

mills, such as spinning methods and technique, methods of storage of cotton, the injurious effect of adulteration on the quality of the yarn, the moisture content of baled cotton of different types, and the effect of temperature and humidity in the mills on the cotton and the yarn. A study to find out the limit of spinning performance of various Indian cottons, brings out the interesting fact that Cambodia Co. 1 may be spun up to 52's, and even up to 60's under special conditions.

Among the services of the Laboratory to the cotton trade in general we may mention the arrangement for examining and valuing samples submitted and the comparative valuation of the samples of average quality of the chief trade varieties furnished officially by the Mill-Owners' Association of Bombay at the beginning of each buying season which are, of course, highly appreciated. The law prescribing the entry of all American cotton only through the port of Bombay and its fumigation as a control measure against the cotton boll weevil is due entirely to the efforts of the Laboratory through whose agency all this work of fumigation is now being carried out. The book makes it

amply clear that the Laboratory has been of great service to all the cotton interests in the country, the grower, the trader, and the mill-owner alike.

We venture to think in this connection that cotton research in India will soon have entered upon a new and more intensive phase to enable cotton to maintain its position against competition from its new rival, "staple" fibre. Just at present this is negligible but it is nevertheless a portent like the cloud now no bigger than a man's hand. Most extraordinary claims are made for it, many countries are exploiting it and, despite imperfections and high cost, even now there is a fair quantity imported into India; and if one recalls to mind how "rayon" was perfected, cheapened and popularised it cannot be difficult to visualise the time when "staple" fibre will become a formidable rival to cotton. The cotton industry will, in the coming struggle, have to rely on the resources of science much more largely and the Laboratory will be called upon to play a still more important rôle with its scope widened to include not merely the cotton fibre but many other products, the cotton plant as well.

A. K. Y.

CENTENARIES.

By

S. R. Ranganathan, M.A.

(University of Madras.)

Samuels, Edward Augustus (1836-1908).

E. A. SAMUELS, the ornithologist, was born in Boston, Massachusetts, on July 4, 1836. He inherited from his father his deep interest in outdoor life. During most of his career, he was employed in the Massachusetts State Board of Agriculture. His duties allowed him ample leisure for other pursuits. He spent his leisure in the study of birds and their habits.

HIS PUBLICATIONS.

He recorded the results of his observations in the *Reports* of the Board of Agriculture. Encouraged by the wide interest his results aroused, he brought out in 1867 his well-known book *Ornithology and Oology of New England*. The book was so good that the State purchased a thousand copies for distribution to the public libraries. The book went through several editions and the 1870 edition came out with the altered title *The Birds of New England*. It is rightly estimated that this book stimulated bird

study in New England more effectively than any other publication of the period.

HUNTING WITH A CAMERA.

Another book of his entitled *With Flyrod and Camera* and published in 1890 broke new ground in another way. It is said that it was perhaps the first publication to suggest the hunting with a Camera instead of a gun.

CONCLUSION.

His wide interest in the bird life and the influence he gained through his publications led to his election as President of the Massachusetts Fish and Game Protective Association. He held this post from 1885 to 1891. During this period, he did much to improve the laws of the land relating to the protection of animals. Though he became blind in his old age, he continued writing to *Forest and Stream* till his death on May 27, 1908. Among his contemporaries, he was regarded as the best-informed man on the natural history of his country.