

Preface

Zoology is currently undergoing a period of transition in which chemical knowledge is progressively integrated with the more classic knowledge of morphology and systematics. Biochemical studies of species, as well as of higher taxa, open new disciplines to the zoologist and offer new viewpoints in considering problems of structure, function, development, evolution, and ecology. The biochemist has considerable opportunities for broadening his sphere of investigation because of the enormous selection of animal species available for study from which a great variety of compounds can be obtained and reactions observed. There are abundant prospects for fruitful collaboration between the biochemist and zoologist in studies in which the characteristics of the animal and the biochemical constituents and processes interact in significant ways.

Very often the initial obstacle in undertaking investigations in new fields is the complexity and scattered character of the literature. This treatise is aimed primarily at making it possible for zoologists and chemists, who have a limited knowledge of the literature in fields other than their own, to gain a valid impression of the present state of knowledge in chemistry and zoology and an introduction to the existing literature. Thus, we have invited research workers who have contributed significantly to problems involving combined chemical and zoological approaches to summarize the knowledge in their specific disciplines of interest and competence. The authors have been encouraged to be critical and synthetic and to include the gaps in knowledge as well as the established information.

The treatise is arranged by phyla, an arrangement which seemed most suitable for presenting chemical information of zoological significance and for bringing to the attention of chemists those aspects of biochemical diversity of greatest potential interest. Each section, dealing with a major phylum, is introduced by a discussion of the biology and systematics of the group. This is followed by chapters dealing with various aspects of the biochemistry of the group. In general, the authors of individual chapters have been given full freedom, within the limitations of

space, to develop their assigned topic. We thought that in this way the reader would have the advantage of the author's personal experience in and attitude toward his field, and that this would more than compensate for any unevenness in coverage that might result.

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