

Natural History Collections

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This book series is devoted to the subject of collecting, organizing and preserving specimens. Natural history collections are the libraries of life and a valuable resource for experts in biodiversity, as well as in evolutionary and environmental sciences. New techniques offer endless possibilities for reanalysing specimens, and natural history collections are an impressive source of undiscovered species. As long as they are properly cared for, even centuries-old specimens can lead to new discoveries. This series highlights the importance of our natural history collections around the globe and summarizes the knowledge, research, opportunities and challenges associated with them. This includes new techniques for sampling and preservation, as well as new exhibition concepts.

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Lothar A. Beck • Ulrich Joger
Editors

Paleontological Collections of Germany, Austria and Switzerland

The History of Life of Fossil Organisms
at Museums and Universities

 Springer

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Archives of Earth's History: An Introduction

This book is devoted to the knowledge of up to 250 years of collecting, organizing, and preserving paleontological collections by generations of scientists. Collections are a huge resource for modern paleontological research and should be available for national and international scientists and institutions, as well as prospective public and private customers. Moreover, these collections are an important part of the scientific enterprise, supporting scientific research, public education, and the documentation of past biodiversity. Knowledge gained in order to understand our world is mainly based on data we owe to the collection, preservation, and ongoing study of natural specimens. Properly preserved collections of fossil marine or terrestrial plants and animals are libraries of Earth's history and vital to our ability to learn about our place in it today and in future.

The approach employed by the editors not only involves an introduction to the topic but also pays attention to general aspects such as new approaches of sorting, preserving, and research in paleontological collections as well as new exhibition concepts. In addition, the book provides information about important public museums where research takes place, outstanding state museums and collections in regional, local, or private museums, and also collections at universities. This is a highly informative and carefully presented book, providing scientific insight for readers who have an interest in fossil record, biodiversity, taxonomy, or evolution, as well as natural history collections at large.

German, Austrian, and Swiss scientists have been playing an exceptional role in the development of paleontology as a science since the beginning of the nineteenth century. Fossil sites and collections such as Holzmaden (*Posidonia* shale), Solnhofen/Eichstätt (*Archaeopteryx*), and the Geiseltal and Messel pits (Eocene mammals with preserved soft body tissues) have gained worldwide fame. Researchers such as Blumenbach, Goldfuss, Kaup, Fraas, Stomer, von Huene, Hermann von Meyer, and von Zittel deserve important positions in the hall of fame of paleontology. They described numerous taxa (the type specimens of which are deposited in the respective collections) and contributed important information to the development of the stratigraphic system. German terms like "Lagerstätte" have been incorporated in the terminology of our discipline.

Therefore, after Springer issued the book series “Natural History Collections” and the first volume “Zoological Collections,” we were happy that we received consent to compile an overview on the paleontological collections of the German-speaking countries. It was, nevertheless, planned in English as its main audience will be the international paleontological community. A compendium of 57 manuscripts is—naturally—dependent on a diversity of contributors. We are thankful to all those colleagues who reacted positively to our request and provided manuscripts on the collections under their care. Some restrictions were necessary to keep the special limits of the book: We could not consider the hundreds of small fossil collections (mostly communal or private-owned) although we admit that they fulfill important roles at a regional scale. We are sorry and ask your pardon if you were not considered. A small minority of collection curators did not respond to our request or did not deliver a manuscript, even after the deadline had been repeatedly prolonged. Those collections may be included in a future second edition. Finally, we are sure that we attained a representative overview on the important paleontological collections of Germany, Austria, and Switzerland.

As stated in our book on the zoological collections (Beck LA (ed.), *Zoological Collections of Germany*) museums can be categorized by their legal status: large research institutions (in Germany usually within the Leibniz community), state-owned, university-owned, or private. In the case of paleontological collections, some of the state-owned collections are not housed in a museum, but in a geological service institution (Landesamt für Geologie or Federal Institute for Geosciences). Some statistics may be worth mentioning: The “big seven” of paleontology (more than two million specimens each) are the collections at Basel, Berlin, Stuttgart, Vienna, Munich, the combined Senckenberg collections, and Göttingen. Together with two other “millionaires”—the collections of the Federal Institute for Geosciences at Hannover/Berlin, and the collection of Tübingen University—these nine “big tankers” constitute an amazing number of about 25 million paleontological specimens. The smaller and medium sized collections listed here amount only to about four million. But many of these have historically valuable collections, in case of the Zürich University collection dating back to Scheuchzer’s times (beginning of the eighteenth century) or even earlier (collections of Gotha or Schleusingen). Therefore, the collections’ history is an important part of each description. Many collections are closely linked to local sites, expeditions to foreign countries, or private collectors who donated their personal collections to an institution. Compiling such diverse information in a single volume is possibly a major virtue of this book.

Each chapter of the book gives the principal data of the respective collection (number of species and/or specimens, main focus of the collection, history), today’s conditions of infrastructure of the paleontological collection (staff, rooms, laboratories, exhibitions, perspectives), examples of today’s research, national and international networks, publications, or other media, and educational work.

Last but not least we would like to thank the team at Springer, especially Verena Penninger who initiated the book series on “Natural History Collections” and Martina Humberger (Heidelberg), Ms. Suganya Selvaraj and Mr. Dhanapal Palanisamy (Chennai, India) who were very helpful in coordinating and producing this volume.

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