

NEBRASKA ORNITHOLOGISTS' UNION.

THE fourth annual meeting of the Nebraska Ornithologists' Union was held in Lincoln, Neb., January 24, 1903, on which occasion the following papers were read:

REV. J. M. BATES: President's address—'Birds and Man.'

MRS. C. S. LOBINGIER: 'Educational Value of Bird Study.'

MISS ANNA CALDWELL: 'Devices for Interesting Children in Bird Study.'

REV. J. M. BATES: 'Observations on the Number of Birds to the Square Mile in Custer County.'

MR. WILSON TOUT: 'The Crow in Nebraska.'

MR. MYRON SWENK: 'The Birds of the Niobrara Valley.'

DR. R. H. WOLCOTT: 'Birds of Cherry County, Neb.'

DR. R. H. WOLCOTT: 'Remarks on a Record of Nebraska Ornithology.'

Newly elected members raised the total membership of the society to nearly two hundred.

The following officers were elected:

President—F. H. Shoemaker, Omaha.

Vice-President—Miss Anna Caldwell, Lincoln.

Corresponding Secretary—J. C. Crawford, Jr., West Point.

Recording Secretary and Editor (permanent)—Dr. R. H. Wolcott, University of Nebraska.

Treasurer—Mr. August Eiche, Lincoln.

Executive Committee—Dr. G. E. Condra, University of Nebraska; Dr. H. B. Lowry, Lincoln; J. A. Dickinson, Gresham.

The office of Custodian was created as a permanent office and Myron Swenk, of Lincoln, appointed to fill it.

The presentation of a considerable amount of material, including many skins on which records are based, was reported, and it was resolved to 'secure, if possible, for the collection, all the material in the state upon which the past records of the occurrence of rare birds in Nebraska had been based.

A committee was appointed to complete the formal organization of the Audubon Auxiliary and to put in definite shape terms of affiliation between it and the union.

ROBERT H. WOLCOTT,
Secretary.

DISCUSSION AND CORRESPONDENCE.

BIOMETRY AND BIOMETRIKA.

TO THE EDITOR OF SCIENCE: May I as one of the editors of the above journal make a personal appeal to the American scientific world through your columns? My reasons for doing so are twofold. In America the novel, be it in science, politics or industry, is not *a priori* condemned as the undesirable or the fatuous, which is its customary fate in Europe. Secondly, the list of American subscribers to our journal shows us that American biologists and mathematicians are willing to consider on its own merits what biometry has to say for itself; they are not from the beginning hostile to the new movement. In Europe the older teachers will have nothing to do with the subject. The list of subscribers shows that we depend chiefly upon the younger workers here; and every difficulty is put in the way of their doing biometric work. This is extremely serious, for it means that appointments and fellowships will not follow on research work in biometry, and thus young scientists are and will be discouraged from taking it up. Quite recently a young American biometrician working here was surprised to find the scorn with which the officials at a great national institution treated his measuring work. 'Well, tell us what biometry has proved?' was the question put to him by officials, whose library contained no copy of the journal, and who apparently had never studied its pages. Another young worker proceeding to take up a colonial appointment was warned by one of the doyens of zoology on all grounds to give up this foolish biometric work. A third, going to work in one of the greatest continental zoological laboratories, finds its world-renowned head disgusted because he attempts to solve a problem by statistics which in fact can and can only be solved in that way.

None of our responsible biometricians claim that there is *one* way only of solving *all* biological problems, but solely that there is only one way, the statistico-mathematical method, in which *certain* problems can be answered. We do not, therefore, aim at depriving biologists, pure and simple, of their field of ac-

tivity. We do not call upon them all to return to school and learn mathematics. What we do say is that, in a certain part of that field, their past conclusions have been based on inadequate reasoning, and we place at the disposal of those who are willing or able to use it a new instrument of investigation. For the many who have not a taste for statistics or mathematics, we have endeavored to provide with each number of our journal a brief summary of what our contributors consider their investigations to demonstrate. A brief examination of these summaries will show the unprejudiced that, on the one hand, no attempt has been made to exaggerate the value of the work done, nor, on the other, has biometry failed to achieve something in the first year during which it has possessed an organ of its own. In the case of the mathematician we have even more to offer than to the biologist; we ask him to see that his science has far wider applications than he has hitherto dreamt of; that a door has been opened to him which quite doubles the space to which he has so far had to confine himself. That in future he may revel in vital phenomena as he has hitherto revelled in the physical universe. That perfect correlation, the causal nexus of the physicist, is only a special case of the general theory of correlation which covers organic as well as inorganic relationships. The older mathematicians worked only under the category of causation, the moderns can also work under that of correlation. In the light of our present knowledge the chapters in treatises on scientific method, which center round 'causation' as the fundamental idea, seem as inadequate as the formal logic of the schools is when compared with 'the numerically definite syllogism.' The mathematician who sees causation as merely a special case of correlation passes—to use a not entirely fanciful geometrical analogy—from space of two to space of three dimensions. Anthropology, craniology, psychology and child study and pedagogy, as well as biology, become fields of work crowded with new problems for the mathematician to tackle; nor must the workers in those fields look upon him as an 'undesirable

alien.' He comes to enrich their own domestic industries with new processes and show them how to handle new and powerful instruments of research. There are signs—very hopeful signs—that this broader view of co-operative action is beginning to be realized in America; it will take a generation or two to produce much effect upon the conservative minds of European scientists, who, circumscribed by an over narrow specialization in field and method, are only annoyed if one suggests that for certain tasks the steam plough is more effective than the spade. In England this great reluctance to adopt new ideas is as manifest in science as in commerce and national defence; it is leaving our race behind in both education and industry.

My appeal accordingly to the American scientific world would be of a double nature. Our journal must perforce have an uphill struggle for the first few years of its existence; we are determined to see it successfully through that struggle, but this task can be made a good deal easier for us by both material and intellectual sympathy from your side of the Atlantic. There are many growing public and academic libraries in America; we feel convinced that they will need *Biometrika* ten or fifteen years hence. They will make our task lighter if they aid now by subscribing in our infancy. I would make a like appeal to both biologists and mathematicians; we want additional subscribers, and we want to be studied and read, and not condemned *a priori* without examination. In the next place, the Carnegie Trust gives America a splendid opportunity to judiciously foster new phases of scientific work. I would appeal to those who have to manage that trust not to put hindrances in the way of young men or women who may be seeking to do biometric work. Such persons have got to combine two or three usually separated faculties; they must be moderate mathematicians, intelligent biologists and observant field naturalists. Do not subject them to a severe triple test, or demand that they shall be at the summit of the tree in mathematics and in laboratory work and in field observation. The engineer must know some mathematics, some

physics and some geology; but we don't expect him to be a first-class proficient in all three sciences. We judge him finally as an engineer. So it must be in biometry. No one can get on without some mathematics, some biology and some field work in this new science; but its workers must be ultimately judged as *biometricians*, and not as mathematicians or biologists. Don't allow, however great their reputation or authority, the pure mathematician or the descriptive biologist, who may never have done a stroke of biometric work, to override biometric workers' claims to recognition. Remember that we have here a new branch of science, which has its own methods and its own disciples. Like all young things, it has its future before it, and no amount of step-motherly treatment will, in the long run, profit the reputation of the scientific community which practices it. In the matter of biometry, America has not yet adopted a hostile attitude. I write in the hope that it may never do so.

KARL PEARSON.

UNIVERSITY COLLEGE, LONDON, ENGLAND.

THE DESTRUCTION OF FROGS.

APROPOS to the note of Mr. Albert M. Reese, relative to the destruction of frogs, I will say that I once witnessed the same thing in Columbus, Ohio, along the Neil Avenue Street Railway. It was in spring, and the frogs had evidently migrated from the Olentangy River, a short distance away and running parallel with the avenue. I did not count them, but there were very many that had been crushed under the car wheels within a distance of perhaps one fourth of a mile. As I recall, the frogs were crushed across the middle. My observations were made in the morning and I inferred that the migration had taken place either in evening or early morning.

H. A. WEBER.

A RARE SCIENTIFIC BOOK.

TO THE EDITOR OF SCIENCE: There is a copy of Purkinje's 'Commentatio de examine physiologico,' etc. (concerning which Professor Wilder inquires in the issue of SCIENCE for April 3) in the Library of the Surgeon

General of the War Department at Washington. F. W. HODGE.

WASHINGTON, D. C.,
April 4, 1903.

THE IMPROVEMENT OF THE MEETINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

TO THE EDITOR OF SCIENCE: The changes in the arrangements for the meetings of the American Association, proposed by Professor Davis in SCIENCE, pages 428-430, and of which I heartily approve, lead me to make the following suggestion that can be carried out easily by the secretaries of the sections.

At the entrance to each sectional meeting-place, let a doorkeeper write upon a black-board the paper then being read or discussed, and also the paper that will be called next. It is usually impossible for a section to follow the daily program, as printed, or even to restrict the papers to the time allotted to each; therefore, the expedient suggested will obviate the embarrassment to the speaker, as well as the distraction of his audience, caused by the frequent entrance and exit of persons who merely desire to ascertain what paper is being read, and, by showing this at a glance, it will aid such people as wish to hear certain papers in several sections meeting simultaneously.

These bulletins of the current communications are commonly employed at the meetings of the British Association for the Advancement of Science, where they are regarded as so useful that there has been general complaint whenever they have been inadvertently omitted. If tried at the St. Louis meeting of the American Association, I am convinced that we also shall adopt this custom permanently.

A. LAWRENCE ROTCH.

BLUE HILL OBSERVATORY,
March 18, 1903.

SHORTER ARTICLES.

THE OCCURRENCE OF THREE INTERESTING FISHES ON THE NEW JERSEY COAST.

MANTIDÆ.

1. MANTA MANATIA (Schneider).

1792. *Raja, birostris, rostro bifido* Walbaum, Pet. Arted. Gen. Pisc., III., p. 535 (based