SEVERAL cousins of Austin B. Fletcher, who died on July 5 leaving the bulk of his fortune to Tufts College, have formally protested probate of his will by filing objections in the Surrogates' Court. The value of the estate is said to exceed $4,000,000.

Z. P. METCALF, professor of zoology and entomology in the North Carolina State College and entomologist of the North Carolina Experiment Station, has been appointed director of resident teaching in the College of Agriculture.

PROFESSOR J. W. MILLER, who has served as head of the department of electrical engineering of the Oklahoma Agricultural and Mechanical College for several years, has been appointed mechanical and electrical research engineer at the engineering experiment station of the University of Arkansas. Mr. Miller will devote his time exclusively to research work on problems of interest to the industries of the state.

MISS CLEMENTINA S. SPENCER, professor of zoology and for seven years acting head of the department in Coe College, Cedar Rapids, Iowa, has resigned and was recently married to Mr. Chester A. Momyer, of Chicago. The new head of the department, occupying the newly created Bert. H. Bailey chair of zoology, is Dr. T. H. Bissonnette, formerly of Queen's College, Ontario, and of the University of Chicago.

DR. GEORGE D. PORTER, Toronto, has been appointed head physical director at the University of Toronto, succeeding Dr. James W. Barton, who resigned last spring.

MR. ALAN G. OGILVIE has been appointed lecturer in geography in the University of Edinburgh in succession to Mr. G. G. Chisholm, who had held that position since the lectureship was founded in 1908.

WE learn from *Nature* that Dr. W. Schumann, director of the Institute of Technical Physics at Jena University, has been appointed professor of theoretical electrotechnics at the Munich Technical College; Dr. Julius Schmidt, of the Stuttgart Technical College, to be reader in chemistry at the Engineering College, Esslingen; and Dr. K. Fajans, to be assistant professor of physical chemistry at the University of Munich.

DISCUSSION AND CORRESPONDENCE

CONCERNING TUNNIES AND ALBACORES

THE huge fishes of the open seas, known as tunny, tuna and albacore, are well represented in the Mediterranean, in the West Indies and especially in the Pacific Ocean, about Southern California, Hawaii and Japan. On account of their great size, the species are rare in collections, and in no case have the forms in any one of these regions been adequately compared with those of any other.

The first thorough and by far the most important study of this group has been lately published by Dr. Kamakichi Kishinouye of the Imperial University of Tokyo.[1] Of late years, deep sea fishing has brought these fishes in great numbers to the Japanese markets, a fact which has given Dr. Kishinouye a most valuable opportunity.

In the study of the muscular layers and associated organs he finds characters of great value. Other important distinctive traits occur in the skeleton. Any treatment of the scombroid or mackerel-like fishes either systematically or anatomically must make constant use of this paper.

Dr. Kishinouye very properly restricts the *Scombridae* to the two very distinct genera, *Scomber* (in Japanese *Saba*) with the short spinous dorsal and *Rastrelliger*. The Spanish mackerel and its allies (in Japanese, *Sawara*) form the well-marked family of *Cybiidae*, visibly separated by the strong dentition, the many-spined dorsal-fin and the long parallel interhemal bones. To this group most of the known fossil mackerels belong.

The Tunnies differ from these ancestral types in so many ways that Kishinouye would make of them a distinct order, *Plecostei*, with two families, *Thunnidae* and *Katsuwonidae*, the first containing the *tunnies* and *albacores* (in Japanese, *Maguro* and *Shibi*), the latter their smaller allies (*Katsuwo*) with the peculiar trellis-like structure of the posterior hemal bones. The new name, *Katsuwonus*, is given to the section of the older genus *Euthynnus*, to which the oceanic bonito, *Euthynnus pelamis*, belongs. Two other new generic names, *Parathunnus* (*mebachi*), and *Neothunnus* (*macropterus*), apparently justified, occur in this paper, but its larger worth consists in its minute description of the structure, habits and values of each of more than a dozen Japanese species and in the finely accurate engravings by which the work is illustrated.

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PHOSPHATE BEHAVIOR IN SOILS

RESULTS obtained by extraction of soils with varied quantities of water and data obtained from displaced solutions are corroborative of the idea that phosphate in the effective solution of the soil constitutes a saturated solution. Two corollaries flow from this propo-

[1] Contributions to the Comparative Study of the so-called Scombroid Fishes, Kamakichi Kishinouye: *Journal* of the College of Agriculture, Imperial University of Tokyo.