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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

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).

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

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

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

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

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

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

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

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

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

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

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

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

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



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.



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 brevilibata* (Attems, 1928); (7) Family Odontopygidae (Slender and two- spined millipedes): Forest slender spined millipede, *Spinotarsus silvarum* Kraus, 1960; (8) Family Spirostreptidae: *Camaricoproctus* sp.



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).

