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Assessments, changes, challenges, and solutions

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Annotated checklist of cockroaches and termites of Zambia (Arthropoda: Insecta; Blattodea)

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Abstract: An annotated checklist of cockroaches and termites (order Blattodea) was compiled for Zambia based on intensive reviews of literature on insects of the country. Furthermore, field surveys were performed to confirm some of these records in the last five years (March 2013 - October 2017). The checklist contains 27 genera of cockroaches in Zambia, containing 43 species and three subspecies. The epifamily Termitoidae comprises 38 genera, 87 species, and one subspecies of termites in the country. The occurrence of seven species of cockroaches and two species of termites in Zambia was confirmed during the biodiversity field surveys. Statuses of some termite species, particularly those of the genus *Macrotermes* Holmgren, 1909, are controversial in Zambia, as they are viewed as crop pests on one hand and as human food on the other. All species of the Blattodea in Zambia are registered as 'not evaluated' in the IUCN Red List.

Resumo: Foi compilada uma lista anotada de baratas e térmitas (Ordem Blattodea) para a Zâmbia, com base nas revisões intensivas da literatura sobre insectos do país. Além disso, foram realizados estudos de campo nos últimos cinco anos (Março 2013 – Outubro 2017) para confirmar alguns desses registos. A lista contém 27 géneros de baratas da Zâmbia, contendo 43 espécies e três subespécies. A epifamília Termitoidae inclui 38 géneros, 87 espécies e uma subespécie de térmitas do país. A ocorrência de sete espécies de baratas e duas espécies de térmitas na Zâmbia foi confirmada durante os levantamentos de biodiversidade. Os estados de algumas espécies de térmitas, particularmente aquelas do género *Macrotermes* Holmgren, 1909, são controversos na Zâmbia, pois são vistos, por um lado, como pragas de culturas e, por outro, como alimento humano. Todas as espécies de Blattodea na Zâmbia estão registadas como “não avaliadas” pela Lista Vermelha do UICN.

Introduction

As a signatory to the International Convention on Biological Diversity (CBD), which was ratified on 8 May 1998, Zambia is expected to: conserve its genetic, species and ecosystem diversity; use its biodiversity components sustainably; and share the benefits derived from the use of its genetic resources equitably among its citizenry. The development of biodiversity conservation programmes in the country is, however, rendered difficult by the scarcity of information available on the country's biodiversity, which is needed to develop the programmes. It goes without saying that in order for a country to conserve its biodiversity and other natural resources effectively, it needs to know what is there in the country to conserve, in the first place, and why, in the second place. There is therefore a need for more, reliable

and updated information on Zambia's biodiversity, generated through intensive literature reviews and biodiversity field surveys in the country, to develop reliable biodiversity conservation programmes.

The formulation of the country's first National Biodiversity Strategy and Action Plan (NBSAP1) in Zambia which operationalized the CBD, was based on the very little information available at the time and that which was gathered through a one-month-long country study on the country's biodiversity undertaken in 1998 (Chidumayo & Aongola, 1998; Mbata, 1998; Ministry of Environment and Natural Resources [MENR], 1998). The country study was sanctioned by the MENR and sponsored by the International Union for Conservation of Nature (IUCN). In 2015 the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP) carried out a revision

of NBSAP1 aimed at harmonizing it with (a) the country's new development trajectory, (b) challenges related to climate change, and (c) the Global Strategic Plan on Biodiversity (2011 - 2020) as well as the Aichi Biodiversity Targets under the CBD of 2010, both of which the country had adopted. This drafting of the NBSAP2 did not help matters, as no additional data on the country's biodiversity was collected from the field.

Regarding the present status of collected Blattodea species in Zambia, the collection is stored in the Livingstone National Museum, the largest and oldest museum in the country. It was established in 1934 during the colonial days as the David Livingstone Memorial Museum and was also formerly called Rhodes-Livingstone Museum. Its year 1999 - insect collection register, examined by the author in 2014, has on record

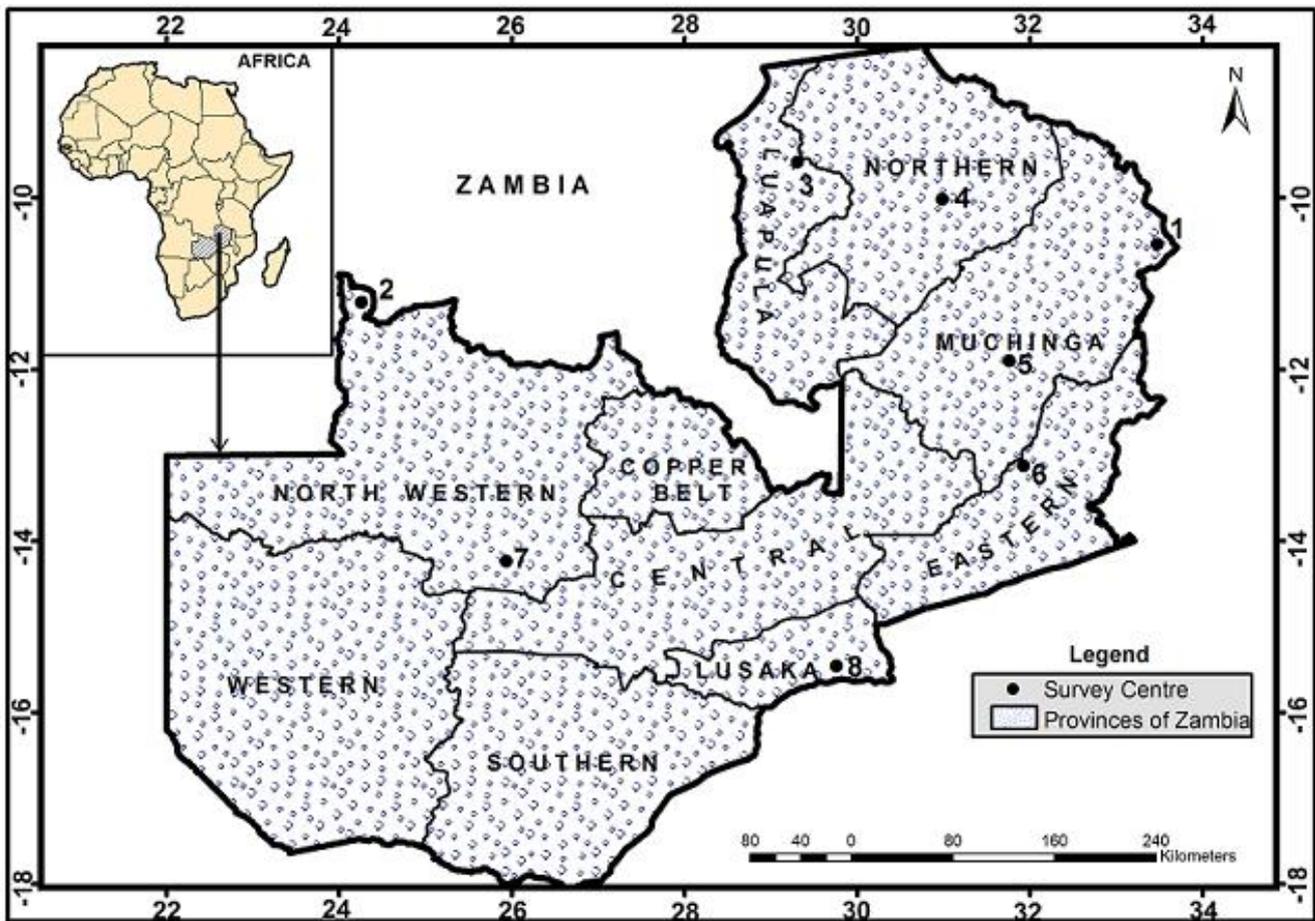


Figure 1: Map of Zambia showing provinces and field biodiversity survey centres. 1: Chowo forest, Nyika National Park. 2: Source of the Zambezi River. 3: Lumangwe Falls area. 4: Chishimba Falls area. 5: North Luangwa National Park. 6: South Luangwa National Park. 7: Treetops school camp, Kafue National Park. 8: Chakwenga, Lower Zambezi National Park.

25 genera and 52 species of termites and 470 termite specimens that were identified only to the genus level. The termite collection is a relatively recent one. The oldest specimen, identified to genus level only, is *Macrotermes* sp., collected from Lusaka by M. G. Bingham. The most recent termite specimen, also identified only to genus level is *Trinervitermes* sp., collected in 1982 by P. Nkunika from Lochinvar National Park in Monze, Southern Province. Surprisingly enough, the Livingstone National Museum had no specimens of cockroaches of Zambia at the time of the author's visit in 2014.

This gap in knowledge on Zambia's biodiversity has now started to be filled up through a five-year project on Zambia's biodiversity known as, the Baseline Inventory of Zambia's Biodiversity. The author is working on Zambia's invertebrates for the project, while four other researchers are concerned with vertebrates and lower and higher plants. This

paper reports on an annotated checklist developed for cockroaches and termites of Zambia.

Study area

For the literature study, the entire country of Zambia was considered. Field surveys were carried out in six selected study areas throughout the country. Zambia lies on the anterior African high plateau, between 1000 m and 1600 m above sea level, consisting mainly of a series of gently undulating to flat plateaux occasionally broken by isolated hills or low ranges of resistant rocks (Davies, 1971). The field surveys were carried out in representative areas of the country selected based on criteria including accessibility by road and pristineness of the area. Areas with comparatively little human disturbance were preferred. We carried out surveys in Nyika National

Park on the Nyika Plateau in Muchinga Province, in the northeast of the country; the source of the Zambezi River in the North-Western Province; Luapula and Northern Provinces; North and South Luangwa National Parks; Lower Zambezi National Park; and Kafue National Park (KNP) (Fig. 1). The latter is the largest national park in the country and the fifth largest in Africa.

Zambia has three distinct seasons – namely, a rainy season (November–April), a cool dry season (May/June–August), and a hot dry season (September–October/November). The relatively high altitude gives the country pleasant subtropical weather during the cool dry season but the average monthly temperatures remain above 20 °C over most of the country for eight or more months of the year.

There are 14 ecosystems in the country, classed into the Forest, Thicket, Woodland, and Grassland vegetation

types (Worldatlas.com., 2018), and the country is divided into ten administrative provinces (Fig. 1).

Materials and methods

The study involved intensive literature surveys on what is known about the diversity of cockroaches and termites (Order Blattodea) in Zambia, as information on the country's biodiversity in general, and the invertebrates, in particular, is very scanty in the literature. Few researchers have worked on the biodiversity of Zambia in the past. For example, Pinhey (1961, 1975), reported on dragonflies and insects of Zambia, while Pinhey & Loe (1973, 1977) produced guides to the insects and butterflies of Zambia. No specific study has been done in the past on cockroaches of the country, but regarding termites, Nkunika (1982, 1986) pioneered the preparation of termite checklists in the country. He published a preliminary checklist of termites of the Southern Province of the country and one for Lochinvar National Park in the same province. The present study involved reviews of the above-mentioned literature plus many more that the author came across scattered over the Internet that examine cockroaches and termites of Zambia and the southern Africa region. Further information on invertebrates of Zambia in the form of preserved specimens in the nation's major animal species repository was accessed by visiting the country's Livingstone National Museum.

Some of the cockroach and termite species recorded to occur in Zambia in the literature were confirmed in this study through identifications of specimens collected by the author and his research team through field biodiversity surveys undertaken in selected parts of the country (Fig. 1) during the study: Nyika National Park on the Nyika Plateau plateau in Muchinga Province, in the northeast of the country; the source of the Zambezi River in the Northwestern Province; Luapula and Northern Provinces; North and South Luangwa National Parks; Lower Zambezi National Park; and Kafue National Park (KNP). The latter is the largest national park in the country and the

fifth largest in Africa. The selection of the parts of the country in which to conduct biodiversity surveys was based on the area's accessibility by road and their pristineness. Areas with comparatively little human disturbance were preferred.

The number of sampling sites selected in each survey centre depended on the vegetation types occurring in the survey centre. Each vegetation type had one sampling site selected in it. An average of four sampling sites were established at each survey centre. Two 100 x 0.25 m transects spaced 50 m apart were set in each chosen sampling site, and cockroaches and termites encountered along each transect on vegetation and in the litter were collected using hands, forceps, and aerial insect nets. No termite mounds were dug up along the transects to collect termites. Only termites found on the surface in litter and on vegetation were collected for identification. Collected insects were preserved in 70% ethanol in well-labelled bottles and taken for identification to the University of Zambia, Department of Biological Sciences, in Lusaka.

Taxonomic identification keys (e.g., Krishna et al., 2013; Marshall, 1989; Pratt, 2017; Ruelle, 1989; Sands, 1998; Victor, 1941), photographs and comparisons of the specimens with already identified and confirmed preserved specimens in the Livingstone National Museum and in the teaching insect collections of the Department of Biological Sciences at the University of Zambia in Lusaka were used to identify the collected termite and cockroach species.

Results

The checklist

The checklist of cockroaches and termites known to occur in Zambia is presented in Tables 1 to 5 below.

General remarks

Each species or subspecies entry in the checklist is divided into the following columns:

Synonym(s):

The alternative valid name(s) of the species or subspecies is presented in this column. If a name of a species or subspecies has many synonyms, only five were selected and the number of remaining ones given.

Distribution:

The column presents the geographical distribution of the species or subspecies in the world.

Location in Zambia:

All locations within Zambia where the species or subspecies was collected are listed in this column.

Note:

Species or subspecies that have been confirmed to occur in Zambia through the biodiversity field surveys conducted by the author (2013–2017) are marked with an asterisk in the checklist (*), while the localities in Zambia where the species or subspecies were collected in the field surveys are marked with a double asterisk (**).

Table 1: Checklist of Blattodea of Zambia: Family Blattidae.

Family	Scientific name	Synonym(s)	Distribution	Location in Zambia
Superfamily BLATTOIDEA: Epifamily Blattoidae.				
Blattidae	<i>Blatta orientalis</i> Linnaeus, 1758. *	<i>Blatta badia</i> (Saussure, 1863); <i>Blatta castanea</i> (Blanchard, 1851); <i>Blatta culinaria</i> (De Geer, 1773); <i>Blatta europaea</i> (Bartsch, 1846); <i>Blatta europea</i> (Bartsch, 1846) + 20.	Cosmopolitan in temperate regions [southern Russian origin]. Has been introduced to many other parts of the world. The Oriental Cockroach is common world-wide. There is no country that is free of the presence of this insect (Plant Pests and Diseases Act. No. 13. 1994; IUCN Red List of Threatened Species. Version 2016-3; Mbata, 1998; Ministry of Environment and Natural Resources (MENR), 1998).	Lusaka** in Lusaka Province; Livingstone in Southern Province.
	<i>Cartoblatta barbara</i> (Shelford, 1911).	<i>Blatta barbara</i> (Shelford, 1911).	Burundi, Democratic Republic of Congo, Zambia (Beccaloni, 2014).	Chingola, Copperbelt Province.
	<i>Cartoblatta pulchra</i> Shelford, 1910.	<i>Periplaneta transvaalensis</i> Rehn, 1922.	Kenya, Malawi, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe (Beccaloni, 2014; Catalogue of life, 2016).	Lusaka and Kafue, Lusaka Province.
	<i>Deropeltis comosa</i> Rehn, 1922.	None.	Kenya, Mozambique, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species, 2016).	Chiawa, Middle Zambezi valley, Lusaka Province.
	<i>Deropeltis melanophila</i> (Walker, 1869).	<i>Deropeltis speiseri</i> Brancsik, 1896; <i>Ischnoptera melanophila</i> Walker, F., 1869.	Cameroon, Ethiopia, Kenya, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species, 2016).	Gorges east of Victoria Falls, Livingstone, in Southern Province.
	<i>Deropeltis paulinoi</i> Bolivar, 1881.	None.	Angola, Democratic Republic of Congo, Mozambique, Namibia, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species, 2016).	Mkushi, in Central Province.
	<i>Deropeltis wahlbergi</i> (Stål, 1856).	<i>Deropeltis nubila</i> Rehn, 1922; <i>Periplaneta wahlbergi</i> (Stal, 1856).	Mozambique, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014).	Chingola, in Copperbelt Province.
	<i>Neostylopyga rhombifolia</i> (Stoll, 1813).	<i>Blatta rhombifolia</i> (Stoll, 1813); <i>Blatta signata</i> Eschscholtz, 1822; <i>Neostylopyga histrio</i> (Saussure, 1864); <i>Neostylopyga signata</i> (Eschscholtz, 1822); <i>Periplaneta decorata</i> Brunner von Wattenwyl, 1865 + 2.	Circumtropical [Asian origin]; China, El Salvador, Germany, India, Indonesia, Madagascar, Malaysia, Mexico, Netherlands, Sweden, Taiwan, Tanzania, United Kingdom, USA (Texas), Zambia (Catalogue of life, 2016; Beccaloni, 2014).	Mbala, Northern Province.
	<i>Periplaneta americana</i> (Linnaeus, 1758). *	<i>Blatta americana</i> Linnaeus, 1758; <i>Blatta aurelianaensis</i> Fourcroy, 1785; <i>Blatta domicola</i> Risso, 1826; <i>Blatta ferrugineofusca</i> Gronovius, 1764; <i>Blatta heros</i> Eschscholtz, 1822 + 9.	Cosmopolitan [African origin]; Africa – Algeria, Botswana, Cameroon, Ghana, Kenya, Madagascar, Malawi, Morocco, Mozambique, Namibia, Nigeria, Senegal, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zambia, Zimbabwe etc., (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species, 2016-3).	Lusaka** and Kafue**, in Lusaka Province; Monze**, Pemba, Choma** and Livingstone**, in Southern Province; Chingola, Chililabombwe and Ndola**, in Copperbelt Province; Kasama and Mbala, in Northern Province; Solwezi and Ikelenge** in Northwestern Province; Mongu and Kalabo in Western Province. Mpika in Muchinga Province; Chipata in Eastern Province (Mbata, 1998; Ministry of Environment and Natural Resources 1998).
	<i>Pseudoderopeltis anthracina</i> (Brancsik, 1896).	<i>Pseudoderopeltis brancsiki</i> (Shelford, 1910); <i>Stylopyga anthracina</i> (Brancsik, 1896); <i>Stylopyga brancsiki</i> (Shelford, 1910).	Malawi, Mozambique, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka and Kafue, in Lusaka Province.
	<i>Pseudoderopeltis caffra</i> <i>caffra</i> (Stål, 1856).	<i>Periplaneta caffra</i> (Stål, 1856)	Botswana, Mozambique, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014).	Gorges east of Victoria Falls, Livingstone, in Southern Province.
	<i>Pseudoderopeltis caffra</i> <i>vicina</i> Princis, 1955.	<i>Pseudoderopeltis vicina</i> Princis, 1955	Burkina Faso, Burundi, Rwanda, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014).	Solwezi, in Northwestern Province (Catalogue of life, 2016; Cockroach species file, 2016).
	<i>Pseudoderopeltis diluta</i> (Stål, 1856).	<i>Periplaneta africana</i> Karny, 1908; <i>Periplaneta diluta</i> Stål, 1856.	Botswana, Namibia, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; Pinhey, 1975).	Victoria Falls region at gorges east of the Victoria Falls, Livingstone, Southern Province.
	<i>Pseudoderopeltis inermis</i> Princis, 1963.	None.	South Africa, Zambia (Catalogue of life, 2016; Beccaloni, 2014).	Chilanga, Lusaka Province.
	<i>Pseudoderopeltis transvaalensis</i> Rehn, 1922.	None.	Mozambique, Namibia, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014).	Kapiri Mposhi, in Central Province.

Table 2: Checklist of Blattodea of Zambia: Family Termitidae.

Family	Scientific name	Synonym(s)	Distribution	Location in Zambia
Superfamily BLATTOIDEA: Epifamily Termitoidea				
Termitidae	<i>Acholotermes epius</i> Sands, 1972	None	Zambia, Zimbabwe (Krishna et al., 2016; Nkunika, 1982; Sands, 1998).	Lusaka (Type locality), in Lusaka Province.
	<i>Acholotermes imbellis</i> Sands, 1972.	None.	Democratic Republic of Congo, Zambia (Livingstone National Museum Collection, Zambia).	Lusaka, in Lusaka Province.
	<i>Adaphrotermes scapheutes</i> Sands, 1972.	None.	Malawi; Zambia (Krishna et al., 2016; Sands, 1998).	Kitwe (Type locality), in Copperbelt Province.
	<i>Aderitotermes fossor</i> Sands, 1972.	None.	Cameroon; Kenya; Malawi; Tanzania; Uganda; Zambia (Krishna et al., 2016; Sands, 1998).	Kabwe, in Central Province.
	<i>Aganotermes oryctes</i> Sands, 1972.	None.	South Africa, Zambia, Zimbabwe (Krishna et al., 2016; Nkunika, 1982, 1986; Sands, 1998).	Livingstone, in Southern Province.
	<i>Allodotermes rhodesiensis</i> (Sjöstedt, 1914).	<i>Termes</i> (<i>Allodotermes</i>) <i>rhodesiensis</i> Sjöstedt, 1914; <i>Allodotermes schultzei orientalis</i> Fuller, 1922; <i>Termes</i> (<i>Protermes</i>) <i>esuriens</i> Sjöstedt, 1924; <i>Termes liber</i> Van Boven, 1969.	Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe (Nkunika, 1982; Ruelle, 1979).	Southern Province.
	<i>Allodotermes schultzei</i> (Silvestri, 1908).	<i>Termes schultzei</i> Silvestri, 1908.	Botswana, Namibia, South Africa, Swaziland, Zambia, Zimbabwe (Nkunika, 1982, 1986; Ruelle, 1979).	Southern Province.
	<i>Allodotermes tenax</i> (Silvestri, 1912).	<i>Termes</i> (<i>Allodotermes</i>) <i>tenax</i> Silvestri, 1912; <i>Termes tenax</i> Silvestri, 1912	Democratic Republic of Congo, Kenya, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe (Hocking, 1965; Nkunika, 1982, 1986; Ruelle, 1979).	Livingstone, in Southern Province.
	<i>Amitermes importunus</i> Sands, 1959.	None.	Malawi, Zambia, Zimbabwe (Bouillon and Mathot, 1965; Nkunika, 1982; Sands 1959, 1992, 1998).	Southern Province.
	<i>Amitermes messinae</i> (Fuller, 1922).	<i>Amitermes harleyi</i> Harris, 1957; <i>Hamitermes messinae</i> Fuller, 1922.	Egypt, Iran, Kenya, Malawi, Saudi Arabia, South Africa, Sudan, Tanzania, Yemen, Zambia (Krishna et al., 2016; Nkunika, 1982).	Southern Province.
	<i>Amitermes truncatidens</i> Sands, 1959.	None	Democratic Republic of Congo, Malawi, Tanzania, Zambia, Zimbabwe (Bouillon and Mathot, 1965; Nkunika 1982, 1986; Sands 1992, 1998).	Southern Province.
	<i>Amitermes unidentatus</i> (Wasmann, 1897).	<i>Amitermes macrocephalus</i> Ghidini, 1941; <i>Eutermes meruensis</i> Sjöstedt, 1911; <i>Hamitermes elongatus</i> Silvestri, 1914; <i>Hamitermes limpopoensis</i> Fuller, 1922; <i>Termes unidentatus</i> Wasmann, 1897.	Democratic Republic of Congo, Ethiopia, Kenya, Malawi, Rwanda, South Africa, Sudan, Tanzania, Uganda, Zambia (Krishna et al., 2016).	Lusaka, in Lusaka Province.
	<i>Ancistrotermes latinotus</i> (Holmgren, 1912).	<i>Ancistrotermes leboemoensis</i> Fuller, 1922; <i>Microtermes latinotus</i> Holmgren, 1912; <i>Termes crucifer</i> Sjöstedt 1900.	Central African Republic, Congo-Brazzaville, Democratic Republic of Congo, Ethiopia, Kenya, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe (Bouillon and Mathot, 1966; Coaton and Sheasby, 1975; Harris, 1966; Nkunika 1982, Nkunika, 1986; Wood and Tomas, 1989).	Southern Province.
	<i>Anentotermes disluctans</i> Sands, 1972.	<i>Anoplotermes luescheri</i> Mathur and Thapa, 1962.	Congo-Brazzaville, Democratic Republic of Congo, Uganda, Zambia (Nkunika 1982, 1986; Sands, 1998).	Southern Province.
	<i>Angulitermes truncatus</i> Sjöstedt, 1926.	None.	Ghana, Kenya, Nigeria, Senegal, Tanzania, Uganda, Zambia, Palaearctic Region [Saudi Arabia] (Krishna et al., 2016; Nkunika, 1982).	Lochinvar National Park, Monze, Southern Province.
	<i>Astalotermes brevior</i> (Holmgren, 1913).	<i>Anoplotermes sanctus</i> Silvestri, 1914; <i>Mirotermes</i> (<i>Procubitermes</i>) <i>mbazwanicus</i> Fuller, 1925; <i>Mirotermes</i> (? <i>Procubitermes</i>) <i>mfolozii warreni</i> Fuller, 1925; <i>Mirotermes</i> (<i>Cubitermes</i>) <i>natalensis brevior</i> Holmgren, 1913.	Angola, Namibia, South Africa, Swaziland, Zambia, Zimbabwe (Nkunika, 1982; Sands, 1972, 1998).	Southern Province.
	<i>Astalotermes impediens</i> Sands, 1972.	None.	Zambia (Krishna et al., 2016; Sands, 1972).	Ndola (Type locality), in Copperbelt Province.
	<i>Astalotermes murcus</i> Sands, 1972.	None.	Congo-Brazzaville, Zambia (Krishna et al., 2016; Sands, 1998).	Ndola (Type locality), in Copperbelt Province.
	<i>Astratotermes aneristus</i> Sands, 1972.	None.	Zambia (Krishna et al., 2016; Sands, 1998).	Kitwe (Type locality), in Copperbelt Province.
	<i>Crenotermes albotarsalis</i> (Sjöstedt, 1897).	<i>Eutermes albotarsalis</i> Sjöstedt, 1897.	Cameroon, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Gabon, Nigeria, Rwanda, Tanzania, Zambia (Bouillon and Mathot, 1965; Harris, 1951).	Kabwe, in Central Province.
	<i>Cubitermes inclitus</i> Silvestri, 1912.	<i>Cubitermes bilobatus inclitus</i> Silvestri, 1912; <i>Eutermes</i> (<i>Cubitermes</i>) <i>domifaber</i> Sjöstedt, 1913.	Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Kenya, Malawi, Rwanda, Tanzania, Uganda, Zambia (Bouillon and Mathot, 1966; Snyder, 1949; Williams, 1966).	Type locality: Zambia [formerly, Northern Rhodesia], Banguelo (Lake Bangweulu area), Samfya, in Luapula Province. Also collected on Ndola-Kitwe road, in the Copperbelt Province; and in Abercorn [Now Mbala], in Northern Province.
	<i>Cubitermes minitabundus</i> (Sjöstedt, 1913).	<i>Eutermes</i> (<i>Cubitermes</i>) <i>minitabundus</i> Sjöstedt, 1913; <i>Isognathotermes minitabundus</i> Sjöstedt, 1926.	Congo-Zaire [Now, Democratic Republic of Congo], Malawi, Zambia (Bouillon and Mathot, 1966; Hocking, 1965; Sands, 1998; Williams, 1966).	Chingola, Nchanga, Ndola-Kitwe road and Kitwe-Dola Hill road, in Copperbelt Province; 8.045 km north of Chembe ferry, Luapula R., in Luapula Province; and Abercorn [Now Mbala], in Northern Province.
	<i>Cubitermes montanus</i> Williams, 1966.	None.	Malawi, Tanzania, Zambia (Bouillon and Mathot, 1966; Nkunika, 1982).	Southern Province.
	<i>Cubitermes muneris</i> (Sjöstedt, 1913).	<i>Cubitermes bisulcatus</i> (Sjöstedt, 1914); <i>Cubitermes muneris</i> Sjöstedt, 1926; <i>Eutermes</i> (<i>Cubitermes</i>) <i>bisulcatus</i> Sjöstedt, 1914; <i>Eutermes</i> (<i>Cubitermes</i>) <i>muneris</i> Sjöstedt, 1913.	Congo-Zaire [Now Democratic Republic of Congo], Kenya, Malawi, Tanzania, Zambia (Bouillon and Mathot, 1966; Nkunika, 1982; Sands, 1998; Williams, 1966).	Southern Province; Kitwe-Dola Hill road., Ndola=Kitwe road, in Copperbelt Province; Abercorn [Now Mbala], in the Northern Province; and the Zambian environs of Tunduma in Muchinga Province.
	<i>Cubitermes oblectatus</i> Harris, 1958.	None.	Congo-Zaire [Now, Democratic Republic of Congo], Malawi, Tanzania, Zambia (Bouillon and Mathot, 1966; Williams, 1966).	Abercorn [Now Mbala], in Northern Province; Nakonde, in Muchinga Province.
	<i>Cubitermes orthognathus</i> (Emerson, 1928).	<i>Mirotermes</i> (<i>Cubitermes</i>) <i>orthognathus</i> Emerson, 1928.	Congo-Zaire [Now, Democratic Republic of Congo], Kenya, Malawi, Tanzania, Uganda, Zambia (Bouillon and Mathot, 1966; Nkunika, 1982; Sands, 1998; Williams, 1966).	Southern Province.
	<i>Cubitermes pallidiceps</i> (Sjöstedt, 1913)	<i>Eutermes</i> (<i>Cubitermes</i>) <i>pallidiceps</i> Sjöstedt, 1913.	Congo-Zaire [Now, Democratic Republic of Congo], Malawi, Tanzania, Zambia, Zimbabwe (Bouillon and Mathot, 1966; Williams, 1966).	Solwezi, in Northwestern Province.
	<i>Cubitermes sanctaeluciaae</i> (Fuller, 1925).	<i>Mirotermes</i> (<i>Cubitermes</i>) <i>sanctaeluciaae</i> Fuller, 1925.	South Africa, Zambia (Sands, 1998).	Lusaka and Kafue, in Lusaka Province.

Family	Scientific name	Synonym(s)	Distribution	Location in Zambia
	<i>Cubitermes sankurensis</i> Wasmann, 1911.	<i>Cubitermes sankurensis elongata</i> Sjöstedt, 1926 [junior homonym of <i>Cubitermes fungifaber elongata</i> Sjöstedt, 1924; replacement name needed if taxon is removed from synonymy]; <i>Eutermes</i> (<i>Cubitermes</i>) <i>cubicephalus</i> Sjöstedt, 1913; <i>Eutermes sibiensis</i> Sjöstedt, 1925.	Angola, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Kenya, Malawi, Tanzania, Zambia, Zimbabwe (Bouillon and Mathot, 1966; Hocking, 1965; Williams, 1966).	Luapula River at Chembe Ferry, Lake Bangweulu at Samfya, in Luapula Province; Ndola, Dola Hill, in the Copperbelt Province; Abercorn [Now Mbala], in Northern Province.
	<i>Cubitermes tenuiceps</i> (Sjöstedt, 1913).	<i>Eutermes</i> (<i>Cubitermes</i>) <i>tenuiceps</i> Sjöstedt, 1913.	Congo-Zaire [Now Democratic Republic of Congo], Malawi, Tanzania, Zambia (Bouillon and Mathot, 1966; Nkunika 1982, 1986; Williams, 1966).	Kafue R., Mazabuka rd., in Southern Province; 30 m. W. of Mumbwa, in Central Province.
	<i>Cubitermes transvaalensis</i> (Fuller, 1925).	<i>Mirotermes</i> (<i>Cubitermes</i>) <i>transvaalensis</i> Fuller, 1925.	South Africa; Zambia (Nkunika 1982, 1986).	Southern Province.
	<i>Cubitermes ugandensis</i> Fuller, 1923.	<i>Cubitermes antennalis</i> Sjöstedt, 1924.	Congo-Zaire [Now, Democratic Republic of Congo], Kenya, Malawi, Rwanda, Tanzania, Uganda, Zambia (Bouillon and Mathot, 1966; Williams, 1966).	Bangweulu environs including Samfya in Luapula Province; near Tunduma in Muchinga Province.
	<i>Enetotermes bembicoides</i> Sands, 1995.	None.	Zambia (Sands, 1998).	Lusaka (Type locality), in Lusaka Province.
	<i>Fulleritermes contractus</i> (Sjöstedt, 1913).	<i>Coarctotermes brunneus</i> Noirot, 1955; <i>Eutermes contractus</i> Sjöstedt, 1913.	Congo-Zaire [Now Democratic Republic of Congo], Namibia, South Africa, Zambia, Zimbabwe (Bouillon and Mathot 1965, 1966; Coaton and Sheasby, 1973b; Nkunika, 1982; Sands, 1957; Sands 1965; Sands, 1998).	Southern Province.
	<i>Furculitermes soyeri</i> Emerson, 1960.	None.	Congo-Zaire [Now, Democratic Republic of Congo], Zambia (Sands, 1998).	Chingola, Copperbelt Province.
	<i>Lepidotermes goliathi</i> (Williams, 1954).	None.	Tanzania; Zambia; Zimbabwe (Uys, 1994).	Lusaka, in Lusaka Province.
	<i>Macrotermes bellicosus</i> (Smeathman, 1781).	<i>Bellicositermes convexus</i> Grasse, 1937; <i>Termes bellicosus</i> Smeathman, 1781; <i>Termes bellicosus zambesiana</i> Van Boven, 1969; <i>Termes carboniceps</i> Sjöstedt, 1924; <i>Termes nigeriensis</i> Sjöstedt, 1911.	Angola, Cameroon, Central African Republic, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Eritrea, Ethiopia, Ghana, Guinea, Guinea-Bissau, Ivory Coast (Cote d'Ivoire), Kenya, Liberia, Malawi, Mauritania, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda, Yemen, Zambia (Coaton, 1962; Mbata, 1995; Ruelle, 1970; Silvestri, 1912; Sjöstedt, 1926).	Lusaka, in Lusaka Province.
	<i>Macrotermes falciger</i> (Getstaecker, 1891). *	<i>Macrotermes usutu</i> Fuller, 1922; <i>Termes falciger</i> Gerstaecker, 1891; <i>Termes goliath</i> Sjöstedt, 1899; <i>Termes michelli</i> Rosen, 1912; <i>Termes swaziae</i> Fuller, 1915; <i>Tumulitermes kibonotensis</i> Sjöstedt, 1924.	Benin, Central African Republic, Congo-Zaire [Now, Democratic Republic of Congo], Ghana, Guinea, Kenya, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Uganda, Zambia (Bouillon and Mathot, 1971; Coaton, 1962; Mbata, 1995; Nkunika, 1982, 1986; Ruelle et al., 1975a; Ruelle, 1970; Wood and Tomas, 1989)	Southern Province; Lusaka** in Lusaka Province; Treetops** (Kafue National Park), in Northwestern Province; Ndola and Chingola, in Copperbelt Province; Mfuwe** and Chipata, in Eastern Province.
	<i>Macrotermes michaelsoni</i> (Sjöstedt, 1914).	<i>Macrotermes bellicosus kunenensis</i> Fuller, 1922; <i>Macrotermes bellicosus limpopoensis</i> Fuller, 1922; <i>Macrotermes bellicosus tonga</i> Fuller, 1927; <i>Termes</i> (<i>Termes</i>) <i>bellicosus mossambica</i> Hagen, 1858; <i>Termes</i> (<i>Termes</i>) <i>michaelsoni</i> Sjöstedt, 1914.	Angola, Botswana, Kenya, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe (Bouillon and Mathot, 1971; Mbata, 1995; Nkunika, 1982, 1986; Ruelle et al., 1975; Ruelle, 1970; Snyder, 1949a).	Southern Province; Lusaka, in Lusaka Province.
	<i>Macrotermes natalensis</i> (Haviland, 1898).	<i>Macrotermes natalensis durbanensis</i> Fuller, 1927; <i>Macrotermes natalensis intermedius</i> Fuller, 1922; <i>Macrotermes natalensis transvaalensis</i> Fuller, 1922; <i>Termes natalensis form intermedius</i> Fuller 1922 + 3.	Angola, Chad, Central African Republic, Congo-Brazzaville, Congo-Zaire, Eritrea, Ghana, Guinea, Guinea-Bissau, Ivory Coast (Côte d'Ivoire), Kenya, Liberia, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Senegal, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe (Bouillon and Mathot, 1971; Coaton, 1962; Mbata, 1995; Nkunika, 1982; Ruelle et al., 1975; Ruelle, 1970; Wood and Tomas, 1989).	Southern Province.
	<i>Macrotermes subhyalinus</i> (Rambur, 1842).	<i>Bellicositermes bellicosus rex</i> Grasse and Noirot, 1961; <i>Bellicositermes jeanneli</i> Grasse, 1937; <i>Termes bellicosus sansibarita</i> Wasmann, 1897; <i>Termes subhyalinus</i> Rambur, 1842; <i>Termes tumulicola</i> Sjöstedt, 1899.	Angola, Benin, Burundi, Central African Republic, Chad, Congo-Zaire [Now, Democratic Republic of Congo], Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast (Côte d'Ivoire), Kenya, Liberia, Malawi, Mali, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda, Yemen, Zambia, Palaearctic Region — Oman, Saudi Arabia (Bouillon and Mathot, 1971; Mbata, 1995; Nkunika, 1982; Ruelle et al., 1975; Ruelle, 1970; Ruelle, 1975b).	Southern Province; Chipata District in Eastern Province; Chelstone, in Lusaka Province.
	<i>Macrotermes vatralatus</i> (Sjöstedt, 1899).	<i>Termes vatralatus</i> Sjöstedt, 1899; <i>Termes imperator</i> Sjöstedt, 1913; <i>Termes waterbergi</i> Fuller, 1915; <i>Macrotermes schoutedeni</i> Sjöstedt, 1924; <i>Amplitermes mozambicanus</i> Sjöstedt, 1926 + 1.	Angola, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia, (Bouillon and Mathot, 1971; Mbata, 1995; Nkunika 1982, 1986; Ruelle et al., 1975a; Ruelle, 1970).	Southern Province.
	<i>Megagnathotermes katangensis</i> Sjöstedt, 1927.	None.	Zambia (Bouillon and Vincke, 1973c; Nkunika, 1982; Sands, 1998).	Southern Province.
	<i>Microcerotermes brachygnathus</i> Silvestri, 1914.	None.	South Africa, Tanzania, Zambia, Zimbabwe (Krishna et al., 2016; Nkunika, 1986).	Lochinvar in Monze, in Southern Province.
	<i>Microcerotermes fuscotibialis</i> (Sjöstedt, 1896).	None.	Angola, Cameroon, Congo-Zaire [Now, Democratic Republic of Congo], Gabon, Ghana, Guinea, Ivory Coast (Côte d'Ivoire), Nigeria, Senegal, Sierra Leone, Zambia (Livingstone National Museum Report, Zambia Collection, 2013).	Southern Province.
	<i>Microcerotermes nemoralis</i> Harris, 1954.	None.	Tanzania, Zambia (Bouillon and Mathot, 1965; Nkunika, 1982).	Southern Province.
	<i>Microcerotermes parvus</i> (Haviland, 1898).	None.	Angola, Cameroon, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Eritrea, Ethiopia, Gabon, Ghana, Ivory Coast, Kenya, Nigeria, Senegal, South Africa, Sudan, Tanzania, Uganda, Zambia (Livingstone National Museum Report, Zambia Collection, 2013).	Southern Province.
	<i>Microcerotermes solidus</i> Silvestri, 1912.	None.	Angola, Cameroon, Congo-Zaire, Ghana, Guinea, Guinea-Bissau, Ivory Coast (Côte d'Ivoire), Nigeria, Senegal, Zambia (Livingstone National Museum Report, Zambia Collection, 2013).	Southern Province.
	<i>Microtermes albopartitus</i> (Sjöstedt, 1911).	<i>Microtermes longiceps</i> Holmgren, 1913; <i>Termes albopartitus</i> Sjöstedt, 1911.	Cameroon, Congo-Zaire [Now, Democratic Republic of Congo], Malawi, South Africa, Tanzania, Zambia, Zimbabwe (Bacchus, 1997).	Lusaka, Lusaka Province.
	<i>Microtermes chomaensis</i> Bacchus, 1997.	None.	Zambia (Bacchus, 1997).	Choma, in Southern Province.
	<i>Microtermes etiolatus</i> Fuller, 1922.	None.	Mozambique, South Africa, Zambia (Bacchus, 1997).	Lusaka, in Lusaka Province.
	<i>Microtermes kasaiensis</i> (Sjöstedt, 1913).	<i>Eutermes kasaiensis</i> Sjöstedt, 1913.	Congo-Zaire; Kenya; Malawi; Uganda. Zambia (Nkunika, 1982).	Southern Province.
	<i>Microtermes lounsburyi</i> Fuller, 1922.	<i>Microtermes unfolozii</i> Fuller, 1922	Malawi, South Africa, Zambia, Zimbabwe (Bacchus, 1997).	Kabwe, Central Province.
	<i>Microtermes luteus</i> Harris, 1954.	None.	Kenya, Malawi, Tanzania, Zambia (Krishna et al., 2016; Nkunika, 1982).	Southern Province.

Family	Scientific name	Synonym(s)	Distribution	Location in Zambia
	<i>Microtermes magnocellus</i> (Sjöstedt, 1915).	<i>Termes (Microtermes) magnocellus</i> Sjöstedt, 1915.	Ethiopia, Tanzania, Malawi, Zambia (Bacchus, 1997; Krishna et al., 2016).	Lusaka, Lusaka Province.
	<i>Microtermes pamela</i> Bacchus, 1997.	None.	Zambia (Bacchus, 1997; Krishna et al., 2016).	Type locality, Mbala, in Northern Province.
	<i>Microtermes vadschaggae</i> (Sjöstedt, 1907).	<i>Termes vadschaggae</i> Sjöstedt, 1907.	Ethiopia, Kenya, Malawi, Senegal, Tanzania, Zambia (Krishna et al., 2016; Nkunika, 1986).	Lochinvar, in Southern Province.
	<i>Mimeutermes binghami</i> Sands, 1968.	None.	Kenya, Zambia (Bouillon and Mathot, 1971; Sands, 1998).	Roma in Lusaka (Type locality), in Lusaka Province.
	<i>Nitiditermes berghei</i> Emerson, 1960.	None.	Congo-Zaire [Now Democratic Republic of Congo], Zambia (Krishna et al., 2016; Sands 1998).	Lusaka, in Lusaka Province; Chingola and Chililabombwe, in Copperbelt Province.
	<i>Odontotermes badius</i> (Haviland 1898).	<i>Termes badius</i> Haviland, 1898; <i>Odontotermes badius badius</i> (Haviland, 1898).	Angola, Botswana, Cameroon, Congo-Zaire [Now, Democratic Republic of Congo], Ethiopia, Kenya, Malawi, Namibia, Somalia, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe (Krishna et al., 2016; Nkunika, 1982).	Southern Province.
	<i>Odontotermes flammifrons</i> (Sjöstedt, 1926).	<i>Termes flammifrons</i> Sjöstedt, 1926.	Congo-Zaire [Now, Democratic Republic of Congo], Malawi, Sudan, Zambia (Bouillon and Mathot, 1965; Harris, 1960).	Lusaka, in Lusaka Province.
	<i>Odontotermes lacustris</i> Harris, 1960.	None.	Malawi, Zambia (Bouillon and Mathot, 1965; Nkunika 1982, 1986; Wood and Tomas, 1989).	Type locality of this species is Abercorn [Now, Mbala - 08°50'S, 31°24'E] in Northern Province; Kalomo, Mazabuka, Monze, Lochinvar and Choma, in Southern Province.
	<i>Odontotermes latericius latericius</i> (Haviland, 1898).	<i>Odontotermes latericius</i> (Haviland, 1898); <i>Termes latericius</i> Haviland, 1898.	Angola, Botswana, Congo-Zaire [Now Democratic Republic of Congo], Kenya, Malawi, Mozambique, Namibia, Senegal, South Africa, Sudan, Tanzania, Togo, Uganda, Zimbabwe, Zambia (Nkunika 1982, 1986; Silvestri, 1912; Sjöstedt, 1926; Wood and Tomas, 1989).	Southern Province.
	<i>Odontotermes transvaalensis</i> (Sjöstedt, 1902).	<i>Termes transvaalensis</i> Sjöstedt, 1902; <i>Termes tubicola</i> Wasmann, 1902.	Botswana, Ethiopia, Kenya, South Africa, Tanzania, Uganda, Zambia, Zimbabwe (Krishna et al., 2016; Livingstone National Museum Report, Zambia Collection, 2013).	Southern Province.
	<i>Ovambotermes sylvaticus</i> Coaton, 1971.	None.	Namibia, Zambia (Krishna et al., 2016; Sands, 1998).	Lusaka, Lusaka Province.
	<i>Pericapritermes gloveri</i> Harris, 1951.	None.	Tanzania, Zambia (Bouillon and Mathot, 1965; Sands, 1998).	Kalambo Falls on south bank river [08°35'S, 31°13'E], in Northern Province.
	<i>Promitermes massaicus</i> (Sjöstedt, 1907).	<i>Eutermes massaicus</i> Sjöstedt, 1907.	Kenya; Tanzania; uganda; and Zambia (Krishna et al., 2016; Nkunika, 1982).	Southern Province.
	<i>Protermes minimus</i> Ruelle, 1971.	None.	Angola, Congo-Zaire [Now, Democratic Republic of Congo], Guinea, Nigeria, Zambia (Ruelle, 1975a).	Lusaka, in Lusaka Province.
	<i>Protermes minutus</i> Grassé, 1937.	<i>Termes minutus</i> Grassé, 1937.	Angola; Congo-Zaire; Gabon; Guinea; Ivory Coast (Cote d'Ivoire); Nigeria; Sierra Leone; Zambia (Krishna et al., 2016).	Lusaka, in Lusaka Province.
	<i>Protermes mwekeræ</i> Ruelle, 1971.	None.	Zambia (Krishna et al., 2016; Ruelle, 1975 a&b).	Type locality 24 km ex Kitwe-Dola Hill via Mwekera Forest Reserve. In Copperbelt Province of Zambia.
	<i>Pseudacanthotermes militaris militaris</i> (Hagen, 1858).	<i>Acanthotermes militaris minor</i> Sjöstedt, 1913; <i>Termes (Termes) militaris</i> Hagen, 1858.	Angola, Benin, Cameroon, Central African Republic, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Equatorial Guinea, Ethiopia, Gabon, Ghana, Guinea, Ivory Coast (Côte d'Ivoire), Kenya, Malawi, Nigeria, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zambia, Zimbabwe (Coaton and Sheasby, 1977; Nkunika, 1982; Sjöstedt, 1926).	Southern Province.
	<i>Pseudacanthotermes spiniger</i> (Sjöstedt, 1900).	<i>Acanthotermes spiniger kohli</i> Wasmann, 191; <i>Acanthotermes spiniger lujæ</i> Wasmann, 1904; <i>Pseudacanthotermes spiniger maynei</i> Sjöstedt, 1926; <i>Pseudacanthotermes unsigaardi</i> Sjöstedt, 1926; <i>Termes (Acanthotermes) spiniger</i> Sjöstedt, 1900.	Angola, Cameroon, Central African Republic, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Ghana, Guinea, Ivory Coast (Côte d'Ivoire), Kenya, Nigeria, Sudan, Tanzania, Uganda, Zambia (Coaton and Sheasby, 1977; Nkunika, 1982; Wood and Tomas, 1989).	Southern Province.
	<i>Rhadinotermes coarctatus</i> (Sjöstedt, 1902).	<i>Eutermes coarctatus</i> Sjöstedt, 1902.	Congo-Zaire [Now, Democratic Republic of Congo], Malawi, Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe (Bouillon and Mathot, 1966; Coaton and Sheasby, 1974; Sands, 1965; Sands, 1998).	Kabwe, Central Province.
	<i>Spatulitermes coolingi</i> Coaton, 1971.	None.	Namibia, Zambia (Sands, 1998).	Lusaka, in Lusaka Province.
	<i>Synacanthotermes trilobatus</i> Sjöstedt, 1926.	<i>Synacanthotermes angolensis</i> Weidner, 1956; <i>Synacanthotermes heterodon trilobata</i> Sjöstedt, 1926.	Angola, Congo-Zaire [Now, Democratic Republic of Congo], Malawi, Zambia (Krishna et al., 2016; Sands, 1998).	Lusaka, Lusaka Province.
	<i>Synacanthotermes zanzibarensis</i> (Sjöstedt, 1915).	<i>Termes (Synacanthotermes) zanzibarensis</i> Sjöstedt, 1915.	Ethiopia, Kenya, Tanzania, Zambia (Livingstone National Museum Report, Zambia Collection, 2013).	Kitwe, Ndola and Chati in Copperbelt Province.
	<i>Termes boultoni</i> Coaton and Sheasby, 1978.	<i>Termes kalaharicus</i> Irish, 1985: 111 [nomen nudum; name credited to Coaton].	Zambia, Zimbabwe (Nkunika, 1982; Sands, 1998).	Southern Province.
	<i>Thoracotermes lusingensis</i> Harris, 1958.	None.	Angola, Congo-Zaire [Now, Democratic Republic of Congo], Zambia (Krishna et al., 2016; Sands, 1998).	Lusaka, Lusaka Province.
	<i>Trinervitermes bettonianus</i> (Sjöstedt, 1905).	<i>Eutermes bettonianus</i> Sjöstedt, 1905; <i>Eutermes crassinus</i> Sjöstedt, 1914; <i>Eutermes (Trinervitermes) ruficeps</i> Holmgren, 1913; <i>Eutermes segelli</i> Sjöstedt, 1907.	Congo-Zaire [Now, Democratic Republic of Congo], Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia, Zimbabwe (Bouillon and Mathot, 1966; Nkunika 1982, 1986; Sands 1957, 1965; Snyder, 1949).	Southern Province.
	<i>Trinervitermes dispar</i> (Sjöstedt, 1902).	<i>Eutermes dispar</i> Sjöstedt, 1902; <i>Eutermes (Trinervitermes) erythraea</i> Holmgren, 1913; <i>Eutermes gemellus</i> Sjöstedt, 1902; <i>Eutermes groofofonteinsis</i> Sjöstedt, 1914; <i>Eutermes katangensis</i> Sjöstedt, 1913 + 3.	Congo-Zaire [Now, Democratic Republic of Congo], Eritrea, Ethiopia, Kenya, Malawi, Namibia, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe (Bouillon and Mathot 1965, 1966; Nkunika, 1982; Sands 1957, 1965).	Southern Province.
	<i>Trinervitermes gratus</i> (Sjöstedt, 1924).	<i>Eutermes (Trinervitermes) carbo</i> Sjöstedt, 1924; <i>Eutermes (Trinervitermes) gratus</i> Sjöstedt, 1924.	Angola, Burundi, Congo-Zaire [Now, Democratic Republic of Congo], Kenya, Rwanda, Tanzania, Uganda, Zambia (Krishna et al., 2016; Nkunika, 1982, 1986).	Southern Province.
	<i>Trinervitermes occidentalis</i> (Sjöstedt, 1904).	<i>Eutermes occidentalis</i> Sjöstedt, 1904; <i>Nasutitermes (Trinervitermes) bettonianus sulciiceps</i> Emerson, 1928; <i>Nasutitermes (Trinervitermes) lutzii</i> Emerson, 1928; <i>Trinervitermes auriterra</i> Sjöstedt, 1926; <i>Trinervitermes maudanicus</i> Sjöstedt, 1926.	Central African Republic, Congo-Zaire [Now, Democratic Republic of Congo], Ethiopia, Ghana, Guinea-Bissau, Ivory Coast (Cote d'Ivoire), Nigeria, Sierra Leone, Uganda, Zambia (Bouillon and Mathot, 1965, 1966; Krishna et al., 2016).	Lusaka, in Lusaka Province.
	<i>Trinervitermes rhodesiensis</i> (Sjöstedt, 1911)	<i>Eutermes agricola</i> Sjöstedt, 1913; <i>Eutermes brutus</i> Sjöstedt, 1911; <i>Eutermes (Trinervitermes) diplacodes</i> Sjöstedt, 1924; <i>Eutermes (Trinervitermes) kalaharicus</i> Holmgren, 1913; <i>Eutermes (Trinervitermes) loubetsiensis</i> Sjöstedt, 1924 + 6.	Angola, Botswana, Central African Republic? Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Namibia, South Africa, Tanzania, Zambia, Zimbabwe (Bouillon and Mathot, 1966; Nkunika, 1982; Sands, 1965).	Southern Province.
	<i>Unguitermes proclivifrons</i> Ruelle, 1973.	None.	Zambia (Krishna et al., 2016; Ruelle, 1975).	Type locality, 30 km ex Kitwe-Dola via Mwekera Forest Reserve, Copperbelt Province of Zambia.

Table 3: Checklist of Blattodea of Zambia: Families Rhinotermitidae, Kalotermitidae and Hodotermitidae.

Family	Scientific name	Synonym(s)	Distribution	Location in Zambia
Superfamily BLATTOIDEA: Epifamily Termitoidae				
Rhinotermitidae	<i>Coptotermes amanii</i> (Sjöstedt, 1911).	<i>Eutermes (Coptotermes) amanii</i> Sjöstedt, 1911	Ethiopia, Kenya, Malawi, Somalia, South Africa (introduced from East Africa), Tanzania, Zambia, Zimbabwe (Krishna et al., 2016).	Lusaka, in Lusaka Province.
	<i>Schedorhinotermes lamanianus</i> (Sjöstedt, 1911).	<i>Rhinotermes bequaertianus</i> Sjöstedt, 1913; <i>Rhinotermes havilandi</i> Van Boven, 1969; <i>Rhinotermes lamanianus</i> Sjöstedt, 1911; <i>Rhinotermes (Schedorhinotermes) lamanianus angulatus</i> Emerson, 1928; <i>Schedorhinotermes provisorius</i> Grasse, 1937 + 1.	Angola, Congo-Brazzaville, Congo-Zaire [Now, Democratic Republic of Congo], Ghana, Guinea, Ivory coast, Kenya, Malawi, Mozambique, Namibia, Nigeria, Sierra Leone, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe (Coaton and Sheasby, 1973b; Maiti, 2006; Nkunika, 1982).	Southern Province.
Kalotermitidae	<i>Bifiditermes sibayiensis</i> (Coaton, 1949).	<i>Kalotermes sibayiensis</i> Coaton, 1949.	Namibia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe (Coaton and Seasby, 1980; Nkunika, 1982).	Southern Province.
Hodotermitidae	<i>Hodotermes mossambicus</i> (Hagen, 1853) *.	<i>Hodotermes (Hodotermes) bloemfonteinensis</i> Sjöstedt, 1926; <i>Hodotermes braini</i> Fuller, 1915; <i>Hodotermes havilandi</i> Sharp, 1895; <i>Hodotermes karrooensis</i> Fuller, 1915; <i>Hodotermes macrothorax</i> Sjöstedt, 1914 + 6.	Angola, Botswana, Ethiopia, Kenya, Malawi, Mozambique, Namibia, South Africa, Tanzania, Uganda, Zambia (Krishna et al., 2016; Nkunika 1982, 1986; Pinhey, 1975; Sands, 1998).	Victoria Falls region in Southern Province; Kafue** and Lower Zambezi** National Parks, in Lusaka Province; Chisamba**, in Central Province.

Table 4. Checklist of Blattodea of Zambia: Family Blattellidae.

Family	Scientific name	Synonym(s)	Distribution	Location in Zambia
Superfamily BLABEROIDEA Saussure, 1864.				
Blattellidae (= Ectobiidae Wood Cockroaches)	<i>Anaplecta cincta cincta</i> Gerstaecker, 1883.	<i>Anaplecta cincta</i> (Gerstaecker, 1883).	Angola, Democratic Republic of Congo, Gabon, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014).	Chingola, in Copperbelt Province.
	<i>Blattella germanica</i> (Linnaeus, 1767). *	<i>Blatta asiatica</i> (Pallas, 1773); <i>Blatta bivittata</i> Serville, 1838; <i>Blatta daunca</i> (Laxmann, 1769); <i>Blatta daurica</i> Laxmann, 1769; <i>Blatta germanica</i> Linnaeus, 1767 + 20.	Cosmopolitan [Asian origin]; The German cockroach is found throughout the world in association with humans. Cameroon, Congo-Brazzaville, Democratic Republic of Congo, Kenya, Madagascar, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; Ministry of Environment and Natural Resources, 1998; Mbata, 1998; Plant Pests and Diseases Act No. 13. 1994).	Lusaka** in Lusaka Province; Monze and Livingstone in the Southern Province; Ndola and Kitwe in Copperbelt Province; Solwezi** in Northwestern Province; Mongu in Western Province; Chipata in Eastern Province; Mansa in Luapula Province; Luwingu in Northern Province.
	<i>Blattella lobiventris</i> (Saussure, 1895).	<i>Blatta lobiventris</i> Saussure, 1895; <i>Blatta madecassa</i> Saussure, 1895; <i>Blatta scoiana</i> (Adelung, 1905); <i>Blattella pallidula</i> Werner, 1907; <i>Blattella schuborzi</i> Shelford, 1912 + 8.	Angola, Burkina Faso, Burundi, Cameroon, Congo-Brazzaville [= Republic of Congo], Democratic Republic of Congo, Equatorial Guinea, Ethiopia, Guinea, Ivory Coast, Kenya, Madagascar, Mozambique, Namibia, Rwanda, Sierra Leone, South Africa, Spanish Guinea, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Gorges, east of Victoria Falls and Livingstone, in Southern Province.
	<i>Burchellia navei</i> Shelford, 1913.	<i>Hemithyrocoera navei</i> (Shelford, 1913).	Democratic Republic of Congo, Ghana, Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chililabombwe, in Copperbelt Province.
	<i>Burchellia vinula</i> (Stal, 1856).	<i>Blatta vinula</i> (Stal, 1856).	Angola, Democratic Republic of Congo, Mozambique, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chililabombwe, in Copperbelt Province.
	<i>Ectobius africanus</i> (Saussure, 1899).	<i>Ectobius (Ectobius) africanus</i> Saussure, 1899.	Angola, Central African Republic, Democratic Republic of Congo, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka, in Lusaka Province.
	<i>Ectobius makalaka</i> Rehn, 1931.	<i>Ectobius fernandesi</i> (Harz, 1975); <i>Ectobius ferrum-equinum</i> (Costa, 1866); <i>Ectobius helvetica</i> (Hagenbach, 1822); <i>Ectobius lapponicus picta</i> (Adelung, 1917); <i>Ectobius (Ectobius) makalaka</i> Rehn, 1931.	Malawi, Spain, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Mpika, in Muchinga Province; Kapiri Mposhi, in Central Province.
	<i>Matabelina backlundii</i> Princis, 1969.	None.	Democratic Republic of Congo, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka, Lusaka Province.
	<i>Matabelina ectobioides</i> (Shelford, 1910).	<i>Tennopteryx ectobioides</i> (Shelford, in Sjöstedt 1910)	Rwanda, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Kafue and Lusaka, in Lusaka Province.
	<i>Stayella abnormalis</i> (Roth, L. M., 1984).	None.	Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka, in Lusaka Province.
	<i>Stayella bimaculata</i> (Gerstaecker, 1869).	<i>Phyllodromia bimaculata</i> (Gerstaecker, 1869); <i>Symploce bimaculata</i> (Gerstaecker, 1869); <i>Symploce backlundii</i> Princis, 1963; <i>Symploce massaica</i> Princis, 1951.	Angola, Democratic Republic of Congo, Kenya, Mozambique, Tanzania, Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Mbala, in Northern Province.
	<i>Supella dimidiata</i> (Gerstaecker, 1869).	<i>Aphlebia transvaaliensis</i> (Kirby, 1900); <i>Ceratinoptera dimidiata</i> Gerstaecker, 1869; <i>Ceratinoptera hottentotta</i> (Saussure, 1899); <i>Phyllodromia delta</i> Kirby, 1900; <i>Supella delta</i> (Kirby, 1900) + 5.	Angola, Botswana, Democratic Republic of Congo, Eritrea, Kenya, Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Kalabo, in Western Province; Kabwe, in Central Province.
	<i>Supella supellectilium</i> Serville, 1838. *	<i>Blatta cubensis</i> Saussure, 1862; <i>Blatta extenuata</i> Walker, 1868; <i>Blatta incisa</i> Walker, 1868; <i>Blatta longipalpa</i> Fabricius, 1798; <i>Blatta phalerata</i> Saussure, 1863 + 8.	Algeria, Gambia, Namibia, South Africa, Sudan, Tanzania, Togo, Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Gorges**, east of Victoria Falls in Livingstone, Southern Province; Lower Zambezi valley, Lusaka Province.
	<i>Symploce incuriosa</i> (Saussure, 1899).	<i>Ischnoptera incuriosa</i> (Saussure, 1899); <i>Ischnoptera pitmani</i> Hanitsch, 1929; <i>Ischnoptera uniramosa</i> Karny, 1908; <i>Phyllodromia trigonalis</i> Saussure, 1899; <i>Symploce pitmani</i> (Hanitsch, 1929); <i>Symploce trigonalis</i> (Saussure, 1899).	Botswana, Namibia, South Africa, Tanzania, Uganda, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chingola, in Copperbelt Province.
	<i>Theganopteryx obscura</i> (Shelford, 1911).	None.	Democratic Republic of Congo, Mozambique, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chingola, in Copperbelt Province.
	<i>Theganopteryx rhodesiae</i> (Shelford, 1913).	None.	Cameroon, Democratic Republic of Congo, Rwanda, Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Environs of Lake Bangweulu, in Luapula Province.

Table 5. Checklist of Blattodea of Zambia: Blaberidae and Corydiidae.

Family	Scientific name	Synonym(s)	Distribution	Location in Zambia
Superfamily BLABEROIDEA Saussure, 1864.				
Blaberidae (Giant Cockroaches)	<i>Cyrtotria capucina</i> (Gerstaecker, 1869).	<i>Agis basilewskyi</i> Princis, 1955; <i>Cyrtotria basilewskyi</i> Princis, 1955; <i>Cyrtotria somali</i> (Saussure & Zehntner, 1895); <i>Derocalymna capucina</i> (Gerstaecker, 1869); <i>Stenopilema somali</i> Saussure & Zehntner, 1895.	Democratic Republic of Congo, Djibouti, Ethiopia, Kenya, Rwanda, Somaliland [Now, Somalia], Tanzania, Tanzania (Zanzibar Island), Uganda, Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Samfya, in Luapula Province.
	<i>Derocalymna lampyrina</i> Gerstaecker, 1869.	<i>Derocalymna bottegoiana</i> Saussure & Zehntner, 1895; <i>Derocalymna punctata</i> Saussure & Zehntner, 1895.	Angola, Cameroon, Central African Republic, Democratic Republic of Congo, Djibouti, Ethiopia, Kenya, Mozambique, Namibia, Somalia, South Africa, Sudan, Tanzania, Uganda, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chirundu bridge, in Lusaka Province.
	<i>Derocalymna porcellio</i> Gerstaecker, 1869.	<i>Derocalymna bipapilla</i> (Kirby, 1900); <i>Derocalymna erythreiana</i> Saussure & Zehntner, 1895; <i>Homalodemus bipapilla</i> Kirby, 1900.	Angola, Democratic Republic of Congo, Djibouti, Ethiopia, Kenya, Malawi, Mozambique, Somalia, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Kasama, in Northern Province.
	<i>Derocalymna silphoides</i> Bolivar, 1889.	None	Angola, Botswana, Namibia, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Kafue, Lusaka Province.
	<i>Eustegasta poecila</i> (Schaum, 1853). *	<i>Eustegasta obsoleta</i> Kirby, 1900; <i>Eustegasta rhodesiana</i> Princis, 1949; <i>Panchlora poecila</i> (Schaum, 1853)	Kenya, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3; Ministry of Environment and Natural Resources, 1998; Mbata, 1998; Pinhey, 1975).	Victoria Falls Region at gorges**, east of Victoria Falls in Livingstone, Southern Province.
	<i>Gyna kazungulana</i> Giglio-Tos, 1907.	None.	Zambia (Only) (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Kazungula (Type locality) in Southern Province.
	<i>Gyna maculipennis</i> (Schaum, 1853). *	<i>Gyna fervida</i> (Saussure, 1864); <i>Gyna insignata</i> (Kirby, 1896); <i>Gyna vetula</i> Brunner von Wattenwyl, 1865; <i>Panchlora fervida</i> Saussure, 1864; <i>Panchlora lata</i> Walker, 1868 + 2.	Angola, Benin, Cameroon, Democratic Republic of Congo, Gambia, Ghana, Ivory Coast, Kenya, Mozambique, Nigeria, Senegal, Sierra Leone, Swaziland, Tanzania, Togo, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3; Ministry of Environment and Natural Resources, 1998; Mbata, 1998; Pinhey, 1975).	Victoria Falls Region, at gorges**, east of Victoria Falls in Livingstone, Southern Province; Kafue Riverside Motel (RIMO)** in Kafue, Lusaka Province.
	<i>Gynopeltis cryptospila</i> (Walker, 1868). *	<i>Gynopeltis picta</i> Gerstaecker, 1869; <i>Polyphaga cryptospila</i> (Walker, F., 1868); <i>Polyphaga erythrospila</i> Saussure, 1893.	Kenya, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Kafue**, in Lusaka Province.
	<i>Gynopeltis newei</i> Shelford, 1909.	None	Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka, in Lusaka Province.
	<i>Nauphoeta cinerea</i> (Olivier, 1789).	<i>Blatta cinerea</i> (Olivier, 1789); <i>Blatta elegans</i> Eschscholtz, 1822; <i>Blatta gallica</i> Fabricius, 1793; <i>Nauphoeta bivittata</i> Burmeister, 1838; <i>Nauphoeta gallica</i> (Fabricius, 1793); <i>Nauphoeta grisea</i> Burmeister, 1838.	Caribbean islands, China, Ecuador, Great Britain, India, Indonesia, Mozambique, Netherlands, Swaziland, Sweden, Taiwan, Tanzania, Zambia (Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka, in Lusaka Province; Kabwe, in Central Province.
	<i>Phenacisma semialata</i> Shelford, 1909.	None.	Mozambique, Tanzania, Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chingola, in Copperbelt Province.
	<i>Platysilpha murina</i> (Walker, 1868).	<i>Perisphaeria murina</i> (Walker, F., 1868).	Mozambique, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Mpika, in Muchinga Province.
	<i>Pseudocololampra pardalina</i> (Walker, 1868).	<i>Calolampra aptera</i> Schulthess, 1898; <i>Calolampra arborifera</i> Hanitsch, 1939; <i>Calolampra pardalina</i> (Walker, F., 1868); <i>Epilampra pardalina</i> Walker, F., 1868; <i>Pseudocololampra aptera</i> (Schulthess, 1898) + 1.	Botswana, Democratic Republic of Congo, Djibouti, Ethiopia, Kenya, Mozambique, Namibia, Rwanda, Somalia, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chililabombwe, in Copperbelt Province.
	<i>Pseudogyna intermedia</i> Shelford, 1909.	None.	Zambia (Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka, in Lusaka Province.
	<i>Rhyarobia maderae</i> (Fabricius, 1781).	<i>Blatta maderae</i> (Fabricius, 1781); <i>Blatta maderensis</i> Jones, 1859; <i>Blatta major</i> Palisot de Beauvois, 1805; <i>Blatta tuberculata</i> Thunberg, 1810; <i>Leucophaea maderae</i> (Fabricius, 1781) + 6.	Brazil, Cameroon, Caribbean islands, Chile, Colombia, Democratic Republic of Congo, Ecuador, Madagascar, Mexico, Netherlands, Nigeria, Portugal, Spain, Sweden, Tanzania, USA, Zambia (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Chililabombwe, in Copperbelt Province.
Superfamily CORYDIOIDEA Saussure, 1864.				
Corydiidae (Sand cockroaches)	<i>Ergaula capensis</i> (Saussure, 1893).	<i>Dyscologamia wollastoni</i> Kirby, 1909	Angola, Cameroon, Congo-Brazzaville, Democratic Republic of Congo, Kenya, Nigeria, Tanzania, Tanzania (Zanzibar Island), Uganda, Zambia, Zimbabwe (Catalogue of life, 2016; Beccaloni, 2014; IUCN Red List of Threatened Species. Version 2016-3).	Lusaka, Lusaka Province.

A total of 27 genera of cockroaches are reported to occur in Zambia (Tab. 6). They are represented by 43 species and three subspecies. None of the 43 species of cockroaches has yet been evaluated for the IUCN (2016) Red List.

There are 38 genera of termites known to occur in Zambia. These include 87 species and one subspecies (Table 7). *Odonototermes latericius latericius* (Haviland, 1898), the nominate subspecies of *Odonototermes latericius* (Haviland, 1898), was

the only subspecies reported to occur in the country in the literature.

Similar to the situation of cockroaches known to occur in Zambia reported in this paper, none of these 87 species of termites has been evaluated for the IUCN red list of threatened species to date.

Table 6: Numbers of cockroaches (Order Blattodea) known to occur in Zambia.

Family	Number of Genera	Number of Species	Number of Subspecies
Blattidae	6	12	2
Blattellidae	9	15	1
Blaberidae	11	15	0
Corydiidae	1	1	0
TOTAL	27	43	3

Table 7: Numbers of termites (Order Blattodea) known to occur in Zambia.

Family	Number of Genera	Number of Species	Number of Subspecies
Termitidae	34	83	1
Rhinotermitidae	2	2	0
Kalotermitidae	1	1	0
Hodotermitidae	1	1	0
TOTAL	38	87	1

Table 8 presents the distribution of cockroaches and termites known to occur in Zambia by province. The province with the largest numbers of reported species and subspecies of both cockroaches and termites is the Southern Province. This is followed by Lusaka Province. Copperbelt Province is the third, while the least known province regarding these two groups of insects, is the Western Province. The occurrence of seven species of cockroaches and two species of termites in Zambia was confirmed during the biodiversity field surveys. The cockroach species were: *Blatta orientalis* (Linnaeus, 1758), *Periplaneta americana* (Linnaeus, 1758), *Blattella germanica* (Linnaeus, 1767), *Supella supellectilium* (Serville, 1838), *Eustegasta poecila* (Schaum, 1853), *Gyna maculipennis* (Schaum, 1853), and *Gynopeltis cryptospila* (Walker, 1868), while the termite species are *Macrotermes falciger* (Gerstäcker, 1891), and *Hodotermes mossambicus* (Hagen, 1853). Some cockroach specimens and particularly those of termites collected from the field are not known and not yet determined whether or not they are new species. The unknown termite specimens have also not yet been compared with preserved specimens in the Livingstone National Museum for identification.

Discussion

Cockroaches: Superfamilies Blattoidea (Epifamily Blattoidea), Blaberoidea, and Corydioidea

The 43 species and three subspecies of cockroaches found to occur in Zambia in this study are a very large number compared to the 11-cockroach species recorded in the country's first National Biodiversity Strategy and Action Plan (NBSAP1). This difference in number is not surprising, however, as the study in 1998 was done in one -month.

The numbers of genera (27), species (43) and subspecies (3) of cockroaches reported for Zambia in this paper, are comparable to those of other countries in the region of southern Africa. The Southern Africa region as a whole has a total of 48 genera and 175 species of cockroach-

Table 8. Numbers of species and subspecies of cockroaches and termites in Zambia by province.

#	PROVINCE	COCKROACHES	TERMITES
		(Order Blattodea: Superfamilies Blattoidea [Epifamily Blattoidea], Blaberoidea, and Corydioidea).	(Order Blattodea: Superfamily Blattoidea: [Epifamily Termitoidea])
1	Central	5	6
2	Copperbelt	12	14
3	Eastern	2	2
4	Luapula	3	4
5	Lusaka	20	25
6	Muchinga	3	3
7	Northern	5	8
8	Northwestern	3	1
9	Southern	21	47
10	Western	3	0

es from the Blattidae, Blattellidae, and Blaberidae families (Marshall, 1989). The total number of cockroach species occurring in South Africa for all families represented in the country is 35 (Biodiversityadvisor.sanbi.org., 2018). Other countries in southern Africa have not yet published checklists of their termites.

In terms of conservation, however, when the 43 species of cockroaches reported for Zambia in this paper were subjected to the IUCN's test, it was discovered that none has ever been evaluated for the IUCN red list of threatened species. Thus, their conservation statuses are still not known. The preparation of checklists of the different plant and animal taxa occurring in a country is important for conservation and determining the IUCN status of a given species is important in that it helps a country prioritize which taxa need to be conserved at a given time.

It should be noted, however, that there is a high possibility that some species of cockroaches present in the country could have been missed in this study, as sampling occurred in a limited number of places not representing all ecosystems. It was not possible to visit all provinces in Zambia because of the cost of conducting biodiversity surveys in the country. The survey group was large, requiring the hiring of three 4x4 vehicles, two with trailers. Furthermore, most of the surveys were done during the dry season in the country, when there are fewer insects in the environment, as many are in cryptic stages such as aestivating eggs and other inconspicuous insect developmental stages. But the 43 -species identified in this study, as indicated earlier, can be considered the baseline number of cockroaches for the country.

Termites: Superfamily Blattoidea (Epifamily Termitoidea)

According to Ruelle (1989) there are 50 genera and 210 species of termites in southern Africa. Zambia's 38 genera and 87 species reported in this paper could indicate that many more species known to occur in other parts of the region could be present and are yet to be found and collected in the country. Many other southern Africa countries do not have checklists for their termites. Outside southern Africa however, the numbers of genera and species of termites in other African countries are comparable with what has been determined for Zambia in this study. In Ethiopia in northern Africa for example, there are 25 genera and 61 species of termites (Cowie et al. 1990).

Among the termites, reported to exist in Zambia, some are crop pests. For instance, *Macrotermes bellicosus* (Smeathman, 1781), *Macrotermes falciger* (Getstäcker, 1891), *Macrotermes michaelseni* (Sjöstedt, 1914), *Macrotermes natalensis* (Haviland, 1898), *Macrotermes subhyalinus* (Rambur, 1842) and *Macrotermes vatrialatus* (Sjöstedt, 1899), are polyphagous general feeders that occasionally damage a wide range of crops including; cotton, coconut, coffee, cocoa, clove, groundnuts, rice, sugarcane fruit trees and forest trees (Hill, 2008). *Odontotermes badius* (Haviland 1898) and *Odontotermes latericius* (Haviland, 1898), also polyphagous feeders, attack a range of crops both as seedlings and as grown plants such as sugarcane, cotton and tea. They also destroy the wood of buildings. *Pseudacanthotermes militaris militaris* (Hagen, 1858), the so-called sugarcane termite, not only attacks sugarcane but also destroys bamboo structures

including fences. *Hodotermes mossambicus* (Hagen, 1853), the harvester termite, attacks various grass species including maize and also impacts cotton.

For Zambia, other parts of tropical Africa and some parts of the tropical world, however, classifying these insects as pests is questionable. The term pest has the connotation that an organism in question is not beneficial to man. Some of the so-called termite pests especially the *Macrotermes* species mentioned above are edible (Mbata, 1995). Many ethnic groups in Zambia, tropical Africa and the tropical world, consume these insects so the species are beneficial to these people (Mbata, 1995). In Zambia the *Macrotermes* species are delicacies for both rural and urban communities. Alates of the species are collected during their nuptial flights that occur at the start of the rainy season in the country (November to March) and consumed as snacks and/or relish.

Only 36 species of termites were reported to occur in Zambia in the NB-SAP1 (Chidumayo & Aongola, 1998; Mbata, 1998). This number has now risen to 87. Nevertheless, none of the 87 species and the one subspecies of termites found in Zambia has been evaluated for their IUCN conservation status. Again, an immediate question that comes to mind is, why conserve organisms some of which are pests to man? The answer is that any given organism on earth is essential to the normal functioning of the planet's ecosystem(s).

Nkunika (1982) reported the presence of 41 species of termites in the Southern Province of Zambia alone. The species were grouped in 27 genera. He reported that the distribution of the termite species in the province was related to rainfall and the distribution of vegetation zones. Again, as stated in the cockroach section above, the actual number of termite species in Zambia is likely to be higher than the 87 found in this study. More work is required to ascertain this but in the mean time, the number 87 serves as a baseline for the future study of termite diversity in the country.

Finally, the intention of the author is to describe those cockroach and termite species that will be determined to be new

species from specimen samples collected in various parts of the country in this study. For the purposes of this study, though the numbers of species of both cockroaches and termites found to have been reported to occur in Zambia in the literature and the few of those that were confirmed to occur in the country through the field surveys, are thought to be enough to serve as baseline data for the biodiversity of the two groups of insects in the country for future conservation programmes of the groups and further research.

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