

# SCIENCE

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## MODERN ZOOLOGY<sup>1</sup>

### CONTENTS

<i>The British Association for the Advancement of Science:</i>	
<i>Modern Zoology:</i> PROFESSOR J. H. ASHWORTH.....	231
<i>Biological Abstracts</i> .....	236
<i>The International Union of Pure and Applied Chemistry:</i> PROFESSOR J. E. ZANETTI.....	239
<i>Scientific Events:</i>	
<i>The Optical Society of America; Exploration of San Juan County, Utah; A New Wild Life Preserve; Prizes in Chemistry</i> .....	242
<i>Scientific Notes and News</i> .....	243
<i>University and Educational Notes</i> .....	246
<i>Discussion:</i>	
<i>Needs of German Scientific Men:</i> PROFESSOR JAMES P. C. SOUTHALE. <i>Further Observations on the Sex Chromosomes of Mammals;</i> DR. THEOPHILUS S. PAINTER. <i>Scorpions in North Dakota:</i> DR. R. L. WEBSTER.....	246
<i>Quotations:</i>	
<i>The Priestley Medal</i> .....	248
<i>Scientific Books:</i>	
<i>Mellor's Comprehensive Treatise on Inorganic and Theoretical Chemistry:</i> PROFESSOR GRAHAM EDGAR	249
<i>Special Articles:</i>	
<i>A New Occurrence of the Black-eyed Yellow Mutation in Rats:</i> DR. HELEN DEAN KING.....	250
<i>The Ohio Academy of Science:</i> PROFESSOR EDWARD L. RICE .....	251
<i>Science News</i> .....	x

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ZOOLOGY has far outgrown its early boundaries when it could be defined simply as a part of natural history, and at no period has its growth been more rapid or more productive in results of scientific and practical importance than in the interval since our last meeting in this city. It is, however, impossible, even if time permitted, for any one observer to survey the many lines of activity in zoology or to record its contributions to knowledge in this fruitful period. I have thought it might be profitable to endeavor to take in retrospective glance the broad outlines of development of zoology during the last two or three decades, and then to limit our further consideration more especially to some of the relations of zoology to human welfare. The period under review has witnessed a growth of our knowledge of the living organism of the same order of importance as the progress in our knowledge of the atom. Never have investigators probed so deeply or with so much insight into the fundamental problems of the living animal; the means for observation and recording have become more delicate, and technique of all kinds more perfect, so that we can perceive details of structure and follow manifestations of activity of the organism which escaped our predecessors.

At the time of the last Liverpool meeting and for some few years previously, a distrust of the morphological method as applied to the study of evolution had been expressed by a number of zoologists. At that meeting Professor MacBride put forward an able defense of morphology while recognizing that the morphological method had its limitations, which must be observed if the conclusions are to rest on safe ground. Through undue zeal of some of its devotees morphology had been pushed too far on arid and unproductive lines, and rash speculation based on unsound morphology brought discredit on this branch of our science. It is now fully recognized that the observed resemblances between animals are due, some of them to genetic relationships, and others to convergent evolution, and therefore that the conclusions drawn from the study of morphology are to be interpreted with the greatest circumspection. There are some groups of animals, *e.g.*, the earthworms, in regard to the evolutionary history of which we can

<sup>1</sup> From the address of the president of the Section of Zoology of the British Association for the Advancement of Science, Liverpool, September, 1923.

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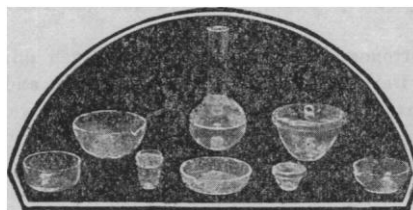
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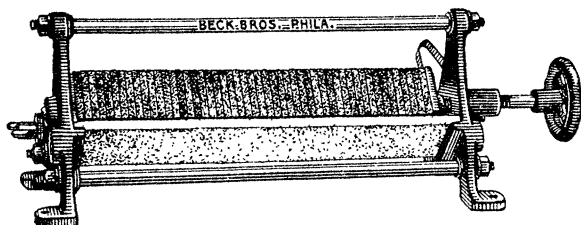
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