

to the United States Department of Agriculture that it, in association with proper state authorities, immediately put on an extended wheat crop survey, (1) to insure a proper harvesting and selecting of the fields from which seed is to be saved for the crop of 1918, so that selection may be made on the basis of freedom from disease and purity as to variety; and (2) to save the seed so it shall be as free as possible from water effects following the period of maturity; for it is through moisture that the invasion of the seed coats becomes most active. This invasion prevents ordinary seed disinfection from being effective.

With this seed survey a soil survey should go hand in hand as follows: (1) Map and locate the virgin lands of the wheat states; (2) map those lands which have had crops on them for the last five to seven years which are of such nature as not to bear the chief diseases of the wheat crop, and (3) set aside these virgin or clean lands and prepare them for the wheat crop of 1918 and 1919.

As a corollary to the seed and soil surveys, the United States Department of Agriculture should commandeer and contract for sufficient of the wheat coming from the virgin lands or from the field crop inspected areas of the older regions which are found to be free from disease, to redistribute to the lands which by the survey have been found to be essentially free from the chief diseases of wheat. Finally, there should be put on a campaign of education which shall reach every grower of wheat in the United States.

If this national survey of soil and of seed production is to be done so as to be effective on the crop of 1918, the work should start before the harvest of 1917, and be so continuously followed up that the plowing may be done for next year and the ground prepared for early seeding. Somewhat over one half of all the land of North Dakota

has still been untouched by the plow, or at least has not been subject to wheat culture. A similar condition exists in most of the spring wheat-producing states. A proper seed bed for the production of wheat can be made upon this new land if it is broken early in the present summer; and, if it is plowed during any portion of this summer, it can be packed and worked down in fine shape for some crop which is suitable to precede wheat, so that in 1919 the wheat can go into this land without further plowing in the finest possible condition.

To summarize: How shall we improve the bushelage and quality of wheat produced in 1918 and 1919? (1) Put on a field crop survey which will locate seed of highest weight and color quality free from disease infection and weather effects; (2) locate the soils upon which such seed should be seeded; (3) take the proper steps to procure that seed and see that it is sowed. Should the government find it necessary to force a proper consideration of the lands upon which wheat is to be sowed and the use of the proper quality of seed, properly disinfected, it would, in my belief, eventually receive the entire sanction of the American farming and business public and we would learn within two or three years the enormous value which would accrue from proper soil and seed sanitation in the cropping cereals.

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SCIENTIFIC EVENTS

AGRICULTURAL EDUCATION AND RESEARCH IN CHINA¹

CONSIDERABLE attention is now being devoted in China to agricultural education and experimentation in various classes of institutions. An experiment station was located at Peking in 1907 under the control of the board of agriculture, industry and commerce. An experimental tract of nearly 300 acres is avail-

¹ From the *Experiment Station Record*.

able, and departments of crops, soils, animal husbandry, horticulture, floriculture, entomology, botany, forestry, bacteriology and biology have been put in operation. In 1908 an agricultural college was organized in connection with the station, but this was disbanded in 1915.

Subsequently an agricultural college and experiment station was established at the capital of each province along much the same lines as at Peking, and many other stations in addition. There are now reported to be 130 stations in the 22 provinces, of which 31 are in Chihli, 25 in Szechwan, 15 in Hu-Long-Kiang, 7 in Hupeh, and 7 in Kwangtung.

Among these are two cotton experiment stations, one at Cheng Ting Hsien, Chihli, and one at Nan Tung Chou, Kiangsu, with a third under consideration at Tung Haing Chou, Hupeh. Experiments are being conducted at these stations in seed selection, seed distribution, plant harvesting, soils and manures, treatment of pests and cotton weaving. A corps of students is also being trained at these stations. H. H. Jobson is in charge of the organization of the cotton work, with H. K. Fung as associate.

Stock-raising experiment stations have been established at Kalgan and Shih Men Shan, Anhui. These are expected to study the improvement of breeds of domestic animals, promote the breeding and sale of stock and stock raising enterprises, and the cultivation of forage crops.

Considerable attention is also being devoted to forestry in China. A department of forestry was organized in January, 1916, with a forestry commissioner in each province. Forestry experiment stations and training schools have been established at Ch'ang Ch'in Hsien, Shantung, and in the Temple of Heaven at Peking.

The university at Nanking has maintained a college of agriculture and a school of forestry for several years. This is an American-supported institution, and in 1915 had enrolled about 70 students in agriculture. A colonization association has been organized under its auspices, with provision for the reser-

vation of about 35 acres in each colony for a model farm. A tract already purchased on Purple Mountain, just outside Nanking, is to be used as an experiment station in connection with the different colonies.

An agricultural experiment station was opened at Nanhsuchou, Anhwei, in 1915, as a part of the American Presbyterian mission station. Agricultural work was taken up at this institution partly as a practical way to teach Christianity, partly to make friends and partly to improve economic conditions. The station is located on the railway between Nanking and Tientsin, and attempts to serve an area of about 6,000 square miles and from 1,500,000 to 2,000,000 people. The farming methods in use are those of from one to two thousand years ago. Special prominence is being given in the experimental work to seed selection, better tillage methods, more and better fertilization, drainage and animal husbandry. The work is to be largely of a demonstration nature during the present pioneer stage, and will also include an agricultural school, a school farm and short winter courses for farmers. J. Losing Buck has been in charge of the agricultural work at the station from the outset.

THE BRITISH METEOROLOGICAL COMMITTEE

THE eleventh annual report of the British Meteorological Committee for the year ended March 31, 1916, states, according to an abstract in the London *Times*, that during the year the staff of all departments of the office was fully occupied in supplying information in reply to inquiries from the various departments of the Admiralty and the War Office. "The results of meteorological inquiries initiated in what appeared to be the remote interest of the theory of the circulation of the atmosphere have turned out to have important practical bearings, and collections of statistics compiled in the ordinary course of meteorological duty have now come in most usefully to meet urgent requirements." "A separate unit of the Royal Engineers has," says the report, "been created for meteorological service in the field. The service with the Expeditionary Force in France is under the command of