The author has, in a number of cases, without any apparent reason given the older freezing-point diagrams of Gautier, and Roland-Gosselin along with the more correctly established diagrams of later workers. This arrangement occupies space at the expense of clearness. The placing of the diagram on the page might also have been done to better advantage. As an example, on page 110 the copper-nickel diagram is given under the paragraph heading silver-zinc, and the diagram for this pair of metals is given on the following page under copper-tin.

In the explanation of those diagrams in which a concealed maximum exists, the changes in concentration are not clearly followed and in at least one case inaccurately given.

The chapter on iron-carbon alloys is clear, concise and well illustrated with excellent reproductions of photomicrographs.

Henry Fay

SCIENTIFIC JOURNALS AND ARTICLES

The contents of *Terrestrial Magnetism and Atmospheric Electricity* for September are: "Pocket Compass Sun-Dial of 1451" (frontispiece); "The Earliest Values of the Magnetic Declination," by L. A. Bauer; "On the Distribution of Magnetism over the Earth's Surface," by P. T. Passalskij, translated by Paul Wernicke; "Report on the Atmospheric Electricity Observations made on the Magnetic Survey Yacht, *Galilee*, 1907–8," by P. H. Dike; Letters to Editor; Notes; Abstracts and Reviews; List of Recent Publications.

THE RULE OF PRIORITY IN ZOOLOGICAL NOMENCLATURE[1]

Disapproval was expressed of the extreme application of the rule of priority, which in the author's opinion had brought about much mischief under pretence of aiming at ultimate uniformity. The author protested against the abuse to which this otherwise excellent rule had been put by some recent workers, encouraged as they were by the decision of several committees who had undertaken to revise the Stricklandian Code, elaborated under the auspices of the British Association in 1842. The worst feature of this abuse is not so much the bestowal of unknown names on well-known creatures as the transfer of names from one to another, as we have seen in the case of *Astacus, Torpedo, Holothuria, Simia, Cynocephalus,* and many others which must be present to the mind of every systematist.

The names that were used uniformly by Cuvier, Johannes Müller, Owen, Agassiz, Darwin, Huxley, Gegenbaur, would no longer convey any meaning, very often they would be misunderstood; in fact the very object for which Latin or Latinized names were introduced would be defeated. It is all very well to talk of uniformity in the future, but surely we must have some consideration for the past. Names with which all general zoologists anatomists and physiologists are familiar should be respected, should be excepted from the rule in virtue of what may be termed the privilege prescription.

If biologists would agree to make that one exception to the law of priority in nomenclature things would adjust themselves well enough, and we might hope to see realized some day what we all desire, fixity in names, that we may readily understand the meaning of all writers, not only over the whole civilized world, at the present day and in the future, but back into the last century, which has marked so great an advance in zoological science. Such a result would be attained by protecting time-honored names of well-known animals from the attacks of the revisers of nomenclature. For this purpose future committees that may be convened to discuss these topics might confer a real and lasting benefit on zoology by determining group by group, which names are entitled to respect, not, of course, on the ground of their earliest date or their correct application in the past, but as having been universally used in a definite sense.

This suggestion is not a new one. As far back as 1896, in a discussion which took place at the Zoological Society of London, Sir Ray

[1] Abstract of a paper by G. A. Boulenger, F.R.S., presented at the Dublin meeting of the British Association.

Lankester, protesting against the digging up of old names, suggested that an international committee should be formed, not to draw up a code of rules, but "to produce an authoritative list of names—once and for all—about which no lawyer-like haggling should hereafter be permitted. Twelve years have elapsed, and nothing of the kind has been arranged. On the contrary; the various committees that have legislated since have insisted on absolute priority, and we often read that such a decision has been arrived at by international agreement. It is not so, a great body of zoologists in this country protest, and hope that something will be done towards carrying out the proposal here briefly set forth, which seems to be the only proper step to take in order to prevent the confusion with which we are menaced.

SPECIAL ARTICLES

SOME RESULTS OF A SERIES OF TESTS MADE BY THE WIRE-BASKET METHOD FOR DETERMINING THE MANURIAL REQUIREMENTS OF SOILS

A NUMBER of methods for determining the manurial requirements of any given piece of land have been proposed from time to time, since it is well known that the mere chemical analysis of a soil often fails to be of real value in this connection.

One of the most reliable methods consists in making actual field tests with various fertilizers applied in definite amounts to plots of land of equal size, one or more of the plots being left untreated to serve as a check. The effect of the various manures applied is measured in terms of the crop harvested, and thus the requirements of the soil for specific forms of plant food is made evident. The chief objection to this method is that climatic conditions are not always favorable for the best results in any one season, in addition plant diseases and insect pests may be active, hence it often happens that it becomes necessary to conduct the field experiments for a number of years before definite conclusions can be reached.

During the year 1904, the Bureau of Soils of the United States Department of Agriculture, devised a promising method for ascertaining the manurial requirements of soils. This has been published as Circular 18, Bureau of Soils, "The Wire-Basket Method for Determining the Manurial Requirements of Soils." Briefly, it consists in treating samples of the soils in question with definite amounts of various fertilizers, and placing the treated soil samples in wire-baskets which are then coated with melted paraffin, and growing wheat in the soil in these baskets for short periods of time. The amount of water transpired by and the green weight of the plants are taken as indicative of the requirements of the soil for specific manurial constituents. The value of the method consists largely in the fact that results can be obtained in a period of two or three weeks.

In the early part of 1908 the writer was requested to make a series of wire-basket tests of soil samples from Boydton, Va.; these samples were taken on a farm, the property of the Boydton Institute. The soil of this region is characterized by one who has worked it for a number of years, "as having tilling qualities of about the average for a heavy clay soil . . . if plowed at the proper time, subsoiled and kept stirred it presents no unusual difficulties." The two soils represented by the following samples are undoubtedly of the same character, and differ from each other mainly through the different treatment which each has received.

A rough mechanical analysis of one of the samples (*a*) by the beaker method, made in this laboratory, gave the following result: Sand 29 per cent., clay 18 per cent., silt 53 per cent. A deficiency of humus was shown by the small amount of volatile matter present (4.76 per cent.) and by the absence of a dark color in the soil. By actual determination the amount of humus was found to be 1.40 per cent. The gravel was found to be composed mainly of quartz.

Two samples of soil were used in making these tests, designated as (a) and (j), having the following history: (*a*) "East end of corn lot on the 300-acre tract. Cleared about