

Fossil mammal collection of the Harrison Institute

The Harrison Institute holds many thousands of fossil mammal specimens in its collections. A summary of the sites, in chronological order, together with a brief description of the material collected from them is included below. Publications resulting from the research are also listed.

Postglacial (11,700 to 0 years before present [bp])

- **Sevenoaks Reserve, Kent – (8,000 bp):** an extensive collection of Mesolithic fossils, primarily comprising large mammals, including the last known wild horse from Britain (*Equus ferus*) and numerous specimens of the red deer (*Cervus elaphus*). The Darent River Gravels collection is partially on display at the Sevenoaks Wildlife Reserve.

Publications:

Harrison, D. L. 1974. A Mammal Survey of the Sevenoaks Reserve and Darent Valley. In: J. G. Harrison. The Sevenoaks Gravel Pit Reserve, pages 97-99. WAGBI Conservation Pub. 1974.

Harrison, D. L., J. Clutton-Brock and R. Burleigh. 1982. Remains of mammals from the Darent River Gravels at Sevenoaks Reserve, Kent. *Archaeologia Cantiana*, 97: 27-52. July 1982 (for 1981).

Late Pleistocene (126,000 to 11,700 bp)

- **Oblazowa2** - working in collaboration with the Polish Academy of Sciences, small mammal specimens were collected from this cave deposit in Poland. It has a typical Late Pleistocene fauna which is rich in rodents and shrews.

Publication:

Nadachowski, A, D. L. Harrison, Z. Szindlar, T. Tomet, and M Wolsan. 1993. Late Pleistocene Vertebrate fauna from Oblazowa 2. (Carpathians, Poland): palaeoecological reconstruction. *Acta zoologica cracoviensia*, 36(2):281-290. [PDF available]

- **Conningbrook, Kent – Mid-Devensian – 30,000 bp:** an extensive collection of small and large mammal material. Of particular interest in the large mammals are spotted hyaena, lion, bear, mammoth, woolly rhinoceros, bison, giant Irish elk. The collection also features numerous specimens of small mammals with the arctic lemming (*Dicrostonyx torquatus*) being especially abundant. Kennard's Shrew (*Sorex kennardi*) was recorded, although it has subsequently been reclassified as *Sorex runtonensis*. Flint Acheulean tools were also collected from the site.

Publications:

Harrison, D. L., 1996. Systematic status of Kennard's Shrew (*Sorex kennardi* Hinton, 1911), Insectivora: Soricidae: a study based on British and Polish material. *Acta zoologica cracoviensia*, 39(1): 201-212. [PDF available] **NOTE:** Also found in Middle Pleistocene section

- **Khao Kao Cave, Thailand - Late Pleistocene – 16,350 ± 2,670 bp:** The cave is situated in an Ordovician limestone hill range in Thailand's Songkhla Province. Analysis of the numerous teeth, jaws, and other bones present in the samples has

resulted in the identification of fifteen species of small mammal representing the orders Chiroptera, Scandentia and Eulipotyphla, all but one known from the living fauna. Eleven of the species are recorded for the first time from the Pleistocene of Thailand including an extinct bat species new to science, which is described. Optically Stimulated Luminescence (OSL) dating of the deposit indicates a late Pleistocene age of 16.35 ± 2.67 Ka, although a small number of rogue grains among the mineral population suggests the presence of material older than 200 Ka.

Pearch, M.J., S. Bumrungsri, J-L. Schwenniger, D.J. Ward and **D. L. Harrison**. 2013. Cainozoic small mammal fauna of Thailand with new records (Chiroptera; Scandentia; Eulipotyphla) from the late Pleistocene. *Cainozoic Research*, 10(1-2): 59-98.

Middle Pleistocene (781,000 to 126,000 bp)

- **Itteringham, Norfolk, East Anglia** – Ipswichian stage (130,000-114,000 bp): A small collection of mostly large mammal fossils, which includes a fragmentary skull of the giant Irish elk (*Megaceros giganteus*).
- **Shropham, Norfolk, East Anglia** - specimens from this site are primarily of large mammals, including much material of European bison and some fine examples of hippopotamus.
- **Westbury-sub-Mendip, Somerset – 250,000 bp**: numerous specimens were collected from this collapsed cave deposit. The most abundant large mammal was the cave bear (*Ursus deningeri*). Small mammal species included the pika (*Ochtona pusilla*) and a number of bat species, for example the long-eared bat (*Plecotus rabederi*) and Bechstein's bat (*Myotis bechsteinii*).
- **West Runton, East Anglia – 500,000 bp**: an extensive collection of thousands of specimens, especially rich in rodents, particularly voles such as *Mimomys savini*. Other interesting species include the giant beaver (*Trogotherium cuvieri*), the oldest known specimen of Runton's Shrew (*Sorex runtonensis*) and the oldest European record of the noctule bat (*Nyctalus noctula*).

Publications:

Harrison, D. L., 1986. Quaternary Research in East Anglia at the Harrison Zoological Museum. *Transactions of the Suffolk Naturalists Society*, 22: 6-15. [PDF available]

Harrison, D. L. and P. J. J. Bates. 1984. Occurrence of *Nyctalus noctula* Schreber, 1774 (Chiroptera: Vespertilionidae) in the Cromerian Interglacial of England. *Mammalia Paris* 48(4): 603-606. [PDF available]

Harrison, D. L. and J. D. Clayden. 1993. New records of *Beremendia fissidens* (Petenyi, 1864) and *Sorex minutus* Linnaeus, 1766 (Insectivora: Soricidae) from the British Lower and Middle Pleistocene. *Cranium jrg.* 10, No.1: 97-99. [PDF available] **NOTE:** Also found in Lower Pleistocene section

Harrison, D. L., S. A. Parfitt and A. J. Stuart. 2006. Occurrence of *Macroneomys brachygnathus* Fejfar, 1966 in the British Middle Pleistocene, with a review of the status of *Beremendia fissidens* (Petenyi, 1864) in Britain (Mammalia, Lipotyphla, Soricidae). *Acta zoologica cracoviensia*, 49A(1-2): 119-124. [PDF available]

Parfitt, S.A. and D. L. Harrison. 2011. New material of the shrew *Macroneomys* FEJFAR, 1966 (Mammalia, Soricomorpha, Soricidae) from the British early Middle Pleistocene, with comments on its palaeobiology and European range. *Acta zoologica cracoviensia*, 54A(1-2): 31-37.

Early Pleistocene (2.6 my [million years] to 781,000 bp)

- **Sidestrand, East Anglia – 1.9 mybp** (million years before present): this site is particularly rich in small mammals, with many thousands collected, especially voles, such as *Mimomys pliocenicus*. The fossil shrews, including *Beremendia fissidens* are also of particular interest.

Publications:

Harrison, D. L., P. J. J. Bates and J. D. Clayden. 1988. Vertebrate fauna (from Sidestrand). pp.: 178-179. In P. Gibbard and J. A. Zalasiewicz. Pliocene and Middle Pleistocene of East Anglia. A Field Guide. Quarternary Research Association Pub. [PDF available] **NOTE:** Also found in Pliocene section

Harrison, D. L., P. J. J. Bates and J. D. Clayden. 1988. On the occurrence of *Galemys kormosi* (Schreuder, 1940) (Insectivora: Desmaninae) in the British Lower Pleistocene. Acta Theriologica 33 (26): 369-378. [PDF available]

Harrison, D. L., P. J. J. Bates and J. D. Clayden. 1989. Occurrence of *Lemmus kowalskii* Carls and Rabeder, 1988 (Rodentia: Microtinae: *Lemmus*) in the Lower Pleistocene of East Anglia. Acta Theriologica 34 (3): 55-65. [PDF available]

Harrison, D. L. and J. D. Clayden. 1993. New records of *Beremendia fissidens* (Petenyi, 1864) and *Sorex minutus* Linnaeus, 1766 (Insectivora: Soricidae) from the British Lower and Middle Pleistocene. Cranium jrg.10, No.1: 97-99. [PDF available] **NOTE:** Also found in Middle Pleistocene section

Pliocene (5.3 to 2.6 mybp)

- **Podlesice, Tatra Mountains, Poland:** an extremely rich fauna of bats and other small mammals. Highlights include the giant early Pliocene shrew, *Paranourosorex gigas*, and *Rhinolophus kowalski*, ancestor of the greater horseshoe bat, *Rhinolophus ferrumequinum*.

Publications:

Harrison, D. L., P. J. J. Bates and J. D. Clayden. 1988. Vertebrate fauna (from Sidestrand). pp.: 178-179. In P. Gibbard and J. A. Zalasiewicz. Pliocene and Middle Pleistocene of East Anglia. A Field Guide. Quarternary Research Association Pub. [PDF available] **NOTE:** Also found in Lower Pleistocene section

Harrison, D. L. and B. Rzebik-Kowalska. 1991. An unusual cranial fossil of the Giant Lower Pliocene Shrew (*Paranourosorex gigas* Rzebik-Kowalska, 1975) from Podlesice, Poland. Palaeovertebrata, Montpellier 21 (1-2): 95-102. [PDF available]

Harrison, D. L. and B. Rzebik-Kowalska. 1992. Observations on the occurrence of *Dibolia* (Talpidae: Desmaninae) in the Lower Pliocene of Poland. Cranium Jrg.9 No.2: 105-108. [PDF available]

Harrison, D. L. and B. Rzebik-Kowalska. 1994. A note on the occurrence of *Desmanella* cf. *dubia* Rumke, 1976 (Insectivora: Talpidae: Uropsilinae) in the Lower Pliocene of Podlesice, Poland. Cranium jrg. 11(1): 3-6. [PDF available]

Late Eocene (37.2 to 33.9 mybp)

- **Hordle Cliff, Hampshire:** an extensive collection of small mammals from the Hordle Mammal and Hordle Rodent Beds. Typical rodents include *Thalerimys fordii* and *Thalerimys headonensis*. Highlights include the jaw of a lemur *Leptodapis magnus* and a new genus *Patriarchamys batesi*.
- **Headon Hill, Isle of Wight:** the Institute has numerous specimens of small mammals from this very rich Eocene deposit, with its relatively well known mammal fauna. Most of the species are shared with Hordle Cliff.

Publications:

Harrison, D. L., P. J. J. Bates and N. M. Thomas. 1995. The occurrence of *Acotherulum pumilum* (Stehlin, 1908), (Mammalia, Artiodactyla, Cebochoeridae) in the Headonian (Upper Eocene) of England. *Tertiary Research*, 15(4): 139-143. [PDF available]

Holman, J. A. and D. L. Harrison. 1998. A new genus of small boid snake from the Upper Eocene of Hordle Cliff, Hampshire, England. *Acta zoologica cracoviensia*, 41(1): 29-33. [PDF available]

Holman, J. A. and D. L. Harrison. 1998. A new genus of snake (Serpentes: Boidae) from the upper Eocene of Hordle Cliff, Hampshire, England. *Acta zoologica cracoviensia*, 41(1): 23-27. [PDF available]

Holman, J. A. and D. L. Harrison. 1999. *Rana* (Amphibia: Ranidae) from the Upper Eocene (MP17a) Hordle Cliff locality, Hampshire, England. *Palaeovertebrata*, Montpellier 28(1): 47-51. [PDF available]

Holman, J. A., D. L. Harrison, and D. J. Ward. 2006. Late Eocene snakes from the Headon Hill Formation, southern England. *Cainozoic Research*, 5 (1-2): 51-62. [PDF available]

Norris, C. A. and D. L. Harrison. 1998. Mammalian periotic bones from the Eocene deposits at Hordle, Hampshire. *Acta zoologica cracoviensia* 41(1): 69-77. [PDF available]

Norris, C. A. and D. L. Harrison. 1998. A possible Omomyid (Primates: Omomyidae) periotic bone from the Eocene deposits at Hordle, Hampshire. *Acta zoologica cracoviensia*, 41(1): 61-68. [PDF available]

Holman, J. A. and D. L. Harrison. 2003. A new helmeted frog of the genus *Thaumastosaurus* from the Eocene of England. *Acta Palaeontologica Polonica*, 48(1): 157-160. [PDF available]

Holman, J. A. and D. L. Harrison. 2002. A new *Thaumastosaurus* (Anura: Familia incertae sedis) from the Late Eocene of England, with remarks on the taxonomic and zoogeographic relationships of the genus. *Journal of Herpetology*, 36(4): 621-626. [PDF available]

Hooker J. J. and D. L. Harrison. 2008. A new clade of Omomyid primates from the European Paleogene. *Journal of vertebrate Palaeontology* 28 (3): 826-840. [PDF available] 5-35. [PDF available] **NOTE:** Also found in Middle Eocene section

Middle Eocene (48.6-37.2 mybp)

- **Creechbarrow, Dorset –** the Institute has an extensive collection from this site with numerous specimens. A highlight includes *Archaeonycteris relicta*, the only known member of this archaic bat genus from Britain.

Publications:

Harrison, D. L. 2002. A new species of Dormouse (Rodentia: Gliridae) from the Creechbarrow Limestone Formation (late Middle Eocene) of Dorset, England. *Tertiary Research* 21 (1-4): 11-18. [PDF available]

Harrison, D. L. 2006. A new genus and species of 'paramyid' rodent (Rodentia: Ischyromyidae) from the Creechbarrow Limestone Formation (late Middle Eocene) of Dorset, England. *Cainozoic Research*, 4 (1-2): 51-60. [PDF available]

Harrison, D. L. 2009. A new genus of paroxyclaenid (Mammalia: Condylarthra: Paroxyclaenidae: *Paravulpavoides*) from the Upper Middle Eocene of Creechbarrow, Dorset, S. England. *Cainozoic Research*. 6(1-2): 2

Harrison, D.L. and J.J. Hooker. 2010. Late Middle Eocene bats from the Creechbarrow Limestone Formation, Dorset, southern England with description of a new species of *Archaeonycteris* (Chiroptera: Archaeonycteridae). *Acta Chiropterologica*, 12(2): 311-327. [PDF available]

Harrison, D. L., P. J. J. Bates, M. Pearch, D. Ward, and C. Michaels. 2012. New additions to the late middle Eocene mammal fauna of Creechbarrow, Dorset, southern England. *Cainozoic Research*, 9(1): 65-85.

Hooker J. J. and D. L. Harrison. 2008. A new clade of Omomyid primates from the European Paleogene. *Journal of vertebrate Palaeontology* 28 (3): 826-840. [PDF available] 5-35. [PDF available] **NOTE:** Also found in Upper Eocene section

Lower Eocene/Upper Palaeocene (55.8 to 48.6 mybp)

- **Ferry Cliff, Sutton, Suffolk** - specimens from this site include the earliest known miniature horse (*Cymbalophus cuniculus*) and a very rich fauna of mammals, many still unclassified, including the large *Coryphodon eocaenus*, which was like a rhinoceros but without a horn.

- No publications