Yenching
Academic
Department of Agriculture
1923-1926

North China
Agricultural Association

PEKING

SEMI-ANNUAL CONFERENCE

May 18-19-20-21, 1923.

An organization for the promotion of agricultural science and the development of rural education and country life in North China.

FIRST SESSION.

Friday, May 18.

Library of the Chinese Political and Social Science Association, Nan Chih Tzu.

George L. Davis — Chairman

2.00 P.M. Address of welcome,
Prof. J. B. Tayler,
Acting President of Peking University.

Response
R. E. Gailey, Y. M.C. A.

Prayer
Rev. George L. Davis.

2.20 P.M. Work being done in agricultural education and science in North China under Government and Mission auspices.
Reports to be given of the work of the Government Agricultural College, Peking University, Kaifeng Baptist College and of agricultural development under the Catholic, Presbyterian, Methodist, Canadian, Anglican, American Board, London Mission and other auspices.

3.20 P.M. Some difficulties experienced in the development of agricultural work.
Ernest H. Shaw.
Round table discussion led by Mr. Shaw.

4.20 P.M. Automobile trip to Haitien.
Inspection of the American Board School and part of the field work of Peking University.

SECOND SESSION.

8.15 P.M. Assembly Hall, Peking University, (Yenching Ta Hsueh) Kuei Chia Chang.
Joint meeting with the Peking University Chapter of the World Agricultural Society.
Special Program.

Speaker: H. L. Chung,
Head of the Department of Agronomy. U. S. Experiment Station. Hawaii.

THIRD SESSION.

Saturday—May 19.

Library of the Chinese Politcal and Social Science Association.

James Hunter—Chairman.

9.00 A M. Methods for conducting a Rural Survey.
C. B. Malone, Tsing Hua College.
Objectives for a Rural Survey.
W. E. Chamberlain, Peking University.

Round table Discussion.

10.20 A.M. Intermission.

10.30 A.M. Developing the "Community idea" in the Chinese village.
Dr. W. C. Coulter,
Western Reserve University.

11.15 A.M. Rural credits.
J. B. Tayler, Peking University.

Round Table Discussion.

1.00 P.M. Luncheon. Place to be announced.
Julian Arnold,
U. S. Commercial Attache.

Subject: Agriculture in the new economic of China.

FOURTH SESSION.

Library of the Chinese Political and Social Science Association.

Ernest H. Shaw—Chairman.

4.00 P.M. The Development of Village Industries.
Sam Dean, Peking University.
S. Moore Gordon, Truth Hall School.

Round Table Discussion.

8.30 P.M. Musicale and Reception to the members of the association by the faculty of Peking University at the residence of Prof. and Mrs. W. E. Chamberlain, No. 7 Hsi Chiao Hutung.
Mrs. E. O. Wilson, Contralto.
Dr. Susan Waddell, Violin.
Miss Lura Aiken, Piano.

FIFTH SESSON.

Sunday—May 20.

Library of Chinese Political and Social Science Association, Nan Chih Tzu.

Rev. Timothy Tingfang Lew, Chairman.

2.45 P.M. Forms of Service for the Rural Church and School.

Dr. Geo. D. Wilder.

Round Table Discussion.

Only one topic has been placed on the program for the Sunday session. It is hoped that the subject will bring forth a large amount of discussion.

The cause of Christianity will never advance very far in China until the Christian farmers are better farmers than the non-Christians. The great mass of China's population depends upon agriculture for a livelihood.

Here also is the solution to the problem of the self-supporting Chinese Church. We cannot have a self-supporting church until the economic returns to the farmer are greater, until he can produce better crops and animals, use his labor to a better advantage and remove superstition from his farm practices.

SIXTH SESSION

Monday—May 21.

Biology Laboratory, Peking University.
Kuei Chia Chang.
W. F. Chamberlain—Chairman.

9.00 A.M. Possibilities in Plant Breeding for North China.
C. C. Chen, Tsing Hua College.

10.00 A.M. Observation of the pratices of American and European Farmers and how these may be applied to Chinese Agriculture.
H. K. Fung, Peking University.

Round Table discussion.

11.00 A.M. Visit to green-houses and gardens, Peking University.

Intermission.

SEVENTH SESSION.

Biology Laboratory, Peking University.
C. F. Chou—Chairman.

2.00 P.M. Suggestions for the development of Horticulture in the Northern provinces.
C. F. Chou, Agricultural adviser, Chang Li.

3.00 P.M. Experiences in Poultry and Pork Improvement.
James Hunter, Tung Chou School.

4.00 P.M. Automobile trip to Tung Chou School.

9.00 P.M. Mendelssohn's "St Paul" by the Peking Choral Society.
P. U. M. C. Auditorium.

BE A BOOSTER!

Membership is open to any person interested in the promotion of agricultural science and the development of rural education and country life in North China.

Dues — $1.00 per year.

All sessions will be given in English.

Bring your note books and pencils.

All sessions will begin promptly at the time stated. Plan to be on time.

The magazine "Life" will issue a full report of the conference printed in Chinese. These may be obtained at 30 cents per copy. Order these for your Chinese co-workers from the recording secretary.

"It ain't the guns nor armament,
Nor the funds that we can pay,
But it's close co-operation
That makes us win the day.
It ain't the individual,
Nor the members as a whole
But the everlastin' team work
Of every bloomin' Soul." — Selected —

Walter E. Chamberlain
Head of the Department of Agriculture
Peking University, (Yenching Ta Hsueh)

Executive Secretary.

Executive Committee

W. E. Chamberlain
E. H. Shaw
James Hunter
Geo. L. Davis
W. H. Gleysteen
J. B. Tayler
J. E. Baker
D. C. Edwards
R. E. Lewis
J. E. Lee

Membership Committee

James Hunter
J. B. Tayler
E. H. Shaw
C. F. Chou
C. C. Yn

Entertainment Committee

E. H. Shaw
Geo. L. Davis
W. H. Gleysteen

A N N U A L R E P O R T

for

the year 1923-24

of the

DEPARTMENT OF AGRICULTURE

PEKING UNIVERSITY

When all factors are considered the work of the department may be said to have made noticeable improvement over previous years. During the year income from the famine funds have beem made available. The interest on the total sum ($225,000 gold) only gives us a bare working basis and we are actually only a little better off than we were before, the only difference being the fact that we know definitely that a certain sum will be available for work during the coming year rather than continual uncertainty.

If Peking University is to function for the greatest service in North China, she must lay plans for a greater Agr'l development for
a) 85% of China's populations is rural
b) An improved agriculture is the key to the self-supporting Chinese Church.

STAFF This year Mr. C.C. Chen of the Dept. of Biology of Tsing Hua has been assisting us on half time basis. Mr. Ch'en has handled the courses in Agronomy and has started plant breeding work at Hai Tien.

Mr. N. Lavroff was added during the winter as assistant foreman at the Nan Yuan Farm. Mr. Kuo Pai Tien a graduate of the Y.M.C.A. Business Training Department has been secured as clerk and accountant at the Horticultural Gardens. Mr. Y.L. Liu has been added to the staff as student assistant in horticulture. I wish at this time to comment on the faithful and efficient sercice which has been rendered the department by Mr. C.C. Yu as farm manager. Mr. Yu is one of our first graduates and a credit to the department.

We employ on the average forty-five laborers per day throughout the year. Our total staff is approximately fifty people. This number can be greatly reduced if we can find the wyas and means to introduce some modern farm machinery.

STUDENTS The total number of students now registered in the depart is as follows: -

Candidates for a B.S. degree	11
Two year Short Course	2
Artisan Students	2
	15

Three students have been dropped this year. One found himself unable to keep up the work and two left because of family reasons. As yet no effort has been put forth on the part of the department to obtain students and only one circular has ever been issued. This was gotten out the first year through cooperation with Mr. Chiu. It has been felt that we would not try to increase one student enrollment until the department had its practical work on an assured basis and we were able to sufficiently increase our staff to enable us to care for their training.

COURSES The following courses have been offered this past year. Farm Crops, Plant Breeding, Farm Animals, Dairy Fundamentals, Market Milk, Soils, Horticultural Project and Farm Practice, also a course in Bookkeeping was given for one semester thru the cooperation of the Business Training Department.

DEPARTMENT PROJECTS The head of the department has always held the position that we must first develop our own University agricultural projects in such a way as to show an appreciable increase in the amounts received over and above the amounts expended before we can intelligently "preach the gospel" of a more profitable agriculture to the Chinese Farmer. We shall show a very favorable financial return on all our projects for the year. Our total sales up to June 16th including materials to be sold immediately amount to $9,443.54. This is over 50% of our total budget this year for current and operating expenses.

HORTICULTURAL GARDENS ON KUEI CHIA CH'ANG Here we have 7 houses devoted to decorative plants. We have gained many interested friends for the University through the service which we have been able to render the community. Our business shows a very substantial increase over last year.

HAITIEN We find ourselves greatly cramped for space, a factor which will be a much greater problem when the University moves to the new site than it is at the present time. Here we have developed our experimental cannery. Last year the students canned over six thousand cans of tomatoes. For the coming year we plan to make our own cans, and have purchased a can making machine in America. This will reduce our costs somewhat. We also expect to done some work with the native fruits such as pears, peaches, etc.

This year we are developing some experimental work here which will be mentioned later. At Haitien we have approximately 147 mou under cultivature devoted to the following crops.

HAITIEN Peanuts, Sweet-potatoes, Wheat, Barley, Field Corn, Rice Cotton, Lotus, Vegetable gardens and Tree Nurseries.

NANYUAN Through the cooperation of General Feng Yu Hsiang a large number of shade trees have been planted along the roadways with the idea of beautifying the property. Approximately 1127 mou are devoted to the following crops:

Sweet Corn, Chinese Field Corn, American Feild Corn, Cotton, Black Beans, Soy Beans, Wheat, Sorghum, Barley, Sweet Potatoes, Millets, Sesame, Sweet Clover, Alfalfa, and Vegetable Gardens.

Out total land under cultivation is approximately 1280 mou.

EXPERIMENT STATION

On our station at Nan Yuan we have demonstrated very conclusively that Sweet Clover will grow under much more unfavorable circumstances to alkaline conditions than Alfalfa. There is an opportunity for the development of this plant as pasture, and hay in connection with an improved system of animal husbandry for China.

At Haitien we are continuing on our third year of work on wheat selection. We have 99 selections under test and observation. At Nan Yuan we are continuing our work on native Chinese yellow corn in attempt to produce a definite two eared strain.

Selection work has begun on a variety known as "Italian White". Acclimatization work is being carried on with sweet corn. We are also working for the third year in acclimatizing a 90 day corn from America. This corn shows great promise for North China and is rapidly becoming adapted to the enviroment of this section. This corn matures from ten to twenty days earlier than the native Chinese yellow corn and has a larger ear. It is a particularly valuable introduction from the standpoint of famine prevention. Should rains fail in the spring the native farmer will still be able to mature a crop of corn even if no rain should fall before July. Through the cooperation of the experiment stations of the Chinese Eastern R.R. we have received a large collection of many varieties of soy beans for trial purposes.

AGRICULTURAL EXTENSION

We have answered quite a large number of letters of inquiry relating to seeds, insect pests and general agr'l information. In fact our correspondence has increased to the extent that it has become a burden, and for this reason it will be necessary in the near future to arrange in some way for University stemgraphic foreign assistance.

We have made the following addresses in cooperation with the Y.M.C.A.

a) to the village heads of the Wang Ping Hisen
b) to the Sociology Seminar at the North-China Language school
c) to the Y.M.C.A. Sunday Afternoon Discussion Group.

Various materials have been loaned for agricultural exhibits. Photographs on Chinese Agr'l have been given to interested parties. An exhibit was given in cooperation with the Y.W.C.A. on "the use of flowers in the home" during their Home Making Exhibitions.

The head of the Dept. has served as Executive Secretary of the North China Agricultural Society and two very interesting conferences covering a period of five days have been held. The proceedings of the first conference are especially valuable to any who are interested in North China's Rurual problems. This material was published in Chinese through the Cooperation of the Magazine, "The Life" and copies are on sale by the Dept. at .30 each.

An address was given at the Anglican Mission before thier normal training students and those from the Methodist Academy. Assistance has been given the Methodist Agricultural school at Changli in the arrangement of a definite pre-agricultural curriculum. When these plans are fully developed we shall have a preparatory school definitely planning to train students for College work in Agriculture in Peking University. I have no evidence to support the fact, but I have no doubt but that Changli will be the first school under Mission auspices in China to train men for pre-college work in Agriculture. The Head of the department has been appointed a member of the Committee on Colonization under the China International Famine Relief Commission. This committee is to gather all the available information concerning the colonization work of other countries with a view towards the utilization of some plan for famine prevention or relief. The Committee is also to study the social and economic conditions of various sections of China in order to direct the migration of famine suffers in case of need.

The head of the department has also served during the past year as an executive member of the Committee on Agricultural Education of China Christian Educational Association.

PLANS FOR THE COMING YEAR

Although no to date definite information of any kind has been received from the New York office we are expecting a consignment of cattle, sheep, hogs, sheep and poultry from America early in September. We are also planning to add to our staff men for full time work in Agronomy, Horticulture and Animal Husbandry.

Definite Present Needs of the Department

~~DEFINITE PRESENT NEEDS OF THE DEPARTMENT~~

1. The services of an expect foreign stenographer for at least one hour per day.
2. For two years the writer has endeavored to have the agricultural bulletins in the library properly cataloged. Spasmodic attempts have been made by the librarian but in the main very little has been accomplished.
3. We are greatly in need of a large number of reference books for library use.
4. Owing to the fact that good teaching illustrations of farm animals are not to be seen in North China we should aim to build up a large collection of lantern slides of ideal types and breeds.
5. A motion picture camera and projections apparatus would be of great benefit to us to prepare films for use in the country districts to give instruction in new methods.
6. The land for agricultural purposes at Hsi Tien is entirely too limited in Area to successfully carry on the works of the Department. This problem must be faced in the near future.

7. In order that we may be of assistance to our cooperating missions in Agricultural work we must definitely plan to enlarge our staff and increase our facilities. The University in its development must face the fact that the rural problem is China's great problem and Yenching must not dodge her responsibilities. We need funds, staff, and land. Resolutions favoring the greater development of the department have been presented to the University by the Chihli-Shansi Educational Assoication and the North China Agr'l Association:

We must find a way in the near future for the following very essential additions to our staff. We need men for the following work.

1. Farm Management and Research in the actual economic condtion of the agricultural population.
2. Bacteriology and Immunology.
3. Veterinary Science
4. Agricultural Education
5. Agricultural Engineering
6. Rural Sociology
7. Poultry Husbandry
8. Entomology
9. Plant Pathology
10. Rural Industry
11. Agricultural Technology

This list may seem a trifle staggering, but not at all impossible if we can all get behind such a program and P U S H !

Respectfully Submitted

(signed) Walter E. Chamberlain

Head of the Department

June 3, 1924

Peking University

ANNUAL REPORT FOR

THE YEAR 1924 - 25,

OF THE

DEPARTMENT OF AGRICULTURE, YENCHING UNIVERSITY.

The policy of the department in the past four years has been to build up our work on a broad and stable basis and to develop our commercial projects and experimental work in such a manner that our foundation work should be well established before we placed special emphasis on the training of agricultural students. During this period we have selected a small group of students, with the idea in mind that from this group we might be able to select the best to help carry on our work when we were ready for more extensive development in teaching and extension work. As exponents of vocational agricultural training we have placed emphasis on the idea that our commercial projects should be run on the profit basis. Our aim is to help the Chinese farmer to conduct his operations at a greater profit so that he may raise his standard of living, educate his family and help support those institutions which are generally considered essential to the well being of an ideal community. If we cannot conduct our own commercial projects on a paying basis our agricultural education is on the wrong track and must result only in failure. We must demonstrate that modern methods are economically profitable and possible. If we cannot run our own projects at a profit we cannot demonstrate to the farmer how he can conduct his own business at a greater profit.

The above ideal cannot be carried out by a wholesale transplanting of western methods and practices to China. We aim to find out in our experimental work those practices, implements, fruits, grains, and vegetables etc. which may be most profitably used or produced by the Chinese farmer and to discard those which are impractical, inefficient and unprofitable under oriental conditions.

In our work of agricultural instruction of a college grade, students may specialize in Horticulture, Animal Husbandry or in General Agriculture, fitting themselves for positions as Farm Managers, Extension Workers, Experiment Station Assistants or Agricultural Teachers. Our aim is to send forth real leaders competent to solve rural problems thoroughly Christian in spirit and outlook.

When we have the funds to develop our extension work, activities will be carried on in the rural villages and shcools, demonstrations given, animal breeding stations opened up, improved seed distributed, visual instruction and boys and girls club work developed.

A brief review of the work of the past four years may be of interest.

1. Our budget for 1925 - 26 is over five times the amount of our budget for 1921 - 22.
   a/ In the above budget over 48½% of our funds will be obtained from China.
   b/ In the above budget over 45% funds will be obtained from our own farm and gardens and student fees.
2. Our staff has increased from one foreigner and one Chinese Assistant in 1922 to six foreigners and three Chinese assistants at the present time.
3. At one period during 1921 we had no land available for agricultural

purposes. At present we have under cultivation approximately 1400 mou or over 212 acres, also 5 glass and 3 paper front greenhouses.

4. A small endowment fund has been established for work in famine prevention.
5. A modern sanitary cow stable has been erected.
6. A small commercial cannery has been established.
7. Purebred beef and dairy cattle, milk goats, sheep, hogs and poultry have been imported from America.
8. A library of several thousand bulletins have been obtained and approximately thirty agricultural periodicals are now received at our reading rooms. A small beginning has been made in the purchasing of books on agricultural science for our reference shelves.
9. Experimentation has been under way for the past three years in work on corn and wheat, variety tests etc.
10. A trial orchard has been established.
11. In extension work, the North China Agricultural Association has been organized to assist all those interested in Agricultural development in the mission and other schools to more closely coöperate with the Department. Various lectures have been given, and a large number of inquiries answered regarding various agricultural problems.
12. Through various forms of publicity the department has become favorably known throughout North China.
13. The number of applications from students desiring to study agriculture is on the increase. Last year more positions were open to our students than we had men to fill them.
14. Our students have been making good in their chosen occupation. This may be considered a measure of the training which they have received. All of our graduates are in some farm of agricultural work. One intends to go to America for further study, another has been sucessful as the manager of our University farms. A former graduate of our two year course is teaching agriculture in an orphanage school, and has had several promotions in his work and is now at the head of the agricultural work in the school with several assistents under him. Another two year man is teaching agriculture at General Feng's military camp. A former artisan student of ours is now employed as a foreman in the Experiment Station of another College. With our increased and more specialized staff the outlook for our students is very promising.

Staff Additions. During the summer of 1924 Messrs. Nicholas and Alexand Garick, and Mr. Fan I Hua were employed on the work of a dairy survey of Peking. In September Mr. Harold C. Etter, a graduate of the University of British Columbia 1924 joined our staff. Mr. Etter came to us very highly recommended. His time during the first Semester was spent in the language school, since then he has had charge of the work in Horticulture and agronomy. His work in the department is to be most highly commended and he shows every evidence of living up to the recommendations received concerning him.

In January first- 1925 Mr. Brunsford Eubank arrived at Haition after a strenuous but successful journey from America in charge of our importation of purebred animals. Mr. Eubank is a graduate of the Texas Agricultural and Mechanical College of the class of 1922. Since his arrival Mr. Eubank has been in attendance at the language school and has made supervision trips once or twice each week to Haition. He has also given a series of lectures on agriculture at the Peking Theological School.

Mr. Elwood Varney, a former student of the University of California joined our forces in March. During the past two years he has been employed as Associate Manager of the Liberty Dairy in Shanghai. Since his arrival Mr. Varney has been stationed at Haitien assisting in our experimental work, overseeing the care of the live stock and perfecting the plans for the new dairy which we hope to establish the coming year. Mr. Varney also made one trip to Harbin to study into the possibility of obtaining Russian cattle from that section.

We were very fortunate in securing the services of Dr. Geo. D. Wilder for a course in Bee-keeping. In addition to our regular students this course attracted several of the local Bee-keepers and was most enthusiastically received.

We have been very glad to offer P. H. Dorsett and his son James the best facilities which the department has at its disposal to assist in the work of plant exploration. Dr. Dorsett comes to China for the Bureau of Plant Industry of the United States Department of Agriculture and has made his head-quarters with us during the past year. We are greatly indebted to the Messrs. Dorsett for then readiness to always assist us in every way possible, for lectures, botanical specimens, and materials for propagation work.

Students. A total of 22 students have been registered during the year for agricultural courses. A rather heavy mortality occurred among the freshmen and sophomore and short course students, and 8 were obliged to be dropped owing to illness or because they were unable to make the required grade ratio.

The total number of students now taking work in the department is as follows:

Candidates for a B. S. degree	6
2 year short course	1
Special students	6
Artisan students	1
	14

Courses. The following courses have been offered during the past year.

Fundamentals of Poultry Husbandry	4 credit hours
Sources of Agricultural Information	1 " "
Livestock Management	4 " "
Feeds and Feeding	3 " "
Farm Management	2 " "
Problems of Chinese Country Life	1 " "
Bee Keeping	3 " "
Principles of Horticulture	4 " "
Fruit Growing	3 " "

A four hour course in Geology throughout the year was given to agricultural students through the co-operation of Prof. Barbour of the Department of Goelogy and Geography.

Owing to the size of our staff, and the work necessary for our projects and experimental work our courses are given in alternate years. New students however are admitted each year.

Department Projects.

Haitien. A modern sanitary cement and brick cow stable has been erected. This stable has stanchions for 20 cattle and is capable of accomodating 32 head.

Following is a list of the dowations of high grade purebred animals which arrived from some of America's leading breeding establishments in January under the care of Mr. Eubank.

The shipment consisted of fifteen head of cattle, six hogs, two sheep, three goats, and twenty chickens.

The cattle included two head of Aberdeen-Angus the bull "Ploweap" a nice representative of the breed, son of Plowman 221,051, champion 53 times as a 3 year old including grand champion of Canada, donated by I. R. Kershaw of Muskogee, Oklahoma. The heifer is an unusually nice representative of the breed, very typical, hearty, and a perfect beauty. Gift of Mrs. Florence V. Eckhart, Ardson Farm, Armonk, New York.

Five Guernseys: "Brookmead's Traveler" an eight months old bull calf tracing to May Rose 2nd nine times, May Rose King 4 times, King of the May 3 times, to two world's champions, Dolly Dimple and May Rilma, and half-brother to Langwater Steadfast who sold for $25,000. Contributed by Frank Graham Thompson of Brookmead, Pennsylvania.

Mars of Annandale 92716, an eighteen months old bull sired by Warcloud of the Glen, and out of Marcella of Annandale, Advanced Registry 15,307. A good representative of the breed. Gift of Moses Taylor, Annandale Farm, Mt. Kisco, N. Y.

Beacon Hill Joan, nine-months-old heifer out of Beacon Hill Daisy, and Beacon Hill Pioneer, whose dam made 604.52 lbs. butter in 7 tracing several times to Langwater Royal. Given by Arthur Curtiss James of Beacon Hill Farm, Newport, R. I.

Two more heifers, gift of Marshall Field, (Caumsett Farm, Huntington, L. I. Caumsett May, a nine-months old heifer of good type and well developed for her age, out of May of Williamsburg, sired by Raymond's Foremost of a Langwater strain of A. R. ancestors; and Caumsett Flower of Waddington 14 months old, sired by Raider's Flower de Lis of Waddington whose nearest forebears came in the A. R. class, and out of Raider's College Welford of Bethany 99271 who made 525.49 lbs. butter in "F", also from strict A. R. ancestry.

One Ayrshire bull, gift of Hugh J. Chisholm from his Strathglass Farm, Port Chester, N. Y., "Strathglass Major Fizzaway" sired by Penhurst Mischief Maker who has 10 A. R. daughters, whose sire has 22 daughters with 29 records averaging 9717 lbs. milk and 393.91 fat and whose dam, Imperial Carolaugh May Mischief 27944, held the unexcelled record of 25329 milk and 894.91 fat; out of Strathglass Mary Fizzaway A. R. 4083.

One Holstein-Friesan heifer contributed by Le Roy Munroe of Jordan, N. Y., a pretty calf of nice size and excellent lines, sired by Woodmont Echo Sylvia, champion first prize 3-year-old New York State Fair 1922, son of Butter Boy Empress, 30th grand champion N. Y. State Fair 1921, out of an untested two-year-old heifer that was above the 10,000 lb. milk mark in 11 months. The heifer with a three-fourths brother took fifth

premium in a class for two calves where there was real competition, in the last N. Y. State Fair.

Four head of Herefords, a pair each of the polled and horned varieties. The horned bull Bonnie Perfect, sired by Commander 790703, dam Rue Perfect 689361. A stylish and quite symmetrical calf, the gift of Reginald H. Parsons of Seattle, Washington, from his Mounterest Ranch at Holt California. The heifer Vain Colald contributed by Carey Bros., of Cheyenne Wyoming. The Polled Hereford heifer, nice-sized and well-marked, contributed by Goernandt Bros. of Aurora, Kansas.

A pair of Shorthorns; the Bull Peking Reserve and a blocky and quiet calf, donated by the American Shorthorn Breeders' Association through the courtesy of F. W. Harding.

The sheep are a pair of Shorpshires: the ewe a beautiful spring lamb, donation of Mr. R. E. Martin of Bonzeman, Montana, the ram, a fine large fellow also from Mr. Martin's herd.

Four Poland China hogs, three secured as donations by the effort of Mr. C. W. Davis Secretary of the American Poland China Record: a fine big type boar from the W. T. Rawleigh Company of Freeport Ill; a sow from Tagus Ranch, Tulare, California; a sow pig from Oregon Agricultural College Corvallis, Oregon, and a fine Big-Bone sow from Henry Kelting of Martinton, Ill.

A Tamworth sow pig from Bear Creek Farm, Hamilton H. Simpson proprietor, Palmer, Ill. A Berkshire sow pig from Carl Wallace of Sycamore Farms, Pottstown, Penn.

The two pigs that died were a Berkshire boar from H. C. & H. B. Harpending of Dundee, N. Y., and a Duroc Jersey sow pig from Harry Riggin, Petersburg, Ill.

The Goats are Toggenbergs, the buck a large kid contributed by Will L. Te Walt, Secretary, American Milk Goat Breeders' Record Association, Vincennes, Indiana.

The chickens include a trio of Silver Pencilled Wyandottes contributed by Fred E. Field, Jr. and Fred W. Rogers, of the International Silver Pencilled Wyandotte Club. Six Single-Comb White Minorcas from G. G. Truman, the largest specialty dealer in America, of Perrysville, Ohio.

Mr. Franklin H. Warner, of the Warner Chemical Company, and Vice-President of the Trustees of the University, gave us a dozen White Leghorns from his flock.

The livestock have done well in China. There been no increases in cattle but we have had an addition of eleven Poland China pigs and nine Poland China Tamworth crasses.

Over two hundred chickens have been raised consisting of native breeds, Rhode Island Reds, Barred Plymouth Rocks, White Leghorns and White Minorcas.

The Cannery.

The Cannery has now operated for three seasons and the total pack has been approximately 13500 cans of tomatoes. Most of these have been sold locally but a few have been shipped out. Last season simple can making machinery was installed. To improve the effeciency of our work this coming season we are using a pressure can tester to reduce any spoilage from faulty seaming of the cans. We also plan to extend our selection of canned goods to include corn, peaches, apricots, pears, and tomato catsup.

Produce and Sales.

The total sales from our commercial projects for the year 1924 -25 will amount to approximately $9,000. This is a most encouraging showing as our Nanyuan project was conducted at a deficit owing to nearly a total loss of the years crop. This was due to the heavy floods of last summer.

A large increase was made this year by the Horticultural Gardens at Kuei Chia Chang. We were not able to keep up with demand for fresh lettuce produced under hygienic conditions. Four large contracts for landscape gardening were handled amounting to about $2,000. Our business for 1924 - 25 shows a gain of thirteen hundred percent over that of 1922-23.

We now have the following crops under cultivation.

Vegetable variety tests, seed selection etc.	28 mou
Vegetable gardens	43 "
Winter wheat	288 "
Beans	134 "
Cotton	19 "
Sorghum	322 "
Millet	301 "
White corn	141 "
Yellow corn	40 "
Peanuts	12 "
Sweet potatoes	12 "
Mangels	2 "
Sudan grass	1 "
Rice (water land)	16 "
Rice (Dry land)	16 "
Onions	12 "
Sesamum	12 "

The Agronomy experiments previously begun the Department have been continued. These fall into three main projects: (1) Selection of soybeans, for table and food (2) Winter wheat and (3) Ear to Row Selection of Corn.

Soy Beans. In 1924 a large number of different varieties of soy beans were brought from Manchuria and planted and harvested at our Haitien Farm. The crop from each variety was carefully examined for qualities of stalk pod and seed, and the beans threshed out. Before planting, this spring, the data was carefully worked over and the varieties divided in two classes according to whether their record for the past season showed their superiority for Fodder or Table food.

This fall it is intended also to secure oil analysis for the various successful varieties, and add a third classification to our selection experiment.

Winter Wheat. Owing to the fact that the customary dry spring makes diffecult the germination and satisfactory growth of spring wheat here, Winter wheat is the main early crop in this section. Work has been done on this in previous years by the Department and last fall selection was further carried on. The plots came up well although the date of planting was late. Now several strains from original high quality heads are neering harvest and also a plot of mass selection shows good promise. It is intended this year to again begin selection with high grade heads. Also winter wheat was sent us from Kaifeng and although this did not do much in the winter owing to late plantingyet the favorable weather has given quite a good stand at present writing. Selection from this will be done this Summer. This year is the third for selection work on Wheat. The Experiment is on Chinese Red Wheat.

Some Northern spring wheat has been imported from America, and next year experiments will be conducted to determine the relative merits of the high yielding spring wheats and the winter wheat, for Chihli Province.

Corn. This year we harvested the first results from our "Ear to Row" corn Experiment, and planted the best original half-ears in special plots for obtaining seed. The work has been done with Chine e yellow, Yellow Dent and Italian White. The results in Italian White were especially successful in point of yield end quality. In each case the five best families have been selected after careful examination and the remaining half of the parent ears planted. In the case of the Italian White classes A and B. were formed on account of the number of original ears which showed qualities recommending continued plantings. Throughout the experiment a number of original ears have produced progeny, which indicate promise of improved strains.

The Use of Commercial Fertilizers.

An extensive series of experiments is being conducted on the following crops, Winter wheat, corn, kaolinag, millet, soybeans, cotton, sweet potatoes, peanuts, onions, cabbage and rice.

The main fertilizer used is Ammonuim Sulphate but Super phasphate and Potassium sulphate and Chinese manure are also being employed for the purpose of experimenting with "mixed and complete" fertilizers and for arriving at comparisions.

The reader will appreciate the size of this series of experiments when he learns that it comprises 485 plots of $\frac{1}{4}$ of a mou each. A large amount of labor and supervision is involved as careful weights, measures, and growth reports must be made on each individual plot.

The chemical fertilizers for use in these experiments was very generoulsy dovated by the Bruner Mond Co.

Plant Introduction and Variety Selection.

A large number of varieties of grains and field crops have been planted in test plots in order to determine adaptability to Chihli and variety differences and preferences under local conditions. Seeds have been received from the Soho Experimental Station of the Chinese Eastern Railway, and from Hankow District and also from American and Canada.

Among the crops which are being tested in this way are Sudan grass, rape, corn, flax, millet and kaoliang.

As soon as our plant Breeding becomes established, a seed business in these grain and field crop will be begun which will be conducted along with the Horticultural Seed Business.

Horticulture.

Hot Beds. In the fall of 1924 three hotbeds were built, one of bricks insulated construction, one foreign style banked with manure and one of Chinese mud construction. A start was made on the Winter forcing of lettuce which to date has shown (1) the practicability of producing lettuce in Peking during the winter months in hotbeds, (2) the profitableness of the undertaking (3) the adaptability of the cheaper mud construction with glass sash for winter forcing.

Next year it is planned to continue the experiment and obtain detailed evidence on the operation of hotbeds throughout the winter season.

Vegetable Variety Tests.

Variety tests are being conducted on imported seed of pumpkin, squash, water-melon, muskmelon, cucumbers, and American pole beans.

Propagation Work.

Through the Cooperation of Mr. P. H. Dorsett of the Bureau of Plant Industry of the United States Department of Agriculture and friends in Penticton, Canada several hundred scion stocks were obtained for propagation purposes. These included approximately a hundred varieties of Chinese apples, pears, peaches, apricots, cherries and crab-apples and commercial varieties of American apples and pears.

Test Orchard.

This spring was the beginning of the Department's orchard. The aim is to test out foreign and Chinese varieties of fruits and to gain knowledge which will form the basis of permanent plantings in the Experimental Orchard and for recommandations for plantings in North China. In all about 125 trees have been planted this spring and about 90% are thriving in spite of the fact that many had over a 4,000 mile journey from Vancouver, Canada, among the imported varieties are McIntosh, Delicious, Winesap, Gravenstein, Jona than and Wealthy apples, Bartlet and Flemish Beauty Pears, Hyslop Crab-apple, Elberta Peach, Bing, Lambert and Morello Cherry and, also varieties of Apricots and Plums. In addition to this large assortment of leading American varieties many trees were brought in from Chefoo, Shantung, and Antung Manchuria, most of these being foreign trees which have already been acclimated to North China. The grafted trees of many Chinese varieties have been planted in Haitien and a large number are growing satisfactoryily. These trees represent the best varieties grown in Chihli Province. Also wild apples pears and peaches have been planted for budding over this summer and fall. Seedling trees both from American and the Western Hills district have been planted. A start has also been made with plantings of Jujube, Walnut, Chestnut, and persimmon trees, apple and pear seedlings are also being raised. Also black dates are being propagated for future workingeover to persimmons. A beginning has been made on Small fruits. Raspberries have been imported from Canada, and also brought in from Antung. Also introduced red, white and black currants have become established and will be progagated. It is felt there is a large field for the culture of small fruits in North China.

Animal Husbandry.

Poultry. Selection work is being conducted on three breeds of native Chinese poultry to determine their value as egg producers and to so develop them that they may breed true to type.

Animal Experimentation. It is planned to develop breeding experiments with pruebred sires and native dams with the view of increasing the milk, meat and wool production of the native stock. Feeding experiments will also be carried on to determine the most economical use of the common feeds.

Extension Work and Surveys. A large number of inquiries have been answered from Chinese, missionaries and Business men concerning various agricultural problems. Mr. Chamberlain made one trip with Mr. Dorsett through some of the walnut areas in the Changli district and Mr. Etter accompanied the Dorsett party on inspection trips to Nanknow, the Ming Tombs area, Fa Hua Ssu (Silver Mountain) and Fengtai. Scion wood was collected and plants and seeds secured for experimental purposes, and a survey was made of the leading varieties of Chinese fruits in the vicinity of Peking.

At Easter time Mr. Etter made a trip to Silver Mountain with a group of agricultural students and a fruning demonstration was given on apple trees at the farm of Mr. Hoh at Tai Ping Chuang and on apricot and pear trees at the Fa Hua Temple.

During the coming year we are planning on establishing extension demonstration work on several fruit centers near Peking and to show to growers on their own property the value of pruning, spraying and thinning.

Mr. Eubank gave a series of talks on agriculture to the students at the Peking Theoligical School in the Methodist Mission.

Plans for the Future.

1. The extensive development of extension work as soon as funds can be secured.

2. In addition to the experimental work already outlined we expect to establish during the coming year:

a/ The testing of various cover crops for use in Orchard culture. Alfalfa, Vetch and various Clovers will be tried out.

b/ The propagation and production of Persimmons.

c/ The hothouse production of carnations and sweet peas for winter cutting.

d/ The improvement of Chinese garden vegetables by selection and breeding.

e/ A survey of the district in the picking, storing, distributing and in general the proper merchandising of fruits with a view to improving the economic welfare of the fruit grower.

f/ The development of a system of hog pasturage suitable to North China conditions.

g/ Plant breeding and selection work in the stable Chinese grains as Kaoliang and millet.

3. The establishment of a commercial nursery. We have already formed the nucleus of a nursery etc.

4. Seed Growing. A start has been made this year on the establishing of a seed business. Leading commercial varieties of vegetable seeds have been imported from America and are now being grown with a view to variety selection for adaptability to Chinese conditions and subsequent propaga-

tion for seed. Also a beginning has been made in the Floriculture work and many varieties of Flower and Shrub seeds have been started with a view to establishing a seed business. Present indications are that the vegetable introductions will prove highly satisfactory. In view of many requests for vegetable and flower seeds this Branch of our work will be pushed ahead as rapidly as possible.

5. A general survey of the area within five miles of Yenching University to determine the most favorable opening for agricultural extension work.

6. The establishment of a commercial dairy and the erection of a cattle shed, small creamery building, and two silos.

7. The establishment of a dairy association among the Peking dairymen, to gain their confidence and good will, interest the owners in better animals and more sanitary practices in milk production, and to arrange for the breeding of native cattle with purebred sires.

8. To co-operate with Washington (U.S.A.) State Holstein Breeders Association in placing a carload of purebred dairy cattle among the Peking dairymen.

9. To co-operate with the Yenching School of Theology in sending lecturers on agricultural topics with their deputation teams when they go out to work in the country districts.

Publications.

Presume of other work has prevented the staff from offering many contributions along this line.

"Attending Yenching's Livestock from St. Louis to Peking by Bransford Eubank has just been received from the printers. The following monographs are in preparation.

" The production and distribution of the "English" walnut (Juglands Regia) in North China by W. B. Chamberlain.

" A Dairy Survey of Peking by W. B. Chamberlain.

Acknowledgments.

In addition to those already made we desire to add the following:

One single salary is being furnished for Horticulture by Mrs. Bonnell an interested friend in American.

A ford Tractor with plow, harrows, grain drill and binder has been presented to the department by Mr. Henry Ford.

The California Spray Chemical Co. has provided us with 300 gold dollars worth of spray materials. The same to be sold and the proceeds used as scholarships for short course students. The scholarships to be known as the "Wilck Scholarships".

We are indebted to Dr. Gibbs of the College of Agriculture of Nanking University for his co-operation in assisting us in animal disease control.

We also wish to acknowledge our appreciation of the kindness shown

as by the Peking Union Medical College in allowing us the use of their bacteriology laboratory in connection with our dairy survey work and to Dr. Ten Broeck for the Autopsies in hog Cholera which he performed.

We are extremely grateful to the Agricultural Advisory Committee of the Board of Managers for all the good work which they have done for us.

Immediate needs of the Department.

Buildings:
- Cattle shed.
- Creamery building.
- Sheep sheds.
- Hog house.
- Poultry houses.
- Homes for farm laborers.
- Granary
- Residences for the agricultural staff.
- Green houses for plant propagation at Haitien.

Grounds.
- Land fills to level off certain areas.
- Walls and fencing.

Machinery.
- Farm machinery.
- Machinery for the development of the Cannery.

Animals.
- Native sheep, hogs and cattle for experimental work in cross breeding, purebred, Berkshire and Tamworth ~~Holstein~~
- Bull and heifer ~~calf~~. (Holstein) (Boars)
- Two Ayrshire heifers.
- Additional breeds of poultry.
- Purebred Jack for mule breeding.

Office.
- Furniture and filing equipment for the keeping of records.
- Stenographic and clerical assistance.

Library.
- Reference books.

Instructional Equipment.
- Owing to the fact that good teaching illustrations of farm animals are not to be seen in North China, we should aim to build up a large collection of lantern slides of ideal types and breeds.

Agricultural Extension.
- Funds for extension work.
- A motion picture camera and projection apparatus would be of great benefit to us for the purpose of preparing films for use in the country villages to give instruction in improved methods etc.

Commercial Projects.
- The immediate development of a nursery and seed business.
- Further development of landscape projects.

Staff.

In order that we may be of assistance to our Co-operating missions, the rural village, and the indigenous Chinese church we must definitely plan to enlarge our staff and increase our facilities. The rural problem is China's problem and Yenching must not dodge her responsibilities.

Resolutions favoring the greater development of the department have been presented to the University by the Chihli, Shansi Education Association and by the North China Agricultural Association.

We must find a way in the near future for the following very essent[ial] additions to our staff. We need men for the following:

1. Agronomy.
2. Animal Disease Control.
3. Village Industries.
4. Farm Management and Research in the actual economic condition of the agricultural population.
5. Agricultural Education.

Respectfully submitted.

(Signed) Walter H. Chamberlain.

Head of the Department.

Yenching University,
June 12, 1925.

The Department of Agriculture

Yenching University

PEKING, CHINA.

Telephones:
City Gardens E. O. 4542.
General Office W. O. 41oo.

HAI-TIEN, PEKING WEST.

March 19, 1926.

Dr. Eric North,
150, Fifth Avenue,
New York City,
U. S. A.

My dear Dr. North:-

In reply to your cablegram requesting more information concerning the dairy, I should try to put the matter before you as clearly as we, who have been most intimately concerned with the project are able. We have talked, planned and advertised so much about dairy within last year that it is hard for us to realize anyone who has any connection with the University is not pretty well acquainted with the situation.

At present we have one model brick dairy barn with modern furnishings, ~~there are~~ rooms for 26 cows; ~~and~~ an adjoining building 34x34 which will later form the last wing of our intended final dairy structure. Besides these two buildings we have the foundations laid for a 20x92 building consisting of the beef cattle, bull and goat sheds, as well as the foundations for the necessary laborers' quarters. We have at present in the dairy barn the four imported milk cows all bred, ~~of~~ one ~~in~~ milking, besides a couple of Russian cows purchased from Dr. Keeler of Shanhaikuan. The cattle are all in good shape and have all been in near perfect health since their arrival a year ago. At present the cow giving milk although not a very good producer is easily paying her keep and well over a dollar a day Mex. even at this advanced ~~dent~~ stage of lactation. The Russian cows were milking at the time we bought them and the income from the three afforded profits sufficient enough to convince us of the practicality of the plan that we now have on the way.

The present situation in China, however, is very bad as you no doubt know. The railways are in the hands of the military, which means that freight transportation upon the few which are running is practically impossible. The fact is that, we, the Animal Husbandry Department, are bound hand and foot by the railway situation . Today the situation looks worse than ever before. We are heartily in hopes that conditions will improve and we may be able to proceed with our plans.

Except for the above mentioned difficulties the possibilities for a commercial dairy in Peking are well now without limit. For the next four or 5 years we could dispose of any amount of milk that we might produce in Peking alone at a handsome profit, which means that a dairy such as we are planning would supply us with the funds for further additions to the staff, practical laboratory for student demonstrations, milk for the faculty and clean milk for the city of Peking, not to mention of the benefit that would arise from our setting of high standard for city market milk. Feed, under normal conditions is plentiful, excellent and varied, although the prices are higher than gold currency in America. Cheaper laber, demand for milk and high price of stable manure will practically over come this disadvantage. Medium and high producing Russian cows are to be found in plentiful numbers and for reasonable prices in Manchuria.

Last year with no more than a number of circular letters we sold in Peking $17,000.00 worth of bonds bearing 8 percent. insterest per annum, which we expect to pay off at the date of maturity, five years from now. Our expenses now and then are calculated as to include several thousand dollars worth of additional dairy buildings. Besides the present buildings and those mentioned, we are about to erect two silos in order that we may be able to control or overcome the constant shortage of roughage. We will plant enough corn on our own or rented land to fill these silos late in the Summer. We expect to order our equipments for the milk room and dairy barn as soon as the dairy man has arrived and will look after the matter. In case the railroads are open the dairy man and I will start to Harbin to buy additional milk cows. We shall expect him to start from the States sometime in July.

As to the dairyman himself, because of the financial situation we would prfer that he be unmarried. He will need considerable executive ability, he should be a good business manager and because of the variety of people with whom he should be associated, He should have a pleasant personality, also we feel that he should be primarily interested in the advancement of Christianity in China as well as consecration towards the common task, because it takes a great deal more of the ordinary desire for service and self-denial to keep a man cheerfully and diligently on the job under such conditions as we have here.

We hope that you may have an opportunity to interview these candidates in person and we know nothing concerning them other than the letters of introduction, copies of which have been sent to you, except one man - a Mr. Williamson of Melvin, Iowa, whom I met in Ames, Iowa, when I was on my Western trip in the Spring of 1924. We are very much concerned about this appointment and depend upon you to get us a suitable man.

We would also request your office to please let us know as soon as the appointment has been made. I hope that I have not omitted anything that you desired.

Sincerely yours,

Bransford Eubank

Bransford Eubank,
Associate Acting Head.

(China Christian Educational Association Educational Reprint No. 3)

AGRICULTURE IN THE PROGRAM OF CHRISTIAN EDUCATION

AN OPEN LETTER*

My dear Mr. .....:

Your letter of May 5th has interested me tremendously and it is refreshing to find someone in the homeland who is definitely interested in securing the wherewithal to promote Christian agricultural education in China.

You ask me how I would start off a Department of Agriculture in.....University with say $500,000 Gold to go on. I am in no position to answer your question because I heartily disapprove of a department of agriculture being attempted under the auspices and circumstances you propose. The longer I am in China, the closer I get to the situation and the more deeply I study modern currents in China that are bound to influence profoundly the whole missionary system of education, the more convinced I am that one college of agriculture and forestry is quite sufficient for all China. What is needed, and needed more than any other educational undertaking in China at the present time, is a system of rural training centers for preachers and teachers with well developed experiment stations working along practical lines and with extension services that would bring to the agricultural population the means for a more "abundant life." The Christian higher educational system in China has under present conditions no more business with three agricultural colleges, and now this fourth one proposed by yourself, than it has for the twenty odd Christian colleges and universities. What is needed is four or five universities with outstanding merits and one strong, wisely developed college of agriculture. By suggesting one college of agriculture, I do not mean to limit Christian agricultural work, rather the opposite; but I am of the very, very strong opinion that interests in agricultural education on the part of the missionary body ought

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*This letter was written originally in answer to a request from a representative of one of the larger Christian colleges for advice as to the development of plans for a department of agriculture. Dean Reisner's viewpoint, based on years of study of the whole problem of agriculture in the Christian movement in China, seems so important that we have persuaded him to permit its publication.—EDITOR.

to be localized (1) in training centers for rural workers, with experiment stations and extension services connected with them; (2) in a series of secondary schools where agriculture should be taught either as a means of self-support or as a vocation; and then below that, (3) our primary schools that are in the country ought to be more strictly ruralized. This last point, you will recall, was very thoroughly discussed at the China Christian Educational Association Agricultural Committee meeting held here in Nanking in February 1924, which you attended.

Now because I am opposed to the development of an agricultural department of college grade in the.....University, do not assume, please, that I am opposed to its getting under an agricultural program. Your constituency is largely rural and yet the atmosphere of the University and all the educational opportunities offered by the institution lead the boys away from the country and into white-collared jobs of the larger social and economic groups. What you have in mind, I feel sure, in proposing a college department of agriculture is that the University may contribute to the life of the rural people, and you want it to be an expression, through education, of the spirit of Christianity. You are absolutely correct in this, but I feel very, very strongly that the method of approach in the attempt to bring help to the rural people through a department of agriculture of college grade is unwise and will prove a relatively fruitless move.

If you will just think for a moment of your situation at ....., of the whole province, of local situations, of the mission stations, of the sources of the student body, of the rural character of the work and of the wonderful Christian school system that has been built up, you will be impressed by this fact, that our education is not lending itself to the greatest needs of the social and economic life of that part of China. The place to begin new agricultural work, I am convinced, is in secondary centers, where the Christian organization is preparing teachers and preachers to go out into the villages to evangelize every aspect of rural life.

Through talking with Dr. .....and others from..... ....., a number of whom have recently stopped off here at Nanking to visit our work, I know you have a mighty fine department of education in the University. I would like to see some agricultural work developed there, but only as it would relate directly to the training and larger usefulness of the students of the department of education. Then for the rest of your agricultural work, I would go directly to secondary schools where there are opportunities for training men to be of direct

service to country people. When are we going to get away from the idea that you don't educate a man unless the education leads to a life of relative comfort and away from real hard work, such as is necessary if any fundamental progress is to be made in social, economic and religious life of the mass of people who are farmers and who will be farmers for many generations to come? You see it, although your hands are practically tied by previous developments and commitments, that our greatest evangelistic and educational opportunity in China is in training men who will be able to bring redemption to the rural masses of China.

In order that I may be clearly understood I would like to repeat that I see no objection whatsoever to.....University undertaking some agricultural work, but I think it would be the height of folly to project such work on the policy of building up a college department of agriculture. Rather let whatever agricultural work is attempted be done in connection with the department of education. Of course, I am assuming that the graduates of your department of education usually go back into the country. If they don't, then I would want to withdraw or at least reconsider this suggestion.

Another suggestion — and it is only a suggestion, because I am not in sufficiently intimate touch with conditions in that part of China and all the factors that are concerned,—is the development of agriculture as an extension part of the University, possibly with a small group of experts at the University and with a related system of rural schools for rural training, and secondary schools of agriculture, which would look forward to ruralizing the rural school system and to developing the schools and churches as centers of helpful extension work directly among the farmers in the community.

I have written you quite frankly because I feel the situation calls only for frankness. I am not worried about any influence that the development of a college or department of agriculture at . . . . University might have here on our work. But I am fed up on the lack of Christian statesmanship, as expressed in the present Christian educational development in China. Christian education in China is top-heavy and it is not meeting the educational needs of the great mass of those who are enrolled in our system of schools nor the needs of the social and economic groups out of which our students come; nor is it meeting, except in an occassional hit and miss fashion, the needs of the struggling infant Christian church. Of course I realize that conditions under which the present higher institution here developed have changed rapidly, are now changing with almost bewildering

rapidity, and that much necessity has been responsible for many of our educational patterns. Nor am I unmindful of the wonderful contributions which our Christian colleges and universities have made and are making. I do not wish to criticize but rather to plead that from now on the needs of the predominant social and economic groups, which are the rural groups, and the needs of the rural church, be given more earnest thought in future Christian educational activities and adventures.

If I can be of any service to you in working out a system of agricultural education and rural extension service for your part of China as a whole, please let me know what it is and I shall do all I can, but don't ask me to help develop plans for another college of agriculture or department of agriculture of college grade in connection with the present Christian educational system, until we have developed in China at least one college that is adequately staffed, equipped and financed, *of which as yet there are none.* We are doing our best here at Nanking to deserve the confidence of the Christian movement in China so that they will take us and make us what we ought to be, but our needs are many and the interest on the part of the rank and file of missionaries and Christian leaders is still a negligible quantity. One might have thought that the experience of the last thirty years in arts education, in medical education, in theological education, and in the development of normal schools would have given us a background on which to base a wise policy for the development of education in agriculture. It hasn't done anything of the kind and sometimes I feel that the situation is absolutely hopeless. I hope it isn't in your case, and that you will withold your plans for collegiate agricultural development until some wiser mode of procedure for the use of whatever funds may become available can be worked out.

With kind regards and best wishes, and assuring you of my interest and willingness to help wherever possible, I am

Yours very sincerely,

JOHN H. REISNER.

June 1, 1926,
University of Nanking.

C O P Y

Shanghai,
July 21/26.

My dear Eric:

I have just been through the meeting of the Council of Higher Education the business of which was the matter of Coordinated Financial Campaign as brough to their attention by your communications from the N. Y. Permanent Committee. You will get full details from Cressy the Secretary. The meeting on the whole showed a good spirit and a readiness to face the issues, although this was motivated in large part by the glitter of large gifts supposed to be available in consequence. There is to be another searching collection of relevant data which will take a year or so and add little that is essential. But the appointment of a strong committee of Chinese chiefly from within our institutions may produce results. They are to give their opinion in the light of the data to be secured. I am not very sanguine and am indifferent as far as our institution is concerned, while tremendously interested from the standpoint of the maximum efficiency of Christian Higher Education.

There is, however, one feature of ours which I am reluctantly convinced is not fitting in to any ideal scheme of correlation, nor being conducted on a basis that ensures much growth and that is our Dept. of Agriculture. As it is, we are holding our own, with a few students working faithfully, with an excellent staff and an industrious thrifty organization. The University has quite an asset in its publicity value and the dairy, vegetable, landscaping and other products. But we are as yet doing virtually nothing for the peasantry of our section nor for the rural church. The emphasis is primarily neither religious nor educational but economic. I question whether there is really any need for more than one centre of college crade and Nanking is obviously that centre, whereas a school in North China working in connection with Nanking and serving as an experiment station and feeder ought to fit in with a rural church program that would include research and extension. Chamberlain would not endorse any such correlation, nor would he be endorsed by the Nanking men. He realizes that we should have a much larger endowment and equipment if we are to carry on in any significant way, and is hoping to accomplish much to this end in America. On the other hand, Chamberlain does not seem to many observers to possess the qualities for heading such an undertaking. Men as unlike as Roger Greene and Joseph Bailie have within the past few weeks expressed themselves to me quite plainly, and Eubank and Etter feel the same way, especially the latter. Meanwhile there seems to be a good chance of our getting a substantial grant from the British Boxer Indemnity Fund, though I should be afraid to apply unless we at least had plans for putting in some one else. Chamberlain, however, has his strong points patience and persistence under long drawn out discouragements, tireless energy, promotional efficiency, devotion to his task. He claims that his religious purpose shows itself in his deeds rather than in pious exercises. I wish you would study him while he is in the States, and get Galt's and perhaps Corbett's views. The former is unqualified in thinking he should be dropped. My own feeling is that we are not only under some little obligation to him but that he has his own quite useful place, perhaps in some such capacity as secretary. I have had one good talk with Reisner and am returning by rail(the Blue Express has timidly begun to run again three times a week)partly to see him and Bowen in Nanking for further conference. Of course if any discontinuance or readjustment came in as our part in a general reorganization of the Christian colleges it would save face. I wish there were a strong Chinese to put at the head if the Department is to continue as of college grade. I am merely giving you my thinking to date on an acute problem. Be very careful about sharing it with any one else, or letting Chamberlain get a hint of it until something more concrete takes shape.

It may be that an experiment station, Secondary School etc. for North China, under the aegis of Yenching while related definitely to Nanking and sending students there for college work would at once make it easier to absorb the various lower grade efforts of North China Missions and cause less dislocation and objection than if we were merely yielded up to the Nanking program, and would get and give all the benefits in the latter course.

Yours etc.,

(Signed) J. L. S.

July 26, 1926

Jointly, to the
China National Christian Council, and,
China Christian Educational Association,
Shanghai, China.

Gentlemen:

After mutual consultation, the officers of Yenching University and the University of Nanking hereby unite in a request that a conference on Agricultural Education and Rural Extension Services be called by you during the coming autumn, preferably in October or early November.

The desire for such a conference has come from a growing realization of the needs of the Rural Church and its claims upon Christian educational and evangelistic agencies.

The recent meeting of the Council of Higher Education was chiefly occupied with the problem of correlating all Christian Higher Education so as to secure its maximum effectiveness for the whole Christian movement. To this end it was decided to study carefully what forms of readjustment in the program of each institution would contribute toward this result; and especially how vocational courses could be planned so as to avoid all needless duplication.

The awakening interest in the problems of the rural church and the desire of all concerned that agricultural education and rural extension services should be as closely related as possible to country evangelistic work would seem to justify the time and expense in the proposed conference, the outcome of which ought also to be of real value in its bearing on the general effort to reorganize Christian Higher Education.

We suggest that the arrangements for the conferance, including program, be placed in the hands of a joint Chinese-foreign committee, with the expectation that this committee would work in consultation with the Rural Church Committee of the N. C. C. and the Committee on Agricultural work of the C.C. E. A. and would secure as representative an attendance as conditions permit.

(Signed) Yenching University
for the University of Nanking.

燕京大學
YENCHING UNIVERSITY

(Incorporated in 1889 as Peking University)

BULLETIN

Department of Agriculture
Two Year Short Course on Agriculture

Volume VIII - Number 7
Peking, China
July, 1926

Yenching University Bulletins

The regular Bulletins of the University are issued at stated times during the year. Other special Bulletins are issued from time to time as the need arises. Copies are sent free every year to a number of Schools and Colleges in China where they may be consulted by all interested students. Applications for Bulletins should be made to the Registrar's Office of the College or School concerned. In applying kindly state the Volume and number of the Bulletin desired, and whether the Chinese or English edition is wanted. It is to be noted that most Bulletins are prospective in that they refer to the academic year following the date of issue. The Bulletins issued during the course of a year are given a Volume number. Bulletins issued during the year 1925-26 are given the Volume Number VIII, which indicates the eighth year of the University since its reorganization was completed in 1918-19.

Yenching University General Catalogue	Number 10	Out of print
School of Religion Catalogue	Number 12	Postage
Colleges of Arts and Sciences Bulletin of Information	Number 15	Postage
Colleges of Arts and Sciences Announcement of Courses	Number 21	Fifteen cents
Yenching University Directory of Faculty and Students	Number 25	Fifteen cents
College of Arts and Sciences for Men Guidebook for Students	Number 30	Fifteen cents

Special Departmental Bulletins will be supplied by the Registrar upon receipt of postage.

YENCHING UNIVERSITY

J. L. Stuart.....President

Wu Lai-chuan.....Vice-President

Mrs. M. G. Frame.....Dean, College of Arts and Sciences for Women

William Hung.....Dean, Colleges of Arts and Sciences for Men

T. H. Ch'en.....Associate Dean, College of Arts and Sciences for Men

———:o:———

DEPARTMENT OF AGRICULTURE

W. E. Chamberlain.....Head of Department

H. C. Etter, B. Eubank.....Associate Acting Heads of Department

H. H. Lew.....Instructor

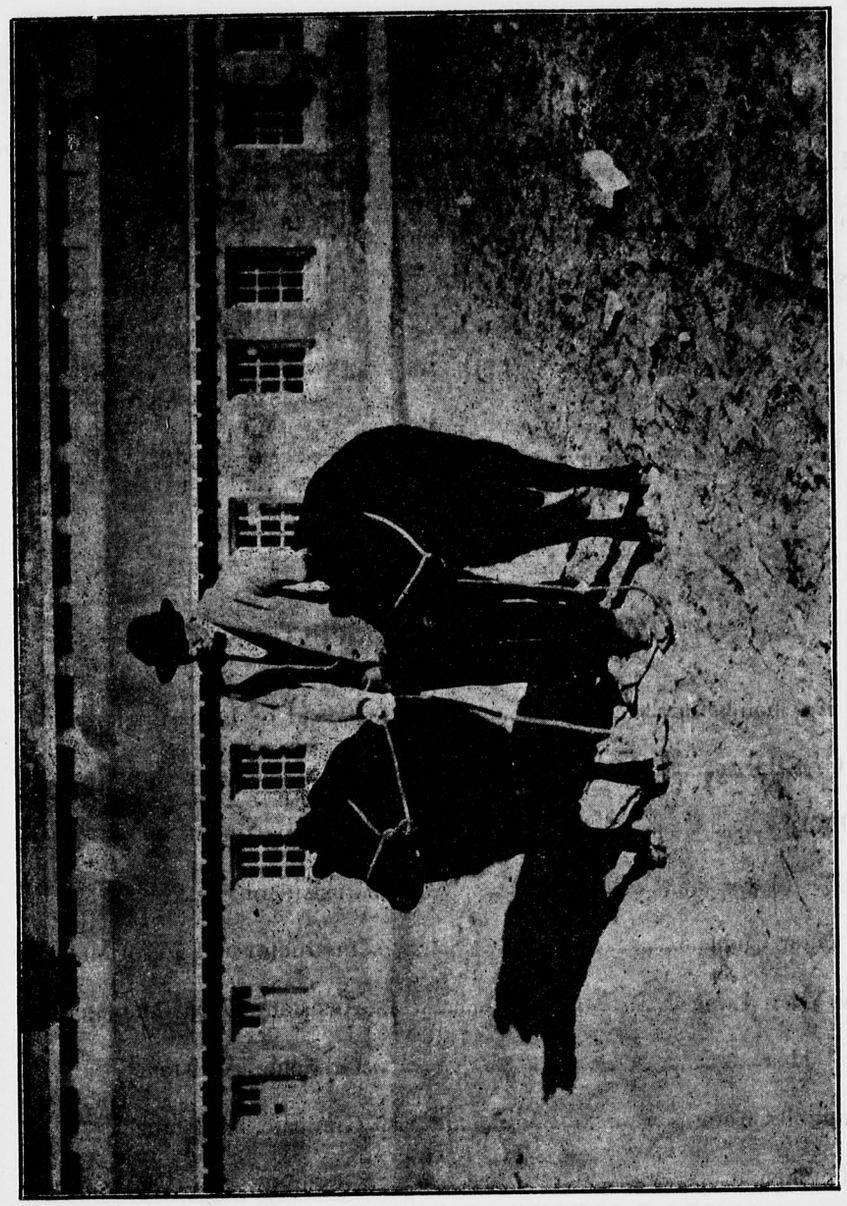
Yü Chen Chou.....Instructor and Farm Manager

Lew Yuen Lung.....Assistant Farm Manager

Fan I Hua.....Graduate Assistant

Chiang I Ch'ang.....Graduate Assistant

S. T. Shen.....Graduate Assistant



A pair of Aberdeen-Angus cattle and a part of our dairy barn

部一之坊奶牛及牛牝二之种本

YENCHING UNIVERSITY
DEPARTMENT OF AGRICULTURE

———:o:———

Two Year Agriculture Short Court in Chinese

In response to the many demands for teachers of agriculture in Primary and Middle Schools, for experiment station assistants and farm managers, the Department of Agriculture is opening this year a new Agriculture Short Course to be taught in Chinese.

The Department feels that this will fill a long felt need in North China for training agricultural leaders especially equipped for rural work. It is an axiom that a "new" agriculture is a fundamental way of raising the standard of living of rural China, which constitutes about 85 per cent of the Chinese people. The Department in offering the new Short Course is definitely aiming to contribute in furnishing the necessary leaders qualified as practical modern agriculturists.

In order to make the course available to as many students as possible and also with a view to directing the graduates into agricultural work in rural districts, instruction in the new Two Year Short Course will be given in Chinese. Another feature of importance is that the Course will cover two years. This provides time for considerable training in practical agriculture; and also enables each student to spend at least one summer engaged in farm practice on one of the Department's Experimental Stations.

Upon the successful completion of the Course a Certificate in Agriculture will be granted by Yenching University.

Entrance Requirements and Registration. A minimum of five years of Middle School successfully completed is required for entrance. The applicant must also have a good scholastic standing and capacity for agricultural studies and pass the special entrance tests which the Department may see fit to give him. Application must be made to the Chairman, Entrance Committee, by September 1, 1926. Application forms may be secured upon request from the Registrar's office or from the Department of Agriculture, Yenching University, Peking West.

Fees. The fees are $60.00 a season, or $30.00 per semester, the fees to be paid at the first of each semester. The incidental fees also required by the University from undergraduate students must also be paid by the Agriculture Short Course Students.

Status of Students. The students are recognized as a part of the Yenching student body and are entitled to the same privileges as undergraduate students except residence in the University dormitories. Vocational hours of work done in the Short Course, however, cannot

be credited on work for Degree; students cannot transfer from the Short Course to the Full Course in Agriculture without first satisfying all the entrance and calendar requirements of the College of Arts and Science for Men.

Scholarships. Three scholarships of $60.00 each are available for students of the first year. These awards will be made with consideration for both the classroom and practical work of the student and will be paid in two instalments of $30.00 each payable at the first of each semester during the student's second year.

Living Accommodation and Costs. Living quarters will be provided by the Department of Agriculture. Board and lodging will be approximately $10.00 per month.

Staff. The regular teaching staff of the Department of Agriculture will also assist with the instruction in the Short Course; these are H. C. Etter (Horticulturist), B. Eubank (Animal Husbandry) and Dr. H. H. Lew (Agronomist). There will be the following additional teachers for the Short Course:

Mr. Yü Chen-chou (Farm Management), Mr. S. T. Shen (Agronomy), Messrs. Fan I Hua and Chiang I Ch'ang (Animal Husbandry, Dairying, Horticulture, Poultry Husbandry, Agriculture and Farm Mechanics), Mr. Lew Yün Lung (Farm Practice).

Courses. The following courses will be given during the session 1926-1927 in the first year.

First Year Short Course		Vocational Hours Fall Semester	Spring Semester
Course A-B	Soils	3 hours	3 hours
Course C	Small Grain Crops	3	-
Course G	Farm Animals	4	-
Course H	Feeds and Feeding	-	3
Course L	Fundamentals of Poultry Husbandary	-	4
Course N	Dairy Fundamentals	3	-
Course P	Principles of Horticulture	4	-
Course Q	Fruit Growing (A) Practical Pomology	-	3
Course S	Nursery Practice and Management	-	4
Course K	Farm Mechanics	3	3
Course V-V	Farm Practice	1	1
		21 hours	21

N.B. 1 laboratory period is reckoned as 1 vocational hour.

Description of Courses.

Courses A-B. Soils—Physics, Chemistry and Microbiology

A complete course of soils dealing with the origin, classification, physical, chemical, and biological properties and their relations to plant growth. Laboratory studies will deal with the methods of soil investigation to supplement the lectures. 2 lectures and 1 laboratory hour.

Required: 7 c

Course C. Small Grain Crops

A study of the important grain crops dealing with their origin, classification, adaptation, uses, distribution and methods of production. 2 lectures and 1 laboratory hour

Required: 7 c

Course G. Farm Animals

A study of the various breeds, types of animals that are accepted as representative of present day standards, the relation of type or conformation to production, training in the selection of superior animals. Supplementing the animals available at the school, there will be lantern slides and photographs of the best types of foreign lands. 3 lectures and 3 practicum hours.

Required: 7 c

Course H. Feeds and Feeding

The general principles of animal feeding, a study of feeding standards, the identification and composition of common grains and commercial feeds, a consideration of their comparative feeding value and conditions which affect their profitable use. The formulation of rations for all classes of farm animals is an important feature of this course. 3 lectures.

Required: 8 c

Course L. Fundamentals of Poultry Husbandry

This course considers breeds and breeding, selection of feed and feeding, housing, sanitation and diseases and selection of laying types. 3 lectures and 3 practicum hours.

Required: 7 or 8 c

Course N. Dairy Fundamentals

A study of the secretion, value and composition of milk, the value of milk and dairy products as food. Butter making, the testing of dairy products, and the care and handling of milk and cream, 2 lectures or recitations and 3 laboratory hours.

Required: 7 or 8 c

Course P. Principles of Horticulture

A study of the principles and practices of gardening as applied to the production of fruits and vegetables. The location and site for an orchard; varieties of fruits, planting methods. Brief instruction will be

given in vegetable forcing, floriculture, landscape gardening and fruit and vegetable by-products. 3 lectures and 3 laboratory hours.

Required: 7 c

Course Q. Fruit Growing—Practical Pomology

The care and management of orchard trees and small fruits. Systems of orchard culture, and orchard practices such as pruning, spraying and thinning. 2 lectures and 3 laboratory hours.

Required: 7 c

Course S. Nursery Practice and Management

A practical course in plant propagation, the principles governing the propagation and transplanting of trees, shrubs and herbaceous perennials and the methods practised in commercial nursery management. 3 lectures and 3 laboratory hours.

Required: 7 c

Course X. Farm Mechanics

Practice in the use and care of woodworking tools, making of farm devices, construction of small buildings. The working of hot and cold iron and steel, management of fire. The making of chains, hooks, rings and simple tools. The proportioning, mixing and placing of concrete, concrete forms, walls and foundations, blocks, posts, walks and surface finishing. 9 practicum hours.

Course V-V Farm Practice

Agricultural students are expected to be able to demonstrate in the field that which they have learned in the class room. All students must show a reasonable proficiency in all the essential general farm operations before they are entitled to receive a certificate. Students are expected to have completed a minimum of two months of actual farm experience before registering for the work of the second year. Summer farm practice is required of each student on one of the Department's Experiment Stations or in some other farm work approved by the Department. Four credits will be given towards the total requirements for a certificate.

We shall be glad to answer enquiries relative to the Two Year Course and discuss special questions arriving concerning prospective students for the course.

Further application forms may be obtained from the Registrar, Yenching University or from the Department of Agriculture, Yenching University, Peking West.

Yenching University,

THE DEPARTMENT OF AGRICULTURE.

Pruning Demonstration by Students

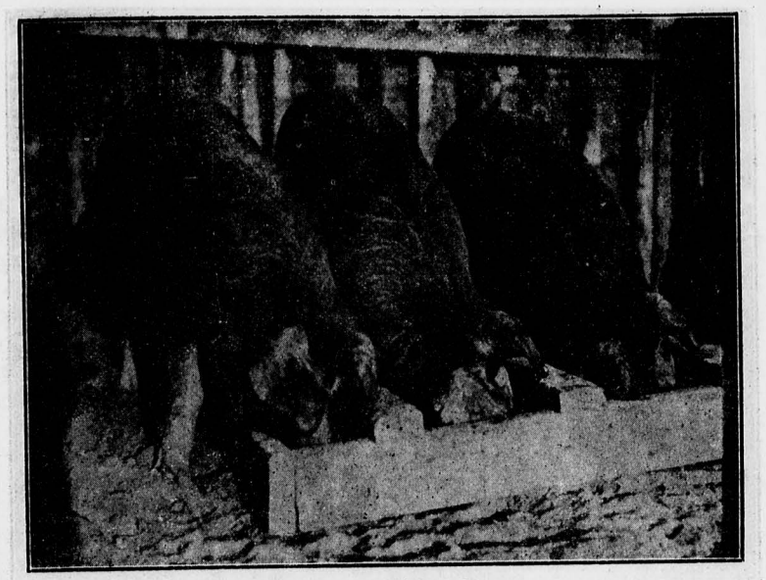
枝樹剪修員學科本

Mr. Etter and Students on Field Trip

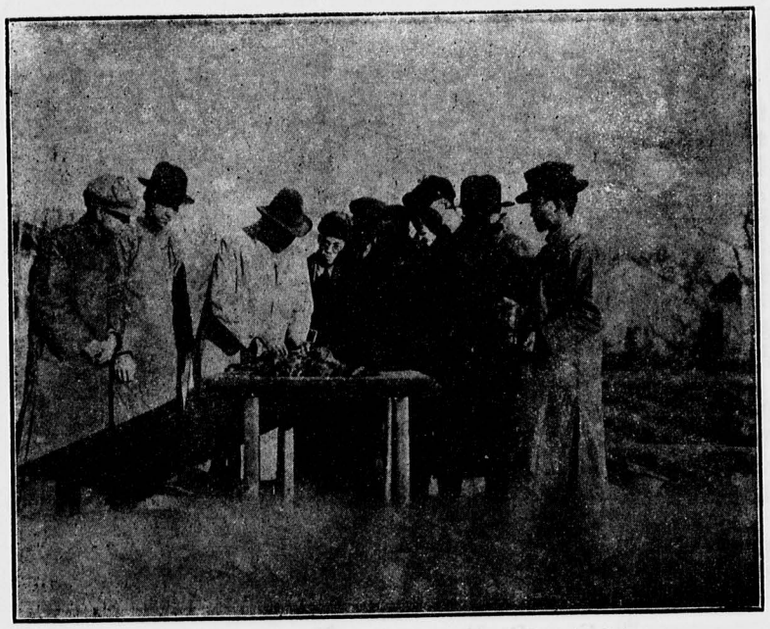
遊出員學與生先德艾

One of Our New Chicken Houses
本科新式鷄房

White Leghorn and White Minorker Chickens
本科之外洋鶏鶏



Trio Poland-China Sows
本科三隻牝猪



Classroom Demonstration by Mr. Chamberlain
錢伯林先生授課情形

燕京大學
農學系

速成科招生簡章

一九二六—一九二七

佈告第八卷第七號

一九二六—一九二七年學曆

秋季

八月三十日	投考報名截止
九月一日至四日	入學考試
九月十日至十二日	教職員會議
九月十一日	宿舍開放
九月十三日至十七日	註冊
九月十八日	開課式
九月二十日	上課
九月二十日	延候註冊付罰金
九月二十一日	中科節放假
十月三日	孔子聖誕放假
十月九日	更改功課截止
十月十日	國慶日放假
十月十五日	報告畢業論文題目
十二月一日	交畢業論文大綱
十二月二十四日至二十六日	耶穌聖誕放假

春季

一月一日	新年放假
一月二十日至二十六日	秋季考試
一月二十七日至二月十日	舊歷新年放假
二月十一日	上課
二月十五日	燈節放假
四月二日至五日	奉假
五月一日	交畢業論文
六月十一日至十七日	奉季考試
六月十八日	班日
六月十九日	訓言典禮
六月二十日	畢業典禮

燕京大學農學系速成科招生簡單

本大學農學系爲培養初中等學校之農學教員，與試驗場所之助手及田園經理等人才起見，於本年特開農學速成科，用中文教授。

本學系深覺此種辦法，在華北足以訓練農學的領袖，尤其是適宜鄉村工作。蓋『新的』農學乃提高中國多數人的鄉村生活程度之基本方法。本學系所以開辦此新的速成科者，其目的原在供給此項需要之領袖以成爲現代實習之農學專家。

又爲謀速成科利於各學生與引導卒業生在鄉村地方工作起見，本科功課全用中文教授，期限二年卒業。此蓋欲於實習農學得有充分時間之訓練，而又令每個學生在本學系試驗場上至少有一個夏天之實習。

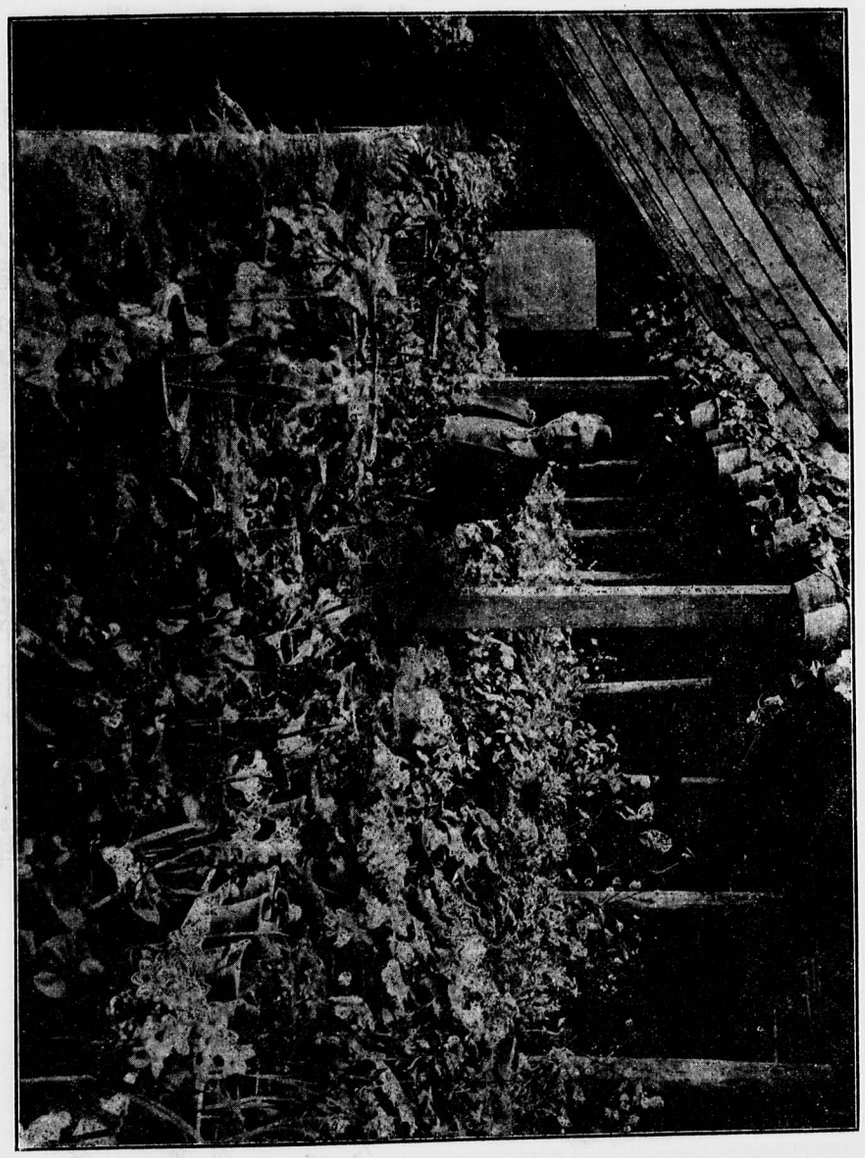
速成科功課習畢考試及格後由本大學發給農學系修業證書。

入學程度與註冊手續

本速成科入學至少有在中學讀畢五年課程之程度。入學者更須有良好之功課成績，與讀習農學功課之能力；於本學系所給予之特別入學試驗亦須及格。願入學者須於九月一日前與招考委員會接洽。入學願書可向京西大學註冊部或農學系索取。至關於速成科有何詢問，本學系亦願一一回答。

學費

速成科學生學費金年六十元，每學期三十元於每學期開學時繳納。又依照大學本科學生定規，亦



Interior of Greenhouse in our Peking Horticultural Gardens

容內藝園科本

須繳納賠償費。

學生待遇

速成科學生除不能在校舍寄宿外，與大學本科學生享受一切同等利益。所習功課之績點，不能算作擬得學位之學分。速成科學生非經過男校文理科之入學考試，不能轉入農學系爲正班生。

津貼

速成科專爲第一年之學生設有三個各六十元之津貼。此種津貼乃授與對於功課及實習工作成績俱佳之學生，於第二年分兩期發給，卽於每學期始發給三十元。

住處與費用

農學系專爲速成科學生預備住處，計食住兩項費用每月約共十元。

教員

農學系本有之教員兼授速成功課。除艾德先生 H. C. Etter（園藝專家）尤班克先生 Eubank（牧畜）劉和博士（作物專家）外，尚有以下專爲速成科添請之教員：于振周先生（農場管理）沈壽全先生（作物）范翊華姜彝長兩先生（牧畜　奶牛牧畜，園藝，家禽牧畜　養蜂，農場器械）劉雲龍先生農場實習。

功課

以下功課，於第一年卽一九二六至一九二七年教授。

功課		第一學期每週授課鐘點	第二學期每週授課鐘點
A—B	土壤	三小時	三小時
C	作物	三小時	
G	農田牲畜	四小時	
H	喂料與喂法		三小時
L	家禽牧畜之基礎		四小時
N	奶牛牧畜之基礎	三小時	
P	園藝之原理	四小時	
Q	水果種植—實用水果種植法		三小時
S	苗園之實習與管理		四小時
X	農田器械	三小時	三小時
V—V	農田實習	一小時	一小時
		共二十一小時	共二十一小時

注意每一次試驗鐘點作爲授課一小時

功課說明

功課A—B 土壤—物理，化學，微生物學

研究土壤之本原，等類，及其物理的，化學的，與生物學的性質；又研究其與栽種植物之關係。於試驗室內並研究考察土壤之方法，以補助教授之不及。講授二小時，試驗一小時。

必修課目：7C

功課C 作物

研究重要之穀類，與其本原，等類，適合，需用，及出產之分類與方法。講授二小時，試驗一小時。

必修課目：7C

功課G 農田牲畜

研究各種牲畜之分種，模樣，及其產育與模樣或形體之關係，而於如何選擇最良好之畜類，亦加以訓練。此外尚有幻影燈照畫片及外國模樣最優美之牲畜寫眞，以資補助。講授三小時 實習三小時。

必修課目：7C

功課H 喂料與喂法

研究飼畜之大概原理，標準；普通穀類及商業喂料之認識及成分。並考慮喂料之比較的價值，及各種狀態關係於其用處之善惡；而於飼餧各種農田牲畜的定量之表式，尤加注意。講授三小時。

必修課目：8C

功課L 家禽牧畜之基礎

注意生產，保養，喂料，喂法，棲塒，健康，疾病，及孵卵等等問題。講授三小時，實習三小時。

必修課目：7或8C

功課N　奶牛牧畜之基礎

研究泌液，牛乳之成分，與其食料之價值。牛油製造及乳酪料理等，亦加討論。講授二小時，試驗三小時。

必修課目：7或8C

功課P　園藝之原理

研究田園中種植水果或蔬菜之原理，實習；與果園之位置，水果之種類，栽植之方法等問題。講授三小時，試驗三小時。

必修課目：7C

功課Q　水果種植—實用水果種植法

果園樹木及小種果類之管理，與果園栽植之法則及實習，如修剪樹枝等。講授二小時，試驗三小時。

必修課目：7C

功課S　苗圃之實習與管理

實習樹木繁殖法。於管理樹木繁殖及移種法之原理，與商業上管理之方法，均加研究。講授三小時，試驗三小時。

必修課目：7C

功課X　農田器械

實習如何使用及保存木質之田具，創造農田設計與蓋築細小房舍及其他問題。

實習九小時

功課V—V　農田實習

農學生須能將其所學應用於農田上；於其領受證書前，一切要緊之普通農田設施，均宜諳練。習畢第一年功課時，至少須有兩月之眞實的農田經驗。每個學生必須在本學系之試驗場或爲本學系所承認之其他場所內有一夏天之實習。此門功課可得四績點。

Farm Practice. Selecting Seed Corn

農田中之實習

C O P Y

YENCHING UNIVERSITY

Peking, China.

Office of the President.

5 August 1926.

Mr. W. E. Chamberlain,
c/o Peking University,
150 Fifth Avenue,
New York City,
U. S. A.

My dear Walter:

I am enclosing herewith a copy of a letter which explains itself. I want however to give you the background and the circumstances leading up to this proposal. As you are quite aware there has been a growing desire on the part of many people interested in Christian higher education in China that there would be a rather extensive reorganization of the colleges and universities so as to reduce their number, avoid needless duplications and increase the total efficiency. With this program I have from the beginning been in the heartiest sympathy and have in fact been perhaps the most outspoken advocate of it among the executive officers in China. I have more than once committed out University to adjusting its own program to any comprehensive scheme that would manifestly be to the advantage of the whole movement. The matter has been made more acute during the past few months because of the proposal to organize a joint financial campaign in America for which purposes a strong committee there has been appointed. The next move naturally be with us in China and at a meeting of the Council of Higher Education in Shanghai last month practically three of the four days were devoted exclusively to this subject. A process was set up for securing as quickly as possibly pertinent information for forming a judgment as to such reorganization and for making proposals to a special meeting of the Council to be held next April if possible and if not, by next July at the latest. It has become increasingly apparent to me as I have been in all these discussions that the recommendations would include the maintenance of only one college course in agricultural education i.e. Agricultural College, W. E. C., with the possible exception of Canton where the government subsidies and the securing of support from overseas Chinese has rather taken the control away from the college authorities. If my forecast is correct we are forced into either refusing to take part in this co-operative scheme or altering our own plans accordingly.

I have also been thinking much about another aspect of that problem which I know is even more upon your mind and that is the service we can hope to render to the farming population of North China. From my layman point of view it has seemed to me that we could not hope with scant resources to do more than go on educating a small number of students who incidentally could be included in Nanking with practically no disturbance and with a very much broader range of studies while failing almost entirely to reach directly the needs of the rural community and church of this section. You more than anyone else among us have realized that if we are to have college work in agriculture, it cannot deal with one special feature such as animal husbandry but must be a rounded our curriculum. And you are hoping to get large sums of money for this purpose. In so far as you succeed we can rival the work at Nanking which may not be the best use of such resources, for the economic and religious benefit to our country constituency. I am told by Eubank and others whom

I have consulted in Shanghai and Nanking that for college students the locality in which they do their work is of no great importance. It may be that after all we could fit into a general scheme and count much more for the real objectives that underlie our efforts by uniting with the American Board, the Methodists and any others interested in this section in the maintenance of a secondary school for training boys who would largely plan to go back to work on their own farms, or be country teachers and preachers, with a few going on to Nanking for college work. That some such recommendation will grow out of the conference called for in the enclosed communication or by the Council of Higher Education when it comes to face the problem, I have very little question. I therefore went to Nanking and talked that whole problem over fully with Howen and Reisner. I found Reisner much more interested in the whole problem of relating agricultural education to the rural church than in a merely institutional program and was forced to recognize that neither in funds nor personnel have we any present hope of accomplishing anything like what they are doing in this respect even if it seemed desirable that wemake the attempt. I recognize that such a change of emphasis ought to have been arrived at in my thinking before you left China and made plans for the campaign which I have heartily endorsed. Charge this to stupidity, lack of forward thinking or anything else. At any rate it has seemed best to me that our local plans be worked out in the light of the general situation which will probably clarify a good deal if the conference called for is actually held this autumn. Whatever is done in North China I feel quite strongly should be under our name and organization. Whether it be of college or middle school grade is merely a question of which renders the more useful service. There could even be a certain amount of advanced work especially arranged for here. Whether the secondary school should be on or near our campus or at Tunghsien or elsewhere becomes a detail in a big worth while program. I do not see that any effort of yours to secure funds need be interfered with. All that you can get will be just as much needed by us and be as usefully spent as though our original ideas were to be unaffected by the developement described above. I feel however that you ought to know without delay of the tendencies which while unconfirmed as yet by any action are to my mind to be unavoidably reckoned with and which ought to result in increased benefit to the poor people of this country and to rural evangelism.

I hope you will make the financial efforts as enthusiastically and as successfully as though these changes were not in the air.

As ever yours,

(Signed) J. L. S.

I have consulted in Shanghai and Nanking that for college students the locality in which they do their work is of no great importance. It may be that after all we could fit into a general scheme and count much more for the real objectives that underlie our efforts by uniting with the American Board, the Methodists and any others interested in this section in the maintenance of a secondary school for training boys who would largely plan to go back to work on their own farms, or be country teachers and preachers, with a few going on to Nanking for college work. That some such recommendation will grow out of the conference called for in the enclosed communication or by the Council of Higher Education when it comes to face the problem, I have very little question. I therefore went to Nanking and talked that whole problem over fully with Bowen and Reisner. I found Reisner much more interested in the whole problem of relating agricultural education to the rural church than in a merely institutional program and was forced to recognize that neither in funds nor personnel have we any present hope of accomplishing anything like what they are doing in this respect even if it seemed desirable that we make the attempt. I recognize that such a change of emphasis ought to have been arrived at in my thinking before you left China and made plans for the campaign which I have heartily endorsed. Charge this to stupidity, lack of forward thinking or anything else. At any rate it has seemed best to me that our local plans be worked out in the light of the general situation which will probably clarify a good deal if the conference called for is actually held this autumn. Whatever is done in North China I feel quite strongly should be under our name and organization. Whether it be of college or middle school grade is merely a question of which renders the more useful service. There could even be a certain amount of advanced work especially arranged for here. Whether the secondary school should be on or near our campus or at Tunghsien or elsewhere becomes a detail in a big worth while program. I do not see that any effort of yours to secure funds need be interfered with. All that you can get will be just as much needed by us and be as usefully spent as though our original ideas were to be unaffected by the developement described above. I feel however that you ought to know without delay of the tendencies which while unconfirmed as yet by any action are to my mind to be unavoidably reckoned with and which ought to result in increased benefit to the poor people of this country and to rural evangelism.

I hope you will make the financial efforts as enthusiastically and as successfully as though these changes were not in the air.

As ever yours,

(Signed) J. L. S.

C O P Y

September 11, 1926.

Dr. J. L. Stuart,
Yenching University,
Peking, China.

My dear Dr. Stuart:-

Your letter of August 5th received. Evidently by this time you have also received my recent letter. I am completely tied up and without any finances for travel until after the meeting of the Board of Trustees. I feel that I am wasting much valuable time, and my morale is getting low. It is unfortunate that this matter could not have been handled in some way so as to have avoided all of this delay.

I fear that this letter will be a long one, but I am asking you to read this not only once but several times. I shall endeavor to give you a fairly clear impression of my ideas on this question of agricultural development.

I have read your letter of August 5th over at least a dozen times, and have reached the following conclusions and questions from it.

(a) You are anxiously trying to feel your way into the problem, but you only seem to see it in an abstract sort of way. The real issues are evidently not clear to you, and are not as yet concrete or specific in your own thinking.

(b) Why would reducing the agrilcultural instruction at Yenching to that of a secondary school be the only program on which Yenching could enter into a cooperating scheme with other Mission institutions for a joint financial campaign in America?

(c) As you view the problem;
Are we simply trying to duplicate the work of Nanking and endeavoring to build up a rival institution with work which overlaps and duplicates Nanking or are we trying to develop an agricultural institution which fits peculiarly into the needs of North China and the great differences in the type of farming, the general differences in size of the individual farm, the differences in type of crops grown, the variety of fruit, the great differences in climate, and even a difference in the type of people; to say nothing of the great differences and possibilities in Animal Industry. Contrast Manchuria with Kiangsu Province. Contrast water buffalo, extensive silk production and cotton growing with large mules and horses and the soy bean, oat and Irish potatoe production. Contrast small fields and mountain sides with rolling prairie areas. We must be forward looking. Personally, I cannot conceive of greater educational error than training Chinese agricultural leaders for future work in North China in an area so totally different. More on this subject at another section of this letter.

(d) You offer no <u>concrete</u> suggestions that would point out the desirability of Yenching changing its plan of procedure other than in (b) as stated above.

(e) What changes would Nanking make? Would Nanking continue in all of the developments which they are now undertaking? Would Nanking give up all of her short courses (2 year and 1 year) and would all students of that type be sent to Peking?

(f) Probably through my own fault, you have evidently failed to grasp or interpret the aims, objectives and policies of our Department of Agriculture in Yenching.

(g) Why do you assume that Yenching will never have only scant resources for Agriculture?

What efforts have ever been made to finance Agril Education by Yenching?

(h) Why in training college students would we "fall almost entirely to reach directly the needs of the rural communities and church of this section?" (See your letter)

(i) In concrete and specific terms what do you mean by "reaching directly the needs of the rural communities and church?"

(j) See your letter. "In so far as you succeed we can rival the work of Nanking which may not be the best use of such resources for economic and religious benefit to our country constituency." Please interpret. In concrete terms what do you mean by the "economic and religious benefit to our country constituency?" In what way would making all work at Yenching all of secondary grade increase the economic and religious benefits to our country constituency? Is our object to rival Nanking or is it to work on the various problems which are peculiarly those of North China? The outstanding features of the work at Nanking are Agriculture and Forestry. Have we planned or endeavored to establish work along these lines.

(k) See your letter. "I found Reisner much more interested in the whole program of relating agricultural education to the rural church than in a merely institutional program and was forced to recognize that neither in funds nor personel have we any present hope of accomplishing anything like what they are doing in this respect even if it seemed desirable that we make the attempt." What do you mean by "a merely institutional program"? By relating agricultural education to the rural church? To which did you refer in the above sentence.

Our Mutual Agreement

I think we are mutually agreed that in our agriculture we should secure a maximum effectiveness for the whole Christian movement and especially that vocational courses should be planned so as to avoid needless duplication. The question is do we have under the present agricultural systems in China needless duplications? We are probably also mutually agreed that the objective of training Chinese students in agriculture is;

1. To demonstrate a form of applied Christianity to the everyday life of the great mass of the Chinese people.

2. To raise the general economic status and standard of living of the Chinese farmer, so that he in turn may be able to support the activities of his community especially the rural Church and school.

Impressions you may have concerning the Agr'l Work at Yenching.

From your letter and some of your statements in the past this is my impression of your thinking in regard to the Yenching Agr'l Department.

We are intending to build up a rival institution to Nanking practically a duplication of their work.

We are placing undue emphasis on commercial projects such as canneries, commercial dairies, and the financial returns from various forms of agricultural industries. In other words we are conducting various businesses more than we are taking information to the Chinese farmer. We are building up a commercial agricultural machine for the benefit of our own department rather than taking any information to the country round about. That dollars and financial success are considered more important by us than the general uplift of the rural community.

I may be incorrect in the above, but I would appreciate tremendously your taking the time to write me your actual impressions of what we are doing.

Aims, Hopes and Aspirations for Agriculture at Yenching.

I should like to see developed at Yenching a strong College of Agriculture, Experiment Station and Extension Service because I believe that in the present state of China's affairs that this is one of the greatest contributions that Christianity could give to North China. I do not believe that all college work in agriculture can be done successfully by only one institution at Nanking for reasons which you will find throughout this letter and inferences to be drawn from questions which I am going to state. We should develop in general so far as possible along the plan which was worked out two years ago. We should place particular emphasis on the problem peculiar to North China as regards climate, famine areas, fruits, grains, animal industry, village industries, problems of farm management, farm mechanics, insect and disease control, colonization and rural credits.

In particular we should develop.

1. Animal Husbandry.

   Beef cattle.
   Dairy catte.
   Goats.
   Hogs.
   Sheep.
   Poultry.

2. Animal Disease Control.

   Disease prevention - serum and vaccine manufacture.

3. Horticulture with especial emphasis on -

   (a) Vegetable forcing which meets the needs of our Northern Climate.
   Fruit growing - as the main fruit areas are in North China.
   Bee keeping as a necessary correlary.

4. Agronomy with special emphasis on -

   (a) Soils, their upbuilding and the fertilizers adopted to them.

   (b) Alkali control.

   (c) Plant breeding on northern grains, and adapted to semi-arid regions and cold climates.

5. Village Industries: endeavoring to find and develop some form of industry by which the farmer during the winter months can supplement his yearly income.

6. Farm Management; as related to the particular type of North China farm which is in general twice the size of the Central China farm, not to mention the large sized farms of many acres in Manchuria or the rolling plains of Mongolia.

   Emphasis on Rural Credits, Cooperation and Colonization.

7. Farm Mechanics with emphasis on irrigation, well digging, road making &

the manufacture of small farm buildings, brick laying, carpentry work, elementary black smithing, etc.

8. Agricultural Technology - the development of allied agricultural industries - Casein manufacture - soap making - vegetable oil manufacture. The development of canneries; The utilization and manufacture of fertilizer, etc. The above is of particular importance. Agriculture developes as its allied industries develop. I would also add leather manufacture for this list, but I fear there would be too many complications.

9. A strong department of Agricultural Education to train teachers, extension worker and rural preachers.

10. Rural Sociology: We should develop either in the department of Sciology or in the department of Agriculture a strong department of Rural Sociology - to undertake surveys studies of rural social problems, the farm family, etc.

To what extent does the above duplicate the work at Nanking?

Regardless of whatever concentration we may bring above in our Mission Colleges some minor duplication is unavoidable. Just as in all colleges and schools we have duplications in the beginning courses in English, History, and Mathematics in our Agriculture Colleges we shall have duplications in our beginning courses in Agronomy, Horticulture, Farm Management and possibly Animal Husbandry. We can sucessfully meet all demands for correlation by the following;

North China is without doubt the area in which animal husbandry and dairying will be developed. Let us transfer all advanced Animal Husbandry to Peking and also all work in Animal Disease Control. We have already animals and quarters for this work and the work in the animal disease control could be greatly assisted through the cooperation with the laboratories and facilities of the Peking Union Medical College. The chief bacteriologist at the P. U. M. C. formerly worked on animal diseases in the United States. Dr. Gibbs, who is in charge of the present work at Nanking has told me that he considered Peking much the better center for this type of work.

Nanking to specialize and lay special emphasis on Sericulture and Forestry. Possibly owing to the fact that already have a part of the work under way develop particularly the field of Plant Pathology, Botany, also Entomology. All graduate work in the above courses to be done at Nanking. Both institutions will need to carry on Agronomy and Horticulture, Farm Management and Agricultural Education (teacher training and training for extension workers should be develop very strongly). This will leave Yenching free to develop Animal Husbandry and Dairying, Animal Disease Control, Bee keeping, Village industries, Farm Mechanics and Agricultural Technology.

Rural Sociology:

All graduate work in the above to be done at Yenching.

Each institution must develop its own experiment station and sub-stations to meet the needs of the particular areas. Correlation on experimental projects be obtained through a mutually cooperative agreement of the Experiment Station Staff of the two institutions.

Canton with its semi-tropical climate should be left free to develop its own particular needs. It would be almost a joke to think of teaching semi-tropical agriculture for South China at Nanking in farm practice or applied laboratory work, and equally so of Manchuria with its cold climates and vast plains. We must not forget that Manchuria and Mongolia is shere the great agricultural development of the future in China is to take place.

Experimental work at Yenching

Experimental work has been generally included in the above. Extensive experimental work is necessary. It is the very heart of any teaching program of either resident instruction or extension teaching. Surveys must be made to determine actual conditions. We have very few facts in China on which to base agricultural teaching. Extension work in agriculture which cannot be proven by experimental evidence is of little value. There is a vast field for experimental work in plant and animal breeding. The animals of China are notoriously poor - milch goats, beef and dairy catte, hogs, sheep and poultry offer a large field for endeavor.

The new agriculture of China must be aChinese Agriculture and not a European or American agriculture brought to the Orient. We need to know what practices can be carried out under North China's conditions successfully and economically, what plants, seeds and fruits are particularly adapted to our northern climate. We need to know what foreign implements can be used economically and what improvements may be made or adapted at a low cost to the Chinese farm equipment. We have already shown in our experimental work that chemical fertilizers can be used profitably by Chinese farmers in our area. The problem of maintenance of soil fertility on the larger areas of the North where there is insufficient amount of natural fertilizer is one of outstanding importance. Yenching claims the title of a University, yet the amount of research which is being carried is lamentably small. Through Agriculture Yenching will be able to enter into a type of research which may be applied directly to China's greatest needs. Under experimental work we should not omit the department of agricultural education. We need to determine that the best methods of agricultural instruction that can be used in our secondary agricultural schools, and many other problems. Every department in the Yenching College of Agriculture should engage in a definite experimental program. Their program should be linked hand in hand with the agricultural instruction and extension students, Seniors particularly, should take an active part in the carrying out of projects of this sort so that they may be fitted for the management of sub-stations and develop in all of their work an experimental attitude of mind.

Demonstration and Extension Work.

Demonstration and extension work is the result of the logical development and working out of an agricultural program. The value of agricultural extension to a rural community is not to be measured by the number of meetings held, the total number of people in the audiences, or the number of gaily colored charts exhibted. Nor should it be praised because of the amoung of seed requested and distributed. All of the above have a proper place in any program, but we must judge extension work by the actual results obtained as evidenced by the adoption of new methods, the use of pure bred animals and improved seed, prepared and selected in the suceeding years. This work must be carefully followed up by the extension worker or local paster who has had some agricultural training. Too much emphasis cannot be placed on the necessity of follow-up work with the leading men of the community. There is a great deal of "Ballyhoo" and show to extension work which impresses the benevolent reader in America particularly be he layman in agriculture, while the actual results obtained may be very small. I should like to see Yenching develop a large Extension program. This should include an agricultural periodical for the country pastor, and teacher, motion picture films, lantern slides, technical agricultural demonstrations as well as demonstrations illustrating improved methods and practices in the form of dramatic play-lets. The Chinese is a born actor. He likes the theater - let us give him some agricultural information in this form. By this means we can show the "pros" and "con's" of every new method or practics. Let us give short term in instructions consisting of periods from a week to one or two months according to the needs of the particular locality. Let us use all the above methods, but these alone will not suffice. We can create a great amount of activity by the above but against all of our work we must hold up the relentless measuring stick of efficiency and ask ourselves whether or not these methods are producing the desired results.

The Chinese by nature is imitative. If one man starts in a business which develops into a remunerative one, some one of his neighbors preceives this and immediately starts out in the same kind of business. For examply notive the number of automobile garages in Peking. No better illustration of the above can be found. Let us take advantage of the above characteristic and quietly go out into selected villages and select farms of suffidient size if properly conducted to afford a farm family a fair standard of living. Place on the farm nothing in the way of equipment but what is thoroughly practicable for Chinese conditions. Let us also locate on this farm a trained student, who is thoroughly qualified and who has had sufficient experience to be able to carry the project through. This man could also act as the village pastor, but I am a trifle doubtful concerning this altho it should be tried out in some location if we can find the exceptional man to carry it through. Let the local pastor pave the way for the demonstration farm or vice-versa and eventually we shall have the two forces acting together in the village in a program for rural betterment. This farm should be kept in touch with each month by men from the college.

Extension work under the Agricultural College should consist of much more than agriculture. This was very much impressed on my mind as I visted the schools of Denmark. In that country the entire type of agriculture has been completely revolutionized through its types of school. The man who is placed out on our demonstration farm should be a graduate of a four year course in agriculture and have a mature mind. He must have a considerable background of general education to enable him to fall in with the plan and have sufficient vision to carry the work through the difficulties and discouragements which he must meet. We must also face the fact that we must pay a man of this caliber more than the returns from the farm. Economic pressure is particularly great in China and we must recognize this fact as we a basic principle in governing our methods of teaching. I shall speak more of this later under "Teaching".

To train a man for Extension work for locations in semi-arid Chilili, for Northern Shansi where the chief growing crops are oats and white potatoes, or for the cold areas of Manchuria in an institution like Nanking, where rice, sericulture and cotton are outstanding features is absolute folly and the height of the impractical.

Teaching.

In our college and secondary instructions the "project" method of teaching should be carried out so far as possible. "seasonal sequence" must also be taken into consideration so far as it is practicable. The material considered in the lecture or recitation should be carefully carried over into the laboratory work and farm practice. Students learn to do by doing. A student may glibly recite on sheep raising. His recital only has value when he can demonstrate the same in the actual handling of sheep. I should like to see agriculture Seniors go from the class room directly on to a farm. This farm should be of sufficient size to afford a fair labor income. The students would go to the farm with the same idea of "trying himself out" that a medical interne enters a hospital. This idea is quite workable where there are less than twelve graduates a year from an institution. We are not seeking number in our graduates, but we are looking for quality.

I shall state a few facts which may be considered "heresy" by some, but never the less are facts which must be met.

What does China need? There are certain economic laws that are always working and we must take them into consideration.

China does not need a greater number of farmers. Many who are now farming should be engaged insome of the industries. We should welcome industrialism in China as fast as it can be developed.

There are many areas under cultivation which should not be cultivated. There are many farms too small to ever give a decent standard of living and many terraced fields that are a tremendous waste of human labor and energy. No amount of agricultural science or teaching will ever give a decent standard of living under such conditions. A new agriculture in China will be a very slow process. We are too apt to want results quickly and to feel that we should revolutionize the country village overnight.

We do not want all the country boys to stay in the country. Let us take any group of students as we find them in the village school. There are a few that are of exceptional intelligence. Then there in the great average group, and also a small group of low intelligence. The boy of exceptional intelligence should not be given agriculture training. He should be given an education which will enable him to enter into the professions, industrial and commercial pursuits. Here and there in this group we may find some one who has a passion for agricultural leadership, but he will be the exception. The group of lower intelligence we do not want in the country. There are too many of them there already. They do not have sufficient brains to farm intelligently and should go to the city where they can enter some form of industry, such as piece work of kind. This is practically a mechanical operation and does not require any particular need of mental ability. These people can obtain a higher standard of living in the city and that is where they belong. Under present Chinese conditions city drift is to be encouraged. Agriculture is for that great group of average intelligence. It is not for the exceptionally bright pupil or for the one of low intelligence. From an ideal standpoint we should hope to retain the exception boy in the country, but it cannot be done. It is not being done in any place in the world and it never can be done. Thought it may hurt our agricultural pride to admit this - yet we must face the facts.

Agriculture is not an occupation of great economic returns - I know of no millionaire farmers. It is an occupation which is most complex, in which there are many factors to be considered. The farming class of every country are conservative sturdy and reliable. They make up the back bone of every nation. The financial returns are such as they may insure a good standard of living, but not much more. This is the very class that must become Christians if China is ever to become a Christian nation. If I am informed correctly China has risen at three different times to about its present progress in Christianity and interest has also lagged at intervening intervals. In my opinion this is due to the type of people to which the message has been taken. The city type of mind is radical, changeable, tempermental, while the rural mind is more conservative and is slow to change. The countryman is slow to change his opinion, but after he does so he usually stays "put". I well remember my visit to a farm home in Shansi. The family had been Catholics for five generations. They were staying "put".

How can we reach the group which we desire to teach in the rural community. Some boys will have received a middle school education and will have caught the vision of the need for rural leadership. These boys should receive a general college training in agriculture. I do not think that the time will be ripe for many years for extension specialization in Chinese agriculture. The great majority of our students will go out as teachers and extension workers. This is the history of agricultural education in every country. A few will become managers of their own farms where larger areas are possible in Manchuria and as they happen to be the sons of wealthy fathers. Men for general teaching and extension work, must have a general training and not a too highly specialized one. In general mission activities they will be up against all kinds of general problems, what they can not solve they will take to a specialist at the Agricultural College. The average Chinese farmer cannot afford a four year course or even a two year college education. Yet I am thoroughly convinced that to obtain a man for extension and teaching work of the right type, and educational qualifications. A man who has had sufficient vision and maturity to become a real leader we must give hime four years of training. These boys must be assisted by some form of loan fund or

or scholarships. I consider the giving of free scholarship pernicious, but it seems unavoidable.

What about secondary schools;

In my opinion we are going just a bit fast in our development of secondary schools. In America they did not develop until 20 or 30 years after the agri. college had made considerable headway. I believe each college should conduct two year and short time courses. These are essentially of a secondary and practical nature. English should be stressed in the four year course for without this medium the student can not take advantage of reference material nor can he keep informed on agr'l progress in other countries after his graduation. The Chinese language should be the medium of instruction in the two year and short courses. The two year courses of the College of Agriculture should be a school of experimental methods to work out the best plan for agricultural teaching in secondary schools, and as a practice school for agricultural teacher training. Some of the more able of these secondary students would find employment as Extention workers and teachers, but I should expect to see many of them take up some of the individual types of farming near the large centers of population, near the towns and cities. Some would become dairymen, green house gardners or cloriculturists, nurserymen, etc. In the present condition of China we would not find these boys returning to the small farms in the interior. Some of these students would enter work allied with agriculture. I have already hadcalls for boys who have had agricultural training to enter the employment of Commercial Fertilizer Cos. to sell fertilizer to farmers and to show them how to properly and economically use it. I am inclined to think that a large part of this secondary work should be given in connection with the College of Agriculture. Here it could be directed and supervised by the college staff and the college staff could do a considerable amount of the teaching. I would not at present be inclined to bring in the pupils from secondary schools in North China at Fen-Chow-Fu in Shansi or Tungchow or Changli to Peking but keep these schools as experimental demonstration centers and practice schools for our work in training men for extention and teaching work. I will discuss this at another place. If my assumption is correct that many of these two year boys will become dairymen, nurserymen and floriculturists this work should be given in connection with the Agricultural College, where thess facilities are available. The equipment for work of this kind is in general too expensive for each secondary school to maintain, and in the smaller places such as Changli, and Fen-Chow-Fu I do not believe the sales from this type of agricultural work would be sufficient to make it possible to carry them on extensively and without the income from the sale the instruction would be too expensive. If my prophecy in the above is correct you will see that even in the secondary schools we have not yet got out to the thousand of small farmers or to the farms in the mountains or in the interior districts. Yet here is where the rural church and a better standard of living even though it may not be sufficient needs be brought about.

The farmers in these villages cannot send their youths of 18 or 20 years of age for even a year of instruction. The minimum cost for board, foom and tuition would not be less than $50. or $60. The bitter economics of the case are set resolutely against it. What is the small farmer's total capital? Land - perhaps twelve mou at $35. per mou. A value of $425. Household furniture $40. A mule or two donkeys at $70. Implements, carts and tools $75. Miscellaneous items $25. A total of $635., and I have probably made the figures very high. There are several children in the family and he is doubtless in debt, for some funeral or wedding expense on which he is paying interest rates varying from 18% to 35% or more. Under these conditions the farmer cannot possibly afford to put 10% of his total captial into education for one son. If by any chance he can do so, that boy will not return to that farm and those conditions, but he will take the little education which he has been able to obtain and enter some form industrial occupation and it is right and reasonable that he should do so.

We cannot directly assist the great mass of small farmers in China by any of the regular forms of school work. They cannot afford even one year of school training. The secondary school cannot do this nor will its students scarcely even return to the interior farms.

What can we do ? Here is where the extension service, the demonstration farm and rural pastor enters the plan. The farm boy under the above conditions cannot go to the school therefore instructions and inspiration must be brought to the farmers and his sons on the farm. Where every possible I would put demonstration farms, but these must of necessity be limited in number. Where there is a fairly well established rural church I would place an extension man to help. This extension worker could make his headquarters with one pastor and work in a series of surrounding villages. In other locations I would try out a man who would act both as the pastor and the extension agent. I would have these pastors undertake boys and girls club work. He should also have a pure bred flock of poultry and I would place under his care a pure bred boar to use for cross breeding on the animals of the surrounding farms. Where sheep raising was carried on I would also place a pure bred ram for breeding work. Improved seed would be distributed through his hands and he would give instructions in the use of sprays for insects and plant disease control. I have at least a course of three credit hours in agriculture for at least a year throughout every Christian Theological School in China, even where the preachers were being trained for city work. Agriculture is the main occupation of 80% of China's population. Chinese pastors need this instruction if only for its cultural value to give them a deeper insight, sympathy and understanding in the works and needs of the great mass of China's population. Students who are training for country churches should receive a minimum of six credit hours for one year. This should be especially arranged to meet their needs. They should have considerable more agricultural work than this, but at least six hours as a minimum.

The extension worker must carry with him much more than agriculture, and this is one point on which the local churches can very greatly assist. The more I think of the problem, I am strongly inclined to believe that we should begin with the thousand characters. From this we go into elementary mathematics. I found Gymnastics and Singing greatly emphasized in the rural work in Denmark. It unified the group and gets them to acting and thinking together. Talks on what Christianity stands for and some elementary talks on Chinese history, health, hygiene and sanitation etc., All of this to gradually lead into a program of instruction in agriculture, with leaflets and papers printed in the thousand characters.

Much good can be accomplished. Means of cooperation brought about and a system of rural credits established. We shall never be able to bring about a good standard of living on these areas which are too small to be economically profitable but we can greatly improve the present conditions. May I repeat, this extension work required a man of high caliber, a broad vision and deep understanding of human nature. I believe this work to be successful must be in the hands of a college graduate, of broad general training in agriculture. Short course men, as a general rule will not have sufficient background and consequent vision or sufficient maturity. We must also pay the man according to his ability. This must be a salary greater than he could earn in ordinary teaching and more than he could earn on a good farm. He must be a member of the college staff and be responsible to it and feel that the College stands ready to helf and advise him in all of his difficulties.

The Question of Location.

With our understanding of the work and the duties of the Extension men, teachers etc., let us consider the location of the institution where their training is to be given. Personally I placed very great importance on this point when we understand the pychology of the Chinese teacher also the work for which he is being trained and the locality in which

they do work(meaning college studies) is of no great importance." I heartily and thoroughly disagree with this except as I shall explain. I doubt if any disinterested person who had thought the problem through or who understands the Chinese student could make that reply. I am wondering if you made entirely plain to them what you had in mind. I, too, would have answered yes, if I thought you meant by college work merely such courses as vertebrate anatony, advanced soil physics, advanced nature could be listed above, but I am talking about the great basic courses in agronomy, horticulture, animal husbandry etc. The courses that are fundamental to the general training of the Extension Worker. We must remember that there is much more to a course than the mere lecture work of the class room. Of great importance is the laboratory work in the stable and field and the applied practical work. Imagine our teaching sericulture or Nanking giving any practical applications in sheep hushandry? We shall never get practical efficiency in our teaching for North China (an area half the size of the United States) if we haveto train our teachers and Extension workers at Nanking. Consider the differences in climate - rainfall and its distributions - crops grown - topography - work animals used - differences in the size of the individual farm - methods of management - crops grown - type of people language and dialects.

In agricultural education applied laboratory work in the field or with animals is equally as important as lecture or recitation work, and for Chinese students it may be more important. Reference books are always available, and information may be obtained by a student without a teacher. However real training of a student can take place only when the teacher and student carry the practical application of the lecture of the class room into applied work in the field, stable or laboratory. Therefore the location of the training center is of the utmost concern. Too great differences in climate, or type of agriculture from what the student is accustomed or differences in kinds of crops grown, types of farm animals used or methods of management between the training center and the area in which the student expects to work greatly lesson the value of his training. Foreign agriculturists are of very little value to China until they have been located in China in a given area at least three years. Much more difficult is the adjustment for the Chinese agricultural teacher as he does not have the background of a scientific agriculture. He has only his four years of training, is naturally conservative and adjustments will not come easily.

There are approximately eight and one half degrees of longitude between Peking and Nanking. What would this mean if we were to take corresponding parallels in the United States. We should be sending students from Pennsylvania, New Jersey, Ohio, Indiana or Illinois for agricultural instruction down to Southern Georgia, Northern Florida, Southern Alabama, Mississippi or Louisiana. We would not consider this feasible or even worthy of any consideration in the United States. Let us consider the location of Mukdee, which is only half way in, our Manchuria territory. A corresponding parallel in the United States would be to send students from Iowa for agricultural instruction down in Northern Mexico.

Oriental Characteristics.

Let us also consider some Oriental characteristics. Is not the Chinese Senior as he graduates from College much more liable to imitate than to originate. Consider the tremendous waste of sending a student trained at Nanking into Manchuria or even North Chilili with our great differences in rail fall distribution. If he is sent from Manchuria for his course, he is constant ly saying to himself "Well, we cannot do that in Manchuria" and he loses half of the value of the instruction. If a native of Kiangsu was sent to Manchuria he would make mistake after mistake before he got adjusted to his surroundings. In the meantime he would become the butt of all the jokes of the entire farming village. He would lose so much face that he would be of very little value, and because of his early mistakes and lack of practical knowledge it would be several years before the village would again have any confidence in him even if he eventually made good. From the beginning his strange dialect would be against him and he would be regarded by

the people with great suspicion as a "foreigner." We are up against the Chinese Rural Mind and we must not lose sight of that fact. In the very town here in the State where I am writing this the County Agent came from a neighboring state and these American farmers go to him very little because they do not think that he can understand their problems on the grounds that he does not happen to be a native of the state. How much more would this be accenturated in China? Do you realize also that a stranger cannot go into a rural village and buy a farm as he is regarded with so much suspicion and fear. I am not pleading for an Agricultural College to rival Nanking, but I am pleading for agricultural educational efficiency, and that North China may have what is rightfully hers.

Should Yenching drop entirely her agricultural program?

She cannot do this if she intends to attempt to meet the greatest outstanding need of China. As China develops the government schools and colleges will be greatly strengthened. The leaders for the most part will be highly specialized returned students. Agriculture will be the last type of education which the government will develop. This is true in the histories of all countries. Academic, Professional, and Industrial education will all receive attention before strong schools of agriculture are developed under government suspices.

The past history of other nations shows the truth of the above, there is even further evidence in China. The largest part of the Chinese students now being trained abroad are not being trained in agriculture. China will look largely to highly trained returned student graduates for educational leadership. The two great fields in which Yenching can be of the greatest service and for which there is the greatest need are theology and agriculture. Let us not give the Chinese stones when he is asking for bread.

How can Yenching most effectively help serve rural China?

A. Shall we develop experimental and demonstration work only?

B. Shall we develop a secondary school only?

C. Shall we develop a combination of (A) and (B) ?

D. Shall we unite with Changli - Tungchow and Fen-Chow-Fu in a secondary school also supporting experimental and demonstration work?

E. Shall we develop a strong College of Agriculture adapted to the needs of No. China?

F. Shall we develop as in (E) adding (b) in order to utilize to the fullest extent our buildings, staff and equipment and as a necessary adjunct developing strong demonstration, experimental and extension work?

G. Shall we bring into the Yenching College of Agriculture as in (F) the present agriculture workers stationed at Tungchow, Changli, Fen-Chow-Fu etc.?

H. Shall we develop as in (F) taking over all secondary student from Tungchow - Changli Fen-Chow-Fu etc., leaving the agricultural instructors now stationed in those localities to carry on experimental and demonstration projects and to direct extension in their particular areas. They could also function in a valuable way by acting as trainers for men who intended becoming extension workers. Much careful training in the field and village is necessary before the extension worker can be sent out on his own responsibility.

I. Shall wedevelop as in (F) and leave secondary work at Tungchow - Fen-Chow-Fu - Changli etc., to be carried on as it is now being conducted. Yenching to cooperate and make arrangements with the above schools to provice facilities for practice teachers training work? Personally, I think we can render the greatest service by adopting either (H) or (I).

I would consider it very impractical for all agricultural instruction of college grade to be given to Nanking. I would consider it equal folly for all secondary students from Central China to be sent to Peking. In my opinion both Nanking and Peking should carry on both college and secondary work. The over lapping and duplication would occue to only a minor degree and each institution would be free to develop the work needed for its particular area as stated earlier in this letter. (See page 4)

I have endeavored to show you the plans whichwe have long had in mind for the Yenching College of Agriculture. Such a plan will I believe result for the "Greatest economic and religious benefit to our country constituency."

The function of the Agriculture College is to train rural leaders, not "dirt-farmers."

Chinese farmers can not afford the expense of a four year agricultural college course. In general the farmer and his sons must receive his education through the extension service. This Extension must be done by Chinese - but it may be directed by foreign supervision. Foreign supervision is necessary as the Chinese have not as yet sufficient experience and the work is too new to be conducted at present by the Chinese alone.

The foreign college or secondary school worker cannot go direct to the Chinese farm village in extension work with any degree of efficiency. After years of labor in the village he may gain their confidence sufficiently to accomplish some good. In the meantime in the college with suitable facilities and equipment he could have trained and supervised in an equal length of time one hundred workers who might be working in one hundred villages.

The function of Mission work in China is to help the Chinese to help themselves, not to do their work for them.

Mission agriculture must train leaders. The Chinese themselves must bring about their own new agriculture. We can only help determine their needs, get them to realize these needs, and train leaders. These leaders should be college trained men, mature thinking, a broad background and a large vision will be required to meet the difficulties of their work.

Agricultural leaders cannot be trained satisfactorily in Central China for North China or vice-versa. In Yenching we have been compelled to develop our plans very slowly. A broad and solid vacational foundation has been built. Students learn to <u>do</u> by <u>doing</u>. For this reason we have developed commercial projects such as commercial floriculture and olericulture, cannery, dairy, etc. Unless we cannot ourselves carry out profitable agricultural enterprises we have no business to try and teach agriculture to the Chinese.

Dr. David Snedden of Columbia University who is without a doubt one of the most farseeing authorities on Vocational Education says that in the U.S. in agricultural instruction we should place the following emphasis;

Managerial ability	60%
Technical knowledge	30%
Manipulative vital applications	10%

In China we shall have to revise the last two items, for here we shall have to train in the use of new tools and modern appliances. If Dr. Snedden is correct we cannot truly vocationalize our agriculture with out placing great emphasis on managerial ability. We cannot teach the student managerial ability without conducting commercial projects and placing student in such an atmosphere of activity. We have therefore not developed commercial projects because we consider the dollar of more importance than the welfare of the rural community, but because it was an essential step to be taken in order to truly vocationalize our instruction and eventually reach our goal viz an effieient program of rural betterment.

In considering the possible removal of all college work in Agriculture from Peking to Nanking the following questions must be answered.

1. In what concrete and specific ways will Mission work in Agriculture be furthered by the proposed change?

2. Would the objectives of Agriculture work for North China be most efficiently obtained by conducting all the college training for leaders at Nanking? Why?

3. Is Nanking the general center to which the Chinese for centuries have looked for educational leadership?

4. Could an Agriculture College at Nanking rather than Peking more effectively cooperate, receive assistance and work with the agriculture departments of the National Government as they become developed and the Chinese government becomes stabilized?

5. Do the present secondary agricultural teachers in Shantung desire to send their students to Nanking or Peking? (see Mr. Etter) Why do these men place so much emphasis on the difference in climate, general conditions, etc., between their location in Shantung and the location of the College at Nanking?

6. Why do the present American Board Agricultural Workers at Fen-Chow-Fu, Shansi desire to send students to Peking instead of Nanking.

7. Which institution lies more nearly within the famine area?

8. Which institution lies nearest the future great places of agriculture development viz Mongolia and Manchuria?

9. Considering that the Oriental student is more likely to imitate than he is to originate do we want agricultural Extension leaders and teachers for semi-arid North China or the cold regions of Manchuria trained at Nanking.

10. Considering the difficulties and complexities of the work and the maturity and vision needed by the Extension worker does secondary education sufficiently train for the leadership which is necessary.

11 Would converting all of the work of the Yenching Department of Agriculture into secondary grade materially reduce the amount necessary for staff salaries.

12. Is any larger staff required for work of college grade than that of secondary? Would these men receive any larger salary?

13. Would any more land be required?

14. Would not experimentation and extension be carried on by the secondary school as well as the college? Would the cost be less, simply because the work was done as a secondary school?

15. Under college instruction more extensive laboratory equipment might be required than for secondary work, but would this exceed $8000 in cost spread over a long period of years?

16. The Education Commission, which had in its membership an Agricultural Educator of note from America, after a careful study of the situation recommended the establishment of Agricultural Colleges at Canton, Nanking, Peking and West China. Were not the studies of this Commission satisfactory?

17. At a conference held under the Committee of Agricultural Work of the C.C.E.A. at Nanking composed of Agricultural Workers from all over China the above recommendation was heartily endorsed. Why should this endorsement be changed?

Just as a last though relative to the number of students. Why do you assume that we shall necessarily have only a very limited number of students? You will recall that all of our emphasis to date have been placed on establishing a strong foundation. We have never gone out after students. Up until this year we have only gotten out one circular and that was at the very beginning of the work. I do not think we want a large body of students. We should eventually hope to have an enrollment of one hundred to one hundred fifty students. Student "mortality" in agriculture will be rather high. We should not encourage students taking agriculture who are not adapted to the work.

We have to date graduated only small number of students, but our graduates are all doing extremely good work. This paper is already far too long or I would go into detail. We have had calls for many more graduates than we have been able to fill. In the North institutions desire men who have been trained in the North. That is why I place so much emphasis on this point.

We have no right to assume that resources for agriculture at Yenching will always be very scanty. Yenching has not yet made any effort either in China or America to finance agricultural work. In connection with this letter at this time may I ask you to read again our last annual report.

I have placed considerable time and thought on this letter. If you study it through carefully I believe that it will help clarify your thinking on this problem, even though you may reach conclusions different from mine. These thoughs of mine are the results of a life time spent among rural people, of four years of agricultural college training, and a year of graduate study on the problems of agricultural education. In addition eight years of agricultural teaching experience and six months travel and study of agricultural schools in Asia and Europe. I ask you to accept these observations for whatever you may consider them to be worth.

Our aim is not to rival Nanking, but to develop in North China an Agricultural College fitted to the needs of North China. Our rural leaders must be men of college training.

We can never satisfactorily train rural leaders for the North Country at Nanking.

I have given to the uttermost, all of my strength and energy to furthering this cause, which I believe to be an outstanding need in China, and my only concern is that as the result of your study, of discussion and conference, the right plan my result.

As ever,

(Signed) W. E. CHAMBERLAIN
Head of the Department of Argiculture,
Yenching University.

CHINA UNION UNIVERSITIES

Fukien Christian University
University of Nanking
Shantung Christian University
Peking University
West China Union University

CENTRAL OFFICE
150 Fifth Avenue, New York City
ERIC M. NORTH, Secretary

Cable Address
Nanfushan, New York

Telephone
Chelsea 2130

PEKING UNIVERSITY

October 6, 1926.

Mr. Franklin H. Warner
415 Lexington Avenue,
New York City.

Mr. E. A. Evans
120 Broadway,
New York City.

Mr. Edwin M. McBrier
203 South Mountain Avenue,
Montclair, New Jersey.

Gentlemen:

In view of the conference that is arranged for to-morrow afternoon with Mr. Chamberlain, I am very anxious that you should take the time before then to read over thoroughly this letter and in particular, the documents which are attached.

I enclose copies of President Stuart's letter of July 21st to me, his letter of July 26th to the National Christian Council, his letter of August 5th to Mr. Chamberlain, and Mr. Chamberlain's reply of September 11th to Dr. Stuart.

Mr. Chamberlain is now on furlough in this country and is anxious to undertake the raising of funds for the further advance of the Department of Agriculture. You will gather from his letter to President Stuart what his own convictions are as to the importance of a great development in this field and you will be able to observe what a strong case he makes. I think it would be wise for us to keep as confidential the communication from President Stuart to me, inasmuch as it relates not simply to a policy of having a fully developed school of agriculture, but also relates to Mr. Chamberlain's personal relationship to it. It seems to me impossible for us to reach any final conclusions concerning the ultimate development of the Department of Agriculture until after the results of the conferences to which Dr. Stuart refers are known. Yet even within the program which Dr. Stuart looks upon as a possible minimum, it is clear that there is need for strengthening and rounding out the program which we have.

I have wondered whether a solution of the matter might not be (1) to say to Mr. Chamberlain that in view of the questions raised by President Stuart we do not feel ourselves competent to reach a conclusion as to the ultimate expansion of the Department of Agriculture, at least in the financial situation in which we are and in the atmosphere of intensifying rather than expanding the work, which it is hoped is pervading the China colleges as a group and (2) to say to Mr. Chamberlain that if he can lay before us ~~in~~ a clear and defensible program for a moderate development of the effectiveness of what we now have, with a view to fitting into any modest plan that might finally be considered, we might be prepared to authorize and encourage and assist him in endeavoring to secure funds during this furlough year.

I have already hinted this to Mr. Chamberlain and he is shaping something of such a brief financial program.

I do not think we should yet raise at all with Mr. Chamberlain the question of his relation to the school as evidently President Stuart's own mind is not yet final on the matter, although I have a letter from him dated August 5th in which he indicates that if the change of plan to which he, Dr. Stuart, refers, comes about, Mr. Chamberlain would not be persona grata as a leader in his present position, but that Dr. Stuart still thinks he has a place in the University.

Cordially yours,

Eric M. Hosack

Secretary,
Peking University.

EMN/L
ENC.

THE DEPARTMENT OF AGRICULTURE

PEKING UNIVERSITY

What we hope to raise this year

		Salary for 5 years including furlough	
For staff			
Horticulture	Gold $3000. X 5	U.S.$15,000.	
Animal Husbandry	3000. X 5	15,000.	
Animal Disease Control	3000. X 5	15,000.	
Farm management	3000. X 5	15,000.	
Agriculture education	3000. X 5	15,000.	
Assistants - Chinese (10)		30,000.	$105,000.
Equipment			
Laboratory Equipment		10,000.	
Machinery and tools		5,000.	15,000.
Operations			
Agricultural extensions and demonstrations		25,000.	
Scholarships ($2,000. a year)		10,000.	35,000.
			$155,000.

Plant		
Buildings - completion of Dairy Barn	$30,000.	
Greenhouses	10,000.	
Outbuildings, sheds, etc	3,000.	
Library Books	2,500.	45,500.
		$200,500.

What these additional funds will enable us to do

1. Enable Yenching to become a vital factor in the improvement of North China's agriculture through

   (a) Increased cooperation with the missions.
   (b) Meeting the demands for agricultural extension and demonstration.
   (c) Training rural leaders.

2. We can greatly increase the number of agricultural students.

3. Develop a phase of University research which will be an invaluable economic contribution to China's welfare in famine prevention and eventually help to bring about the self-supporting Chinese church.

4. Increase our annual income

   (a) The additional staff in horticulture, and the greenhouses will enable us to develop winter vegetables, nurseries, and landscaping work.

   Estimated increase of annual income — Gold $2,500.

   (b) The development of the dairy will increase our annual income over expenses involved, by — 15,000.

   Gold 17,500.

Note: This sum is approximately twice the income now received from the famine funds.

October 6, 1926.

WALTER E. CHAMBERLAIN.

Sent with confidential letter

no dup

October, 1926

FIFTH ANNUAL REPORT
(1925-1926)
THE DEPARTMENT OF AGRICULTURE
Yenching University
Peking, China.

INTRODUCTION

The field for agricultural experiment, extension, and instruction in North China is so wide and the active agents in the territory so few that we have felt it of first importance as a Department of Agriculture to establish our work on a broad and stable basis, at the same time giving a limited number of students training of a University grade. Such plans as have been formulated point toward an Institution in keeping with the needs of the territory. The majority of our early students are to come into the Department as assistants so that we to reap directly the benefits of the practical nature of their instruction. The practical nature of our course is necessarily stressed by the fact that most of our work depends upon the actual income that we derive from our projects.

The Chinese farmers are careful and hard workers, but down the centuries have frequently suffered starvation and also remained in poverty. History records the devastation of large areas by flood and drought, but - except for the more serious cases - there has been no mention nor even estimate of the pests and diseases that are constantly preying on the crops and animals of the already poverty stricken farmer no doubt taxing him far in excess of any recorded calamity. These handicaps, although strikingly evident to even the untrained eye can easily be controlled by systematic scientific methods. Intensive cultivation has been practiced but without the development of improved livestock, crops and fruits which have accompanied such like progression in Western Nations. So coupled along with the depletion of soil fertility there has resulted a drag which is even more than any ravages by pests, drought or flood. Scientific research and patient experiment have brought about methods for improving crops and livestock, and restoring and conserving soild soil fertility.

Western nations are rapidly replacing inferior methods, tools, animals and crops. The Department hopes through further research and demonstration to help the Chinese farmers to profit by the knowledge which to us of the West has long since become common property.

From our western experience we know that such a move will be gradual, hence our desire to lay a broad and permanent foundation in order that we may know what we are about when we begin our more intensive extension program. We hope that we may be able to supply the growing demand for college trained agriculturalists with practical men who have an unselfish interest in the welfare of rural China.

STAFF

The staff has steadily increased from three to fourteen members during the past two years. The staff now comprises:

1 Professor and head of the Department
4 Instructors (2 foreign, 2 Chinese)

3 Graduate Assistants
2 Secretaries and Clerks (1 at Haitien, 1 in Peking)
1 Short Course Graduate Assistant
3 Student Assistants

Mr.Walter E.Chamberlain, Head of the Department of Agriculture, left on furlough to America by Europe in January. Much credit is due Mr.Chamberlain for his enterprise and foresight in developing the Department in its early years. During the absence of Mr.Chamberlain Mr.B.Eubank and Mr.H.C.Etter are acting as Associate Heads of the Department and Mr.C.C.Yu, one of the first graduates of the Department, has been given rank as Instructor. The staff has had two additions in the Division of Agronomy, Dr.H.H.Lew and Mr.S.T.Shen. Dr.Lew was formerly a Tsinghua student and completed his graduate studies in soils at Ames and Maryland. Mr.Shen is a graduate of Nanking University and is in charge of the crop breeding work. Mr.P.H.Yui joined the staff in January as Secretary in our main office at Haitien, Messrs.Fan I Hua and Chiang I Ch'ang, graduates of this year from the Full Course have been given positions as Assistants in the Department. Mr.Liu Yun Lung, who this year completes the Two Year Short Course has been appointed Assistant Farm Manager. Even with these additions to the staff, there is still need of new members, who shall be able to handle the branches of work which are not now provided for as fully as we desire. These needs are mentioned later under the "Needs of the Department of Agriculture."

STUDENTS

Our students, while undergoing the usual high mortality rate due to the entrance requirements and high standards of work have increased to the following:

7 Candidates for B.S.Degree
5 Two Year Short Course Students
3 Artisan Students

During this year the agricultural students have lived at Haitien and have attended classes temporarily in the Theology Building on the new site. This arrangement enabled us to correlate the lecture and the laboratory work in a very desirable way in our instruction this year.

COURSES OF INSTRUCTION

During this year, due to additions in the staff, we have extended our specialization to the five general branches of agriculture and the class room work has been divided so that each instructor is teaching his specialized subject. The vocational and practical nature of our work has been strengthened by adding a 9 hour a week course in Farm Mechanics and in increasing the Farm Practice to the same number of hours per week. We aim to graduate our students capable of conducting by themselves farm operations.

The following courses have been given during the past session:

Agriculture	1	Soils	3 credits
"	2	Farm Crops	3 "
"	3	Special Field Crops	3 "
"	5-6	Farm Mechanics	3-3 "
"	7	Farm Animals	3 "
"	9	Principles ofAnimal Breeding	3 "
"	25	Market Milk	3 "
"	34	Nursery Practice and Management	3 "
"	35	Principles of Landscape Architecture	2 "
"	43-44	Farm Practice	1-1 "

A new Two Year Agricultural Short Course will be opened next year to students who have completed 5 years in Middle School under the new 6-6-4 system. This course will be taught in Chinese and will be practical in nature and emphasize Chinese conditions and methods of improvement for Chinese Agriculture.

The graduates from this course will be fitted to be modern farmers, farm managers, middle school teachers and agriculture experimental station assistants.

EXTENSION

An increasingly large number of inquiries have been coming in during the year, and due to the addition of a permanent Secretary to our staff we have been able to handle these requests for supplies and information in a much better manner than ever before. The increasing demand for veterinary advice and information concerning plant diseases and pest control has impressed upon us the fact that these two should be the next additions to our staff.

Mr.Etter and assistants have made a number of short trips into the various fruit growing districts in Chihli Province. Mr.Yu has likewise made a few trips to gather seed for the Department. Mr.Eubank has been called to make a few local visits to look at sick livestock.

During the last summer, Mr.Etter made an extensive trip south through Shantung and Kiangsu provinces, inspecting the horticultural and general agricultural conditions of the territory, and visiting the middle schools of the section arranging with several for cooperation in extension and teaching work.

Mr.Chamberlain went into Manchuria visiting the farms and experiment stations of the district, arranging for cooperation and livestock breeding, and an exchange of experimental data - at the time considering the advisability of locating a university substation in that district.

Mr.Eubank made an inspection tour into Inner Mongolia and made arrangements with the missions in that district to cooperate in the establishment of an agricultural experimental station and industrial school. Later he also visited the Methodist Agricultural Middle School at Changli and arranged for the affiliation of the agricultural work of the school.

The Department showed exhibits and delivered speeches for the Hsiangshan Orphanage Fair last autumn and arranged for every means of cooperation between the two schools. Plans are under foot for a more extensive program for the coming year. At present the Department is considering a set of plans

for the Department of Sociology with a view to cooperating with them in their rural projects.

While we have been criticized for not being more direct in our present contact with Chinese rural life, we are convinced that our policy of first getting firmly established, will eventually reach and help more people, than if we devoted our whole attention to groups of local rural villages, for the present financial condition makes it imperative that we stay on our localwork in order to meet the demands of our present program.

BUDGET

The 1925-1926 budget was $88,489.00 including $50,000.00 set aside for land purchase. During the year the following tracts of land have been bought:

59 mou	of farm land .	$2646.16
9 "	" " (commission excluded)	3345.80
43 "	" rice and upland	2400.00
	Total	$5391.96

The budget omitting the land appropriation was $38,489. of which $17,869. was derived from Famine Fund Income. Next year, 1926-1927 the departmental budget is $53,660.00 excluding G$15,000.00 for land purchase, it being proposed to raise $31,370.00 of this budget from our projects. This shows the Department's need of further endowment funds and financial assistance, and also that the Department is able to manage the Experimental Station so as to produce considerable revenue.

During the past year owing to unexpected delay in establishing the Yenching Dairy the total receipts from projects have not reached the original estimate, however, expenditure for feed has been correspondingly reduced.

The receipts by projects for 1925-1926 have been as follows: (based on actual receiptsof 10½ months)

Haitien Farm	$1985.53
Haitien Landscape (Spring,1926)	1500.00
Dairy	802.09
Nanyuan Farm	487.63
Horticultural Gardens	4400.00
Total	$9175.25

NEEDS OF THE DEPARTMENT

1. Staff
   a. Veterinarian
   b. Entomologist and Plant Pathologist
   c. Farm Management and Rural Survey
   d. Agricultural Education
   e. Poultry man
   f. Horticulturist (Olericulture)
   g. Animal Husbandry

2. Land

2. Land
   a. 200 acres of land for experimental station near the University site at Haitien.
   b. Extension sub-stations in various districts of North China.

3. Buildings
   a. Greenhouse
   b. Addition to dairybarn
   c. Hog barn
   d. Serum laboratory
   e. Agronomy building and soils laboratory
   f. Horticultural Building
   g. Staff residences

4. Machinery
   a. Foreign plows and other farm and garden tools
   b. Canning machinery.

5. Extension
   Funds for establishing and equipping extension farms, for staff and for demonstration purposes. The desired equipment includes moving picture camera, projection lantern and exhibits to demonstrate the benefits of improved agriculture, funds for publishing and circulating agricultural magazines, monograms and articles.

6. Livestock
   a. Poland China boar
   b. Berkshire boar
   c. Tamworth Boar
   d. White Leghorn cockerels
   e. Holstein bull
   f. 2 Ayshire heifers

7. Library
   Reference books and agricultural publications for library and reading room.

Funds are sorely needed for the enlargement of the work of the Department. The remittances from the China Famine Fund Committee provide less than one half of our budget, the balance being raised by returns from our projects. In view of the pressing need for money, Mr. Chamberlain, Head of the Department, has undertaken the task of soliciting financial support while on his furlough. Endowments and gifts are necessary in order for us to adequately meet in the near future even the most urgent needs of agriculture in North China, and especially to help the rural Christians to raise their standard of living through a "new agriculture".

DIVISION OF ANIMAL HUSBANDRY

Prior to December, 1924, the Head of the Department of Agriculture had done some commendable work in constructing the first unit of the dairy, along with some minor buildings, and general plans. Several courses had also been given, and some projects started with some of the local available livestock, as well as some planning done for future extension projects. But the Division of Animal Hushandry did not separate itself out of the general work of the Department until the above date when the present instructor ar-

rived with a shipment of foreign pure bred livestock. Since that time, while there has been no increase in staff, plans are completed for the addition of one foreign trained dairy expert, and two graduate assistants with the beginning of the next college year.

We have a modern brick dairy barn, the first wing of our intended unit with room for 26 cows, and an opposite wing to be used as a milk house and dairy sales room. There is under construction a large cattle, goat and sheep shed, with adjoining rooms for the laborers, grain storage and grinding sheds. Our poultry year boasts seven 20 bird colony chicken houses with accompanying land and fences. The hogs are kept at present in ordinary Chinese sheds, but we intend to make the hog house our next important building.

We have ground for the present pens and buildings, and are allowed the land of the Department not otherwise employed for the growing of the feed crops. During the year we have had two pure bred calves from our imported heifers and have purchased several head of native mixed bred cattle.

We have 45 new pigs from six of our sows, which brings our total number of foreign hogs up to 70, while our 50 white Leghorns have grown to over 500, and our other fowls in proportion. We have purchased 5 head of milk goats and hope to soon have an appreciable addition to our milk supply from that source.

Unfortunately for the Chinese nation, the separation of the intelligent and educated Chinese classes from immediate contact with the soil has resulted in an almost complete extinction of any commendable or economical form or type of livestock. For this reason, with the single exception of the world famous Peking duck, there has been no effort to develop any far animal, with the aim of systematic improvement. Successful progressive livestock management demands a keen type of intelligent sympathetic work coupled with generations of patient affectionate actual contact with the animals. Nor can any advancement be made where starvation feeding methods are the rule, and certainly no good results are likely to arise when the affection and care has been for generations bestowed by servants whose very existence has largely depended upon the amount of goods, etc. that they could themselves secretly absorb out of the limited amount entrusted into their hands. Livestock suffer visibly and quickly from any variation from the exact amount necessary for their well doing, so where the inaccuracy has the oriental trait of running to minors and minuses like results may be expected. Likewise there has been a lack of any protection from the pests and plagues which tend to follow on the heels of the concentrating herds.

Naturally the representatives of each remaining class are types which are the most able to withstand the prevalent conditions, but sad to say they are not the types which most economically turn feed and capital into work, meat, wool and milk. Not only has this condition resulted in a loss of the value of the native livestock, but also there has grown up an absolute ignorance of the fact that there are types of stock that may be bred and fed at a profit. The political conditions of the country have caused overcrowding with the result that the demand for food for human consumption has limited the livestock units of each farm to the barest necessities in the way of work animals, and a few scattering animals that are able to exist on what would otherwise be wasted.

So the farmer hauls a long distance to market what could often be fed to livestock on the farm, and marketed in a reduced bulk. In turn and at a different season, there is a long haul back from the city with the manure which might have much easier been produced on the farm as a by-product of the livestock industry.

A constant and steady income is universally recognized as a valuable asset to any farm as well as a panacea for most financial difficulties. Correlated with this recognition is the knowledge that it is best and most regularly obtained through some profitable form of livestock.

Meat compared with other foodstuff in China, is very dear, likewise in comparison with vegetables, very little is consumed. Chinese labor is very inefficient, Chinese are often undersized and undeveloped. There is no doubt that much of this trouble is due to the lack of meat in their diet. North China is admirably suited to the raising of livestock, presenting a field strangely undeveloped for a country which has enjoyed so long a period of continuous cultivation.

Milk has been recognized as a food by the Chinese only since the advent of the foreigners, and since that time only comparatively few have begun to use it, but certainly not nearly the number that there would be if there was more milk to be had. So foremost in our projects for the year has been the partial completion of the plans for a modern model dairy on our University farm at Haitien. Milk will, of course, be supplied the faculty of the University, and daily deliveries made into Peking. Funds for this work were secured by the sale of bonds which will eventually be matured and paid off by the profits of the dairy sales.

During the year we have successfully kept our foreign imported livestock under Chinese conditions, and have reared the offspring equally successful in the new location. We are delighted to learn that this part of China is adapted even better than we had thought, to the rearing of improved livestock. All classes do quite well with the exception of two breeds of foreign chickens which hardly seem hardy enough to withstand certain diseases and pests that have occurred.

We have separated out and reared several varieties of native chickens, and are conducting breeding experiments on the resultant offspring. Also we have continued the work of grading our goats, and have started an experiment with our Shropshire ram on native ewes.

Though all our projects have suffered from being cramped up on our small plots of ground, we feel that with the gradual increase of our land we shall be better able to continue our breeding work. Both our outside and local projects have been hindered a great deal by the tie up in the railway traffic, so much so that we have been forced to put off several until the trains could be normal again.

All extension work that we had planned has largely been stopped by the traffic tie up, and the disturbed political conditions, but arrangements have been made with several mission stations and schools for the distribution of such breeding stock as may be available. Acclimated foreign chickens were put on our Nanyuan farm, but were lost when that section was looted by the invading army. Arrangements have been made with the local dairies for the

cooperative use of the Department's bulls, and Animal Husbandry information. The Department is to receive and handle a shipment of pure bred dairy stock from America as soon as conditions permit.

Plans are under way for the establishment of at least one agricultural industrial school and experiment station to be located somewhere in the Northwest livestock belt. Local equipment is to be expanded and experiments continued with the addition of further experiments in cattle and hog improvement. Also there are to be experiments in the methods of handling and marketing of locally raised animal products, with the hopes of establishing better markets and a better quality of produce. Feeding experiments will be continued using locally grown feeds, and several types of foreign and native houses are to be tried for sheltering the livestock.

Three courses have been given during the year viz: Farm Animals, Market Milk and Animal Breeding, while the courses to be taught next year are Farm Animals, Animal Diseases, Feeds and Feeding, Dairy Fundamentals and Poultry Production. These courses are to be taught both in Chinese and English.

Besides the above mentioned land, the Division is keenly in need of further breeding stock to supplement our various units. More houses will soon be necessary for the stock, and more labor and minor equipment needed. But primary both for this part of China as well as the Department is the need for some method of disease prevention and plague control. There should be a trained veterinarian employed for this work and fully equipped laboratories established for the production of serum. A man is also needed to look after the poultry management, as well as additional staff in the way of trained animal husbandry men. Once the Division has the capital and staff to raise it above the present conditional state of existence, it will no doubt be able to support itself and certainly benefit and raise the living standards of the people of China.

DIVISION OF AGRONOMY

The Division of Agronomy has witnessed marked growth during the year 1925-1926. Its most significant development has been the addition of two Chinese members to the staff, Dr.H.H.Lew and Mr.S.T.Shen, who have enabled the work to go ahead with greater scope and detail than before. Dr.Lew is a soils specialist, having done his college graduate work at Ames and Maryland. Mr.Shen is in charge of the Plant Breeding Experiments and is a graduate of Nanking University, where he held a position for two years as Graduate Assistant in Agronomy. The Division is united in its administration with the Division of Horticulture, Mr.Harold C.Etter being head of the combined Divisions of Horticulture and Agronomy.

Scope of Work, Land and Equipment - The work in agronomy this year has been organized into projects and now considerable area is involved in definite experiments. The experiments conducted, cover approximately the following areas:

Alkaline Soil and Drainage	100 mou
Fertilizer Experiments	75 "
Rotation of Crops	9 "
Crop Breeding	8 "

This gives a total of 192 mou or about 30 acres. This work has mostly all developed since the fall of 1924. The area in agronomy projects is bound

to steadily increase, and of especial significance is the work in drainage and alkaline soils at Nanyuan where the present project of 100 mou can be extended to include the 1134 mou comprising the farm. During the year about 15 mou of rice land was purchased to the northwest of the Old Summer Palace, this acquisition together with the rental of 120 mou adjacent to the University site to the south and the cultivation of 50 mou of University land east of the East Residence Compound and the further purchase of another small tract of 9 mou has provided land this year to take care of the expanding experimental work. The development of further experimentation demands the acquisition of a large tract of land near the University site of about 200 acres in order to establish the permanent Experiment Station.

The Department has used the foreign plough successfully at the Haitien Station this year, and a part of our immediate plans is to effect the adoption in our work of modified foreign tools and implements. We realize that efficient but cheap tools need to replace the often ineffective tools commonly used by the Chinese farmer, and also that modern farm implements for large scale farming need to be demonstrated as to their value in developing tracts of virgin land in the vast outer territories of China. The Department already has a Ford tractor and a complement farm implements - the kind gift of Mr.Henry Ford - which did work last summer in breaking land to Northern Manchuria on the ranch of the late Major Morgan Palmer. The Department now needs a plentiful supply of modern farm implements as plows, harrows, and even a harvesting machine in order to test out their real value in China. Furthermore, an agronomy building is required to furnish Field Crops Laboratory accommodation, storage for harvested crops and barn space; the conduct of large Crop Breeding and Soil and Fertilizer Experiments requires plenty of room for seed and specimen storage.

North China agriculture consists mostly of field crops consequently the work in agronomy is fundamental to agricultural improvement here. The Department aims to introduce improved cultural operations for various crops, including scientific soil handling methods and the use of improved tools, further we shall work to increase the quantity and quality of yields by crop breeding and we have already begun work in drainage and alkaline soils which are big problems in Chihli and we are purposing to demonstrate scientific irrigation. There is need of funds and staff for establishing sub-experimental stations where problems of the different districts can be studied and solutions demonstrated to farmers in locations readily available for their observation.

Courses of Study - Courses of instruction are offered in Soil Physics, Chemistry and Microbiology, Field Crops, Crop Breeding, Methods of Experimentation and Seminars in Soils and Crops. During the session 1925-26 three courses were taught. In the fall semester a course in Soils dealt with the origin classification and nature of soild, their physical, chemical and microbiological characteristics, crop rotations, drainage and irrigation. In the second Semester two courses - Farm Crops and Special Field Crops were offered. The course dealt with the history, classification, production and cultural phases and uses of small grains in Farm Crops. Frequent discussions were held on comparisons between Western and Chinese cultural methods. The course on Special Field Crops was a course mostly in Advanced Agronomy dealing with the value and use of commercial fertilizers, theories and practices of soil fertility, crop breeding methods and insect and disease control of field crops. In the discussions in this course the aim has been to introduce methods of scientific agriculture into China. The laboratory per-

iods of these course have been spent both in widening the general agricultural knowledge of the students and also in training them in the scientific methods of agriculture such as soil analysis, evalation and systems of application of commercial fertilizers, crop breeding methods and pest and disease control.

The Department seeks to train students as leaders in scientific agriculture and also to provide China with practical well trained and intelligent farmers. To accomplish these purposes the work in the Four Year Course has considerable pure science, and is of the grade of work in American Universities, while the two year Short Course emphasizes practical agriculture in the vocational sense, training the student for positions as rural leaders, middle school teachers, experiment station assistants and farm managers. The first year Short Course classes in 1926-27 will be taught in Chinese and the aim is to have as many of the Short Course graduates as possible continue with some kind of agricultural work after their graduation.

Agronomy Projects - The projects now being conducted by the Department are:

1. Drainage project on low-lying and alkaline land, involving about 1200 mou or 200 acres.

2. Crop rotations - 3 and 6 year rotations including the following crops: Wheat, Cotton, Kaoliang, Corn, Soybean and Clover.

3. Commercial Fertilizer Experiments on North China Crops: viz: Cotton, Kaoliang, Millet, Corn, Soybeans, Peanuts, Sweet potatoes, Rice, Cabbage, Onions and Wheat.

4. Wheat Breeding (a) Pure line selection begun in 1922.
   (b) Pure line head selection begun in 1925.
   (c) Variety tests begun in 1925.

5. Corn Breeding (Remnant Method begun in 1924 with Chinese Red, Italian White and 90 Day Corn; acclimitization work was begun with 90 Day Corn in 1922 (b) Acclimitization work in Country Gentlemen Sweet Corn.

6. Soybean Breeding - Variety tests on 50 varieties begun in 1925 and 1926.

7. Cotton Breeding Acclimitization work on Trice and Million Dollar Cotton (Improved Chinese) begun in 1926.

8. Rice Breeding - Selection work with 176 heads Purple Golden Seal Rice begun in 1926.

9. Peanut Breeding - Selection work with 151 selections of prostrate type and 51 selections of upright type begun in 1926.

10. Kaoliang Breeding - Variety tests of 13 varieties begun in 1925 and 1926.

11. Millet Breeding - (a) Variety tests of 18 varieties begun in 1925, including a very promising fodder variety of Manchurian millet.

12. Variety Acclimitization Tests with Cow Peas, Mung Beans, Spring Wheat, Himalaya Barley, Chinese Barley, Banner Oats, Gold Coin Oats, Sudan Grass, Field Corn (Canadian), Sorghum (Canadian) and Hemp begun in 1925 to 1926.

We have established working cooperation with the Mission Stations at Weihsien and Hwanghsien, Shantung, where wheat from our station is now being grown.

Report on Projects - The most advanced experiments of the Department are those on Wheat, corn and soybeans which were begun before the writer assumed the responsibility for the Division of Agronomy. The commercial fertilizer experiments conducted by the Department in association with Brunner Mond & Company (China) enlarged our experimental plots during 1925-26 by over 120 mou; These fertilizer experiments are being conducted on new plans this year, which have greatly increased the scientific value of the work. Staff additions and the subsequent expansion of Soil and Plant Breeding experimentation with the development of the Nanyuan Station projects have brought considerable growth in the Division of Agronomy.

Drainage and Alkaline Soil Improvement - Since at Nanyuan the farm lands are usually seriously flooded each year at the rainy season owing to poor drainage, the Department has begun a drainage scheme whereby the level of the fields is raised about 2 feet in strips about 30 feet wide and the excavated areas made to serve as drains, it being further intended to grow rice or other aquatic in these parts. Already a considerable tract of land has been ditched and this season will indicate results both with regards to drainage and reduction of alkalinity, the latter being a serious handicap at Nanyuan. The successful completion of this project would have a far reaching effect in changing the prevailing system of farming and give reasonable assurance of an annual harvest; it also provides a basis for securing the cooperation of neighboring prominent owners, in a general drainage scheme, which would bring great benefit to the whole Nanyuan district. Unfortunately the recent war stopped extensive boundary drainage and the general development of the scheme on our Station for this year.

Crop Rotation Experiments - Crop rotation experiments constitute one of the methods adopted for attacking the soil fertility problem, with the further aim of demonstrating how legumes can be economically included in North China crop rotations, bringing the benefits of maintenance of the nitrogen and organic content of the soil and increase of bacterial activity. A 3 year rotation has been planned for general North China conditions including sweet potatoes, wheat followed by corn with soybeans and cotton. A 6 year rotation adopted for mixed farming with livestock includes cotton, wheat, clover (2 years) and wheat again with legume green manuring crops introduced throughout the rotation. Military operations this spring delayed planting according to outlined plans and peanuts have been substituted for cotton in both rotations. The Peking Red and Nanking (N.N.) Wheat have shown up to good advantage. Records will be kept showing costs of productions and returns during the cycle of the rotations.

Commercial Fertilizer Experiments - Realizing the need of commercial fertilizers to supplement the scanty supply of barnyard manure available for common field crops, the Department is emphasizing commercial fertilizer experiments, as indicated above. In 1924-25 most of the work was with ammonium sulphate; the experiments suffered from the heavy rains in July and August but generally showed that under North China conditions commercial fertilizers could be

applied with profit even when all costs of application had been calculated. Some of the main points apparent from last year's experiment are:

1. On certain general crops application of commercial fertilizer paid for itself by increased net returns, thereby demonstrating the economic soundness of using commercial fertilizers in Chinese farming.

2. "Complete fertilizer" tests are essential in order to adequately determine the crop requirements on different types of soil. Extensive experimentation is needed in order to ascertain crop responses to various fertilizer treatments in Chinese soils.

3. Evaluable of Chinese barnyard manure (ma feng) as a fertilizer.

4. Desirability of thorough experiments designed to study the strictly economic aspects of applying different commercial fertilizers under Chinese conditions.

This year the experiments have been completely reorganized and considerably enlarged so that the above four points are well covered. The main work is being conducted as last year in cooperation with the Brunner Mond & Company (China) but the Department has also initiated separate projects. In the main experiments 4 up-to-date plans have been used on 11 of the main crops in North China, giving a total af about 600 plots involving around 75 mou of land.

In one of the plans the Schreiner Triangular method is used and acid phosphate, sulphate of ammonia and sulphate of potash are applied either singly or in combinations and in various weights. In 2 of the plans nitrogenous fertilizers including nitrate of soda, sulphate of ammonia, beancake and urea are compared in one case on the basis of equal nitrogen content and in the other on the basis of equal cost price.

Realizing that manure is the main if not the only fertilizer in use in some part of China, comparisons with the commercial fertilizers are being studied, Furthermore tests of the value of combining acid phosphate with manure are also made based on the theory that manure as a complete fertilizer contains little phosphorus and that North China fields having been cropped with grains for long years may be in need of phosphorus. Most of the experiments are located in the Chi Pei Lo Garden (Korean Garden) where 120 mou has been rented chiefly for experimental purposes. The rice experiments are being conducted on land purchased this spring just outside the northwest corner of the Yuanmingyuan (Old Summer Palace).

Fertilizer applications and seeding have been completed with the exception of cabbage and winter wheat and onion, preparation for the onion experiment now being under way. The crops have done quite well in spite of the very dry spring. The rain fall being only about one inch for the first 4 months of this year. Much trouble has been caused by birds and insects which have destroyed the seedlings and have in places greatly reduced the stand; re-seeding and transplanting have been done to make up the loss when possible. Aphis have attacked the cotton plants, but timely spraying with nicotine sulphate has successfully checked any great damage. At the time of writing the various crops have grown luxuriantly due to recent rains, and the plants are

beginning to show the effects of different fertilizers.

Owing to the increase in the Agronomy Staff it will be possible to give close study to the experiments and to make full agronomic notes. The present indications are that the experimentation with commercial fertilizers will make valuable contributions towards the solution of the present unsolved problems concerning the fertilizer requirements of the Chinese soils.

Crop Breeding Experiments - Plant breeding is one of the fundamental ways of improving Chinese agriculture. This is true not only because plant-breeding is basic to crop improvement but because through improved varieties and strains and the subsequent distribution to the farmer of the improved seeds there is the easiest way in which the Chinese farmers can increase their returns; they can buy good seed with practically the same money outlay that they make for poor seed. The resulting increased yields would give him revenue to make further improvements in farm implements or livestock. The work of breeding and seed production will be closely correlated in our work so as to extend to the farmers as readily as possible the benefits of our experimentation. The breeding already begun is chiefly with the leading North China crops and this year progress has been made in laying the foundations for scientific crop improvement. A graduate assistant is giving practically his full time to this branch and the land devoted to breeding plots has increased several hundred per cent during the last two years. Wheat, Pureline selection on Peking Red Wheat is now in its fourth year and Nos.11 and 13 show a special superiority compared to checks and other selections. Next year these will be put into blocks and it is hoped to have seed for distribution for 1928. Variety tests were started last year and will be increased and continued thereby forming a basis for future selection work. Some Canadian spring wheat is also being acclimitized this year, but owing to late planting and drought conditions it is not as far advanced as would be the case under normal conditions. A new breeding experiment with Peking wheat was begun last fall some 500 selections made on the Haitien and Nanyuan stations being planted in "head to row" tests. About three hundred of these have proved of worth and further selections amounting around 1700 heads have been made in Haitien district this summer, and will be incorporated, bringing the experiment to approximately 2000 selections.

Corn - Chinese Red, Italian White and 90 Day Corn have been grown in the experimental plots using the remnant method since 1924 and are being multiplied in preparation for distribution this fall. All these varieties give promise of being highly successful, the Italian White giving heavy yields of both fodder and grain and the 90 Day having the advantage of early maturity; the Chinese Red shows indications of definite improvement through the selection work already done. A new experiment is being conducted with Italian White in which there is crossing of pairs according to type.

Soybeans - Owing to the large acreage in North China - especially in Manchuria, improvement of the crop for grain, fodder or oil has been developed as an important part of the work in plant breeding. Fifty varieties are being tested and classified and some of these show special value. The varieties have been planted in plots of about 1/100 mou each and have made good growth, it being planned to further enlarge the experiment and to continue careful selection; the indications are for good results for the experiments this year.

Other crops - Acclimatization and variety tests and selection work are being conducted with cotton, rice, peanuts, kaoliang, millet and other crops. This work was mostly originated this spring and it is aimed to increase the number of varieties in these experiments by further selections made during the present season. Farm crop seeds have been secured from Manchuria, Nanking and Canada and this year work will be started with various legume crops both foreign and native.

The plant breeder in China has the opportunity of improving native Chinese varieties and also of introducing and making indigenous certain foreign varieties and then interesting experimental work in originating new varieties through hybridization. China has some crops which would be valuable introductions to the West and it is equally true that many western crops can be successfully introduced into China, an example of such profitable introduction to the Chinese farmer being the case of the extensive cultivation of the American peanuts in Shantung.

The Division of Agronomy realizes the importance of plant breeding in the programme of improving Chinese agriculture and wishes to emphasize the need of additional Staff and increased acreage in order that this essential work may increasingly be efficiently and progressively conducted.

Plans for Development - Besides following up the work that has been started in previous years and initiated in 1926 new projects either as a necessary development of previous work or as fresh problems will be undertaken among which the most important ones are the introduction of new legumes which may also include the introduction of their respective inoculants and the development of native legumes, the latter being especially emphasized as they are better adapted and the soils naturally inoculated. The introduction of new field crops will also be extended together with more comprehensive breeding experiments with the most of the field crops of north China.

Concerning the investigations of soils problems, rough soil surveys particularly with respect to drainage will be made as alkali conditions are frequently encountered and such alkali conditions have been mainly due to water logged conditions. A drainage project has already been started at our Nanyuan Farm to reclaim about 1200 mou of alkali land by an open ditch drainage system, and if not for the war a good part of the work could have been completed in 1926 and its value tested. Other experimental studies on alkali soil will also be made such as the introduction of alkali resistant crops and application of chemicals.

Whether or not North China soils need lime has never been studied. An extensive study will be made as soon as laboratory facilities can be obtained. Lime can be obtained cheaply everywhere and if found useful it opens another way of industrial development and agricultural improvement.

Laboratory facilities for chemical, physical and biological studies of soils have not been completed. It is hoped that more equipment will be secured in order to pursue accurate and thorough studies of the nature of China soils.

The establishment of sub-experimental stations in various districts in North China is desired to develop extension work in order to reach farmers in different agricultural sections. We furthermore seek to cooperate with

various missions in any agricultural work they may have already begun or should contemplate and would be glad to answer all inquiries and to visit various mission stations to share in the work of improving the agricultural and hence the economic welfare of the Chinese Christian farmers.

DIVISION OF HORTICULTURE

The horticultural work of the Department of Agriculture was formally organized with the arrival of Mr.H.C.Etter from British Columbia in September, 1924. Mr.Etter in addition to his duties in horticulture has also been in charge of the agronomy work. However, the addition of Dr.H.H.Lew and S.T.Shen to the agronomy staff during the past year has enabled Mr.Etter to give a larger proportion of his time to horticulture than before; this has resulted in enlarging the nursery, increased acreage planted in vegetables and flowers in order to establish a seed distribution center, and a considerable enlargement of the landscape work which this year has included the grounds of the Yenching School of Chinese Studies and some plantings on the new University site at Haitien. Mr.Liu Yun Lung throughout the year has performed commendable work as student assistant in horticulture. Mr.Wang Ming Ching, who will enter the Agriculture Short Course this fall has assisted in horticultural field and experimental work since March.

The Horticultural Division has grown during the past two years until it now includes the essential branches of horticulture viz: Pomology, Olericulture, Floriculture and Landscape Gardening. A small experimental cannery is also operated, a nursery and a seed farm are now being established and plans being laid for the erection of a modern greenhouse next year.

Land and Equipment

The work in horticulture is conducted at Haitien and also at the Horticultural Gardens at the old University site in Peking. In Peking there is about 10 mou or approximately 1-1/2 acres in cultivation in vegetables and nursery stock and also 6 glass greenhouses, two paper front greenhouses and four hotbeds with glass sash. At Haitien the land in experimental work in horticulture totals 27 mou or about 4 acres made up as follows:

Orchard	15 mou	Nursery	5½ mou	Foreign vegetables	5 mou
Chinese vegetables	2 "			Cannery tomatoes	7½ "

Owing to the shortage of land the vegetable work is being carried out to a large extent as intertillage between tree rows. There is need for an area of at least 25 mou to give space for the development of the farm. At Haitien is also located the experimental cannery which is operated in 10 chien of Chinese buildings; the cannery equipment now used is all of the hand power type manufactured by the Burpee Can Sealer Company, but it is desired to establish a small cannery with power machinery; already a pressure cooker and a can testing machine have been imported. Owing to the expanding nature of the seed farm, the present three chien of storage rooms is becoming inadequate and there is need for a horticultural building to furnish room for harvested crops, seedbins, a shipping department and a horticultural laboratory. A

Planet Junior Seeder and also a Wheel Cultivator have been used during the year at Haitien and give evidence of being of economic value to Chinese market gardeners; the cost is low, they effect saving in labor and do highly efficient work. The Department also carries a large stock of spray pumps and spray chemicals which are much in demand.

Scope of Work in Horticulture - North China needs a "new orcharding" and to accomplish this some of the necessary steps are the introduction of new varieties of fruit, breeding to improve Chinese fruit varieties, adoption of modern cultural practices of pruning, spraying and thinning, soil fertility systems and improvements in marketing. The plans of the Horticultural Division include the establishment as soon as possible of a Seed and Nursery Department so as to supply farmers and gardeners with "Northern grown" seeds and healthy nursery stock of desirable varieties. Special attention is being given in the season of 1926 also to the control of fruit and vegetable pests. The Department is cooperating with the University in the landscaping of the new University campus which is affording an excellent opportunity for the development of floriculture and landscaping. It is planned also to erect a foreign style greenhouse to demonstrate winter forcing of vegetables, modern floriculture and also afford laboratories for breeding, propagation and experimental work for the Divisions of Horticulture and Agronomy. We are working to establish reliable horticultural experimentation, which in the case of fruit breeding must occupy a long period of years; at the same time we are in a practical way filling some immediate horticultural needs in China in respect to pest control, seed distribution, nursery stock and food conservation by canning. In all the courses in horticulture the students are given practicum periods which serve to train them to perform the various horticultural operations and lines of experimentation carried on at the Experimental Station.

Courses - During the year the horticultural courses were rearranged, 8 courses now being offered to cover comprehensively the main branches of the subject. Fruit Growing is now given in two courses: Practical Pomology and Commercial Pomology. A new course in Canning, Evaporating and Fruit and Vegetable Bi-products has been added in order to provide a lecture course supplementing the present work which the students do in the Departmental Cannery. During the past session two courses have been taught: The Principles of Landscape Architecture in the fall semester and Nursery Practices and Management in the spring semester. The former course dealt with the principles involved in landscape planting, a study of planting material and the making of landscape plans. In the laboratory period the students drew plans showing the landscape of different areas of the new University site. The Nursery Course has dealt with various methods of plant propagation. Emphasis has been placed on the propagation of fruit trees. The practical periods have been speng in working on problems involved in the establishing of a nersery, the need of work of this kind being very great in North China. The courses to be given in the New Agriculture Two Year Short Course have been outlined and two of the students graduating this year have been appointed to the Departmental staff to enable the giving of instruction in Chinese.

Projects - Experimental work is being established in the main branches of horticulture and the chief projects now being conducted are outlined below:

1. Orchard:
   The aim is to introduce suitable western orcharding practices in

order to establish a "new orcharding", it being now the general condition that the Chinese fruit grower has practically no knowledge of pruning, spraying and thinning and other essential modern orchard operations. The first step in this work was the planting of a test orchard which was begun in the spring of 1925 and continued in 1926. The trees for this orchard have been imported from Canada and also secured from Antung, Manchuria and Chefoo, Shantung. The present orchard contains 189 fruit trees which are planted on the agricultural land on the University site. These trees comprise 78 apple, 22 pear, 15 plum and prune, 15 apricot, 18 cherry, 11 peach, 13 cut trees, 7 date and 4 persimmon trees. The foreign varieties comprise such well known ones as Delicious, Winesap, Yellow Newtown, Winter Banana, McIntosh, Jonathan, Wealthy and Gravenstein apples; such pear varieties as Bartlett, Flemish, Beauty, Anjon, Clapps, Favorite and Bosc;Moor-park and Blenheim apricots; Crawford, J.H.Hale and Elberta peaches; Green Gage, YellowEgg and Bradshaw plums; Bing, Lambert and Royal Anne cherries and other trees such as Nectarine, Italian Prune, English Walnut, etc. Together with these trees we have planted Chinese varieties and also trees of foreign origin but propagated in China (at Chefoo), one main purpose being to breed for the production of improved varieties for China. Various cultural operations are to be tested and insect and disease control demonstrated. The experiment to date proves it is possible to import trees from the Pacific Coast and transplant them successfully in China, some of our trees even being sent by parcel post. Also we have discovered that special precautions need to be taken such as the mounding or burying of the young trees during the first winter or two to prevent the killing of the tops. Orchard pests have also been kept under good control.

2. Vegetables:

This work includes the introduction, special cultural operations and pest control of vegetables with an aim to increase the selection of vegetables that can be grown in North China. Also by means of improved methods of cultivation and pest control, it is planned to improve the culture of native Chinese vegetables. The olericulture work is now carried on in three sections: (a) Variety and acclimatization tests of imported vegetables. (b) Cultural operations and improvement of Chinese vegetables. (c) Commercialvegetable garden for supplying market vegetables to faculty members and local markets. The work of the past year shows that many imported seeds have done exceptionally well and there is every promise of successfully acclimatizing various varieties of foreign peas, beans, corn, lettuce, spinach and potatoes. Several new kinds of tomatoes are being tested and this vegetable shows that it is well suited to Peking conditions. We aim to supply foreign residents with sanitarily grown vegetables throughout the year. This is a commercial project which promises to contribute well to the financial support of the Department.

3. Floriculture:

In view of the difficulty of obtaining seeds of even common flowers in China, we have begun acclimatization and variety tests with many varieties of foreign flowers. We are also beginning a collection of Chinese wild and medicinal flowers and are propagating various Chinese flowers. This work is largely associated with the building up of a seed farm. One of the special problems, work on which was begun in 1925, was a suitable lawn grass mixture for Peking. So far the various foreign seeds tried have failed to live through the winter. This work is being continued during the next year.

4. Landscaping:

In response to the demand for home gardening the Department has undertaken landscaping contracts. This work amounted to around $2000.00 in 1925 and has increased to over $3000.00 for 1926. During the year the two largest projects undertaken were the landscaping of the grounds of the Yenching School of Chinese Studies in Peking and the planning and initial planting on the landscaping of the University campus at Haitien. A Home Garden Club has been organized which has stimulated interest in landscaping among the Faculty members; also the landscape work is being used to stimulate interest among the student body in school and community beautification and the national porblem of afforestation. The Division is fostering the organization of a Yenching Tree Club among the student body.

5. Cannery:

The cannery has now operated for 4 years and last year saw improvement in the efficiency of the tomato pack, the spoilage being considerably reduced and corn and peaches being added to the selection of canned goods. During 1924-1926 approximately 5500 cans of tomato were sold. These tomatoes were canned mostly by the Agricultural students and are paving the way for a popular utilization of canned goods in China, which is a means of food conservation.

6. Nursery:

This project is essential because of the difficulty in purchasing reliable fruit trees readily in China. One of the main features of the work has been the grafting of scions of foreign varieties on Chinese stocks. Fifty-six trees are now growing as a result of the grafting down in 1925 and 970 grafted fruit trees of both Chinese and foreign varieties have been planted in the nursery this spring (1926). Also we have 150 grafted mulberry trees and 1500 various grafting stocks have been planted including Wild Pear, French Crab, Black Date, Mountain Apple, Wild Peach and Wild Mulberry. A large number of scions have been used in grafting, which were obtained from Washington, D.C. and British Columbia, Canada and Fruit sections in North China.

7. Seed Farm:

Work has now been carried on for two years in the development of a vegetable and flower seed business. In view of the present need, this work will be pushed ahead as rapidly as possible and will be developed in cooperation with the production of farm crop seeds. Our geographical location gives us a special advantage with "Northern Grown" seeds. Some sales have been made this spring; it is our intention to issue the first Yenching Northern Grown Seed Catalogue this fall.

8. Pest Control:

This is one of the most pressing needs of Chinese horticulture. Research work is being planned and apparatus and spray materials have been stocked in order to institute a vigorous program for pest control. This summer a student assistant is giving practically full time to pest control, study of life histories and demonstration among local farmers.

9. Winter Forcing of Vegatables:

In the winter of 1924-1925, an experiment was started with three hotbeds of lettuce to determine the practicability of winter forcing of this crop in Peking. The results of two years of this experiment showed that head lettuce varieties tested; viz: Big Boston and New York, although they failed to head successfully, provided a succulent and delicious salad and were raised without any special difficulty excepting in the severest cold weather when growth was considerably retarded. Other varieties and different control measures will be used in order to obtain a more satisfactory product. Two paper front greenhouses were constructed last winter and cucumbers were successfully forced and tomatoes are being tested as a succession greenhouse crop for cucumbers.

Horticultural Gardens, Peking - The Horticultural Gardens are the oldest unit in our horticultural work having been inaugurated by Mr.Chamberlain, Head of the Department of Agriculture and the usefulness of the gardens to the Peking community has been indicated annually by the increase in business. During the past year the returns in cash have gained about $750.00 over the previous year. The receipts for 11 months up to the middle of May 1926 were $4,108.53 with an estimated revenue for the year of about $4400.00. The estimated expenditure for the same period is about $3400.00 making a net return of about $1000.00 for the fiscal year.

Cash sales for 1925 to 1926 (11 months) were distributed as follows:

Flowers and plants	$1521.16
Landscape	1759.37
Flower service	351.02
Garden vegetables	190.00
Forcing lettuce	175.62
Field grown lettuce	122.74
Total	$4119.91

This year the utilization of the gardens has gradually been transformed from featuring flowers to landscaping and vegetable gardening; it is planned to specialize only in the rarer and more difficult crops. It is highly desirable to develope both summer and winter growing vegetables in order to supply the demand of missionary and other foreign residents in Peking.

Mr.Kuo Shu, the clerk and accountant at the Gardens deserves much credit for his efficient conduct of his work.

Outlook and needs - China possesses long and valuable history in horticulture and her gardeners can today teach western gardeners lessons in utilization of waste and in intensive cultivation. Much work needs to be done, however, in establishing modern orcharding in North China. This involves the introduction of new varieties, the pruning, spraying and thinning of trees, cultural treatments for orchard soils and also improvement in marketing methods. Cooperative marketing can doubtless be applied in certain districts with benefit to the growers. Mr.Etter is at present cooperating with the Chinese International Famine Relief Commission on different Committees relating to the problem of rural cooperation in China. The work in floriculture and olericulture can be brought most quickly to practical fruition by the establishing of our

seed farm. The development of the nursery for distributing new or improved plants is fundamental to the improvement of Chinese horticulture.

An additional departmental staff member is needed to give extensive study to the pests and diseases of crops for this constitutes an annual loss to farmers of many millions of dollars. Another horticulturist is also needed to assist in the rapidly expanding work. The establishment of a power machinery cannery and a modern greenhouse are two tasks which we desire to accomplish in order to help with the acute problem of supplying food to China's four hundred millions.

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Respectfully submitted,

Associate Acting Heads,
Department of Agriculture

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