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CONTENTS.

MSS. intended for publication and books, etc., intended for review should be sent to the Editor of SCIENCE, Garrison-on-Hudson, N. Y.

*SOME PRESENT PROBLEMS IN AGRICULTURE.**

AGRICULTURE is now in a transitional stage. It is passing from the old to the new. It is pupating. The problems are great, and they all have a forward look.

Most of these problems are incapable of solution quickly. They must ripen and mature. They are many; this paper proposes to indicate only a few of them that appeal most to me.

The problems of agriculture are of pressing importance, both to agriculture itself and to the public welfare. They are of two kinds: (1) the technical problems of the business, (2) the problems of adjustment to the affairs of our growing civilization.

The problems of adjustment are of the greatest public concern, because agriculture is our greatest occupation. Agriculture is necessary to civilization. Of all occupations, it employs most men, most capital and is followed in the most places. It probably must always employ from one fifth to one fourth of the people of any self-sustaining nation. There are super-

* Paper read by L. H. Bailey before Department 18, Section on Agriculture, of the International Congress of Arts and Science, St. Louis, September 24, 1904.

growing animals and the feeding of milking animals.

Part I., and especially the chapters upon metabolism, will be of much interest to the student of nutrition in general, but the special value of the book is found in Part III., in which is made the first serious attempt to apply the more recent knowledge regarding the energy relations of feeding stuffs to practical use. It abandons definitely the assumption which has underlain nearly all previous works of this character that the digestible nutrients, so-called, of a feeding stuff are a measure of its value. In place of this, Kellner puts the actual productive value as worked out by his own investigations and which is shown to differ very widely in many cases from the indications given by the digestible nutrients. While he does not fail to point out that the basis for an undertaking of this sort is still somewhat narrow, yet he believes that the time is ripe for a beginning. He has accordingly, in the appendix, given a series of tables in which the productive value of feeding stuffs is estimated, largely upon the basis of his own results, while the so-called feeding standards are also expressed upon the same basis.

While it is, perhaps, to be regretted that the author has expressed his feeding values in the form of starch equivalents instead of boldly adopting the terminology of energy, and while it can not be denied that his tables are based to a considerable degree upon estimates, nevertheless the book promises to mark a distinct stage of development in the theory of stock feeding and will be welcomed by the large number of those who have become dissatisfied with the present conventional methods in this subject.

H. P. ARMSBY.

SCIENTIFIC JOURNALS AND ARTICLES.

THE contents of the *American Journal of Mathematics* are as follows:

ALEXANDER CHESSIN: 'On a Class of Differential Equations.'

L. P. EISENHART: 'Surfaces with the Same Spherical Representation of their Lines of Curvature as Pseudospherical Surfaces.'

VIRGIL SNYDER: 'On the Forms of Sextic Scrolls having no Rectilinear Directrix.'

LEONARD EUGENE DICKSON: 'Determination of the Ternary Modular Groups.'

THE April issue of the *Journal of Nervous and Mental Disease* opens with a paper by Dr. William P. Spratling and Dr. Roswell Park, on 'Bilateral Sympathectomy for the Relief of Epilepsy,' with report of three cases, and notes on the physiologic effects of cutting the sympathetic, and on the histologic changes found in the cases in question. The microscopical findings are illustrated by two plates. Dr. F. W. Langdon follows with a paper on myelomalacia, with especial reference to diagnosis and treatment, illustrated by charts, and Dr. Arthur Conklin Brush discusses the medico-legal aspects of traumatic epilepsy. The Society Proceedings reported this month include the meeting of the Boston Society of Psychiatry and Neurology held November 17, 1904, and that of the Chicago Neurological Society of the same date.

SOCIETIES AND ACADEMIES.

THE GEOLOGICAL SOCIETY OF WASHINGTON.

THE 166th meeting was held on March 22. The regular program included:

The Coal Measures of Brazil: Dr. I. C. WHITE.

Dr. White discussed the character and distribution of the coal-bearing beds of southern Brazil. The series consists of coarse conglomerates, and gray sandstones at the base, alternating with blue and gray shales up to 350 to 400 feet above the granite upon which the measures rest in the states of Santa Catharina and Rio Grande do Sul, where his principal studies were prosecuted during the past year. Above these basal sandstones, the coal beds occur three to four in number through a thickness of 200–250 feet of alternating gray sandstones, clays and shales. There are two principal coals, the 'Bonita' bed at the base, and the 'Barro Branco' near the top of the coal series. The coal is high in both ash and sulphur, but can be used successfully for locomotives, stationary boilers, etc., in a region where imported coal costs not less than $10 per ton at the seacoast.