Austria

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Contents

Introduction

Small mammals, and especially insectivores, long have been the stepchildren in Austrian palaeontology, although Hofmann described an insectivore species, *Plesiosorex styriacus*, from two Styrian sites as early as 1892. In 1893 the same author described and figured an erinaceid tooth, now known as *Lantanotherium* sp., from Göriach in Styria. Thenius (1949) presented a revision of the insectivores of the Styrian Tertiary, that is the Miocene. No insectivores were known from other parts of Austria at that time, partly because research was centred in Vienna and Graz; many more fossil sites are known from the eastern parts of Austria, which, however, mainly yielded large mammals. Systematic searches for small mammals by means of screen washing techniques only began in the middle of the 20th century. Until then, finds of small mammals were more or less a side-product of the search for large mammals. The first large-scale excavations, which also yielded lots of small mammals, among them insectivores, started in 1955 in the Kohfidisch caves and fissures in Burgenland, and in the 1960s at the Eichkogel site near Mödling in the Vienna Basin. Bachmayer, Zapfe, Thenius and their students initiated and conducted the excavations at these sites. The Kohfidisch fauna, including the insectivores, was presented by Bachmayer & Wilson (1970, 1978, 1980), but not all of the material was taken into account in these contributions. Some insectivores from the Eichkogel were published by Rabeder (1973). The rodents of this site have been published in a number of papers by Daxner-Höck (e.g. 1972, 1977, 1981). Excavations of the Pliocene faunas from Stranzendorf and Deutsch-Altenburg were carried out by G. Rabeder and his team from the University of Vienna.

Over the last 15 years excavations took place in Obergänserndorf and Teiritzberg (Korneuburg Basin), in the opencast mine at Oberdorf in the northwestern part of the Styrian Basin, in Mühlbach am Manhartsberg and Grund near Hollabrunn (Molasse Basin, Lower Austria), in Apfelberg (Fohnsdorf Basin, Styria), in Richardhof-Golfplatz, Richardhof-Wald, Stixneusiedl, Neusiedl a. See and Götzendorf (Vienna Basin), and in

Schernham (Molasse Basin, Upper Austria). These field activities were carried out by G. Daxner-Höck, her students and colleagues from the NHMW, and were granted by the Austrian Science Fund projects: P- 8089-GEO, P-10338-GEO, P-15724-N06. These sites also yielded insectivores, which have been presented by Rabeder (1998a, b) and Ziegler (1998, 2003, in press).

The acronyms used in this article are;

NHMW Naturhistorisches Museum Wien
IPUW Institut für Paläontologie der Universität Wien
CJG Collection Joanneum Graz

Insectivore faunas in the Neogene of Austria

MN 4

Oberdorf 3

Location – Opencast mine in the Köflach-Voitsberg lignite area in the northwestern part of the Styrian Basin, *c.* 20 km west of Graz [N 47°04'31" E 15°09'05"].

Stratigraphy – Orleanian, Ottnangian, 17.3-17.6 my (Daxner-Höck *et al.*, 1998b).

Literature – Daxner-Höck *et al.* (1998a, b), Ziegler (1998).

Insectivores – Erinaceidae: *Galerix symeonidisi* Doukas, 1986, *Galerix aurelianensis* Ziegler, 1990. Plesiosoricidae: *Plesiosorex* cf. *styriacus* (Hofmann, 1892). Talpidae: *Talpa minuta* de Blainville, 1838, *Desmanodon* sp., Talpidae gen. et sp. indet. 1. Dimylidae: *Plesiodimylus* aff. *chantrei* Gaillard, 1897. Soricidae: *Lartetium* cf. *prevostianum* (Lartet, 1851), *Florinia stehlini* (Doben-Florin, 1964), *"Allosorex" gracilidens* (Viret & Zapfe, 1952), *Heterosorex neumayrianus* aff. *subsequens* (Doben-Florin, 1964).

Taxonomic descriptions – All insectivores have been published by Ziegler (1998).

Storage of material – NHMW.

Oberdorf 4

Location – Opencast mine in the Köflach-Voitsberg lignite area in the north-western part of the Styrian Basin, *c.* 20 km west of Graz [N 47°04'31" E 15°09'05"].

Stratigraphy – Orleanian, Ottnangian, 17.3-17.6 my (Daxner-Höck *et al.*, 1998b).

Literature – Daxner-Höck *et al.* (1998a, b), Ziegler (1998).

Insectivores – Plesiosoricidae: *Plesiosorex* aff. *germanicus* (Seemann, 1938). Talpidae: *Desmanella* aff. *engesseri* (Ziegler, 1985), *Proscapanus* aff. *sansaniensis* (Lartet, 1851), *Myxo-*

mygale hutchisoni (Ziegler, 1985), *Desmanodon* sp., Talpidae gen. et sp. indet. 2. Dimylidae: *Plesiodimylus* aff. *chantrei* Gaillard, 1897, *Chainodus intercedens* (Müller, 1967). Soricidae: *Miosorex* sp., *Florinia stehlini* (Doben-Florin, 1964), *"Allosorex" gracilidens* (Viret & Zapfe, 1952), Soricidae gen. et sp. indet., *Heterosorex neumayrianus* aff. *subsequens* (Doben-Florin, 1964).

Taxonomic descriptions – All insectivores have been published by Ziegler (1998).

Storage of material – NHMW.

Schönegg

Location – Former lignite mines in the Styrian Basin; area of the coal mines near Eibiswald-Wies [N 46°54'23" E 15°14'51"].

Stratigraphy – Ottnangian/Karpatian, MN4/5? (Daxner-Höck, 2004a, correlation chart).

Literature – Hofmann (1892), Thenius (1949).

Insectivores – Plesiosoricidae: *Plesiosorex styriacus* (Hofmann, 1892) (type locality).

Taxonomic descriptions – Hofmann established and first described *Plesiosorex styriacus*. Thenius (1949) redescribed and figured the holotype from Schönegg.

Storage of material – CJG.

Voitsberg

Location – Former coalmines in the Köflach-Voitsberg lignite area in the northwestern part of the Styrian Basin, ca. 20 km west of Graz, a few km south and east of Oberdorf [N 47°03' E 15°09'].

Stratigraphy – Early Miocene according to Daxner-Höck *et al.* (1998b); according to Thenius (1949) Middle Miocene. There is no stratigraphical connection between the fossil horizons of Voitsberg (old collection) and Oberdorf (new collection).

Literature – Hofmann (1892), Thenius (1949).

Insectivores – Plesiosoricidae: *Plesiosorex styriacus* (Hofmann, 1892).

Taxonomic descriptions – Hofmann established and first described *Plesiosorex styriacus*. Thenius (1949) also described and figured one of the two specimens, a dentary fragment with p4-m1.

Storage of material – IPUW.

MN 5

Göriach

Location – Former lignite mine, Aflenz Basin, Styria [N 47°33-34' E 15°18-21'].

Stratigraphy – Lignite seam, Early Badenian (Daxner-Höck, 2003b, correlation chart).

Literature – Hofmann (1893), Thenius (1949), Rabeder (1978), van der Made (1998).

Insectivores – Erinaceidae: *Lantanotherium sansaniense* (Lartet, 1851), Erinaceidae gen. et sp. indet.

Taxonomic descriptions – Hofmann (1893) described the M2 under the name *Erinaceus sansaniensis*. Thenius (1949) referred the specimen to *Lantanotherium* sp. by means of Hofmanns description. Rabeder (1978) listed the species presented here.

Storage of material – The M2 was stored in the CJG. It was already lost in 1949. The storage of the material on which Rabeders list is based, is unknown.

Grund

Location – Artificial sand pit near Grund, north of Hollabrunn, Lower Austria, Molasse Basin [N 48°38'17" E 16°03'51"].

Stratigraphy – Marine silt and sand of the Grund Formation, Lower Badenian, Lagenidae Zone, 15.1 my (Daxner-Höck, 2003a; Rögl & Spezzaferri, 2003).

Literature – Ziegler (2003), Daxner-Höck (2003a).

Insectivores – Erinaceidae: *Schizogalerix pristinus* Ziegler, 2003.

Taxonomic descriptions – The species was described by Ziegler (2003).

Storage of material – NHMW.

Leoben

Location – Styria. Exact location in Leoben unknown. [N 47° 33-34' E 15°18-21'].

Stratigraphy – Middle Miocene according to Thenius (1949). De Bruijn *et al.* (1992) correlated the Leoben fauna with MN 5.

Literature – Thenius (1949).

Insectivores – Erinaceidae: *Lantanotherium longirostre* Thenius, 1949 (type locality). Talpidae: *Talpa minuta* de Blainville, 1838.

Taxonomic descriptions – The only thorough descriptions were presented by Thenius (1949).

Storage of material – CJG. The mandible fragment of *Talpa minuta* was already lost in 1949.

Mühlbach am Manhartsberg

Location – Artificial outcrop in the village Mühlbach, Lower Austrian Molasse Basin, *c.* 50 km northwest of Vienna [N 48°31'09" E 15°47'34"].

Stratigraphy – Marine silt and sand, Gaindorf Formation, Lower Badenian, 15.1 my (Daxner-Höck, 2003a; Rögl & Spezzaferri, 2003).

Literature – Roetzel (2003), Ziegler (2003), Harzhauser *et al.* (2003), Daxner-Höck (2003a).

Insectivores – Erinaceidae: *Schizogalerix pristinus* Ziegler, 2003 (type locality), *Galerix* cf. *aurelianensis* Ziegler, 1990, Erinaceinae gen. et sp. indet.

Taxonomic descriptions – All insectivores were published by Ziegler (2003).

Storage of material – NHMW.

Obergänserndorf

Location – At the eastern gateway of the village Obergänserndorf in the Korneuburg Basin, north of Vienna [N 48°25'25" E 16°22'44"].

Stratigraphy – Marine-brackish silt and clay, Karpatian, 16.5-16.7 my (Daxner-Höck, 1998).

Literature – Harzhauser *et al.* (2002), Rabeder (1998a), Daxner-Höck (1998).

Insectivores – Erinaceidae: *Atelerix* sp. Talpidae: *Proscapanus* cf. *intercedens* Ziegler, 1985, *Desmanodon* cf. *antiquus* Ziegler, 1985. Dimylidae: *Plesiodimylus* cf. *bavaricus* Schötz, 1985. Soricidae: *Florinia* cf. *stehlini* (Doben-Florin, 1964), *Dinosorex* cf. *zapfei* Engesser, 1975.

Taxonomic descriptions – The insectivores have been published by Rabeder (1998a). Here *Mioechinus* sp. is changed into *Atelerix* sp. following the suggestion of Mein & Ginsburg (2002).

Storage of material – NHMW.

Teiritzberg 1

Location – The waste dump Teiritzberg is situated 2 km north of Korneuburg, north of Vienna in the Korneuburg Basin [N 48°22'16" E 16°21'07"].

Stratigraphy – Marine-brackish sand and silt deposits, Karpatian, 16.5-16.7 my (Daxner-Höck, 1998).

Literature – Harzhauser *et al.* (2002), Rabeder (1998a), Daxner-Höck (1998).

Insectivores – Erinaceidae: *Galerix* sp. Talpidae: *Proscapanus* cf. *intercedens* Ziegler, 1985. Dimylidae: *Plesiodimylus* cf. *bavaricus* Schötz, 1985. Soricidae: *Dinosorex* cf. *zapfei* Engesser, 1975.

Taxonomic descriptions – The insectivores have been published by Rabeder (1998a).

Storage of material – NHMW.

Teiritzberg 2

Location – The waste dump Teiritzberg is situated 2 km north of Korneuburg, north of Vienna in the Korneuburg Basin [N 48°22'16" E 16°21'07"].

Stratigraphy – Marine-brackish sand and silt deposits, Karpatian, 16.5-16.7 my (Daxner-Höck, 1998).

Literature – Harzhauser *et al.* (2002), Rabeder (1998a), Daxner-Höck (1998).

Insectivores –Erinaceidae: *Galerix* sp. Dimylidae: *Plesiodimylus* cf. *bavaricus* Schötz, 1985. Soricidae: *Florinia* cf. *stehlini* (Doben-Florin, 1964), *Dinosorex* cf. *zapfei* Engesser, 1975.

Taxonomic descriptions – The insectivores were published by Rabeder (1998a).

Storage of material – NHMW.

MN 6

Apfelberg

Location – Clay pit south of Knittelfeld, Fohnsdorf Basin, Styria [N 47°11'16" E 14°49'32"].

Stratigraphy – Clay with lignite layers, Apfelberg Formation, Badenian (Strauss *et al.*, 2003).

Literature – Strauss *et al.* (2003).

Insectivores – Erinaceidae: Galericinae gen. et sp. indet. Talpidae: *Talpa* cf. *minuta* de Blainville, 1838, *Storchia* sp. Dimylidae: *Plesiodimylus* cf. *chantrei* Gaillard, 1897.

Taxonomic descriptions – As only some teeth and tooth fragments are available no more precise determinations can be expected. The galericine is represented by a p4-fragment, which fits in size *Galerix exilis* and *Parasorex socialis*. According to the stratigraphic position it most probably represents *Galerix exilis*.

Storage of material – NHMW.

MN 7/8

Bullendorf

Location – Sand-pit near Mistelbach, north of Vienna, northern Vienna Basin [N 48°36'17" E 16°40'17"].

Stratigraphy – Silt-sand sequence of a sand-pit, Lower Pannonian, letter-zone B-C?, MN7/8-9?, Astaracian or Vallesian? (so far no *Hippotherium* was found in the fossil layer itself, but *Hippotherium* is present in nearby sand-pits) (Daxner-Höck, 1996).

Literature – Daxner-Höck (1996, 2004b).

Insectivores – Erinaceidae: Galericinae gen. et sp. indet. Soricidae: *Crusafontina endemica* Gibert, 1975 vel *kormosi* (Bachmayer & Wilson, 1970).

Taxonomic descriptions – The entire insectivore material consists of only six isolated teeth, which have not yet been described. The three galericine teeth (d3, M3 and P4-fragment) are certainly not referable to *Lantanotherium*. According to their size they may belong either to *Schizogalerix voesendorfensis* or *Parasorex socialis*. The soricid teeth (right lower incisor fragment, two upper incisors) belong to *Crusafontina*; the species is not determinable. The occurrence of *Crusafontina* argues in favour of at least a MN 9 correlation of the Bullendorf sample (Ziegler, in press).

Storage of material – NHMW.

Jamm

Location – Near Kapfenstein in Styria [N 46°50-52' E 15°56-59'].

Stratigraphy – Middle Miocene, Sarmat, probably MN 7/8.

Literature – Thenius (1949).

Insectivores – Erinaceidae: *Parasorex socialis* von Meyer, 1865.

Taxonomic descriptions – Thenius (1949) described and figured the specimens from Jamm as *Galerix exilis*. Given the size relation p2<p3, which is inverse in *G. exilis*, the remains certainly belong to *Parasorex socialis*. Furthermore, except some late Spanish records (up to MN 9), *G. exilis* has not been recorded in faunas later than MN 6.

Storage of material – IPUW.

MN 9

Götzendorf

Location – Sandpit in Sandberg near Götzendorf an der Leitha (township of Mannersdorf am Leithagebirge) in the southern part of the Vienna Basin, southeast of Vienna [N 48°00'27" E 16°34'59"].

Stratigraphy – Floodplain deposit, silt-clay-sand, Late Pannonian, letter zone F, Early Vallesian, 9.7-9.9 my (Daxner-Höck, 2004a, correlation chart).

Literature – Bachmayer & Wilson (1984), Rögl *et al.* (1993), Rabeder (1998b), Ziegler (in press).

Insectivores – Erinaceidae: *Lantanotherium* cf. *sanmigueli* Villalta & Crusafont, 1944. Plesiosoricidae: *Plesiosorex* n. sp. Talpidae: *Archaeodesmana* sp., *Desmanella* n. sp., *Talpa* cf. *gilothi* Storch, 1978. Dimylidae: *Plesiodimylus* aff. *chantrei* Gaillard, 1897. Soricidae: *Crusafontina* aff. *endemica* Gibert, 1975, Soricinae gen. et. sp. indet., *Dinosorex engesseri* Rabeder, 1998 (type locality).

Taxonomic descriptions – The insectivores were published by Rabeder (faunal list in Rögl *et al.* 1993). The name *Dibolia* for the desman is replaced by the now valid name *Archaeodesmana*. Rabeder (1998b) described *Dinosorex engesseri* with Götzendorf as type locality. As Rabeders faunal list is not based on the whole sample, the entire material was studied by the first author. The updated species list is from Ziegler (in press).

Storage of material – NHMW.

Richardhof-Golfplatz

Location – Artificial outcrop (now a golf course), sequence of clay-silt; westernmost margin of the Vienna Basin, close to Richardhof, south of Vienna [N 48°03'27" E 16°16'13"].

Stratigraphy – Freshwater silt and clay (lake deposit), Middle Pannonian, letter zone E, Early Vallesian, 10.1-10.3 my (Daxner-Höck, 2004a, correlation chart).

Literature – Ziegler (in press).

Insectivores – Erinaceidae: *Lantanotherium sanmigueli* Villalta & Crusafont, 1944, *Galerix* sp., Galericinae gen. et sp. indet. Talpidae: *Archaeodesmana vinea* (Storch, 1978), *Storchia* sp., *Proscapanus* sp., *Talpa* cf. *gilothi* Storch, 1978, *Desmanella* aff. *rietscheli* Storch & Dahlmann, 2000, Talpidae gen. et sp. indet. Dimylidae: *Plesiodimylus* aff. *chantrei* Gaillard, 1897, *Metacordylodon schlosseri* (Andreae, 1904). Soricidae: *Crusafontina* aff. *endemica* Gibert, 1975, *Petenyia dubia* Bachmayer & Wilson, 1970, *Paenelimnoecus repenningi* (Bachmayer & Wilson, 1970), Soricinae gen. et. sp. indet., *Dinosorex engesseri* Rabeder, 1998.

Taxonomic descriptions – The insectivores from Richardhof-Golfplatz are described in Ziegler (in press).

Storage of material – NHMW.

Stixneusiedl

Location – Sandpit, sequence of clay-silt-sand [N 48°03'05" E 16°40'15"].

Stratigraphy – Freshwater clay-silt-sand, Upper Pannonian, letter zone F, Early Vallesian, 9.7-9.9 my (Daxner-Höck, 2004a, correlation chart).

Literature – Daxner-Höck (1996), Ziegler (in press).

Insectivores – Plesiosoricidae: *Plesiosorex* sp. Talpidae: *Storchia* sp., *Desmanella* cf. *rietscheli* Storch & Dahlmann, 2000.

Taxonomic descriptions – As only some isolated teeth and tooth fragments are available, no more precise determinations are possible (Ziegler, in press).

Storage of material – NHMW.

Vösendorf, Inzersdorf

Location – Former clay pits for a brickyard near Brunn-Vösendorf, south of Vienna, Lower Austria, southwestern margin of the Vienna Basin [Vösendorf: N 48°06-07' E 16°19-21'; Inzersdorf: N 48°08-09' E 16°19-22'] .

Stratigraphy – Middle Pannonian, letter zone E, Early Vallesian, 10.3-10.6 my (Daxner-Höck, 2004a, correlation chart).

Literature – Papp & Thenius (1954), Rabeder (1985).

Insectivores – Erinaceidae: *Schizogalerix voesendorfensis* (Rabeder, 1973) (type locality). Talpidae: *Desmanella* sp. Soricidae: *Dinosorex sansaniensis* (Lartet, 1851).

Taxonomic descriptions – Only the erinaceid is published in detail. *Galerix voesendorfensis* was described by Rabeder (1973) and subsequently referred to the genus

Schizogalerix by Engesser (1980). The other species are from the faunal list in Rabeder (1985). Here *Trimylus sansaniensis* is listed under the now valid name *Dinosorex sansaniensis*.

Storage of material – NHMW, IPUW.

Remarks – Today the sites Vösendorf and Inzersdorf are built over and integrated into a housing area; they are no longer accessible. The material was found at both sites. As it is not possible to find out the exact locality of each site, the co-ordinates are given in round terms.

MN 10

Neusiedl a. See

Location – Sandpit "Alte Lehmgrube", near Neusiedl a. See [N 47°57'30" E 16°52'37"].

Stratigraphy – Fluvial sand, Late Pannonian, Late Vallesian, ~9.7 my (Daxner-Höck, 2004a, correlation chart).

Literature – Daxner-Höck (1996), Ziegler (in press).

Insectivores – Talpidae: *Archaeodesmana* aff. *vinea* (Storch, 1978), *Talpa* cf. *gilothi* Storch, 1978. Soricidae: *Crusafontina* aff. *endemica* Gibert, 1975, *Dinosorex engesseri* Rabeder, 1998.

Taxonomic descriptions – Only some isolated teeth and tooth fragments are available (Ziegler, in press).

Storage of material – NHMW.

Richardhof-Wald

Location – Artificial outcrop near Richardhof; westernmost margin of the Vienna Basin, south of Vienna, near Gumpoldskirchen [N 48°03'35" E 16°16'15"].

Stratigraphy – Freshwater silt and clay, Late Pannonian, Late Vallesian, ~ 9.7 my (Daxner-Höck, 2004a, correlation chart).

Literature – Daxner-Höck (1996), Ziegler (in press).

Insectivores – Erinaceidae: *Lantanotherium sanmigueli* Villalta & Crusafont, 1944. Talpidae: *Archaeodesmana vinea* (Storch, 1978), *Storchia* sp., *Proscapanus* sp., *Talpa* cf. *gilothi* Storch, 1978, *Desmanella* aff. *rietscheli* Storch & Dahlmann, 2000, Talpidae gen. et sp. indet. Dimylidae: *Plesiodimylus* aff. *chantrei* Gaillard, 1897. Soricidae: *Crusafontina* aff. *endemica* Gibert, 1975, *Petenyia dubia* Bachmayer & Wilson, 1970, *Paenelimnoecus repenningi*

(Bachmayer & Wilson, 1970), Soricinae gen. et. sp. indet., *Dinosorex engesseri* Rabeder, 1998.

Taxonomic descriptions – The material was studied by the first author, and will appear shortly (Ziegler, in press).

Storage of material – NHMW.

Schernham b. Haag

Location – Sand and gravel pit, west of Haag am Hausruck, Upper Austria, Molasse Basin [N 48°10'40" E 13°36'38"].

Stratigraphy – Fluvial sand, intercalation of the Hausruckschotter, Late Pannonian, Late Vallesian (Daxner-Höck, 2004b).

Literature – Ziegler (in press), Daxner-Höck (2004b).

Insectivores – Erinaceidae: *Lantanotherium sanmigueli* Villalta & Crusafont, 1944, Galericinae gen. et sp. indet., cf. *Postpalerinaceus vireti* Crusafont & Villalta, 1947. Plesiosoricidae: *Plesiosorex* sp. Talpidae: *Archaeodesmana* aff. *vinea* (Storch, 1978), *Storchia* sp., *Proscapanus* sp. 1, *Proscapanus* sp. 2, *Talpa* aff. *minuta* de Blainville, 1838, *Talpa vallesensis* Villalta & Crusafont, 1944, *Urotrichus* sp., Urotrichini gen. et sp. indet., *Desmanella* aff *rietscheli* Storch & Dahlmann, 2000, Talpidae gen. et sp. indet. Dimylidae: *Plesiodimylus* aff. *chantrei* Gaillard, 1897, *Metacordylodon schlosseri* (Andreae, 1904). Soricidae: *Crusafontina* aff. *endemica* Gibert, 1975, *Petenyia dubia* Bachmayer & Wilson, 1970, *Paenelimnoecus repenningi* (Bachmayer & Wilson, 1970), Soricinae gen. et. sp. indet., *Dinosorex engesseri* Rabeder, 1998.

Taxonomic descriptions – The material was studied by Ziegler (in press).

Storage of material – NHMW.

MN 11

Eichkogel

Location – Artificial outcrop close to the top of the Eichkogel near Mödling, south of Vienna, Lower Austria, southwestern margin of the Vienna Basin [N 48°03'55" E 16°17'32"].

Stratigraphy – Freshwater silt-clay, Upper Pannonian, letter zone H, early Turolian (Daxner-Höck, 2004a, correlation chart).

Literature – Rabeder (1970, 1973), Bachmayer & Wilson (1978), Daxner-Höck (1996), Ziegler (in press).

Insectivores – List from Rabeder (1970) based on material from the IPUW.Erinaceidae: *Schizogalerix moedlingensis* (Rabeder, 1973) (type locality), *Galerix*? sp., *Lantanotherium* cf. *sanmigueli* Villalta & Crusafont 1944. Talpidae: *Galemys* cf. *kormosi* (Schreuder, 1940), *Desmana*? spp. 2 and 3, *Talpa* spp., Talpinae gen. et sp. indet. Soricidae: *Petenyia hungarica* Kormos, 1934, *Paenelimnoecus* cf. *pannonicus* (Kormos, 1934), *Petenyiella* sp., *Anourosorex* sp., *Limnoecus*? sp., *Sorex* div. sp., Soricidae gen. et sp. indet.

List based on material from the NHMW. Erinaceidae: *Schizogalerix moedlingensis* (Rabeder, 1973) (type locality) Talpidae: *Archaeodesmana* cf. *vinea* (Storch, 1978), *Storchia* sp., *Talpa* aff. *minuta* de Blainville, 1838, *Urotrichus* sp., *Desmanella* aff. *rietscheli* Storch & Dahlmann, 2000. Soricidae: *Crusafontina kormosi* (Bachmayer & Wilson, 1970), *Paenelimnoecus* cf. *repenningi* (Bachmayer & Wilson, 1970), *Petenyia dubia* Bachmayer & Wilson, 1970, Soricidae gen. et sp. indet.

Taxonomic descriptions – The faunal list from Rabeder (1970) is adapted to the current classification. *Lantanotherium* is from a faunal list from Bachmayer & Wilson (1978) where they compared the Eichkogel and Kohfidisch faunas. Only *Schizogalerix moedlingensis* was published in detail (Rabeder, 1973). The genus *Schizogalerix* was described by Engesser (1980), who referred the species *moedlingensis* to that genus. ?*Galerix* sp. certainly represents no *Galerix*, since this genus was long extinct in Central Europe at that time. It stood longest in Spain, where the last occurrences correlate with MN 9 (van den Hoek Ostende, 2001). Possibly the Eichkogel *Galerix* represents *Lantanotherium*. *Desmana* cf. *kormosi* was referred to *Galemys* by Rümke (1985). Among the other desmans there may be *Archaeodesmana*, which was identified among the NHMW material. Rabeder (1970) listed *Petenyiella* cf. *pannonica* (Kormos, 1934). This obviously represents *Paenelimnoecus pannonicus* as in soricids the species name *pannonicus* occurs only with *Paenelimnoecus*. The material has not been studied by a specialist since the 1970s, and is in dire need of revision. Additional material stored in the NHMW is under study by the first author. A review of the small NHMW sample gives the above insectivore list; as this additional material is very limited and poorly preserved even a painstaking study will hardly yield more precise determinations.

Storage of material – IPUW, NHMW.

Kohfidisch

Location – Cave and fissure fill site near Kohfidisch in southern Burgenland, Pannonian Basin [N 47°08'52" E 16°20'39"].

Stratigraphy – Clay, Late Pannonian, Early Turolian, (Daxner-Höck, 2004a, correlation chart).

Literature – Bachmayer & Wilson (1970, 1978, 1980).

Insectivores – Erinaceidae: *Schizogalerix zapfei* (Bachmayer & Wilson, 1970) (type locality), cf. *Parasorex socialis* von Meyer, 1865, *Lantanotherium* sp., *Erinaceus*? sp. Talpidae: *Archaeodesmana vinea* (Storch, 1978), cf. *Desmanella crusafonti* Rümke, 1974, *Talpa gilothi* Storch,

1978, Talpidae gen. et sp. indet. Soricidae: *Crusafontina kormosi* (Bachmayer & Wilson, 1970) (type locality), *Petenyia dubia* Bachmayer & Wilson, 1970 (type locality), *Paenelimnoecus repenningi* (Bachmayer & Wilson, 1970) (type locality), Neomyini gen. et sp. indet.

Taxonomic descriptions – The whole small mammal fauna has been presented in three contributions by Bachmayer & Wilson (1970, 1978, 1980). Among the abundant species *Schizogalerix zapfei* and *Crusafontina kormosi*, which were not totally isolated from other material, some further insectivore species may be hidden. The erinaceid species *zapfei* and *moedlingensis* were referred to *Schizogalerix* by Engesser (1980). *Lantanotherium* is expected to be *L. sanmigueli*, but this cannot be corroborated by the available m2 and m3. *Erinaceus* is not determinable more precisely. The desman was originally was listed as *Desmana pontica*? Schreuder, 1940. Rümke (1985) named the Kohfidisch desman *Dibolia vinea* Storch, 1978, elevating *D. pontica vinea* Storch, 1978 to species level and referred it to *Dibolia* Rümke, 1985. Hutterer (1995) referred all *Dibolia* species to *Archaeodesmana* Topachevski & Pashkov, 1983. The soricid species *Anourosorex kormosi* was referred to *Crusafontina* Gibert, 1975 by Storch & Qiu (1991). *Petenyia dubia* was attributed to the genus *Blarinella* Thomas, 1911 by Reumer (1984). Storch (1995) advocates the original generic assignment. *Petenyiella? repenningi* was referred to the genus *Paenelimnoecus* Baudelot, 1972 by Reumer (1992).

Storage of material – NHMW.

Pliocene

Deutsch-Altenburg 9

Location – Quarry with many caves and fissures, yielding Middle Pliocene to Middle Pleistocene faunas. Township Bad Deutsch-Altenburg, district Bruck an der Leitha, east of Vienna, Lower Austria [N 48°09′ E 16°55′].

Stratigraphy – Middle Pliocene.

Literature – Frank & Rabeder (1997).

Insectivores – Talpidae: *Talpa minor* Freudenberg, 1914. Soricidae: *Beremendia* sp., *Asoriculus* sp., *Petenyia* sp., *Crocidura obtusa* Kretzoi, 1938.

Taxonomic descriptions – No detailed descriptions from the faunas of the various fissures at Deutsch-Altenburg are available. The vertebrates were determined and listed by G. Rabeder (in Döppes & Rabeder, 1997).

Storage of material – IPUW.

Deutsch-Altenburg 14

Location – Quarry with many caves and fissures, yielding Middle Pliocene to Middle Pleistocene faunas. Township Bad Deutsch-Altenburg, district Bruck an der Leitha, east of Vienna, Lower Austria [N 48°09′ E 16°55′].

Stratigraphy – Middle Pliocene.

Literature – Frank & Rabeder (1997).

Insectivores – Talpidae: *Talpa minor* Freudenberg, 1914. Soricidae: *Beremendia* sp., *Petenyia* sp.

Taxonomic descriptions – See Deutsch-Altenburg 9.

Storage of material – IPUW.

Deutsch-Altenburg 19

Location – Quarry with many caves and fissures, yielding Middle Pliocene to Middle Pleistocene faunas. Township Bad Deutsch-Altenburg, district Bruck an der Leitha, east of Vienna, Lower Austria [N 48°09′ E 16°55′].

Stratigraphy – Late Pliocene.

Literature – Frank & Rabeder (1997).

Insectivores – Talpidae: *Talpa minor* Freudenberg, 1914.

Taxonomic descriptions – See Deutsch-Altenburg 9.

Storage of material – IPUW.

Deutsch-Altenburg 20

Location – Quarry with many caves and fissures, yielding Middle Pliocene to Middle Pleistocene faunas. Township Bad Deutsch-Altenburg, district Bruck an der Leitha, east of Vienna, Lower Austria [N 48°09′ E 16°55′].

Stratigraphy – Middle Pliocene.

Literature – Frank & Rabeder (1997).

Insectivores – Talpidae: *Talpa minor* Freudenberg, 1914, *Galemys kormosi* (Schreuder, 1940). Soricidae: *Sorex* sp., *Beremendia* sp., *Asoriculus gibberodon* (Petényi, 1864).

Taxonomic descriptions – See Deutsch-Altenburg 9. *Desmana kormosi* from Deutsch-Altenburg 20 was referred to *Galemys* by Rümke (1985).

Storage of material – IPUW.

Deutsch-Altenburg 21

Location – Quarry with many caves and fissures, yielding Middle Pliocene to Middle Pleistocene faunas. Township Bad Deutsch-Altenburg, district Bruck an der Leitha, east of Vienna, Lower Austria [N 48°09′ E 16°55′].

Stratigraphy – Middle Pliocene.

Literature – Frank & Rabeder (1997).

Insectivores – Talpidae: *Talpa minor* Freudenberg 1914, *Desmana* sp. Soricidae: *Beremendia* sp., *Blarinoides mariae* (Petényi, 1864), *Asoriculus* sp., Soricinae gen. et sp. indet.

Taxonomic descriptions – See Deutsch-Altenburg 9. *Desmana* sp. from Deutsch-Altenburg 21 also may represent a species of *Galemys* or *Archaeodesmana*.

Storage of material – IPUW.

Deutsch-Altenburg 26

Location – Quarry with many caves and fissures, yielding Middle Pliocene to Middle Pleistocene faunas. Township Bad Deutsch-Altenburg, district Bruck an der Leitha, east of Vienna, Lower Austria [N 48°09′ E 16°55′].

Stratigraphy – Middle Pliocene.

Literature – Frank & Rabeder (1997).

Insectivores – Talpidae: *Talpa minor* Freudenberg, 1914, Desmaninae indet. Soricidae: *Beremendia* sp., *Petenyia* sp.

Taxonomic descriptions – See Deutsch-Altenburg 9.

Storage of material – IPUW.

Stranzendorf

Location – Loess section in Niederrußbach, district Korneuburg, Lower Austria [N 48°27′ E 16°05′].

Stratigraphy – Middle and Late Pliocene.

Literature – Frank & Rabeder (1997).

Insectivores – Talpidae: *Talpa* cf. *minor* Freudenberg, 1914. Soricidae: *Sorex* cf. *runtonensis* Hinton, 1911, *Sorex* sp., *Beremendia* cf. *fissidens* (Petényi, 1864), *Blarinoides mariae*? Sulimski, 1959.

Taxonomic descriptions – The insectivores are listed in Frank & Rabeder (1997).

Storage of material – IPUW.

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