appointed district demonstrators, local representatives of the college, whose function is to promote interest in scientific agriculture and to advise farmers on scientific questions: G. W. Wood, L. C. Raymond, A. A. Campbell, L. V. Parent, R. Newton.

DISCUSSION AND CORRESPONDENCE

A NEW MATHEMATICAL PRIZE

Alfred Ackermann-Teubner has founded a new mathematical prize by establishing a capital of 20,000 Marks at the University of Leipzig. For the present a prize of 1,000 Marks shall be given every other year, and the surplus interest shall be added to the capital until this amounts to 60,000 Marks. After the capital has reached 60,000 Marks all the interest, less expenses, shall be used for an annual prize, which shall be given for published work in the domain of the great German mathematical Encyclopedia.

The donor of the capital for the prize reserves the right to bestow it in 1914, without any restrictions; but after this date the prize is to be awarded, in order, for work in the following subjects: (1) History, philosophy, teaching and education; (2) mathematics, especially along the lines of arithmetic and algebra; (3) mechanics; (4) mathematical physics; (5) mathematics, especially along the line of analysis; (6) astronomy, theory of probability and theory of errors; (7) mathematics, especially along the line of geometry; (8) applied mathematics not provided for in what precedes, especially geodesy and geophysics.

Those who have received the Nobel prize shall not be considered in connection with the awarding of this prize and preference is to be given to German mathematicians, but the prize shall not be restricted to the scholars of this nationality. As long as the prize is awarded every second year, papers or monographs which have appeared during the preceding sixteen years may be considered, but only those which have been published no longer than eight years can be considered when it is awarded annually.

The prize is to be awarded for work which exhibits a prominent advance along scientific or pedagogic lines, and the limits of the subject matters to be considered shall, in general, be those of the German encyclopedia. If new penetrating mathematical theories should arise, work along these lines may also be considered. Alfred Ackermann-Teubner is at present the senior member of the great publishing firm of B. G. Teubner, of Leipzig, Germany, and has for many years taken an active part in various mathematical activities. The capital for the prize mentioned above is a consequence of the friendly relations between the donor and various prominent mathematicians.

It is probably fortunate that these prizes are to be given for work already published and not for competing memoirs relating to subjects proposed by some committee. Many of the leading mathematicians do not enter into the race of preparing competing memoirs, and it seems likely that more good will be done if mathematicians feel free to pursue those lines in which they can work most successfully. The subject of mathematics has become so broad that real progress calls for forward movements in many fields. All the various helpful interrelations can not be foreseen by a few men.

G. A. Miller

SCIENTIFIC BOOKS

Monographs on Biochemistry. The Chemical Constitution of the Proteins. Part I. Analysis. By R. A. H. Plimmer, D.Sc. Second edition. London and New York, Longmans, Green and Co. Pp. x + 188. 1912. 5 s. 6 d. net.

Although the knowledge concerning the chemical constitution of the proteins gained since the appearance of the first edition of this monograph is relatively small, the amount of information contained in this second edition is much greater than that furnished in the first. The author now gives us a more detailed account of the methods of hydrolysis of the proteins and the estimation of the amino-acids which result thereby. The

chemical constitution of their constituent amino acids is extensively discussed and the methods by which each of these amino acids has been synthesized is described. The differentiation of the proteins by means of the proportion of the various types of nitrogen which they yield on hydrolysis is given in detail, as well as the recent methods for estimating amino nitrogen and also the nitrogen belonging to the different groups of amino acids.

The book contains the first practically complete compilation yet published of analyses thus far made of the products of hydrolysis of all the various individual proteins, a feature which will be appreciated by those working in this field of protein chemistry. In commenting on these analyses the author very properly emphasizes the fact that the percentages reported are in almost all cases minimal, and that none of the analyses represents the true amino acid make-up of the protein; a fact too often overlooked by those who have previously attempted to compile such analyses, which simply reveal gross differences between proteins of different origin.

Plimmer's monograph, like the others of this series, contains a very full bibliography; but, unfortunately, references in the text are not made in such a way as to readily show the papers which are authority for the statements made. This defect is especially apparent in connection with the tables of analyses of the proteins. Those who wish to quickly and pleasantly inform themselves of what is known of the chemical constitution of the proteins, and of the methods by which this has been learned, will find this monograph exceedingly satisfactory. As an experienced teacher of physiological chemistry recently wrote the reviewer, "It strikes me as a remarkably useful book; and it has more human touches than most reviews of this type."

THOMAS B. OSBORNE

Physiologisches Praktikum für Mediziner. By MAX VERWORN. Second edition. Jena, Gustav Fischer. 1912. Pp. xii + 262; 141 illustrations.

It is a curious fact that Germany, the country in which the science of physiology has undergone its greatest development, has been backward in providing laboratory instruction in that science. And now that it is being provided it is to be regretted that it is on a lower pedagogic and scientific plane than in the English and especially the American universities. The book before us is a second edition from Bonn of a work, the first edition of which was issued from Göttingen five years ago. It is a combination of the chemical and the physical, about one fourth of the text being devoted to the former. There is an average of one illustration for less than two pages of text. Each main topic is introduced by a brief, concise and usually excellent summary of its physiology, and this is followed by an elaborate account of the procedures to be pursued in performing a series of selected experiments. Most of the experiments are well known to university teachers of the subject; but some are new, and a perusal of the book will prove suggestive. Many experiments which are frequently performed by students in American universities are wanting, and the only mammals employed, besides man, are the rabbit, the guinea-pig and the white rat. But the most striking feature of the book is the elaborateness of the directions for laboratory work, something with which we in America are not familiar. The student is never left to determine a procedure for himself, but is told exactly how to do the thing desired. He must, for example, hold his scalpel thus and so, the verbal directions being supplemented by a nearly life-sized picture of a hand holding the instrument; and he must make "not little, shallow, short, hurried cuts with the point of the knife, but long, firm, quiet, deep incisions with its blade." In order to tell how to make a frog's muscle-nerve preparation two pages of text are required and two additional pages of life-sized illustrations. Eight pages, including illustrations, are employed in describing the customary method of measuring the blood pressure in a mammal with the simple action of the vagus nerve on