

## An annotated list of the Diplopoda described by Alois Humbert alone and with Henri de Saussure, and the Diplopoda from Saussure's Mexico expedition

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**Abstract:** Alois Humbert and Henri de Saussure described 70 species of millipede based primarily on specimens collected on their respective expeditions, but including some other holdings of the Muséum d'histoire naturelle de Genève, and 52 species based on specimens borrowed from the Naturhistorisches Museum Wien. These species are listed alphabetically; the type specimens identified in the collections of both museums are enumerated and their state of preservation noted, the whereabouts of type specimens identified in other institutions are discussed and the currently valid combination is given for each species where this has been established.

**Keywords:** Millipedes - Geneva - Vienna - Antilles - Cuba - Sri Lanka - type-catalogue.

### INTRODUCTION

The early Diplopoda collections of the Muséum d'histoire naturelle de Genève (MHNG) were greatly enriched by the material brought back from the expeditions of Henri de Saussure to Mexico and the Antilles in 1854-1856 and of Alois Humbert to Sri Lanka (then Ceylon) in 1858-1860.

Saussure published two papers (Saussure, 1859a, b) with very cursory descriptions of the specimens he collected during his expedition, followed by a monograph (Saussure, 1860) with more extended descriptions and in some cases more details about the number of specimens and the type localities. He was the first myriapod expert to collect in the American tropics (Hoffman, 1999), although some of the specimens he described from there were collected by others, notably François Sumichrast, a Swiss naturalist who had accompanied Saussure on his expedition and chosen to remain in Mexico (Hollier & Hollier, 2012).

Humbert (1865) produced a monograph of the myriapods of Sri Lanka which was notable for its "superior lithographic figures of genitalia" (Hoffman, 2009: 102). The two men collaborated on further publications on myriapods, principally of the Americas. Three papers (Humbert & Saussure, 1869a, b, 1870) with very short species descriptions were followed by a monograph which gave more details for at least some of the species (Saussure & Humbert, 1872). Two of these papers

(Humbert & Saussure, 1869b, 1870) are largely based on specimens then in the Naturhistorisches Museum Wien (NHMW) and include many South American species not revisited in the monograph.

Humbert's final publication on the group was posthumous (Humbert, 1893); it was only partially complete and was prepared for publication by Saussure (with a significant contribution from Leo Zehntner, who matched the illustrations to the slide preparations of Humbert and produced some missing illustrations).

Saussure returned to the Diplopoda late in his career, perhaps as a result of Humbert's unfinished study, and together with Zehntner published on the fauna of Madagascar. The Madagascan species are discussed in a separate publication (Hollier & Wesener, 2017).

These publications did not designate types, and the specimens were not labelled as such. Specimens of species considered to be in synonymy were placed under the name thought to be correct, usually with no indication of their original placement. The type specimens of many of the species described by Humbert and Saussure were revised by Jean Carl, curator of Arthropods at the MHNG and a prolific taxonomist of Diplopoda. Carl described and illustrated the taxonomically important features of many of Humbert and Saussure's species. Although he often mentioned he had studied one of the specimens used for the original description, he did not designate lectotypes and it is not always clear from his comments how many type specimens were then available to him.

More recently, Richard Hoffman identified many type specimens in the MHNG collection and designated a number of lectotypes, particularly of the American species. William Keeton and Jean-Paul Mauriès also revised some of the specimens in the MHNG.

The nomenclature of this list follows Hoffman (1999) for the North American millipede fauna. For the other species more limited checklists like Krabbe (1982), Marek *et al.* (2003), Jeekel (2001a, b, c, 2006, 2007), de Zoysa *et al.* (2016) and Wesener (2016) have been followed. In some cases other references are cited for the combination used. Nevertheless, some of the names remain *incertae sedis*, and in these cases the original combination is used as a place holder.

## ARRANGEMENT AND FORMAT

The species are listed alphabetically. The format for each is:

**specific epithet** Author, publication: page [*Original generic placement*].

Provenance as given in the original description, depository. Type series.

Subsequent revision of the type material. Number of specimens in the MHNG, label data of type specimens.

Other information.

*Currently valid combination (or placeholder name)*

The following abbreviations are used in the list:

BMNH Natural History Museum, London

MHNG Muséum d'histoire naturelle de Genève

MNHN Muséum national d'Histoire naturelle, Paris

NHMW Naturhistorisches Museum Wien

ZMHB Museum für Naturkunde, Berlin

## CATALOGUE

**acolhuus** Humbert & Saussure, 1869a: 150 [*Polydesmus (Fontaria)*].

Mexico temperata. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription. They stated that they had eight ♂ and seven ♀ from “Moyoapan et Sierra de Agua, près Orizaba” but it is not clear whether this refers to the original series or to a variety described just before this information was given. The MHNG collection has a card-mounted ♂ and at least eight specimens (or parts of specimens) in alcohol (loose in two jars) under the name *Fontania acolhuus*. The dry specimen is accompanied by a glass vial containing a dry pair of gonopods secured by a pin through the cork stopper. The dry specimen is labelled “Sierra de Agua” and the jars containing the specimens in alcohol are labelled “S<sup>1</sup> Cruz, Mexique” and “S<sup>2</sup> Cruz Mexique.” The labels in both jars indicate type material; the dried specimen is also part of the type series. Hoffman

(1970: 159) designated one of the ♂ as a lectotype, put in a separate vial in the jar with the label “Lectotype!” There is a ♂ paralectotype in the NHMW (Inventory number 3348, Acquisition number 1866.I.A).

*Rhysodesmus acolhuus* (Humbert & Saussure, 1869)

**acutus** Humbert & Saussure, 1870: 176 [*Spirostreptus*]. Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♂ only, and the type locality as “Nouvelle-Grenade”. No specimens found in the MHNG. The NHMW contains a ♂ type specimen broken into three parts with the locality “New Grenada”, donated by E. Friedrichsthal (Inventory number 2165, Acquisition number 1866.I.51). The Acquisition Register shows that this specimen was part of a lot of two individuals that were described as two species by Humbert & Saussure, and it is therefore the holotype. The “New Grenada” on the data label probably refers to San Juan de Nicaragua, where Friedrichsthal disembarked in 1839 (Fischer-Westhauser, 2007; Stagl, 2003). Hoffman (1999: 36) suggested that the original placement of this species in the genus *Spirostreptus* was a *lapsus calami* and that it was considered by the authors to belong to the genus *Spirobolus*. This generic placement was formalised by Bollman (1893: 60).

*Spirobolus acutus* (Humbert & Saussure, 1870)

**aduncus** Saussure & Humbert, 1872: 158 [*Polydesmus (Rhachidomorpha)*].

New replacement name for *P. uncinatus* Humbert & Saussure, 1869a, a junior homonym of *P. uncinatus* Peters, 1864. The MHNG collection contains one ♂ specimen in alcohol under the name *Rhachomorpha uncinata*, labelled as a type. The specimen is in fragments and lacks a data label, but was transferred from the dry collection and is presumably a syntype that had been placed in the collection before the name was changed. The MHNG also has two broken specimens in alcohol under the name *Rhachidomorpha adunca*, also labelled as types.

*Rhachidomorpha adunca* (Saussure & Humbert, 1872)

**angulatus** Saussure, 1860: 336-337, fig. 25 [*Eurydesmus*]. Selon toute probabilité, le Brésil. Unspecified number of ♀.

The pagination of the publication is faulty and reads 536-537. Saussure & Humbert (1872) gave the locality as “République Argentine” and indicated that the original description was based on a single dried specimen. The MHNG collection contains two ♂ specimens labelled “Amérique mérid.” in alcohol, with a broken pair of gonopods in a separate vial, under the name *Eurydesmus angulatus*. One of these is presumably the specimen used by Carl (1903) to describe and illustrate the gonopod. The whereabouts of the ♀ holotype is unknown. The NHMW collection includes a ♀ specimen from Rio de Janeiro

determined by Humbert & Saussure as *E. angulatus* (Inventory number 3288, Acquisition number 1866.I.8); according to a label in the jar this specimen was subsequently identified as *E. zebratus* (Gervais, 1836) by Hoffman in 1980.

*Eurydesmus angulatus* Saussure, 1860

**annectens** Humbert & Saussure, 1869b: 677-678 [*Polydesmus (Stenonia)*].

Les Moluques (Musée de Genève). Unspecified number of ♂ and ♀.

Carl (1902) described and illustrated the gonopod based on an "Originalexemplar." The MHNG collection contains three card-mounted specimens and one in alcohol under the name *Platyrrhachus annectens* used by Carl. The one ♂ and two ♀ card-mounted specimens each have a label with the sex, "Odontodesmus annectens" and "Moluques" on the pin but there are three different abbreviations for the authors. The specimen in alcohol has a similar label but in a different handwriting, and is indicated to be a type. These specimens are obviously syntypes. An undated label placed with the specimen in alcohol by Hoffman indicates that he thought it belonged to the genus *Psaphodesmus*, but this opinion was not published. The generic placement is uncertain.

'*Polydesmus*' *annectens* Humbert & Saussure, 1869

**arboreus** Saussure, 1859b: 331 [*Julus*].

St. Thomas. Unspecified series.

Saussure (1860) stated that he had many specimens of both sexes, and that they were common on St. Thomas, where they were found climbing on trees or curled among the roots. The MHNG collection contains one ♂ and three ♀ in alcohol labelled as types under the name *Anadenobolus arboreus*. There are also numerous specimens in two jars under the name *Rhinocricus arboreus*, but these were collected after the publication of the original description and therefore cannot be types. The specimens under *Anadenobolus* each have the label "St Thomas, Antilles" and are syntypes, notwithstanding the holotype and paratype labels. There are further syntypes in the ZMHB (Mortiz & Fischer, 1975; ZMB211, erroneously referred to as the holotype) and in the MNHN (MY4381) according to their online database.

*Anadenobolus arboreus arboreus* (Saussure, 1859)

**aztecus** Humbert & Saussure, 1869a: 149 [*Cyclodesmus*].

Cordillera mexicana. More than one ♂.

Saussure & Humbert (1872) gave a more detailed redescription of the ♂ without mentioning the ♀ characters. Carl (1902) illustrated the gonopod based on an "Originalexemplar." The MHNG collection contains one specimen under the name *Cyclodesmus aztecus* [sic]. There is no data label but the identification labels in the jar have "Mexique" written on them. The handwriting of one of these labels indicates that this was the specimen studied by Carl and it is therefore a syntype.

*Cyclodesmus aztecus* Humbert & Saussure, 1869

**aztecus** Saussure, 1859b: 331 [*Julus*].

Cordova au Mexique. Unspecified series.

Saussure (1860) gave a much more detailed redescription of both sexes. He stated that he had many specimens from "les parties chaudes du Mexique, à Vera Cruz, à Cordova, à Orizaba etc." Carl (1919) described and illustrated the gonopods. The MHNG collection contains three ♂ and two ♀ card-mounted specimens and one ♀ directly pinned under the name *Spirobolus aztecus* and many specimens in alcohol in three jars under the name *Rhinocricus aztecus*. The three dry ♂ each have the label "Mexique, Voyage de Saussure," two of the ♀ are labelled "Mexique, V<sup>g</sup>e de Saussure" and the third is labelled "Orizava [sic] Mexique, V<sup>g</sup>e de Saussure." These are all syntypes. One of the jars containing two ♂ specimens in alcohol has the label "Spirobolus aztecus Sss, type, Mexique, Sumichrast." The second, labelled "Holotypus" contains around twenty broken specimens without a contemporary data label. The third contains around eight broken specimens and is labelled "Spirobolus aztecus Sauss., Mexique (Sumichrast)." It is likely that all of these are syntypes. There are further syntypes in the ZMHB (Moritz & Fischer, 1975; ZMB209) and in the MNHN (MY305, MY4328) according to their online database.

*Anadenobolus aztecus* (Saussure, 1859)

**aztecus** Saussure, 1859a: 324 [*Polydesmus (Leptodesmus)*].

Plateau du Mexique. Unspecified series.

Saussure (1860) gave a much more detailed description of both sexes. He stated that he had taken it "à plusieurs reprises sur le plateau de Puebla" adding "Un grand individu mâle a été pris sur les Flancs du Pic d'Orizaba, mais d'autres individus proviennent du volcan de Tuxtla, d'un climat tempéré." Carl (1903) illustrated the gonopod, mentioning an "Originalexemplar" from Puebla. The MHNG collection contains a ♂ and a ♀ labelled as types in alcohol under the name *Neoleptodesmus aztecus* and two specimens in alcohol labelled as a type under the name *Polydesmus aztecus*. The first two specimens, which have been transferred from the dry collection, have the data labels "Puebla, Mexique, M H de Saussure" and are clearly part of the type series. The other two have the data label "Potrero, Mexico, Sumichrast" and are probably specimens sent to Saussure subsequently to the expeditions and are not part of the type series collected by Saussure. Hoffman (1999: 424) designated the ♂ from Puebla as the lectotype. There is a paralectotype in the ZMHB (Moritz & Fischer, 1978; ZMB207).

*Neoleptodesmus aztecus* (Saussure, 1859)

**bataviae** Humbert & Saussure, 1869b: 688-689 [*Polydesmus (Strongylosoma)*].

Java, Batavia, Ida Pfeiffer (Musée de Vienne). Unspecified number of ♂.

No specimens found in the MHNG. There is one ♂

type specimen in the NHMW (Inventory number 2116, Acquisition number 1866.I.314). The Acquisition Register shows that the lot contained only one specimen, so this can be considered the holotype. Attems (1898) referred to the poor condition of this type which is broken but retains one of the gonopods. The generic placement follows Jeekel (1979).

*Sundanina bataviae* (Humbert & Saussure, 1869)

**brandti** Humbert, 1865: 38-39, pl. 3, fig. 15, pl. 5, fig. 15 [*Sphaeropoeus*].

Peradenia près Kandy. Unspecified number of ♂ and ♀. The MHNG collection contains two pinned specimens and two specimens in alcohol under the name *Sphaeropoeus brandtii*, and seven specimens loose in a jar in alcohol under the name *Arthrosphaera brandti*. One of the pinned specimens has the label “Peradenia, Ceylan, Voyage Humbert,” the other lacks a label (Fig. 1). The specimens in alcohol under the name *S. brandti* have identification labels with “Ceylan, Voy. Humbert” and are accompanied by two vials, one containing a telopod and the other one of the second pair of legs of a ♀. The specimens placed under *S. bandtii* and *S. brandti* are syntypes. The



Fig. 1. A syntype of *Arthrosphaera brandti* (Humbert, 1865) (photo P. Schwendinger).

specimens in alcohol under *A. brandti* were collected by Bugnion in 1912 and are therefore not part of the type series. The generic placement follows Wesener (2016).

*Arthrosphaera brandti* (Humbert, 1865)

**brotii** Humbert 1893: 70-74, pl. 10, fig. 15(1-6), pl. 14, fig. 8 [*Julus*].

Petit Salève; Bois d'Yvres; Pitons; sommet des Voirons; Reponsoir; Louèche [sic] (Valais); Sevrier. Many ♂ and ♀. The MHNG collection contains many specimens in alcohol under the name *Cylindroiulus brotii*. None can be identified as syntypes, having been collected after the publication of the original description. The whereabouts of the type material is unknown.

*Cylindroiulus brotii* (Humbert, 1893)

**caicarae** Humbert & Saussure, 1870: 174 [*Spirostreptus*]. Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♀ only, identified the type locality Caicara and stated that the specimen(s) had been collected by Natterer. No specimens found in the MHNG. There is one ♀ type specimen collected by Natterer in the NHMW (Inventory number 2439, Acquisition number 1866.I.47). The Acquisition Register shows that the lot contained only one specimen, so this can be considered the holotype. The locality probably refers to a fazenda on the Paraguay River where Natterer stayed between October 1825 and June 1826 (Schmutzer, 2007). The generic placement is uncertain.

'*Spirostreptus*' *caicarae* Humbert & Saussure, 1870

**californicus** Humbert & Saussure, 1870: 177 [*Spirostreptus*].

California. Unspecified number of ♂.

Saussure & Humbert (1872) gave a more detailed redescription, implying that they only had one specimen. No specimens found in the MHNG. There is a ♂ type specimen, collected in California by Parreys, in the NHMW (Inventory number 2168, Acquisition number 1866.I.43). The Acquisition Register shows that the lot contained only one specimen, so this can be considered the holotype. Hoffman (1999: 36) considered that the placement of this species as a member of the genus *Spirostreptus* rather than *Spirobolus* in the original description was probably a *lapsus calami*.

A junior synonym of *Tylobolus uncigerus* (Wood, 1864)

**carneus** Saussure, 1859a: 324 [*Polydesmus* (*Leptodesmus*)].

Brésil. Unspecified series.

Saussure (1860) implied that the original description was based on a single ♂ specimen from Bahia in Brazil, although the phrasing is ambiguous because it refers to an illustration. Saussure & Humbert (1872) described the ♀, giving the locality as Rio de Janeiro. Carl (1903) stated that he studied two ♂ “Originalexemplare,” describing

and illustrating the gonopod. The MHNG collection has two specimens in alcohol under the name *Leptodesmus carneus*, with a vial containing part of the head of a third specimen, a gnathochilarium, a pair of gonopods and a ♀ second pair of legs. Although there are no original data labels, these are presumably the syntypes referred to by Carl. The NHMW collection contains a non-type ♀ specimen collected by Tóth in 1864 in Rio de Janeiro (Inventory number 3292, Acquisition number 1866.I.140) and identified by Humbert and Saussure. This specimen was presumably the one used for the description of the ♀ in Humbert & Saussure (1872). *L. carneus* was designated the type species of *Leptodesmus* by Pocock (1909: 162), but the genus is poorly defined (Hoffman, 2012).

*Leptodesmus carneus* Saussure, 1859

***carolinensis*** Saussure, 1859a: 325 [*Polydesmus (Paradesmus)*].

Caroline du Sud. Unspecified series.

Saussure (1860) gives a much more detailed redescription which mentions both sexes. Saussure & Humbert (1872) considered the name to be a junior synonym of *P. erythropygus* Brandt, 1839. Carl (1903) described and illustrated the gonopod of an “Original exemplar” of *P. carolinensis* under the name *Euryurus erythropygus*. The MHNG collection has two card-mounted specimens under the name *Pachyurus carolinensis*. One is a ♂ labelled “Caroline S., Etats Unis” the other is ♀ and unlabelled. Hoffman refers to a ♂ holotype in the MHNG but because the original series was unspecified and the redescription covers both sexes, these specimens should be considered syntypes. There is a further syntype in the ZMHB (Moritz & Fischer, 1978; ZMB206, erroneously referred to as the holotype).

*Euryurus carolinensis* (Saussure, 1859)

***chichimecus*** Saussure, 1859b: 331 [*Julus*].

Mexique, Cordova. Unspecified series.

Saussure (1860) gave a more detailed redescription of the ♀, indicating that he had more than one specimen and stating that he had not found the ♂. The MHNG collection contains a directly pinned ♀ specimen under the name *Spirobolus chichimecus* and a ♀ in alcohol under the name *Rhinoericus chichimecus*. The dry specimen, which has a card mount under the middle of the body, is labelled “Mexique, Voyage de Saussure.” The specimen in alcohol does not have a data label, but has “Mexique” on the identification labels. Both specimens are presumably syntypes. The status of the specimen in alcohol is less certain because it could have been acquired with the ♂ specimen in alcohol which was once placed under this name, presumably after the original description was published, and was subsequently identified by Carl as *A. zapotecus*. There is a syntype in the MNHN (MY4384) according to their online database. *Anadenobolus chichimecus* (Saussure, 1859)

***cinctus*** Humbert & Saussure, 1870: 174-175 [*Spirostreptus*].

Rio. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♀ only. No specimens found in the MHNG. The NHMW contains a single broken ♀ type specimen collected in Rio by Frauenfeld (Inventory number 2440, Acquisition number 1866.I.5). The Acquisition Register shows that the lot contained only one specimen, so this can be considered the holotype. The generic placement is uncertain.

*Spirostreptus cinctus* Humbert & Saussure, 1870

***cingalensis*** Humbert, 1865: 32-34, pl. 3, fig. 13 [*Polydesmus (Strongylosoma)*].

Pundel-Oya Valley. One ♀.

No specimens found in the MHNG. The whereabouts of the holotype is unknown. The generic placement follows de Zoysa *et al.* (2016).

*Singhalorthomorpha cingalensis* Humbert, 1865

***clarazianus*** Humbert & Saussure, 1869a: 152 [*Polydesmus (Odontotropis)*].

Ager argentinus. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription and stated that the material was collected by Georges Claraz. The MHNG collection contains three specimens in alcohol, in two jars, under the name *Odontotropis clarazianus*. The label in the first jar reads “Odontotropis clarazianus Sauss., TYPE, La Plata, M<sup>r</sup> Claraz.” Although the word type has been added to the label in pencil as an afterthought, it indicates that the specimen is a syntype. A label in the other jar indicates that the two specimens it contains were identified by Carl and are therefore probably not syntypes. The generic placement follows Hoffman (1981).

*Odontopeltis clarazianus* (Humbert & Saussure, 1869)

***cluniculus*** Humbert & Saussure, 1870: 174 [*Spirostreptus*].

Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription, the type locality “Rio Negro” and noted that the specimen(s) had been collected by Natterer. No specimens found in the MHNG. The NHMW contains two ♀ syntypes collected by Natterer (Inventory numbers 2437 and 2438, Acquisition numbers 1866.I.49 and 1866.I.45 respectively).

*Orthoporus cluniculus* (Humbert & Saussure, 1870)

***coarctatus*** Saussure, 1860: 297-298, fig. 18 [*Polydesmus*].

Cayenne. Unspecified number of ♂ and ♀.

Saussure questioned the locality labels because he considered the specimens to be very similar to *P. beaumontii* Leguillou, 1841, described from Java. The MHNG collection contains many specimens in alcohol, including some studied by Saussure, but none could be

identified as syntypes. The NHMW collection includes a specimen collected by Ida Pfeiffer in Borneo and identified as this species by Humbert & Saussure (Inventory number 3503, Acquisition number 1866.I.135). This species is of Asian origin, but now found throughout the tropics. The whereabouts of the syntypes is unknown.

*Asiomorpha coarctata* (Saussure, 1860)

**coccineus** Humbert & Saussure, 1869a: 152 [*Polydesmus (Tropisoma)*].

Cordillera orientalis mexicana. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription, the locality “Orizaba” and the information that they had 22 individuals collected by Sumichrast. Carl (1903) illustrated the gonopod on the basis of an “Originalexemplar.” The MHNG collection contains one ♂ and two ♀ in alcohol, under the name *Strongylosoma coccinea*, that are labelled as types. The specimens have been transferred from the dry collection and although they do not have data labels they are clearly syntypes. The NHMW contains two ♀ syntypes (one incomplete) donated by Humbert & Saussure (Inventory number 3421, Acquisition number 1866.I.E).

*Acutangulus coccineus* (Humbert & Saussure, 1869)

**cognatus** Humbert, 1865: 22-23, pl. 2, fig. 6 [*Polydesmus*]. Peradenia près Kandy; Pundel-Oya Valley. Unspecified series.

Carl (1932) illustrated the antenna and gonopod but stated that he could not find Humbert’s type. The MHNG collection contains the dissected parts studied by Carl in alcohol under the name *Lankadesmus cognatus*. The type material is apparently lost.

*Lankadesmus cognatus* (Humbert, 1865)

**consobrinus** Humbert & Saussure, 1870: 174 [*Spirostreptus*].

Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of only the ♀, and the type locality as “Colombie.” No specimens found in the MHNG. The NHMW contains one ♀ syntype collected by Sulkowski in 1847 in Columbia (Inventory number 2441, Acquisition number 1866.I.61). The Acquisition Register indicates that the original lot contained two specimens collected in 1847 by Sulkowsky in Columbia; the whereabouts of the other syntype is unknown. The generic placement is uncertain.

‘*Spirostreptus*’ *consobrinus* Humbert & Saussure, 1870

**consobrinus** Saussure, 1859a: 322 [*Polydesmus (Fontaria)*].

Plateau du Mexique. Unspecified series.

Saussure (1860) gave a more detailed description of both sexes, but he implied that the original description was based on the ♂ only. He stated that he frequently

took both sexes together under stones, “dans toutes les terres froides du Mexique, dans l’Anahuac, au pic d’Orizaba etc.” Although Hoffman (1999) stated that the whereabouts of the type specimens was unknown and that he had not seen them in the MHNG, the collection has three card-mounted specimens under the name *Fontaria consobrinus*. There is also a vial containing a damaged pair of gonopods secured by a pin through the cork stopper. The two ♂ and one ♀ each have only “Mexique” on the label and all are in poor condition, but there is no reason not to think that the ♂ at least are syntypes.

*Rhyodesmus consobrinus* (Saussure, 1859)

**couloni** Humbert & Saussure, 1869a: 151 [*Polydesmus (Oxyurus)*].

Cuba. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription. Carl (1903) refers to “Originalexemplare” in his discussion of this species. The MHNG collection has two card-mounted specimens under the name *Leptodesmus couloni*. Both the ♂ and the ♀ specimens are badly damaged. They both have the data label “Oxyurus Couloni Humb. et Sauss., Cuba,” apparently in Humbert’s handwriting, and are syntypes. Hoffman (1999) refers to a ♂ holotype in the MHNG without justification.

*Amphelictogon couloni* (Humbert & Saussure, 1869)

**crassicornis** Humbert & Saussure, 1870: 177 [*Spirostreptus*].

Nova-Granada. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♂ only, and stated that the specimen(s) had been collected by Natterer. No specimens found in the MHNG. There is one broken ♂ type specimen collected by Friedrichsthal in the NHMW (Inventory number 2167, Acquisition number 1866.I.51a). The Acquisition Register shows that this specimen was part of a lot of two individuals that were described as two species by Humbert & Saussure, and it is therefore the holotype. The “New Grenada” on the data label probably refers to San Juan de Nicaragua, where Friedrichsthal disembarked in 1839 (Fischer-Westhauser, 2007; Stagl, 2003). Hoffman (1999: 36) suggested that the placement of this species in the genus *Spirostreptus* in the original description was a *lapsus calami* and that it was considered by the authors to belong to the genus *Spirobolus*. This generic placement was formalised by Bollman (1893: 60).

*Spirostreptus crassicornis* (Humbert & Saussure, 1870)

**crebriatriatus** Humbert, 1865: 55-56, pl. 5, fig. 24 [*Spirobolus*].

Peradenia. Two ♂.

The MHNG collection contains fragments of two specimens in alcohol under the name *Spirobolus crebriatriatus*. A label in the jar reads “Spirobolus

crebrestriatus Humb., (type) Peradenia, Ceylan” indicating that the specimens are syntypes. The generic placement is uncertain; here we follow Jeekel (2001c). *Cingalobolus crebrestriatus* (Humbert, 1865)

**cultratus** Humbert & Saussure, 1870: 175 [*Spirostreptus*]. Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription, stating that the original description was based on three fragments of a ♂ collected by Natterer. No specimens found in the MHNG. The holotype is in the NHMW (Inventory number 2523/2532, Acquisition number 1866.I.92). The specimen was reviewed by Hoffman, who illustrated the head and left gonopod (Hoffman, 1968a). This specimen has two inventory numbers because it was also described as *Alogostreptus nattereri* Attems, 1950, making the latter a junior synonym of *U. cultratus* (Humbert & Saussure, 1870). *Urostreptus cultratus* (Humbert & Saussure, 1870)

**cyaneus** Saussure, 1859a: 327 [*Strongyloidesmus*].

Régions tempérées du Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of the ♂ without mentioning the ♀, and indicated that he had several specimens. Carl (1903) described and illustrated the gonopod, referring to more than one ♂ “Original exemplare.” The MHNG collection has five ♂ specimens labelled as types in alcohol under the name *Strongyloidesmus cyaneus*. All are broken, some have the data label “Orizaba, Mexique, M H de Saussure” and others are without data labels, but are presumably syntypes. Some more recently collected specimens are also present. Hoffman (1999) refers to a ♂ holotype in the MHNG without justification.

*Strongyloidesmus cyaneus* Saussure, 1859

**cyprius** Humbert & Saussure, 1869a: 684-685 [*Polydesmus (Oxyurus)*].

Chypre, Kotschy (Musée de Vienne). Unspecified number of ♂ and ♀.

Attems (1898) redescribed the species based on type specimens in the NHMW. The MHNG has one specimen in alcohol under the name *Leptodesmus cyprius*. A note in the jar reads “Polydesmus cyprius Sss. & H. (Type) Chypre, Mus. Vienne”, indicating that it is a syntype. The NHMW contains fragments of at least six syntypes, including one pair of gonopods *in situ* and one pair in a glass vial (Inventory number 2024, Acquisition number 1866.I.152). Hoffman (1968b) illustrated the gonopods of a syntype in the NHMW.

*Melaphe cypria* (Humbert & Saussure, 1869)

**decolor** Humbert & Saussure, 1870: 173 [*Polydesmus (Oxyurus)*].

Brasilia. Unspecified number of ♀.

Saussure & Humbert (1872) gave a more detailed redescription, noting that the specimen(s) had been

collected by Natterer. No specimens found in the MHNG. The NHMW contains one broken ♀ (Inventory number 3295, Acquisition number 1866.I.137a). According to the Acquisition Register, *P. decolor* and *P. nattereri* were described from lot 137 which comprised only two specimens, specimen 3295 can therefore be considered the holotype. Although Attems (1898: 383) placed this species in the genus *Leptodesmus*, the generic placement remains uncertain and the genus *Leptodesmus* is poorly defined (Hoffman, 2012).

*'Polydesmus' decolor* (Humbert & Saussure, 1870)

**domingensis** Saussure & Humbert, 1872: 176 [*Spirobolus*].

Substitute name for *Julus haitensis* Saussure, 1860 (the two specimens described by Saussure as *Julus haitensis* Gervais, 1847 were in fact a different species). The MHNG collection has one ♂ syntype in alcohol under the name *Alcimobolus dominguensis*, erroneously labelled as the holotype by Mauriès in 1980. The whereabouts of the second syntype is unknown.

*Alcimobolus domingensis* (Saussure & Humbert, 1872)

**flicornis** Saussure, 1859b: 332 [*Julus*].

Vera-Cruz. Unspecified series.

Saussure (1860) gave a more detailed description of the ♀ without mentioning the ♂ or the number of specimens. Saussure & Humbert (1872) gave a description of the ♂, stating that they had received a number of specimens of both sexes from Cuernavaca. The MHNG collection includes one card-mounted ♂ under the name *Paraiulus flicornis*, and a ♀ specimen in alcohol under the name *Julus flicornis*. The specimen in alcohol is labelled “Cuernavaca” while the dry specimen is labelled “Vera Cruz, Mexique, M<sup>r</sup> de Saussure.” The specimen from Cuernavaca is presumably the one received after the publication of the description and not part of the type series. The specimen from Vera Cruz could be part of the type series but the original description appears to have been based on only the ♀ characters and so its status is dubious. Hoffman (1999) regarded the generic position as uncertain.

*'Julus' flicornis* Saussure, 1859

**fraternus** Saussure, 1860: 374, fig. 40 [*Julus*].

Yautepec dans les terres chaudes de la province de Mexico. One ♀.

The MHNG collection contains one card-mounted ♀ under the name *Spirostreptus fraternus*. It is labelled “Atihuayan, Mexique, M H de Saussure” and matches the rough measurements given in the original description. This specimen is presumably the holotype. There is a ♂ specimen in alcohol under the same name, but the identification is given with a question mark so it cannot be part of the type series.

*Orthoporus fraternus* (Saussure, 1860)

**fraternus** Saussure, 1859a: 322-323 [*Polydesmus (Fontaria)*].

Côte orientale du Mexique. Unspecified number of ♂ and ♀.

Saussure (1860) stated that he had four ♂ and three ♀, collected “dans les vallées du versant oriental de la Cordillère”. The MHNG has two ♂ and two ♀ in the dry collection under the name *Fontaria fraternus*. One ♂ and the two ♀ have the data label “Cordova, Mexique, M H de Saussure,” the other ♂ has “Pic Orizaba, Mexique, M H de Saussure.” There is also a glass vial containing a pair of gonopods secured by a pin through the cork stopper. All are part of the type series; the ♂ from Cordova was designated as the lectotype by Hoffman (1970: 155). There is a paralectotype in the ZMHB (Moritz & Fischer, 1978; ZMB202).

*Rhysodesmus fraternus* (Saussure, 1859)

**frauenfeldianus** Humbert & Saussure, 1870: 172 [*Polydesmus (Oxyurus)*].

Nova Granada. Unspecified number of ♀.

Saussure & Humbert (1872) gave a more detailed redescription. No specimens found in the MHNG or in the NHMW. The whereabouts of the type specimen(s) is unknown.

*Chondrodesmus frauenfeldianus* (Humbert & Saussure, 1870)

**gracilipes** Humbert & Saussure, 1870: 172 [*Polydesmus (Oxyurus)*].

Brasilia. Unspecified number of ♀.

Saussure & Humbert (1872) gave a more detailed redescription, stating that the specimen had been donated to the NHMW by Archduke Maximilian. No specimens were found in the MHNG. The NHMW contains a number of fragments, probably all from one ♀ type specimen (Inventory number 2612, Acquisition number 1866.I.146). The Acquisition Register shows that the lot contained only one specimen, so this can be considered the holotype. Attems (1898) redescribed the species based on this ♀ type specimen, and placed the species in the genus *Odontopeltis*. This placement was later rejected by Pena-Barbosa *et al.* (2013) and the actual generic position is uncertain.

*'Polydesmus' gracilipes* Humbert & Saussure, 1870

**gracilis** Humbert & Saussure, 1869a: 149 [*Sphaeriodesmus*].

Cordillera mexicana. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription (explicitly stating that there was more than one specimen) and a more precise type locality “Cordillère oriental, Moyoapan.” No specimens found in the MHNG. The whereabouts of the type specimens is unknown.

*Cylionus gracilis* (Humbert & Saussure, 1869)

**granosus** Humbert & Saussure, 1869b: 674 [*Polydesmus (Pachyurus)*].

Les Moluques (Musée de Genève). Unspecified number of ♀.

The MHNG has one card-mounted ♀ and one ♂ in alcohol under the name *Pachyurus granosus*. The ♀ has the label “Pachyurus granosus ♀ H. et S. Moluques” and is a syntype. The ♂ is in fragments. A typed label in the vial reads “Pachyurus granosus Sauss. ♂ TYPUS, ex. Mus. Genf, Moluques.” The original description only treats the ♀ and so the type status of this specimen is dubious.

*Polylepis granosus* (Humbert & Saussure, 1869)

**granulosus** Saussure, 1859a: 323 [*Polydesmus (Leptodesmus)*].

Cordova au Mexique. Unspecified series.

Saussure (1860: 325) placed this name in the synonymy of *P. toltecus* Saussure, 1859 (and noted that it was a junior homonym of *P. granulosus* Palissot de Beauvoir, 1805), and indicated that the original description was based on the ♀. No specimens are placed under this name in the MHNG but the ♀ in alcohol placed under the name *P. tolteca* could be a syntype, although this seems unlikely.

A junior synonym of *Rhysodesmus toltecus* (Saussure, 1859)

**haastii** Humbert & Saussure, 1869b: 683-684 [*Polydesmus (Oxyurus)*].

Auckland, Waikato River, Nouvelle Zélande (Musée de Vienne, Voyage Novara). Unspecified number of ♀.

No specimens found in the MHNG. The NHMW contains one broken ♀ syntype (Inventory number 3811, Acquisition number 1866.I.22). Johns (1964: 41) refers to a ♀ specimen in the NHMW as the holotype, which can be regarded as a lectotype designation by holotype assumption. The Acquisition Register gives a more detailed locality “Waikato River/Tauperi” showing that the specimen was collected during the Novara’s stay in Auckland in 1858 (Scherzer, 1862).

*Pseudoprionopeltis haastii* (Humbert & Saussure, 1869)

**haitensis** Saussure, 1860: 363-364 [*Julus*].

Ile de St-Domingue. Two ♂.

The specimens were first ascribed to *J. haitensis* Gervais, 1847 but were recognized by Saussure & Humbert (1872: 176) to be a distinct species and the species was given the new replacement name *Spirobolus dominguensis*. The pagination of the publication is faulty, and reads 563-564. The MHNG collection has one ♂ syntype in alcohol under the name *Alcimobolus dominguensis*, erroneously labelled as the holotype by Mauriès in 1980. The whereabouts of the second syntype is unknown.

*Alcimobolus domingensis* (Saussure & Humbert, 1872)



**hamifer** Humbert, 1865: 52-53, pl. 4, fig. 22, pl. 5, fig. 22 [*Spirostreptus*].

Ceylan (Peradenia?). Unspecified number of ♀.

The MHNG collection contains two specimens in alcohol in separate jars. One jar contains a broken ♀ specimen, with the main parts of the body in one vial and the second pair of legs in another. A label in the jar reads “*Spirostreptus hamifer* Humb. Type, Ceylan Voyage Humbert” indicating that it is a syntype. The second jar has a label indicating that the specimen was collected by Schneider, and it is therefore not a syntype.

*Harpurostreptus hamifer* (Humbert, 1865)

**heteropygus** Humbert & Saussure, 1869a: 154 [*Spirobolus*].

Mexico temperata. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription of the ♂ only and the type locality “Cuernavaca.” No specimens found in the MHNG. The whereabouts of the type specimens is unknown.

*Centrelus heteropygus* (Humbert & Saussure, 1869)

**hochstetterii** Humbert & Saussure, 1869b: 690-691 [*Polydesmus* (*Icosidesmus*)].

Auckland, Nouvelle-Zélande (Musée de Vienne, Voyage Novara). Unspecified series.

Attems (1899) redescribed the species based on type specimens in the NHMW. Carl (1902) gave a detailed redescription based on a type specimens in the MHNG and illustrated the gonopod. The MHNG collection contains two ♂ specimens in alcohol under the name *Icosidesmus hochstetteri*. The labels in the jar indicate that the specimens came from the NHMW and are types. Johns (1964: 6) designated one of the specimens (identified by a label in the vial containing the specimen) as lectotype. The NHMW houses two ♂ specimens from the type series (Inventory number 3823, Acquisition number 1866.I.10b), rather than the three reported by Johns (1964).

*Icosidesmus hochstetteri* Humbert & Saussure, 1869

**humbertiana** Saussure in Humbert, 1893: 89, pl. 14, fig. 13 [*Glomeris*].

Pitons, Mont Salève. Based on a coloured drawing by Humbert.

The MHNG collection contains two specimens under this name. They were collected on the Salève by Zehntner and are not part of the type series because Saussure stated that the type specimen had been lost and that he described it based on the colour pattern illustrated by Humbert. Hoess & Scholl (2001) discussed the confusion surrounding patterned *Glomeris*, and demonstrated that recent specimens of patterned *Glomeris* from Mont Salève belonged to *G. connexa*.

A junior synonym of *Glomeris connexa* C. L. Koch, 1847

**ignobilis** Humbert & Saussure, 1870: 177 [*Spirostreptus*].

America borealis. Unspecified number of ♂.

Saussure & Humbert (1872) gave a more detailed redescription, and indicated that they had two specimens. No specimens found in the MHNG or in the NHMW. Hoffman (1999) stated that the holotype (actually a syntype) was in the NHMW. Although it appears in the acquisitions register (Acquisition number 1866.I.42), the specimen is apparently lost.

A junior synonym of *Narceus annularis* (Rafinesque, 1829)

**inermis** Humbert, 1865: 39-41, pl. 3, fig. 16 [*Sphaeropoeus*].

Peradenia. Unspecified number of ♂ and ♀.

Humbert mentioned a series of varieties from several localities, but did not name them. The MHNG contains one card-mounted and four directly pinned specimens under the name *Sphaeropoeus inermis*, and four specimens in alcohol under the name *Arthrosphaera inermis*. The card-mounted specimen and one of the pinned specimens each have the label “Peradenia, Ceylon, Voyage Humbert.” Two of the pinned specimens have the label “Pundal O Vall., Ceylan, Voyage Humbert.” The other pinned specimen lacks a data label. The specimens in alcohol are in two vials, each with the label “*Sphaeropoeus inermis* Humb., Ceylan, Voy. Humbert”; these specimens were revised by Thomas Wesener in 2008. All are syntypes.

*Arthrosphaera inermis* (Humbert, 1865)

**inornatus** Humbert, 1865: 30-31, pl. 3, fig. 11 [*Polydesmus*].

Peradenia. One ♂.

No specimens found in the MHNG. The whereabouts of the holotype is unknown. The generic placement follows de Zoysa *et al.* (2016).

*Anoplodesmus inornatus* (Humbert, 1865)

**insignis** Saussure, 1859b: 332 [*Julus*].

La Plata. Unspecified number of ♂.

Saussure (1860) stated that he had two specimens, one of them damaged. The MHNG collection contains one ♂ in alcohol under the name *Pelmatojulus insignis*. The specimen, which has been transferred from the dry collection and is in fragments, is labelled “La Plata, M Melly” and as holotype. The latter label is erroneous and the specimen is a syntype.

*Pelmatojulus insignis* (Saussure, 1859)

**insularis** Humbert & Saussure, 1869b: 678-680 [*Polydesmus*].

Les Moluques (Musée de Genève). Unspecified number of ♀.

Although the original description refers to the specimen(s) as ♀, Carl (1902) illustrated the gonopod based on what he stated was an “Original exemplar.” The MHNG collection contains one card-mounted specimen

under the name *Platyrrhachus insularis* used by Carl. It is labelled “P. insularis, Sauss & H, Moluques” and is presumably a syntype.

*Psaphodesmus insularis* (Humbert & Saussure, 1869)

**intermedius** Humbert & Saussure, 1869a: 151-152 [*Polydesmus (Oxyurus)*].

Cordillera orientalis mexicana. Unspecified number of ♂.

Saussure & Humbert (1872) gave a more detailed redescription and the type locality as Orizaba. Carl (1903) placed this name in the synonymy of *P. sumichrasti* having examined the gonopod, but Hoffman (1999) revalidated the name. The MHNG collection contains one ♂ in alcohol, under the name *Polydesmus intermedius*, labelled as a type. The specimen has been transferred from the dry collection and is a syntype.

*Neoleptodesmus intermedius* (Humbert & Saussure, 1869).

**javanus** Saussure, 1859a: 324-325 [*Polydesmus (Leptodesmus)*].

L'île de Java. Unspecified series.

Carl (1902) redescribed the species, illustrating the gonopod, on the basis of a single ♂ “Original exemplar.” The MHNG collection contains one card-mounted specimen under the name *Platyrrhachus javanus*, the name used by Carl. The specimen is labelled “Java, M Melly” and should be regarded as the lectotype, designated by holotype assumption by Carl (1902: 656) who clearly stated that he had the one “Original exemplar.” The generic placement is uncertain; here we follow Carl (1902).

*Platyrrhachus javanus* (Saussure, 1859)

**kandyanus** Humbert, 1865: 49-50, pl. 4, fig. 20, pl. 5, fig. 20 [*Spirostreptus*].

Peradenia près Kandy. One ♂ and two ♀.

The MHNG collection contains one ♂ and three ♀ in alcohol under the name *Spirostreptus kandyanus*. As mentioned in the original description, the ♀ are paler and smaller than the ♂ (the third ♀, not mentioned in the description, is even smaller than those described). Humbert explicitly based the description solely on the ♂, adding that the ♀ specimens were found with it. de Zoysa *et al.* (2016) erroneously placed this name as a junior synonym of *Thyropygus allevatus* (Karsch, 1881), citing Hoffman (1982). However, in this publication Hoffman (1982: 36) revised specimens from Thailand identified as *S. kandyanus* by Daday, and identified them as *T. allevatus*, but his mention of “*Spirostreptus kandyanus* (sensu Daday nec. Humbert, 1866 [sic])” clearly did not bring Humbert’s species into question. The generic placement is uncertain, and the genus *Spirostreptus* probably does not occur in Sri Lanka (de Zoysa *et al.*, 2017).

‘*Spirostreptus*’ *kandyanus* Humbert, 1865

**kelaarti** Humbert, 1865: 23-25, pl. 2, fig. 7 [*Polydesmus*]. Trincomalie. Unspecified series.

Humbert mentioned a number of varieties, but did not name them. Carl (1902) made reference to “die kleinsten Original exemplare”. Carl (1932) discussed the variation in the species. The MHNG collection contains three card-mounted specimens and three in alcohol under the name *Prionopeltis kelaarti*. The dry specimens are each labelled “Ceylan, V<sup>se</sup> Humbert” while the jar contains the label “*Polydesmus kelaarti* Humb. (Type) Peradenia, Ceylan, Voyage Humbert.” The gonopods of one of the specimens in alcohol, identified by a label “Gonopodes” in the vial, were illustrated by Carl (1932: 464, figs 65-67) as the “Type”. Although the locality given for the alcohol specimens does not match the one in the original description, all of these specimens are probably syntypes. There are many other specimens in alcohol under the name *Anoplodesmus kelaarti* but these were collected by Carl after the publication of the original description and are therefore not syntypes. The generic placement follows de Zoysa *et al.* (2016).

*Chondromorpha kelaarti* (Humbert, 1865)

**lankaensis** Humbert, 1865: 50-52, pl. 4, fig. 21, pl. 5, fig. 21 [*Spirostreptus*].

Trincomalie. Two ♂ and two ♀.

Carl (1917) illustrated the posterior gonopod of the “type.” The MHNG contains five specimens in alcohol in three jars under the name *Spirostreptus lankaensis* and five specimens in alcohol together in one jar under the name *Ktenostreptus lankaensis*. The first jar contains two specimens and the label “*Spirostreptus lankaensis* Humb. (type) Trincomalie, Voy. Humbert.” The second jar contains one specimen and the label “*Spirostreptus lankaensis* Humb. (type) Trincomalie, Voy. Humbert.” These three specimens are clearly syntypes, and the jars have type labels on them. The third jar contains two specimens and a vial with a pair of gonopods, with the label “*Spirostreptus lankaensis* Humb. Ceylan coll. Schneider” while the fourth jar with five specimens has the label “*Spirostreptus (Ktenostreptus) lankaensis* Humb. Ceylan, Bugnion.” These seven specimens are not syntypes. Given the dissection, Carl presumably studied the specimens collected by Schneider.

*Ktenostreptus lankaensis* (Humbert, 1865)

**laticaudatus** Humbert & Saussure, 1870: 175-176 [*Spirostreptus*].

Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♂ only, stating that the specimen(s) had been collected by Natterer. No specimens found in the MHNG. The NHMW contains a single ♂ type specimen with the gonopods intact (Inventory number 2166, Acquisition number 1866.I.50) collected by Natterer. The Acquisition Register shows that the lot contained only one specimen, so this can be considered

the holotype. Hoffman (1999: 36) considered the original placement of this species in the genus *Spirostreptus* instead of *Spirobolus* was a *lapsus calami*. The generic placement is uncertain.

'*Spirostreptus*' *laticaudatus* Humbert & Saussure, 1870

**layardi** Humbert, 1865: 28-30, pl. 3, fig. 10 [*Polydesmus*].  
Peradenia près Kandy. Unspecified number of ♀.

No specimens found in the MHNG. The whereabouts of the type material is unknown.

*Anoplodesmus layardi* (Humbert, 1865)

**limax** Saussure, 1859a: 322 [*Polydesmus* (*Fontaria*)].

Terres chaudes du Mexique. Unspecified series.

Saussure (1860) stated that he had two ♂ and three ♀, and gave Cordova and San-Andrès-Tuxtla as localities. The MHNG collection has two ♂, one card-mounted and one in alcohol, under the name *Fontaria limax*. The dry ♂ has the data label "Cordova, Mexique" and is accompanied by a vial containing a broken pair of gonopods secured by a pin through the cork stopper. The ♂ in alcohol has the data label "Tuxtlan [sic], Mexique." Both are part of the type series. Hoffman (1966: 10) designated the ♂ which was transferred from the dry collection to alcohol, as the lectotype. There is a further paralectotype in the ZMHB (Moritz & Fischer, 1978; ZMB196).

A junior synonym of *Rhysodesmus dasypus* (Gervais, 1847)

**lunelii** Humbert, 1865: 47-49, pl. 4, fig. 19 [*Spirostreptus*].  
Putlam, côte occidentale de Ceylan. One ♂.

Carl (1917) re-illustrated the gonopod of the type because Humbert's original figure was printed too small for some of the detail to be visible. The MHNG collection contains one ♂ specimen in alcohol under the name *Thyropygus luneli*. The specimen is in several pieces and there is a vial containing a pair of gonopods. A label in the jar reads "Thyropygus luneli (Humb.) type! Ceylon, A. Humbert" indicating that this is the holotype. The MNHN online database states that there is a type (MY4391) in their collection, but since they give the country of origin as India, this must be a mistake.

*Humbertostreptus lunelii* (Humbert, 1865)

**macilentus** Humbert, 1893: 10-14, pl. 2, fig. 2 (1-7) [*Polydesmus*].

[Environs de Genève]. Unspecified series.

Humbert gave a description of his specimens under the name *P. macilentus* C.L. Koch, 1844. Attems (1898: 446) recognized that Humbert's specimens were not of this species, but placed the name *P. macilentus* Humbert in the synonymy of *P. subintiger* Latzel, 1884 rather than replacing it. The MHNG contains some 40 specimens in alcohol, in three jars, under the name *Polydesmus subintiger macilentus*. Two jars contain a label reading "Polydesmus macilentus C.Koch (Type Humbert) env. Genève coll. Humbert", apparently in Carl's handwriting.

The first jar has a vial with some 15 ♀ specimens, the second a vial with some 10 ♂ and 15 ♀ specimens. The third jar contains one ♂ and three ♀ collected near Bex and they are not labelled as types.

A junior synonym of *Propolydesmus testaceus* (C.L. Koch, 1847)

**macrourus** Humbert & Saussure, 1870: 176 [*Spirostreptus*].

Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♂ only. No specimens found in the MHNG. Although there is a single type specimen listed in the NHMW Acquisition Register (Acquisition number 1866.I.104), the specimen is apparently lost. Hoffman (1999: 36) considered that the original placement of this species in the genus *Spirostreptus* instead of *Spirobolus* was probably a *lapsus calami*.

'*Spirostreptus*' *macrourus* Humbert & Saussure, 1870

**mayus** Saussure, 1859a: 322 [*Polydesmus* (*Fontaria*)].

Cordillère du Mexique. Unspecified series.

Saussure (1860: 323) placed this name in the synonymy of *P. toltecus* Saussure, 1859, and indicated that the original description was based only on the ♂. There are no specimens placed under this name in the MHNG. The ♂ specimen in alcohol placed under the name *P. toltecus* in the MHNG could be a syntype of *P. mayus* if Saussure (1860) was correct in stating that *P. toltecus* was described on the basis of ♀ material only.

A junior synonym of *Rhysodesmus toltecus* (Saussure, 1859)

**mexicana** Humbert & Saussure, 1869a: 155-156 [*Siphonophora*].

Mexico, Cordillera orientalis. Unspecified number of ♀.

Saussure & Humbert (1872) gave a more detailed redescription and the locality "montagnes de la Sierra de Agua, près Orizaba." The MHNG contains fragments of an unknown number of specimens in alcohol under the name *Siphonophora mexicana*. There is no data label but the identification labels in the jar have "Mexique" written on them. The specimens are presumably syntypes. The NHMW contains a ♂ donated by Humbert and Saussure, which may be a syntype (Inventory number 2098, Acquisition number 1866.I.G).

*Linozonium mexicanum* (Humbert & Saussure, 1869)

**mexicanum** Humbert & Saussure, 1869a: 153 [*Craspedosoma*].

Mexico, Cordillera orientalis. Unspecified number of ♀.

Saussure & Humbert (1872) gave a more detailed redescription. The MHNG collection contains one specimen in alcohol under the name *Craspedosoma mexicana*. There is no data label but the identification labels in the jar have "Mexique" written on them. Hoffman (1999) refers to the specimen as holotype

but the type series was not specified and it should be considered a syntype.

*Cleidogona mexicana* (Humbert & Saussure, 1869)

**mexicanus** Saussure, 1859b: 328-329 [*Glomeridesmus*].

Mexique. Unspecified number of ♂ and ♀.

Saussure (1860) states that the specimens came from “Cordova, zone chaude du Mexique”.

Carl (1902) illustrated the gonopod. The MHNG collection contains three specimens in alcohol (in two jars) and parts of at least five card-mounted or pinned specimens under the name *Sphaeridesmus mexicanus*. The pinned specimens are broken, and some parts that have been secondarily card-mounted are not necessarily all from the same specimen. The ♂ specimen studied by Carl is in alcohol and labelled as a type with a locality label in the jar reading “Pic d’Orizaba, H. de Sss”. Among the pinned specimens there are a ♂ and part of a ♀ labelled “Cordova, Mexique, M H de Saussure” which are clearly syntypes. The other specimens were collected by Sumichrast or have illegible labels and are less certainly syntypes. There is also a syntype in the ZMHB (Moritz & Fischer, 1978; ZMB213).

*Sphaeridesmus mexicanus* (Saussure, 1859)

**mexicanus** Saussure, 1859b: 332 [*Julus*].

Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of both sexes, indicating that he had many specimens from numerous localities. Carl (1919) described and illustrated the gonopods. The MHNG collection contains four card-mounted ♂ specimens, eight card-mounted ♀ specimens and one ♂ specimen in alcohol under the name *Spirobolus mexicanus*. The card-mounted specimens have labels indicating that they were collected on Saussure’s expedition (one ♀ lacks a label). The specimen in alcohol was collected by Sumichrast, labelled as a type and is the one studied by Carl. All these specimens are syntypes. There are further syntypes in the ZMHB (Moritz & Fischer, 1975; ZMB210) and in the MNHN (MY3487) according to their online database.

*Hiltonius mexicanus* (Saussure, 1859)

**mexicanus** Saussure, 1859b: 328 [*Oniscodesmus*].

Mexique. Unspecified series.

Saussure (1860) stated that the specimen(s) came from the “parties chaudes du Mexique (Cordova).” The MHNG collection has one card-mounted ♀ and one ♂ in alcohol under the name *Oniscodesmus mexicanus*. Both are labelled “Cordova, Mexique, M H de Saussure” and are from the type series. Hoffman (1979a: 5) designated the ♂, which was transferred to alcohol from the dry collection, as lectotype.

*Cyphodesmus mexicanus* (Saussure, 1859)

**mexicanus** Humbert & Saussure, 1869a: 156 [*Platydesmus*].

Mexico, Cordillera orientalis. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription, giving the type locality “Sierra de Agua” and mentioning nine ♂ specimens. The MHNG collection has four card-mounted specimens. The two largest specimens, mounted on the same card, have the locality “Mexiq.” written on the identification label, and “A.” written at the lower right corner of the card. Another specimen has an identification label without locality and the last specimen has no labels but “A.” written in the lower right corner of the card. There is no reason to suppose that they are not all syntypes. There is also a ♀ syntype in the NHMW (Inventory number 2099, Acquisition number 1866.I.D)

*Platydesmus mexicanus* Humbert & Saussure, 1869

**mexicanus** Saussure, 1859a: 327 [*Stenodesmus*].

Terres chaudes du Mexique. Unspecified number of ♂ and ♀.

Saussure (1860) gave a more detailed description and the type locality as Cordova. Carl (1903) stated that the dry ♂ type specimen was so badly damaged that he could only examine the last segment of the gonopod. The MHNG collection has one card-mounted ♀ under the name *Stenodesmus mexicanus*. It is labelled “t.c. [terres chaudes], Mexique” and the anterior part of the body is missing. This specimen is clearly a syntype. The remains of the ♂ syntype studied by Carl are apparently lost.

*Stenodesmus mexicanus* Saussure, 1859

**modestus** Humbert, 1865: 53-54, pl. 5, fig. 23 [*Spirostreptus*].

Peradenia. Two ♀.

No specimens found in the MHNG. The whereabouts of the syntypes is unknown. The generic placement of the species is uncertain.

*‘Spirostreptus’ modestus* Humbert, 1865

**montezumae** Saussure, 1859b: 330 [*Julus*].

Vera-Cruz. Unspecified series.

Saussure (1860) gave a more detailed redescription of both sexes. The MHNG collection contains a ♂ in alcohol under the name *Orthoporus montezumae* and a ♀ in alcohol under the name *Spirostreptus montezumae*. The ♂ is labelled as holotype but because the type series was unspecified it should be considered as a syntype. The ♀ is identified as *montezumae* var. and may not be a syntype. There is a further syntype in the MNHN (MY4388) according to their online database.

*Orthoporus montezumae* (Saussure, 1859)

**montezumae** Saussure, 1859a: 323 [*Polydesmus (Fontaria)*].

Versant orientale de la Cordillière du Mexique. Unspecified series.

Saussure (1860) gave a much more detailed redescription of both sexes, and stated that it was common around Mirador and Cordova, and that he took specimens in

many localities between 1000 and 7000 feet in altitude. The MHNG has one ♂, one ♀ and a badly damaged specimen in the dry collection and a further ♀ specimen in alcohol, all under the name *Fontaria montezumae*. The data labels of the dry specimens read “Puebla, Mexique” with only that of the ♀ having Saussure’s name on the label. There is also a glass vial containing a dry pair of gonopods secured through the cork stopper. The ♀ in alcohol has the data label “Moyoapan”. These are all part of the type series. The ♂ was designated as lectotype by Hoffman (1999: 348). There is a further paralectotype in the ZMHB (Moritz & Fischer, 1978; ZMB203).

*Rhysodesmus montezumae* (Saussure, 1859)

**mystecus** Saussure, 1860: 369-370, fig. 36 [*Julus*].

Régions tempérées du Mexique, Oaxaca. Unspecified number of ♂ and ♀.

Carl (1919) described and illustrated the gonopods. The MHNG collection contains one ♂ specimen in alcohol under the name *Messicobolus mystecus*. It is labelled “t. c. Mexique” and is accompanied by a glass vial containing a pair of gonopods with the label “*Messicobolus tepanacus* Sauss. = *mystecus* Sauss voir Carl 1919, métatype ♂, Gonopodes postérieures.” This specimen is the one referred to by Carl (1919: 387) as having been labelled “tepanacus” and it is not a syntype. The whereabouts of the type specimens is unknown.

*Messicobolus mystecus* (Saussure, 1860)

**mystecus** Humbert & Saussure, 1869a: 150 [*Polydesmus* (*Fontaria*)].

Mexico temperata. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription and gave the locality “Cordillère orientale, région moyenne”. The MHNG collection contains two specimens in alcohol under the name *Fontaria mystecus*. There is no data label but the identification labels in the jar have “Mexique” written on them. One of these labels reads “*Polydesmus mystecus* Sss et H., Type, Mexique”, indicating that the specimens are syntypes.

*Rhysodesmus mystecus* (Humbert & Saussure, 1869)

**nahuus** Humbert & Saussure, 1869a: 150-151 [*Polydesmus* (*Fontaria*)].

Mexico temperata. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription, the locality “Cordillère orientale” and stated that they had one ♂ and seven ♀. The MHNG collection contains one specimen in alcohol under the name *Fontaria nahua*. There is no data label but the identification labels in the jar have “Mexique” or “Cordova” written on them. One of these labels reads “*Polydesmus nahua* Sss et H. (type) Cordova” indicating that it is a syntype. There is one broken ♀ syntype in the NHMW (Inventory number 3333, Acquisition number 1866.I.B) donated by Humbert and Saussure. The whereabouts of the other syntypes is unknown.

*Rhysodesmus nahuus* (Humbert & Saussure, 1869)

**nahuus** Humbert & Saussure, 1869a: 154 [*Spirobolus*]. Mexico, Cordillera orientalis. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription, the type locality “Sierra de Moyoapan” and indicated that they had three ♂ and three ♀. Carl (1919) redescribed the species and illustrated the gonopods. The MHNG collection contains parts of at least seven specimens in alcohol under the name *Chelogonobolus nahuus*. The specimens are in two vials and a third vial contains a damaged pair of gonopods. There is no data label but there is a label indicating that the specimens were studied by Carl for the 1919 publication and therefore include syntypes.

*Chelogonobolus nahuus* (Humbert & Saussure, 1869)

**nattereri** Humbert & Saussure, 1870: 173 [*Polydesmus* (*Oxyurus*)].

Brasilia. Unspecified number of ♀.

Saussure & Humbert (1872) gave a more detailed redescription. No specimens found in the MHNG. The NHMW contains one ♀ (Inventory number 3296, Acquisition number 1866.I.137b). According to the Acquisition Register, *P. decolor* and *P. nattereri* were described from lot 137 which comprised only two specimens; this specimen is therefore the holotype. The generic placement is uncertain and the genus *Leptodesmus* remains poorly defined (Hoffman, 2012).

*Leptodesmus nattereri* (Humbert & Saussure, 1870)

**nattereri** Humbert & Saussure, 1870: 176 [*Spirostreptus*].

Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♂ only, the type locality as Caicara and stated that the specimen(s) had been collected by Natterer. No specimens found in the MHNG. The NHMW contains a single ♂ syntype collected by Natterer (Inventory number 2171, Acquisition number 1866.I.48). The locality probably refers to a fazenda by the Paraguay River where Natterer stayed between October 1825 and June 1826 (Schmutzer, 2007). Hoffman (1999: 36) considered the original placement of this species in the genus *Spirostreptus* instead of *Spirobolus* a probable *lapsus calami*. The generic placement follows Marek *et al.* (2003).

*Rhinocricus nattereri* (Humbert & Saussure, 1870)

**nietanus** Saussure, 1860: 365-366, fig. 33 [*Julus*].

Mexique, près de Cuernavaca. Unspecified number of ♂.

The pagination of the publication is faulty and reads 565-566. Saussure & Humbert (1872) implied that the original description was based on one immature specimen, stating that they had subsequently received adults of both sexes collected by Matija Botteri. Carl (1919) described and illustrated the gonopod of Saussure’s specimen. The MHNG contains five specimens in alcohol in two jars under the name *Saussurobolus nietanus*. One jar contains

the ♂ specimen studied by Carl. The specimen is in a vial with the label “Atlihuayan, Mexique” and another vial contains a broken pair of gonopods. The jar is labelled “Holotypus” but the specimen should be considered a syntype because the original description did not clearly define the type series. The specimens in the second jar are in fragments and have three identification labels with “Mexico” or “Mexique” as the locality, one indicating only ♂ while the other two read “♂♀ type!” These specimens may be syntypes but it is more likely that the ♀ is part of the material collected by Botteri.

*Centrelus nietanus* (Saussure, 1860)

**novarae** Humbert & Saussure, 1869b: 689-690 [*Polydesmus*].

Auckland, Nouvelle-Zélande (Musée de Vienne, Voyage Novara). Unspecified number of ♂ and ♀.

Attems (1898) redescribed the species in more detail, using type specimens in the NHMW. The MHNG collection contains one ♂ specimen in alcohol under the name *Strongylosoma novarae*. A label in the jar reads “Strongylosoma novarae H. u S., Nouv. Zealand, Mus. Vienne” indicating that it is part of the type series. Rowe & Sierwald (2006: 535) designated a ♂ specimen in the NHMW as the lectotype and a ♀ specimen as a paralectotype (Inventory number 3426/3). There are also five other specimens (Inventory number 3426/1). The Acquisition number for all three lots is 1866.I.10a, even though only six specimens were sent to Humbert and Saussure, and these were identified as belonging to two species. This is the type species of the genus *Akamptogonus* Attems, 1914.

*Akamptogonus novarae* (Humbert & Saussure, 1869)

**olmecus** Humbert & Saussure, 1869a: 155 [*Parajulus*]. Mexico, Cordillera orientalis. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription, the type locality Moyoapan and stated that they had six ♂ and eight ♀. The MHNG collection contains 3 ♂ and parts of at least 6 ♀ in alcohol, in three jars. The ♂ lectotype, designated by Mauriès (1972: 160), is in one jar, two ♂ and five ♀ labelled as paralectotypes are in the second, while fragments of ♀ are in the third. According to notes in the jars, the lectotype and paralectotypes were transferred from the dry collection by Mauriès in 1971.

*Paraiulus olmecus* Humbert & Saussure, 1869

**orizabae** Humbert & Saussure, 1869a: 151 [*Polydesmus (Oxyurus)*].

Mexico, Orizaba. Unspecified number of ♀.

Saussure & Humbert (1872) gave a more detailed redescription. The MHNG collection contains one ♀ in alcohol under the name *Rhysodesmus orizabae*, labelled as a type. The specimen has been transferred from the dry collection and the original identification and locality

label is illegible. Hoffman labelled this specimen as the holotype, but since the type series was not specified it should be considered a syntype.

*Neoleptodesmus orizabae* (Humbert & Saussure, 1869)

**otomitus** Saussure, 1859b: 330 [*Julus*].

Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of the ♀, stating that he had eight specimens, all ♀. He gave a number of localities: “Cordova, Vera Cruz, San-Andres-Tuxtla – Oaxaca?” The MHNG collection contains one specimen in alcohol under the name *Julus otomitus*. The specimen has been transferred from the dry collection and the original label is illegible. A more recent label states that the specimen was identified as the type of *Orthoporus otomitus* by Hoffman in 1975. This specimen is a syntype. There is a syntype in the ZMHB (Moritz & Fischer, 1974; ZMB212, erroneously referred to as the holotype). A specimen in the NHMW collection (Inventory number 2445, Acquisition number 1866.I.H) donated by Humbert & Saussure is probably another syntype. The NHMW collection also contains a ♂ collected by Friedrichsthal in “Nova Grenada” (Inventory number 2444, Acquisition number 1866.I.51c) and fragments of three ♀ collected by Scherzer in “Central America” (Inventory number 3043, Acquisition number 1866.I.119) which were identified as this species by Humbert & Saussure.

*Orthoporus otomitus* (Saussure, 1859)

**otomitus** Saussure, 1859a: 322 [*Polydesmus (Fontaria)*].

Plateau du Mexique. Unspecified series.

Saussure (1860) gave a more detailed description of both sexes, although based on apparently immature specimens. The MHNG collection has two dry specimens under the name *Fontaria otomitus*. One is card-mounted and has the label “♀ Puebla, Mexique, M H de Saussure,” the other is directly pinned with a small piece of card supporting the centre of the specimen and is unlabelled. Hoffman (1999) stated that he had only found one immature ♂ in the MHNG, it is unclear whether this refers to the unlabelled specimen. Both specimens are presumably syntypes.

*Rhysodesmus otomitus* (Saussure, 1859)

**paraensis** Humbert & Saussure, 1870: 176 [*Spirostreptus*].

Para. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of both sexes. No specimens found in the MHNG. The acquisitions register of the NHMW lists a single specimen (Acquisition number 1866.I.38) but no specimen can be located in the collection; the type material appears to be lost. Hoffman (1999: 36) considered that the original placement of this species as a member of the genus *Spirostreptus* rather than *Spirobolus* was probably a *lapsus calami*.

*Rhinocricus paraensis* (Humbert & Saussure, 1870)

***persicus*** Humbert & Saussure, 1869b: 687-688 [*Polydesmus (Strongylosoma)*].

Perse, Kotschy (Musée de Vienne). Unspecified series. Attems (1898) redescribed this species and noted that the type specimens in the NHMW were in very bad condition and might not be useful. No specimens found in the MHNG. The NHMW contains six presumed syntypes, all of them broken but including a fragment with a pair of gonopods *in situ* (Inventory number 3574, Acquisition number 1866.I.215). The Acquisition Register lists the localities as “Karak insul” (Kharg Island) and “Sin. Pers.” but only enumerates five specimens.

*Tetrarthrosoma persicum* (Humbert & Saussure, 1869)

***pfeifferae*** Humbert & Saussure, 1869b: 680-681 [*Polydesmus (Stenonia)*].

Batavia, Ida Pfeiffer (Musée de Vienne). Unspecified number of ♂.

Attems (1899) redescribed this species but did not explicitly refer to type specimens in the NHMW. No specimens found in the MHNG. The NHMW contains a single broken ♂ type specimen (Inventory number 2117, Acquisition number 1866.I.172). The Acquisition Register shows that the lot contained only one specimen, so this can be considered the holotype. The generic placement follows Jeekel (2007).

*Gigantorhacus pfeifferae* (Humbert & Saussure, 1869)

***picteti*** Saussure, 1859a: 325-326 [*Polydesmus (Paradesmus)*].

Terres chaudes du Mexique. Unspecified series.

Saussure (1860) placed this name in the synonymy of *P. klugii* Brandt, 1839. He stated that the latter species is abundant and that he collected it “à Cordova, à Orizaba, à Panuco et sur tout le versant oriental du plateau”. Hoffman (1999: 389) erroneously assumed that the localities given by Saussure for the distribution of *P. klugii* referred to *P. picteti* whereas Saussure (1860: 294) implied that a single ♀ specimen served for the original description. The MHNG collection contains 14 card-mounted specimens under the name *Pachyurus klugii*. No specimen can be identified as the type of *P. picteti* from the labels, but one fits the size given in the original description and most of the characters described by Saussure (1860: 295), and it may be the holotype.

A junior synonym of *Amplinus klugii* (Brandt, 1839)

***picteti*** Humbert, 1865: 59-61, pl. 5, fig. 26 [*Siphonophora*]. Montagnes qui dominant Peradenia (sous les écorces). One ♂ and two ♀.

The MHNG collection has two card-mounted ♀ and one ♂ in alcohol under the name *Siphonophora picteti*. The jar holding the ♂ contains the label “Siphonophora Picteti Humb., (Type), Peradenia Ceylon, Voy. Humb.” indicating that it is a syntype. One of the dry ♀ has the data label “Peradenia, Ceylan, V<sup>se</sup> Humbert,” the other lacks a data label but the species name label in the box

has “Ceylan” written in the lower left corner. The jar is labelled as holotype but all three specimens are syntypes. *Pterozonium picteti* (Humbert, 1865)

***sallei*** Saussure, 1860: 300-301, fig. 8 [*Polydesmus*].

Antilles, Saint-Domingue, leg. Sallé. Unspecified number of ♀.

The MHNG collection has a card-mounted ♀ specimen and a ♂ in alcohol under the name *Leptodesmus sallei*. The ♂ is from Haiti, but the ♀ has the data label “S<sup>t</sup> Domingue, Antilles, M H de Saussure” and is a syntype. Hoffman (1999) refers to this specimen as the holotype without justification. The generic placement follows Pérez-Asso (2010).

*Beatadesmus sallei* (Saussure, 1860)

***saussurei*** Humbert, 1865: 26-27, pl. 2, fig. 8 [*Polydesmus*].

Peradenia près Kandy. Unspecified number of ♂ and ♀ (several samples).

The MHNG collection contains one card-mounted ♂ and two specimens in alcohol in separate jars under the name *Prionopeltis saussurei*. The dry specimen is labelled “Peradenia, Ceylan, V<sup>se</sup> Humbert.” Both of the specimens in alcohol have a label in the jar that reads “Polydesmus saussurei Humb. (Type) Peradenia, Ceylan, Voyage Humbert.” One of the specimens in alcohol is broken into many pieces. All three are syntypes. There are also specimens collected by Carl under this name in the MHNG; these were collected after the publication of the original description and are not syntypes. The generic placement follows de Zoysa *et al.* (2016).

*Anoplodesmus saussurei* (Humbert, 1865)

***simillimus*** Humbert & Saussure, 1869a: 150 [*Polydesmus (Fontaria)*].

Mexico temperata. Unspecified series (more than one individual).

Saussure & Humbert (1872) gave a more detailed redescription, and mentioned the locality “Cordillère orientale; Santa Cruz près Orizaba”, noting that the species was found under the bark of trees. The MHNG collection has six card-mounted specimens under the name *Fontaria simillima*. Two ♂ specimens mounted on the same card have the label “5d” while four smaller specimens, all mounted on the same card, have the label “5c”. There is also a glass vial with a dry pair of gonopods secured by a pin through the cork stopper. Hoffman (1966: 16) designated the smaller ♂ (mounted legs-up) as lectotype, as indicated by the word “Lectotype” handwritten on the card at the rear of the specimen.

*Stenodesmus simillimus* (Humbert & Saussure, 1869)

***simplex*** Humbert, 1865: 34-35, pl. 3, fig. 14 [*Polydesmus (Strongylosoma)*].

Pundel-Oya Valley. Unspecified series.

Carl (1932) gave a new illustration of the gonopod,

without stating that it came from the type. The MHNG collection contains the gonopod studied by Carl, stored in alcohol under the name *Orthomorpha (Kalorthomorpha) simplex*. An undated label in the jar indicates that Hoffman identified these as part of the type; given that the type series was undefined, it is a syntype. The generic placement follows de Zoysa *et al.* (2016).

*Anoplodesmus simplex* (Humbert, 1865)

**skinneri** Humbert, 1865: 31-32, pl. 3, fig. 12 [*Polydesmus (Strongylosoma)*].

Peradenia. Unspecified series.

In the comparison with *P. cingalensis*, Humbert implied that he only had ♂ specimen(s). No specimens found in the MHNG. The whereabouts of the type material is unknown. The generic placement follows de Zoysa *et al.* (2016).

*Singhalorthomorpha skinneri* (Humbert, 1865)

**strangulatus** Humbert & Saussure, 1870: 175 [*Spirostreptus*].

Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription, indicated the type locality as Mato Grosso and stated that they had two ♀ specimens. The MHNG collection contains one ♂ specimen in alcohol under the name *Spirostreptus strangulatus*. The specimen is in a vial and there is a pair of gonopods in a second vial. A label in the jar reads “*Spirostreptus strangulatus* Sss. et H., Brésil Mus. Vienne” indicating that it could be a syntype. Another label, dated 1960, states that Hoffman designated the specimen as lectotype, but this designation does not appear to have been published, possibly because the sex of the specimen makes its status as a syntype questionable. There is one broken ♀ syntype in the NHMW (Inventory number 2443, Acquisition number 1866.I.79). The Acquisition Register indicates that this lot comprised two specimens collected by Natterer, who was active in the Mato Grosso between 1823 and 1829. An undated label in the jar indicates that Hoffman considered the species to belong to the genus *Pseudonannolene*.

‘*Spirostreptus*’ *strangulatus* Humbert & Saussure, 1870

**subterraneus** Saussure, 1859a: 323-324 [*Polydesmus (Leptodesmus)*].

Profondeur des grandes cavernes de l’île de Cuba. Unspecified number of ♂ and ♀.

Saussure (1860) stated that he had numerous specimens and gave a more precise locality; “grotte de Cotilla, à dix lieues de la Havane,” to which he added in a footnote “et je crois aussi dans celle de Matanzas.” Carl (1903: 551-552) described the gonopod based on one of the “Original exemplare.” The MHNG collection contains two ♂ and two ♀ card-mounted specimens under the name *Leptodesmus subterraneus*, all of them damaged. Each has the data label “Grottes de Cuba, M H de

Saussure” and they are all syntypes. Hoffman (1999) refers to a ♂ holotype in the MHNG without justification. There are three further syntypes in the ZMHB (Moritz & Fischer, 1978; ZMB208).

*Amphelictogon subterraneus subterraneus* (Saussure, 1859)

**sumichrasti** Humbert & Saussure, 1869a: 151 [*Polydesmus (Oxyurus)*].

Cordillera mexicana orientalis. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription and the type locality Orizaba. The specimens were collected by Sumichrast. Carl (1903) illustrated the gonopod based on one of the “Original exemplare” from Orizaba. The MHNG collection contains parts of at least two ♂ in alcohol under the name *Polydesmus sumichrasti*, at least one specimen having been transferred from the dry collection according to a label left in the box. One tube contains three vials, one with a broken body, one with a single gonopod and one with two loose segments. The second tube contains a vial with a broken pair of gonopods and an identification label in Carl’s handwriting. The third tube contains body fragments lacking the head and a label indicating that Keeton-Brown had identified it as *Neoleptodesmus* sp. in 1970. These are presumably all part of the type series. Hoffman (1999) refers to a ♂ holotype in the MHNG without justification.

*Neoleptodesmus sumichrasti* (Humbert & Saussure, 1869).

**syriacus** Humbert & Saussure, 1869b: 686-687 [*Polydesmus (Strongylosoma)*].

Syrie, Gödl (Musée de Vienne). Unspecified number of ♂ and ♀.

Attems (1898) redescribed the species and examined the type specimens, which were stated to be in poor condition. The MHNG collection contains a number of specimens in alcohol identified as *Tetrathrosoma syriacum*, but these were collected in the 1970s and are therefore not types. There are six potential syntypes in the NHMW (Inventory number 3576, Acquisition number 1866.I.83). The Acquisition Register states that four specimens collected by Gödel in 1853 were sent to Humbert. It is probable that the other specimens were collected by Edmund Boissier (a Genevan botanist who collected many specimens for Saussure in “Syria” and “Asia Minor”) and are part of the type series used in the original description even if they were not part of the original loan. Rudolf Oskar Gödel-Lannoy was consul-general in Beirut from 1850 to 1855 (Hamernik, 2006) and the type locality could therefore be Beirut.

*Tetrathrosoma syriacum syriacum* (Humbert & Saussure, 1869)

**syriacus** Saussure, 1859b: 329-330 [*Julus*].

Syrie, Edmond Boissier. Unspecified number of ♀.

The MHNG collection contains one ♀ in alcohol



under the name *Julus syriacus*. The specimen has been transferred from the dry collection and is labelled “Syrie, Voyage Boissier.” The jar has a holotype label, but the series was unspecified and the specimen should be considered a syntype.

*Archispirostreptus syriacus* (Saussure, 1859)

**taprobanensis** Humbert, 1865: 56-57, pl. 5, fig. 25 [*Spirobolus*].

Peradenia. Unspecified series.

The MHNG collection contains one specimen in alcohol under the name *Spirobolus taprobanensis*. A label in the jar reads “*Spirobolus taprobanensis* Humb., type, Peradenia Ceylan” indicating that it is a syntype. The generic placement is uncertain and here we follow the suggestion of Jeekel (2001c).

*Cingalobolus taprobanensis* (Humbert, 1865)

**tarascus** Saussure, 1860: 377-378, fig. 52 [*Julus*].

Les montagnes du Mexique. One ♀.

Saussure (1860: 378) stated “j’ai trouvé l’individu qui sert de type à cette espèce dans les montagnes du district d’Angangué (Mechoacan), à une altitude de 9000 pieds”. No specimens found in the MHNG collection. The whereabouts of the holotype is unknown. The generic placement is uncertain.

‘*Julus*’ *tarascus* Saussure, 1860

**tarascus** Saussure, 1860: 327, fig. 24 [*Polydesmus* (*Rhachidomorpha*)].

Zone chaude du Mexique, Cordova. Unspecified series.

The MHNG collection contains parts of at least one ♂ specimen in alcohol under the name *Polydesmus tarascus*. At least one specimen has been transferred from the dry collection according to a label left in the box. One tube contains two vials, one with body fragments and the other with a pair of gonopods. A second tube contains a vial with body fragments. Both tubes have identification labels and it is not clear if they are different specimens, although the fact that there are two old data labels of the kind used in the dry collection reading “Cordova, Mexique, M H de Saussure” might indicate that there were two. The jar is labelled “Holotypus”, but since the type series was unspecified, the contents should be considered as syntype(s).

*Rhachidomorpha tarascus* Saussure, 1860

**tepanecus** Saussure, 1859b: 332 [*Julus*].

Cordova au Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of the ♀ without mentioning the ♂ and without indicating the number of specimens. The MHNG collection contains one card-mounted ♀ specimen under the name *Spirobolus tepanecus* and two ♀ in alcohol in separate jars under the name *Messicobolus tepanaca*. The card-mounted specimen is labelled “Mexique, V<sup>sc</sup> de Saussure” and fits the rough measurements given in the description.

One jar contains the label “*Spirobolus tepanecus* Sauss. type ♀, Santa Cruz, Sumichrast” and has been labelled as holotype. The other has only the locality “Mexique” on the old identification labels in the jar, but according to a label dated 2000, H. v. d. Merwe determined that the specimen is not in the same genus. The card-mounted specimen and that labelled as holotype are both syntypes. *Messicobolus tepanecus* (Saussure, 1859)

**tepanecus** Saussure, 1859a: 321 [*Polydesmus* (*Fontaria*)].

Des terres chaudes du Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of the ♂ without mentioning the ♀, and gave Cordova as the type locality. Saussure & Humbert (1872) described the ♀ on the basis of five specimens from Moyoapan and Santa Cruz, but these are not syntypes (and may not be conspecific). The MHNG collection has five dry specimens under the name *Fontaria tepanecus*, the ♂ having the data label “Cordova, Mexique, M H de Saussure.” There is also a tube containing a dry pair of gonopods secured by a pin through the cork stopper. These are all part of the type series. Hoffman (1970: 155) refers to a ♂ specimen in the MHNG collection as the holotype, which can be considered a lectotype designation by holotype assumption, particularly because the specimen has the label “Lectotype sig. Hoffman ’60.” *Rhysodesmus tepanecus* (Saussure, 1859)

**teres** Humbert & Saussure, 1870: 175 [*Spirostreptus*].

Brasilia. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription of the ♀ only, stating that the specimen(s) had been collected by Natterer. No specimens found in the MHNG. There is one dissected ♂ type specimen in the NHMW (Inventory number 2442, Acquisition number 1866.I.46) collected by Natterer. The Acquisition Register shows that the lot contained only one specimen, so this can be considered the holotype. The sex given in the redescription is either an error or they used a different specimen, the whereabouts of which is unknown. The generic placement is uncertain.

‘*Spirostreptus*’ *teres* Humbert & Saussure, 1870.

**thwaitesii** Humbert, 1865: 27-28, pl. 2, fig. 9 [*Polydesmus*].

Peradenia. Unspecified series.

The MHNG collection contains one card-mounted ♂ specimen under the name *Prionopeltis thwaitesii*. It is labelled “Peradenia, Ceylan, V<sup>sc</sup> Humbert” and is obviously one of the “Original exemplare” referred to by Carl (1902). The whereabouts of the other syntypes is unknown. The generic placement follows de Zoysa *et al.* (2016).

*Anoplodesmus thwaitesii* (Humbert, 1865)

**toltecus** Saussure, 1859b: 331 [*Julus*].

Mexique. Unspecified series.

Saussure (1860) indicated that he had more than one specimen, without mentioning their sex, and gave the locality “terres chaudes du Mexique, Cordova”. Carl (1919) described and illustrated the gonopods. The MHNG collection contains one ♂ in alcohol under the name *Rhinocricus toltecus*. The specimen is accompanied by a glass vial containing a pair of gonopods. There is a green label in the jar with “toltecus Sauss. Mexique” and a label in the vial with “Rhinocricus toltecus Sss, type! Gonopodes” in Carl’s handwriting. Because the type series was unspecified, Carl’s (1919: 381) identification of this specimen as the type constitutes an inadvertent lectotype designation.

*Anadenobolus toltecus* (Saussure, 1859)

**toltecus** Saussure, 1859a: 322 [*Polydesmus* (*Fontaria*)]. Cordova au Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of both sexes, but indicated that the original description was based only on the ♀. The ♂ description could have been based on the specimen(s) that furnished the description of *P. mayus* Saussure 1859a, which he had placed in the synonymy of *P. toltecus* (Saussure, 1860: 325). The MHNG collection has parts of what appear to be one ♂ and one ♀ in alcohol under the name *Polydesmus toltecus*. The fragments are separated in five vials in the same jar. The ♀ specimen, which has been transferred from the dry collection, is labelled “Cordova, Mexique” and is probably a syntype of *P. toltecus*. The ♂ is unlabeled and could be a syntype of *P. mayus*.

*Rhysodesmus toltecus* (Saussure, 1859)

**totonacus** Saussure, 1860: 361, fig. 31 [*Julus*].

Mexique, Oaxaca. Unspecified number of ♂ and ♀.

The pagination of the publication is faulty and reads 561. Carl (1919) described and illustrated the gonopods. The MHNG collection contains two card-mounted specimens under the name *Spirobolus totonacus*. Both specimens have larger, secondary card mounts placed under the originals, and are accompanied by glass vials containing a pair of dry gonopods secured on pins through the cork stoppers. One of the dry specimens is labelled “Mexique” and “totonacus per expl. = zapotecus”, the latter written by Carl in pencil. The other lacks a data label but has “Mexique” written on the species name label pinned in the box. It bears a label “cet expl. doit être le véritable totonacus” written in pencil by Carl. Although Carl (1919: 381) identified the latter specimen as the holotype, the original description included both sexes and this does not qualify as an inadvertent lectotype designation. There is a further syntype in the MNHN (MY4396) according to their online database.

*Anadenobolus totonacus* (Saussure, 1860)

**totonacus** Saussure, 1859a: 321 [*Polydesmus* (*Fontaria*)]. Pic d’Orizaba, Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of

the ♂ without mentioning the ♀, but implying that he had more than one specimen. The MHNG contains one card-mounted ♂ under the name *Fontaria totonacus*. The data label reads “Pic d’Orizaba, Mexique.” There is also a glass vial containing only unidentifiable dry fragments secured by a pin through the cork stopper. Hoffman (1999: 325) designated this specimen as lectotype, suggesting that another syntype (now to be considered as a paralectotype) might be in the BMNH.

*Rhysodesmus totonacus* (Saussure, 1859)

**tzendalus** Saussure, 1860: 370-371, fig. 37 [*Julus*].

Régions tempérées du Mexique, Oaxaca. Unspecified number of ♀.

The MHNG collection contains two specimens in alcohol under the name *Spirobolus tzendalus*, both broken. There is no data label but the identification labels in the jar have “Mexique” written on them. Hoffman (1999) speculated that the types may be lost because Carl did not revise the species, but since Carl was primarily focusing on illustrating the gonopods, he has very likely ignored the female type specimens, which are presumably also syntypes. There is a further syntype in the MNHN (MY4397) according to their online database.

*Messicobolus tzendalus* (Saussure)

**uncinatus** Humbert & Saussure, 1869a: 152 [*Polydesmus* (*Rachidomorpha*)].

Mexico, Cordillera orientalis. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription and the localities “Monte Azul, Cerro de Azeamela, Sierra de Agua, dans la Cordillère orientale.” They also noted that the species lived under the bark of pines. Carl (1903) illustrated the gonopod, although it is not clear which specimen(s) he studied. The MHNG collection contains one ♂ specimen in alcohol under the name *Rhachidomorpha uncinata* labelled as a type. The specimen is in fragments and lacks a data label. It was transferred from the dry collection and is presumably a syntype that had been placed in the collection before Saussure & Humbert (1872: 158) replaced the name with *Polydesmus* (*Rachidomorpha*) *aduncus* because it was a junior homonym of *P. uncinatus* Peters, 1864. There are also two broken specimens in alcohol under the name *Rhachidomorpha adunca*, also labelled as types.

*Rhachidomorpha adunca* Saussure & Humbert, 1872 (New replacement name)

**unicolor** Humbert, 1893: 41-42, pl. vi, fig. 1-6 [*Atractosoma*].

Mont Salève. One ♀ and several juveniles.

No specimens found in the MHNG. The whereabouts of the syntypes is unknown. The species was treated as *incertae sedis* by Brölemann (1935: 305).

*Atractosoma unicolor* Humbert, 1893

**vermiformis** Saussure, 1859a: 326 [*Polydesmus (Strongylosoma)*].

Terres chaudes du Mexique. Unspecified series.

Saussure (1860) stated that he had several ♀ specimens, and gave the locality as “terres chaudes du versant oriental de la Cordillère”. The MHNG collection contains a card-mounted ♀ under the name *Leptodesmus vermiformis*. It has the data label “Cordova, Mexique, M H de Saussure” and is almost certainly a syntype.

*Neoleptodesmus vermiformis* (Saussure, 1859)

**vicinus** Saussure, 1859a: 322 [*Polydesmus (Fontaria)*].

Plateau du Mexique. Unspecified series.

Saussure (1860) gave a more detailed redescription of both sexes, stating that he had eleven specimens. He gave the distribution as “les terres froides du Mexique, le plateau de l’Anahuac; toutefois on l’a pris aussi à Oaxaca.” Hoffman (1999) stated that he had not found this species in the MHNG, but the collection has three dry specimens under the name *Fontaria vicinus*. One card-mounted specimen is labelled “Puebla, Mexique” and the other “Mexique,” the latter is badly broken. There is a broken dry specimen in a glass tube containing a locality label “Puebla, Mexique” and secured by a pin through the cork stopper. There is also a glass vial with a pair of dry gonopods secured by a pin through the cork stopper. There is no reason to suppose that these are not syntypes. There is a further syntype in the ZMHB (Moritz & Fischer, 1978; ZMB204).

*Rhysodesmus vicinus* (Saussure, 1859)

**viridis** Saussure, 1859a: 326 [*Polydesmus (Rhachis)*].

Mexique, Tuxtla. Unspecified series.

Saussure (1860) gave a more detailed redescription of the ♂ without mentioning the ♀, but indicating that he had more than one specimen. The MHNG has two ♂ specimens in alcohol, labelled as types, under the name *Rhachis viridis*. These specimens have been transferred from the dry collection; both have the data label “Tuxtlan [sic], Mexique, M H de Saussure” and are obviously syntypes. Hoffman (1999) noted that a specimen in the NHMW, studied by Attems (1898), may also be a syntype. This specimen (Inventory number 8961, Acquisition number 1883.II.1), which was collected by Sumichrast and sold to the NHMW by Bilimek in 1883, is not part of the type series. This specimen, a ♂ lacking the gonopods, is probably associated with a microscopic preparation carrying gonopods, labelled as *Rhachis viridis* but without locality data, which might have been used by Attems (1898: 196, plate 4).

*Rhachodesmus viridis* (Saussure, 1859)

**woodi** Humbert & Saussure, 1870: 177 [*Spirostreptus*].

America borealis, Saint-Louis. Unspecified number of ♂.

Saussure & Humbert (1872) gave a more detailed redescription. No specimens found in the MHNG. There are two specimens in the NHMW. One, a dissected ♂ in

alcohol with the gonopods in a vial (Inventory number 2069, Acquisition number 1866.I.52), has the entry in the Acquisition Register “*Spirobol. Woodi* HBS. (Hekl) Amerika/St. Louis 1 [specimen].” The other ♂, also identified by Humbert and Saussure, has a separate entry (Inventory number 2170, Acquisition number 1866.I.82) and has the locality data “America borealis”. It is not clear whether the specimens are syntypes (interpreting “America borealis” and “St Louis” as the localities of the two specimens) or whether the first is the holotype. Hoffman (1999: 36) considered that the original placement of this species as a member of the genus *Spirostreptus* rather than *Spirobolus* was probably a *lapsus calami*, an inference supported by the Acquisition Register entry.

A junior synonym of *Narceus americanus* (Palisot de Beauvois, 1817)

**woodianus** Humbert & Saussure, 1869a: 152 [*Polydesmus (Scytonotus)*]

Mexico, Cordillera orientalis. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription and the localities Orizaba and Moyoapan. They also stated that they had 22 specimens collected by Sumichrast. The MHNG collection has ten card-mounted specimens under the name *Peridontodesmus woodianus*. One specimen has the label “Orizaba, Mexique, env. Sumichrast.” Six smaller specimens mounted on one card have the label “3a”; they are badly damaged. Two specimens mounted on one card also have the label “3a.” There is one unlabelled specimen. Although only one specimen is labelled with the type locality and collector, it seems probable that all of these specimens are syntypes. *Peridontodesmus woodianus* (Humbert & Saussure, 1869)

**zapotecus** Saussure, 1860: 359-361, fig. 30 [*Julus*].

Parties chaudes du Mexique. Unspecified number of ♂ and ♀.

The pagination of the publication is faulty and reads 559-561. Carl (1919) described and illustrated the gonopods using Saussure’s specimens. The MHNG collection contains one card-mounted specimen under the name *Spirobolus zapotecus* and a ♂ in alcohol under the name *Rhinocricus zapotecus*. The dry specimen is labelled “Mexique” and is presumably a syntype. The specimen in alcohol is broken and the gonopods are separated in a vial. It has a label in Carl’s handwriting “cet expl. était étiqueté chichimecus mais il est identique à *zapotecus* type. Saussure n’a pas eu le ♂ de chichimecus.” It is therefore not a syntype of *J. zapotecus*.

*Anadenobolus zapotecus* (Saussure, 1860)

**zapotecus** Saussure, 1860: 314-315, fig. 11 [*Polydesmus*].

Régions chaudes du Mexique, San-Andrés-Tuxtla etc. Unspecified number of ♂ and ♀.

The MHNG collection has one ♀ in the dry collection under the name *Fontaria zapotecus*, with the data label “Tuztlant [sic], Mexique, M H de Saussure” and there is no reason to doubt that it is a syntype despite Hoffman’s statement (1999: 353) that he could not find any type specimens in the MHNG.

*Rhysodesmus zapotecus* (Saussure, 1860)

**zelebori** Humbert & Saussure, 1870: 173 [*Polydesmus (Oxyurus)*].

Brasilia merid. Unspecified series.

Saussure & Humbert (1872) gave a more detailed redescription and the locality Rio de Janeiro. No specimens found in the MHNG. There is a broken ♂ syntype with a single gonopod in a vial in the NHMW (Inventory number 3321, Acquisition number 1866.I.6a) (Fig. 2). According to the Acquisition Register the locality is Rio de Janeiro. The generic placement is unclear, and Hoffman, 1979b did not include this species in *Leptodesmus*.

*Leptodesmus zelebori* (Humbert & Saussure, 1870)



Fig. 2. A syntype of *Leptodesmus zelebori*. (A) Head and anterior body rings (B) Ventral view of gonopod. (photos O. Macek/N. Akkari)

**zendalus** Humbert & Saussure, 1869a: 150 [*Polydesmus (Fontaria)*].

Mexico orientalis. Unspecified number of ♂ and ♀.

Saussure & Humbert (1872) gave a more detailed redescription, and the locality “Cordillère orientale.” The MHNG collection has one ♂ and one ♀ in alcohol under the name *Fontaria zendala*, and labelled as types. The data label in the jar reads “Moyoapan, Mexique”. The ♂ was designated as lectotype by Hoffman (1970: 157). *Rhysodesmus zendalus* (Humbert & Saussure, 1869)

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