

INTRODUCTION

Bombyliids, or bee flies as they are commonly called, comprise a diverse and speciose assemblage of brachycerous flies. With more than 4,780 species known worldwide, they are one of the largest families of Diptera, surpassed in numbers of species only by the Limoniidae (10,600), Tachinidae (9,600), Dolichopodidae (7,300), Chironomidae (7,300), Syrphidae (6,100), Asilidae (7,500), Ceratopogonidae (5,900), and Muscidae (5,200). They occur in a variety of habitats and ecosystems (from ca. 10 km from the Arctic Ocean in Canada through all latitudes as far south as Tierra del Fuego; and at altitudes from more than 3500 m in the Himalayas to 200 m below sea level at the shores of the Dead Sea. They are found on all continents except Antarctica and also many oceanic islands. The family has a remarkable range in size (from some *Exoprosopa* with wingspans of more than 60 mm to the tiny *Apolysis* that can be as small as 1.5 mm in length) and variety of shapes (e.g., *Systropus* mimicking ammophiline wasps; *Bombomyia* mimicking bumblebees). The adults of the larger species are powerful and agile fliers, rivaling the syrphid flies in their ability to hover and move in all directions while in flight. With many species possessing colorful patterns of stripes and spots on the wings and bodies, bee flies are often some of the most striking in appearance of all the Diptera.

Individuals can often be seen either resting in the open on trails or on rocks or twigs sunning themselves, or feeding on a variety of flowering plants. Adults (except the few genera with nonfunctional mouthparts such as *Oestranthrax*) are nectar feeders and females are obligate pollen feeders, obtaining pollen from anthophilous plants as a necessary requirement for the nourishment of developing ova. As a result of this pollen and nectar feeding, bombyliids are often major pollinators of many flowering plants, especially those occurring in the more desertic regions of our planet. Recent studies have shown that some plants depend on bee flies for pollination so that the survival of some endangered plant species may depend on preserving their bee fly pollinators.

Immatures are poorly known as a whole, yet of those that have been reared, most are primarily parasitoids on the immatures of holometabolous insects (see Yeates & Greathead, 1997 for the most recent review of the parasitic habits of the family). Still others are known to prey on the egg pods of orthopterans and one species (*Petrorossia feti*) has been recorded from the egg mass of a spider. Some species are important natural enemies of major pests including locusts and grasshoppers, armyworms, slug and nettle caterpillars, and tsetse. Others develop in nests of solitary wasps and bees and are occasionally considered to be pests when they kill the larvae of bees being bred as pollinators for crops. Thus, bee flies are of economic importance as well as an attractive group of insects for studies on biodiversity and evolution.

This revised edition of the original 1999 catalog assembles together in one place all the taxonomic information necessary for systematic reference on every name described in association with this family. A previous study of the genus-group names of the family (Evenhuis, 1991a) provided the basis for the 1999 work. This revised edition covers all the known names of taxa of Bombyliidae in the printed literature. This includes all incorrect original spellings of taxa, emendations (whether justified or unjustified), and as many *nomina nuda* as could be found during this study. In order to provide completeness and accuracy, all the original literature was examined by at least one of us.

In preparing this catalog every effort has been made to trace all names used for Bombyliidae and where possible to determine the identity of the species and whether it is recognized under another name. During this process type material has been examined in major type depositories in Europe and North America and many new synonyms proposed. Sadly, several familiar names have fallen into synonymy with earlier names and in other

instances new replacement names have had to be proposed where it has been discovered that the name in use is preoccupied. However, in the course of our examination of type material we have been able to establish the identity of a number of species hitherto not recognized since they were described.

This process has also enabled us to name the type depository for most species, to indicate the nature of the type material, and to designate lectotypes in many instances. We have also provided notes on these designations as well as certain collections, authors, and type depositories as an aid to those who will wish to follow up our work. Other supporting material includes a list of collectors of type specimens and appendices explaining certain changes made in the catalog, which may appear unjustified without explanation and clarification of the characters defining the species involved.

Bombyliid species are typically and most frequently encountered in arid areas and constitute a high percentage of the diversity of flies in the more desertic regions of the earth [although some genera (e.g., *Euchariomyia*, *Ligyra s. lat.*, *Palintonus*, *Systropus*) prefer tropical latitudes] and have good potential as indicators of biodiversity in these regions. A scan of the summary totals for each region in the Classification table below shows the Palearctic Region (1,478 spp.) to be the most diverse of all the zoogeographical realms with the Afrotropical Region (1,433 spp.) close behind in numbers of species-group taxa. This is no doubt a result of the combination of the activity of work in these two regions over the years by bombyliid specialists and the relatively large area comprised by each. Contrastingly, the Neotropical (467 spp.) and Oriental (311 spp.) regions, though with small numbers of described species, also have relatively large total areas with suitable habitats and hosts for bombyliids and should be expected to harbor many more species than are shown in the table. More concentrated collecting and resultant systematic work on taxa in these regions should help increase these numbers of species significantly.

Clarification of the generic concepts and concurrent recognition of *Heteralonia* (Bowden, 1975c, 1980) and the recent erection of new genera allied to *Bombylius* (Greathead, 1995) and new Australian genera allied to *Ligyra* and *Exoprosopa* (Lambkin *et al.*, 2003) has dramatically reduced the number of species contained in two of the largest genera of Bombyliidae: *Exoprosopa* and *Bombylius*. However, despite the resultant transfer of hundreds of species to other genera, they still remain the two most speciose of the bombyliids (*Exoprosopa*—335; *Bombylius*—286). Other bombyliid genera commanding the attention of biodiversity enthusiasts include *Villa* (280 spp.), *Anthrax* (249 spp.), *Geron* (196 spp.), and *Systropus* (175 spp.).

A total of 6,163 species-group names occur in the Bombyliidae. Of these, 5,826 are nomenclaturally valid and 4,781 are here deemed taxonomically valid.

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CLASSIFICATION

Since Becker (1913) there have been various efforts at estimating a phylogenetic classification of the Bombyliidae. Most have been done on a restricted basis (regional or taxonomic). The only worldwide and generically comprehensive analysis done on the family was by Yeates (1994). His work remains the standard and resulted in significant advances in our knowledge of the relationships among the genera and subfamilies of the bee flies.

The following is the classification used in this work for the Bombyliidae s. str., which is based on the original catalog classification (Evenhuis & Greathead, 1999).

TAXON	DISTRIBUTION							total
	AF	PA	NE	NO	OR	AU	PI	
Oligodraninae								
Oligodranes Loew, 1844		3						3
Usiinae								
Apolysini								
Apolysis Loew, 1860	29	18	73	2	2			123
Usiini								
Parageron Paramonov, 1929	1	18			1			19
Usia Latreille, 1802	5	47			1			49
Unplaced Usiinae		12					1	13
Phthiriinae								
Phthiriini								
Acreophthiria Evenhuis, 1986			3					3
Acreotrichus Macquart, 1850						3		3
Australiphthiria Evenhuis, 1986						3		3
Elektrophthiria Nel, 2006		1						1
Neacreotrichus Cockerell, 1917			13	1				13
Phthiria Meigen, 1820	22	42	1	6	1		1	73
Pygocona Hull, 1973						2		2
Poecilognathini								
Euryphthiria Evenhuis, 1986			2					2
Poecilognathus Jaenicke, 1867			11	6				14
Relictiphthiria Evenhuis, 1986			4					4
Tmemophlebia Evenhuis, 1986			13	3				16
Unplaced Phthiriinae							1	1
Toxophorinae								
Gerontinae								
Geron Meigen, 1820	64	33	32	13	3	34	1	196
Systropodini								
Dolichomyia Wiedemann, 1830			3	5				8
Melanderella Cockerell, 1909			1					1
Paradolichomyia Nel & De Ploëg, 2004		1						1
Systropus Wiedemann, 1820	43	44	16	24	58	2		175
Zaclava Hull, 1973						4		4
Toxophorini								
Toxophora Meigen, 1803	18	15	10	12	1	1		50
Heterotropinae								
Heterotropus Loew, 1873	13	40			2			48
Bombyliinae								
Acrophthalmydini								
Acrophthalmyda Bigot, 1858				2				2
Bombyliini								
Adelidea Macquart, 1840		8						8
Anastoechus Osten Sacken, 1877	30	59	4		4			92
Australoechus Greathead, 1995	29							29
Beckerellus Greathead, 1995	3	1						4
Bombomyia Greathead, 1995	17	2			2			21
Bombylella Greathead, 1995	15	8			2			24
Bombylisoma Rondani, 1856	23	15			2			38

TAXON	DISTRIBUTION							total
	AF	PA	NE	NO	OR	AU	PI	
Bombylius Linnaeus, 1758	23	154	109	12	11			286
Bromoglycis Hull, 1971						1		1
Brychosoma Hull, 1973						3		3
Cacoplox Hull, 1970				1				1
Choristus Walker, 1852						2		2
Conophorina Becker, 1920	1							1
Cryomyia Hull, 1973						2		2
Dischistus Loew, 1855	7	18						25
Doliogethes Hesse, 1938	17							17
Efflatounia Bezzi, 1925		2						2
Eremyia Greathead, 1996	1	2			1			3
Eristalopsis Evenhuis, 1985						3		3
Euchariomyia Bigot, 1888					3			3
Euprepina Hull, 1971				10				10
Eurycarenum Loew, 1860	14				1			15
Eusurbus Roberts, 1929						2		2
Gonarthus Bezzi, 1921	31							31
Heterostylum Macquart, 1848			5	11				16
Isocnemus Bezzi, 1924	1							1
Karakumia Paramonov, 1927		1						1
Laurella Hull, 1971						2		2
Lepidochlanus Hesse, 1938	1							1
Mandella Evenhuis, 1983						5		5
Meomyia Evenhuis, 1983						10		10
Merleus Zaitzev, 2003		1						1
Muscatheres Evenhuis, 1986				1				1
Nectaropota Philippi, 1865				1				1
Neobombylodes Evenhuis, 1978		4						4
Neodischistus Painter, 1933				3				3
Nothoschistus Bowden, 1985				4				4
Parachistus Greathead, 1980		1						1
Parasystoechus Hall, 1976				10				10
Parisus Walker, 1852	44	2			1			47
Pilosia Hull, 1973						2		2
Semistoechus Hall, 1976				1				1
Sericusia Edwards, 1937				1				1
Sisyromyia White, 1916						12		12
Sisyrophanus Karsch, 1886	8							8
Sosiomyia Bezzi, 1921	1							1
Staurostichus Hull, 1973						13		13
Systoechus Loew, 1855	91	20	5		4			117
Tovlinius Zaitzev, 1979		3						3
Triplasius Loew, 1855	4	4						8
Triploecheus Edwards, 1937			4	4				8
Xerachistus Greathead, 1995	5	1						5
Zinnomyia Hesse, 1955	3							3
Conophorini								
Aldrichia Coquillett, 1894			2					2
Conophorus Meigen, 1803		52	16					68
Geminaria Coquillett, 1894			2					2
Hallidia Hull, 1970				1				1
Legnotomyia Bezzi, 1902	1	9						10
Lordotus Loew, 1863			29					29
Notolegnotus Greathead & Evenhuis, 2001	1							1
Othniomyia Hesse, 1938	1							1
Platamomyia Brèthes, 1925				1				1
Prorachthes Loew, 1868	2	8			1			10
Sparnopolius Loew, 1855			5	3				5
Unplaced Bombyliinae	5	1		4		9	2	21
Eclimini								
Alepidophora Cockerell, 1909			4					4
Cyrtomyia Bigot, 1892				2				2

TAXON	DISTRIBUTION							total
	AF	PA	NE	NO	OR	AU	PI	
<i>Eclimus</i> Loew, 1844		2						2
<i>Lepidophora</i> Westwood, 1835			3	6				8
<i>Marmosoma</i> White, 1916						1		1
<i>Palintonus</i> François, 1964	1							1
<i>Paratoxophora</i> Engel, 1936	1							1
<i>Thevenetimyia</i> Bigot, 1875	1	4	28	2		6	1	37
<i>Tillyardomyia</i> Tonnoir, 1927						1		1
Crocidiinae								
<i>Adelogenys</i> Hesse, 1938	3							3
<i>Apatomyza</i> Wiedemann, 1820	12							12
<i>Crocidium</i> Loew, 1860	22	2						24
<i>Desmatomyia</i> Williston, 1895			3					3
<i>Inyo</i> Hall & Evenhuis, 1987			2					2
<i>Mallophthiria</i> Edwards, 1930				2				2
<i>Megaphthiria</i> Hall, 1976				4				4
<i>Semiramis</i> Becker, 1913		1						1
<i>Timiomyia</i> Evenhuis, 1978		1						1
Mariobezziinae								
<i>Callynthrophora</i> Schiner, 1868	3							3
<i>Corsomyza</i> Wiedemann, 1820	27							27
<i>Gnumyia</i> Bezzi, 1921	2							2
<i>Hyperusia</i> Bezzi, 1921	9							9
<i>Mariobezzia</i> Becker, 1913	1	3			1			4
<i>Megapalpus</i> Macquart, 1834	1							1
<i>Paracorsomyza</i> Hennig, 1966		1						1
<i>Pusilla</i> Paramonov, 1954	1							1
<i>Zyxmyia</i> Bowden, 1960	1							1
Xenoprosopinae								
<i>Xenoprosopa</i> Hesse, 1956	1							1
Oniromyiinae								
<i>Oniromyia</i> Bezzi, 1921	2							2
Cythereinae								
<i>Amictites</i> Hennig, 1966		1						1
<i>Amictus</i> Wiedemann, 1817		28			1			28
<i>Callostoma</i> Macquart, 1840	1	6			1			7
<i>Chalcochiton</i> Loew, 1844		11						11
<i>Cyllenia</i> Latreille, 1802		6						6
<i>Cytherea</i> Fabricius, 1794	4	49						49
<i>Enica</i> Macquart, 1834	1							1
<i>Glaesamictus</i> Hennig, 1966		1						1
<i>Gyrocraepedum</i> Becker, 1913		1						1
<i>Neosardus</i> Roberts, 1929						18		18
<i>Nomalonia</i> Rondani, 1863	6							6
<i>Palaeoamictus</i> Meunier, 1916		1						1
<i>Pantarbes</i> Osten Sacken, 1877			6					6
<i>Praecytherea</i> Théobald, 1937		1						1
<i>Sericosoma</i> Macquart, 1850				10				10
<i>Sericothrix</i> Hall, 1976				1				1
<i>Sinaia</i> Becker, 1916		1						1
<i>Sphenoidoptera</i> Williston, 1901				1				1
Unplaced Cythereinae				4			1	4
Lomatiinae								
Lomatiini								
<i>Aleucosia</i> Edwards, 1934						36		36
<i>Anisotamia</i> Macquart, 1840		1			1			2
<i>Bryodemina</i> Hull, 1973			2	3				2
<i>Canariellum</i> Strand, 1928	3	1						4
<i>Comptosia</i> Macquart, 1840		1	2		2	62		67
<i>Doddosia</i> Edwards, 1934						5		5
<i>Edmundiella</i> Becker, 1915		1						1
<i>Lomatia</i> Meigen, 1822		36						36
<i>Macrocondyla</i> Rondani, 1863				30				30

TAXON	DISTRIBUTION							total
	AF	PA	NE	NO	OR	AU	PI	
Notolomatia Greathead, 1998	97							97
Ogcodocera Macquart, 1840			2	1				2
Oncodosia Edwards, 1937						4		4
Paleolomatia Nel, 2008		1						1
Ylasoia Speiser, 1920				2				2
Peringueyimyini								
Peringueyimyia Bigot, 1886	1							1
Unplaced genera of Lomatiinae								
Alomatia Cockerell, 1914			1					1
Unplaced species of Lomatiinae							1	1
Antoniinae								
Antonia Loew, 1856	8	8						15
Antoniaustralia Becker, 1913						2		2
Cyx Evenhuis, 1993						4		4
Myonema Roberts, 1929						1		1
Tomomyzinae								
Amphicosmus Coquillett, 1891			6					6
Docidomyia White, 1916						15		15
Metacosmus Coquillett, 1891			3	2				5
Pantostomus Bezzi, 1921	9							9
Paracosmus Osten Sacken, 1877			9					9
Tomomyza Wiedemann, 1820	11							11
Anthracinae								
Anthracini								
Anthrax Scopoli, 1763	54	86	43	43	24	23	1	249
Brachyanax Evenhuis, 1981		2			8	7		13
Dicranoclista Bezzi, 1924	2		2					4
Satyramoeba Sack, 1909		1			1			2
Spogostylum Macquart, 1840	23	60			4		1	79
Thraxan Yeates & Lambkin, 1998						20		20
Turkmeniella Paramonov, 1940		2						2
Walkeromyia Paramonov, 1934				2				2
Xenox Evenhuis, 1984			5	2				5
Aphoebantini								
Aphoebantus Loew, 1872			12	3				80
Cononedys Hermann, 1907	1	12			1			13
Epacmus Osten Sacken, 1886			13					13
Eucessia Coquillett, 1886			1					1
Exepacmus Coquillett, 1894			1					1
Pteraulacodes Hesse, 1956	2							2
Pteraulax Bezzi, 1921	8	1						9
Exoprosopini								
Atrichochira Hesse, 1956	2					2		4
Balaana Lambkin & Yeates, 2003	3	4				5		10
Colossoptera Hull, 1973					1			1
Defilippia Bezzi, 1921	7	3						8
Diatropomma Bowden, 1962	2							2
Euligyra Lambkin & Yeates, 2003	6	1						6
Exoprosopa Macquart, 1840	172	64	65	28	14	3	1	335
Heteralonia Rondani, 1863	72	51			32	1		142
Hyperalonia Rondani, 1863				6				6
Kapu Lambkin & Yeates, 2004						4		4
Ligyra Newman, 1841	16	14	9	19	35	34		111
Litorhina Bowden, 1975	35	2			2	1		38
Micomitra Bowden, 1964	8	9			3			19
Munjua Lambkin & Yeates, 2003						4		4
Ngalki Lambkin, 2011						2		2
Palrika Lambkin & Yeates, 2003						2		2
Pseudopenthes Roberts, 1928						2		2
Pterobates Bezzi, 1921	1	3			2	1		5
Wurda Lambkin & Yeates, 2003						8		8

TAXON	DISTRIBUTION							total
	AF	PA	NE	NO	OR	AU	PI	
Prorostomatini								
<i>Conomyza</i> Hesse, 1956	2							2
<i>Coryprosopa</i> Hesse, 1956	1							1
<i>Epacmoides</i> Hesse, 1956	3							3
<i>Plesiocera</i> Macquart, 1840	9	1						10
<i>Prorostoma</i> Hesse, 1956	1							1
<i>Stomylomylia</i> Bigot, 1887		7						8
Villini								
<i>Astrophanes</i> Osten Sacken, 1877			1	1				2
<i>Caecanthrax</i> Greathead, 1981	2	2			1			3
<i>Chrysanthrax</i> Osten Sacken, 1886			38	23				56
<i>Cyananthrax</i> Painter, 1959			1	1				1
<i>Deusopora</i> Hull, 1971				1				1
<i>Diochanthrax</i> Hall, 1975			1					1
<i>Dipalta</i> Osten Sacken, 1877			2	1				2
<i>Diplocampta</i> Schiner, 1868				6				6
<i>Exechohypopion</i> Evenhuis, 1991				6		7		13
<i>Exhyalanthrax</i> Becker, 1916	46	33			6	1		78
<i>Hemipenthes</i> Loew, 1869	1	31	25	27	8			81
<i>Laminanthrax</i> Greathead, 1967	1	2						2
<i>Lepidanthrax</i> Osten Sacken, 1886			47	6		2		52
<i>Mancia</i> Coquillett, 1886			1					1
<i>Marleyimyia</i> Hesse, 1956	1				1			2
<i>Neodiplocampta</i> Curran, 1934			8	12				16
<i>Oestranthrax</i> Bezzi, 1921	5	9	1					15
<i>Oestrimyza</i> Hull, 1973				1				1
<i>Pachyanthrax</i> François, 1964	5	9			2			13
<i>Paradiplocampta</i> Hall, 1975			1					1
<i>Paranthrax</i> Bigot, 1876				2				2
<i>Paravilla</i> Painter, 1933			55	11				58
<i>Poecilanthrax</i> Osten Sacken, 1886			40	4				41
<i>Rhynchanthrax</i> Painter, 1933			7					7
<i>Stonyx</i> Osten Sacken, 1886			5	2				5
<i>Synthesia</i> Bezzi, 1921	1							1
<i>Thyridanthrax</i> Osten Sacken, 1886	10	30	12	3	2			52
<i>Veribubo</i> Evenhuis, 1978	5	26			1			30
<i>Verrallites</i> Cockerell, 1913			1					1
<i>Villa</i> Liroy, 1864	46	80	50	36	31	24	4	280
<i>Villoestrus</i> Paramonov, 1931	1	2						3
Unplaced Villini								
			1	8				9
Xeramoebini								
<i>Desmatoneura</i> Williston, 1895	6	9	1		2			15
<i>Petrorossia</i> Bezzi, 1908	28	29			17	3		69
<i>Pipunculopsis</i> Bezzi, 1925	1							1
<i>Prothaplocnemis</i> Bezzi, 1925		2						2
<i>Xeramoeba</i> Hesse, 1956	8	9			1			13
Unplaced Anthracinae								
							6	6
Unplaced Genera in Bombyliidae								
<i>Pachysystropus</i> Cockerell, 1909			2					2
<i>Palaeogeron</i> Meunier, 1915		1						1
<i>Tithonomyia</i> Evenhuis, 1984			1					1
Unplaced Species in Bombyliidae								
	10	6					2	18
Questionably Placed In Bombyliidae								
<i>Anthracida</i> Germar		1						1
Totals	1433	1478	873	467	311	433	27	4781

EXPLANATORY INFORMATION

Taxonomic and Nomenclatural Information

1. Scope: This catalog includes all names, available and unavailable according to the I.C.Z.N. *Code* (see below), that apply to the extant (living) and extinct (fossil) members of the family Bombyliidae occurring in the world.

2. Adherence to the Code: Wherever possible, all requirements of the *International Code of Zoological Nomenclature* (I.C.Z.N., 1999) have been followed in this catalog. Some exceptions occur in the treatment and listing of some names in accordance with common usage and in the interest of taxonomic stability. These exceptions have been fully annotated and in most instances should be formally submitted to the International Commission on Zoological Nomenclature for action.

3. Arrangement of taxa: Suprageneric taxa (tribes, subfamilies) are arranged in the systematic order following the classification of Yeates (1994) with slight modifications (see under Classification and Phylogenetic Considerations for more details). Names of valid genera are listed alphabetically within higher category (tribe or subfamily) and valid subgenera listed alphabetically within genera. Valid species are listed alphabetically within genera or subgenera, and valid infraspecific taxa [varieties and forms (those proposed before 1961), and subspecies] are listed alphabetically within species. Synonyms including all available and unavailable names (genus-group and species-group) including emendations (justified or unjustified) are listed chronologically; variant spellings (termed “errors” and “incorrect original spellings” herein) are placed at the end of the synonyms in chronological order.

Unplaceable taxa are listed at the end of the most appropriate taxon (e.g., subgenerically unplaced species at the end of the genus possessing subgenera; subfamilially unplaced genera and species at the end of the family treatment).

4. Typographical treatment of names: Genus-group and suprageneric headings are centered with authorship. Taxonomically valid genus-group and species-group names are listed in boldface and placed flush left (uppercase for genus-group names; lowercase for species-group names). Nomenclaturally invalid species-group names (e.g., *nomina nuda*) that could not be synonymized with a nomenclaturally valid species are listed alphabetically within genera along with valid species, but are in italics. For species-group names, the full reference with original generic combination and genus-group and species-group orthography, author, year, page, and associated synonyms are indented below the main species-group name entry in chronological order. Incorrect original spellings and errors for species-group names are listed at the end of the list of synonyms without being combined with a genus-group name. In the few cases of junior homonymy in taxonomically valid species-group names when we have preferred to not propose a replacement name (pending further study), the junior homonym is placed flush left in alphabetical order with valid species but is listed in italics because, in most cases, it cannot be nomenclaturally valid. Unplaceable and unavailable names (*nomina nuda*, non-binomial names, etc.) above the species level are placed in a list at the end of the appropriate higher taxon.

5. Taxonomic references: References given after each name pertain to the original proposal of that name. Additional (secondary) references are given in brackets when necessary for nomenclatural purposes, or to give secondary citations when an author described

the same taxon as new in a different work (when there is more than one secondary reference they are listed in chronological order).

Each reference consists of name (genus- or species-group), author(s), year of publication, and page. Nomenclaturally available genus-group names follow this reference line with information on the type species (see below under Section 6). Suppressed and other invalid genus-group names (*nomina nuda*, unjustified emendations, and incorrect original and subsequent spellings) do not have type species or type specimen information listed. Taxonomically valid species-group names are followed by geographical distribution (see below under Treatment of Geographical Information). The author and date combination can be used to find the corresponding reference in the Literature Cited section. (When authors have published more than one article in the same year, dates are suffixed with letters denoting chronological order.)

Authors cited are those responsible for the names listed in accordance with the *Code*. Authorship by more than one author is listed as in the original work. When authorship of the name is different from the authorship of the work, the citation takes the form, e.g., “Pallas *in* Wiedemann, 1818a”, so that the work can be located in the Literature Cited section (in this case, under “Wiedemann, 1818a”). Spelling of authors’ names follows that most commonly used or, when known, the spelling preferred by the author. Authors’ names containing the articles “de”, “van”, “von”, and “van der” are omitted, e.g., “Wulp” instead of “van der Wulp” (anomalies in this practice occur only in cases where a non-European author prefers the use of the article, e.g., “Van Duzee” instead of “Duzee.” Spelling of Russian names takes the predominant form when transliterated from the Cyrillic to the Roman alphabet or the transliterated form preferred by the author (e.g., “Zaitzev” rather than “Zaytsev” or “Zaitsev”).

The date of a work given in the catalog is that which is cited in the original work. If a name was published in an undated work, a work in which the date could only be found from external evidence, or a work in which the given date was found to be incorrect, the correct date is given in brackets in the bibliography in accordance with Recommendation 22A(5) of the *Code*, but the brackets are omitted from the date in the catalog text.

In cases where two or more bibliographic references are given for the same name, e.g., “*Bombylius tricolor* Guérin-Méneville, 1831: pl. 21, fig. 9 [1838: 299]”, the nomenclatural availability of the name dates from the first reference. In the infrequent instances where the second reference involves a different binomen than the first, or a different taxonomic category (genus, subgenus; or species, infraspecies), this is annotated in parentheses immediately following the reference concerned, e.g., “*Bombilius vertebralis* Dufour, 1833: 7 [1836: 470 (as “*Bombylius*”)]”.

Page numbers cited are those on which the name appears in the original work including cases where reprint pagination predates the journal issue date (having been issued in advance of the published journal article). For certain authors for which works are known from reprinted as well as original editions (e.g., Macquart, Paramonov), both the original and secondary publication pagination are cited, with the secondary pagination in parentheses, e.g., “*Bombylius fuliginosus* var. *tavrizi* Paramonov, 1926: 119(45)”. When an original and secondary publication were published in different years, the secondary publication is cited in brackets, e.g., “*Anthrax griseescens* Paramonov, 1935: 14, 28, 29 (key only) [1936b: 104]”.

6. Type species: Most of the information for type species of genus-group names is taken from Evenhuis (1991b). Type species of genus-group names are listed in their original binomia with original authorship and date irrespective of their citation and orthography at the time of the establishment of the genus-group name. Subgeneric epithets that may have

been included in the original establishment of the type species are omitted. The correct nominal type species is listed first, with any senior synonym listed in brackets, e.g. “Type species: *Geron gibbosus* Meigen, 1820 [= *Bombylius gibbosus* Olivier, 1789].” If the type species is invalid because of homonymy, the citation takes the following form: “Type species: *Toxophora maculata* Meigen, 1804 [preoccupied, = *Asilus fasciculatus* Villers, 1789].” If the nominal species was misidentified so that the actual type species is different from the proposed type species, it is cited in the following form: “Type species: *Amictus heteropterus* Wiedemann, 1821, [misidentification, = *Pseudoamictus bezzii* Paramonov, 1930].” In this particular case, the misidentified type species is *Amictus heteropterus* Wiedemann and the actual type species is *Pseudoamictus bezzii* Paramonov.

Method of fixation of type species follows Articles 68 and 69 of the *Code* and uses the terms (in order of precedence according to Articles 68 and 69) “original designation”, “monotypy”, “subsequent designation”, and “subsequent monotypy”. In cases of subsequent monotypy and subsequent designation, the author, date, and page of the designation is given, e.g., “. . . subsequent monotypy (Meigen, 1804: 273)”, “. . . subsequent designation (Latreille, 1810: 414)”. If a genus-group name was originally proposed without included species, annotation is given in brackets to the work that lists the first inclusion of species in the genus from which the subsequent designation was made unless the designation is by subsequent monotypy.

7. Homonyms and replacement names: Preoccupied names are noted with annotations in brackets. Genus-group junior homonyms have this bracketed information following the type species information; species-group junior homonyms have this bracketed information following the type locality. Replacement names are listed with the preoccupied name they replace in parentheses after the page reference, e.g., “*Anastoechus hessei* Hall, 1958: 195 (new replacement name for *Anastoechus deserticola* Hall, 1954)”, “**ERISTALOPSIS** Evenhuis, 1985a: 289 (new replacement name for *Syrphoides* Evenhuis, 1983).”

8. Emendations and variant spellings: Emendations at the genus-group level (justified or unjustified) are listed in the catalog with full reference citation [author(s), date, page] because they are available names according to the *Code*, e.g., “*ECLIMMUS* Agassiz, 1846b: 134 (unjustified emendation of *Eclimus* Loew, 1844).” Genus-group names published prior to 1991 and associated type species information have been checked by the senior author and have been published in Evenhuis (1991b). Justified species-group emendations do not have author, date, and page of the emendation listed in all cases, but have the original orthography listed in parentheses after the page reference. Incorrect spellings are not available names, hence are listed in the form: “*aurecrnitus*, incorrect original spelling of *aurecrinitus*” (followed by author, date, and pagination in parentheses if the incorrect spelling is an example of more than one spelling for the same taxon found in the original publication). When a name is spelled in more than one way in the original publication (such as in some of Macquart’s or Rondani’s works), the correct spelling is determined by the First Revisor Principle. Other variant spellings (i.e., incorrect subsequent spellings) are listed as “errors.” The listing of these variant spellings is not exhaustive, but reflects those names found in the major reference works that otherwise may lead to confusion as to correct orthography.

9. Gender endings of species-group names: Names in synonymy are cited in their original orthography, but to satisfy Article 30 of the *Code*, taxonomically valid names have been checked and changed when necessary to ensure that the ending agrees in gender with the genus under which it is presently combined. (It was not possible to check all names,

hence some gender endings may be incorrect, especially in cases where it was not possible to ascertain adjectival status.)

10. Nomenclatural changes: Changes in binomial combination, rank, and validity presented for the first time in this catalog are marked in boldface with abbreviated notations (listed in Section 13). Changes in binomial combination or changes in rank for junior synonyms are not annotated.

11. Type depositories: Every effort was made to ascertain the existence of a type or types and its/their type depository(s). The form of citation is indication of the rank of type that currently exists (e.g., syntype, holotype, lectotype, etc.) and the location of the type specimen(s). Codens for collections listed in Arnett *et al.* (1993) are used here with additions and slight modifications as noted on the revised web version of this list (see <http://www.bishopmuseum.org/bishop/ento/codens-r-us.html>). Types that have been examined by either of us either on site or through loan are indicated by an asterisk (*). The following institutions have been visited by one or both of us for the purpose of studying types of Bombyliidae: AMNH, AMS, ANIC, BMNH, BPBM, CAS, CNC, DEI, HNHM, KBIN, LACM, MAMU, MCZ, MNHN, NMSA, NMW, RMNH, SAM, SAMC, UMO, USNM, ZMHB. Type specimens of Chilean species currently in MEUC were seen by the senior author in the collection of Jack Hall before they were sent for deposition to that institution.

If a lectotype has been previously designated, the citation referring to such a designation is given in parentheses following the rank of type. If a lectotype is designated in this work, a notation is given in parentheses following the rank of type that refers to Appendix 1 where lectotype designations are made in this catalog.

Clarification of certain lost types, transferral of type specimens from the original published institution to another, and other notes on certain collections is given for selected species following the type depository. These annotations are placed in parentheses with the following notation, e.g., “(see Note 4)”, where the number pertains to those in the Collection Notes section.

Abbreviations used for types:

- H = holotype
- L = lectotype
- N = neotype
- S = syntype(s)
- T = type (status not ascertained)

Abbreviations for type depositories:

- AMGS = Albany Museum, Grahamstown, South Africa.
- AMNH = American Museum of Natural History, New York, USA.
- AMS = Australian Museum, Sydney, NSW, Australia.
- ANIC = Australian National Insect Collection, Canberra, ACT, Australia.
- ANSP = Academy of Natural Sciences, Philadelphia, Pennsylvania, USA.
- ASAY = Academy of Sciences of Armenia, Erivan, Armenia.
- BMNH = The Natural History Museum, London, UK.
- BPBM = Bernice Pauahi Bishop Museum, Honolulu, Hawai'i, USA.
- BPCS = Bauckhorn personal collection, Siegburg, Germany.
- BYU = Brigham Young University, Provo, Utah, USA.
- CAS = California Academy of Sciences, San Francisco, California, USA.
- CAU = Chinese Agricultural University, Beijing, China.

CNC	= Canadian National Collection, Ottawa, Ontario, Canada.
CPMM	= Museu Dr. Alvaro de Castro, Lourenço Marques, Mozambique.
CUIC	= Cornell University, Ithaca, New York, USA.
DABZ	= Department of Agriculture, Bulawayo, Zimbabwe.
DCPC	= Domenico Cyrillus personal collection, Naples, Italy (destroyed).
DEI	= Deutsches Entomologisches Institut, Eberswalde, Germany.
DJG	= David J. Greathead personal collection, Wargrave, UK.
DMSA	= Durban Museum, Durban, South Africa.
EFC	= Efflatoun Collection, Faculty of Science, Cairo University, Cairo, Egypt.
EIHU	= Entomological Institute, Hokkaido University, Sapporo, Japan.
ESEC	= Entomological Society of Egypt, Cairo, Egypt.
FIOC	= Instituto Oswaldo Cruz, Rio de Janeiro, Brazil.
FMH	= Frank M. Hull personal collection, University, Mississippi, USA.
GMUG	= Geologisches-Paläontologisches Museum, Universität Göttingen, Göttingen, Germany.
HMUG	= Hunterian Museum, University of Glasgow, Glasgow, UK.
HNHM	= Hungarian Natural History Museum, Budapest, Hungary (most Diptera types destroyed during 1956 insurrection).
HLDH	= Hessische Landesmuseum, Darmstadt, Germany.
IEUP	= Istituto di Entomologia, Università degli Studi, Pavia, Italy.
IJSM	= Natural History Museum, Institute of Jamaica, Kingston, Jamaica.
IMLA	= Instituto Miguel Lillo, Universidad Nacional de Tucuman, Tucuman, Argentina.
INHS	= Illinois Natural History Survey, Urbana, Illinois, USA.
INPC	= National Pusa Collection, New Delhi, India.
ITLJ	= National Institute of Agro-Environmental Sciences, Tsukuba, Japan.
JB	= John Bowden personal collection, Colchester, UK.
JCH	= Jack C. Hall personal collection, Riverside, California, USA.
JDPC	= J. Dils personal collection, Stabroek, Belgium.
KBIN	= Royal Belgian Institute of Natural History, Brussels, Belgium.
KSMA	= King Saud University, Museum of Arthropods, Riyadh, Saudi Arabia.
KUIC	= Kagoshima University, Kagoshima, Japan.
LACM	= Natural History Museum of Los Angeles County, Los Angeles, California, USA.
LSUK	= Linnaean Society, London, UK.
MABC	= Marcos Báez personal collection, Tenerife, Canary Islands.
MACN	= Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina.
MAMU	= Macleay Museum, University of Sydney, Sydney, NSW, Australia (most types transferred to ANIC).
MBBJ	= Museum Zoologicum Bogoriense, Bogor, Java, Indonesia.
MCPM	= Milwaukee Public Museum, Milwaukee, Wisconsin, USA.
MCSN	= Museo Civico di Storia Naturali "Giacomo Doria", Genoa, Italy.
MCSV	= Museo Civico di Storia Naturali di Venezia, Venice, Italy.
MCZ	= Museum of Comparative Zoology, Cambridge, Massachusetts, USA.
MDRG	= Museum voor Dierkunde, Rijksuniversiteit, Ghent, Belgium.
MEUC	= Universidad de Chile, Santiago, Chile.
MGAB	= Museum of Natural History "Grigore Antipa", Bucharest, Romania.
MLPA	= Museo de La Plata, Universidad de La Plata, Tucuman, Argentina.
MLUH	= Martin-Luther Universität, Halle a.S., Germany.
MMBC	= Moravian Museum, Brno, Czech Republic.

- MNHN = Museum National d'Histoire Naturelle, Paris, France.
 MNMS = Museo Nacional de Ciencias Naturales, Madrid, Spain (includes the former Instituto Español de Entomología).
 MNRJ = Museu Nacional de Rio de Janeiro, Rio de Janeiro, Brazil.
 MNVL = Museum d'Histoire Naturelle de Ville de Lille, Lille, France.
 MRAC = Musée Royal de l'Afrique Centrale, Tervuren, Belgium.
 MRSN = Museo Regionale Scienze Naturale, Torino, Italy.
 MSNM = Museo Civico di Storia Naturale, Milan, Italy.
 MVMA = Museum of Victoria, Abbotsford, Victoria, Australia.
 MZHF = Finnish Museum of Natural History, University of Helsinki, Helsinki, Finland.
 MZLU = Zoological Museum, University of Lund, Lund, Sweden.
 MZSP = Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil.
 MZUF = Museu Zoologico "La Specola", Florence, Italy.
 MZUN = Museo dell'Istituto di Zoologia dell'Università di Napoli, Naples, Italy.
 NDAA = New South Wales Department of Agriculture, Orange, NSW, Australia.
 NHMB = Naturhistorisches Museum, Basel, Switzerland.
 NHRS = Naturhistoriska Riksmuseet, Stockholm, Sweden.
 NMB A = Naturhistorisches Museum, Admont, Austria.
 NMBZ = Natural History Museum of Zimbabwe, Bulawayo, Zimbabwe.
 NMCL = Naturkunde-Museum, Coburg, Germany.
 NMID = National Museum of Ireland, Dublin, Ireland.
 NMPC = National Museum (Natural History), Prague, Czech Republic.
 NMSA = Natal Museum, Pietermaritzburg, South Africa.
 NMW = Naturhistorisches Museum, Vienna, Austria.
 NYBG = New York Botanical Garden, Brooklyn, New York, USA.
 NYSM = New York State Museum, Albany, New York, USA.
 NZAC = New Zealand Arthropod Collection, Auckland, New Zealand.
 NZSI = National Zoological Collection, Zoological Survey of India, Calcutta, India.
 OLML = Oberösterreichisches Landesmuseum, Linz, Austria.
 OSUC = Ohio State University, Columbus, Ohio, USA.
 PBC = P. Beraud personal collection [location unknown].
 PDMC = Paul DuMerle personal collection, Antibes, France.
 PMHU = Paläontologisches Museum, Humboldt-Universität, Berlin, Germany.
 PMNH = Peabody Museum of Natural History, Yale University, New Haven, Connecticut, USA.
 PPDD = Ministry of Agriculture, Cairo, Egypt.
 PPRI = National Collection of Insects, Pretoria, South Africa.
 PSPC = Paul Speiser personal collection (destroyed in WWII).
 QDPI = Queensland Department of Primary Industry, Indooroopilly, Queensland, Australia.
 QM = Queensland Museum, Brisbane, Australia.
 RMNH = Nationaal Natuurhistorisch Museum, Leiden, Netherlands.
 SAM = South Australian Museum, Adelaide, Australia.
 SAMC = South Africa Museum, Cape Town, South Africa.
 SCSC = St. Cloud State College, St. Cloud, Minnesota, USA.
 SEMC = Snow Entomological Museum, University of Kansas, Lawrence, Kansas, USA.

SIZK	= Schmalhausen Institute of Zoology, Kiev, Ukraine.
SMFD	= Forschungsinstitut und Museum Senckenberg, Frankfurt, a.M., Germany.
SMNK	= Staatliches Museum für Naturkunde, Karlsruhe, Germany.
SMNS	= Museum für Naturkunde, Stuttgart, Germany.
TARI	= Taiwan Agricultural Research Institute, Taiching, Taiwan.
TDPC	= Jean Timon-David personal collection.
TIMJ	= Tainai Insect Museum, Niigata, Japan.
TMSA	= Transvaal Museum, Pretoria, South Africa.
TMUT	= Tabariat Modares University, Tehran, Iran
TUPH	= Tehran University, Institute of Public Health Research, Tehran, Iran.
UAIC	= University of Arizona, Tucson, Arizona, USA.
UBIG	= Université de Besançon, Institut de Geologie, Doubs, France.
UCGC	= University of Colorado, Geological Museum, Boulder, Colorado, USA.
UMO	= University Museum, University of Oxford, Oxford, UK.
UNKN	= Type depository unknown or not traced in this study.
UQ	= University of Queensland, St. Lucia, Queensland, Australia.
USNM	= National Museum of Natural History, Washington, D.C., USA.
UZIUI	= Zoological Museum, Uppsala University, Uppsala, Sweden.
VSRI	= N.I. Vavilov All-Russian Scientific Research Institute of Plant Industry, St. Petersburg, Russia.
WADA	= Western Australian Department of Agriculture, South Perth, Australia.
WAMP	= Western Australian Museum, Perth, Australia.
WSU	= M.T. James Collection, Washington State University, Pullman, Washington, USA.
ZFMK	= Zoologisches Forschungsinstitut und Museum "Alexander Koenig", Bonn, Germany.
ZIS	= Zoological Institute, Russian Academy of Science, St. Petersburg, Russia.
ZMAN	= Instituut voor Taxonomische Zoologie, Universiteit van Amsterdam, Amsterdam, Netherlands.
ZMHB	= Museum für Naturkunde, Humboldt-Universität, Berlin, Germany.
ZMGU	= Zooloji Musesi, Gazi Üniversitesi, Ankara, Turkey.
ZMUC	= Zoologisk Museum, University of Copenhagen, Copenhagen, Denmark.
ZMUH	= Zoologisches Museum und Institut, Hamburg, Germany.
ZMUM	= Zoological Museum, University of Moscow, Russia.
ZSMC	= Zoologische Staatssammlung des Bayern, Munich, Germany.

12. Miscellaneous annotations: *Nomina nuda* are listed under their current synonym (if known), without type locality or distributional information, and are followed by "*Nomen nudum*." When synonymy is not known for *nomina nuda*, they are listed alphabetically under the currently accepted generic combination. New combinations and/or synonymy for *nomina nuda* are not annotated as such.

Other annotations are added in brackets for various circumstances such as nomenclatural actions that clarify usage, etc.

13. Abbreviations and symbols: The following abbreviations and symbols are used throughout the catalog:

† = fossil taxon

[A]	= amber fossil
Arch	= Archipelago
[C]	= compression/impression fossil
Code	= <i>International Code of Zoological Nomenclature</i>
ed(s).	= editor(s)
f.	= form
fig(s).	= figure(s)
I.C.Z.N.	= International Commission on Zoological Nomenclature
I(s)	= Island(s)
<i>in litt.</i>	= <i>in litteris</i>
[K]	= copal fossil
Mt(s)	= Mount/Mountain(s)
N. COMB.	= New combination
n.n.	= new replacement name (used only for new names proposed in this work)
N. STAT.	= new status (e.g., from variety to subspecies or species)
N. SYN.	= New synonymy
p.	= page(s)
pers. comm.	= personal communication
pl.	= plate
<i>q.v.</i>	= <i>quod vide</i> [= which see]
spp.	= species (plural)
ssp.	= subspecies
var.	= variety

Treatment of Geographical Information

1. Zoogeographical realm delimitation: The zoogeographical realms used here are Afrotropical, Australasian/Oceanian, Nearctic, Neotropical, Oriental, and Palearctic. Delimitation of the Afrotropical and Australasian realms are based primarily on the boundaries used in those regional Diptera catalogs (cf. Crosskey, 1980; Evenhuis, 1989). The boundaries for the remainder of these realms are based on political boundaries as this provided a convenient and absolute delimitation, though they may be at odds with realms from a zoological standpoint.

For the delimitation between the Nearctic and Neotropical Regions, the boundaries in Mexico are based on the following:

Nearctic (Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila de Zaragoza, Colima, Distrito Federal, Durango, Guanajuato, Guerrero, Hidalgo, Jalisco, México, Michoacán de Ocampo, Morelos, Nayarit, Nuevo León, Puebla, Querétaro de Arteaga, San Luis Potosí, Sinaloa, Sonora, Tamaulipas, Tlaxcala, Veracruz-Llave, Zacatecas).
Neotropical (Campeche, Chiapas, Oaxaca, Quintana Roo, Tabasco, Yucatán).

For the delimitation of the Oriental and Palearctic Regions, the boundaries in China are based on the following:

Oriental (Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hong Kong, Hunan, Jiangxi, Shanghai, Yunnan, Zhejiang); **Palearctic** (Anhui, Beijing, Gansu, Hebei, Heilongjiang, Henan, Hubei, Jiangsu, Jilin, Liaoning, Nei Monggol, Ningxia, Qinghai, Shanxi, Shaanxi, Shandong, Sichuan, Tianjin, Xinjiang, Xizang).

2. Type localities: Only the country, island group, or state or province are listed depending on the format. In cases where the original citation of the type locality differs from a contemporary geopolitical entity, the country or main geopolitical unit of the type locali-

ty is cited in full as given in the original publication and placed in quotes. The type locality is followed by supplemental distributional information, if known, separated from the type locality by a semicolon. When more than one type locality is listed by the author and no lectotype has been designated, these localities are listed with each locality connected by an ampersand, or are cited verbatim, e.g., “Greece” & “Turkey”; “Nouvelle-Hollande, côte orientale.” When a lectotype has been designated from one of the original localities, only the lectotype locality is listed without further annotation.

Some countries and island groups are broken down to states, provinces, archipelagos, overseas or other outside dependencies, and smaller island groups. These “sublocalities” are placed in parentheses after the main locality, e.g., “Australia (NSW),” “USA (California).” In cases where the published type locality is too vague to be assigned to one of the sublocalities specified in the format of this catalog, it is listed verbatim, e.g., “Nouvelle-Hollande,” “Amérique du Sud”, etc. with current geopolitical equivalents, if known.

If the type locality was not given in the original description or in any other part of the original work, the term “Not given” is used. If the terms “Patrie inconnue,” “Patria ignota”, or their equivalents, are used in the original description, they are repeated, in quotes, in place of “Not given”. If ancillary evidence (label data, etc.) has been used to infer the type locality, this inferred type locality is placed in brackets, e.g., “Not given [= Malawi (from type specimen label data)]”. Questionable inferences are prefaced with a query, e.g., “Not given [= ?Australia]”. If it is known that the originally published type locality was in error, it is cited verbatim, in quotes, with the corrected or probable type locality given in brackets, e.g., “Océanie, cap des Aiguilles” [error, = South Africa (Western Cape)]. When the type locality has been clarified or queried by external publication, the reference to the external work may be added within brackets, e.g., ““Tasmanie”, [error, = Australia (NSW); (see Hardy, 1929a: 61)]”.

3. Fossil Taxa: Species originally described from fossils are listed with form of preservation (amber, copal, or compression/impression), their known geographical distribution, as well as their geological horizon (e.g., Miocene, Oligocene, Eocene).

4. Distribution: Complete distributional information as is known from the literature is listed in alphabetical order with additional records from unpublished information that has been verified by one of us to the best possible extent.

Localities preceded by a query are considered questionable for purposes of this catalog. Many of these localities have been cited in the early literature and could not be verified in this study.

5. Abbreviations: The following abbreviations are used in the geographical treatment of the catalog:

ACT	= Australian Capital Territory (Australia)
AF	= Afrotropical
Arch	= Archipelago
AU	= Australasian/Oceanian
CET	= Central European Territory (Russia)
ES	= Eastern Siberia (Russia)
FE	= Far East (Russia)
incl.	= including
NE	= Nearctic

NET	= Northern European Territory (Russia)
NSW	= New South Wales (Australia)
NT	= Northern Territory (Australia)
NO	= Neotropical
OR	= Oriental
PA	= Palearctic
PI	= Patria Ignota
PNG	= Papua New Guinea
SA	= South Australia (Australia)
SET	= Southern European Territory (Russia)
UK	= United Kingdom
U.S.	= United States
USA	= United States of America
WA	= Western Australia (Australia)
WS	= Western Siberia (Russia)

5. Geographical equivalents: Countries and states and provinces within countries listed in the distribution for each species follow current Anglo-American orthography. An exception is the eastern European republic of Georgia, for which we use “Gruzia” so as to avoid confusion with the American state of Georgia.

Many of the localities cited in early works are no longer used, and some are not easily found in common gazetteers due to variations in spelling by Danish, Dutch, German, French, or other former administrators of the areas in question. The following is a list of such localities plus obsolete variant names of localities that have recently changed their spelling. The names are listed alphabetically (in order of first appearance in either the first or second column). The old name or obsolete spelling is given in the first column, the current equivalent is given in the second column, and the format of listing in the distributional information of the catalog is given in the third column. The list is not exhaustive, but cites those most often encountered in the literature:

Old Name	Current Name	Listing in Catalog
Abyssinia	Ethiopia	Ethiopia
Afars and Issas	Djibouti	Djibouti
Baluchistan	Pakistan	Pakistan
Basutoland	Lesotho	Lesotho
Bechuanaland	Botswana	Botswana
Belgian Congo	Congo	Congo
Bessarabia	Moldova	Moldova
British New Guinea	Papua New Guinea	PNG (PNG)
Ceram	Seram Laut	Indonesia (Maluku)
Cirenaica	Libya	Libya
Dahomey	Benin	Benin
Dalmatia	Croatia	Croatia
East Pakistan	Bangladesh	Bangladesh
French Guinea	Guinea	Guinea
French Somaliland	Djibouti	Djibouti
Malaya	Malaysia	Malaysia (Peninsular)
Moldavia	Moldova	Moldova
Natal	KwaZulu-Natal	South Africa (KwaZulu-Natal)
Netherlands New Guinea	Irian Jaya	Indonesia (Irian Jaya)
New Pommern	New Britain	PNG (Bismarck Arch)
New Hebrides	Vanuatu	Vanuatu
Northern Rhodesia	Zambia	Zambia

Old Name	Current Name	Listing in Catalog
Nyasaland	Malawi	Malawi
Persia	Iran	Iran
Portuguese East Africa	Mozambique	Mozambique
Portuguese Guinea	Guinea-Bissau	Guinea-Bissau
Serbia	Yugoslavia	Yugoslavia
Southern Rhodesia	Zimbabwe	Zimbabwe
South West Africa	Namibia	Namibia
South Yemen	Yemen	Yemen
Spanish Guinea	Equatorial Guinea	Equatorial Guinea
Tanganyika	Tanzania	Tanzania
Tibet	China	China (Xizang)
Tranquebariae	India	India (Tamil Nadu)
West Pakistan	Pakistan	Pakistan
Zaire	Congo	Congo

6. Geographical areas broken down below country level: The following countries are broken down to state/province/island, etc. Most countries selected are those with more than 1 million square miles of total area: Australia, Brazil, Canada, India, Indonesia, Malaysia, Mexico, Russia, South Africa, United Kingdom, and the United States. The following countries have off-shore islands or island-groups listed in parentheses: France, Greece, Italy, Japan, New Caledonia, Papua New Guinea, Spain, and Yemen. Israel's territorial claims are listed in parentheses to separate them from the country proper. We make no political statements by doing so and use this method of citation only as a matter of convenience in geographical delimitation.

