

## Preface

Living beings produce pharmacological active substances to ensure their survival. In many cases, such substances can harm or kill other living creatures or can trigger allergies. Some of these compounds pose a danger not only to human beings but also to animals.

Our concern is to try to acquaint the readers – especially physicians, veterinarians, pharmacists, biologists, chemists, food chemists, biochemists, students of these disciplines, but interested laymen also – with poisonous microorganisms, fungi, plants, and animals, in words and pictures.

We want to inform the reader about the biology of the poisonous living beings and about the structure, the effects and mode of action of their toxic ingredients.

We report on the numerous possibilities to poison, which are, e.g., misapplication of drugs and natural substances as therapeutics in medicine, folk medicine and folk customs, misuse of plants and biogenic substances as narcotics, confusion of poisonous plants with edible ones, testing the edibility of unknown plants, attempted suicides, homicides, poison arrows, poison baits, animal attacks, or infections.

We inform about the symptoms of the poisonings, in many cases shown on case reports, and we give hints on poisoning prevention and about measures to treat the poisonings. However, the books are not intended as a guide to medical practice in cases of poisoning.

For poisonings of animals, especially of farm and domestic animals, by plants we characterize the preconditions of poisonings, show the symptoms and the possible treatment of these poisonings as well as their prevention.

We inform not only about poisonous drugs and their active ingredients which in earlier and current times are used as therapeutics, but also about drugs which may be starting points for the development of new medicines.

Over the decades, our knowledge in the field of natural poisons has expanded rapidly. Reasons for this include, e.g., modern molecular biological methods available today. The easier accessibility to exotic sources through globalization and the easier accessibility of living beings from the marine habitat have fostered the interest in investigations of these sources.

We have always tried to see the toxins not only as a danger to humans and animals but also as an admirable variety of substances that have been evolved in the course of evolution to protect the living products of evolution and thus enable them to continue to exist.

The books are based on our book *Biogene Gifte*, third edition, published in 2010 by Wissenschaftliche Verlagsgesellschaft Stuttgart in German language. Because of the enormous increase in knowledge in the field of natural poisons and venoms, to reach a larger readership and to fit into the STEM series of the De Gruyter publishing house, the topic is now covered in five volumes in English language.

After a fundamental chapter on toxins (definition of terms used in toxicology, history, chemistry, biology, first aid, and general and clinical toxicology) Volumes 1 to 3 are devoted to poisonous plants and their active substances. Volume 4 summarizes the current knowledge about poisonous animals, their poisons, their attacks, and the measures after an attack. Volume 5 deals with poisonous mushrooms and cyanobacteria and their ingredients and selected microbial toxins. The volumes are staggered in time, so that the highest possible topicality is guaranteed. The volumes can be purchased independently, but at least the joint purchase of the three plant volumes is recommended.

In terms of nomenclature, we have adhered for plants to ‘The World Flora Online, WFO 2022’. We have taken the English-language trivial names predominantly from the ‘Der große Zander, Enzyklopädie der Pflanzennamen, 2008’.

Despite the extensive bibliographies at the end of each chapter, the cited literature represents only a selection. For reasons of space, the information is as short as possible. Preference was given to review papers. Further literature is summarized at the end of the volumes.

We would like to thank everyone who helped us with the creation of the books. We would especially like to thank Mr. Dipl.-Phys. Karl-Heinz Lichtnow, Greifswald (Germany), for drawing the drafts of structural formulas and schemes and his readily available help with critical computer problems of any kind. We would like to thank all image authors and Getty images for the provision of the photos. Our thanks go to De Gruyter publishing house, especially Mrs. Karin Sora, for making these books possible, and Mrs. Dr. Bettina Noto for the always pleasant and helpful cooperation in the completion of the volumes and her careful editing work, and Mrs. Anne Stroka and her staffs for the preparation of the manuscript to the printable form.

We are always grateful for critical information on errors and suggestions for improvement.

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