloupensis* Malicky, 1980  
*Helicopsyche guadeloupensis* Malicky, 1980: 222.  
*Helicopsyche* species 1 Flint, 1968b; Flint & Sykora (1993): 60.  
*Helicopsyche* species 2 Flint, 1968b; Flint & Sykora (1993): 60.  
Type locality: Guadeloupe, Mittellauf des Flusses Lezard bei Chemin de Diane.  
Holotype [♂] & paratype [♀]: Malicky private collection.  
Distribution: Dominica (Flint & Sykora, 1993), Guadeloupe (Malicky, 1980), Martinique (Botosaneanu, 1988), St. Lucia (Flint & Sykora, 1993).  
Known life history stages: L, C, M, F.  
Remarks: The ♀, larva and larval case were described by Botosaneanu (1988).
- gudrunae* Chantaramongkol & Malicky, 1986  
*Helicopsyche gudrunae* Chantaramongkol & Malicky, 1986: 531.  
Type locality: Sri Lanka, Provinz Sabaragamuwa, 21 mi N von Ratnapura.  
Holotype [♂]: MZLU.  
Distribution: Sri Lanka (Chantaramongkol & Malicky, 1986).  
Known life history stages: M.
- hageni* Banks, 1938  
*Helicopsyche hageni* Banks, 1938: 296.  
Type locality: Cuba, Pico Turquino N. side, 4500-6000 ft.  
Lectotype [♂]: MCZC [subsequently designated by Flint (1967a)].  
Distribution: Cuba (Fischer, 1970).  
Known life history stages: M.  
Remarks: The male was redescribed by Flint (1967a) and Botosaneanu & Flint (1991b).
- haitiensis* Banks, 1938  
*Helicopsyche haitiensis* Banks, 1938: 296.  
*Helicopsyche haitiense* Banks, 1938: Botosaneanu & Flint (1991b): 203; Botosaneanu (1991): 134.  
Type locality: Haiti, La Visite & vic. La Selle, 5000-7000 ft.  
Lectotype [♂]: MCZC [subsequently designated by Flint (1967a)].  
Distribution: Haiti (Fischer, 1970).  
Known life history stages: M.  
Remarks: The male was redescribed by Ross (1956) and Botosaneanu & Flint (1991b).

- heacota* Mosely, 1953  
*Helicopsyche heacota* Mosely in Mosely & Kimmins, 1953: 68.  
 Type locality: Australia: New South Wales, Heacote.  
 Holotype [♂] & paratype [1♂]: NHML.  
 Distribution: Australia: NSW (Fischer 1970), Q (Johanson 1995a), V (Johanson 1995a).  
 Known life history stages: M, F.  
 Remarks: The ♀ was described in Johanson (1995a).
- helicifex* (Allen, 1857)  
*Pikea helicifex* Allen, 1857: 1  
*Helicopsyche helicifex* (Allen, 1857): Fischer (1970): 297.  
*Helicopsyche sericea* Hagen, 1864; Johanson (1995b): 00.  
*Helicopsyche lusitanica* McLachlan, 1884; Fischer 1970: 00.  
 Type locality: Portugal.  
 Holotype [case]: not available.  
 Distribution: Portugal Fischer 1970, Spain Fischer 1970.  
 Known life history stages: C, M, F.  
 Remarks: The male was redescribed and female described by Johanson (1995b).
- hollowayi* Ross, 1975  
*Helicopsyche hollowayi* Ross, 1975: 74.  
 Type locality: New Caledonia, N. of Mt. Aoupinie, Haut Mou, Napone Areu Valley.  
 Holotype [♂]: INHS. Paratypes [38♂♂]: INHS, NHML, USNM, ORST & CTFT.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- howesi* Tillyard, 1924  
*Helicopsyche howesi* Tillyard, 1924: 313.  
 Type locality: New Zealand, South Island, Dunedin.  
 Holotype [♂]: CINZ.  
 Distribution: New Zealand (Fischer 1970).  
 Known life history stages: M.
- iltona* Mosely 1953 see *zealandica* Hudson, 1904
- incisa* Ross, 1956  
*Helicopsyche incisa* Ross, 1956: 398  
*Helicopsyche indecisa* [sic] McElravy et al. (1982): 307.  
 Type locality: Mexico, Chiapas, Finca Esperanza.  
 Holotype [♂] & paratypes [12♂♂]: INHS.  
 Distribution: Mexico and Peru (Fischer, 1970), Panama (Mc Elravy et al., 1981).  
 Known life history stages: M.
- jacquemarti* Johanson, 1993  
*Helicopsyche jacquemarti* Johanson, 1993: 150.  
 Type locality: Tanzania, Morogoro Region, Uzungwa Mts, Mwanihana Forest, above Sanje, 1000 m.  
 Holotype [♂] & paratypes [32♂♂, 18♀♀]: ZMUC.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M, F.
- kakadu* Johanson, 1995  
*Helicopsyche kakadu* Johanson, 1995a: 000.  
 Type locality: Australia: Northern Territory, Radon Creek, Kakadu National Park [J. Blyth].  
 Holotype [♂] and paratypes [2♀♀]: MVMA.  
 Distribution: Australia: NT (Johanson 1995a).  
 Known life history stages: M, F.
- kantilali* Marlier & Malicky, 1979  
*Helicopsyche kantilali* Marlier & Malicky, 1979: 110.  
 Type locality: Seychelles, Mahé, Riv. Grand St. Louis.  
 Holotype [♂]: ISNB.  
 Distribution: Seychelles (Marlier & Malicky, 1979).  
 Known life history stages: L, P, C, M, F.
- kariona* Ross, 1975  
*Helicopsyche kariona* Ross, 1975: 69.  
 Type locality: New Caledonia, Trib. of Karionan Rv., 5 km. NNW of Païta.  
 Holotype [♂]: INHS.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- koumaca* Ross, 1975  
*Helicopsyche koumaca* Ross, 1975: 76.  
 Type locality: New Caledonia, Pouebo.  
 Holotype [♂] & paratype [♂ pupa]: INHS.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- lambda* Flint, 1983  
*Helicopsyche lambda* Flint, 1983: 93.  
 Type locality: Argentina, Pcia. Misiones, Arroyo Piray Mini, Rt. 17 W Dos Hermanas.  
 Holotype [♂] & paratype [1♂]: USNM.  
 Distribution: Argentina (Flint, 1983).  
 Known life history stages: M.
- lapidaria* Ross, 1975  
*Helicopsyche lapidaria* Ross, 1975: 73.  
 Type locality: New Caledonia, Stream on Pic Mouirange, Camp des Travaux Publics on Terr. Route 2.  
 Holotype [♂]: INHS. Paratypes [40♂♂]: INHS, USNM, NHML, ORST & CTFT.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- lata* Ulmer, 1951  
*Helicopsyche lata* Ulmer, 1951: 513.  
 Type locality: Indonesia: Java, Tjibodas, Kali Tjiwalen.  
 Holotype [♂] & paratypes [4♂♂, 2♀♀]: ZMUH.  
 Distribution: Indonesia (Fischer, 1970).  
 Known life history stages: L, P, M, F.  
 Remarks: The larva, pupa and case were described by Ulmer (1955).
- leucothoe* Schmid, 1993  
*Helicopsyche leucothoe* Schmid, 1993: 79.  
 Type locality: India, Manipur, Vangai Chungpao.  
 Holotype [♂] & allotype [♀]: CNCI. Paratypes [2♂♂, 2♀♀].  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.
- lewalleni* Denning & Bickle, 1979  
*Helicopsyche lewalleni* Denning & Bickle, 1979: 27.  
 Type locality: El Salvador, La Liberatad, west bank Rio Chilama.  
 Holotype [♂] & paratypes [1♂, 1♀]: CAS.  
 Distribution: El Salvador (Denning & Bickle, 1979).  
 Known life history stages: M, F.
- limnella* Ross, 1938  
*Helicopsyche limnella* Ross, 1938: 179.  
 Type locality: USA, Arkansas, McFadden Springs.  
 Holotype [♂] & paratypes [8♂♂, 3♀♀]: INHS.  
 Distribution: USA: AR (Fischer, 1970), OK (Fischer, 1970).  
 Known life history stages: L, P, M, F.
- lubrica* (Say, 1821) see *borsealis* Hagen, 1861
- lusitanica* McLachlan, 1884 see *helicifex* (Allen, 1857)
- lusrica* (Say, 1821) see *borsealis* Hagen, 1861
- lustrica* (Say, 1821) see *borealis* Hagen, 1861
- lutea* (Hagen, 1861)  
*Notidobia lutea* Hagen, 1861: 271.

- Helicopsyche lutea* (Hagen, 1861); Hagen (1866): 254.  
Type locality: Dominican Republic, St. Domingo.  
Lectotype [♀]: MCZC [subsequently designated by Ross, 1952: 35].  
Distribution: Dominican Republic (Fischer, 1970), Haiti (Fischer, 1970), Hispaniola (Botosaneanu & Flint, 1991a).  
Known life history stages: M, F.  
Remarks: The species was suggested to be a synonym to *H. comosa* Kingsolver (Flint 1967a). Botosaneanu & Flint (1991a) redescribed the female and considered it to be a good species.
- maculata* Mosely, 1939  
*Helicopsyche maculata* Mosely, 1939: 44.  
Type locality: India, Palnis, Kodaikanal Shola, 7000 ft.  
Holotype [♂]: NHML.  
Distribution: Burma (Fischer, 1970), India (Fischer, 1970).  
Known life history stages: M, F.
- maculisternum* Botosaneanu, 1993  
*Helicopsyche maculisternum* Botosaneanu in Botosaneanu & Alkins-Koo, 1993: 40.  
Type locality: Trinidad, Northern Range, the stream just below Maracas Waterfall.  
Holotype [♂], allotype [♀] & paratypes [1♂, 5♀]: ZMUA.  
Distribution: Trinidad (Botosaneanu & Alkins-Koo, 1993).  
Known life history stages: L, C, P, M, F.
- margaritensis* Botosaneanu, 1959  
*Helicopsyche margaritensis* Botosaneanu, 1959: 61.  
*Helicopsyche vergelana* Ross, 1956; Flint (1981): 37.  
Type locality: l'île de Margarita, Toma de Agua del Encañado (springs of the Rio San Juan), on the west slope of the Cerros de Copey.  
Holotype [♂] & allotype [♀]: type depository not given.  
Distribution: Venezuela (Botosaneanu, 1959), Grenada (Flint & Sykora, 1993).  
Known life history stages: L, C, P, M, F.  
Remarks: The species was considered synonym under *H. vergenala* Ross by Flint (1981) but considered to be a distinct species and redescribed by Botosaneanu (1989) and Botosaneanu & Alkins-Koo (1993). The larva was described by Botosaneanu & Alkins-Koo (1993).
- marlieri* Jacquemart, 1957  
*Helicopsyche marlieri* Jacquemart, 1957: 1.  
Type locality: Zaïre, Parc National Albert, secteur Nord, Nyaleka River, affluent gauche Semliki, secteur Vieux-Béni, 900 m.  
Holotype [mature pupa ♂] & paratypes [mature pupae 2♂, 4 larvae]: ISNB.  
Distribution: Zaïre (Fischer, 1970).  
Known life history stages: L, P, M.  
Remarks: The species was redescribed by Johanson (1993).
- martynovi* Mosely, 1939  
*Helicopsyche martynovi* Mosely, 1939: 43.  
Type locality: Burma, Tenasserim, Mekane, 90 km. E. of Moulmein, 200 m.  
Holotype [♂]: NRS. Paratypes [several ♂, ♀]: NRS & NHML.  
Distribution: Burma (Fischer, 1970), India (Schmid, 1993).  
Known life history stages: M, F.
- megalochari* Malicky, 1974  
*Helicopsyche megalochari* Malicky, 1974: 230.  
Type locality: Greece, Insel Andros, Apikia.  
Holotype [♂] & paratype [1♂]: Malicky private collection.  
Distribution: Greece (Malicky, 1974).
- Known life history stages: L, M, F.  
Remarks: The female was described and male redescribed by Johanson (1995b).
- merida* Botosaneanu & Flint, 1982  
*Helicopsyche merida* Botosaneanu & Flint, 1982: 24.  
Type locality: Venezuela, Edo. Mérida, 11 km southeast of Apartaderos.  
Holotype [♂]: USNM. Paratypes [2♂♂, 8 mature pupae]: ZMUA.  
Distribution: Venezuela (Botosaneanu & Flint, 1982).  
Known life history stages: L, P, C, M, F.
- mexicana* Banks, 1901  
*Helicopsyche mexicana* Banks, 1901: 368.  
*Helicopsyche arizonensis* Banks, 1907; Ross (1944): 289.  
Type locality: Mexico, Cuernavaca.  
Lectotype [♂] & paralectotypes [2♂♂]: MCZC.  
Distribution: Mexico (Fischer, 1970), USA: AZ (Fischer, 1970), CA (Denning & Blickle, 1979), TX (Fischer, 1970), UT (Denning & Blickle, 1979).  
Known life history stages: C, M, F.  
Remarks: The female was described and the male redescribed by Denning & Brickle (1979).
- minima* von Siebold, 1856  
*Helicopsyche minima* von Siebold, 1856: 38.  
*Helicopsyche nigra* Bremi, 1848; Hagen (1864a): 819.  
Type locality: USA: Puerto Rico, "Aus einem Backe der Hochebene der Sierra de Suevilla".  
Holotype [larval case]: ETHZ. (lost)  
Distribution: USA: PR (Fischer, 1970).  
Known life history stages: L, C, M, F.  
Remarks: The male and female was described by Flint (1964). A revised description of the male is given in Botosaneanu & Flint (1991b).
- minuscula* Martynov, 1912  
*Helicopsyche minuscula* Martynov, 1912: 3.  
Type locality: Peru, Callanga, 2-3000 m.  
Holotype [♀]: ZMPA.  
Distribution: Peru (Fischer, 1970).  
Known life history stages: F.
- minuta* Mosely, 1939  
*Helicopsyche minuta* Mosely, 1939: 43.  
Type locality: Burma, Kambaiti, 7000 ft.  
Holotype [♂]: NRS. Paratypes [♂♂, ♀♀]: NRS & NHML.  
Distribution: Burma (Fischer, 1970).  
Known life history stages: M, F.
- monda* Flint, 1983  
*Helicopsyche monda* Flint, 1983: 93.  
Type locality: Paraguay, depto. Alto Paraná, Salto del Monday, near Puerto Presidente Franco.  
Holotype [♂] & paratypes [5♂♂]: USNM.  
Distribution: Argentina (Flint, 1983), Brazil (Flint, 1983), Paraguay (Flint, 1983).  
Known life history stages: M.
- montana* Felber, 1912  
*Helicopsyche montana* Felber, 1912: 46.  
Type locality: Mexico.  
Syntypes [several larvae & 2 cases]: NHMB & ZMUA.  
Distribution: Mexico (Fischer, 1970).  
Known life history stages: L, P, C.  
Remarks: The species was described from early instars.
- muelleri* Banks, 1920  
*Helicopsyche muelleri* Banks, 1920: 348.  
*Helicopsyche mulleri* [sic] Banks (1920): 348; Fischer (1970):

- 301; Marlier (1964a): 15.  
*Helicopsyche turbida* Navás, 1923; Flint (1967a): 25.  
*Helicopsyche angelae* Marlier, 1964; Flint (1967a): 25.  
 Type locality: Brazil, Santa Catharina.  
 Lectotype [♂] & paralectotypes [6♂♂]: MCZC [subsequently designated by Flint (1967a)].  
 Distribution: Argentina (Fischer, 1970), Brazil (Fischer, 1970), Peru (Marlier, 1964a).  
 Known life history stages: L, C, P, M, F.  
 Remarks: The larva, pupa and case were described by Marlier (1964a).
- murrumba* Mosely, 1953  
*Helicopsyche murrumba* Mosely in Mosely & Kimmings, 1953: 72.  
 Type locality: Australia: New South Wales, Mt. Kosciusko, 2700 ft.  
 Holotype [♂] & paratypes [3♂♂]: NHML.  
 Distribution: Australia: NSW (Fischer 1970), T (Neboiss 1977), Q (Johanson 1995a), V (Johanson 1995a), WA (Johanson 1995a).  
 Known life history stages: L, M, F.  
 Remarks: The female sex was redescribed by Johanson (1995a). Information on larvae were given by and Bailey (1982).
- myrrhine* Schmid, 1993  
*Helicopsyche myrrhine* Schmid, 1993: 83.  
 Type locality: India, Mysore, Malbidu.  
 Holotype [♂]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M.
- neboissi* Johanson, 1995  
*Helicopsyche neboissi* Johanson, 1995a: ooo.  
 Type locality: Australia: Queensland, Cape York Peninsula, Lockerbie Scrub [M.S. Moulds].  
 Holotype: [♂] and paratype [♀]: MVMA.  
 Distribution: Australia: Q (Johanson 1995a).  
 Known life history stages: M, F.
- nigra* Bremi, 1848 see *minima* von Siebold, 1856
- nigrisensilla* Botosaneanu & Flint, 1991  
*Helicopsyche nigrisensilla* Botosaneanu & Flint, 1991b: 210.  
 Type locality: Dominican Republic, La vega province, 20 km S. of Constanza.  
 Holotype [♂] & allotype [♀]: USNM. Paratypes [10♂♂, 7♀♀]: USNM & ZMUA.  
 Distribution: Dominican Republic (Botosaneanu & Flint, 1991b)  
 Known life history stages: M, F.
- occidentale* Botosaneanu & Flint, 1991  
*cubana occidentale* Botosaneanu & Flint, 1991b: 207.  
*occidentale* Botosaneanu & Flint, 1991; Botosaneanu (pers. comm.).  
 Type locality: Cuba, Pinar del Rio Province. - Soroa, Rio El Manantiales.  
 Holotype [♂]: ZMUA. Paratypes [26♂♂]: ZMUA & USNM.  
 Distribution: Cuba (Botosaneanu & Flint, 1991b).  
 Known life history stages: M.
- ochthephila* Flint, 1968  
*Helicopsyche ochthephila* Flint, 1968a: 65.  
 Type locality: Jamaica, St. Andrew, Hardwar Gap, Dicks Pond Trail.  
 Holotype [♂]: USNM. Paratypes [13♂♂]: IJSN.  
 Distribution: Jamaica (Flint, 1968a).  
 Known life history stages: L, P, C, M, F.
- oenodoce* Schmid, 1993  
*Helicopsyche oenodoce* Schmid, 1993: 75.  
 Type locality: India, Assam, Manipur, Lagairong.  
 Holotype [♂]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M.
- palpalis* (Ulmer, 1910)  
*Petrotrichia palpalis* Ulmer, 1910: 44.  
*Helicopsyche palpalis* (Ulmer, 1910); Marlier & Malicky, (1979): 110.  
 Type locality: Seychelles, Mahé, Cascade Estate, 800 ft.  
 Holotype [♂] & paratypes [10♂♂, 8♀♀]: NHML. Paratype [1♂]: ZMUH.  
 Distribution: Seychelles (Fischer, 1970).  
 Known life history stages: L, P, C, M, F.  
 Remarks: The larva, pupa and case were described by Marlier (1977).
- paralimnella* Hamilton, 1989  
*Helicopsyche paralimnella* Hamilton, in Morse, Hamilton & Hoffman, 1989: 30.  
 Type locality: USA, South Carolina, Oconee County, Thompson River at North Carolina border, 439 m.  
 Holotype [♂]: USNM, paratypes [39♂♂, 3♀♀]: USNM & CUCC.  
 Distribution: USA: SC (Morse, Hamilton & Hoffman, 1989).  
 Known life history stages: M, F.
- paucispina* Botosaneanu & Flint, 1991  
*Helicopsyche paucispina* Botosaneanu & Flint, 1991b: 213.  
 Type locality: Cuba, Pinar del Rio Province, Viñales, San Vicente, Arroyo del aqueducto.  
 Holotype [♂] & paratype [1♂]: ZMUA.  
 Distribution: Cuba (Botosaneanu & Flint, 1991b).  
 Known life history stages: M.
- pedunculata* Johanson, 1993  
*Helicopsyche pedunculata* Johanson, 1993: 151.  
 Type locality: Tanzania, Tanga Region, W. Usambara Mts, Mazumbai, Kaputu Stream, 1680 m.  
 Holotype [♂]: ZMBN.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M.
- peruana* Banks, 1920  
*Helicopsyche peruana* Banks, 1920: 349.  
*Helicopsyche woytkowskii* Ross, 1956; Flint (1967a): 25.  
 Type locality: Peru, Natucana, 7788 ft.  
 Holotype [♂]: MCZC.  
 Distribution: Peru (Fischer, 1970).  
 Known life history stages: M, F.
- petersorum* Ross, 1975  
*Helicopsyche petersorum* Ross, 1975: 70.  
 Type locality: New Caledonia, Stream on Mt. Gaata, 4.3 km NW. of Station Castex.  
 Holotype [♂]: INHS.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- petri* Chantaramongkol & Malicky, 1986  
*Helicopsyche petri* Chantaramongkol & Malicky, 1986: 531.  
 Type locality: Sri Lanka, Central Province, Knuckles Mountains, 15 mi NE von Kandy.  
 Holotype [♂] & paratypes [2♂♂]: MZLU.  
 Distribution: Sri Lanka (Chantaramongkol & Malicky, 1986).  
 Known life history stages: M.
- philodoce* Schmid, 1993  
*Helicopsyche philodoce* Schmid, 1993: 87.

- Type locality: India, Madras, Perumalmalai.  
 Holotype [♂]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M.
- pietia* Denning, 1964  
*Helicopsyche pietia* Denning, 1964: 132.  
 Type locality: Mexico, Baja California, 3 miles southwest of Mission San Javier southwest of Loreto.  
 Holotype [♂]: UCRC. Paratypes [3♂♂, 9♀♀]: CAS & UCDC.  
 Distribution: Mexico (Denning, 1964).  
 Known life history stages: M, F.
- piroa* Ross, 1944  
*Helicopsyche piroa* Ross, 1944: 289.  
 Type locality: Texas: San Antonio, along San Antonio River  
 Holotype [♂], allotype [♀] & paratypes [6♂♂, 2♀♀]: INHS.  
 Distribution: Mexico (Fischer, 1970), USA: AR (Bowles & Mathis, 1989), OK (Bowles & Mathis, 1992), TX (Fischer, 1970).  
 Known life history stages: L, M, F.
- piscina* (Hagen, 1859) see *Goerodes piscina* (Hagen, 1859) (Goeridae)
- planata* Ross, 1956  
*Helicopsyche planata* Ross, 1956: 400.  
 Type locality: Mexico, Chiapas, San Cristóbal.  
 Holotype [♂] & paratype [1♂]: INHS.  
 Distribution: Mexico (Fischer, 1970).  
 Known life history stages: M.
- planorboides* Machado, 1957  
*Helicopsyche planorboides* Machado, 1957a: 193.  
 Type locality: Brazil, Rio Doce Valley, Minas Gerais, Tarumirim.  
 Holotype [♂] & paratypes [6♂♂, ♀♀]: SESP & Machado private collection.  
 Distribution: Brazil (Machado, 1957a, b).  
 Known life history stages: L, P, C, M, F.
- poutini* McFarlane, 1964  
*Helicopsyche poutini* McFarlane, 1964: 55.  
 Type locality: New Zealand, Westland, 17-mile Stream, Barrytown, just above the bridge.  
 Holotype [♂] & paratypes [several ♀♀]: CMNZ.  
 Distribution: New Zealand (McFarlane, 1964).  
 Known life history stages: L, P, C, M, F.  
 Remarks: Descriptions of larva was given by Cowley (1978).
- propinqua* Botosaneanu & Flint, 1991  
*Helicopsyche propinqua* Botosaneanu & Flint, 1991b: 215.  
 Type locality: USA: Puerto Rico, Toro Negro Forest, Doña Juana creek.  
 Holotype [♂]: USNM.  
 Distribution: USA: PR (Botosaneanu & Flint, 1991b).  
 Known life history stages: M.
- ptychopteryx* (Brauer, 1865)  
*Saetotricha ptychopteryx* Brauer, 1865: 416.  
*Helicopsyche ptychopteryx* (Brauer, 1865); Neboiss (1986): 99.  
 Type locality: Australia: Sidney.  
 Holotype [♀]: NHMW.  
 Distribution: Australia: NSW (Johanson 1995a), Q (Johanson 1995a), V (Fischer 1970).  
 Known life history stages: M, F.  
 Remarks: The male was described and female redescribed by Neboiss (1986). Additional morphological information on the adults is given in Johanson (1995a).
- puttula* Malicky & Chantaramongkol, 1992  
*Helicopsyche puttula* Malicky & Chantaramongkol, 1992: 21.  
 Type locality: Indonesia: Sumatra, Dolok Merangir.  
 Holotype [♂]: Malicky private collection.  
 Distribution: Indonesia (Malicky & Chantaramongkol, 1992).  
 Known life history stages: M.
- quadrosa* Ross, 1956  
*Helicopsyche quadrosa* Ross, 1956: 400.  
 Type locality: Mexico, Chiapas, Finca Victoria.  
 Holotype [♂] & paratypes [2♂♂]: INHS.  
 Distribution: Mexico (Fischer, 1970).  
 Known life history stages: M.
- ramosi* Flint, 1964  
*Helicopsyche ramosi* Flint, 1964: 72.  
 Type locality: USA: Puerto Rico, Yauco-Lares Rd., Km. 22.  
 Holotype [♂], allotype [♀] & paratypes [3♂♂, 3♀♀]: USNM.  
 Distribution: USA: PR (Flint, 1964).  
 Known life history stages: L, P, C, M, F.  
 Remarks: The male and female of this species was redescribed by Botosaneanu & Flint (1991b).
- rentzi* Denning & Bickle, 1979  
*Helicopsyche rentzi* Denning & Bickle, 1979: 31.  
 Type locality: Costa Rica, Guanacosta, Finca La Pacifica, 10 miles north Canas.  
 Holotype [♂] & paratype [1♀]: CAS.  
 Distribution: Costa Rica (Denning & Bickle, 1979).  
 Known life history stages: M, F.  
 Remarks: In "Type locality", "Guanacosta" should be corrected to Guanacaste.
- revelieri* McLachlan, 1884 see *shuttleworthi* von Siebold, 1856.
- rodschana* Malicky & Chantaramongkol, 1992  
*Helicopsyche rodschana* Malicky & Chantaramongkol, 1992: 21.  
 Type locality: Thailand, Chiangmai Zoo, 400 m.  
 Holotype [♂]: Malicky private collection.  
 Distribution: Thailand (Malicky & Chantaramongkol, 1992).  
 Known life history stages: M.
- ruprawathi* Schmid, 1958  
*Helicopsyche ruprawathi* Schmid, 1958b: 158.  
 Type locality: Sri Lanka, Niriella.  
 Holotype [♂] & paratypes [14♂♂, 4♀♀]: USNM, paratypes [2♂♂]: MCZC, [1♂]: ZMUH.  
 Distribution: Sri Lanka (Fischer, 1970).  
 Known life history stages: C, M, F.
- salika* Chantaramongkol & Malicky, 1986  
*Helicopsyche salika* Chantaramongkol & Malicky, 1986: 531.  
 Type locality: Sri Lanka, Central Province, Pidurutalagala, 2 mi N von Nuwara-Eliya.  
 Holotype [♂]: MZLU.  
 Distribution: Sri Lanka (Chantaramongkol & Malicky, 1986).  
 Known life history stages: M.
- selanderi* Ross, 1956  
*Helicopsyche selanderi* Ross, 1956: 400.  
 Type locality: Mexico, Michoacán, 20 miles west of Morelia.  
 Holotype [♂] & paratype [1♂]: INHS.  
 Distribution: Mexico (Fischer, 1970).  
 Known life history stages: M.
- separata* McLachlan, 1976 see *crispata* (Benoit, 1857)
- sericea* Hagen, 1864 see *helicitex* (Allen, 1857)
- shaunga* Mosely, 1939  
*Helicopsyche shaunga* Mosely, 1939: 44.  
 Type locality: Burma, Washaung, 20 km. E. of Myitkyina, 200 m.

- Holotype [♂]: NRS.  
 Distribution: Burma (Fischer, 1970).  
 Known life history stages: M.
- shuttleworthi* von Siebold, 1856 see *shuttleworthi* von Siebold, 1856.
- shuttleworthi* von Siebold, 1856  
*Helicopsyche shuttleworthi* von Siebold, 1856: 38.  
*Helicopsyche shuttleworthii* [sic] several authors.  
*Helicopsyche shuttleworthi* [sic] several authors.  
*Helicopsyche revelieri* McLachlan, 1884; McLachlan (1884) 29.  
*Helicopsyche corsica* Vailant, 1953; Johanson (1995 ♂): ooo.  
 Type locality: France: Corsica, Porto Vecchio.  
 Neotype [♂]: NHML. [Subsequently selected by Johanson 1995b: 00]  
 Distribution: France (Fischer, 1970), Italy (Moretti & Cianficconi, 1981), Switzerland (Fischer, 1970).  
 Known life history stages: L, C, M, F.  
 Remarks: Updated distributional data is given by Moretti & Cianficconi (1981). The larval stage was described by Char-dard (1947). The record from Switzerland certainly is error. The male and female was redescribed by Johanson (1995b).
- shuttleworthii* von Siebold, 1856 see *shuttleworthi* von Siebold, 1856.
- siamia* Johanson, 1994  
*Helicopsyche siamia* Johanson, 1994: 17.  
 Type locality: Thailand, Chiang Mai, Doi Suthep Temple.  
 Holotype [♂]: ZMBN.  
 Distribution: Thailand (Johanson, 1994).  
 Known life history stages: M.
- sigillata* Botosaneanu & Flint, 1991  
*Helicopsyche sigillata* Botosaneanu & Flint, 1991a: 182.  
 Type locality: Cuba, Oriente Province, Baracoa, Monte Iberia, N. Novoa.  
 Holotype [♂]: ZMUA, paratypes [10♂♂, 5♀♀]: USNM and ZMUA.  
 Distribution: Cuba (Botosaneanu & Flint, 1991a).  
 Known life history stages: L, P, M, F.
- singulare* Botosaneanu & Flint, 1991  
*Helicopsyche singulare* Botosaneanu & Flint, 1991b: 199.  
 Type locality: Puerto Rico, El Verde Field Station, Quebrada Prieta, 370 m.  
 Holotype [♂] & paratypes [3♂♂]: USNM, paratype [1♂]: ZMUA.  
 Distribution: USA: PR (Botosaneanu & Flint, 1991b).  
 Known life history stages: M.
- sinuata* Denning & Bickle, 1979  
*Helicopsyche sinuata* Denning & Bickle, 1979: 31.  
 Type locality: USA, California, San Bernardino County, Sheep Creek Canyon.  
 Holotype [♂]: UCRC.  
 Distribution: USA: CA (Denning & Bickle, 1979).  
 Known life history stages: M.
- sperata* McLachlan, 1976 see *crispata* (Benoit, 1857)
- sri Lanka* Malicky, 1973  
*Helicopsyche sri Lanka* Malicky, 1973: 166.  
 Type locality: Sri Lanka, Belihul-Oya.  
 Holotype [♀ pupa]: USNM.  
 Distribution: Sri Lanka (Malicky, 1973).  
 Known life history stages: C, F.
- starmuehlneri* Ross, 1975  
*Helicopsyche starmuehlneri* Ross, 1975: 72.
- Type locality: New Caledonia, 3 km. from mouth of Mou R.  
 Holotype [♂ pupa] & paratype [1 ♂ pupa]: INHS.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: M.
- stoltzei* Johanson, 1993  
*Helicopsyche stoltzei* Johanson, 1993: 152.  
 Type locality: Tanzania, Morogoro Region, Uzungwa Mts, Mwanahana Forest, above Sanje, 1100 m.  
 Holotype [♂]: ZMUC.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M.
- tanzanica* Johanson, 1993  
*Helicopsyche tanzanica* Johanson, 1993: 152.  
 Type locality: Tanzania, Iringa Region, Uzungwa Mts, Chita Forest Reserve, 1300 m.  
 Holotype [♂] & paratypes [59 ♂♂, 16 ♀♀]: ZMUC. Paratypes [2♂♂, 1♀]: ZMBN.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M, F.
- tapadas* Denning, 1966  
*Helicopsyche tapadas* Denning, 1966: 238.  
 Type locality: Mexico, Arroyo Santiago, Nayarit, 3 miles NW. of Jesus Maria.  
 Holotype [♂] & paratype [1♂]: UCDC.  
 Distribution: Mexico (Bueno-Soria & Flint, 1978).  
 Known life history stages: M.
- temora* Denning & Bickle, 1979  
*Helicopsyche temora* Denning & Bickle, 1979: 30.  
 Type locality: Mexico, 6.4 km. SW of Temoris, Chihuahua, 1500 m.  
 Holotype [♂] & paratypes [2♂♂]: UCRC.  
 Distribution: Mexico (Denning & Bickle, 1979).  
 Known life history stages: M.
- theodoce* Schmid, 1993  
*Helicopsyche theodoce* Schmid, 1993: 73.  
 Type locality: India, Assam, NEFA, Kameng Frontier Division., Amatulla.  
 Holotype [♂] & allotype [♀]: CNCI. Paratype [1♂]: ZMUA.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M, F.
- thyonee* Schmid, 1993  
*Helicopsyche thyonee* Schmid, 1993: 81.  
 Type locality: India, Assam, NEFA, Kameng Frontier Division, Lifakpo.  
 Holotype [♂]: CNCI.  
 Distribution: India (Schmid, 1993).  
 Known life history stages: M.
- tillyardi* Mosely, 1953  
*Helicopsyche tillyardi* Mosely in Mosely & Kimmins, 1953: 71.  
 Type locality: Australia: New South Wales, Rules Point, 4450 ft.  
 Holotype [♂]: NHML.  
 Distribution: Australia: ACT (Johanson 1995a), NSW (Fischer 1970), Q (Johanson 1995a), V (Johanson 1995a).  
 Known life history stages: M.  
 Remarks: The male and female sexes were redescribed by Johanson (1995a).
- tribulationa* Johanson, 1995  
*Helicopsyche tribulationa* Johanson, 1995a: ooo.  
 Type locality: Australia: Queensland, Cape Tribulation, 16°06'S, 145°29'E [G. Daniels].  
 Holotype [♂]: MVMA.

- Distribution: Australia: Q (Johanson 1995a).  
 Known life history stages: M.
- truncata* Ross, 1956  
*Helicopsyche truncata* Ross, 1956: 398.  
 Type locality: Mexico, Chiapas, Finca Vergel.  
 Holotype [♂] & paratypes [11♂♂, 5♀♀]: INHS.  
 Distribution: Mexico (Fischer, 1970), Panama (McElravy et al., 1981).  
 Known life history stages: M.
- turbida* Navás, 1923 see *muelleri* Banks, 1920
- tuxtlanensis* Bueno-Soria, 1983  
*Helicopsyche tuxtlanensis* Bueno-Soria, 1983: 455.  
 Type locality: Mexico, Veracruz, Balzapote, 3 km. north from Estacion de Biología "Los Tuxtlas".  
 Holotype [♂]: UNAM. Paratypes [3♂♂]: USNM.  
 Distribution: Guatemala (Bueno-Soria, 1983), Mexico (Bueno-Soria & Barba-Alvarez, 1991).  
 Known life history stages: M.
- † *typica* Ulmer, 1912  
 † *Helicopsyche typica* Ulmer, 1912: 307.  
 Syntypes [4♀♀]: GMUK.  
 Known life history stages: F.  
 Remarks: The species is known only from Baltic amber dated to late Eocene (Fischer, 1970).
- ulugurensis* Johanson, 1993  
*Helicopsyche ulugurensis* Johanson, 1993: 153.  
 Type locality: Tanzania, Morogoro Region, Uluuguru Mts, Lupanga East, 1000 m.  
 Holotype [♂]: ZMUC.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M.
- umbonata* Hagen, 1864  
*Helicopsyche umbonata* Hagen, 1864b: 128.  
 Type locality: Jamaica, Chitty, Paines Town.  
 Types [cases]: depository unknown.  
 Distribution: Jamaica (Fischer, 1970).  
 Known life history stages: L, P, C, M, F.  
 Remarks: The male, female, larva and pupa were described and the case was redescribed by Flint (1968a).
- usambarensis* Johanson, 1993  
*Helicopsyche usambarensis* Johanson, 1993: 153.  
 Type locality: Tanzania, Tanga Region, E. Usambara Mts, Sigi River, 500 m.  
 Holotype [♂] & paratype [1♂]: ZMUC.  
 Distribution: Tanzania (Johanson, 1993).  
 Known life history stages: M.
- valligera* Flint, 1983  
*Helicopsyche valligera* Flint, 1983: 93.  
 Type locality: Argentina, Pcia. Misiones, Arroyo Coati, 15 mi E San José.  
 Holotype [♂] & paratypes [6♂♂, 8♀♀]: USNM.  
 Distribution: Argentina (Flint, 1983), Brazil (Flint, 1983).  
 Known life history stages: M.
- vallonia* Ross, 1975  
*Helicopsyche vallonia* Ross, 1975: 69.  
 Type locality: New Caledonia, Waterfall on Hienghene Road, N. of Ouaieme Bay.  
 Holotype [♂ pupa]: INHS.  
 Distribution: New Caledonia (Ross, 1975).  
 Known life history stages: P.
- vergelana* Ross, 1956  
*Helicopsyche vergelana* Ross, 1956: 400.  
 [*Helicopsyche margaritensis* Botosaneanu, 1959; Flint,
- (1981): 37.]  
 Type locality: Mexico, Chiapas, Finca Vergel.  
 Holotype [♂] & paratypes [12♂♂, 5♀♀]: INHS.  
 Distribution: Colombia (Flint, 1991), Costa Rica (Bueno-Soria & Flint, 1978), Honduras (Bueno-Soria & Flint, 1978), Grenada (Flint & Sykora, 1993), Guatemala (Bueno-Soria & Flint, 1978), Mexico (Fischer, 1970), Surinam (Flint, 1974), Venezuela (Fischer, 1970).  
 Known life history stages: L, P, C, M, F.  
 Remarks: A reviewed description of the male was given by Flint (1974) and Botosaneanu & Alkins-Koo (1993).
- villegasi* Denning & Bickle, 1979  
*Helicopsyche villegasi* Denning & Bickle, 1979: 29.  
 Type locality: Mexico, 4 km. W of Nochistlan, Zacatecas, Rio de Nochistlan, at dam named Presade, "Los Tuzas", Baldomera Villegas, 1930 m.  
 Holotype [♂]: UCRC.  
 Distribution: Mexico (Denning & Bickle, 1979).  
 Known life history stages: M.
- woytkowskii* Ross, 1956 see *peruana* Banks, 1920.
- yamadai* Iwata, 1927  
*Helicopsyche yamadai* Iwata, 1927: 216.  
 Type locality: Japan, Higashi-yama, Kyōto, Miidera temple, Otsu.  
 Syntypes [larvae]: ZIKU.  
 Distribution: Japan (Fischer, 1970).  
 Known life history stages: L.  
 Remarks: The species was described from larval stage.
- zealandica* Hudson, 1904  
*Helicopsyche zealandica* Hudson, 1904: 70.  
*Helicopsyche itona* Moseley, 1953; McFarlane (1966): 146.  
 Type locality: New Zealand, Wellington, Wadestown, Wilton's Bush.  
 Type depository [life history stage(s) not given]: NMNZ.  
 Distribution: New Zealand (Fischer, 1970).  
 Known life history stages: L, P, C, M, F.  
 Remarks: The adult stage was described by Hare (1910).  
 Revised larval descriptions were given by Cowley (1978).
- Helicopsyche* sp. 1  
 Locality: Brazil, C 2, 93 [1 larva].  
 Known life history stages: L, C.  
 Bibliographic reference: Marlier (1964b).
- Helicopsyche* sp. 2  
 Locality: Brazil, C 93 [20 larvae], C 10 [2 larvae].  
 Known life history stages: L, C.  
 Bibliographic reference: Marlier (1964b).
- Helicopsyche* sp. 3  
 Locality: Brazil, A 68 [1 larva & 1 pupa]; E 1 [7 larvae].  
 Known life history stages: L, C, P.  
 Bibliographic reference: Marlier (1964b).
- Helicopsyche* species 1  
 The species is synonym with *H. guadeloupensis*.  
 Bibliographical reference: Flint (1968b).
- Helicopsyche* species 2  
 The species is probably synonym with *H. guadeloupensis*.  
 Bibliographical reference: Flint (1968b).
- Helicopsyche* sp.  
 Locality: Puerto Rico, Río Maricao, above fish hatchery.  
 Known life history stages: L.  
 Bibliographical reference: Flint (1964).
- Helicopsyche* sp. E  
 Locality: Sri Lanka, Gartmore-Dola (region Maskeliya), 2000 m [41 larvae].

- Known life history stages: L, C.  
 Bibliographic reference: Malicky (1973).
- Helicopsyche* sp. F  
 Localities: Sri Lanka, Gartmore-Dola (region Maskeliya), 2000 m [1 larva]; Sri Lanka, Gartmore-Dola, below the waterfall, 1800 m [4 larvae].  
 Known life history stages: L, C.  
 Bibliographic reference: Malicky (1973).
- Helicopsyche* sp. a  
 Locality: Cuba: Río Indio (ou mieux: Cabezadas de Río Indio), Massif de Gran Piedra [case].  
 Known life history stages: C.  
 Bibliographic reference: Botosaneanu & Sykora (1973).
- Helicopsyche* sp. b  
 Locality: Cuba: Río Indio (ou mieux: Cabezadas de Río Indio), Massif de Gran Piedra.  
 Known life history stages: C.  
 Bibliographic reference: Botosaneanu & Sykora (1973).
- Helicopsyche* sp. g  
 Locality: Cuba: Río Indio (ou mieux: Cabezadas de Río Indio), Massif de Gran Piedra.  
 Known life history stages: C.  
 Bibliographic reference: Botosaneanu & Sykora (1973).
- Helicopsyche* near *comosa* Kingsolver  
 Locality: Cuba, 6 km S of Baracoa, Río Sabanilla, a tributary of the Río Miel.  
 Known life history stages: M, F.  
 Bibliographic reference: Botosaneanu (1977), Botosaneanu (1979) and Botosaneanu & Flint (1991a).
- HYDROSALPINX Barnard, 1934 now in HYDROSALPINGIDAE  
 Scott, 1985
- † PALAEOHELICOPSYCHE Ulmer, 1912  
 Type species: † *Palaeohelicopsyche serricornis* Ulmer, 1912 [monotypic]  
 † *serricornis* Ulmer, 1912  
 † *Palaeohelicopsyche serricornis* Ulmer, 1912: 309.  
 Syntypes [4♂, 1♀]: GMUK, MRBP & MSNG.  
 Remarks: The species is known only from Baltic Amber dated to late Eocene (Fischer, 1970).
- NOTODOBIA Stephens, 1829  
*borealis* Hagen, 1861 see *Helicopsyche borealis* (Hagen, 1861)  
*lutea* Hagen, 1861 see *Helicopsyche lutea* (Hagen, 1861)
- PALUDINA Féruccac, 1812  
*Iustrica* Say, 1821 see *Helicopsyche borealis* (Hagen, 1861)
- PETROTRICHIA Ulmer 1910 see HELICOPSYCHE von Siebold, 1856
- PIKEA Allen, 1857 see HELICOPSYCHE von Siebold, 1856
- RAKIURA McFarlane, 1973  
 Type species: *Rakiura vernale* McFarlane, 1973 [monotypic]  
*vernale* McFarlane, 1973  
*Rakiura vernale* McFarlane, 1973: 27.  
 Type locality: New Zealand, Takaka, Waikoropupu Springs.  
 Holotype [♂] & paratypes [18♂, 1♀]: CMNZ.  
 Distribution: New Zealand (McFarlane, 1973).  
 Known life history stages: E, L, P, C, M, F.  
 Remarks: Descriptions of larva was given by Cowley (1978).
- SAETOTRICA Brauer, 1865 see HELICOPSYCHE von Siebold, 1856
- TETANONEMA Ulmer, 1905 see COCHLIOPSYCHE Müller, 1885
- VALVATA see HELICOPSYCHE von Siebold, 1856

## REMARKS

Due to the lack of descriptions and material, *Helicopsyche fannii* Rougemont, 1879 is listed as nomen nudum.

Seven species: *Helicopsyche helicoidella* (Vallot, 1855), *Helicopsyche pupoidea* (Gould, 1864), *Helicopsyche scalaris* Hagen, 1864, *Helicopsyche thelidomus* Hagen, 1864, *Helicopsyche arenifera* (Lea, 1834), *Helicopsyche brasiliensis* (Swainson, 1840) and *Helicopsyche colombiensis* von Siebold, 1856, have been described from larval cases. However, the original descriptions are inadequate and the type material has been impossible to trace. The species have therefore not been listed in this catalog. Bibliographical references to the species can be found in Fischer (1970).

The Stettiner Museum has been given in the literature as depository site for the types of *Cochliopsyche clara* (Ulmer, 1905). This institution does no longer exist, and the types are now in ZMPA. Information on changes in depository sites for other species has not been given here, but may have occurred.

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\* Additional records for *Helicopsyche borealis* (Hagen, 1861): Canada: Alberta (Schmid 1980) and Northwest Territories (Schmid 1980).

Schmid, F. 1980. Genera des Trichoptères du Canada et des États adjacents. Les Insectes et Arachnides du Canada, partie 7. Pp. 1-289.

## LITERATURE CITED

- ADAMS, C. B., 1839. Note. Am. J. Sci. Miscellanies 36: 392-393.
- ALLEN, E. A., 1857. Um apantamento para a fauna Lusitanica: 1-14.
- ARNETT, R. H. Jr., G. A. SAMUELSON, J. B. HEPPNER, G. M. NISHIDA, J. C. WATT & R. E. WOODRUFF, 1986. The insect and spider collection of the world. E. J. Brill/Flora & Fauna Publications, Gainesville. 220 pp.
- BAILEY, P. C., 1982. Diel activity pattern in larvae of the Australian caddisfly *Helicopsyche murrumba* Mosely (Trichoptera: Helicopsychidae). J. Aust. ent. Soc. 21: 247-250.
- BANKS, N., 1899. Descriptions of new North American Neuropteroid insects. Trans. Am. Ent. Soc. 25: 199-218.
- BANKS, N., 1901. A list of neuropteroid insects from Mexico. Trans. Am. Ent. Soc. 27: 361-371.
- BANKS, N., 1907. Descriptions of new Trichoptera. Proc. ent. Soc. Wash. 8: 117-133.
- BANKS, N., 1920. New neuropteroid insects. Bull. Mus. Comp. Zool. 64 (3): 297-362.
- BANKS, N., 1938. New West Indian Neuropteroid insects. Rev. Entomologica 9: 285-304.
- BARTHOLMEW, J. G., W. E. CLARKE & P. H. GRIMSHAW, 1911. Atlas of Zoogeography. Bartholomew's Physical Atlas - V. Edinburg Geographical Institute. John Bartholomew & Co. Edinburg. Pp. 1-67, I-XI, 36 pls.
- BENOIT, L., 1959. Illustrazione sistematica critica iconografica de' testacei estramarini della Sicilia Ulteriore e delle isole cir-costanti: i-xvi + 1-52..
- BERGER, J. & J. KASTER, 1979. Convergent evolution between phyla: a test case of mimicry between caddisfly larvae (*Helicopsyche borealis*) and aquatic snails (*Physa integra*). Evolution 33: 511-513.
- BETTEN, C., 1934. The caddis flies or Trichoptera of New York State. Bull. N. Y. St. Mus. 292. 576 pp.
- BOTOSANEANU, L., 1956. Le développement postembryonnaire, la biologie et la position systématique d'un des Trichoptères plus intéressants de la faune européenne: *Helicopsyche bacescui* Orghidan et Botosaneanu. Acta Soc. Zool. Bohemoslov. 20: 285-312.
- BOTOSANEANU, L., 1959. *Helicopsyche margaritensis*,
- Trichoptère nouveau des petites Antilles. Studies on the fauna of Curaçao and other Caribbean Islands 9: 61-68.
- BOTOSANEANU, L., 1977. Trichoptères (imagoes) de Cuba, capturés par moi-même en 1973 (Insecta, Trichoptera). Fragmenta Entomologica 13 (2): 231-284.
- BOTOSANEANU, L., 1979. The caddis-flies (Trichoptera) of Cuba and of Isla de Pinos: A synthesis. Studies on the Fauna of Curaçao and other Caribbean Islands 59 (185): 33-62.
- BOTOSANEANU, L., 1988. Trichoptères de la Martinique. Annls Soc. ent. Fr. (N.S.) 24 (2): 215-228.
- BOTOSANEANU, L., 1989. Notes on the caddisflies (Insects, Trichoptera) from Isla Margarita (Venezuela). Bull. Zool. Mus. Univ. Amsterdam 11 (25): 203-209.
- BOTOSANEANU, L., 1991. Trichoptères d'Haïti. Bull. Inst. r. Sci. nat. Belg., Ent. 61: 113-134.
- BOTOSANEANU, L. & M. ALKANIS-KOO, 1993. The caddis flies (Insecta: Trichoptera) of Trinidad and Taobago, West Indies. Bull. Inst. r. Sci. nat. Belg., Ent. 63: 5-45.
- BOTOSANEANU, L. & O. S. FLINT Jr, 1982. On some Trichoptera from Northern Venezuela and Ecuador (Insecta). Beaufortia 32: 13-26.
- BOTOSANEANU, L. & O. S. FLINT Jr, 1991a. Some *Helicopsyche* von Siebold species from Cuba and Hispaniola with conspicuous androconial systems (Insecta: Trichoptera: Helicopsychidae). Proc. Ent. Soc. Wash. 93 (1): 176-185.
- BOTOSANEANU, L. & O. S. FLINT Jr, 1991b. Contribution to the study of the genus *Helicopsyche* (Trichoptera) from Cuba, Hispaniola, and Puerto Rico. Bull. Zool. Mus. Univ. Amsterdam 12 (14): 197-219.
- BOTOSANEANU, L. & J. SYKORA, 1973. Sur quelques Trichoptères (Insecta: Trichoptera) de Cuba. Pp: 379-407: In: Résultats des expéditions biospéologiques cubano-roumaines à Cuba. Editura Academiei Republicii Socialiste România, Bucharest.
- BOWLES, D. E. & M. L. MATHIS, 1989. Caddisflies (Insecta: Trichoptera) of mountainous regions in Arkansas, with new state records for the order. J. Kans. Ent. Soc. 62 (2): 234-244.
- BOWLES, D. E. & M. L. MATHIS, 1992. A preliminary checklist of

- the caddisflies (Insecta: Trichoptera) of Oklahoma. *Insecta Mundi* 6 (1): 29-35.
- BRAUER, F., 1865. Zweiter Bericht über auf der Weltfart der Kais Fregatte Novara gesammelten Neuropteren. Verh. zool.bot. Ges. Wien 15: 415-422.
- BRAUER, F., 1866. Neuroptera. In "Reise der Osterindien Fregatte Novara." Zoologischer Teil. IV (1). Neuropteren. 105 pp.
- BREMI, J., 1848. Über ein Phryganeengehäuse aus Brasilien. Mitt. naturf. Ges. Zürich 1, 2: 61-63.
- BUENO-SORIA, J., 1983. Five new species of caddisflies (Trichoptera) from Mexico. Proc. Ent. Soc. Wash. 85 (3): 450-456.
- BUENO-SORIA, J. & R. BARBA-ALVAREZ, 1991. Preliminary studies in caddisflies from Los Tuxtlas, Veracruz, México. Proc. of the 6th Int. Symp. on Trichoptera. Adam Mickiewicz Univ. Press, Poznan. Pp. 239-242.
- BUENO-SORIA, J. & O. S. FLINT Jr., 1978. Catálogo sistemático de los Tricópteros de Mexico (Insecta: Trichoptera), con algunos registros de Norte, Centro y Sudamérica. An. Inst. Biol. Univ. Nal. Autón. Mexico 49. Ser. Zoología (1): 189-218.
- CHANTARAMONGKOL, P. & H. MALICKY, 1986. Beschreibung von neuen Köcherfliegen (Trichoptera, Insecta) aus Sri Lanka. Ann. Naturhist. Mus. Wien 88/89 B: 511-534.
- CHARDARD, R., 1947. La larve d'*Helicopsyche Revelieri* Mac Lachlan (Trichoptères, Sericostomatidae). Bull. Soc. Sci. Nancy 6: 1-13.
- COWLEY, D. R., 1978. Studies of the larvae of New Zealand Trichoptera. N. Z. J. Zool. 5: 639-750.
- DAVIS, C. C., 1965. A study of the hatching process in aquatic invertebrates. XVIII. Eclosion in *Helicopsyche borealis* (Hagen) (Trichoptera, Helicopsychidae). XIX. Hatching in *Psephenus herricki* (De Kay) (Coleoptera, Psephenidae). Am. Midl. Nat. 74 (2): 443-450.
- DENNING, D. G., 1964. Trichoptera from Baja California. Pan-Pacif. Ent. 40: 128-134, 241-245.
- DENNING, D. G., 1966. New and interesting Trichoptera. Pan-Pacif. Ent. 42: 228-238.
- DENNING, D. G. & R. L. BLICKLE, 1979. New species of *Helicopsyche* (Trichoptera, Helicopsychidae). Pan-Pacif. Ent. 55: 27-33.
- ELKINS, W. A., 1936. The immature stages of some Minnesota Trichoptera. Ann. ent. Soc. Amer. 29: 656-681.
- FELBER, J., 1908a. Beiträge zur Metamorphose der Trichopteren. Zool. Anz. 32 (17): 476-478.
- FELBER, J., 1908b. Die Trichopteren von Basel und Umgebung mit Berücksichtigung der Trichopteren-Fauna der Schweiz. Arch. Naturges. 74 (1): 199-282.
- FELBER, J., 1912. Ueber eine neue *Helicopsyche* aus Mexico. Zeitschrift für Wissenschaftliche Insektobiologie 8: 46-48.
- FISCHER, F. C. J., 1970. Trichopterorum catalogus, vol. XI. Nederlandse Entomologische Vereniging.
- FLANNAGAN, J. F., 1977. Emergence of caddisflies from the Roseau River, Manitoba. Proc. of the 2nd Int. Symp. on Trichoptera. Junk, The Hague. Pp. 183-197.
- FLINT, O. S. Jr., 1964. The caddisflies (Trichoptera) of Puerto Rico. Univ. of Puerto Rico, Agric. Exp. Sta., Techn. paper 40: 80 pp.
- FLINT, O. S. Jr., 1966. Studies of neotropical caddis flies, III: Types of some species described by Ulmer and Brauer. Proc. U.S. Nat. Mus. 120: 1-22.
- FLINT, O. S. Jr., 1967a. Studies of neotropical caddis flies, V: Types of the species described by Banks and Hagen. Proc. U.S. Nat. Mus. 123: 1-37.
- FLINT, O. S. Jr., 1967b. Studies of neotropical caddis flies, II: Trichoptera collected by Prof. Dr. J. Illies in the Chilean Subregion. Beitr. neotrop. Fauna 5: 45-68.
- FLINT, O. S. Jr., 1968a. The caddisflies of Jamaica (Trichoptera). Bull. Inst. Jamaica, Sci. Ser. 19: 1-68.
- FLINT, O. S. Jr., 1968b. Bredin-Archbold-Smithsonian biological survey of Dominica. 9. The Trichoptera (Caddisflies) of the Lesser Antilles. Proc. U.S. Nat. Mus. 125 (3665): 1-86.
- FLINT, O. S. Jr., 1972. Studies of neotropical caddisflies, XIV: On a collection from Northern Argentina. Proc. Biol. Soc. Wash. 85: 223-248.
- FLINT, O. S. Jr., 1974. The Trichoptera of Surinam. In: Geijsses, D. C. & Hummelinck, P. W. (eds.): Studies on the fauna of Suriname and other Guyanas. 79 (55): 3-151.
- FLINT, O. S. Jr., 1981. Studies of neotropical caddisflies, XXVIII: The Trichoptera of the Río Limón Basin, Venezuela. Smithson. Contr. Zool. 330: 1-60.
- FLINT, O. S. Jr., 1983. Studies of neotropical caddisflies, XXXIII: New species from Austral South America (Trichoptera). Smithson. Contr. Zool. 377: 1-100.
- FLINT, O. S. Jr., 1985/86. Studies of neotropical caddis flies, XXXVI: The genus *Cochliopsyche* in Middle America (Trichoptera: Helicopsychidae). An. Inst. Biol. Univ. Nal. Autón. Mex. 56, Ser. Zool. (1): 213-216.
- FLINT, O. S. Jr., 1991. Studies of neotropical caddisflies, XLV: The taxonomy, phenology, and faunistics of the Trichoptera of Antioquia, Colombia. Smithson. Contr. Zool. 520: 1-113.
- FLINT, O. S. Jr. & J. L. SYKORA, 1993. New species and records of caddisflies (Insecta: Trichoptera) from the Lesser Antilles, with special reference to Grenada. Ann. Cam. Mus. 62 (1): 47-62.
- GROSS, J. 1912. Das Tierreich 5. Ins.
- HAGEN, H. A., 1861. Synopsis of the Neuroptera of North America. With list of the South American species. Smithsonian Miscellaneous Collections 4 (1): 1-347.
- HAGEN, H. A., 1864a. Phryganidarum synopsis synonymica. Verh. zool.-bot. Ges. 14: 799-890.
- HAGEN, H. A., 1864b. Ueber Phryganiden-Gehäuse. Stettiner Ent. Zeit. 25 (4-6): 113-144, 221-263.
- HAGEN, H. A., 1866. Description of a genus of caddis-flies, of which the larvae construct cases known as *Helicopsyche*. Ent. monthly Mag. 2: 252-255.
- HANDLIRSCH, A., 1906-1908. Die Fossilen Insecten und die Phylogenie der Rezenten Formen. Ein Handbuch für Paläontologen und Zoologen. 1430 pp.
- HARE, E. J., 1910. Some additions to the Perlidae, Neuroptera - Planipennia, and Trichoptera of New Zealand. Trans. Proc. R. Soc. N. Z. 42: 29-33.
- HARPER, P. P., 1990. Associations of aquatic insects (Ephemeroptera, Plecoptera and Trichoptera) in a network of substratic lakes and streams in Québec. Hydrobiologia 199: 43-64.
- HOFMANN, O., 1894. Baukünste der Phryganiden. Ber. naturw. Ver. Regensburg 4: 38-49.
- HUDSON, G. V., 1904. New Zealand Neuroptera. West, Newman, London. 102 pp.
- International code of zoological nomenclature. 3rd ed. International trust for zoological nomenclature. university of California Press Berkeley & Los Angeles. Charlesworth & Co Ltd., Huddersfield, England. 1985.
- IWATA, M., 1927. Trichopterous larvae from Japan. Annotations Zool. Jap. 11: 203-219.
- JACQUEMART, S., 1957. Une *Helicopsyche* nouveaux du

- Congo Belge, *Helicopsyche marlieri* sp.n. (Trichoptera, Sericostomatidae). Bull. Inst. r. Sci. nat. Belg. 33 (30): 1-10.
- JOHANSON, K. A., 1993. New *Helicopsyche* von Siebold, 1856 (Trichoptera: Helicopsychidae) from East Africa. Annls Limnol. 29 (2): 139-155.
- JOHANSON, K. A., 1994. *Helicopsyche siama* sp.n. (Trichoptera: Helicopsychidae) from Thailand. Aquat. Insects 16 (1): 17-20.
- JOHANSON, K. A., 1995a. Eight new species and a revised key to Australian *Helicopsyche* von Siebold, 1856 (Trichoptera: Helicopsychidae). Ent. scand. 26 (in press)
- JOHANSON, K. A., 1995b. Revision of the European *Helicopsyche* (Trichoptera: Helicopsychidae), with designation of a neotype for *Helicopsyche shuttleworthi* von Siebold, 1856. Ent. scand. (in press)
- KINGSOLVER, J. M., 1964. New species of Trichoptera from Cuba. Proc. Ent. Soc. Washington 66: 257-259.
- KORBOOT, K., 1964. Four new species of caddis flies (Trichoptera) from Eastern Australia. J. Ent. Soc. Queensland 3: 32-41.
- KUMANSKI, K. P., 1988. Trichoptera, Integripalpia. In: Fauna Bulgarija 19. 354 pp.
- MACHADO, A. B. M., 1957. *Helicopsyche planorboides* n. sp. (Trichoptera, Helicopsychidae) and its mimetic relations to Planorbids (Mollusca, Pulmonata). An. Acad. Bras. Ciénc. 29 (1): 193-200.
- MACKAY, R. J. & G. B. WIGGINS, 1979. Ecological diversity in Trichoptera. Annu. rev. Entomol. 24: 185-208.
- MALICKY, H., 1973. Results of the Austrian-Ceylonese Hydrobiological mission 1970 of the 1st Zoological University Institute of Vienna (Austria) and the Department of Zoology of the University of Ceylon, Vidyalankara Capus, Kelaniya (Sri Lanka). Part XVI: The Ceylonese Trichoptera. Bull. Fish. Res. Stn., Sri Lanka (Ceylon) 24 (1/2): 153-177.
- MALICKY, H., 1974. Acht neue mediterrane Köcherfliegen (Trichoptera). Ent. Z. 84 (21): 229-238.
- MALICKY, H., 1980. Vier neue Köcherfliegen von der Insel Guadeloupe (Kleine Antillen, Mittelamerika) (Trichoptera). Entomofauna 1: 219-225.
- MALICKY, H. & P. CHANTARAMONGKOL, 1992. Neue Köcherfliegen (Trichoptera) aus Thailand und angrenzenden Ländern. Brauaria 19: 13-23.
- MALICKY, H. & F. SIPAHILER, 1984. A faunistic survey of the caddisflies (Trichoptera) of Turkey. Proc. of the 4th Int. Symp. on Trichoptera. Junk, The Hague. Pp. 207-212.
- MARLIER, G., 1964a. Sur trois Trichoptères nouveaux Recueillis en Amerique du Sud par le Professeur J. Illies. Bull. Inst. r. Sci. nat. Belg. 40 (6): 1-15.
- MARLIER, G., 1964b. Trichoptères de l'Amazonie. Mem. Inst. R. Sci. nat. Belg. 2 (76): 1-167.
- MARLIER, G., 1977. Les larves et nymphes des Trichoptères des Seychelles. Proc. of the 2nd Int. Symp. on Trichoptera. Junk, The Hague. Pp. 31-54.
- MARLIER, G. & H. MALICKY, 1979. A new *Helicopsyche* from the Seychelles (Trichoptera, Helicopsychidae). Z. Arbgem Öst. Ent. 30 (3/4): 110-112.
- MARTENS von, E., 1891. Drehungsrichtung der schneckenförmigen Gehäuse von Insektenlarven. SB. Ges. naturf. Fr. Berlin: 79-85.
- MARTYNOV, A. V., 1912. On two collections of Trichoptera from Peru. Annu. Mus. St. Petersb. 17: 1-40.
- MCELRAVY, E. P., V. H. RESH, H. WOLDA & O. S. FLINT Jr., 1981. Diversity of adult Trichoptera in a 'non-seasonal' tropical environment. Proc. of the 3rd Int. Symp. on Trichoptera. Junk, The Hague. Pp. 149-156.
- MCELRAVY, E. P., WOLDA, H. & V. H. RESH, 1982. Seasonality and annual variability of caddisfly adults (Trichoptera) in a "non-seasonal" tropical environment. Arch. Hydrobiol. 94: 302-317.
- MCFARLANE, A. G., 1964. A new endemic subfamily, and other additions and emendations to the Trichoptera of New Zealand (Part 5) Rec. Canterbury Mus. 8: 55-79.
- MCFARLANE, A. G., 1966. New Zealand Trichoptera (Part 6). Rec. Canterbury Mus. 8: 137-161.
- MCFARLANE, A. G., 1973. Five new species of Trichoptera from New Zealand. J. r. Soc. N. Ze. 3: 23-34.
- MCLACHLAN, R., 1876. A monographic revision and synopsis of the Trichoptera of the European fauna. London. Part V. Pp. 221-280.
- MCLACHLAN, R., 1880. A monographic revision and synopsis of the Trichoptera of the European fauna. London. Supplement. Pp. XIII-LXXXIV.
- MCLACHLAN, R., 1884. A monographic revision and synopsis of the Trichoptera of the European fauna. London. First additional supplement. Pp. 1-76.
- MECOM, J. O., 1972. Feeding habits of Trichoptera in a mountain stream. OIKOS 23: 401-407.
- MEY, W., 1991. Faunistische Daten über Köcherfliegen der Ostpaläarktis und Beschreibung neuer Arten (Insecta, Trichoptera). Dtsch. ent. Z., N. F. 38 (4-5): 349-363.
- MICHAELIS, F. B., 1973. The distribution and life history of *Rakiura vernale* (Trichoptera: Helicopsychidae). J. r Soc. N. Z. 3: 295-304.
- MOLLES, M. C. & K. H. NISLOW, 1991. Geographic variation in the structure of caddisfly cases: clues to the influences of competition and predation. Proc. of the 6th Int. Symp. on Trichoptera. Adam Mickiewicz University Press. Poznan. Pp. 177-180.
- MONSON, M. P., R. W. HOLZENTHAL & G. G. AHLSTRAND, 1988. The larva and pupa of *Cochliopsyche vazquezae* (Trichoptera: Helicopsychidae). J. N. Am. Benthol. Soc. 7 (2): 152-159.
- MORETTI, G. P. & F. CIANFICCONI, 1981. First list of Italian Trichoptera. Proc. of the 3rd Int. Symp. on Trichoptera. Junk, The Hague. Pp. 199-211.
- MORETTI, G. P., F. S. GIANOTTI, M. I. TATICCHI & A. VIGANO, 1981. Trichoptera if the Isle of Elba (Tuscany, Italy). Proc. of the 3rd Int. Symp. on Trichoptera. Junk, The Hague. Pp. 249-256.
- MORSE, J. C., S. W. HAMILTON & K. M. HOFFMAN, 1989. Aquatic insects of Lake Jocassee Catchment in North and South Carolina, with descriptions of four new species of caddisflies (Trichoptera). J. Elisha Mitchell Scient. Soc. 105 (1): 14-33.
- MOSELY, M. E., 1939. The Indian caddis flies (Trichoptera). J. Bombay Soc. 41: 39-47, 332-339.
- MOSELY, M. E. & D. E. KIMMINS, 1953. The Trichoptera (Caddis flies) of Australia and New Zealand. British Museum (nat. Hist.), London. 550 pp.
- NEBOISS, A., 1977. A taxonomic and zoogeographic study of Tasmanian caddis-flies (Insecta: Trichoptera). Mem. Natn. Mus. Vict. 38: 1-208.
- NEBOISS, A., 1986. Identity of two caddis-fly species described by Brauer and Navás (Trichoptera). Aquat. Insects 8: 99-104.
- NEBOISS, A., 1987. Identity of species of Trichoptera described by K. Korboot 1964-65 (Insecta). Mem. Natn. Mus. Vict. 48 (2): 131-140.

- ORGHIDAN, T. & L. BOTOSANEANU, 1953. *Helicopsyche bacescui* n.sp. (Trichoptera, Helicopsychinae). Bul. sti. Acad. repub. rom. 5: 425-431.
- PICTET, F. J., 1856. in H. H. Hagen (ed.), Die im Bernstein befindlichen Neuropteren. Monographie des Chéloniens de la molasse Suisse. Kessmann, Geneve.
- RESH, V. H., G. A. LAMBERTI & J. R. WOOD, 1984. Biological studies of *Helicopsyche borealis* (Hagen) in a coastal California stream. Proc. of the 4th Int. Symp. on Trichoptera. Junk, The Hague. Pp. 315-319.
- ROSS, H. H., 1938. Descriptions of Nearctic caddis flies (Trichoptera) with special reference to the Illinois species. Bull. Illinois nat. Hist. Surv. 21 (4): 100-183.
- ROSS, H. H., 1944. The caddis flies, or Trichoptera, of Illinois. Bull. Illinois nat. Hist. Surv. 23: 1-326.
- ROSS, H. H., 1952. Lectotypes of Hagen species belonging to certain families of Trichoptera. Psyche 59: 31-36.
- ROSS, H. H., 1956. Evolution and classification of the mountain caddisflies. Urbana: University of Illinois Press. 213 pp.
- ROSS, H. H., 1975. A preliminary report on the Helicopsychidae (Trichoptera) of New Caledonia. Cah. O.R.S.T.O.M., sér. Hydrobiol. 9 (2): 67-80.
- SAY, T., 1821. Descriptions of univalve shells of the United States. J. Ac. Philad. 2, 1.
- SCHMID, F., 1958a. Contribution à l'étude des Trichoptères néotropicaux III. Mitt. Zool. Mus. Berlin 34 (1): 183-217.
- SCHMID, F., 1958b. Trichopteres de Ceylan. Arch. f. Hydrobiol. 54 (1/2): 1-173.
- SCHMID, F., 1993. Considérations sur les Hélicopsychides (Trichoptera, Integripalpia). Beaufortia 43 (5): 65-100.
- SIEBOLD Von, C., 1856. Ein Beitrag zur Fortpflanzungsgeschichte der Thiere. Wahre Parthenogenesis bei Schmetterlingen und Bienen, Leipzig. 144 pp.
- SPINELLI BATTA, G. & G. P. MORETTI, 1988. The clining apparatus of Trichoptera pupae: number, structure, and SEM observations of the denticulations on the urotergal plates. Proc. of the 5th Int. Symp. on Trichoptera. Junk, The Hague. Pp. 11-17.
- STEINMANN, H., 1973. Identification keys to Integripalpia (Trichoptera) of the European families, subfamilies and genera I. Folia Ent. Hung. 26: 113-143.
- SWAINSON, W., 1840. A treatise on malacology; or, shells and shell fish. Longman, Orme, Brown, Green & Longmans, London. 419 pp.
- TARTER, D. C. 1990. A checklist of the caddisflies (Trichoptera) from West Virginia. Ent. News 101 (4): 236-245.
- TASSINARI, I. 1858. Mollusc. fluviat. Ital: 383.
- THIENEMANN, A., 1905. Biologie der Trichopteren-Puppe. Zool. Jb. Syst. 22: 489-574.
- TILLYARD, R. J., 1924. Studies of New Zealand Trichoptera, or caddis-flies: No. 2, descriptions of new genera and species. Trans. Proc. R. Soc. N.Z. 55: 285-314.
- ULMER, G., 1905. Zur Kenntniss aussereuropäischer Trichopteren. Stettiner Ent. Zeit. 66: 1-119.
- ULMER, G., 1910. Trichoptera. In: Percy Sladen Trust. Expedition, Indian Ocean in 1905. Trans. Linn. Soc. London 3 (14): 41-54.
- ULMER, G., 1912. Die Trichopteren des Baltischen Bernsteins. Beitr. Naturk. Preuss. 10: 380 pp.
- ULMER, G., 1951. Köcherfliegen (Trichopteren) von der Sunda-Inseln. Arch. Hydrobiol. Suppl. 19: 1-528.
- ULMER, G., 1955. Köcherfliegen (Trichopteren) von der Sunda-Inseln. Arch. Hydrobiol. Suppl. 21: 408-608.
- VAILLANT, F., 1953. Les *Helicopsyche* Hagen de Corse. Entomologiste 9: 76-78.
- VAUGHN, C. C., 1985. Life History of *Helicopsyche borealis* (Hagen) (Trichoptera: Helicopsychidae) in Oklahoma. Am. Midl. Nat. 113 (1): 76-83.
- VORHIES, C. T., 1909. Studies on the Trichoptera of Wisconsin. Trans. Wisconsin Acad. Sci. Art. Lett. 16: 647-718.
- WICHARD, W., 1988. Caribbean amber caddisflies - biogeographical aspects. Proc. of the 5th Int. Symp. on Trichoptera. Junk, The Hague. Pp. 67-69.
- WIGGINS, G. B., 1977. Larvae of the North American caddisfly genera (Trichoptera). University of Toronto Press. 401 pp.

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