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# English names of the millipedes (Diplopoda) of KwaZulu-Natal

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ABSTRACT

Certain groups of invertebrates are becoming mainstreamed in conservation activities in KwaZulu-Natal, particularly groups that have many species endemic to the province and that are confined to small distribution ranges. As a result of this there is a need to assign common (English) names where these are unavailable. A list of scientific names and standardised common names is presented for species of millipede occurring in KwaZulu-Natal.

KEY WORDS: South Africa, common names, Polyxenida, Polyzoniida, Polydesmida, Siphonophorida, Sphaerotheriida, Spirobolida, Spirostreptida.

## INTRODUCTION

A diverse array of invertebrate species is endemic to the Maputaland-Pondoland-Albany biodiversity hotspot in the eastern region of South Africa, in the middle of which lies most of the province of KwaZulu-Natal (Mittermeier *et al*. 2005). These endemic invertebrates include species of earthworms, insects, millipedes and snails. (e.g. Hamer 1998; Armstrong 2002; Herbert & Kilburn 2004; Plisko 2003).

The accumulated transformation of land in KwaZulu-Natal, where the natural indigenous vegetation is totally removed or irreversibly changed to a secondary form, reached 45 % of the total land surface of the province in 2008 (Jewitt 2012). Land transformation is probably the most important threat facing invertebrate species in KwaZulu-Natal (e.g. Plisko 2000). As a result, the conservation requirements of the endemic invertebrate species need to be highlighted and included in conservation planning and environmental impact assessments (McGeoch *et al*. 2011).

In order to mainstream invertebrates in conservation practice, a general awareness of their identities, diversity and conservation needs is required. Regarding identities, scientific nomenclature eliminates confusion, but is known only to specialists. Scientific names have little meaning for the layperson or the conservationist (Plant Protection Research Institute 1979), and often these scientific names are even difficult to pronounce correctly. Common names on the other hand can vary markedly from region to region (Plant Protection Research Institute 1979), if indeed there are common names widely in use. These may change with time, as do scientific names as taxonomic and systematic research proceeds. Therefore the list will have to be revised from time to time. However, since many people who are or will be involved in the conservation of invertebrates identify animal species by their common names and not by their scientific names, it seems judicious that a standardised list of English names is created and published for

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reference. Certain invertebrate groups such as snails (Herbert & Kilburn 2004) and butterflies (Mecenero *et al.* 2013) already have standardised lists of common names.

Millipedes are being incorporated into conservation planning and environmental impact assessments in KwaZulu-Natal (McGeoch *et al*. 2011). Ninety-one percent of the 234 known millipede species and subspecies in KwaZulu-Natal are currently thought to be endemic to the province, and many have very small total distribution ranges. A single common name will be given for a single scientific name to avoid confusion. This is possible with millipedes because common names have only recently been used for this group of invertebrates in KwaZulu-Natal. The provided list can be used as the basis for common names of genera and species elsewhere in South Africa should this be required.

## METHODS OF COMPILATION

English names for various orders, families, genera and species of millipede have been in use for some time (e.g. Lawrence 1987; Ezemvelo KZN Wildlife Biodiversity Database). These common names were taken as the starting points for the naming of the millipede taxa in KwaZulu-Natal. Many orders, families and even genera in the province can be given names according to characteristics that are quite easily observable to the layperson. However, since the elaborate secondary sex organs derived from the seventh pair of legs of the males are the main distinguishing characteristics of species of millipede, and the females are often indistinguishable without the males, the scientific names often reflect some aspect of these distinguishing characteristics. This means that translation of the specific epithet of the scientific name into English was often the only means of providing a good English name for a species name, but this name may not describe readily observable features. The species occurring in KwaZulu-Natal and the scientific nomenclature were obtained from Hamer (1998, 2000, 2009) and Redman *et al*. (2003).

## RESULTS

Table 1 gives the scientific names and English names of the species of millipede known from KwaZulu-Natal. Figures 1–10 provide general habitus information for various orders and associated genera.

## DISCUSSION AND CONCLUSIONS

The list of species of millipede in KwaZulu-Natal gives each species a standardised English name that can be used for conservation planning and other conservation activities. Although identification of millipede species usually (but not invariably) requires male specimens and has to be done by specialists and trained technicians, the species of certain genera can be distinguished by externally visible features such as colour patterns (e.g. *Centrobolus* species, *Allawrencius* species, certain *Doratogonus* species, and certain *Zinophora* species), in conjunction with distribution if colour alone is insufficient. Other species of certain groups (e.g. some genera of Polydesmida) can be identified using external morphology under high magnification and available diagnostic keys. Species of some genera with externally similar morphology that require dissection out of the secondary sexual organs can nevertheless be easily identified under high magnification with the use of diagnostic keys (e.g. *Doratogonus* species using the key and illustrations in Hamer 2000).

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We trust that this short communication will assist with the increasing mainstreaming of millipede taxa in conservation activities and planning, as Herbert and Kilburn (2004) have done in the case of snail and slug species. The illustration of the millipede species by means of photographs in a guide could be a further improvement in the effort to increasingly include millipede species in conservation activities, as might standardisation of English names for millipede species in other parts of South Africa.

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TABLE 1
English names for millipedes occurring in KwaZulu-Natal.

| **Scientific Name** | **English Name** |
|---|---|
| **Order Polydesmida** | |
| **Family Dalodesmidae** | **Keeled millipedes (Figs 1, 2)** |
| *Allawrencius complex* Lawrence, 1953 | Complex keeled millipede (Fig. 1) |
| *Allawrencius gladiator* Lawrence, 1958 | Gladiator keeled millipede |
| *Allawrencius nodulosus* Verhoeff, 1939 | Nodular keeled millipede |
| *Allawrencius teres* (Attems, 1934) | Elegant keeled millipede |
| *Allawrencius triordinatus* Lawrence, 1953 | Three-ordered keeled millipede |
| *Allawrencius verrucosus* Lawrence, 1962 | Warty keeled millipede |
| *Drakensius minor* Schubart, 1956 | Minor Drakensberg keeled millipede |
| *Gnomeskelus arcuatus* Verhoeff, 1939 | Arcuate keeled millipede |
| *Gnomeskelus attemsii* Verhoeff, 1939 | Attems's keeled millipede |
| *Gnomeskelus auriculatus* Lawrence, 1953 | Bumpy keeled millipede |
| *Gnomeskelus bifurcatus* Lawrence, 1953 | Twin-forked keeled millipede |
| *Gnomeskelus brevipes* Lawrence, 1953 | Short-legged keeled millipede |
| *Gnomeskelus brincki* Schubart, 1956 | Brink's keeled millipede |
| *Gnomeskelus burius* Verhoeff, 1939 | Plough-share keeled millipede |
| *Gnomeskelus circulipes* Verhoeff, 1939 | Circular-gonopod keeled millipede |
| *Gnomeskelus cyclocanthus* Lawrence, 1958 | Circular-angled keeled millipede |
| *Gnomeskelus edentulus* Lawrence, 1953 | Toothless keeled millipede |
| *Gnomeskelus falcifer* Verhoeff, 1930 | False keeled millipede |
| *Gnomeskelus fluvialis* Lawrence, 1958 | Riverine keeled millipede |
| *Gnomeskelus forcipifer* Lawrence, 1953 | Forceps-carrying keeled millipede |
| *Gnomeskelus furculatus* Verhoeff, 1939 | Forked keeled millipede |
| *Gnomeskelus glaber* Lawrence, 1958 | Hairless keeled millipede |
| *Gnomeskelus globifer* Attems, 1928 | Globed keeled millipede |
| *Gnomeskelus gonarthrodus* Lawrence, 1962 | Jointed-gonopod keeled millipede |
| *Gnomeskelus hamuliger* Verhoeff, 1939 | Hook-carrying keeled millipede |
| *Gnomeskelus harpagonifer* Verhoeff, 1939 | Hooked-gonopod keeled millipede |
| *Gnomeskelus jaculator* Lawrence, 1958 | Javelin keeled millipede |
| *Gnomeskelus krausi* Lawrence, 1962 | Kraus's keeled millipede |
| *Gnomeskelus laevigatus* Lawrence, 1953 | Polished keeled millipede |
| *Gnomeskelus larvatus* Lawrence, 1962 | Ghost keeled millipede |
| *Gnomeskelus latzeli* Verhoeff, 1939 | Latzel's keeled millipede |
| *Gnomeskelus lawrencei* Verhoeff, 1939 | Lawrence's keeled millipede |
| *Gnomeskelus maritimus* Lawrence, 1962 | Maritime keeled millipede |
| *Gnomeskelus medius* Verhoeff, 1939 | Midway keeled millipede |
| *Gnomeskelus montivagus* Verhoeff, 1939 | Mountain-wandering keeled millipede |
| *Gnomeskelus multidentatus* Verhoeff, 1940 | Many-toothed keeled millipede |
| *Gnomeskelus natalicus* Attems, 1928 | Natal keeled millipede |
| *Gnomeskelus origensis* Lawrence, 1953 | Original keeled millipede |

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TABLE 1 (*continued*)
English names for millipedes occurring in KwaZulu-Natal.

| **Scientific Name** | **English Name** |
|---|---|
| *Gnomeskelus petersii* Verhoeff, 1940 | Peters' keeled millipede |
| *Gnomeskelus processiger* Lawrence, 1953 | Advanced keeled millipede |
| *Gnomeskelus pugnifer* Lawrence, 1953 | Fisted keeled millipede |
| *Gnomeskelus retrusus* Schubart, 1956 | Obscure keeled millipede |
| *Gnomeskelus serratus* Verhoeff, 1939 | Serrated keeled millipede |
| *Gnomeskelus setosus* Verhoeff, 1939 | Bristled keeled millipede |
| *Gnomeskelus spectabilis* Verhoeff, 1940 | Visible keeled millipede |
| *Gnomeskelus subterraneus* Lawrence, 1962 | Subterranean keeled millipede |
| *Gnomeskelus tenuipes* Lawrence, 1953 | Preserved keeled millipede |
| *Gnomeskelus tereticornis* Lawrence, 1962 | Smooth-horned keeled millipede |
| *Gnomeskelus trifurcatus* Lawrence, 1953 | Three-forked keeled millipede |
| *Gnomeskelus tristriatus* (Attems, 1938) | Three-striped keeled millipede |
| *Gnomeskelus tuberosus clivicolus* Lawrence, 1962 | Slope-dwelling lumpy keeled millipede |
| *Gnomeskelus tuberosus falcifer* Verhoeff, 1939 | Sickle-carrying lumpy keeled millipede |
| *Gnomeskelus tuberosus microdens* Lawrence, 1962 | Small-toothed lumpy keeled millipede |
| *Gnomeskelus tuberosus tuberosus* Attems, 1934 | Lumpy keeled millipede |
| *Gnomeskelus tuberosus urbanus* Lawrence, 1962 | Urban lumpy keeled millipede |
| *Gnomeskelus tugelanus alticolus* Verhoeff, 1939 | High-collared Tugela keeled millipede |
| *Gnomeskelus tugelanus unicolor* Verhoeff, 1939 | One-coloured Tugela keeled millipede |
| *Platytarropus polydesmoides* Verhoeff, 1953 | Many-rowed flat-backed millipede |
| *Platytarrus excelsus* Lawrence, 1959 | Lofty flat-backed millipede |
| *Platytarrus guduensis* Schubart, 1956 | Gudu Falls flat-backed millipede |
| *Rhopaleskelus affinis* Schubart, 1956 | Neighbouring keeled millipede |
| *Rhopaleskelus biseriatus* Verhoeff, 1939 | Two-rowed keeled millipede |
| *Rhopaleskelus longisetosus* Lawrence, 1962 | Long-bristled keeled millipede |
| *Rhopaleskelus minor* Lawrence, 1958 | Minor keeled millipede |
| *Rhopaleskelus pietermaritzburgensis* Schubart, 1956 | Pietermaritzburg keeled millipede |
| *Rhopaleskelus terreus* (Attems, 1928) | Brownish keeled millipede |
| *Schubartina formicinus* Lawrence, 1958 | Ant keeled millipede |
| | |
| **Family Gomphodesmidae** | **Soil millipedes (Fig. 3)** |
| *Ulodesmus anodontus* Lawrence, 1953 | Toothless soil millipede |
| *Ulodesmus biconus biconus* Attems, 1928 | Two-coned soil millipede |
| *Ulodesmus biconus ramidens* Lawrence, 1953 | Branch-toothed two-coned soil millipede |
| *Ulodesmus bispinosus* Attems, 1928 | Two-spined soil millipede |
| *Ulodesmus cultrifer* Lawrence, 1963 | Weaponed soil millipede |
| *Ulodesmus denticulatus* Verhoeff, 1939 | Denticulate soil millipede |
| *Ulodesmus fossor* Lawrence, 1958 | Trench soil millipede |
| *Ulodesmus lawrencei* Verhoeff, 1939 | Lawrence's soil millipede |
| *Ulodesmus major* Lawrence, 1953 | Major soil millipede |

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TABLE 1 (*continued*)
English names for millipedes occurring in KwaZulu-Natal.

| **Scientific Name** | **English Name** |
|---|---|
| *Ulodesmus margatensis* Attems, 1934 | Margate soil millipede |
| *Ulodesmus micramma bothae* Lawrence, 1962 | Botha's small sandy soil millipede |
| *Ulodesmus micramma micramma* Lawrence, 1962 | Small sandy soil millipede |
| *Ulodesmus micramma zuluensis* Lawrence, 1962 | Zululand small sandy soil millipede |
| *Ulodesmus munroi* Lawrence, 1963 | Munro's soil millipede |
| *Ulodesmus natalensis microdens* Lawrence, 1953 | Small-toothed Natal soil millipede |
| *Ulodesmus natalensis natalensis* Lawrence, 1953 | Natal soil millipede |
| *Ulodesmus pluridens* Lawrence, 1953 | Many-toothed soil millipede |
| *Ulodesmus robustus* Lawrence, 1958 | Robust soil millipede |
| *Ulodesmus schubarti* Lawrence, 1958 | Schubart's soil millipede |
| *Ulodesmus securifer minor* Lawrence, 1953 | Little axe-armed soil millipede |
| *Ulodesmus securifer securifer* Attems, 1928 | Axe-armed soil millipede |
| *Ulodesmus simplex* Lawrence, 1953 | Simple soil millipede |
| *Ulodesmus spiralipes* Verhoeff, 1939 | Spiral-gonopod soil millipede |
| | |
| **Family Paradoxosomatidae** | **Paradoxical keeled millipedes** |
| *Habrodesmus alatipes* Lawrence, 1953 | Winged-gonopod keeled millipede |
| | |
| **Family Pyrgodesmidae** | **Nurse keeled millipedes** |
| *Attemsodesmus minutus* Lawrence, 1953 | Minute Attems's keeled millipede |
| | |
| **Family Vaalogonopodidae** | **Dull keeled millipedes** |
| *Phygoxerotes coronatus* Lawrence, 1953 | Crowned dull keeled millipede |
| *Phygoxerotes myrmecophilus* Lawrence, 1953 | Ant-loving dull keeled millipede |
| *Phygoxerotes nodulosus* Verhoeff, 1939 | Nodular dull keeled millipede |
| *Phygoxerotes proximus* Lawrence, 1958 | Nearest dull keeled millipede |
| | |
| **Order Polyxenida** | |
| **Family Polyxenidae** | **Bristly millipedes** |
| *Propolyxenus lawrencei* Condé, 1949 | Lawrence's bristly millipede |
| *Typhloxenus mirificus* Condé, 1955 | Remarkable bristly millipede |
| *Typhloxenus modestus* Condé, 1959 | Modest bristly millipede |
| | |
| **Order Polyzoniida** | |
| **Family Siphonotidae** | **Sucking millipedes** |
| *Rynchomecogaster lawrencei* Verhoeff, 1939 | Lawrence's sucking millipede |
| | |
| **Order Siphonophorida** | |
| **Family Nematozoniidae** | **Sucking millipedes** |
| *Nematozonium elongatissimum* Verhoeff, 1940 | Most elongate sucking millipede |
| *Nematozonium filum* Verhoeff, 1939 | Thread-like sucking millipede |

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TABLE 1 (*continued*)
English names for millipedes occurring in KwaZulu-Natal.

| **Scientific Name** | **English Name** |
|---|---|
| **Order Sphaerotheriida** | |
| **Family Sphaerotheriidae** | **Pill millipedes (Fig. 4)** |
| *Sphaerotherium dorsale* (Gervais, 1847) | Dorsally-ridged pill millipede |
| *Sphaerotherium dorsaloides* Silvestri, 1910 | Small dorsally-ridged millipede |
| *Sphaerotherium giganteum* Porat, 1872 | Giant pill millipede (Fig. 4) |
| *Sphaerotherium hanstromi* Schubart , 1958 | Hanstrom's pill millipede |
| *Sphaerotherium mahaium* Schubart, 1958 | Mahai pill millipede |
| *Sphaerotherium millepunctatum* Attems, 1928 | Thousand-punctured pill millipede |
| *Sphaerotherium obtusum* Koch, 1847 | Blunt pill millipede |
| *Sphaerotherium perbrincki* Schubart, 1958 | Perbrinck's pill millipede |
| *Sphaerotherium punctulatum* Brandt, 1841 | Dotted pill millipede |
| *Sphaerotherium rotundatum* Brandt, 1833 | Rounded pill millipede |
| *Sphaerotherium rudebecki* Schubart, 1958 | Rudebeck's pill millipede |
| *Sphaerotherium subdorsale* Silvestri, 1910 | Lesser ridged pill millipede |
| *Sphaerotherium tenuitarse* Silvestri, 1910 | Thin-footed pill millipede |
| *Sphaerotherium tomentosum* Schubart, 1958 | Tomentose pill millipede |
| *Sphaerotherium zuluense* Schubart, 1958 | Zululand pill millipede |
| | |
| **Order Spirobolida** | |
| **Family Pachybolidae** | **Red millipedes (Fig. 5)** |
| *Centrobolus anulatus* (Attems, 1934) | Ringed red millipede |
| *Centrobolus bifidus* (Lawrence, 1967) | Bifid red millipede (Fig. 5) |
| *Centrobolus decoratus* (Lawrence, 1967) | Decorated red millipede |
| *Centrobolus fulgidus* (Lawrence, 1967) | Shining red millipede |
| *Centrobolus inscriptus* (Attems, 1928) | Inscribed red millipede |
| *Centrobolus lawrencei* (Schubart, 1966) | Lawrence's red millipede |
| *Centrobolus richardi* (Lawrence, 1967) | Richard's Bay red millipede |
| *Centrobolus ruber ruber* (Attems, 1928) | Bright red millipede |
| *Centrobolus ruber vulpinus* (Attems, 1928) | Fox red millipede |
| *Centrobolus rubricollis* (Schubart, 1966) | Red-necked millipede |
| *Centrobolus rugulosus* (Lawrence, 1967) | Wrinkled red millipede |
| *Centrobolus sanguinipes* (Lawrence, 1967) | Blood-red-footed red millipede |
| *Centrobolus tricolor* (Lawrence, 1967) | Three-coloured red millipede |
| *Centrobolus vastus* (Attems, 1934) | Desolate red millipede |
| | |
| **Order Spirostreptida** | |
| **Family Harpagophoridae** | **Large spined millipedes (Fig. 6)** |
| *Zinophora brevilobata* (Attems, 1928) | Short-lobed large spined millipede (Fig. 6) |
| *Zinophora brevispina* (Lawrence, 1965) | Short-spined large spined millipede |
| *Zinophora laminata* (Lawrence, 1965) | Laminate large spined millipede |

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TABLE 1 (*continued*)
English names for millipedes occurring in KwaZulu-Natal.

| **Scientific Name** | **English Name** |
|---|---|
| *Zinophora levis* (Attems, 1928) | Light large spined millipede |
| *Zinophora mudenensis* Redman, 2003 | Muden large spined millipede |
| *Zinophora pearlae* Redman, 2003 | Pearlrose's large spined millipede |
| *Zinophora thukela* Redman, 2003 | Thukela large spined millipede |
| | |
| **Order Spirostreptida** | |
| **Family Odontopygidae** | **Slender and two- spined millipedes (Fig. 7)** |
| *Chaleponcus discalceatus* (Attems, 1934) | Barefooted two-spined millipede |
| *Chaleponcus durbanicus* (Attems, 1914) | Durban two-spined millipede |
| *Chaleponcus spathulatus* Kraus, 1966 | Spatulate two-spined millipede |
| *Patinatius ambiguus* Kraus, 1966 | Ambiguous slender spined millipede |
| *Patinatius attemsi* Kraus, 1960 | Attems's slender spined millipede |
| *Patinatius bidentatus bidentatus* Kraus, 1960 | Two-toothed slender spined millipede |
| *Patinatius bidentatus simulator* Kraus, 1966 | Resembling two-toothed slender spined millipede |
| *Patinatius natalicus* (Kraus, 1960) | Natal slender spined millipede |
| *Patinatius richmondus* Kraus, 1966 | Richmond slender spined millipede |
| *Patinatius rusticus* (Attems, 1934) | Rural slender spined millipede |
| *Patinatius terreus* (Attems, 1934) | Earthy slender spined millipede |
| *Spinotarsus anguliferus* Kraus, 1960 | Angled slender spined millipede |
| *Spinotarsus apertus* Kraus, 1960 | Open slender spined millipede |
| *Spinotarsus avirostris* Kraus, 1960 | Bird-beaked slender spined millipede |
| *Spinotarsus bruggenorum* Kraus, 1966 | Bruggen's slender spined millipede |
| *Spinotarsus bullatinus* Kraus, 1960 | Bubbled slender spined millipede |
| *Spinotarsus bullatoides* Kraus, 1966 | Puckered slender spined millipede |
| *Spinotarsus bullatus* (Attems, 1926) | Horned slender spined millipede |
| *Spinotarsus colosseus* (Attems, 1928) | Colossal slender spined millipede |
| *Spinotarsus costatus* (Attems, 1934) | Costate slender spined millipede |
| *Spinotarsus cuspidosus* Kraus, 1960 | Cusped slender spined millipede |
| *Spinotarsus debilis* (Attems, 1928) | Weak slender spined millipede |
| *Spinotarsus destructus* Kraus, 1960 | Destroyed slender spined millipede |
| *Spinotarsus dingaanus* Schubart, 1966 | Dingaan's slender spined millipede |
| *Spinotarsus drummondicus* Kraus, 1966 | Drummond slender spined millipede |
| *Spinotarsus durbanensis* Kraus, 1966 | Durban slender spined millipede |
| *Spinotarsus elatior* Kraus, 1960 | Tall slender spined millipede |
| *Spinotarsus elegans* Kraus, 1960 | Elegant slender spined millipede |
| *Spinotarsus glabrus* Kraus, 1960 | Shiny slender spined millipede |
| *Spinotarsus glomeratus* Kraus, 1960 | Glomerate slender spined millipede |
| *Spinotarsus gracilis* (Attems, 1934) | Thin slender spined millipede |
| *Spinotarsus grandis grandis* Kraus, 1960 | Great slender spined millipede |
| *Spinotarsus grandis zonatus* Kraus, 1960 | Zoned great slender spined millipede |

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TABLE 1 (*continued*)
English names for millipedes occurring in KwaZulu-Natal.

| **Scientific Name** | **English Name** |
|---|---|
| *Spinotarsus hluhluwensis* (Schubart, 1966) | Hluhluwe slender spined millipede |
| *Spinotarsus hospitii* Kraus, 1960 | Hosted slender spined millipede |
| *Spinotarsus inermis* (Attems, 1934) | Unarmed slender spined millipede |
| *Spinotarsus ingwavuma* Kraus, 1960 | Ingwavuma slender spined millipede |
| *Spinotarsus kranskopensis* Kraus, 1960 | Kranskop slender spined millipede |
| *Spinotarsus krausi* Schubart, 1966 | Kraus's slender spined millipede |
| *Spinotarsus lawrencei* Kraus, 1960 | Lawrence's slender spined millipede |
| *Spinotarsus lobatus* Kraus, 1960 | Lobed slender spined millipede |
| *Spinotarsus lobuliferus* Kraus, 1960 | Lobulate slender spined millipede |
| *Spinotarsus magnus* Kraus, 1960 | Great slender spined millipede |
| *Spinotarsus malleolus* Kraus, 1960 | Hammered slender spined millipede |
| *Spinotarsus maritzburgensis* Kraus, 1960 | Maritzburg slender spined millipede |
| *Spinotarsus mazongwanus* Kraus, 1966 | Mazongwaan slender spined millipede |
| *Spinotarsus mertensi* Kraus, 1966 | Mertens's slender spined millipede |
| *Spinotarsus parvus* Kraus, 1960 | Little slender spined millipede |
| *Spinotarsus rostrum* Kraus, 1960 | Beaked slender spined millipede |
| *Spinotarsus silvarum* Kraus, 1960 | Forest slender spined millipede (Fig. 7) |
| *Spinotarsus silvicolens* Kraus, 1960 | Woodland slender spined millipede |
| *Spinotarsus striatus* Kraus, 1960 | Striate slender spined millipede |
| *Spinotarsus striolatus* Attems, 1928 | Striped slender spined millipede |
| *Spinotarsus swartkopensis* Kraus, 1966 | Swartkop slender spined millipede |
| *Spinotarsus triangulosellus* Kraus, 1966 | Small triangular slender spined millipede |
| *Spinotarsus triangulosus* Kraus, 1960 | Triangular slender spined millipede |
| *Spinotarsus tridens* Kraus, 1966 | Trident slender spined millipede |
| *Spinotarsus tristis* Kraus, 1960 | Dull slender spined millipede |
| *Spinotarsus tubulosus* Kraus, 1960 | Hollow slender spined millipede |
| *Spinotarsus tugela* Kraus, 1960 | Tugela slender spined millipede |
| *Spinotarsus umgeni* Kraus, 1966 | Umgeni slender spined millipede |
| *Spinotarsus unicus* Kraus, 1960 | Unique slender spined millipede |
| *Spinotarsus zuluinus* (Attems, 1934) | Zululand slender spined millipede |
| | |
| **Family Spirostreptidae** | **Black and shagreened millipedes (Figs 8, 9, 10)** |
| *Camaricoproctus disparatidens* Lawrence, 1965 | Disparate-toothed shagreened millipede |
| *Camaricoproctus planidens* Lawrence, 1965 | Flat-toothed shagreened millipede |
| *Camaricoproctus torquidens* Lawrence, 1965 | Twisted-toothed shagreened millipede |
| *Camaricoproctus transvaalicus* Lawrence, 1966 | Transvaal shagreened millipede |
| *Camaricoproctus tumididens* Lawrence, 1965 | Tumid-toothed shagreened millipede |
| *Doratogonus avius* Hamer, 2000 | Solitary black millipede |
| *Doratogonus bilobatus* (Schubart, 1966) | Bilobed black millipede |
| *Doratogonus cristulatus* (Porat, 1872) | Cristulate black millipede |

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TABLE 1 (*continued*)
English names for millipedes occurring in KwaZulu-Natal.

| **Scientific Name** | **English Name** |
|---|---|
| *Doratogonus falcatus* (Attems, 1928) | Sickle-shaped black millipede |
| *Doratogonus flavifilis* (Peters, 1855) | Yellow-banded black millipede |
| *Doratogonus hoffmani* Hamer, 2000 | Hoffman's black millipede |
| *Doratogonus infragilis* Hamer, 2000 | Strong black millipede |
| *Doratogonus krausi* (Lawrence, 1965) | Kraus's black millipede |
| *Doratogonus major* (Lawrence, 1965) | Major black millipede |
| *Doratogonus meridionalis* Hamer, 2000 | Southern black millipede |
| *Doratogonus minor* Hamer, 2000 | Minor black millipede |
| *Doratogonus montanus* Hamer, 2000 | Montane black millipede |
| *Doratogonus natalensis* (Attems, 1928) | Natal black millipede |
| *Doratogonus peregrinus* (Lawrence, 1965) | Wandering black millipede |
| *Doratogonus praealtus* Hamer, 2000 | High-altitude black millipede |
| *Doratogonus precarius* Hamer, 2000 | Precarious black millipede |
| *Doratogonus rattrayi* Hamer, 2009 | Rattray's black millipede (Fig. 9) |
| *Doratogonus rubipodus* Hamer, 2000 | Ruby-footed black millipede |
| *Doratogonus septentrionalis* Hamer, 2000 | Northern black millipede |
| *Doratogonus stephensi* Hamer, 2000 | Stephens's black millipede |
| *Doratogonus xanthopus* (Attems, 1914) | Yellow-footed black millipede |
| *Doratogonus zuluensis* Hamer, 2000 | Zululand black millipede |
| *Orthoporoides corrugatus* (Attems, 1934) | Corrugated black millipede (Fig. 10) |
| *Orthoporoides laccatus* (Attems, 1934) | Milky black millipede |
| *Orthoporoides pontifex* (Attems, 1928) | Leading black millipede |
| *Orthoporoides pyrhocephalus* (L. Kock, 1865) | Fire-headed black millipede |
| *Orthoporoides zulu* (Chamberlin, 1947) | Zulu black millipede |




Figs 1, 2. Order Polydesmida: Family Dalodesmidae (Keeled millipedes): (1) Complex keeled millipede, *Allawrencius complex* Lawrence, 1953; (2) Lumpy keeled millipede, *Gnomeskelus tuberosus* (subspecies unknown).

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Fig. 3. Order Polydesmida: Family Gomphodesmidae (Soil millipedes): *Ulodesmus* sp.

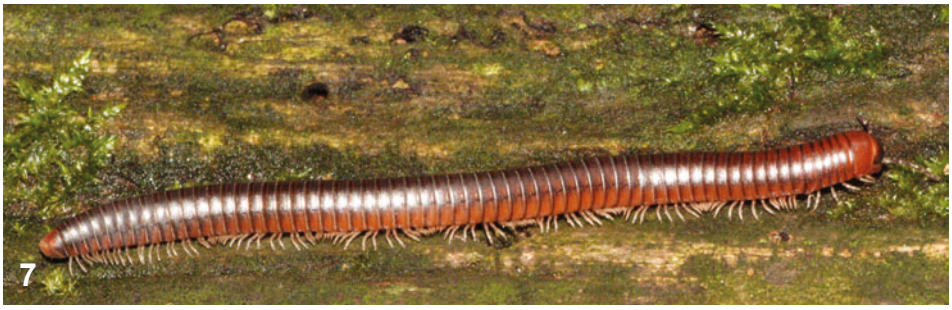


Fig. 4. Order Sphaerotheriida: Family Sphaerotheriidae (Pill millipedes): Giant pill millipede, *Sphaerotherium giganteum* Porat, 1872.

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Fig. 5. Order Spirobolida: Family Pachybolidae (Red millipedes): Bifid red millipede, *Centrobolus bifidus* (Lawrence, 1967).










Figs 6–8. Order Spirostreptida: (6) Family Harpagophoridae (Large spined millipedes): Short-lobed large spined millipede, *Zinophora brevilobata* (Attems, 1928); (7) Family Odontopygidae (Slender and two- spined millipedes): Forest slender spined millipede, *Spinotarsus silvarum* Kraus, 1960; (8) Family Spirostreptidae: *Camaricoproctus* sp.

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Figs 9, 10. Order Spirostreptida: Family Spirostreptidae (Black and shagreened millipedes): (9) Rattray's black millipede, *Doratogonus rattrayi* Hamer, 2009; (10) Corrugated black millipede, *Orthoporoides corrugatus* (Attems, 1934).

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