

## Book Review

### ‘Collecting, preserving and research is out!’

BIOLOGISCHE VIELFALT: SAMMELN, SAMMLUNGEN UND SYSTEMATIK [BIOLOGICAL DIVERSITY: COLLECTING, COLLECTIONS AND SYSTEMATICS] (Rundgespräche der Kommission für Ökologie, 26. Edited by Bayerische Akademie der Wissenschaften). Verlag Dr Friedrich Pfeil, Munich. 144 pp. August 2003. €22.00. ISBN 3-89937-014-7.

There are all too many vulnerable natural history collections, not only in the United States (see Gropp, 2004; Suarez & Tsutsui, 2004) but also in many other parts of the world, amongst them Germany. There are 169 natural history museums in Germany (Voss & Schwägerl, 2003), many being small, with more regional focus, but others are of the highest international importance (e.g. those in Berlin, Munich, Bonn, Frankfurt, Stuttgart, Dresden and Hamburg). German Museums haven't enjoyed opulent budgets for a long time. I remember one autumn years ago when the museum in Stuttgart was unable to continue regular correspondence because the postage budget had run out. If we wish to admire an original ruin from World War II, a visit to the Humboldt museum in Berlin would be appropriate. The surviving part of this museum also has suffered heavily during the chequered history of eastern Berlin (Anonymous, 1998). Financial problems, however, are not the only threat to the outstanding natural history heritage kept in German museums, but rather a symptom of a lack of appreciation of natural history collections by policy-makers. One of the most notorious examples of a dangerous atmosphere of ignorance in German politics was exemplified in a recent talk delivered in the natural history museum of Stuttgart: as stated on page 65 in this volume, the Head of the Department for Museums and Fine Arts in the Ministry of Science, Research and Arts of the Land Baden-Württemberg, unequivocally expressed the view that for museums, collecting, preserving and research is 'out'. Moreover, the whole museum business 'has to become cheaper'. Of course, natural history museums would be much cheaper if we were to relieve them of collecting, curation and research, but such a course of action would be to lose the material resources on which other museum duties such as exhibitions and public education are based. Meanwhile, even if the situation in Stuttgart is less fraught, such ignorance is visible everywhere in Germany, not only in administration but also in legislation.

For example, collecting insects and other organisms is largely illegal in Germany. Admittedly, the law only prohibits collecting of protected species, but they form a long list

(BArtSchV, 1999/2002). Moreover, it is not permissible even to attract protected species with light traps or collect them in pitfall traps or other trapping method. Therefore, any project relying on trapping or attraction faces serious problems, because protected species may also be lured. This legislation applies to scientific officers working for national museums as much as to anyone else, with the effect that their official duty to document biodiversity is, to a great extent, prohibited by law. Everybody needs a permit, one for every administrative district, a new one every year. Eventually you may be permitted to collect a particular group of insects and to identify them, but not routinely to keep voucher specimens. After identification the specimens have to be released at the collecting locality (as stated in the last permit I obtained some ten years ago). Walter Ruckdeschel (p. 110) refers to a Bavarian permit from 1999, which even requires that the dead material from pitfall trapping has to stay in the ecosystem, i.e. all the specimens have to be thrown away at the trapping locality. Preservation of voucher specimens was explicitly prohibited. The laws for protecting endangered (and all other) species are often so strict as to render sensible scientific work virtually impossible (Reichholf, p. 13). Many of us are aware of the bureaucratic (sometimes frustrating) burden that we have to overcome to obtain collecting permits for tropical biodiversity hotspots (Pethiyagoda, 2004; Böhme, p. 49). The situation is not necessarily better in highly developed countries.

Fully aware of these unfortunate conditions, in October 2002, the Commission for Ecology of the Bavarian Academy of Sciences organized a round-table discussion about 'Biological Diversity: Collecting, Collections and Systematics'. Thirty-one participants from science, administration and politics discussed the problems of collection-based science and their prohibition in Germany on the basis of ten talks, which are presented (together with the subsequent discussions) in this volume. The book is intended to enlighten the relevant authorities in Germany about the problems faced by collection-based research and to inform biologists and the interested public about the results of the meeting, as Josef Reichholf from the Zoologische Staatssammlung Munich and Hubert Ziegler from the Bavarian Academy of Sciences explain in their preface (p. 9). All papers are written in German with an English summary.

The compilation starts with a discussion of species and species concepts by Matthias Glaubrecht from the Berlin museum (pp. 15–42). This is a welcome introduction for the target group. For me, the most notable point of his paper is the historical reminder that the biological species

concept was expressed first by the geologist and naturalist Leopold von Buch in 1819 (and recognized by Darwin and Wallace).

Then herpetologist Wolfgang Böhme (Museum Koenig, Bonn, pp. 43–54) demonstrates the importance of zoological collections for the global documentation of biodiversity and particularly for the recognition of new species. New species amongst insects are commonplace and most of our non-entomological friends hopefully can imagine that this is indeed the case, but then, who cares about creepy crawlies? Böhme gives us useful examples and references to disabuse anyone who thinks we already know everything in the living world: new pythons, an anaconda and a crocodile published in this century, almost 1000 new reptile species discovered over the last ten years, etc. Such discoveries were all made with the help of collections or from within collections themselves. Bureaucratic problems hindering biodiversity research are discussed. Böhme explicitly speaks out against repatriating primary type material for the sake of political correctness if appropriately curated and internationally available collections are not present in the countries of origin.

Josef Reichholf (Zoologische Staatssammlung, Munich, pp. 55–68) demands a change of collecting strategies from 'Noah's Ark' (complete representation of all species in a few specimens) to 'Darwin's Archive' (focusing on spatial/temporal variation, on samples rather than individuals to tackle evolutionary and ecological questions). Continuous collecting is necessary. As the main part of most national collections has been provided by private collectors, it might be fruitful to convince them to change their collecting strategy also. However, collecting is generally outlawed and continuous collecting is near impossible. (The importance of private collections is outlined in the next paper by Dietrich Herm, pp. 69–74.) As shown in a graph of the ornithological collection in Munich (p. 57), the effect of national legislation on collection development is worse than that of the world-wide economic crisis in the 1920s and matches the effect of the Second World War in its devastation. Wolfgang Lippert, President of the Bavarian Botanical Society, experienced similar problems in the botanical realm (pp. 87–98). Continuous monitoring in natural (hence, mostly protected) habitats, and the opportunistic collection of voucher specimens (before they are grazed by rapidly advancing sheep) is hindered by current legislation. Lippert illustrates the importance of botanical collections with appropriately selected examples as Böhme did earlier for zoology.

Databasing specimen data increasingly becomes an integral part of work in natural history collections. Michael Malicky and Gerhard Aubrecht (Oberösterreichisches Landesmuseum Linz, Austria) present an account of the biogeographical database ZOBODAT (pp. 75–86) founded in 1972 in the framework of the European Invertebrate Survey. It contains more than three million records (79% insects), mainly from Austria, Romania and Italy ([http://](http://www.biologiezentrum.at)

[www.biologiezentrum.at](http://www.biologiezentrum.at)). In the subsequent discussion, all the common problems of databasing collection data are discussed: misidentifications, necessary and laborious research on deciphering label data, etc. Malicky considers 850 man-years for databasing the ten million botanical specimens in Austrian collections (5–10 specimens per hour). Many of us have experienced how many hours it can take to determine the locality of a single hundred-year-old Arabian or African place name.

Erno Stackebrand, the director of the German collection of microorganisms and cell cultures, gives an overview of the potential and problems of prokaryote collections (pp. 99–112), and Walter Ruckdeschel concludes with a paper entitled 'Nature conservation contra collectors?' (pp. 113–121), which provoked a long, controversial discussion (pp. 122–127). Ruckdeschel was the President of the Bavarian authority for conservation and is the President of the entomological society of Munich, and hence has insights from both sides. He emphasizes the common goals of collectors and conservationists, pleads for general permits for scientific collecting and emphasizes the problems of the future of collecting-based work. The number of young people (including biology students) interested in natural history is in decline. If collecting remains illegal in the present form, naturalists will soon be on the German Red List too.

This compilation gives us an impression about the current problems and discussions about collections and collecting in Germany, a country with a true heritage of natural history collections and a great (but crumbling) tradition in collection-based research. As it is published in German, in times of increasing neglect of non-English literature, it easily might be overlooked. Collections, for us systematic entomologists, are vital, and we should be aware of their fate wherever they are.

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## References

- Anonymous (1998) Archiv der Natur. *Der Spiegel*, **35/1998**, 152–155.
- BArtSchV. (1999/2002) Verordnung zum Schutz wild lebender Tier- und Pflanzenarten [...]. [http://bundesrecht.juris.de/bundesrecht/bartschv\\_1999/gesamt.pdf](http://bundesrecht.juris.de/bundesrecht/bartschv_1999/gesamt.pdf) (accessed 05.viii.2004).
- Gropp, R.E. (2004) Threatened species: university natural science collections in the United States. *Systematics and Biodiversity*, **1**, 285–286.
- Pethiyagoda, R. (2004) Biodiversity law has had some unintended effects – moves to prevent unfair exploitation of resources could restrict conservation research. *Nature*, **429**, 129.
- Suarez, A.V. & Tsutsui, N.D. (2004) The value of museum collections for research and society. *Bioscience*, **54**, 66–74.
- Voss, J. & Schwägerl, C. (2003) Naturkundemuseen. Manager der Artenvielfalt. *Frankfurter Allgemeine Zeitung*, **27 August**, Nr. **198**, 1.