

equivalent to payment at the rate of about 11d. per lb. for the lint in the Liverpool market. The prices obtained for the Sea Island cotton have been highly satisfactory. One recent consignment from Barbados was valued at from 16d. to 17d. per lb., another averaged just under 15d., the highest price being 16½d., and the lowest 13d. Prices current exhibited in Barbados at the same time showed that Sea Island cotton was being quoted in Savannah at from 10d. to 12½d., but this was evidently the price for common lint, as the last crop on the Sea Islands brought from 30c. to 35c.—this, of course, representing the result of 30 odd years of careful selection and cultivation. The figures given are sufficient to indicate that West Indian cotton, grown from Sea Island seed, is capable of yielding a return quite equal to the finest product of America. It is calculated that, the yield of lint being assumed to be 204lb. per acre—the average in America—and the total cost of placing it in the Liverpool market 7d. per lb. for cotton fetching 12d. per lb., the net profit would be at the rate of £5 2s. per acre. Labor is cheaper in the West Indies than in the Southern States; the cotton gin expert referred to was amazed at the low value of the labor in Barbados.

Sir Daniel Morris, the head of the Imperial Department of Agriculture, is of opinion that the only cotton that should be grown in the West Indies is the Sea Island variety, which, it is well known, is a native of these islands. Other varieties are therefore being eliminated. Some planters favor the Upland, and even the indigenous varieties which are still found growing wild, but it will undoubtedly prove more advantageous to devote attention only to the highly cultivated long-staple Sea Island cotton. The area throughout the world suitable for the growth of Upland is unlimited; that able to produce Sea Island is strictly limited. The latter fetches double the price of any other cotton, and like Blue Mountain coffee, will remain unaffected by future fluctuations of the market. A sample of the native cotton of Jamaica has been sent to England and pronounced very fine, being valued at 14d. per lb. It is a cotton which appears to resist

insect pests, and many think that a first-class variety might be evolved from it. The experiments in the island, however, are being made with Sea Island seed, and it will probably be found wiser to begin where the Sea Island planters have left off than to engage in experiments which may not prove successful.

Many difficulties have naturally been encountered in establishing the industry, owing largely to the inexperience and ignorance of the growers, the most formidable being the attack of the cotton worm. Remedies were not at hand, and loss was sustained, but the planters are now forearmed, and they believe themselves able to cope with any similar emergency. Every assistance is rendered to growers by the Imperial Agricultural Department, which has published and circulated an extensive literature on the subject. One of Sir Daniel Morris's latest ideas is to send the officers of the department to the various islands to deliver popular lectures on the industry with magic-lantern illustrations. He recommends, however, that only capable planters should go in for cotton-growing at present, and advises those who wish to come out to the West Indies to embark on planting on a large scale, to pay a visit first to St. Vincent, and study the conditions and opportunities there. Great credit is due to him for his indefatigable efforts to promote the industry during the past four years. West Indian planters are not very ready to strike out on new lines, and, but for the steady persistence and influence of the department, aided by practical assistance from the British Cotton Growers' Association and West Indian Committee, it is doubtful whether the present important results would have been achieved.

#### DECENNIAL PUBLICATIONS OF THE UNIVERSITY OF CHICAGO.

MOST of the eighteen volumes originally planned as decennial publications of the University of Chicago have been issued. The University Press announces the following as among the volumes that may be expected shortly:

*Lectures on the Calculus of Variations.* By  
OSKAR BOLZA.

This treatise is, in substance, a reproduction in considerably extended form of a series of lectures delivered by the author at the Colloquium held in connection with the summer meeting of the American Mathematical Society at Ithaca, N. Y., in August, 1901. It gives a detailed account of the typical and most important class of problems in the calculus of variations—in which an integral depending upon a plane curve and containing no higher but the first derivatives of the unknown functions is to be maximized or minimized—with special emphasis upon the progress of the theory during the last twenty-five years. The following topics are treated: (1) The older theory of the first and second variation from Euler to Jacobi, and the critical revision of its foundations and demonstrations by DuBois-Reymond, Scheeffer, Weierstrass and others. (2) Weierstrass's theory: the problem in parameter-representation, the fourth necessary condition; sufficient conditions. (3) Simplifications and extensions of Weierstrass's theory (especially by Kneser and Hilbert. (4) The so-called isoperimetric problems. (5) Hilbert's existence theorems.

*The Study of Stellar Evolution: A Popular Account of Modern Methods of Astrophysical Research.* By GEORGE ELLERY HALE.

The purpose of this book is to tell how the origin, development, and decay of celestial bodies are studied in a modern observatory. The remarkable advances in astronomy during the second half of the nineteenth century, including the development of great telescopes, the introduction of the spectroscope, the many discoveries made with its aid and the results obtained through the use of photography, have given the study of stellar evolution a prominent place in the work of many observatories. The explanations of instruments and methods are accompanied by illustrations, and the most recent astronomical photographs obtained with the telescopes of the Yerkes Observatory are reproduced in a series of plates.

*Glacial Studies in Greenland.* By THOMAS CHROWDER CHAMBERLIN.

This book will consist of a detailed description of about fifteen Greenland ice tongues, and of a portion of the main ice cap, dwelling

especially upon the significant features, followed by a chapter on generalizations, a chapter on experiments, a chapter on theoretical deductions and a chapter on the applicability of the generalizations and deductions to the great ice invasions of the past.

*Studies in General Physiology.* In two Parts.

By JACQUES LOEB.

This work will contain some of the author's principal papers on the subjects of animal tropisms, heteromorphosis and artificial transformation of organs, artificial parthenogenesis, physiological effects of ions, the effects of lack of oxygen, function of cell nucleus, etc. These papers have appeared in scattered German periodicals or as separate publications in German, and many of them are now out of print or inaccessible.

DR. J. C. McCONNELL.

In the death of Dr. J. C. McConnell, anatomist of the Army Medical Museum, which occurred on July 25 at Liberty, N. Y., where he had gone for recuperation, more than one science has lost an efficient coadjutor. Apart from the profession of medicine and anatomy and their application to the duties of his office, Dr. McConnell utilized his leisure as a delineator of objects of natural history, especially shells and fossils, crania and bones. He had for nearly thirty-five years carried on this work, and it is certain that as a draughtsman in black and white line, for scientific purposes, he had no equal in this country, if in the world.

About his last important work was the completion of the drawings for the illustration of the still unpublished Miocene volume of the Maryland Geological Survey. Many thousand exquisite drawings had been prepared by him for the National Museum and various surveys, as well as the Army Medical Museum, in the course of his career. To those requiring such service his loss is nothing short of a calamity. In his personal relations Dr. McConnell was attractive and genial. His official associates as well as those who knew him chiefly as an artist, will sympathetically join in the regrets of his bereaved family.