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The World of Peptides

A Brief History
of Peptide Chemistry

With 138 Figures

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*To Irmgard and to the
memory of Agnes*

Preface

Almost two centuries ago proteins were recognized as *the* primary materials (proteios = primary) of life, but the significance and wide role of peptides (from pepsis = digestion) in practically all life processes has only become apparent in the last few decades. Biologically active peptides are now being discovered at rapid intervals in the brain and in other organs including the heart, in the skin of amphibians and many other tissues. Peptides and peptide-like compounds are found among toxins and antibiotics. It is unlikely that this process, an almost explosive broadening of the field, will come to a sudden halt. By now it is obvious that Nature has used the combination of a small to moderate number of amino acids to generate a great variety of agonists with specific and often highly sophisticated functions. Thus, peptide chemistry must be regarded as a discipline in its own right, a major branch of biochemistry, fairly separate from the chemistry of proteins. Because of the important role played by *synthesis* both in the study and in the practical preparation of peptides, their area can be considered as belonging to bio-organic chemistry as well.

The already overwhelming and still increasing body of knowledge renders an account of the history of peptide chemistry more and more difficult. It appears therefore timely to look back, to take stock and to recall the important stages in the development of a new discipline. Also, with the passing of time the principal contributors to peptide chemistry, become, as persons, gradually too distant and somewhat forgotten. A few of us are still around who had the good luck to be participants in the exciting early endeavors of peptide research and had also the distinct privilege of knowing some of the ground-breaking investigators in person. The stories they told us about their predecessors, their teachers and about their own work provide an invaluable link to the past. This kind of oral tradition is usually absent from scientific publications and can be found mainly in biographies and autobiographies of famous scientists, for instance in "Aus meinem Leben" by Emil Fischer. Yet, we thought that remembrance of the past of peptide chemistry, in order to reach its full value, should be presented as an

integrated continuum, in the form of a book, and undertook the task of writing one.

A noteworthy break in the development of peptide chemistry can be discerned in the nineteen thirties, a geographical change, marked, at least symbolically, by the emigration in 1934 of Max Bergmann from Germany to the United States. Prior to this time contributions by German authors exceeded by far, both in number and in significance, the publications of researchers from other countries. In the following period the center of activity in peptide research shifted west, to Great Britain and to the United States and in later years also to Japan. Only in the last decades could Europe regain a part of the ground lost. The somewhat different backgrounds of the two authors of this volume led to a natural division of the material covering these two major periods. Yet, in spite of the undeniable dichotomy, the book attempts to show an uninterrupted intellectual enterprise. Its aim is to present the history of peptide chemistry as a continued human effort toward lofty goals. The authors will feel rewarded if this objective has been reached, even if only in part. Should "The World of Peptides" also provide entertaining reading for the experienced researcher and some stimulus for the uninitiated, their aim would be fully achieved.

Heidelberg, Princeton

Theodor Wieland
Miklos Bodanszky

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