Type specimens of mammals (Mammalia) in the collections of the Zoologisches Forschungsmuseum Alexander Koenig, Bonn

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Abstract. An annotated catalogue of type specimens of Mammalia in the collections of the Zoologisches Forschungsmuseum Alexander Koenig in Bonn is given. By the end of 2010, the Bonn collections housed name-bearing types (five syn- and 77 para- and one lecto- and one neotype) for 85 taxa and para- and paralectotypes for 105 taxa. Casts of rare type specimens of 3 extinct taxa are also listed. The collections also include vouchers for karyotypes and GenBank entries. A lec-
totype is selected for Microtus savii niethammericus Contoli, 2003, and replacement names are proposed for homonyms of two preoccupied taxa, Apodemus maximus Thaler, 1972 (Muridae) and Sciurus vulgaris hofmanni Valverde, 1967 (Sciuridae).

Key words. Taxonomy, types, vouchers, chromosomes, genetic sequences, mammal diversity.

INTRODUCTION

Biological collections of the world preserve the voucher specimens on which our knowledge of the biodiversity on our planet is based. Article 72.10 of the Code (ICZN 1999) states that, “Holotypes, syntypes, lectotypes and neotypes are the bearers of the scientific names of all nominal species-group taxa (and indirectly of all animal taxa). They are the international standards of reference that provide objectivity in zoological nomenclature and must be cared as such. They are to be held in trust for science by the persons responsible for their safe keeping.” Recommendation 72F includes the following formulations “Every institution in which name-bearing types are deposited should ... (2) take all necessary steps for their safe preservation, (3) make them accessible for study, (4) publish lists of name-bearing types in its possession or custody, and (5) so far as possible, communicate information concerning name-bearing types when requested.”

The first type catalogue of mammals in the Zoologisches Forschungsmuseum Alexander Koenig was published more than 25 years ago (Hutterer 1984). Here we present an updated annotated list of the name-bearing types (holotype, syntype, lectotype, neotype), but also of paratypes and paralectotypes, as these form part of the original type series and are available for the selection of neotypes, if required (Article 75, Recommendation 75A, ICZN 1999). In a few cases we have also listed casts of type specimens from other institutions in order to facilitate access to the types of some extinct species. The collections also include vouchers for chromosome counts and for genetic sequences. If available, such information has been mentioned but it was not possible to compile a full list of such voucher specimens. As GenBank entries already play an important role in the study of mammalian phylogeny and taxonomy, cross-references to the vouchers on which the genetic sequences were based will become more and more important in order to ensure scientific objectivity and to enable verification of correctness of specimen identifications when indicated. Figures listed for the respective original description of a taxon are all figures in that publication which show features of the new taxon.

The present list is compiled in the style of other modern examples such as Lawrence (1993), Turni et al. (2007) and Turni & Kock (2008). The systematics, sequence of or-
ders and families within orders follows Wilson & Reed-er (2005). Likewise, the taxonomy largely follows the respective chapters in Wilson & Reeder (2005), particularly those on soricomorphs (Hutterer 2005), rodents (Muss-er & Carleton 2005), glirids (Holden 2005), sciurids (Thor-ington & Hoffmann 2005) and artiodactyls (Grubb 2005).

We included no figures in this catalogue as photographs of many of the ZFMK type specimens are available online through the Global Biodiversity Information Facility (http://www.biolgie.uni-ulm.de/cgi-bin/query_all/query_all.pl?lang=d&pr=gbif-v1).

Abbreviations for museum collections used:

AMNH = American Museum of Natural History, New York, USA,
BMNH = The Natural History Museum, London, UK,
CM = Carnegie Museum, Pittsburgh, USA,
FMNH = Field Museum of Natural History, Chicago, USA,
HNHM = Hungarian Natural History Museum, Budapest, Hungary,
HZN = Harrison Zoological Museum, Sevenoaks, UK,
IZEA = Institut de zoologie et d’écologie animale, Lau-sanne, Switzerland,
MNHN = Museum National d’Histore Naturelle, Paris, France,
NMP = National Museum of the Philippines, Manila, The Philippines,
NMW = Naturhistorisches Museum Wien, Vienna, Austria,
QM = Queensland Museum, Brisbane, Australia,
PBS = Paimpont Biological Station of Rennes University, France,
RMCA = Royal Museum for Central Africa, Tervuren, Belgium,
SMF = Senckenberg Museum, Frankfurt, Germany,
SMNS = Staatliches Museum für Naturkunde, Stuttgart, Germany,
TM = Transvaal Museum, now Ditsong National Museum of Natural History, Pretoria, South Africa,
ZFMK = Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany,
ZIN = Zoological Institute of the Academy of Sciences, Moscow, Russia,
ZMB = Zoologisches Museum der Humboldt-Universität, Berlin, Germany.

CATALOGUE OF TYPE SPECIMENS

MONOTREMATA

Ondihorhynchidae

Oedurodon dicksoni Archer, Jenkins, Hand, Murray & Godthelp, 1992
In: Platypus and Echidnas (Augee ML, ed.): 16, figs. 1–8
Material. ZFMK 95.167, cast of holotype skull QM F20568, Middle Miocene sediments of Riversleigh, Australia.
Comments. Cast donated by I. Rocek in 1995. A full reconstruction of skull and dentary was provided by Muss-er & Archer (1998).

AFROTERA

Chrysochloridae

Eremitalpa granti namibensis Bauer & J. Niethammer, 1960
Bonn. zool. Beitr. 10: 241, fig. 2 (10 Jan)
Holotype. ZFMK 59.513, cranium and mandible taken from owl pellets, in good condition; Sossus Vley, Namib Desert, Namibia, collected by G. Niethammer, Feb 1959, field no. 47.
Paratypes. ZFMK 59.514 (40 skulls), and further 16 uncatalogued skulls plus uncounted postcranial elements, all from the same locality and collector.
Comments. Further paratypes are in the AMNH, NMW and TM.

MACROSCELIDEA

Macroscelididae

Elephantulus intus omahekensis Lehmann, 1955
Bonn. zool. Beitr. 6: 171
Holotype. ZFMK 55.74, female, skin and skull; Kl. Oka-puta, Namibia, collected by W. Hoesch, 16 Oct 1954, field no. M. 1130.
Paratypes. ZFMK 55.78, 55.120–55.125, 4 males, 3 females, skins and skulls, same locality and collector as holotype, 14–18 Oct 1954.
Current name. Elephantulus intus (A. Smith, 1836).
CINGULATA

Dasypodidae

Cabassous chacoensis Wetzel, 1980
Ann. Carnegie Mus. 49: 335, fig. 2 (5 Sept)
Paratype. ZFMK 60.317, adult female, skin and skull; Filadelfia, Paraguay, collected by J. Unger, 10 Dec 1958, field no. 448.
Comments. Holotype CM 67067, taken at 5–7 km W Estantia Juan de Zalazar, Depto. Presidente Hayes, Paraguay (Wetzel 1980).

LAGOMORPHA

Ochotonidae

Lagomys ater Eversmann, 1842
Addenda ad Celeberrimi Pallasii Zographiam Rosso-Asiaticam, Fasc. 3: 3.
Material. Possible paralectotype (see below), ZFMK 88.64, juvenile female, mount and skull (extracted in 1988); Russia, Altai, sold by J.G.W. Brandt 1851 to the Zoological Institute Heidelberg (No. 391), exchanged in 1988.
Current name. Ochotona alpina atra (Eversmann, 1842) or Ochotona a. alpina (Pallas, 1773); see Lissovsky (2003).
Comments. Johann Georg Wilhelm Brandt (1794–1856) opened a warehouse for natural history specimens in Hamburg in 1827. He had world-wide connections to travelers and collectors (Stresemann 1967). It is likely, but not certain, that he purchased specimens from Eduard Eversmann (1794–1860), a German explorer and scientist who held a professorship at the University of Kazan in Russia for several decades and who sold specimens to German museums such as the Berlin Museum (Gebhard 1964). Lagomys ater was collected in the Altai Mountains, as stated on the label of the ZFMK specimen. Lissovsky (2003) discussed the status of the Altai pika Ochotona alpina (Pallas, 1773) and the type locality and type series of O. a. atra (Eversmann, 1842). There are three specimens of Ochotona a. atra collected by Eversmann in 1841 in the ZIN. Yakhontov & Formozov (1992) designated ZIN 84398 as lectotype, and the other two specimens are paralectotypes. Provided that Eversmann distributed other specimens from his type series among German museums, ZFMK 88.64 could be a further paralectotype.

Leporidae

Pronolagus randensis waterbergensis Hoesch & Lehmann, 1956
Bonn. Zool. Beitr. 7: 32, fig. 6
Holotype. ZFMK 34.144, male, skin and skull; Otjosongombe, Waterberg, Namibia, caught by W. Hoesch, 1 June 1934, field no. XXXI.
Current name. Pronolagus randensis caucinus Thomas, 1929 (Hoffmann & Smith 2005).

ERINACEOMORPHA

Erinaceidae

Erinaceus algirus girbaensis Vesmanis, 1981
Holotype. ZFMK 79.464, skin and skull; Djerba Island, Tunisia, collected May 1932, purchased from Fritsche.
Paratype. ZFMK 79.463, skin and skull, same data as holotype.

SORICOMORPHA

Soricidae

Congosorex verheyeni Hutterer, Barriere & Colyn, 2001
Holotype. ZFMK 99.932, female, specimen preserved in spirit and skull; Mbomo, Parc National d’Odzala, Republic of the Congo, collected by members of the ECOFAC team, 19 Oct 1996, field no. R16761.
Comments. Paratypes in MNHN, RMCA and in PBS.

Congosorex phillipsonorum Stanley, Rogers & Hutterer, 2005
J. Zool., London 265: 271, figs. 3–8
Paratype. ZFMK 2009.631 (formerly FMNH 169493), alcoholic specimen, skull removed; West Kilombero Scarp, 2062 m, Udzungwa Mts, Iringa District, Iringa Region, Tanzania; collected by K.M. Howell, 15 Jul 2000, field no. KMH 19125.
Comments. Holotype in FMNH.
Crocidura arabica  Hutterer & Harrison, 1988
Bonn. zool. Beitr. 39: 64, figs. 3, 5, 6

Crocidura ariadne  Pieper, 1979
Bonn. zool. Beitr. 29: 282, figs. 1–6 (30 Jan)
Holotype. ZFMK 78.100, cranial fragment taken from owl pellet; Agia Pnevmi, Crete, Greece, collected by Harald Pieper, 23 Sept 1973.

Crocidura batakorum  Hutterer, 2007
Lynx (PrEEh a) n.s. 38: 11, figs. 5–8
Holotype. ZFMK 96.411, old adult male(?), specimen in spirit, skull extracted, part of left braincase damaged; Tanabag River Valley near village Kalabayog (0°44'N, 118°43'E), ca. 60 km N Puerto Princesa, Palawan, Republic of the Philippines, 200 m, collected by S. Bächner, 10 Mar 1992.
Comments. Status confirmed by Esselstyn et al. (2009).

Crocidura (bottegi) obscurior  Heim de Balsac, 1958
Paratype. ZFMK 59.499, female preserved in spirit, skull extracted and lost; “Fôrét Zièla”, 500 m, Mount Nimba, Guinea, collected by M. Lamotte, 24 Oct 1956, collector’s no. 59.
Current name. Crocidura obscurior Heim de Balsac, 1958
Comments. Specimen donated to M. Eisentraut by H. Heim de Balsac. Holotype probably in MNHN.

Crocidura canariensis  Hutterer, López-Jurado & Vogel, 1987
J. nat. Hist. 21: 1354, figs. 2–4
Holotype. ZFMK 86.75 (transferred to Museo Canario at Las Palmas in 1987), adult male, specimen preserved in spirit, skull and mandibles extracted; offspring of animals collected at La Tiscamanita, N Túineje, Fuerteventura, Canary Islands, Spain, by L. F. López-Jurado, 30 Jan 1985. Chromosome slides (IZEA 2331; Hutterer et al. 1990, fig. 2) and frozen tissue kept at IZEA, Lausanne.
Paratypes. ZFMK 86.76, 86.370, two females in alcohol, same data as holotype; ZFMK 86.72-74, three skeletons, same data as holotype; ZFMK 86.371, skin from La Oliva, Fuerteventura, Nov 1984; ZFMK 86.372, skin from Malpais de los Arravales, Fuerteventura; ZFMK 86.374–380, skins from owl pellets collected near Gran Tarajal, Fuerteventura, all collected by L. F. López-Jurado.
Comments. Holotype ZFMK 86.75 is voucher for the GenBank sequences EF525043 and EF525160 (IZEA 2331, Dubey et al. 2008). Paratype ZFMK 86.76 is voucher for the chromosome count 2n = 36, NF = 56, NFA = 52 in Hutterer et al. (1992), table 1 (IZEA voucher 2332).

Crocidura flavescens bueae  Heim de Balsac & Barloy, 1966
Mammalia 30: 631
Paratype. ZFMK 78.004, skin and skull of a juvenile female; garden of mission, Buea, ca. 1000 m, Cameroon, collected by M. Eisentraut, 26 Jan 1954, field no. 54, received in exchange from SMNS in 1978 (catalogue no. SMNS 5561)
Comments. The holotype out of the same series (“femelle, No. 53, Missionsgarten, Buea (Eisentraut ...)”) was in the working collection of Heim de Balsac and today is in the MNHN, Paris. In their short description the authors stated “Cotypes à choisir parmi les spécimens de Buea, au Musée de Bonn”. The series collected by Eisentraut near Buea in 1954 and 1957 and studied by Heim de Balsac ended up at the SMNS, though. Apart from the paratype in the ZFMK collection which was received in exchange in 1978, there are three more paratypes in the SMNS with the collection nos. SMNS 5559 (field no. 35), 5560 (field no. 49) and 6561 (field no. 11).

Crocidura flavescens hansrumpfi  Hutterer, 1981
Bonn. zool. Beitr. 31: 226, fig. 3 (29 Jan)
Paratype. ZFMK 80.265, female, skin and skull; Jimma, Kaffa Province, Ethiopia, collected by H. Rupp, 23 Aug 1973, collector’s no. 477; received in exchange from Stuttgart Museum (SMNS 23703), Apr 1980.
Current name. Crocidura olivieri group, status unresolved (Hutterer 2005).
Comments. This form represents a dark chocolate-brown forest form of the C. olivieri group in Ethiopia, the variation of which is still poorly understood.

Crocidura lamottei elegans  Hutterer, 1986
Cimbebasia, Ser. A., 8: 29
Holotype. ZFMK 76.009, male, skin and skull; Bandia, Senegal, collected by W. Böhme, W. Hartwig and H. Ullenbruch, 9–20 Jan 1976, field no. 279.
Paratype. ZFMK 76.010, female, skin and skull, same data as holotype, field no. 234.
Crocidura lanosa Heim de Balsac, 1968
Biol. Gabonica 4: 309, figs. 1–4


Current name. Crocidura lanosa Heim de Balsac, 1968.

Crocidura littoralis stenocephala Heim de Balsac, 1979
Säugetierkundl. Mitt. 27: 258, figs. 4–6 (Nov)

Paratype. ZFMK 79.141, female, skin and skull; Kahuzi Biega National Park, Kivu, Democratic Republic of the Congo, collected by F. Dieterlen, 15 Nov 1972, field no. K 2544; received in exchange from SMNS (SMNS catalogue no. 22806).

Current name. Crocidura stenocephala Heim de Balsac, 1979 (Hutterer 1982).

Comments. The species was described in Dieterlen & Heim de Balsac (1979).

Crocidura manengubae Hutterer, 1982
Bonn. zool. Beitr. 32: 241, figs. 1, 4 (Jan)

Holotype. ZFMK 81.443, male, skin and skull; Lake Manenguba, 1800 m, Bamenda Highlands, Cameroon, collected by M. Eisentraut and assistants, 28 Dec 1966, field no. 306.

Paratype. ZFMK 69.409, female, skin and skull; same locality and collectors, 3 Jan 1967, field no. 321.


Crocidura osorius Molina & Hutterer, 1989
Bonn. zool. Beitr. 40: 86, figs. 2, 3, 8, 13

Paratypes. ZFMK 89.54, specimen in spirit, skull extracted; near Teror, Gran Canaria, Spain, collected by staff of the Finca de Osorio, 1988, field no. 3.


Comments. Holotype (field no. 42) deposited in the Museo Canario, Las Palmas de Gran Canaria (Molina, in litt. 2009).

Crocidura panayensis Hutterer, 2007
Lynx (Praga) n.s. 38: 6, figs. 1–4

Holotype. ZFMK 2003.1091, adult female, specimen in spirit, skull extracted; Sibaliw, Municipality of Bunuan (11°49.188′N, 121°58.064′E), NW peninsula, Panay, Republic of the Philippines, collected by E. Curio, 13 May 2000; transferred to the NMP (now NMP 5207).


Comments. Status confirmed by Esselstyn et al. (2009).

Crocidura suaveolens balcanica Ondrias, 1971
Z. Säugetierkd. 35: 379

Paratypes. ZFMK 66.337, female, skin and skull; Sara- jevo, Bosnia and Herzegovina, former Yugoslavia, collected by G. Witte, 26 June 1962, field no. 383; ZFMK 66.335, 66.336, 1 female, 1 male, skins and skulls; Ombra Valley, Croatia, former Yugoslavia, collected by G. Witte, 7 and 9 June 1962, field nos. 371, 380.

Current name. Crocidura suaveolens mimula Miller, 1901; see Dubey et al. (2007).

Comments. The holotype was collected near Kryoneri on, Attica, Greece.

Crocidura sicula aegatensis Hutterer, 1991
Bonn. zool. Beitr. 42: 247

Holotype. ZFMK 89.392, adult male, skin and skull; Casa Sarraceno, Marcellina, Egadi Islands, Italy, collected by F. Krapp, 23 Mar 1969, field no. 35/69.

Paratypes. 6 specimens, listed in detail by Krapp (1970); 1 from Levanzo (ZFMK 89.393, skull), Favignana (ZFMK 89.394–397, 4 skulls, ZFMK 89.398, skin and skull).


Crocidura sicula calypso Hutterer, 1991
Bonn. zool. Beitr. 42: 247

Holotype. ZFMK 89.418, adult male, specimen preserved in spirit and extracted skull; Is-Saqwi, Xlendi Valley, Gozo (Malta), collected by S. Schembri and D.M. Johnson, 22 Oct 1986.

Paratypes. ZFMK 89.400, specimen in spirit, skull removed, same data as holotype; ZFMK 89.401–417, 2 uncatalogued, 20 skulls from owl pellets, Gozo, collected by J. Sultana, Oct 1981.


Comments. Further paratypes are in the collection of P. J. Schembri, Malta, and in IZEA.

Crocidura suaveolens brunecheri Lehmann, 1977
Ric. Biol. Selvag., Suppl., 5: 198, fig. 2 (May)

Holotype. ZFMK 77.665, male, skin and skull; Tiriolo, Catanzaro, Calabria, Italy, collected by E. von Lehmann, 6 Mar 1977, field no. 18.

Paratypes. 12 skins and skulls from Catanzaro Province: 3 males, 4 females, ZFMK 77.664, 77.666-77.671, Tirolo; 3 males, ZFMK 77.661-77.663, Marcellentina; male, ZFMK 77.660, Catanzaro; male, ZFMK 77.672, near Petritzia; all collected by E. von Lehmann, Mar 1977.

Current name. Crocidura suaveolens mimula Miller, 1901; see Dubey et al. (1997).
Comments. Described as *C. s. brücheri* (Lehmann 1977).

*Crocidura tansaniana* Hutterer, 1986  
Bonn zool. Beitr. 37: 27, fig. 3c  
**Holotype.** ZFMK 85.194, adult male, skin and skull; Amani, E Usambara Mountains, Tanga, Tanzania, collected by S.R.Telford, 17 June 1984, field no. SRT-TZ-12078.  
**Current name.** *Crocidura tansaniana* Hutterer, 1986.

*Crocidura telfordi* Hutterer, 1986  
Bonn zool. Beitr. 37: 28, fig. 3d  
**Holotype.** ZFMK 85.195, adult male, skin and skull; Morningside, 1150m, Uluguru Mountains, Morogoro, Tanzania, collected by S.R.Telford, 17 Nov 1983, field no. SRT-TZ-4806.  
**Current name.** *Crocidura telfordi* Hutterer, 1986.  
**Comments.** A further skin without skull (SRT-TZ-2397) from Bondwa Peak, Uluguru Mountains, was mentioned in the original description (Hutterer 1986) but excluded from the type material.

*Crocidura yankariensis* Hutterer & Jenkins, 1980  
**Paratype.** ZFMK 80.805, skull without occipital, with both mandibles, from pellet; Futuk (9°50′N, 10°55′E), Bauchi State, Nigeria, collected by A. Demeter, 7 Aug 1978, field no. 55.  
**Current name.** *Crocidura yankariensis* Hutterer & Jenkins, 1980.  
**Comments.** Holotype in MNHM.

*Myosorex eisentrauti* Heim de Balsac, 1968  
Bonn zool. Beitr. 19: 20, figs. 1–6 (10 Apr)  
**Holotype.** ZFMK 69.372, male, skin and skull; Pico de Santa Isabel, 2400 m, Bioko, Equatorial Guinea, collected by M. Eisentraut, 14 Oct 1966, field no. 41.  
**Paratypes.** ZFMK 69.373, female, skin and skull, same data as holotype, field no. 40; ZFMK 69.374, male, skin and skull, Refugium, 200 m, 5 Oct 1966, field no. 2; ZFMK, without catalogue no. (field no. 9), skull (skin given to Pater Basilio), Refugium, Bioko, 6 Oct 166, all collected by M. Eisentraut.  
**Current name.** *Myosorex eisentrauti* Heim de Balsac, 1968 (Hutterer 2005).

*Myosorex eisentrauti okuensis* Heim de Balsac, 1968  
Bonn zool. Beitr. 19: 24, figs. 4, 5 (10 Apr)  
**Holotype.** ZFMK 69.376, male, skin and skull; Lake Oku, Lager IV, 2100 m, Banso Highlands, Cameroon, collected by M. Eisentraut, 25 Jan 1967, field no. 410.  
**Paratypes.** 11 skins and skulls, ZFMK 69.377-69.389, Lake Oku (field nos. 460, 446, 377, 346, 461, 376, 340, 345, 416); Lake Manenguba (field nos. 277, 320), all collected by M. Eisentraut in Jan and Feb 1967.  
**Current name.** *Myosorex okuensis* Heim de Balsac, 1968 (Hutterer 2005).  
**Comments.** Paratype ZFMK 69.389 (field no. 447) was given to the Transvaal Museum Pretoria in Aug 1981. Additional paratypes were in the working collection of H. Heim de Balsac and subsequently passed to MNHN.

*Myosorex eisentrauti rumpii* Heim de Balsac, 1968  
Bonn zool. Beitr. 19: 27, figs. 4–6 (10 Apr)  
**Holotype.** ZFMK 69.375, male, skin and skull; Lager V near Dikume, 1100 m, Rumpi Hills, Cameroon, collected by M. Eisentraut, 28 Feb 1967, field no. 568.  
**Current name.** *Myosorex rumpii* Heim de Balsac, 1968 (Hutterer 2005).

*Myosorex khaaulei* Stanley & Hutterer, 2000  
Bonn zool. Beitr. 49: 20, figs. 1, 2 (30 Dec)  
**Paratypes.** ZFMK 2009.633, female, skin and skull; 4 km W 5° N Chita, 1460 m, 8°28′30″S, 35°54′25″E, Udzungwa Scarp Forest Reserve, Udzungwa Mts, Kilombero District, Morogoro Region, Tanzania, collected by W.T. Stanley, 14 Aug 1995, field no. WTS 1877. Formerly FMNH 155611.  
**Current name.** *Myosorex khaaulei* Stanley & Hutterer, 2000.

*Neomys anomalus rhenanus* Lehmann, 1976  
Bonn zool. Beitr. 27: 160 (Oct)  
**Holotype.** ZFMK 71.62, male, skin and skull; Fimnich near Datzeroth, Westerwald, Germany, collected by E. von Lehmann, 6 Apr 1971, field no. 360.  
**Current name.** *Neomys anomalus* Cabrera, 1907.  
**Comments.** Further paratypes from the private collection of W. Issel, Augsburg, are now in SMNS.

*Neomys fodiens niethammeri* Bühler, 1963  
Bonn zool. Beitr. 14: 169  
**Neotype.** ZFMK 94.525, female, skin and skeleton; islet below karstic spring, Ramales de la Victoria, Cantabria, N Spain, collected by P. Bühler, 18–19 Sept 1970 (in captivity until 28 Dec 1970).  
**Current name.** *Neomys fodiens niethammeri* Bühler, 1963.  
**Comments.** Bühler (1996: 312) designated a neotype because the holotype, an isolated mandible, was lost. The
taxon may eventually deserve species status (López-Fuster et al. 1990).

**Paracricodura schoutedeni camerunensis** Heim de Balsac, 1960

Bonn, Zool. Beitr. 10: 204, fig. 3 (10 Jan)

**Holotype.** ZFMK 61.760, male, skin and skull; Lager V, ca. 600 m, above Muéli, N side of Mount Cameroon, Cameroon, collected by M. Eisentraut, 7 Feb 1958, field no. 568.

**Current name.** Paracricodura camerunensis Heim de Balsac, 1960 (Hutterer, unpubl.).

**Sorex araneus hilleri** Lehmann, 1966

Säugetierkundl. Mitt. 14: 131, fig. 2

**Holotype.** ZFMK 64.169, male, skin and skull; Naturschutzgebiet Elmpeter Schwalmbruch, Kreis Erkelenz, Bezirk Aachen, North Rhine-Westphalia, Germany, collected by E. von Lehmann, 7 Apr 1964, field no. 29.

**Paratypes.** 6 males, 2 females (ZFMK 64.168, 64.170, 64.171, 64.577-580, 64.1193), same collector and locality.

**Current name.** Sorex araneus hilleri Lehmann, 1966.

**Comments.** Two paratypes (ZFMK 64.1192, 64.1194) were exchanged with NMW in May 1979.

**Sorex araneus silanus** Lehmann, 1961

Zool. Anz. 167: 214

**Holotype.** ZFMK 60.339, adult male, skin and skull; Camigliatello Silano, Calabria, Italy, collected by E. von Lehmann, 9 Aug 1960, field no. 71.

**Paratypes.** 4 males, 3 females, 1 indiv. sex undetermined, ZFMK 60.336-60.338, 60.340-60.344, all same locality and collector.

**Current name.** Sorex araneus silanus Lehmann, 1961.

**Comments.** Taxonomy discussed in detail by Brüunner et al. (2002).

**Sorex araneus wettsteini** Bauer, 1960

Bonn. zool. Beitr. 11: 178 (30 Oct)

**Paratypes.** ZFMK 79.544 (male), 79.545 (female), skins and skulls; salutation zone of Neusiedler See, Neusiedl am See, Burgenland, Austria, collected by K. Bauer, 19 May and 11 Apr 1951, field nos. KB 51/105, KB 51/44. Obtained in exchange from NMW in 1979.

**Current name.** Sorex araneus wettsteini Bauer, 1960.

**Sorex minutus becki** Lehmann, 1963


**Holotype.** ZFMK 56.1004, male, skin and skull, Sihum, Liechtenstein, collected by E. von Lehmann and H.-J. Kuhn, 11 Aug 1956.

**Paratypes.** ZFMK 49.43, male, skin and skull; Osterach Valley, Allgäu, Germany, 7 Sept 1949; ZFMK 50.144, 50.145, 2 males, skins and skulls, Bodman, Lake Constance, Germany, 9 May 1949, all collected by G. Heinrich.

**Current name.** Sorex minutus Linnaeus, 1866.

**Sorex etruscus** Savi, 1822

Nuovo Giornale dé Letterati 1: 60, plate on p. 70

**Syntypes.** ZFMK 78.513, adult female, in spirit, skull removed; Italy, earlier than 1846, sent to Göttingen Museum by Paolo Savi (Berthold 1850: 13, “Gesch. dcs Hrn Prof Savi” = donated by prof. Savi), where it was catalogued in 1846. Inscription on specimen label: “Crocidura etrusca (Savi) / 1846 / Savi”. ZFMK 78.514, juvenile, complete specimen in spirit. Pisa, Italy, no date, sent to Göttingen Museum by Paolo Savi; has 2 labels, a) one old and faded, “Sorex etruscus ...”, b) a newer one, approximately about 1850, “a. Crocidura etrusca / A.S. / Savi / Pisa”.

**Current name.** Suncus etruscus (Savi, 1822).

**Comments.** Both specimens were detected on the occasion of the take-over of parts of the mammal collection of the old Göttingen Museum by ZFMK in 1978. The meaning of “A.S.” on the label of the second specimen is “Alte Sammlung” (=old collection). Therefore it already was in the old collection when its first inventory was compiled about 1846.

**Sylvisorex akaibe** Mukinzi, Hutterer & Barrière, 2009

Mammalia 73: 130, figs. 2, 3

**Paratype.** ZFMK 2006.168 (R27986), young adult; Masako Forest Reserve (00°36.304’N, 25°15.389’E), 388 m, Kisangani area, Tshopo district, NW Democratic Republic of the Congo, collected by I. Mukinzi and D. Amundala, 2 Jun 2005.

**Current name.** Sylvisorex akaibe Mukinzi, Hutterer & Barrière, 2009.

**Comments.** Holotype. Holotype in RCMA.

**Sylvisorex granti camerunensis** Heim de Balsac, 1968

Bonn, zool. Beitr. 19: 35, figs. 10, 11 (10 Apr)

**Holotype.** ZFMK 69.358, male, skin and skull; Lager III, 1800 m, Lake Manenguba, Cameroon, collected by M. Eisentraut, 18 Dec 1966, field no. 271.

**Paratypes.** 6 skins and skulls, ZFMK 69.359, 69.361-69.364, one specimen without catalogue no.; Lake Manenguba (field nos. 305, 295, 280); Dec 1966; Lake Oku, 2100 m (field nos. 354, 363, 375), Jan 1967, all collected by M. Eisentraut.

**Current name.** Sylvisorex camerunensis Heim de Balsac, 1968; see Hutterer et al. (1992).

**Sylvisorex morio isabellae** Heim de Balsac, 1968

Bonn. zool. Beitr. 19: 31, figs. 8, 9 (10 Apr)

**Holotype.** ZFMK 69.365, male, skin and skull; Refugium, 2000 m, Bioko, Equatorial Guinea, collected by M. Eisentraut, 10 Nov 1966, field no. 32.
Paratypes. 3 skins, 2 skulls, ZFMK 69.366, 69.367, one specimen without catalogue no., Refugium (field no. 35), Bioko, Oct 1966; Pico de St. Isabel, Bioko, 2400 m (field no. 44), 14 Oct 1966, all collected by M. Eisentraut.  
Current name. *Sylvisorex rayo corbeti*  
Hutterer & Montermin, 2009  
Bonn. zool. Beitr. 37: 752  
Holotype. ZFMK 66.298, male, skin and skull; Monte Gargano, Apulia, Italy, collected by G. Witte, 28 July 1961, field no. 216.  
Current name. *Talpa rayo vittei*  
Hutterer (2005).  

*Talpa rayo vittei*  
Hutterer, 1988  
Current name. *Talpa rayo vittei*  
Hutterer (2005).  

*Talpa rayo vittei*  
Hutterer, 1988  
Current name. *Talpa rayo vittei*  
Hutterer (2005).  

CHIROPTERA  

**Pteropodidae**  

*Ronsettus aegyptiacus occidentalis*  
Eisentraut, 1960  
Bonn. zool. Beitr. 10: 231, figs. 8, 13 (10 Jan)  
Holotype. ZFMK 59.450, male, skin and skull; Mueli, ca. 600 m, N side of Mount Cameroon, Cameroon, collected by M. Eisentraut, 20 Feb 1958, field no. 648.  
Paratypes. 28 skins and skulls, 1 specilmen in spirit; Lager V, above Mueli, 600 m (ZFMK 61.576, 61.578, 61.582, 61.584-61.586, 61.595-61.597, 61.600, 61.602), Feb 1958; Lager I, above Buea, 1600 m, Mount Cameroon (ZFMK 61.592, 61.593, 63.209a-f), Nov 1957; Lager VI, Isobi, 30 m, W side of Mount Cameroon (ZFMK 61.577, 61.580, 61.581, 61.583, 61.587-61.591, 61.594, 61.598, 61.599, 63.208a-e), Mar 1958; Lager IV, near Lake Koto Barombi, 120 m, N side of Mount Cameroon (ZFMK 61.575, 61.579, 61.601), Jan 1958; all collected by M. Eisentraut.  
Current name. *Ronsettus aegyptiacus unicolor*  
Gray, 1870; see Koopman (1966).  

**Rhinolophidae**  

*Hipposideros camerunensis*  
Eisentraut, 1956  
Zool. Jb., Syst. Ökol. 84a: 526, figs. 6–8 (27 Dec)  
Paratype. ZFMK 79.138, adult female; Buea, Cameroon, collected by M. Eisentraut, 29 Apr 1954, field no. 506; received in exchange from SMNS (SMNS catalogue no. 5196), Mar 1979.  

Bonn zoological Bulletin 59: 3–27

Comments. Holotype and additional paratypes in SMNS.

*Rhinolophus denti knorri* Eisentraut, 1960
Stuttg. Beitr. Naturk. 39: 3, fig. 2 (1 June)

Paratypes. ZFMK 59.174, male, skin and skull; cave near Nyembaro, Salung Plateau, 10 km W Kolenté, Guinea, collected by H. Knorre, 15 Nov 1956, field no. 90; ZFMK 59.175, male, skin and skull, same locality and collector, 19 Nov 1956.


Comments. Holotype in SMNS.

*Rhinolophus ferrumequinum martini* Petrov, 1941

Holotype. ZFMK 2002.458, female, skull; Pepeliste near Krivolak, 400 m, 40 km SE Veles, S Serbia, collected by B. Petrov, 9 Apr 1939, field no. BP 214.

Paratypes. ZFMK 98.078, female, skin and skull, same data as holotype, field no. BP 217.

Current name. *Rhinolophus ferrumequinum* (Schreber, 1774), see Csorba et al. (2003).

*Rhinolophus landeri guineensis* Eisentraut, 1960
Stuttg. Beitr. Naturk. 39: 1, fig. 1 (1 June)

Paratypes. ZFMK 59.176, female, skin and skull; Tahiré, bottom of Kelesi Plateau, Guinea, collected by H. Knorre, 5 Oct 1956, field no. 29; ZFMK 59.177, male, skin and skull, cave near Nyembaro, Kankuya Plateau, 8 km W Kolenté, Guinea, same collector, 23 Nov 1956, field no. 137.


*Rhinolophus sumatr anus* K. Andersen, 1905

Paratype. ZFMK 78.526, male, complete specimen in spirit; Sumatra, Dr. Lambrecht, without date; transferred from Göttingen Museum (catalogue no. 61a) 1978.


*Rhinolophus ziama* Fahr, Vierhaus, Hutterer & Kock, 2004
Myotis 40: 109, figs. 1–7

Holotype. ZFMK 99.934, adult male, specimen preserved in spirit, skull and parts of skeleton; Reserve de la Biosphere du Massif du Ziama, western edge of Seredou, Guinée Forestière, Guinea, collected by H. Vierhaus, 12 Aug 1992, field no.HV 2590.


Megadermatidae

*Megaderma gigas* Dobson, 1880

Holotype. ZFMK 78.525, specimen in spirit, skull extracted; Wilson’s River, Mount Margaret, Central Queensland, Australia, collected by Mr. Wilson, sent to Göttingen Museum by Dr. Schütte 1879. Transferred to ZFMK in 1978; Göttingen Museum catalogue no. 102a.

Current name. *Macroderma gigas* (Dobson, 1880).

Comments. When retrieved in 1978 the skull of the holotype was dissected on one side only. Therefore Dobson must have obtained his figure by mirroring this side of the skull. The only partial dissection of the skull also explains the fact that in the original description the skull figured has no nasal fossa. The skull was cleaned in 1979.

Phyllostomidae

*Platyrrhinus chocoensis* Alberico & Velasco, 1991
Bonn. zool. Beitr. 42: 238

Paratype. ZFMK 89.250, male, skin and skull; Concepción Bajo Calima pulpope, Municipio Buenaventura, Valle, Colombia, collected by J.H. Gamba, 2 Mar 1986, field no. 129, donated by M. Alberico in 1989.


Comments. Further paratypes in ZMB (Turni & Kock 2008), FMNH, MNHN and SMNS.

Molossidae

*Dinops Cestoni* Savi, 1825
Nuovo Giornale de’ Letterati, Pisa, 10: 235


Current name. *Tadarida teniotis* (Rafinesque, 1814).

Comments. Synonym of *Tadarida teniotis*. The specimen was sent to the Göttingen Museum by P. Savi. The year specification 1846 refers to the year of inventory taking in Göttingen (cf. Berthold 1850), the specimen was collected before. Additional specimens that can also be considered to represent syntypes are in the museums of Pisa, Vienna, and London.

Vespertilionidae

*Amblyotus atratus* Kolenati, 1858
Syntype(?). ZFMK 77.1035, male, in spirit, skull extracted; label 1: “Amblyotus atratus (Kolenati) / Meteorus / Altvater Mountains”, label 2: “Vesperus atratus Kuhl / Altvater /107a/ C. Koch”.

**Current name.** Eptesicus nilssonii (Keyserling & Blasius, 1839), see Ellerman & Morrison-Scott (1951).

**Comments.** The ZFMK specimen originates from the bat collection of the renowned chiropterologist Carl Koch who mainly collected in Hesse and Westphalia but also exchanged bats from all over the world or received them from contemporaries. Koch very probably received the specimen now in Bonn from his contemporary Kolenati. This assumption is supported by the label entries of Kolenati’s genus (*Amblyotus*), subgenus (*Meteorus*) and species (*atraius*) as well as the type locality “Altvater Mountains”. C. Koch’s main work (*Das Wesentliche der Chiropteren mit besonderer Beschreibung der in dem Herzen von Nassau und den angrenzenden Landesteilen vorkommenden Fledermäuse; 1862/63*) contains a paragraph on *Meteorus atraius* (Kolenati) on page 393 which documents that Koch saw a specimen. In addition he points out the similarity of *M. atraius* with *V. nilssonii.***

**Plecotus alpinus** Kiefer & Veith, 2002

*Myoris* 39: 8, figs. 2–4 (Apr 2002)

**Holotype.** ZFMK 2001.325, male, skin and skull; Ristolas (06°53’N 44°46’E), Haute Alpes, France, 1600m, collected by P. Favre, 24 Aug 2001.


**Current name.** Plecotus macrobullaris alpinus Kiefer & Veith, 2002.

**Comments.** See Kock (2002) for a discussion of the publication date.

**Plecotus auritus hispanicus** Bauer, 1957

Bonn zool. Beitr. 7: 312 (31 Jan)

**Holotype.** ZFMK 46.292, female, skin and skull; Lagunilla, Bejar, Salamanca, Spain, collected by H. Grün, 7 July 1940.

**Paratypes.** 8 skins and skulls, 1 specimen in spirit; ZFMK 34.19 (Lagunilla, 3 Feb 1934), 46.288 - 46.291, 46. 293 (same locality, 6–10 July 1940), 35.73 (Linares de Riofrio, 2 May 1935), 53.36 (same locality, 3 Feb 1953), 30.66 (specimen in spirit, Mosqueruela, 3 Oct 1930), all collected by H. Grün.

**Current name.** Plecotus austriacus hispanicus Bauer, 1957; see Bauer (1960: 141–144).

**Pipistrellus eisenrauti** Hill, 1968

Bonn. zool. Beitr. 19: 45 (10 Apr)

**Holotype.** ZFMK 68.5, adult male, skin and skull; Lager V, Dikume-Balue, Rumpi Hills, Cameroon, collected by M. Eisentraut, 18 Feb 1967, field no. 498.

**Paratype.** ZFMK 68.6, adult female, skin and skull; Lager II, ca. 1100 m, Mount Kupe, Cameroon, same collector, 30 Nov 1966, field no. 198.

**Current name.** Hypsugo eisenrauti (Hill, 1968).

**Comments.** Another paratype was given to BMNH.

**Vespertilio Bonapartii** Savi, 1838

Nuovo Giornale de’ Letterati, Pisa, 37: 226


**Current name.** Hypsugo savii (Bonaparte, 1837).

**Comments.** This specimen of Savi’s pipistrelle was sent to the Göttingen Museum by Paolo Savi, as noted by Berthold (1850) and was subsequently discussed by Dobson (1880). *Vesperugo musculus* Blasius, 1853 is another synonym of *H. savii*; syntypes of this taxon are preserved in the Natural History Museum of Braunschweig (Hevers 2005).

**CARNIVORA**

**Felidae**

**Felis catus jordansi** Schwarzc, 1930

Zool. Anz. 91: 223

**Holotype.** ZFMK 83.186, male, skin and skull (occiput damaged); Santa Margarita, Majorca, Spain, collected by J. Parpal, 13 Jan 1929.

**Paratype.** ZFMK 83.187, skin, in poor condition; San Juan, Majorca, same collector, 9 June 1930.

**Current name.** Felis silvestris jordansi Schwarzc, 1930.

**Comments.** Skull and skin of holotype are figured in Haltenorth (1953). The paratype may be a domestic cat.

**Viverridae**

**Genetta bourloni** Gaubert, 2003

Mammalia 67: 95, figs. 4–6

**Paratype.** ZFMK 95.10, skin; Ziama Forest, Gboda, SE Guinea, obtained from local people by W. Bützler, 1993/94.

**Current name.** Genetta bourloni Gaubert, 2003.
Genetta (Paragenetta) lehmanni Kuhn, 1960

Säugetierkundl. Mitt. 8: 154–160, figs. 1, 4, 5, 7, 9–12

Holotype. ZFMK 57.11, skull of an adult individual, sex unknown; Kpeaple (6°36′N, 8°30′W), Liberia, Feb 1956, ex H. Himmelheber collection.

Paratypes. ZFMK 61.966, skull of an adult individual, sex unknown, same locality and collector, 1959; formerly in the possession of Dr. H. Himmelheber.

Current name. Genetta johnstoni Pocock, 1908.


Herpestidae

Crossarchus platycephalus Goldman, 1984
Can. J. Zool. 62: 1624

Paratypes. 6 skins, 6 skulls (2 damaged); ZFMK 61.739 (field no. 701), adult male. ZFMK 61.741 (field no. 700), adult female, collected by M. Eisentraut, Lager VI, Isobi, near Bibundi, W side Mount Cameroon, Cameroon, 5 Mar 1958, 30 m; ZFMK 61.742 (field no. 719), adult, same locality and collector, 7 Mar 1958; ZFMK 61.740 (field no. 657), ZFMK 61.743 (field no. 563), adult males, Lager V, above Mueli, 600 m, N side Mount Cameroon, Cameroon, same collector, 21 Feb and 6 Feb 1958; ZFMK 69.150 (field no. 578), Lager V, Dikume, 1100 m, Rumphi Hills, W Cameroon, same collector, 1 Mar 1967.


Liberictis Kuhl

Hayman, 1958

Ann. Mag. nat. Hist. (13) 1: 449, fig. 1

Paratypes. 6 skulls, ZFMK 58.21 – 58.26; Gaplay (7°8′N, 8°28′W), NE-Liberia, Jan 1957, ex H. Himmelheber collection.

Current name. Liberictis kuhlii Hayman, 1958.

Comments. The original series consisted of 8 skulls. The holotype is BMNH 58.507 and one paratype was in the collection of the Department of Biogegraphy, Saarbrücken University.

Canidae

Vulpes vulpes toshchi Lehmann, 1969
Z. Jagdwiiss. 15: 28–31, figs. 1–4

Holotype. ZFMK 66.487, adult female, flat skin and skull; Calvo area, Monte Gargano, Apulia, Italy, collected by M. Fasciuroso, 13 Oct 1961, collection G. Witte.

Paratypes. 4 skulls, 2 flat skins. ZFMK 56.741, male, flat skin and skull, Foresta Umbra, Monte Gargano, collected by B. Hagen, 12 Sept 1955; ZFMK 56.742, skull, humerus and femur, same locality and collector; ZFMK 66.488, female, skull, Calvo area, Monte Gargano, 800–900 m, collected by M. Fasciuroso, June 1961, collection G. Witte no. 214; ZFMK 66.489, damaged skull, Foresta Umbra, Monte Gargano, collected by La Torre, June 1961, collection G. Witte no. 243; ZFMK 68.205, male, flat skin, Langro, Calabria, Italy, through V. Skanderberg, winter 1967/68, collection E. von Lehmann.

Current name. Vulpes vulpes crucigera Bechstein, 1789.

ARTIODACTYLA

Cervidae

Alces pfizenmayeri Zukowsky, 1910
Wild und Hund 16, 45: 808.

Material. ZFMK 2009.632, a possible syntype or paralectotype; skull of adult male, junction of Aldan and Lena River, Yakutsk Province, Russia; collected by E. Pfizenmayer (Tiblisi) in Nov 1909.

Current name. Alces americanus (Clinton, 1822).

Comments. Pfizenmayer (1910) published an account on a large form of moose from northern Siberia in which he figured five male skulls from the Aldan Range. Zukowsky (1910: 808) subsequently commented on this article and named the moose Alces pfizenmayeri. In 1914 he added a more detailed account in which he fixed the skull shown in Pfizenmayer’s (1910) figure 6 as the type; this skull had been donated to the Berlin Museum and catalogued under number A.19.09 (Zukowsky 1914: 38). A letter from E. Pfizenmayer to Alexander Koenig dated 15 June 1911 (ZFMK Archives) tells that he sold other skulls from that series to the museums of Vienna, Washington, Stockholm, and Bonn; one he kept for himself. Zukowsky’s (1914) action of fixing the Berlin specimen as the type can be taken as a lectotype designation; the remaining specimens will then be paralectotypes. The Bonn specimen was not figured in the paper of Pfizenmayer (1910); its status is therefore questionable. It is, however, one of the original specimens obtained by Pfizenmayer from the type locality. Grubb (2005) included the name as a synonym in Alces americanus. Zukowsky’s name, however, is the earliest available name for the Palaearctic range of the American Moose and is sometimes applied as technical name for the Yakutsk Moose (Franzmann 1981).

Dama dama geiselana Pfeiffer, 1998
Eiszeitalter u. Gegenwart 48: 75, figs. 1C, 2, 6

Material. ZFMK 2009.629, east of right antler of holotype (Landesmuseum für Vorgeschichte Halle, HK 97:14165 NN17); Pleistocene lake sediments of Neumark-Nord, Geiselatal, Sachsen-Anhalt, Germany.


Comments. Cast taken from original by ZFMK staff.

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RODENTIA

Sciuridae

Sciurus ingrani sebastiani Müller & Vesmanis, 1971 Senckenberg. biol. 52: 378

Holotype. ZFMK 2009.622 (formerly Univ. Saarbrücken 0535), adult male, skin and skull; rainforest above the electric power station, 500 m, San Sebastián Island (23°50'S, 45°20'W), São Paulo State, Brazil, collected by E. & P. Müller, E.B. Böhaler & F. Silva, Oct 1964, field no. 234.


Current name. This taxon was overlooked by Thorton & Hoffmann (2005), and its status therefore not evaluated. They included ingrani as a subspecies in Sciurus aestuans, however, Müller & Vesmanis (1971) demonstrated that sebastiani was larger in cranial measurements than ingrani from the mainland, and that its body colouration was darker. Here we tentatively accept the taxon as a valid island form as Sciurus aestuans sebastiani Müller & Vesmanis, 1971.

Comments. Holotype and paratypes were initially stored at the Department of Biogeography at Saarbrücken University, then transferred to the University of Trier, and finally donated to the ZFMK in 2009. Two further paratypes are in SMF (SMF 40557-8).

Sciurus vulgaris hoffmanni Valverde, 1967


Paratype. ZFMK 92.518, adult male, skin and skull; La Perdiz, Sierra de Espuna, Alhama de Murcia, Spain, collected by J.A. Valverde, 25 Apr 1967, field no. 979.

Current name. Sciurus vulgaris hoffmanni Valverde, 1967 is antateded by Sciurus aestuans hoffmanni Peters, 1864, a Central American squirrel (Peters 1864, Elliot 1904). Both homonyms were listed by Thorton & Hoffmann (2005) without comment. A replacement name is therefore required for the strikingly large and pale squirrel of the Sierra de Espuna. It shall be further known as Sciurus vulgaris valverdei Hutterer nom. nov., in honour of its describer, J.A. Valverde.

Comments. Holotype is no. 985 in the Estación Biológica de Donana, Sevilla. Measurements of paratype 979 were included in Valverde (1967); the specimen was donated by J.A. Valverde to J. Niethammer and remained in his private collection until it was passed to the ZFMK in 1992.

Gliiridae

Dryomys nitedula aspromontis Lehmann, 1964

Sitzber. Ges. naturf. Freude Berl. (N.F.) 4: 33, fig. 2

Holotype. ZFMK 63.510, adult male, skin and skull; Gambrie d’Aspromonte, Calabria, Italy, collected by E. von Lehmann, 13 Aug 1963, field no. 92.

Paratypes. ZFMK 63.508, 63.509, 63.511 – 63.513, 3 males, 2 females, skins and skulls, same locality and collector as holotype, 12–13 Aug 1963, field nos. 85–86, 93–95.

Current name. Dryomys nitedula (Pallas, 1778).

Dryomys nitedula diamesus Lehmann, 1959

Bonn. zool. Beitr. 10: 4 (7 Sept)

Holotype. ZFMK 58.211, male, skin and skull; Ivanova Kureta, Montenegro, former Yugoslavia, collected by E. von Lehmann, 16 Sept 1958, field no. 28.

Paratypes. ZFMK 58.210, 58.212, 1 male, 1 female, skins and skulls, same locality and collector as holotype, 14–15 Sept 1958, field nos. 16, 23.

Current name. Dryomys nitedula (Pallas, 1778).


Muscardinus avellanarius abanticus Kivanç, 1983

Bonn. zool. Beitr. 34: 421, figs. 2, 3 (14 Dec)

Paratypes. ZFMK 83.127, 83.128, females, skins and skulls; Abant, Vil. Bolu, Turkey, collected by E. Kivanc, 6 Aug 1980 and 5 July 1981, field nos. EK 84, EK63.


Comments. Holotype in the collection of the Biology Department in the Natural Sciences Faculty of Ankara Univ.

Muscardinus avellanarius kroecki G. Niethammer & Bohmann, 1950

Neue Ergebnisse und Probleme der Zoologie (Klatt-Festschrift), Leipzig, p. 661

Holotype. ZFMK 74.272, unsexed skin; Vitosa, 1500 m, 10 km S Sofia, Bulgaria, collected by A. Kroeck, 26 Aug 1944, field no. 81, at the same time no. 173/44 of the Bohmann collection. Donated to Museum Koenig by Bohmann in Oct 1974.

Current name. Muscardinus a. avellanarius (Storch 1978).

Nesomyidae

Petromusculus collinus kurzii Lehmann, 1955

Bonn. zool. Beitr. 6: 171 (31 Dec)

Holotype. ZFMK 55.75, male, skin and skull; Renosternberg, Kaoko-veld, Namibia, collected by W. Hoesch, 26 Mar 1955, field no. 1256.

Paratypes. ZFMK 55.79, 55.455, 55.456, skins and skulls, same locality, collector and date as holotype.

Current name. Petromusculus collinus (Thomas & Hinton, 1925), see Musser & Carleton (2005).
Cricetidae

Clétrionomyss glareolus curcio Lehmann, 1961

Zool. Anz. 167: 219

Holotype. ZFMK 60.352, adult female, skin and skull; Camigliatello Silano, Calabria, Italy, collected by E. von Lehmann, 2 Aug 1960, field no. 29.

Paratypes. ZFMK 60.349 - 60.351, 60.353, 60.354, 60.356 - 60.366, 16 skins and skulls, same locality and collector, July/Aug 1960.

Current name. Myodes glareolus (Schreber, 1780); see Musser & Carleton (2005).

Clétrionomyss glareolus garganicus Hagen, 1958

Z. Säugetierkd. 23: 54, fig. 1

Holotype. ZFMK 58.128, adult male, skin and skull; Foresta Umbra, 800 m, Monte Gargano, Apulia, Italy, collected by B. Hagen, 28 Aug 1955, field no. 24.


Current name. Myodes glareolus (Schreber, 1780); see Musser & Carleton (2005).

Comments. Hagen (1958: 56, table 2) lists 24 specimens in her description of which 21 were in the ZFMK collection in Apr 1979. The collection date of the holotype was given by Hagen (1958: 55) as “July” but “VIII. 1955” is recorded on its label; likewise all paratypes were collected in Aug 1955.

Clétrionomyss glareolus pirinus Wolf, 1940


Holotype. ZFMK 39.91, adult female, skin and (damaged) skull; Banderiza Hütte, 1800 m, Pirin Mountains, Bulgaria, collected by H. Wolf, 11 June 1938.


Current name. Myodes glareolus (Schreber, 1780); see Musser & Carleton (2005).

Pitymys bavaricus König, 1962

Senckenberg. biol. 43: 2, figs. 1, 2, 6, 8, 13

Paratypes. ZFMK 79.142, male, skin and skull; Garmisch-Partenkirchen, Bavaria, Germany, collected by C. König, Nov 1961, field no. 1149, received in exchange from SMNS; ZFMK 2009.630, male, skin and skull; same locality and collector, 10 Nov 1959, field no. 1194, ex Coll. J. Niethammer.


Comments. The German subpopulation is probably extinct.

Pitymys savii brachycercus Lehmann, 1961

Zool. Anz. 167: 223

Holotype. ZFMK 60.379, male, skin and skull; Camigliatello Silano, Calabria, Italy, collected by E. von Lehmann, 27 July 1960.

Paratypes. ZFMK 60.380 – 60.385, 6 skins and skulls, same locality, collector, and date as in holotype.


Comments. Elevated to species by Gallieni et al. (1994).

Microtus anatolicus Kryštufek & Kefelioglu, 2002

Bonn. zool. Beitr. 50: 8, figs. 2–4

Holotype. ZFMK 99.926, adult male, skin (tail missing) and skull; Yağılı Köyü, Cihanbeyli, Konya, Turkey, collected by H. Kefelioglu, 20 July 1993.


Comments. 12 paratypes were deposited in the Ondokuz Mayis University at Samsun, Turkey.

Microtus (Terricola) savii niethammericus Contoli, 2003

Hystrix, Italian Journal of Mammalogy (n.s.) 14: 109

Lectotype. Here designated: ZFMK 2003.928, adult female (6 teats visible), flat skin and skull; Foresta Umbra, 12 km in direction Monte San Angelo (41.13N 15.58E), 750 m, Monte Gargano, Italy, collected by J. Niethammer, 23 Mar 1980; field no. 5104.


Current name. Microtus savii (de Selys-Langchamps, 1838); see Musser & Carleton (2005).

Comments. Contoli (2000: 40) named this taxon Microtus (Terricola) savii niethammeri, a nomen nudum and homonym of Microtus (Terricola) multiplex niethammeri Brunet-Lecompte & Volobouev, 1991. In 2003, he renamed it niethammericus and provided a short description (3 pairs of teats in females, X chromosome acrocentric) and type locality (Foresta Umbra), based on the work of Niethammer (1981). He also listed a series of 21 syntypes (ZFMK 2003.916 – 2003.936), based on the paper of Niethammer (1981) and on correspondence with one of us (RH). No holotype was fixed. We selected a specimen as the lectotype which exhibits one of the diagnostic traits (3 pairs of teats), and which has a skull in good condition. Vouchers for the karyotype of 2n = 54 (1 male, 1 female; Niethammer 1981: 46, fig. 1) are among the paralectotypes.

Nesoryzomys fernandinae Hutterer & Hirsch, 1980

Bonn. zool. Beitr. 30: 276, fig. 2 (28 Dec)

Holotype. ZFMK 79.370, skull of an adult individual, interparietale missing, tip of nasalia damaged, from owl pellets; Fernandina Island, 300 m, Galápagos Islands, Ecuador, collected by U. Hirsch, June 1979.
Paratypes. ZFMK 79.371 – 79.406, 36 skulls, ex pellets, same locality, collector and date as holotype; further paratypes deposited in AMNH, BMNH, FMNH and Charles Darwin Station, Galápagos Islands.


Comments. The species was recently collected alive (Dowler et al. 2000).

Muridae

Acomys ciliacus Spitzenberger, 1978
Ann. naturhist. Mus. Wien 81: 444, figs. 1c, 2c, plate 1 (Feb)

Paratypes. ZFMK 68.265, male, skin and skull; 20 km E Silifke, Turkey, collected by H. Mittendorf, 22 July 1968, field no. 181; ZFMK 68.266, 68.267, females, skins and skulls, same locality and collector, 24 July 1968, field nos. 193, 194.


Comments. Holotype in NMW.

Apodemus agrarius heinrici Lehmann, 1970
Säugerterk. Mitt. 18: 154, fig. 1 (May)

Holotype. ZFMK 46.441, male, skin and skull; Bildhausen near Münnerstadt, Bad Kissingen District, Germany, collected by G. Heinrich, 10 Aug 1946, field no. 2956.

Paratypes. ZFMK 46.412, male, skin and skull, same locality, collector and date as holotype.

Current name. Apodemus agrarius (Pallas, 1771).

Apodemus flavicollis alpinus Heinrich, 1951 – Apodemus flavicollis alpicola Heinrich, 1952

Paratypes. ZFMK 49.20 – 49.25, 4 males, 2 females, skins and skulls; Osterach Valley, Allgäu, Germany, collected by G. Heinrich between 1 and 14 Aug 1949.

Current name. Apodemus alpicola Heinrich, 1952

Comments. As alpinus was preoccupied Heinrich assigned the name alpicola to the same form.

Apodemus tauricus geminae Lehmann, 1961
Zool. Anz. 167: 228

Holotype. ZFMK 58.149, adult female; Monte Gargano, Apulia, Italy, coll. by B. Hagen, Aug 1955, field no. 7.

Paratypes. ZFMK 58.144, 58.145, 58.148, 58.150 – 58.163, 58.156 – 58.164, 15 skins and skulls, same locality, collector and date as holotype.

Current name. Apodemus flavicollis (Melchior, 1834); see Musser & Carleton (2005).

Comments. According to the locality data published by Hagen (1958) the terra typica can be specified as “Fores-ta Umbra, Monte Gargano”.

Apodemus flavicollis sicilianaus Lehmann & Schaefer, 1973
Ric. Biol. Selvag., Suppl. 5: 180, figs. 3, 4 (Nov)

Holotype. ZFMK 73.256, adult female, skin and skull; higher range, Mount Etna, ca. 1600 m, Sicily, Italy, collected by E. von Lehmann and H.-E. Schaefer, 12 Sept 1973, field no. 27 (A 7).

Paratypes. ZFMK 73.250 – 73.257, 4 males, 3 females, skins and skulls, same locality, collector and date as holotype, field nos. 20 – 26, 28 (A 1–6, 8).

Current name. Apodemus sylvaticus (Linnaeus, 1758).

Comments. This name is missing in Wilson & Reeder (2005).

CaunariosmytamaraaniLópez-Martinez & López-Julrado, 1987
Doñana, Publicación ocasional 2:10


Comments. The original type series is in the Museo Canario, Las Palmas de Gran Canaria, Spain. The species is extinct.

Colomys goslingei eisentrautii Dieterlen, 1983
Bonn. zool. Beitr. 34: 89 (12 Sep)

Holotype. ZFMK 74.366, adult male, skin and skull; Bafut-ngemba Reserve, Mount Lefo, 1800–1900 m, SE Bamenda Highlands, W Cameroon, collected by W. Böhme and W. Hartwig, 6 Mar 1974, field no. 88.

Paratype. ZFMK 74.365, female, skin and skull, same locality, collectors and date as holotype. Another paratype was transferred to SMNS (now SMNS 32300).


Comments. The taxon deserves species status (Hutterer & Dieterlen, unpubl. data).

Colomys goslingei ruandensis Dieterlen, 1983
Bonn. zool. Beitr. 34: 89 (12 Sep)

Holotype. ZFMK 68.548, adult male, skin and skull; Rugege Forest, ca. 2300 m, Umika, W Ruanda, collected by F. Dieterlen, 21 Aug 1964, field no. D 3450.

Paratypes. ZFMK 68.549 – 68.551, skins and skulls, same locality and collector as holotype.

Dasynys incomptus longipilosus Eisenraut, 1963
Die Wirbeltiere des Kamerungebirges, Parey, Hamburg und Berlin, p. 132, fig. 30
Paratype. ZFMK 63.670, male, skin and skull; grasslands above Musake Hütte, Mount Cameroon, W Cameroon, collected by M. Eisenraut, 15 Feb 1954, field no. 169; received in exchange from SMNS (Mar 1979).
Current name. Dasynys incomptus (Sundevall, 1847), as in Musser & Carleton (2005), but may be a different form (Hutterer, unpubl.).
Comments. Holotype in SMNS.

Deomyys ferrugineus poensis Eisenraut, 1965
Bonn. zool. Beitr. 16: 8 (1 Nov)
Holotype. ZFMK 64.1091, adult male, skin (prepared from specimen in spirit) and skull; Refugio, Bioko, Equatorial Guinea, collected by Leon Martin Zambo, July 1964, field no. 691.
Paratypes. ZFMK 66.796, in spirit, field no. 695; ZFMK 64.1092, male, skin and skull, field no. 692; ZFMK 64.1090, 64.1093, 64.1094, females?, all same locality, collector and date as holotype.
Current name. Deomyys ferrugineus Thomas, 1888; taxonomic status not evaluated.
Comments. One skin out of this series is figured in colour in Eisenraut (1973: plate 1).

Desmodillus auricularis hoeschi Lehmann, 1955
Bonn. zool. Beitr. 6: 171 (31 Dec)
Holotype. ZFMK 55.76, male, skin and skull; Okatjongeama, Namibia, collected by W. Hoesch, 22 Apr 1955, field no. 1279.
Paratypes. ZFMK 55.80, 55.466, males, skins and skulls, same locality and collector.
Current name. Desmodillus auricularis (Smith, 1834); see Petter (1971).

Desmodillus auricularis wolfi Lehmann, 1955
Bonn. zool. Beitr. 6: 172 (31 Dec)
Holotype. ZFMK 55.77, male, skin and skull; Vogelweide, Namibia, collected by W. Hoesch, 7 July 1954, field no. 1020.
Paratypes. ZFMK 55.81, 55.472, females, skins and skulls, same locality, collector and date.
Current name. Desmodillus auricularis (Smith, 1834); see Lehmann (1960) and Petter (1971).

Grammomys caniceps Hutterer & Dieterlen, 1984
Stuttgart. Beitr. Naturk. A, 374: 12, figs. 1h, 2h, 3, 4, 5a, 6a, 7 (31 Dec)
Holotype. ZFMK 84.76, male, skin, skull, baculum and visera in alcohol; Malindi (03°14’S, 40°05’E), Kenya, collected by F. Fröhlich, Sept 1982, in captivity until 24 May 1984.
Paratypes. 3 males (ZFMK 84.32, 84.34, 84.74) and 5 females (ZFMK 84.31, 84.33, 84.72, 84.75), all skins and skulls, offspring of imported animals.
Comments. A further paratype in Stuttgart (SMNS 38200). ZFMK 84.34 is voucher for the karyotype of 2n = 56, NF = 78.

Gerbillurus (Gerbillurus) vallinus tytonis Bauer & J. Niethammer, 1960
Bonn. zool. Beitr. 10: 255, figs. 4–6 (10 Jan)
Holotype. ZFMK 59.515, complete skull, from a mummy; Sossus Vley, Namib, Namibia, collected by G. Niethammer, 18 Feb 1959, field no. 1152.
Paratypes. ZFMK 59.516, 6 skulls out of barn owl pellets, same locality, collector and date.
Current name. Gerbillurus tytonis (Bauer & J. Niethammer, 1960)
Comments. The year of publication is often given as 1959, but the relevant journal issue was published 10 Jan 1960.

Gerbillurus (Dipodillus) dasyurus leosolliticus Lehmann, 1966
Holotype. ZFMK 65.174, female, skin and skull; Deit-el-Hajar, 25 km SE Damascus, Syria, collected by H. Mittendorf, 22 Jan 1965, Coll. Kumerloewe no. 185.
Paratypes. ZFMK 65.175 – 65.177, 2 males, 1 female, skins and skulls, same locality and collector, Coll. Kumerloewe nos. 191–193.
Current name. Dipodillus dasyurus (Wagner, 1842); see Musser & Carleton (2005).

Gerbillurus (Dipodillus) dasyurus palmyrae Lehmann, 1966
Holotype. ZFMK 65.183, female, skin and skull; Palmyra, Syria, collected by H. Mittendorf, 2 Jan 1965, Coll. Kumerloewe no. 174.
Paratypes. ZFMK 65.184 – 65.186, 1 male, 2 females, skins and skulls, same locality and collector, Coll. Kumerloewe nos. 172, 173, 175.
Current name. Dipodillus dasyurus (Wagner, 1842); see Harrison (1972) and Musser & Carleton (2005).

Gerbillurus folleyi Heim de Balsac, 1936
Bull. Biol. Fr. Belg., Suppl. 21: 317, 389, fig. 15
Paratype. ZFMK 60.85, skin and skull; Beni-abbès, Algeria, collected by H. Heim de Balsac, without date.
Current name. Gerbillurus gerbillus (Olivier, 1801).
Hybomys eisentrauti  Van der Straeten & Hutterer, 1986
Mammalia 50: 36, fig. 1

Holotype. ZFMK 74.377, adult male, skin and skull; Lake Bambuhlui, Mount Lefo, 1800 m, Cameroon, collected by W. Böhme, 10 Mar 1974, field no. 115.
Paratypes. ZFMK 74.374, young adult male, 6 Mar 1974; ZFMK 74.375, adult male, 6 Mar 1974; ZFMK 74.376, young adult male, 9 Mar 1974; same collector and locality as holotype; ZFMK 69.175, adult male; Lake Oku, 2100 m, Mount Oku, Cameroon, collected by M. Eisen- traut, 19 Jan 1967; all specimens skin and skull.


Hybomys univittatus basilií Eisentraut, 1965
Zool. Jb. Syst. 92: 20, figs. 1, 2

Holotype. ZFMK 63.670, adult male, skin and skull; Moca Valley, ca. 1200 m, Bioko, Equatorial Guinea, collected by M. Eisen- traut, 16 Nov 1962, field no. 258.


Comments. In the original description Eisentraut (1965: 20) mentioned 34 specimens in addition to the holotype. In Apr 1979 33 of these could be located in the ZFMK collection. The missing specimen was very likely given to Pater Basilio after whom this subspecies was named. There are 15 more specimens in spirit in the ZFMK collection. These were collected during Eisen- traut’s 1962/63 expedition but were not considered in the context of the description. Further paratypes were deposited in SMNS and AMNH.

Hylomyscus aeta grandis Eisentraut, 1969
Z. Säugetierkd. 34: 300

Holotype. ZFMK 69.731, adult female, skin and skull; Lager IV, 2100 m, Lake Oku, Banso Highlands, Cameroon, collected by M. Eisen- traut, 22 Jan 1967, field no. 391.
Paratypes. ZFMK 69.732 – 69.734, 1 male, 2 females, skins and skulls, same locality and collector, 20–23 Jan 1967, field nos. 378, 394, 401.


Hylomyscus allenii montis Eisentraut, 1969
Z. Säugetierkd. 34: 302

Holotype. ZFMK 66.372, adult male, skin and skull; Refugium, 2000 m, Pico de Santa Isabel, Bioko, Equatorial Guinea, collected by M. Eisen- traut, 22 Dec 1962, field no. 406.

Current name. Uncertain; possibly Hylomyscus montis Eisentraut, 1969 (RH, unpubl.).

Lenniscomyss striatus mittendorffi Eisentraut, 1968
Bonn. zool. Beitr. 19: 7 (10 Apr)

Holotype. ZFMK 68.8, adult male, skin and skull; Lake Oku, ca. 2100 m, Banso Highlands, W Cameroon, collected by M. Eisen- traut, 30 Jan 1967, field no. 452.

Current name. Lenniscomyss mittendorffi Eisentraut, 1968; see Van der Straeten & Verheyen (1980).

Comments. In the text of his description Eisentraut mentions the elevation of the type locality as ca. 2300 m, in the locality register and on the specimen label it is listed as 2100 m. The holotype is figured in colour in Eisentraut (1973; pl. 3).

Lophourusmyys dieterleni Verheyen, Hulsemans, Colyn & Hutterer, 1997

Holotype. ZFMK 68.289, adult male, skin and skull; Lake Oku, Lager IV (06°12’N, 10°32’E), 2100m, Bamenda-Banso Highlands, W Cameroon, collected by M. Eisen- traut, 21 Jan 1967, field no. 384.

Current name. Lophourusmyys dieterleni Verheyen, Hulsemans, Colyn & Hutterer, 1997; see Musser & Carleton (2005).

Comments. The status of this taxon was discussed by Missoup (2010).

Lophourusmyys medicaudatus Dieterlen, 1975
Bonn. zool. Beitr. 26: 295, figs. 1–4 (Dec)

Paratypes. ZFMK 68.982 (male), 68.984 (female), skins and skulls; Kahuzi, Democratic Republic of the Congo, collected by F. Dieterlen, 11–13 Nov 1966, field nos. D 9069, D 9036; ZFMK 68.983, 68.985, 1 male, 1 female, skins and skulls, Tshibati, Democratic Republic of the Congo, same collector, 30 Mar 1966 and 7 Apr 1964, field nos. D 7254, D 1884.
Current name. *Lophuromys medicaudatus* Dieterlen, 1975

Comments. Holotype in SMNS.

*Lophuromys roseveari* Verheyen, Hulselms, Colyn & Hutterer, 1997

**Holotype.** ZFMK 69.297, female, skin and skull; Mushake Hütté (04°08’N, 09°12’E), Mount Cameroon, 1850–2200 m, Cameroon, collected by M. Eisentraut, 18 Mar 1967, field no 656.

**Paratypes.** ZFMK 69.292 (adult male), 69.302 (adult female), skins and skulls, Mushake Hütté, Mount Cameroon, 1850–2200 m, field nos. 655, 658; ZFMK 69.293, 69.296, adult females, skins and skulls, Hütte II (04°11’N, 09°12’E), Mount Cameroon, 3000 m, Cameroon, field nos. 716, 712; ZFMK 61.790, adult male, skin and skull, Buea (04°09’N, 09°13’E), 1800 m, Cameroon, field no. 4; all collected by M. Eisentraut.

Current name. *Lophruryomys eisenatraui* roseveari Verheyen, Hulselms, Colyn & Hutterer, 1997; see Missoup (2010).

*Lophuromys sikapusi eisenatraui* Dieterlen, 1979

**Holotype.** ZFMK 74.436, adult male, skin and skull; slope of Mount Lefo, near Bamenda, Cameroon, collected by W. Böhme, 6 Mar 1974, field no. 81.

**Paratypes.** ZFMK 74.437, juvenile to subadult female, skin and skull, same collector, locality and date as holotype, field no. 92.


*Lophuromys sikapusi parvalbus* Eisentraut, 1965

Zool. Jb. Syst. 92: 24, figs. 3, 4

**Holotype.** ZFMK 63.669, adult female, skin and skull; Moca Valley, 1200 m, Bioko, Equatorial Guinea, collected by M. Eisentraut, 28 Oct 1962, field no. 165.

**Paratypes.** ZFMK 64.481 – 64.483, 1 male, 2 females, skins and skulls, same locality and collector as holotype, 30 Oct–16 Nov 1962, field nos. 173, 262, 178.


*Malpaisomys insularis* Hutterer, López-Martínez & Michaux, 1988

Palaeovertebrata 18: 246, figs. 3–5, 7, plates 1, 2

**Paratypes.** ZFMK, yet uncounted and uncatologued mandibles, maxillaries, and skeletal elements; all from type level CV-A1 at locality Cueva Villaverde near La Oliva (22°38’N, 10°12’30”W), Fuerteventura, Canary Islands, Spain; age 1070 ± 50 BP.


Comments. Holotype in the Department of Palaeontology, Universidad Complutense, Madrid (CV-188.1). Paratypes were distributed to AMNH, BMNH, CM, FMNH, SMF, and many other collections. Extinct species.

*Mastomys verheyeni* Robbins & Van der Straeten, 1989

**Holotype.** ZFMK 92.468 (male), 92.469 (female), both preserved in spirit with skulls extracted; Guemé, N Cameroon, both collected by members of RUCA, 23 Nov 1970, field nos. RUCA 162, 163.


Comments. Specimens were donated by E. Van der Straeten in 1992. Holotype and paratypes in SMF, further paratypes in RMCA.

*Mus sylvaticus maximus* Burg, 1925

Palazzia 3: 70

Lectotype. ZFMK 83.169, adult female, skin and skull; Bergell, Switzerland, collected by G. von Burg, Feb 1921.

**Paratypes.** ZFMK 83.170, skin; Bergell, Switzerland, collected by G. von Burg, Mar 1923.

Current name. *Apodemus flavicollis* (Melchior, 1834); see Hutterer (1984).

Comments. The lectotype was designated by Hutterer (1984). Musser & Carleton (2005) listed this name under the synonymy of *A. sylvaticus* (Linnaeus, 1758). *Apodemus sylvaticus maximus* (Burg, 1925) is a senior homonym of the extinct taxon *Apodemus maximus* Thaler, 1972, described from the Pliocene of Sicily (Thaler 1972). A substitute name is therefore proposed for the fossil species: *Apodemus pellegrinoide* Hutterer nom. nov. (pro *Apodemus maximus* Thaler, 1972, not *Apodemus sylvaticus maximus* (Burg, 1925)).

*Oenomys hypoxanthus albiventris* Eisentraut, 1968

Bonn. zool. Beitr. 19: 8 (10 Apr)

**Holotype.** ZFMK 69.9, adult male, skin and skull; Lager IV, ca. 2100 m, Lake Oku, Banso Highlands, W Cameroon, collected by M. Eisentraut, 23 Jan 1967, field no. 397.


Current name. Included in *Oenomys hypoxanthus* (Pucheran, 1855) by Musser & Carleton (2005), but this form requires a re-consideration.

**Otomys occidentalis** Dieterlen & Van der Straeten, 1992
Bonn. zool. Beitr. 43: 386, figs. 2–4

**Paratypes.** ZFMK 69.218, female, skin and skull; Mount Oku, 2100 m, Cameroon, collected by M. Eisenraut, 28 Jan 1967; ZFMK 88.139, ZFMK 88.140, females, skins and skulls, Gangirwal, Gotel Mountains, Nigeria, collected by G. Nikolaus, 18 and 20 Mar 1988.

**Current name.** *Otomys occidentalis* Dieterlen & Van der Straeten, 1992.

**Comments.** The holotype SMNS 41336 consists of a skull, the skin is lost.

**Praomys hartwigi** Eisenraut, 1968
Bonn. zool. Beitr. 19: 8 (10 Apr)

**Holotype.** ZFMK 68.7, adult female, skin and skull; Lager IV, Lake Oku, Basso Highlands, W Cameroon, collected by M. Eisenraut, 24 Jan 1967, field no. 402.

**Paratypes.** ZFMK 69.1073, 69.1075, 69.1077 – 69.1079, 69.1081, 2 males, 4 females, skins and skulls, same locality and collector, 20 – 26 Jan 1967, field nos. 399, 396, 409, 377 a, 385, 386; ZFMK 69.1074, 69.1076, 1 male, 1 female, skins and skulls, Lager III, ca. 1800 m, Lake Manenguba, same collector, 2 – 4 Jan 1967, field nos. 316, 323.

**Current name.** *Praomys hartwigi* Eisenraut, 1968.

**Comments.** One paratype (ZFMK 69.1072) was transferred in exchange to SMNS.

**Praomys hartwigi obscurus** Hutterer & Dieterlen, 1992
Bonn. zool. Beitr. 43: 402, figs. 1, 2 (21 Oct)

**Holotype.** ZFMK 88.115, adult female, skin and skull; Gangirwal, 2300 m, Gotel Mountains, SE Nigeria, collected by G. Nikolaus, 16 Mar 1988, field no. (GN5).


**Current name.** *Praomys obscurus* Hutterer & Dieterlen, 1992 (Musser & Carleton 2005).

**Comments.** Described in Hutterer, Dieterlen & Nikolaus (1992). Additional paratypes in SMNS.

**Praomys petteri** Van der Straeten, Lecompte & Denys, 2003
Bonn. zool. Beitr. 50: 333, figs. 2, 3 (24 Feb)

**Paratypes.** ZFMK 70.146 (male), 70.147 (female), 92.318 – 92.322 (2 males, 3 females), all preserved in spirit with skulls extracted; all from breeding colony of F. Petter (Paris), from animals collected 1968 at Boukoko, Central African Republic.

**Current name.** *Praomys petteri* Van der Straeten, Lecompte & Denys, 2003.

**Comments.** The specimens are from the breeding colony of *P. morio* which yielded the karyotype of 2n = 42 (Petter 1965).

**Rattus ratus povohlai** J. Niethammer & Martens, 1975
Z. Säugerkd. 40: 344

**Holotype.** ZFMK 78.001, male, skin and skull; Dar-i-Nur, near Djalahabad, 1200 m, E Afghanistan, collected by J. Niethammer, 18 Apr 1966, field no. A 1230.

**Paratypes.** ZFMK (not catalogued), 9 specimens, same data as holotype, field nos. A 1223, A 1225, A 1229, A 1531, A 1534, A 1584 – 1587.

**Current name.** *Rattus tanezumi* Temminck, 1844; see Musser & Carleton (2005).

**Comments.** All specimens were collected in houses (field notes of J. Niethammer).

**Thamnomys rutilans poensis** Eisenraut, 1965
Zool. Jb. Syst. 92: 26, fig. 5

**Holotype.** ZFMK 63.668, adult male, skin and skull; Moca Valley, 1200 m, Bioko, Equatorial Guinea, collected by M. Eisenraut, 7 Nov 1962, field no. 209 a.

**Paratypes.** ZFMK 64.4814 – 64.487, females and skulls, without locality, 29 (29 Nov), 226 (9 Nov), 683 (3 Nov 1962), all same locality and collector as holotype; ZFMK 66.759, specimen in spirit, same locality and collector, 11 Nov 1962, field no. 229; ZFMK 64.486, skull, shrub willow area above Moca, ca. 1500 m, same collector, 11 Mar 1963, field no. 683.

**Current name.** *Grammomys poensis* (Eisenraut, 1965).

**Comments.** *Grammomys poensis* replaces the better known *G. rutilans* which is not available (Hutterer, in Musser & Carleton 2005).

**Octodontidae**

**Octodon pacificus** Hutterer, 1996
Z. Säugerkd. 59: 28, figs. 1–6

**Holotype.** ZFMK 92.384, adult female, skin and skull; Isla Mocha, Arauco Province, Chile, collected by Francis- co Behn, 16 Jan 1959, field no. L6. Skull lacks occipital and bullae.

**Paratypes.** 3 skins and skulls, ZFMK 92.383, adult female, and ZFMK 92.385-6, two juveniles, collected by F. Behn at the type locality between 11 and 24 Jan 1959.

**Current name.** *Octodon pacificus* Hutterer, 1996.

**Comments.** The species is most probably extinct, the type specimen obtained in 1959 being the first and last record of a living animal. A survey of mammals on Isla Mocha yielded no trace of this species, however, remains were found in an archaeological excavation (Saavedra et al. 2003).
CONCLUSIONS

This catalogue presents the status of the ZFMK mammal collections in 2010, 77 holotypes, 5 syntypes, 2 lectotypes, and 1 neotype are listed. In addition, paratypes or paralectotypes for 105 taxa are included. The number of type specimens will increase in the future, as more species of mammals will be described, based on ZFMK material. This is particularly true for Africa, where new species of mammals are frequently being discovered (Hoffmann et al. 2009).

Some issues concerning type material could not yet be resolved, but may be so in the future. For example, Groves (2003) mentioned unspecified material in “Museum Alexander Koenig (Bonn)” that served for his description of *Gazella beneditii salinarum* Groves, 2003. We were not able to trace such material so far. The description of *Suncus hutats* Kerbis Pettersans & Hutterer, 2009 includes a statement that one paratype will be deposited in the ZFMK (Kerbis Pettersans & Hutterer 2009) but this has not been done yet.

Numerous vouchers for karyotypes still have to be identified. For example, specimens of European and Asian *Mus* and *Famulus* were used by Gropp et al. (1969, 1970, 1973) to analyze their karyotypes, as were specimens of *Mus* from Sicily by Lehmann & Radbruch (1977). Also GenBank voucher specimens will have to be identified in order to link published sequences with vouchers in the Bonn collection. This is one of the next goals to be achieved.

GEOGRAPHIC ORIGIN OF TYPE SPECIMENS (EXCLUDING CASTS)

Afghanistan  
*Rattus rattus* povolnyi J. Niethammer & Martens

Algeria  
*Gerbillus foleyi* Heim de Balsac

Australia  
*Megaderma gigas* Dobson

Austria  
*Sorex araneus* wettsteini Bauer

Bosnia and Herzegovina (former Yugoslavia)  
*Crocidura suaveolens* balcanica Ondrias

Brazil  
*Scinurus ingrami* sebastiani Müller & Vesmanis

Bulgaria  
*Clothionomys glareolus* pirinus Wolf  
*Muscicetinus avellanarius* kroekki G. Niethammer & Bohmann

Cameroon  
*Colomys goslingi* eisentranti Dieterlen

Crocidura flavescens* bneae* Heim de Balsac & Barly

Crocidura manaeangae* Hutterer

Crossarchus platyccephalus* Goldman

Dasynys incomps* longipliros* Eisentraut

Hipposideros* cameronensis* Eisentraut

Hybomys* eisentranti* Van der Straeten & Hutterer

Hylomyscus* aeta* grandis* Eisentraut

Lemniscomys striatus* mittendorfi* Eisentraut

Lophuromys* dieterleni* Verheyen, Hulselmanns, Colyn & Hutterer

Lophuromys* roseare* Verheyen, Hulselmanns, Colyn & Hutterer

Lophuromys* sikapusi* eisentranti* Dieterlen

Mastomyos* verheyeni* Robbins & Van der Straeten

Myosorex* eisentranti* okiensis* Heim de Balsac

Myosorex* eisentranti* rumpii* Heim de Balsac

Oenomys* hypoxanths* albiventris* Eisentraut

Octoeryx* occidentalis* Dieterlen & Van der Straeten

Paracrocida* schoutedeni* cameronensis* Heim de Balsac

Pipistrellus* eisentranti* Hill

Praomys* hartwigi* Eisentraut

Rousettus* aegyptiacus* occidentalis* Eisentraut

Sylvilagrus* granti* cameronensis* Heim de Balsac

Sylvilagrus* silvanorum* Hutterer, Riepert & Sedláček

Central African Republic  
*Praomys* petteri* Van der Straeten, Lecompte & Denys

Chile  
*Octodon* pacificus* Hutterer

Colombia  
*Platyrrhinus* chocoensis* Alberico & Velasco

Czech Republic  
*Amblyotus* atratus* Kolenati

Democratic Republic of the Congo  
*Crocidura kivauna* Heim de Balsac

*Crocidura* kivasha* Heim de Balsac

*Crocidura* littoralis* stenocephala* Heim de Balsac

Lophuromys* medicandatus* Dieterlen

Sylvilagrus* akatiei* Mukiini, Hutterer & Barriere

Ecuador  
*Nesoryzomys* fernandinae* Hutterer & Hirsch

Equatorial Guinea  
*Deomylos* ferrugineus* poensis* Eisentraut

Hybomys* univittatus* basili* Eisentraut

Hylomyscetis* allenii* montis* Eisentraut

Lophuromys* sikapusi* parvus* Eisentraut

Myosorex* eisentranti* Heim de Balsac

Sylvilagrus* morio* isabellae* Heim de Balsac

Tammomyos* rutillans* poensis* Eisentraut

Ethiopia  
*Crocidura flavescens* harsrupper* Hutterer
Kenya
Crocidura ariadne Pieper

Guinea
Crocidura (botteggi) obscurior Heim de Balsac
Genetta borelloni Gaubert
Rhinolophus denti knorri Eisentraut
Rhinolophus landeri guineensis Eisentraut
Rhinolophus ziana Fahr, Vierhaus, Hutterer & Kock

Indonesia
Rhinolophus sumatranaus K. Andersen

Italy
Apodemus flavicollis siciliannus Lehmann & Schaefer
Apodemus ibericus gerniana Lehmann
Clethrionomys glareolus curcio Lehmann
Clethrionomys glareolus gargaricus Hagen
Crocidura sicula aegatensis Hutterer
Crocidura snaevelensis bruecheri Lehmann

Kenya
Grammomys caniceps Hutterer & Dieterlen

Liberia
Genetta (Paragenetta) lehmanni Kuhn
Liberictis klnbi Hayman

Liechtenstein
Sorex minutus becki Lehmann

Malta
Crocidura sicula calypso Hutterer
Montenegro (former Yugoslavia)
Dryomys nitedula diamesus Lehmann
Talpa caeca steini Grulich
Talpa stankovicui montenegrina Kryštufek

Namibia
Desmodillus auricularis hoeschii Lehmann

Nigeria
Crocidura yankariensis Hutterer & Jenkins
Praomys hartwigi obscurus Hutterer & Dieterlen
Sylvisorex corbei Hutterer & Montemann

Oman
Crocidura arabica Hutterer & Harrison

Paraguay
Cabassous chacоensis Wetzel

Republic of the Congo
Congosorex verheyenii Hutterer, Barriere & Colyn

Senegal
Crocidura lanottee elegans Hutterer

Serbia (former Yugoslavia)
Rhinolophus ferrumequinum martinoi Petrov

Spain
Crocidura canariensis Hutterer, López-Jurado & Vogel
Crocidura orsoni Molina & Hutterer

Senegal
Felix catus jordansi Schwarz
Malpaisomys insularis Hutterer, López-Martinez & Michaux

Serbia (former Yugoslavia)
Neomyx fodieni niethammeri Bühler
Plecotus auritus hispanicus Bauer

Switzerland
Mus sylvaticus maximus Burg

Syria
Gerbillus (Dipodillus) dasyurus leosoliticus Lehmann
Gerbillus (Dipodillus) dasyurus palmyrae Lehmann

Tanzania
Congosorex phillipsoni Stanley, Rogers & Hutterer
Crocidura tanzaniana Hutterer
Crocidura telfordi Hutterer
Myosorex kihaulei Stanley & Hutterer

Turkey
Acomys cilicus Spitzenberger
Microtus anatolicus Kryštufek & Kefelioglu
Muscardinus avellanarius abaticus Kivanç
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