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Cotton experiment station  
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UNIVERSITY OF NANKING

COLLEGE OF AGRICULTURE AND FORESTRY

NANKING, CHINA

REPORT ON COTTON EXPERIMENT 1919

This report centers principally about the cooperative foreign cotton culture experiment with standard test sets of American seed prepared by the United States Department of Agriculture, in which the help and interest of twenty-three cooperators were enlisted; and the visit of Mr. O. F. Cook and Mr. Harold Loomis, assistant, of the United States Department of Agriculture, and Mr. John B. Griffing, who comes to take charge of our cotton work.

Letter sent to Cooperators

On April 23, the following letter was sent to the co-operators whose names and locations are given in the next paragraph. This will explain the situation as it held at that time, and also gives some light on subsequent developments.

Nanking, April 23, 1919.

Dear Mr.

I have unexpectedly just received word from Mr. Julian Arnold, our Commercial Attaché, American Legation, Peking, that he has received from the U. S. Department of Agriculture a number of standard test sets of American cotton seed, as per enclosure, for distribution. These seeds were sent at the request of Mr. O. F. Cook, of the Office of Acclimatization and Adaptation of Crop Plants, who is probably the first authority on cotton in the world and who may likely visit China this coming fall, not only to investigate the behavior of the trial sets he has had sent out, but to make a study of Chinese cotton as well. In this same connection you will be interested to know that the Chinese Cotton Millowners' Association of China have asked us to establish at the University a cotton experiment station, for which they would provide at least \$600 annually.

The purpose of the experiment which we shall carry on is to find the one particular variety of foreign cotton which does best under the climatic and soil conditions under which it is planted. After this has been determined, all other varieties will be discarded and steps taken to produce seed of the good variety in large quantity for distribution among the farmers. This is in keeping with the latest and probably the most important cotton cultural practice ever discovered, namely, that crossing of different varieties, no matter how excellent the varieties to begin with, leads to deterioration. Hence our problem is not only to determine the one best variety for a given region, but see to it that in the meantime seed of several different kinds is not allowed to be distrib-

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uted in the region for which you are working. With these things in mind I am asking you, along with twenty-two others, embracing a territory from Kaifeng, Honan, to Chengchow, Hunan, and to Ningpo, Chekiang, as per enclosed list of co-operators, to join with us to help in the preliminary experimental work which must be done.

Had we known earlier of the sending of the cotton sets, I could have written you earlier. I know most of you personally, and that you are interested. I have had correspondence with you all and have asked you from among many, feeling that you would be in a position to give the matter some personal attention.

You will note that only a small piece of ground is required, which I trust will be available. If it isn't, I shall be glad to pay for the rent of a small piece, and other expenses incidental thereto, up to \$15.00. In such cases, please take care that you have a good chance of harvesting all the cotton, and that it will not be taken and distributed all over the countryside, as there will be a strong tendency to do, and thus defeat what you are trying to do.

Some time in the autumn I shall pay you a visit, to see the cotton and make further arrangements for the future. I hope some representative of the U. S. Department of Agriculture will be here to make the round with me.

This letter will come rather unexpectedly to many, but I hope it will be possible for you to help, even for one year. The extension of cotton culture in China in the next ten years will be one of the more important agricultural developments, and foreign cotton will play a big part in it.

I think the directions for planting, including amount of land needed, etc., are clear. I hope we can hear before long that the cotton seeds have been received and planted. If any question arises at any time, please feel free to write.

Sincerely yours,

John H. Reisner.

Name and location of Cooperators.

Below are given the names and locations of those who took part in the experiment. It should be noted that the locations include widely varying climatic conditions and offered excellent opportunity for studying the behavior of these standard test sets under different conditions.

<u>Province</u>	<u>City</u>	<u>Cooperators</u>
Honan	Kaifeng	Bishop W. C. White
"	Chengchow	Mr. W. W. Lawton
"	Hsuehchow	Mr. C. O. Forsberg
"	Kioshan	Dr. O. C. Behrents
Hupeh	Hankow	Bishop L. H. Roots
"	Anlu	Dr. Ed. Cundall

# Report on Cotton Experiment 1919 (3)

Province	City	Cooperators
Hunan	Yochow City	Mr. George Bachman
"	Hengchow	Mr. C. H. Derr
"	Chengchow	Mr. P. H. Dowling
Kiangsi	Nanchang	Dr. Alie Gale
"	An I Hsien	Mr. H. Lamb
Anhwei	Anking	Bishop Huntington
"	Luchowfu	Mr. Justin E. Brown
"	Chuchow	Dr. E. I. Osgood
"	Nanhsuchow	Mr. J. L. Buck
"	Pochow	Mr. Wade Bostick
Kiangsu	Nanking	University of Nanking
"	Wusih	Mr. T. K. Yung
"	Nantungchow	Mr. S. Z. Kwauk, Agri-cultural School
"	Shanghai	Chinese Cotton Mill-owners' Association
Chekiang	Kashing	Mr. S. C. Farrior
"	Ningpo	Mr. C. B. Day

## Standard Test Set of Cotton Seeds

This list of eight varieties has been carefully made out by the United States Department of Agriculture, after years of experimenting and experience and is known as a standard test set. It includes varieties adapted to wide variations in climatic conditions, and varying among themselves as to type of plant, length of lint, etc. It contained the following eight named varieties:

- |             |               |
|-------------|---------------|
| 1. King     | 5. Lone Star  |
| 2. Acala    | 6. Trice      |
| 3. Durango  | 7. Egyptian   |
| 4. Columbia | 8. Sea Island |

Descriptions of the more important of these eight varieties are given as follows in seed distribution pamphlet No. 40, of the Bureau of Plant Industry, U. S. D. A.

Acala is a large-bolled variety, introduced into the United States from Mexico in 1907; with lint 1-1/16 to 1-3/16 in., usually 1-1/8 full, with good drag and extra strong; clear white without creamy tint; percentage of lint, 32% to 35%. It matures earlier than Lone Star or other big boll cottons.

Durango is a long staple cotton introduced and acclimatized by the U. S. D. A. The lint is of excellent quality and attains a length of 1 1/4 in. under favorable conditions. Lint percentage 32 to 34. It is earlier than Columbia.



Columbia is an early long staple, big boll variety, originating from a single plant found in the Russell Big Boll variety in 1903. The lint is very strong, from 1-1/4 to 1-7/16 in. in length, fine, silky, and very uniform in length; percentage of lint, 29 to 33; season early in comparison with the older long staple varieties.

Lone Star belongs to the Texas Big Boll type and was bred in Texas by the U. S. D. A. as Columbia, developed from a single plant found in a field of Jackson cotton in 1905. The lint is 1 in. to 1-1/8 in. in length, very strong and of uniform length of fiber, 38% to 40%. The Lone Star is undoubtedly the best variety now available for general planting in the Texas blackland belt and adjacent regions. The variety is being grown extensively in Texas, Oklahoma, and Arkansas.

Trice is an early maturing, short staple variety, with fine lint 7/8 to 1 in. long, percentage of lint 28 to 33, season early.

King is an early maturing short staple variety, its earliness being one of the best features, but generally considered inferior to Trice.

No description is given of Egyptian and Sea Island. Because of their lateness of maturity, they showed no promise whatever at any of the stations. Both are long staples, being the longest staples under cultivation.

#### Results of Experiments

The experiments were carried on as uniformly as possible at all the experiment stations, the same sets being used and planted in the same order, so as to give a uniform basis of comparison. In general Trice proved most satisfactory. In no case did Egyptian or Sea Island show any signs of promise, though at the station in Nanking a number of the bolls opened. It was evident that the season was too short and not dry enough. After Trice, which was much more promising than any of the other tested varieties, Acala and Lone Star were the most promising, and certainly at the stations visited, and the results examined, it would not appear necessary or advisable to experiment further with any other than these three varieties, the others all being discarded. No attempt was made to get quantitative comparisons, because of the relatively little value they would have on the basis of the extent of the individual experiments. In several instances, however, as given later, statistics were taken.

At Nanking, Trice was so superior to the others that <sup>only</sup> this variety will be experimented with further in 1920.

At Wusih, when the experiment station was visited, there was little to choose between Trice, Acala and Lone Star (visited in late August) before bolls began to open.

At Shanghai, about September 1, Trice was markedly superior

though Lone Star showed up well. October observations showed Trice opening up fairly well, but that Lone Star was not opening its bolls. The earliness of Trice doubtless makes it a more desirable variety for the Shanghai region.

At Kashing, Trice again was most promising.

At Nantungchow, Trice and Lone Star in late August behaved about equally well, but October observation showed that neither of the varieties was opening its bolls freely, the difference being in favor of Trice.

At Ningpo, the experiment was drowned out.

At Chuchow, Acala and Trice showed greatest promise, and further experiment necessary to choose between the two.

At Nanhsuchow, Trice was markedly superior to all the others.

At Tangshan, Trice and Acala were more heavily fruited and developing more rapidly than any other varieties of the standard set.

At Pochow, none of the varieties showed any promise whatever.

At Kaifeng, Trice, Acala and Lone Star all showed promise, but further testing is necessary to determine which should be developed for general growing.

At Chengchow, Lone Star, Trice and Acala need further testing to determine relative excellence and adaptability.

At Hsuehchow, the cotton was drowned out and hence no results could be obtained.

At Kioshan, drought at the time of planting gave poor stand and no results obtainable.

At Hankow (Han Chuan) Acala and Trice were reported much better than any of the others.

At Yochow, the seed had been planted late, and this fact, with fall rains, insects and diseases, made judgment of results difficult. Trice furnished the largest amount of picked cotton.

At Changsha, we were able to examine a field of foreign cotton (not the standard set) which had been very badly hit by disease and insects and fall rains. If the season could be taken as average, the cultivation of foreign varieties is very problematical, unless the variety seen happened to be very unfitted for the region.

At Anlu, Hupeh, because of lateness of planting, the test was not satisfactory. Samples of Trice cotton, grown for several years at Anlu, showed considerable deterioration of staple.

At Nanchang, with late planting, Trice produced the most freely. The test was unsatisfactory, but valuable from information secured regarding the pink boll-worm.

At Anking, the cotton had been planted at the experiment station of the Anhwei First Agricultural School. The plants had made very little growth, were badly infested by insects and diseases and no results obtained. The information regarding insects and diseases was valuable.

At Luchowfu, a promising start was followed by an unfavorable ripening season, and the results were disappointing.

The following of the above reports were based on actual observations. All others were based on written reports by the cooperators:

Nanking, Wusih, Shanghai, Kashing, Nantungchow, Chuchow, Nanhsuchow, (Tangshan), Chengchow, Yochow, Changsha, Nanchang and Anking.



### Mr. Cook's Visit to China

On August 10, Mr. O. F. Cook, cotton expert of the United States Department of Agriculture, came to China and made his headquarters at the University. About September 1, Mr. J. B. Griffing arrived and remained for about a month. Mr. Cook left November 1. An itinerary was arranged for Mr. Cook, and besides representatives from the Chinese Cotton Mill Owners' Association being invited to accompany Mr. Cook on his trip, representatives were also invited from the Ministry of Agriculture and Commerce, Peking. Mr. C. C. Nieh was along part of the trip, particularly the trip to Nantungchow, and Mr. Yeh made the whole trip. Mr. Yeh doubtless reported fully to you on this trip, so that brief mention will only be necessary here.

The itinerary included Wusih, Shanghai, Nantungchow, Chuchow, Nanhsuchow, Tientsin, Peking, Paotingfu, Changteho, Chengchow, Hankow, Wuchang, Yochow, Changsha, Nanchang, Anking, and back to Nanking, thus allowing a good view of the more important cotton areas in China. Among the more important matters developing from this trip are the following:

Pure seed. Before Mr. Cook's arrival, it is safe to say no one in China fully realized the important relation between successful cotton culture and pure seed. (Mr. Swingle the year before had emphasized the fact also.) From the standpoint of pure seed production, it is further safe to say that not a single individual or experiment station had so far been successful, in developing pure stands of uniform character of any foreign staple. The experiments of the University of Nanking had in mind the determining of varieties for different sections, to be followed by development of pure seed farms the following year or as soon as the best variety for a region could be determined. (This will be possible this year, on a limited scale. Lack of trained personnel is the greatest problem in this connection.)

Constant selection and roguing on seed farms for foreign cotton will be essential and necessary. It must not be understood that pure seed from the United States will give uniform plants in China, that produce pure seed. This is because of the variation that is induced by change in climatic conditions. Constant selection is necessary in the United States to keep out all variations from a given type, and if this is true of seed planted year after year under similar soil and climatic conditions, how much greater care in selection is necessary when the factor of acclimatization is introduced.

The development of pure strains of Chinese cotton is of even more importance, it would seem, at the present time than the acclimatization of foreign staples. That there is no pure stand of Chinese

cotton in China, is probably a perfectly safe statement to make, and Chinese cotton, from many observations, is capable of much and important improvement.

7 The introduction of large quantities of foreign cotton at this time is undoubtedly a very questionable policy, and the general distribution of foreign seeds, unacclimatized, will doubtless prove of no avail or benefit to the cotton cultural interests. China is already more or less polluted with upland (foreign) staples, and the greater the amount of introduction without scientific selection in China first, the more difficult it will make successful foreign cotton culture.

#### A So-called English Cotton

At Tangshan, in North China, and near Tientsin, large areas of foreign cotton were found cultivated under the name of "English cotton." It was said to have been cultivated about thirty years. The staple is known in the market as "Tung Ho" and commands a high price. This cotton has become thoroughly acclimatized, and though very uniform at the present time, careful selection would doubtless net good results. The improvement of the cotton should probably receive as much attention as the introduction and acclimatization of Trice. It is not impossible that there is a close relation between this cotton and the foreign cotton of Shensi, and that grown about Laohokou, Hupeh, in increasing amounts, and that demands highest market prices.

#### Insects and Diseases

4 As a result of numerous observations, it would appear that the seriousness of cotton insect pests and diseases is not fully realized, and that more vigorous steps should be taken towards a thorough study of the problems involved. The situation is serious enough to warrant the securing of the best ability that can be found. It is an experienced expert's, not an amateur's, job.

The pink boll-worm, so destructive in Egypt, was found in every station or place visited north of the Yangtze River, and in Yochow, Changsha, Wuchang, Nanchang, and Anking. It was not found in Nanking nor was it found in the East China section. It was found in Nanchang, in the foreign cotton which was being grown on land that probably had not been grown to cotton for many years past. It is inconceivable that it could have been introduced with the cotton seed, as the insect is not found in the United States. In Chengchow, Hanan, it was found in seeds found in ginned and baled cotton shipped from Shensi. It was abundant in the fields of Chinese cotton about Chang-teho.

PT. 0 The Leaf hopper insect and disease were found everywhere, more damaging in some places than in others, and varying in intensity, locally. It was found in Shanghai, Nantungchow, Kashing, but probably



not causing damage of economic importance. At Wusih, it undoubtedly was of economic importance. It could be seen in cotton fields as we passed them on the train. The cotton at the government station at Wuchang was very badly damaged by them. Both Chinese and foreign cotton were attacked. At Changsha, the disease was also very bad. It was found in Nanchang, where cotton had not been grown for many years, as noted above. It was serious in Anking. It had done considerable damage in fields of Chinese cotton in and about Nanking. It also attacked the foreign cotton in Nanking. A factor that makes the leaf hopper insect and disease so baffling; is the fact that it undoubtedly has other host plants, having been found on soy beans, on "wu tung" seedlings, and on peach trees.

Other diseases and insects found were angular leaf spot and the red spider, but their economic importance was not nearly so great as the two above named.

*John H. Reiser*

Nanking

## TRANSFER

March 27, 1920.

Chinese Cotton Millowners' Association,  
Shanghai.

Gentlemen:

I take pleasure in enclosing herewith the annual report of the cotton experiment station which has been developed as per your letter of April 12, 1919, and our letter to you of May 29. As per your letter of April 12, which reads, "The Cotton Millowners' Association has decided to ask you to establish a cotton experiment station in Nanking. The Association will pay \$600 annually to cover all expenses in the station. If it is not enough, please let us know and we will consider it at our general meeting," We enclose statement of expenses that we have been put to in connection with our cotton work.

I believe the report needs no particular comment, though I would like to point out the importance of the year's work in connection with Mr. Cook's visit to China, furnishing a basis, and practically the only basis available, for a study of the relative merits of the more important foreign cottons for China. It is needless to point out that the information secured from these experiments is already being used by your Association to a large extent as the basis for your work this year.

The total expenses have been \$725.62, the largest item being in connection with the visits to the various stations. While the sum of \$600 was specifically mentioned, in view of your suggestion that you would consider a larger amount, we are submitting the total expenses of the station for the year. We desire to point out further that, while \$15.00 was allowed to each cooperator for expenses in connection with the local experiments, all but six bore their own expenses, because of their interest in the work and their desire to have a share in it. We trust these expenditures will meet with your approval, and we shall be glad to receive your check to cover the outlay advanced by the University Treasurer.

Sincerely yours,

*John H. Reiser*

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UNIVERSITY OF NANKING  
COLLEGE OF AGRICULTURE AND FORESTRY  
NANKING, CHINA

COTTON EXPERIMENT STATION

Expenses from April 12, 1919, to March 25, 1920

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Postage on seed distribution	\$6.80
Labour	60.25
Substation expenses	69.20
Telegrams	4.32
Travel	<u>585.05</u>
Total	\$725.62

*John H. Reiser.*

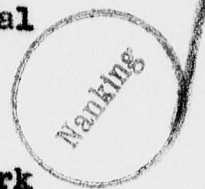
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University of Nanking, College of Agriculture and Forestry.

An Experiment in Adult Education and Extension Work  
among Chinese Farmers in Cooperation with Local  
Missionaries.

TRANSFER



An experiment in adult education and extension work was begun this autumn (1921) by giving a series of agricultural exhibits. These were first tried in an experimental way at three different points in or near Nanking and were so successful that they were immediately extended in cooperation with mission societies having work in and about Nanking. The different departments of the College of Agriculture and Forestry cooperated in these exhibits, showing educational material and charts on the following subjects: Silk, cotton, corn, rice, wheat, barley, plant diseases, forestry, nursery stock, spraying, modern tools and public health. In addition to the exhibit, demonstrations were given such as: operation of foreign plows and cultivators, sprayers, ginning cotton with the saw gin, microscopic examination of silkworm diseases. In addition to the exhibits and demonstrations, stereopticon lectures were given at the evening sessions.

These exhibits and demonstrations were primarily organized to promote the growing of improved cotton seed and the use of certified silkworm eggs. From these standpoints the work may be considered to have been very successful, as much interest was shown by the farmers in taking advantage of the improved seed both of silk and of cotton which the University has to offer.

The interest and attendance at the first fairs proved so great that the attempt was made to carry on the fairs in more distant

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places in cooperation with mission stations, such as the Methodist Mission at Poochiatsi; the Southern Presbyterian Mission at Kiangyin; the Christian Mission at Chuchow; the Northern Presbyterian Mission at Nanhsuchou and Szechow, and the Advent Christian Mission at Hochow. The exhibition was taken 130 li across the country in a Ford car from Manhsuchou to Szechow. The last of these exhibits has just been given in Shanghai, where it was seen by the Chinese Chamber of Commerce in the Y.M.C.A.

At one of the Mission stations of the Northern Presbyterian Mission about fifteen miles from Nanking, the exhibits were seen by more than 2000 farmers including their families. Mr. A.V. Gray the missionary in charge said regarding the exhibition held at the station where he is trying to do some evangelistic work and to create interest in agriculture that he had the very best hearing he ever had anywhere as a result of the fair.

It is very evident from these experiments that such exhibitions can be made to play an important part in adult education among the farming classes, and that it can be developed to tremendous advantage in country evangelistic work.

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Reports (4,770)  
Mr. Wheeler's Report  
May 5 - 1923  
Washington

Conference of representatives of Agricultural Missions  
with the United States Department of Agriculture in Washington.

At a recent meeting of the Board delegates were appointed to the Conference on Agricultural Missions, which was held in Washington, May 5th. At the conference Dr. Wallace Radcliffe of Washington and I represented the Board. I wish to report briefly concerning the meeting, which was quite unique in character.

(There were present about 70 people representing chiefly the United States Department of Agriculture and the Mission Boards or organizations which were carrying on work in agriculture in foreign lands.) Dr. Speer, in a pamphlet published some time ago, has pointed out that the principle of such practical service to the community, as represented by improvement of agricultural methods in foreign lands, was implicit in the missionary aim from the very beginning, but it is only recently that such work as agricultural education has become recognized or has become articulate. An International Association of Agricultural Missions was organized in 1920 and the recent conference was held under its auspices and that of the United States Department of Agriculture.

Dr. W. Taylor, (Chief of the Bureau of Plant Industry,) presided, and there was an evident spirit of cooperation and helpfulness on the part of all the government officials.

The Board might be interested to know that the two largest undertakings in this line of work in foreign lands are -

The Bunster Farm in Angol, Chile, under the direction of the Methodist Mission and Board, in which approximately \$275,000. has been invested.



(Statement by Dr. Farmer: The Bunster Industrial Farm is located at Angol, in southern Chile. It was purchased four years ago at an initial investment of \$275,000. There are 3800 acres divided into three farms, which raise wheat, cattle, fruit - especially a large apple orchard. It has an apiary and the second largest and perhaps most important nursery in all Chile. The school connected with it is only in its beginning stages and has a small attendance, but it is hoped eventually that the farm will support 300 boys. At present it meets all of the expenses with the exception of the support of one missionary couple in the school work. There are two missionary couples now on the farm and two are about to leave this country.)

And in China in relation to the recent appropriation of approximately \$900,000 of the unused China Famine Funds, three-fourths of which total is to go to the School of Forestry and Agriculture of the Nanking University, and one-fourth to a similar department at Peking University, the total sum to be administered under a committee appointed jointly by the American Minister in China and the Committee of reference and Counsel in the United States.

(Signed) W.R. Wheeler

EXTENSION WORK  
UNIVERSITY OF NANKING,  
College of Agriculture and Forestry  
in  
Cooperation with Mr. R. A. Torrey, Jr. for Presbyterian  
Mission, Tsinanfu, Shantung.

RECEIVED  
JUL 30 1923  
TREASURERS OFFICE

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A UNIQUE AGRICULTURAL INSTITUTE.

An Agricultural Institute has just been held in the small hsien city of Lin I in the heart of Shantung. It was unique in being the first of its kind, in being a joint affair carried on by the Missionary and the Government officials, and in the keen interest manifested by the multitudes who attended. Through his extensive famine relief work in this and other districts the Missionary in charge had become convinced that Christianity must be made more practical in its expression to the country people, that famines would continue until better economic and social as well as in the spiritual life of the people and that the development of a self respecting and self supporting Church depended upon this.

The plan of gathering the farmer Christians for an agricultural institute, as they were gathered together for Bible classes, was thought of as a preliminary step. It was found that the Agricultural Department of the University of Nanking was very glad to cooperate in such an effort. During the relief work a very cordial friendship had been established with the Hsien Magistrate and during a friendly visit the proposed institute was mentioned. It was learned that this official was greatly interested in the improvement of cotton in this district. He was enthusiastic about the proposed gathering and volunteered to assist in making it a success and in contributing towards the necessary expenses. It was thus decided to make the Institute county wide and to invite lecturers from the Government Agricultural College at Tsinan as well as from the University of Nanking.

At the suggestion of the official a committee was formed. The magistrate was made Chairman and whole heartedly gave his time and energy to filling the office. The Missionary was made Vice Chairman, the head of the Bureau of Lectures on Industries for the Hsien was made Secretary and Treasurer, and his assistant was made registrar. A Reception Committee was formed with the Chairman and Vice-Chairman of the Chamber of Commerce, the principal of the Government High School, teachers from this school and the head of the Farmers' Mutual Protective Society as members. The prison official made a most efficient stage manager and teachers from the High School acted as stage hands. The Chief of Police took charge of the exhibition room while the lecturers were off duty. The large Cheng Hwang Temple was loaned for the occasion, two threshing floors were loaned by prominent gentry for the erection of the Missionary's large evangelistic tent and plowing demonstrations, and a nearby field was loaned for demonstration work by a local Christian. A Chinese talking machine was borrowed to amuse the crowds while waiting for sessions to open and the drum and corps of the Government School occupied the intervals between acts during the plays.



The official took it upon himself to send to Tsinanfu and secure over one thousand gin of American cotton seed for distribution to the h of villages. The Missionary also purchased some four hundred pounds of improved Nanking seed for distribution among the Christians. The Magistrate sent word to the head men of all villages that they should attend the Institute, they were registered, given a pamphlet on the cultivation of foreign cotton and a supply of seed to be tried out in their home fields. The Missionary advertised the meetings among his Christians and prepared entertainment for them during their stay. An informal conference was also arranged so that they could meet the lecturers in private and ask questions and discuss their agricultural problems.

Lectures on the value of improved cotton, methods of better cotton cultivation, soil improvement, the importance of the farmer and agriculture, hoe cutting, unbinding of feet, the necessity of educating the girls (the last of which were ably handled by a government representative at the special request of the Magistrate), were illustrated by charts and experiments. These lectures were held every morning during the three days, in the tent before a spell bound audience of from four to five hundred. While the lectures were being given charts and samples were on exhibition, with men to fully explain them, in one of the buildings of the big Taoist Temple. At the end of the lectures demonstrations of plowing and harrowing with American implements adapted to Chinese conditions were given. When the foreign plow drawn by two ordinary Chinese animals easily broke a deep furrow thru the hard sun baked soil of a much trodden threshing floor excitement ran high.

The visiting lecturers were a representative of the Provincial Bureau of Industries, a professor from the Provincial College of Agriculture and Forestry, one Chinese and two foreign professors from the College of Agriculture and Forestry, University of Nanking, the foreign head of the Department of Rural Reconstruction and Agriculture in the International University of Rabandrinath Tagore of Bengal, India, and give students from the University of Nanking one year course in Agriculture.

The afternoons were devoted to demonstrations and plays given by the Nanking students. One play showed the average farmers poor and discouraged over the failure of his cotton to realize a remunerative price on the markets. Their proposal to remedy matters by idolatrous worship is checked by a Christian pastor, who introduces them to the representative of the Nanking University Extension Department. Thru him they learn how to plant and cultivate to secure better results. Thru him they also purchase better seed. As a result the following season their crop brings them such profits as to enable them to buy new clothes and put their sons in school, while their conservative neighbor who scoffed at the new seed and improved methods sinks deeper into debt. The second play was against the gambling evil. It represented two families closely related. The man of one gambled away his cotton proceeds and then when his mother died during his gambling spree he was over whelmed. He appealed to the wealthy landlord for assistance in the way of a loan to secure money for the funeral but found that he was to be turned off of the land for thriftlessness. The prosperous happy home of the relative, who worked hard improving every moment and refused to gamble, was a striking contrast. It was to this home the stricken family had to turn in their distress and a reformation on the part of the gambler resulted.

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A play in which the lines were spoken rather than sung was a new thing to the people of the district but the crowds listened with rapt attention. The acting was splendid and the lines cleverly cast with much of humor and pathos, so that the morals were skillfully driven home. All were so delighted with this phase of the Institute that the Jail Official begged that the plays be given at a nearby fair. He arranged that the actors performing there should retire for part of the days and turn the stage over to the Nanking students. Altho this was a raw country audience of about a thousand men, women and children the same attention and order prevailed and universal delight was expressed.

In the evening several thousand gathered before the theater stage of the big temple to listen to an illustrated lecture on soils, cultivation and fertilization of soils. The same spontaneous order and attention was displayed at this time as at the others. The cordial hospitality of the Magistrate and other officials and gentry of the Hsien could not have been surpassed. From early in the morning till late at night the official was actively engaged introducing the speakers, directing the carrying of the plows from place to place, and helping in every possible manner. He had his wife and the girls and teachers from the government school attend the public performance of the play. He gave two dinners, one for all the parties having a part in the management of the Institute and a private dinner for just the main guests and the Missionary. This dinner was catered to by his wife. The spirit of understrained friendship and mutual respect that was manifested thruout by both foreigners and Chinese was most striking and delightful.

The Institute was held just a few days before the cotton planting season and was such a complete success that it is hoped to repeat it in the autumn just after the cotton harvest. The Magistrate contributed two hundred dollars towards the expenses of the Institute and the remainder of the cost was met by the Missionary. Lin I Hsien is seventy li from the railway and the official provided an armed escort and conveyances to take the party to and from the station. As there is another Mission outstation to hold a day's Institute there. However, the President of the local Agricultural Society was so enthusiastic about it that the party stayed an extra day. Here again the Chong Hwang Temple was loaned for the occasion. The lectures as well as the plays were given from the theater stage in the middle of the big court yard before the main temple. The porticos flanking both sides of the court were adorned with recently done pictures vividly portraying the tortures of doomed souls passing thru the Buddhist purgatory. The exhibition material ~~was~~ was arranged in these porticos, causing a striking contrast between the ancient superstitions that have impoverished the masses for so many centuries and the enlightenment that is being brought in thru Christianity and helping them to take hope and press on towards better things in both this life and the next.

R. A. Torrey, Jr.