

## A review of the taxonomic nomenclature and a checklist of the species of the Branchiobdellae (Annelida: Clitellata)

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*Abstract.*—The taxonomic nomenclature of the branchiobdellidans is reviewed. This includes the higher rankings and the numerous generic names assigned during the first half of the 19th century, particularly the use of *Branchiobdella* for species of the marine leech, *Branchellion*. The current taxonomic situation is summarized to high light where inconsistencies and omissions exist in the data. The class Branchiobdellae consists of one order, Branchiobdellida, with five families containing a total of 21 genera and 149 species. The binomia are given with any junior synonyms, and these are followed by the citation in which the rank was reduced to junior status. In addition, the valid taxon *Sinodrillus heterorchis* has been placed in *incertae sedis* until the entry point of the sperm ducts into the glandular atrium can be determined, two species are considered *nomen inquirenda* and three others *nomen nudem*.

Branchiobdellidans are leech-like symbionts found mainly on astacid crayfish in the Holarctic. The taxon is monophyletic and is considered to be independent of, and equivalent in rank to, the clitellate Oligochaeta and Hirudinea (Holt 1989a, Gelder & Brinkhurst 1990, Brinkhurst & Gelder 1991). Currently, the Clitellata is considered to be a subphylum, and so the three taxa just mentioned have the assigned rank of class. Thus, the higher taxonomic rankings of the branchiobdellidans are, the class Branchiobdellae Kasprzak, 1984, which consists of one order, Branchiobdellida Holt, 1965a, with five families (Holt 1986), Branchiobdellidae, Bdellodrilidae, Cambarincolidae, Caridinophilidae, and Xironodrilidae.

*Historical review of the higher ranks.*—The branchiobdellidans were raised to family rank by Grube (1851) with the name Branchiobdellea. Subsequently, Vejdovský (1884) reduced “Branchiobdellidae aut.” to a junior synonym of his proposed Discodrilidae. Ludwig (1886:786) did not accept Vejdovský’s recommendation, but changed

the suffix used by Grube (1851) to read Branchiobdellidae. This spelling has continued to be accepted as it conforms to the recommendations of the International Code of Zoological Nomenclature for constructing a family name.

The taxonomy of the branchiobdellidans has undergone a number of revisions, and this has resulted in some of the names and ranks becoming superfluous. The list below gives all of the names and their ranks as they have appeared in the literature.

### Higher Taxonomic Ranks and Names Proposed for Branchiobdellidans

- Class Branchiobdellae Kasprzak, 1984:217
- Subclass Branchiobdellida Stuart, 1982:43
- Branchiobdellidea Sawyer, 1986:647
- Order Branchiobdellida Holt, 1965a:30
- Superfamily Branchiobdelloidea Hall, 1914:190
- Family Branchiobdellea Grube, 1851:114
- Discodrilidae Vejdovský, 1884:38
- Branchiobdellidae Ludwig, 1886:782
- Bdellodrilidae Holt, 1986:668

Cambarincolidae Holt, 1986:692

Caridinophilidae Holt, 1986:692

Xironodrilidae Holt, 1986:691

Subfamily Branchiobdellinae Goodnight,  
1940:27

Cambarincolinae Goodnight, 1940:29

“*Branchiobdell-*” for non-branchiobdellidans.—The stem “branchiobdell-” was used by Rudolphi in an unpublished collection name for a marine leech with paired, external gills, *Branchiobdellion Torpedinis*. The new species was described and named *Branchellion torpedinis* Savigny, 1820. Unfortunately three junior synonyms were then created, *Hirudo (Branchiobdella) Rudolphii* Blainville, 1827, *Branchiobdella torpedinis* Blainville, 1828, and *Hirudo (Branchiobdella) torpedinis* Gervais, 1836. These misuses of “*Branchiobdella*” for *Branchellion* ceased with Diesing (1850) and the synonym status of *B. torpedinis* was reviewed by Blanchard (1894). Other suffixes to the stem have been found in the literature by the author, however, they have not been cited or discussed as this would have added nothing to the presented clarification of these misuses.

*Historical review of genera and species.*—The first report of a worm that can be recognized as a branchiobdellidan was made by Roesel (1755) when he reported a worm living on the surface of the crayfish, *Astacus Fluviatilis*. Although the Roesel reference has often been cited in historical reviews of branchiobdellidans (Sawyer 1986, and others), no tangible information has been reported, and the page and figure numbers cited were usually incorrect. Therefore, a translation of the anatomical description and location of the symbiont on the host is given (Roesel 1755:327, tab. LIX, figs. 19–22).

“25. With regard to the remaining figures in tab. LIX, particularly [figs] 19, 20, 21, 22. They show us a kind of worm that receives its nourishment from the “river crab” especially in December and January. Figure 19 depicts them [the worms] in their

natural maximum size [about 8mm long] — smaller versions can also be found. Their movement corresponds to the movement of a leech. Here [Fig. 19] I portray them in the positions they take up. Their basic color is a shiny brownish yellow; the head is their most supple member, it is a little pointed in shape and has a pair of black eye-spots. The remaining joints following the head get progressively thicker — right to the last joint [segment] — the sections [segments] as well as the dividing points between the sections are more round than wide. On the back of the third, fourth and fifth segment — counting from the rear — one notices a black spot discernible through the skin. It is simply feces in the rectum. These worms can be found anywhere under the breast plate of the “river crab”, particularly at the two sides from the head to the tail; especially where they occur in considerable numbers. Roesel’s figures 20, 21, 22 show these worms in the same position as in [Fig.] 19, but greatly enlarged [about 5×]. Whether these [worms] originate within the body of the “river crab” or outside of it, I cannot say, but I have observed that the “river crabs” are covered with many small eggs that stick together in clumps, at the time when they harbor these worms.”

Roesel’s figures 20 to 22 have been redrawn (Fig. 1a–c) and show branchiobdellidans in typical fixed positions. Figure 1a depicts the “head” followed by 11 segments with the posterior disc or “sucker” forming the 11th. The other two specimens are sufficiently contracted to hide the posterior segments. The reported and drawn “pair of eye-spots” are precisely where the dark jaws should be in a branchiobdellidan. Due to the fragile condition of this rare book, the author was supplied with photocopies of only a few requested pages. It is possible that Roesel (1755) made additional references to branchiobdellidans in other parts of this volume that were not available to the author. Reason for this belief comes from a subsequent work by Moquin-Tandon (1846) who refers to Roesel’s finding very

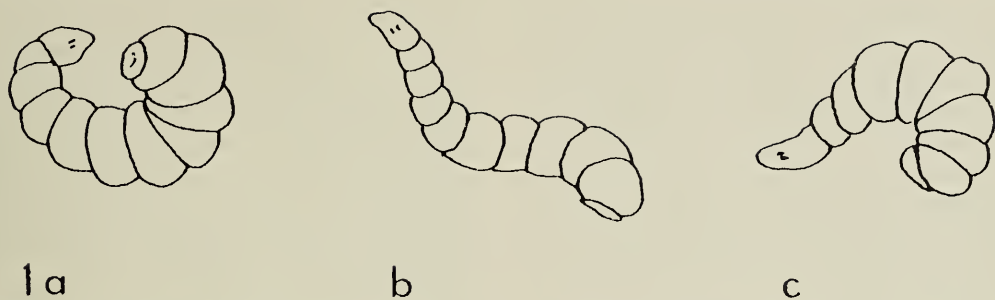


Fig. 1. Three preserved worms from the "river crab," redrawn from Roesel (1755: Tab. LIX, figs. 20, 21, and 22, respectively) at approximately 6.5 $\times$ .

small hirudineans, *Branchiobdella astaci*, which were parasitic in the gills of crawfish.

An improved description of a "crab worm," *Hirudo parasita* was made by Braun (1805), followed by a second species, *Hirudo astaci* Müller, 1806. However, it was the detailed observations on *Branchiobdella astaci* Odier, 1823, and presumably the same name as used by Roesel that resulted in this being accepted as the type species for the newly created genus. For completeness, it should be noted that Vejdvoský (1884) did not agree with Odier and recognized *B. parasita* Braun, 1805, as the type species.

Unfortunately, in the early 1800's, Blainville was already incorrectly using *Branchiobdella* for the gilled leeches, as noted earlier. Therefore, to accommodate the branchiobdellidans, he created a new generic name *Microbdella* Blainville, 1827. This name was modified to *Hirudo (microbdella) astaci* by Gervais (1836:628), and later (Gervais 1845) to *Microbdella astaci*. The problem of consistency with the genus name continued when Vallot (1840) proposed *Astacobdella branchiale* for *B. parasita*. In his checklist of worms, Diesing (1850) accepted the former generic name for his two new species, *Astacobdella Roeseli* Diesing, 1850, and *Astacobdella Abildgaardi* Diesing, 1850. Continuing this trend, *Astacobdella Philadelphica* Leidy, 1851, became the first reported branchiobdellidan in North America. After 1851, all branchiobdellidans were placed in the genus *Branchiobdella*, until Moore (1895a) recognized that specimens

found in North America were sufficiently different from *Branchiobdella* to warrant forming a number of additional genera. The century closed with Voigt (1885) arguing that the four known species of *Branchiobdella* in Europe were variants of a single species, *B. varians*. Although a few of his contemporaries used the name, it was not generally accepted.

The last monograph on the branchiobdellidans was produced by Pierantoni (1912). Since then a number of reviews, checklists, and keys to species have been produced, but they have been restricted to one of the three geographical regions in the Holarctic where the symbionts are found. These regions are North America, from Panama to southern Canada inclusive (Hoffman 1963; Holt 1965a, 1968a, 1973a, 1974a, 1986), Europe, from the Atlantic coast to the Ural Mountains (Moszyński 1938, Pop 1965, Boshko 1983), and eastern Asia, which include southeastern Russia, Korea, Japan, and China (Yamaguchi 1934; Liu 1964, 1984; Subchev 1986; Gelder 1987; Timm 1991). Therefore, a single checklist for the taxon is long overdue.

The largest contribution to branchiobdellidan taxonomy has been made by Holt (see Holt & Opell 1993), whose primary focus was on North American species. His philosophy (Holt pers. comm.) was that if a group of individuals has a recognizable anatomical structure, or a structure with a different relative proportion to that in a described species, then the new group should

be described as a new species. This philosophy was also shared by Yamaguchi (1934). However, European workers such as Moszyński (1938), Pop (1965), and Karaman (1967) recognized that such a level of difference warranted only subspecies rank. Therefore, this dichotomy in what constitutes a species in the branchiobdellidans needs to be addressed in the future.

This checklist contains the binomial names and junior synonyms of all branchiobdellidans with the author and date of the original description. The endings of a number of species binomen have been changed since the type descriptions were published (see Holt 1973a, Holt & Opell 1993). However, Holt & Opell (1993) changed the specific name endings of three species of *Cambarincola* from "us" back to the original "a" without supporting the change. These reversals have not been accepted in this checklist. The change of *Cambarincola osceola* to *osceolia* by Holt (1973:10) is not supported by the current International Code of Zoological Nomenclature (ICZN, 1985) in the opinion of F. M. Bayer (pers. comm.), and so the former spelling is accepted. In order to make this checklist more user-friendly, some species citations are followed by an author's name and a date. This citation indicates the paper in which the preceding name was modified or changed. Researchers studying type descriptions will become aware of the occasional anomaly where information in the checklist differs from the original paper. Two of these are explained to prevent confusion. The description of *Branchiobdella balcanica sketi* Karaman, 1967, was republished as a new subspecies by Karaman (1970), but the former is the authentic citation. Some papers have a year printed at the head of the pages, but due to delays, the journals were actually published a year later than stated. The date of publication is the only correct one, for example; Moore (1894) has the previous year imprinted on its pages. Ellis (1918) reported a number of branchiobdellidans on Michigan crawfishes,

and a number of the species cited were followed by, "in ed." The type descriptions of these new genera and species were published in Ellis (1919). The discrepancy in time was caused by an editorial delay of the manuscript with the new taxa, which did not effect the publication or distribution of the paper. The correct type citations for these taxa are Ellis (1919).

Taxonomic keys require a number of external and internal anatomical characters to be observed before the specimen can be identified. Many of the characters are not easy to observe, so there has been a temptation to use only the obvious characters of the external body shape, body length, and jaw structure. Such an approach invariably ignores the differing effect that fixation anomalies can produce on a soft body, and the apparently different morphology of the jaws when seen from various aspects. As a result of the variability of these few characters, 33 new species were described by Georgevitch (1955, 1957) that have since been reduced to junior synonyms of four species by Pop (1965).

*Sinodrilus heterorchis* (Liu & Zhang, 1983) has a pair of separately opening anterior nephridiopores which makes it a member of either the Branchiobdellidae or the Xironodrilidae. However, the type description did not state where the vas deferens enters the glandular atrium; without this information, it is not possible to assign this genus to a family. Therefore, the valid genus and species of *Sinodrilus heterorchis* has been placed in incertae sedis until the missing information is obtained. In addition, two species are considered nomen inquirenda and three other species nomen nudum in the checklist.

### Checklist

Class Branchiobdellae Kasprzak, 1984  
Order BRANCHIOBDELLIDA Holt, 1965a  
Family Branchiobdellidae (Grube, 1851)

*Ankyrodrilus* Holt, 1965b

*Ankyrodrilus koronaeus* Holt, 1965b

*Ankyrodrilus legaeus* Holt, 1965b

*Branchiobdella* Odier, 1823*Branchiobdella astaci* Odier, 1823

- = *Astacobdella Roeseli* (Diesing, 1850)
- = *Branchiobdella astaci fluviatilis* (Ostroumoff, 1883)
- = *Branchiobdella astaci leptodactyli* (Ostroumoff, 1883)
- = *Branchiobdella varians* var. *astaci* (Voigt, 1885) Pierantoni, 1912
- = *Hirudo astaci* (Müller, 1806) Vejdovský 1884
- = *Hirudo (Microbdella) astaci* (Gervais, 1836) Vejdovský, 1884
- = *Malacobdella (Hirudo) Astaci* (Gervais, 1836) Diesing 1850
- = *Microbdella astaci* (Gervais, 1845) Vejdovský 1884

*Branchiobdella balcanica balcanica* Moszyński, 1938

- = *Branchiobdella pentodonta orientalis* (Pop, 1965) Karaman 1967
- = *Xironogiton dolicoberos* (Georgevitch, 1957) Pop 1965

*Branchiobdella balcanica sketi* Karaman, 1967*Branchiobdella cheni* Liu, 1964*Branchiobdella digitata* Pierantoni, 1906*Branchiobdella domina* Timm, 1991*Branchiobdella hexodonta* Gruber, 1883

- = *Branchiobdella dubia* (Pierantoni, 1912) Pop 1965
- = *Branchiobdella ochridensis* (Georgevitch, 1957) Pop 1965
- = *Branchiobdella varians* var. *hexodonta* (Voigt, 1885) Pierantoni 1912
- = *Cambarincola pluridentata* (Georgevitch, 1957) Pop 1965

*Branchiobdella italica* Canegallo, 1928

- = *Branchiobdella insolita* (Moszyński, 1938) Pop 1965
- = *Branchiobdella pentodonta* var. *italica* (Canegallo, 1928) Pop 1965

*Branchiobdella kobayashii* Yamaguchi, 1934*Branchiobdella kozarovi* Subchev, 1978*Branchiobdella macroperistomium* Liu & Zhang, 1983*Branchiobdella minuta* Pierantoni, 1912*Branchiobdella monodontus* Liu & Zhang, 1983*Branchiobdella orientalis* Yamaguchi, 1934*Branchiobdella parasita* Henle, 1835

- = *Astacobdella branchialis* (Vallot, 1840) Vejdovský 1884
- = *Branchiobdella anatis* (Pierantoni, 1912) Pop 1965
- = *Branchiobdella bidens* (Georgevitch, 1955) Pop 1965
- = *Branchiobdella decidonta* (Georgevitch, 1957) Pop 1965
- = *Branchiobdella tridens* (Georgevitch, 1955) Pop 1965

= *Branchiobdella varians* var. *parasita* (Voigt, 1885) Pierantoni 1912

= *Cambarincola cylindrica* (Georgevitch, 1957) Pop 1965

= *Cambarincola odontias* (Georgevitch, 1955) Pop 1965

= *Hirudo Parasita* (Braun, 1805) Henle 1835

= *Pterodrilus aliata* (Georgevitch, 1957) Pop 1965

= *Pterodrilus bidens* (Georgevitch, 1955) Pop 1965

= *Pterodrilus dentata* (Georgevitch, 1957) Pop 1965

= *Pterodrilus karamani* (Moszyński, 1938) Pop 1965

= *Pterodrilus megas* (Georgevitch, 1955) Pop 1965

= *Pterodrilus megodont* (Georgevitch, 1955) Pop 1965

= *Pterodrilus prion* (Georgevitch, 1955) Pop 1965

= *Xironogiton bidens* (Georgevitch, 1955) Pop 1965

*Branchiobdella pentodonta* Whitman, 1882

= *Bdellodrilus hexadonta* (Georgevitch, 1957) Pop 1965

= *Branchiobdella capito* (Georgevitch, 1955) Pop 1965

= *Branchiobdella cordis* (Georgevitch, 1955) Pop 1965

= *Branchiobdella karamani* (Georgevitch, 1957) Pop 1965

= *Branchiobdella segmentata* (Georgevitch, 1957) Pop 1965

= *Branchiobdella septadonta* (Georgevitch, 1957) Pop 1965

= *Branchiobdella unidonta* (Georgevitch, 1957) Pop 1965

= *Branchiobdella varians* var. *pentodonta* (Voigt, 1885) Pierantoni 1912

= *Cambarincola dojranensis* (Georgevitch, 1955) Pop 1965

= *Cambarincola gastrax* (Georgevitch, 1955) Pop 1965

= *Cambarincola hamata* (Georgevitch, 1957) Pop 1965

= *Cambarincola odontias* (Georgevitch, 1955) Pop 1965

= *Xironodrilus crassus* (Georgevitch, 1955) Pop 1965

= *Xironodrilus tetradonta* (Georgevitch, 1955) Pop 1965

= *Xironogiton dilatatus* (Georgevitch, 1955) Pop 1965

= *Xironogiton dolicoberos* (Georgevitch, 1955) Pop 1965

= *Xironogiton latus* (Georgevitch, 1957) Pop 1965

- = *Xironogiton tridens* (Georgevitch, 1957) Pop 1965  
*Branchiobdella teresae* Subchev, 1986
- Cirrodrilus* Pierantoni, 1905  
*Cirrodrilus aequiannulus* (Liu, 1984)  
 = *Stephanodrilus aequiannulus* Liu, 1984  
*Cirrodrilus anodontus* (Liu, 1964)  
 = *Stephanodrilus anodontus* Liu, 1964  
*Cirrodrilus aomorensis* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *aomorensis* Yamaguchi, 1934  
*Cirrodrilus breviformis* (Liu & Chang, 1964)  
 = *Stephanodrilus breviformis* Liu & Chang, 1964  
*Cirrodrilus chosen* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *chosen* Yamaguchi, 1934  
*Cirrodrilus cirratus* Pierantoni, 1905  
 = *Ceratodrilus cirratus* (Yamaguchi, 1932a) Holt 1967a  
 = *Stephanodrilus* (*Ceratodrilus*) *cirratus* (Pierantoni, 1905) Yamaguchi 1934  
*Cirrodrilus ezoensis* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *ezoensis* Yamaguchi, 1934  
*Cirrodrilus fimbriatus* Timm, 1991  
*Cirrodrilus heteroglandularis* (Liu & Chang, 1964)  
 = *Stephanodrilus heteroglandularis* Liu & Chang, 1964  
*Cirrodrilus homodontus* (Yamaguchi, 1932b)  
 = *Cambarincola homodontus* Yamaguchi, 1932b  
*Cirrodrilus inukaii* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *inukaii* Yamaguchi, 1934  
*Cirrodrilus japonicus* (Pierantoni, 1912)  
 = *Stephanodrilus japonicus* Pierantoni, 1912  
*Cirrodrilus kawamurai* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *kawamurai* Yamaguchi, 1934  
*Cirrodrilus liaoningensis* (Liu & Chang, 1964)  
 = *Stephanodrilus liaoningensis* Liu & Chang, 1964  
*Cirrodrilus makinoi* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *makinoi* Yamaguchi, 1934  
*Cirrodrilus megalodontatus* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *magalodontatus* Yamaguchi, 1934  
*Cirrodrilus minimus* (Liu, 1964)  
 = *Stephanodrilus minimus* Liu, 1964  
*Cirrodrilus nipponicus* (Yamaguchi, 1932c)  
 = *Carcinodrilus nipponicus* Yamaguchi, 1932c  
*Cirrodrilus peristomalis* (Liu & Chang, 1964)  
 = *Stephanodrilus peristomalis* Liu & Chang, 1964  
*Cirrodrilus pugnax* Timm, 1991  
*Cirrodrilus quadridentaculatus* (Liu, 1984)  
 = *Stephanodrilus quadridentaculatus* Liu, 1984  
*Cirrodrilus sapporensis* (Pierantoni, 1906)  
 = *Stephanodrilus sapporensis* Pierantoni, 1906  
*Cirrodrilus suzukii* (Yamaguchi, 1934)  
 = *Stephanodrilus* (*St.*) *suzukii* Yamaguchi, 1934  
*Cirrodrilus uchidai* (Yamaguchi, 1932a)  
 = *Ceratodrilus Uchidai* Yamaguchi, 1932a  
 = *Stephanodrilus* (*Ceratodrilus*) *uchidai* (Yamaguchi, 1932a) Yamaguchi, 1934
- Xironogiton* Ellis, 1919  
*Xironogiton cassiensis* Holt, 1974a  
*Xironogiton fordi* Holt, 1974a  
*Xironogiton instabilis* (Moore, 1894) Holt 1974a  
 = *Bdellodrilus instabilis* (Moore, 1894) Pierantoni 1912  
 = *Branchiobdella instabilia* (Moore, 1894) Ellis 1919  
 = *Xironogiton instabilis instabilis* (Goodnight, 1940) Holt 1974a  
 = *Xironogiton instabilis oregonensis* (Goodnight, 1940) Holt 1974a  
 = *Xironogiton oregonensis oregonensis* (Ellis, 1919) Holt 1974a  
 = *Xironogiton oregonensis pectinatus* (Ellis, 1919) Holt 1974a  
*Xironogiton kittitasi* Holt, 1974a  
*Xironogiton occidentalis* Ellis, 1919  
*Xironogiton victoriensis* Gelder & Hall, 1990
- Family Bdellodrilidae Holt, 1986**
- Bdellodrilus* Moore, 1895b  
*Bdellodrilus illuminatus* (Moore, 1894)  
 = *Branchiobdella illuminata* (Moore, 1894)
- Cronodrilus* Holt, 1968b  
*Cronodrilus ogygius* Holt, 1968b
- Hidejiodrilus* Gelder & Brinkhurst, 1990  
*Hidejiodrilus koreanus* (Pierantoni, 1912)  
 = *Stephanodrilus koreanus* (Pierantoni, 1912)
- Uglukodrilus* Holt, 1989b  
*Uglukodrilus hemophagus* (Holt, 1977a)  
 = *Adenodrilus hemaphagus* Holt, 1977a
- Family Caridinophilidae Holt, 1986**
- Caridinophilus* Liang, 1963  
*Caridinophilus unidens* Liang, 1963
- Family Cambarincolidae Holt, 1986**
- Cambarincola* Ellis, 1912  
*Cambarincola acudentatus* Holt, 1973a  
*Cambarincola alienus* Holt, 1963  
*Cambarincola barbarae* Holt, 1981a  
*Cambarincola bobbi* Holt, 1988a  
*Cambarincola branchiophilus* Holt, 1954  
*Cambarincola carcinophilus* Holt, 1973a  
*Cambarincola chirocephalus* Ellis, 1919  
 = *Cambarincola* (*Coronata*) *chirocephala* (Ellis, 1919) Goodnight 1940  
*Cambarincola demissus* Hoffman, 1963  
*Cambarincola dubius* Holt, 1973b  
*Cambarincola ellisi* Holt, 1973a

- Cambarincola fallax* Hoffman, 1963  
*Cambarincola floridanus* Goodnight, 1941  
*Cambarincola goodnighti* Holt, 1973c  
*Cambarincola gracilis* Robinson, 1954  
*Cambarincola heterognathus* Hoffman, 1963  
*Cambarincola hoffmani* Holt, 1973a  
*Cambarincola holostomus* Hoffman, 1963  
*Cambarincola holti* Hoffman, 1963  
*Cambarincola illinoisensis* Holt, 1982  
*Cambarincola ingens* Hoffman, 1963  
*Cambarincola jamapaensis* Holt, 1973a  
*Cambarincola leoni* Holt, 1973b  
*Cambarincola leptadenus* Holt, 1973b  
*Cambarincola macrocephalus* Goodnight, 1943  
*Cambarincola macrodontus* Ellis, 1912  
 = *Cambarincola* (*Cambarincola*) *macrodontus* (Ellis, 1912) Goodnight 1940  
*Cambarincola manni* Holt, 1973c  
*Cambarincola marthae* Holt, 1973b  
*Cambarincola mesochoreus* Hoffman, 1963  
*Cambarincola meyeri* Goodnight, 1942  
*Cambarincola micradenus* Holt, 1973a  
*Cambarincola montanus* (Goodnight, 1940)  
 = *Triannulata montana* (Goodnight, 1940) Holt 1974b  
*Cambarincola nanagnathus* Holt, 1973a  
*Cambarincola olmecus* Holt, 1973a  
*Cambarincola osceola* Hoffman, 1963  
*Cambarincola ouachita* Hoffman, 1963  
*Cambarincola pamela* Holt, 1984a  
*Cambarincola philadelphicus* (Leidy, 1851)  
 = *Astacobdella Philadelphica* (Leidy, 1851)  
 = *Branchiobdella americana* (Pierantoni, 1912) Holt 1967a  
 = *Cambarincola* (*Coronata*) *philadelphica* (Leidy, 1851) Goodnight 1940  
*Cambarincola restans* Hoffman, 1963  
*Cambarincola serratus* Holt, 1981a  
*Cambarincola sheltensis* Holt, 1973b  
*Cambarincola shoshone* Hoffman, 1963  
*Cambarincola smalleyi* Holt, 1964  
*Cambarincola speocirolanae* Holt, 1984b  
*Cambarincola steevesi* Holt, 1973b  
*Cambarincola susanae* Holt, 1973a  
*Cambarincola toltecus* Holt, 1973a  
*Cambarincola virginicus* Hoffman, 1963  
*Cambarincola vitreus* Ellis, 1919  
 = *Cambarincola* (*Cambarincola*) *vitreus* (Ellis, 1919) Goodnight 1940
- Ceratodrilus* Hall, 1914  
*Ceratodrilus orphiorhysis* (Holt, 1960a) Holt 1988b  
*Ceratodrilus thysanosomus* Hall, 1914  
 = *Cirrodrilus thysanosomus* (Hall, 1914) Goodnight 1940
- Ellisodrilus* Holt, 1960b  
*Ellisodrilus carronamus* Holt, 1988a  
*Ellisodrilus clitellatus* Holt, 1960b  
*Ellisodrilus durbini* (Ellis, 1919)
- = *Pterodrilus durbini* (Ellis, 1919) Holt 1960b
- Magmatodrilus* Holt, 1967a  
*Magmatodrilus obscurus* (Goodnight, 1940)  
 = *Stephanodrilus obscurus* (Goodnight, 1940) Holt 1967a
- Oedipodrilus* Holt, 1967b  
*Oedipodrilus anisognathus* Holt, 1988a  
*Oedipodrilus cuetzalanae* Holt, 1984b  
*Oedipodrilus macbaini* (Holt, 1955)  
 = *Cambarincola macbaini* (Holt, 1955) Holt 1969  
*Oedipodrilus oedipus* Holt, 1967b
- Pterodrilus* Moore, 1895a  
*Pterodrilus alcornus* Moore, 1895a  
*Pterodrilus annulatus* Gelder, 1996  
*Pterodrilus cedrus* Holt, 1968c  
*Pterodrilus choritonamus* Holt, 1968c  
*Pterodrilus distichus* Moore, 1895a  
*Pterodrilus hobbsi* Holt, 1968c  
*Pterodrilus mexicanus* Ellis, 1919  
*Pterodrilus missouriensis* Holt, 1968c  
*Pterodrilus simonlsi* Holt, 1968c
- Sathodrilus* Holt, 1968b  
*Sathodrilus attenuatus* Holt, 1981b  
*Sathodrilus carolinensis* Holt, 1968b  
*Sathodrilus chehalisae* Holt, 1981b  
*Sathodrilus dorfus* Holt, 1977b  
*Sathodrilus elevatus* (Goodnight, 1940)  
 = *Cambarincola elevatus* (Goodnight, 1940) Holt 1978  
 = *Cambarincola* (*Cambarincola*) *elevatus* (Goodnight, 1940) Hoffman 1963  
*Sathodrilus hortonii* Holt, 1973c  
*Sathodrilus inversus* (Ellis, 1919)  
 = *Cambarincola inversa* (Ellis, 1919)  
 = *Cambarincola* (*Cambarincola*) *inversa* (Ellis, 1919) Goodnight 1940  
 = *Sathodrilus virgiliae* (Holt, 1977b) Holt 1981b  
*Sathodrilus lobatus* Holt, 1977b  
*Sathodrilus megadenus* Holt, 1968b  
*Sathodrilus nigrofluvius* Holt, 1989b  
*Sathodrilus norbyi* Holt, 1977b  
*Sathodrilus okaloosae* Holt, 1973c  
*Sathodrilus prostates* Holt, 1973a  
*Sathodrilus rivigeae* Holt, 1988a  
*Sathodrilus shastae* Holt, 1981b  
*Sathodrilus villacruzcus* Holt, 1968b  
*Sathodrilus viallobosi* Holt, 1968b  
*Sathodrilus wardinus* Holt, 1981b
- Tetodrilus* Holt, 1968b  
*Tetodrilus friaufi* Holt, 1968b
- Triannulata* Goodnight, 1940  
*Triannulata magna* Goodnight, 1940
- Family Xironodrilidae Holt, 1986**
- Holtodrilus* Gelder & Brinkhurst, 1990

*Holtodrilus truncatus* (Liang, 1963)

*Xironodrilus* Ellis, 1919

*Xironodrilus appalachius* Goodnight, 1943

*Xironodrilus bashariae* Holt & Weigl, 1979

*Xironodrilus dentatus* Goodnight, 1940

= *Xironodrilus pulcherrimus dentatus* (Goodnight, 1940) Goodnight 1943

*Xironodrilus formosus* Ellis, 1919

*Xironodrilus pulcherrimus* (Moore, 1894)

= *Branchiobdella pulcherrima* (Moore, 1894) Ellis 1919

Incertae sedis:

*Sinodrilus heterorchis* (Liu & Zhang, 1983) Gelder & Brinkhurst 1990

Nomen inquirenda:

*Branchiobdella tetradonta* Pierantoni, 1912 (Holt 1967a:7)

*Cambarincola okadai* Yamaguchi, 1933 (Holt & Opell 1993:253)

Nomen nudem:

*Astocobdella Abildgaard* Diesing, 1850:434—inadequate description.

*Bdelodrilus manus* n. sp. cited in Moore 1895a:454—no description.

*Branchiobdella chilensis* Moquin-Tandon, 1846:300—no description.

= *Astacobdella chilensis* Diesing, 1850

*Branchiobdella auriculae* Moquin-Tandon, 1846:301—no description.

### Acknowledgments

Many thanks for the help, tolerance, and understanding shown by Greg Curtis and Virginia Fisher at the library, University of Maine at Presque Isle, Maine; Dr. Jon L. Norenburg, Cheryl Bright and William E. Moser at the National Museum of Natural History, Smithsonian Institution, Washington D.C.; Valerie Wheat, American Museum of Natural History, New York; Skip Sterener, University of Nebraska State Museum at Lincoln, Nebraska, U.S.A.; Dr. Marco Ferraguti, Dipartimento di Biologia, Università degli Studi di Milano, Italy and Drs Joseph B. Jennings and Richard A. Baker, University of Leeds, U.K., to my requests for assistance at the most inopportune times. Thanks are also due the Dr. Andrea M. Gorman and Mark J. Wetzel for their constructive criticism of the manuscript, and Andreas Schneider for translating the archaic German texts.

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