

AN INTRODUCTION TO THE FIFTH INTERNATIONAL  
CONFERENCE ON DORMICE (MAMMALIA: GLIRIDAE)

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Dormice, the Gliridae, form an important and distinctive family of rodents that are interesting from a variety of viewpoints relevant to many different fields of biology. They comprise an ancient group of mammals that were once widespread and diverse in terms of numbers of species. Their fossil remains provide an insight into the early evolution and diversity of rodents and there has been much discussion about the phylogeny and taxonomy of the Rodentia, based on study of palaeontological material. However, we now have access to the new tools offered by molecular biology, that provide fresh input to these discussions, confirming, adjusting or even contradicting existing ideas. There is opportunity here for a fruitful exchange of ideas.

Dormice have a specialised physiology and many of them are profound hibernators. This raises questions about how and why hibernation evolved and how it is controlled. Hibernation is a winter phenomenon, shared with some other groups of mammals, but many dormice also frequently undergo additional periods of torpor during the active season. Their body temperature falls substantially, evidently to reduce the energy cost of homeothermy, but at the cost of compromising reproductive output. During both hibernation and torpor, animals abandon the advantages of homeothermy, a key attribute of mammals that contributes much to their success. This raises important questions, for both physiologists and ecologists, about how and why these phenomena occur.

Dormice are naturally rare, far less abundant than murid rodents for example, raising interesting ecological questions about why this should be so. In recent times, natural scarcity has been exacerbated by anthropogenic environmental damage, and several species are now regarded as rare or endangered, attracting conservation related research and active habitat management to assist their survival. Their sensitivity to both climate and other environmental factors means that dormice are important bioindicators of environmental change, again a topic worthy of considerable research. Scarcity has led to legal protection being extended to dormice, several of which are now listed among national Red Data species and international agreement, in the form of the Bern Convention, protects dormice throughout Europe. Yet, paradoxically, one species is often regarded as an agricultural and domestic pest, and also hunted for food in some countries.

There are six living genera in the family Gliridae, mostly monospecific. One species of dormouse (*Glirulus japonicus*) occurs in Japan, and several species of *Graphiurus* inhabit large areas of Africa, but otherwise the dormice are essentially a Palearctic group. Here they pose interesting questions related to their distribution. For example, *Eliomys*, appears to have colonised north Africa by spreading round both ends of the Mediterranean, to form one very variable species or at least two that are difficult to separate. *Eliomys quercinus* occurs in habitats ranging from forest to mountain scree and semi-desert, vineyards to sand dunes and inside houses. Why is it that such an adaptable and widespread species is so patchy in its European distribution? Why is it not more evenly distributed and, given the patchiness, how does it survive as a continent-wide species? *Muscardinus* is a widespread, but monospecific genus, and in many areas it is the only species of dormouse present. It is strongly associated with woodland edges, understorey shrubs and scrub, all transient habitats where the integrity of habitat corridors is essential to link scattered local populations and enable their survival. *Glis* and *Dryomys* appear to prefer more mature forests, with *Glis* being strongly associated with beech (*Fagus sylvatica*) trees. Its reproduction is strongly linked to beech masting years, leading to wide fluctuations in population density. *Muscardinus* on the other hand, is associated particularly with hazel (*Corylus avellana*) and its numbers are more stable, perhaps being more affected by weather and habitat quality. The reproductive biology of *Dryomys* is poorly known by comparison.

So, dormice are interesting, distinctive and different. Their varied interest has brought together biologists from many countries at a series of international meetings focussed on the Gliridae. The first of these was held in 1990 in the Bavarian National Park (Germany), where HEIKO MÜLLER-STEISS invited a small group of people to discuss our shared interest in dormice. The meeting focused on dormouse ecology, an important issue in the National Park, where MÜLLER-STEISS had used radio-tracking to begin some ground-breaking work on the comparative behaviour of three species that occur there. A booklet, "*Schläfer und Bilche*", summarising aspects of that conference was published in 1996 by Deutschen Nationalparks, Bayersiche Wald (ISBN 3-930977-25-7).

The Second International Conference was held in 1993 at Fuscaldo in southern Italy. It was organised by MARIA FILLIPPUCI and others, and included geneticists and palaeontologists who brought new insights to our discussion of glirids. The proceedings were published in *Hystrix* (vol. 6: parts 1 & 2, 1994). A Third Conference took place in Ystria (Croatia) in 1996, organised by NICOLA TURTKOVIC, with the proceedings being published in *Natura Croatica* (vol. 6: no. 2, 1997). This conference again attracted a wide participation and included memorable excursions to see different dormouse habitats, including beech forests barely 2

m tall, stunted by high altitude and totally unlike the dormouse habitats familiar to participants from elsewhere in Europe. The Fourth Conference was held in 1999 at the new Trakya University at Edirne in Turkey. This provided an opportunity to see and hear about *Myomimus*, a mysterious and little known genus of dormice that I myself had first discovered in Turkey while on a student expedition to Anatolia in 1965 (CORBET & MORRIS 1967). Again, a wide variety of papers were presented, later published in the *Trakya University Journal of Scientific Research* (vol. 2, December 2001).

The Szent István University (Gödöllő, Hungary) was host to the Fifth International Conference on Dormice in 2002. Delegates attended from more than ten different countries, meeting to discuss many varied aspects of the biology of dormice, and the proceedings are offered for publication here.

One key issue that needed early clarification was exemplified by the official title of the Conference itself. This had been widely advertised as an “International conference on dormice (Myoxidae)”, and this name for the dormouse family was incorporated into the title of many papers at the conference. Yet the family name Gliridae was also in widespread use for the same group of animals. Similarly, some participants used the scientific name *Glis glis* in reference to the edible dormouse, while others used the name *Myoxus glis*. The whole purpose of internationally standardised scientific nomenclature is to permit unambiguous reference to species throughout the world, yet here we appeared to have confusion.

The difficulty arises from the problem of agreeing which name has priority. In the case of the edible dormouse, the name *Glis glis* was first proposed by BRISSON in a book “*Regnum Animale*” published in 1762. However, certain aspects of this work led later authors to regard it as inadequate as a basis for scientific nomenclature (eg the names proposed did not properly conform to the Linnean system and descriptions included confused Latin grammar). Thus, BRISSON (1762) was considered ‘not available’ as a legitimate source of scientific names by many authors, and priority was given to the next-earliest description, made by ZIMMERMAN in 1780, who referred to the animal as *Myoxus glis*. However, if we reject “*Regnum Animale*” as a reliable source of animal names, including *Glis*, we must also discard many other names that he proposed and that are now in widespread use (e.g. *Odobenus*, *Pteropus*, *Meles*, *Lutra*, *Hyaena*, *Tapirus*, *Giraffa* and others). Accepting ZIMMERMAN’s nomenclature also means changing the family name of dormice to Myoxidae, and also changing many other family names too. This obviously creates widespread taxonomic confusion that goes well beyond a small group of obscure rodents!

It is the role of the International Commission for Zoological Nomenclature to resolve such questions. In Case no. 2928 (GENTRY 1994), the ICZN reviewed the

validity of “Regnum Animale” and rejected its use as a source of scientific names. Nevertheless, the ICZN ruled that, to avoid further confusion, certain generic names would be preserved and declared valid because of their long-established and widespread use. These include *Glis* (and Gliride). Thus, the names Myoxidae and *Myoxus glis* are not valid and their use should cease. For the purpose of convenience at the conference, the Chairman proposed that the names *Myoxus* and Myoxidae used by some participants should remain on posters and in verbal presentations during the conference, but would be changed in any papers submitted for publication.

Thus one debate concerning dormice is resolved, but many other areas of discussion and enquiry remain. This diversity of interest is reflected in the papers presented at the fifth International Conference on Dormice and offered for publication here.

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