

## ***Zoological Record* and registration of new names in zoology**

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**Abstract.** BIOSIS is offering, through *Zoological Record* (ZR), to provide a database register of new names in zoology. Inclusion of a name in this register would not indicate or imply its validity or other nomenclatural status. The register would provide the raw material needed by those seeking to establish which new zoological species, genera or families have recently been described and named. The register would also include those names that appear to be unavailable under the Code (where possible they would be indicated as such), but would not arbitrate in matters relating to the availability or validity of the names. Expert taxonomists, calling on the assistance of the Commission where necessary, would determine which names were available and valid for use in a particular group of animals. ZR's coverage of new names is well over 90% complete and takes place within two weeks of receipt of new publications by ZR or within three to six weeks of receipt of new publications by source libraries. Double-checking ensures that far less than one percent of 20,000 new animal names registered each year is likely to be recorded incorrectly. There is no existing registration source that is more up-to-date or complete. The register would be available on line free of charge to anyone who wished to check on the existence of a name and would provide a sound basis for a full nomenclatural repository. However, the register could only be as comprehensive as the community chooses to make it. A comprehensive register could be achieved if zoologists ensured that ZR was aware of all new works containing new names. The 10% of new names not currently registered by ZR because of the obscurity of the publications in which they appear (or other reasons) could be eliminated if the Code required all new names to be registered. Therefore, it is proposed that Recommendation 8A of the Code (which recommends that authors should send a copy of a work containing a new name or names to ZR) be revised to become a mandatory Article.

**Keywords.** Nomenclature; taxonomy; register of new names; BIOSIS; *Zoological Record*.

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### **Introduction**

This article was written following the extensive discussions leading up to the publication in 1999 of the Fourth Edition of the *International Code of Zoological Nomenclature* and more recently with the Commission's Executive Secretary on a possible role for *Zoological Record* (ZR) in 'registering' new names in zoology. During the preparation of the paper, the concept of a centralized archive/database for taxonomists was also raised in the journal *Nature* (*Nature*, 2002). This stimulated extensive exchanges on the TAXACOM e-mail discussion list. I hope that the views on names registration expressed in the current paper will be a valuable addition to the discussion.

In the current proposal, BIOSIS is offering the means to collect all new animal names and, acting as a neutral host, make them available free of charge to all who need to use them. In BIOSIS's view, this would be a means of registering new names and would provide a firm foundation for *Nature's* more extensive concept of a centralized repository of nomenclature. If I have understood the latter correctly,

this would involve extending the basic names database to include additional data, such as description, type locality, holotype location, links to the bibliographic citation, abstract or the full text of the publication. Developing such systems is one of BIOSIS's core activities and, although BIOSIS does not have the funds to offer to implement this more extensive concept on its own, it would be willing to participate in any suitable cooperative arrangements that might be developed in the zoological community.

It is important to note that the word 'registration', as used in the current paper, is simply a label to describe a proposal for providing a comprehensive database of new names in zoology. Inclusion of a name in this register would not indicate its validity or other nomenclatural status. The register would provide the raw material needed by those seeking to find out what species, genera or families had been described and named. The expert taxonomists, calling on the assistance of the Commission where necessary, would determine which names were valid for use in a particular group of animals.

### **The current situation**

The value of a central zoological names resource is generally accepted but, unfortunately, the means of providing it is not. Recognizing this situation, *Nature* (Nature, 2002) has recently taken 'a small step towards a database for taxonomists'. A new policy, started in August 2002, requires authors of papers which are accepted for publication in *Nature* and which contain 'the formal nomenclature and description of species' to send a preprint or an electronic copy to the Linnean Society of London. With this action, *Nature* has made the first move towards a central repository for taxonomic data, although the Linnean Society does not currently have an established mechanism to act as a repository of this nature. We applaud this initiative. However, as the ZR is already in existence as just such a repository, BIOSIS would like to explore possible options which could develop the idea further without duplicating already existing efforts.

### **New names in *Zoological Record* (ZR)**

In 1995, the discussion draft of the current (fourth) edition of the Code included an Article that proposed a process of 'international notification' of new names. This was to be achieved by recording them in ZR. As part of this proposal, BIOSIS developed the Index to Organism Names (ION; [http://www.biosis.org.uk/free\\_resources/ion.html](http://www.biosis.org.uk/free_resources/ion.html)), a free name search tool that enables any user to check whether a name has been used. All zoological names indexed in ZR since 1978 were added to this database, together with names from other associated organism groups to enhance its value to the wider scientific community. ION is still freely available and is currently being enhanced with improved search mechanisms and additional content.

However, the 'notification' proposal was at the time unacceptable to the zoological community for a number of reasons, and therefore was finally included in the current Code as a recommendation (Recommendation 8A) rather than as a mandatory Article. The main concerns of the community related to coverage, availability and accessibility, to which ZR responded (Howcroft & Thorne, 1999) as follows:

- (1) *Coverage*. ZR's names coverage is estimated to be well over 90% complete (Bouchet, 1999). The remaining 10% or so of names are mainly those published in sources to which ZR does not have access. We estimate that names we seek from source libraries are usually indexed in ZR within six weeks of receipt at the source library and a great majority are indexed within three weeks. Material sent directly to ZR from publishers is normally indexed within two weeks of receipt. As each new name indexed is double checked for spelling, only a small fraction of one percent of new names is likely to be recorded incorrectly. We know of no more current or complete names resource.
- (2) *Availability*. Names are recorded at face value and reflect the literature. Names that have been published improperly under the Code and are therefore formally unavailable are still recorded. This may include names that are not accompanied by an adequate description, names that are published electronically or associated with invalid typification. Names are

checked against selected criteria of availability and if they appear to be unavailable under the Code, this is stated in the index entry. Other than this ZR is a unbiased index to the literature and makes no judgements on the status or validity of names. This is the province of taxonomists not indexers. ZR has adopted this neutral position throughout its existence. However, it would not be difficult to mark in the register those newly published names that do not fulfil selected criteria.

- (3) *Access.* There was an incorrect assumption that access to new names could only be achieved through ZR and that this access would have to be paid for. This was never the case and the ION service, then as now, is free to anyone who wishes to check on the existence of a name. Other zoologists questioned the viability of ZR and expressed concern about long-term access to the register. BIOSIS has long recognized the importance of archival issues, and can use its experience to ensure enduring access to a names register. The ZR was founded in 1864. It has survived through two world wars and the technological revolutions of the late 20th century, and the community can be reassured that it is securely positioned for the future.

### **ZR and registration**

Each year ZR selects some 70,000 items from the life science literature, and extracts some 20,000 new animal names. These names, along with existing names indexed from the literature, are made available to users through ION in the free resources part of the BIOSIS web site. We suggest that this existing effort could readily be exploited as a basis for registration purposes.

New animal names published in serials monitored for ZR (this list is available on the BIOSIS web site: [www.biosis.org](http://www.biosis.org)) would be indexed as now. For those new names published in serials not monitored for ZR (i.e. serials not available to us), authors would need to provide a reprint of the relevant articles for indexing as is already recommended in the existing Code. A similar mechanism could be established for names published in non-serial publications.

After indexing, all new names would be transferred to a suitably titled register/database of new animal names mounted by BIOSIS on the web. The new names, marked as such, would simultaneously be added to ION. This would enable such names to be searched alongside existing names. The database would be available free of charge to anyone (including non-subscribers to ZR) who wished to check on the existence of a name. Such a database would provide a sound basis for a full nomenclatural repository. However, it is important to note that in the current proposal and in any other proposal that might be put forward, a new names register/database will only be as comprehensive as the community chooses to make it. It should be noted that registration of a name can only be accomplished once the original publication in which the name is published as new has been indexed in ZR.

### **BIOSIS and the community**

BIOSIS, established in 1926, is a not-for-profit organization based in Philadelphia, U.S.A., which provides a variety of services for those seeking access to life science information. BIOSIS UK, established in 1980, is a subsidiary of BIOSIS, based in York, England. It compiles *Zoological Record* and provides an international presence for the organization. BIOSIS is self-sustaining - there are no shareholders; any surplus is reinvested in the company, and in the development of new services for the life science community.

True to its mission, BIOSIS has long standing associations with several organizations, and is an active participant of the Committee on Data for Science and Technology (CODATA), the Global Biodiversity Information Facility (GBIF), Species 2000, and the Taxonomic Databases Working Group (TDWG). It also has close ties with the Commission, and currently hosts the web sites of the Commission and of Species 2000.

In addition to its participation in the activities of these organizations, BIOSIS has recently created a new web-portal site entitled 'BiologyBrowser' ([www.biologybrowser.org](http://www.biologybrowser.org)) offering a range of free services to the research and education community. This incorporates an indexed web directory of links

to relevant Internet sites, an animal classification guide for students and teachers, a biological conference calendar, and, in collaboration with other organizations, ION.

Working with the zoological community is also a means of ensuring that significant duplication of effort is avoided. Sharing resources, or using existing resources for new applications, benefits the entire community, and the concept of registration is no exception. Registration would support, not compete with, GBIF, Species 2000, and the many other names and biodiversity initiatives. Moreover, using the ZR, registration could be accomplished with little extra effort by anyone else in the publication chain.

## **BIOSIS and ZR**

For almost a century the Zoological Society of London (ZSL) subsidized the publication of ZR. In 1980, aware that it could not continue to provide this subsidy and wishing to ensure the continuity of ZR, the ZSL entered into a joint publishing agreement with BIOSIS. In the agreement, all production, management and financial liability for ZR was transferred to BIOSIS, and BIOSIS UK was created. Since 1980, BIOSIS has eliminated a significant publication backlog in ZR, introduced new production systems, and issued ZR in electronic formats. Following these achievements, the BIOSIS Board (which includes several eminent members of the life science community) has given overwhelming support for the ongoing development of ZR and its community activities.

## **Conclusion**

Given the critical role of names in all life science research, it is essential that the zoological community agrees on a mechanism to bring them together in a central resource. BIOSIS is well positioned, and willing, to provide this. With the help of the community, and by using existing ZR procedures, a fully comprehensive new animal names database (and perhaps, in the future, other organism names) could readily be established. Taking this further, to provide a repository of the full description, links to abstracts etc., would be a logical step that BIOSIS would be interested in discussing with others. To make the registration of names that BIOSIS proposes a reality, the current recommendation in the Code that authors should send a copy of their work to ZR would have to be emended by the Commission to become a mandatory requirement in the form of an Article of the Code.

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