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35636, 1915.

CARLISLE

File No. 810

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DEPARTMENT OF THE INTERIOR
UNITED STATES INDIAN SCHOOL
CARLISLE, PA.

September 16, 1915.

FILED BY C. P. F.

OFFICE OF INDIAN AFFAIRS
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The Honorable
Commissioner of Indian Affairs,
Washington, D. C.

Sir:

I am in receipt of Office letter, dated September 15th, enclosing for my information copy of report of Special Supervisor H. L. Kent on vocational courses in agriculture, mechanic arts, and home economics, for the Carlisle Indian school. With this letter was also enclosed original of Mr. Kent's report, which I am returning herewith, as evidently this was mailed to me through error.

Very respectfully

Superintendent.

OHL:SR
Encl.

REPORT ON VOCATIONAL COURSES IN AGRICULTURE, MECHANIC ARTS AND HOME ECONOMICS FOR THE CARLISLE INDIAN SCHOOL.

By H. L. Kent, Special Supervisor.

If provision for the education of the Indian is to keep pace with progress in general educational advancement, no more wise or commendable work could be undertaken than to put into operation three year vocational courses in agriculture, trades and home economics at the Carlisle school. The general and rather indefinite and aimless work of the grades fails to function to any considerable extent in the lives of Anglo-Saxon boys and girls, and therefore we are demanding high school or vocational school work for them, and it seems but reasonable to suppose that Indian boys and girls have a greater need for advanced and more specific and carefully directed training. Neither ought such advanced and applied work to be limited, as heretofore, to a short business training for the relatively few who developed an aptitude for such work. The fact that these boys and girls are coming to the schools at an earlier age than they formerly did makes such an advanced course possible at present.

Since these Indian children have land on which they may finally settle and build farm homes, it seems but reasonable to put first emphasis on the courses in agriculture for the boys and in home economics (home making and managing) for the girls. The promising future of agriculture also justifies this training for these landowners. To the same degree the success of

former graduates of Carlisle in industrial work and the trades together with the increasing demand for better trained and educated workmen in every industry, justifies the introduction of the three year trade courses.

The size of the plant at Carlisle, the farms, shops, and general equipment, its location in the heart of a highly developed agricultural section, its nearness to so many and such varied industrial centers, all seem to qualify it as the most desirable of the Indian schools for the development of such courses. Here agriculture may not only be taught and practiced in a most advantageous way but the agriculture of the whole district is so highly developed as to present a worthy ideal to the Indian boys who may come to Carlisle. To the same extent the shop and household equipment fit the school for the mechanic arts and home economics work. Therefore with the addition of a very little special equipment for agricultural practice on the small-farm scale, and for training in managing and doing the work of a small farm home, these courses may be put into operation at once with no other expense except that incident to the necessary change in teachers and texts.

Since the Carlisle school is so far from any reservation and since Indian or other schools are comparatively numerous nearer to the various reservations, it would seem but the part of wisdom and economy as well as adding to the efficiency of the work here if in the future no students were allowed to enter the Carlisle school except those ready for the sixth grade or more advanced work. This would allow those who expected to

complete only the eighth grade to enter for a three year term and take such vocational work as they could in the grades. Others might enter for a longer term and complete the grade and high school work, while still others might enter for a three year period after having completed the eighth grade in the Carlisle or other schools. The expense of transportation, coupled with the lack of ability to do the special work offered at Carlisle with pupils in the lower grades, would seem to justify this limitation to pupils of sixth grade standing. It would even justify urging even seventh and eighth grade pupils to attend schools nearer their homes until they were ready for the advanced work to be offered at Carlisle only.

AIM OF THE COURSES.

AGRICULTURE: This course is planned and should be conducted with the vocational aim clearly and definitely dominant. The work in agriculture is the important and determining work, the nucleus about which the academic work is to be arranged. The character and amount of the academic work is to be determined by its relation and importance to the problems of agriculture and its vital necessity to the future farmer. The aim is to produce not a scientist, nor a specialist, but a practical efficient farmer, whose success will depend fully as much upon his skill in doing which results from practice and training as it results from scientific knowledge and managerial ability. The course is planned to include all of the work which would be found on

the ordinary, diversified farm. This will fit the students to return to their own land, situated under whatever conditions it may be, and adapt themselves to those conditions and successfully undertake the type of farming which must be followed there.

The work in history, civics, economics, and farm writing should aim definitely at training for citizenship. The general living conditions and atmosphere as well as the social life and student enterprises at Carlisle will add materially to the effectiveness of this work.

MECHANIC ARTS: No course in mechanic arts in any school conducted as a school will turn out experienced master craftsmen. The function of this course in the Indian school should be (1) to help a boy to find himself and to select that life work for which he seems best fitted and has most chance of success, (2) to give him such trade and technical information and training as to enable him to leave school not a finished workman, but a partially trained workman, who, after getting real trade experience, will become the exceptionally trained and skilled workman capable of acting as foreman, boss, contractor or manager.

The academic work must contribute definitely and distinctively to trade problems, so that this work too shall function in the future life of the mechanic. This work should supplement the practical work, and fit the student to plan work, to follow the plans of others, to make estimates, and to do work in a businesslike, orderly way. The practice work should aim

to give an orderly experience in and reasonable familiarity with processes, operating machines, doing trade work, selecting and using materials, planning jobs and directing work. In all practical work an attempt should be made to apply and use the academic work.

HOME ECONOMICS: The girls who take the course in Home Economics should become the model housewives and mothers in the communities to which they return. This course should bend all its efforts to that end. All of the work in housewifery should be planned and conducted with the home of the farmer or workman of very moderate means in mind. Therefore the work should be essentially practical rather than idealistic. Management of such a home and of such an income should be emphasized throughout. Training for motherhood and for the cultural and artistic part of the home life must also be provided, i.e. these girls must be able to make their future homes pleasant and attractive, as well as economically and hygienically efficient, and they must give to their children the culture and refinement essential to racial progress. This part of their training must be secured through training in social observances and usages, through the special type of English work provided for this course, through the special courses dealing with home management, motherhood and the care of children, and through the several art courses.

Special effort should be made to preserve all that is best in Indian folktales and hero stories as a race heritage,

which is to be handed down by mothers to their children as an inspiration for racial advancement and progress. In the same way but in larger measure Indian art should be fostered and encouraged in every possible way. Girls should be encouraged to get all that is best in their tribal art, to become proficient in its use, to understand its symbolism, and to apply it to the materials and furnishings of their new types of homes.

Special attention must also be given to fit these girls to take a part in the social and community life of their future neighborhood and to enable them to exercize a helpful and wholesome influence on all community activities.

MODIFICATIONS OF PRESENT WORK.

If the above ideals are to be realized economically, both as regards time and expense to pupils and to the matron, certain changes should be effected in the present system in the school.

EQUALIZATION OF INDUSTRIAL AND ACADEMIC ADVANCEMENT: At present there is considerable inequality in the industrial and academic advancement of pupils. Some changes should be made, which will tend to more nearly equalize advancement of individuals in these two lines of growth. A number of ways of possible solution of the problem should be considered.

The academic work of the school should be carefully revised and as much as possible of useless or misplaced material eliminated. Frequent repetition of virtually the same work should

be avoided. The real needs of the pupil should determine in large measure what work should be given. In so far as possible the content of subject matter should be adapted to the Indian's peculiarities of mind and former experiences. Too much of the ordinary course of study is the accumulation of years of custom. All such material which will not definitely contribute to social ends should be eliminated. A short direct line to efficiency should be the ideal constantly in mind in planning the academic work of the grades.

Pupils older than the average for their grade should be pushed along rapidly. Absolute thoroughness in the lower grades is of less consequence than some experience in several grades. Besides such pushing along is a spur to greater effort. In cases of men and women of advanced age in the second and third grade, all their efforts and those of their teachers should be centered on reading, writing and arithmetic and possibly drawing, at least until they reach the sixth grade and possibly the seventh. The school will better fit these individuals by pushing them on without history, physiology, geography, etc., than by giving them intensive training in the lower grades.

Teachers should be required to carefully study their own methods and efficiency. Stronger pressure may be put upon these students who are in school only half a day than on pupils in the ordinary school. A rigid insistence on teachers making such a study of themselves, their methods and work, with the definite object of putting pupils through the grades more rapidly, would no doubt result in increased efficiency.

Pupils too should be encouraged to give more time outside the classroom to study. Aside from this, there should be definite training in how to study. Teachers complain of time lost in recitation because pupils are slow to respond. Yet outside the classroom the same pupils think quickly. This is in part due to the habit of thinking in their native tongue and translating into English (this of course is a slow and difficult process), and in part to lack of ability or at least confidence in their ability to express themselves. In such cases, simple, brief answers should be accepted rather than complete sentences and thought processes, provided that the answers are correct and that such answers cause the recitations to move along more rapidly and increase interest and activity.

With such readjustment of grade work, continuous improvement of the teaching force, and special advancement or promotion of older pupils, it will, no doubt, be possible to bring the academic standing nearer to the industrial advancement.

BETTER ORGANIZATION OF INDUSTRIAL INSTRUCTION: With the introduction of the new courses, special effort should be made to organize and correlate the special instruction given in connection with the present industrial work. All definite instruction given in connection with work in sewing, painting, carpentry, blacksmithing, printing, etc., should be rather completely and definitely outlined, so that the work given will constitute a definite and coherent unit. Only through such careful organization can one be sure that all the instruction needed by the prospective craftsman is being given. Perhaps, too, it might

be well to set aside more definitely the periods when such instruction is to be given. All such work should be connected with text and reference work where possible. This will encourage thoroughness and will also train pupils to use manuals and reference work when he is out in the world, dependent upon his own resources for the solution of difficult trade problems.

The work of outlining instruction should be done by the different persons in charge of industrial work, under the direction of the director of that work. The different courses should then be compared and harmonized and made to properly coordinate with the academic work. The development of this part of the teaching work must necessarily be slow, but should be continuous. While the man in direct charge of the industrial work should always be a skilled tradesman, parts of the instruction may be given by the director of this work if necessary.

Such an organization of this work presents difficulties which can be overcome only through experience.

ATTITUDE OF TEACHERS.

If such vocational courses as are now being planned for the Carlisle school are to be successful, it is very important that the teachers of English, mathematics, botany, chemistry, physics and other academic subjects, fully appreciate the difference which must be made in teaching these subjects as part of a vocational course and in teaching them as cultural or college preparatory courses. Not only must the texts selected treat the subject matter in an applied way, but each teacher must strive

to understand and put herself in sympathy with the problems of the particular vocation, and so teach her work as to make it contribute definitely to the solution of the problems of that vocation. The teachers selected to teach the above mentioned work should be selected with careful consideration of their fitness and willingness to present their work in this applied way.

Furthermore,at all times all teachers should have a clear idea of the probable future living conditions of these boys and girls, and endeavor to make their teachings function under those conditions. All that is best in Indian life, character and art should not be discarded, but carefully adapted and fostered.

RELATION OF ACADEMIC WORK AND VOCATIONAL PRACTICE.

If the suggestions made above for more definite organization of trade work are fully carried out, some slight modification of the present daily program may be necessary. The present organization of the shop and sewing work will need to be changed but little,however.

Of course, in general, boys in the grades who have not yet selected a particular trade or vocation should be detailed for the general odd jobs about the school. Boys who have entered upon the Mechanics Arts Course and selected a trade should be assigned,as generally as possible, to work bearing on experience and training for that trade. The Home Economics work will

present no difficulties of this kind, but the detail of the boys for farm work should be put on a regularly organized basis.

RELATION OF SCHOOL WORK TO AGRICULTURE PRACTICE: All vocational courses contemplate at least three lines of development on the part of the pupil, (1) skill in doing, or practice in applying in an economical and effective way the principles and processes learned in the classroom, (2) such an understanding of the principles underlying and responsibility for variation in practice as will enable him intelligently to modify practice as conditions may demand, (3) such a mastery of principles, practice and business economy as will fit for managerial work.

The success in developing skill and managerial ability will depend very largely upon the helpful relation of the work on the Carlisle farms, campus, and in the greenhouse, and the instruction in the classroom. The conditions at Carlisle are such as to make such a relation practical. The work in agriculture has been so planned as to take the best possible advantage, seasonal and otherwise, of the opportunity of relating classroom and industrial work.

Boys in the first year class of the course in agriculture should be detailed to care for, operate, and repair the farm machinery, to make repairs and improvements about the farm buildings, fences and equipment, to care for the poultry, and to do the gardening work and seed testing.

Second year boys should be detailed to do the work connected with planting, caring for and harvesting the grain

and forage crops, to care for the orchard and bush fruits, and to feed and care for the horses, hogs, sheep and bees.

Third year boys should in the main be detailed to do the butchering, dairying, and caring for the dairy herd, and the road, woodlot and landscape work, and manuring, liming, and fertilizing the farm. However, the managing and accounting work must not be lost sight of and these boys should be given opportunity to get data for the farm accounts work, to confer with the farmer and assist in planning the work, and as much as possible to act as gang foremen. Actual farm practice should, of course, not be limited to the term during which a subject is being pursued in class, but should as far as possible be continued throughout the year, so that students may become fully acquainted with all phases of the work.

While the program as above outlined cannot always be strictly adhered to, it should be followed as closely as is possible under the varying demands of farm work.

The above emphasis on practical farm work should not take the place of formal laboratory work entirely. Wherever laboratory exercises are necessary to a thorough understading of scientific principles, or as a training for practice, such exercises should be given entirely separate from actual farm work. Examples of such exercises are experiments illustrating capillarity in soils, puddling of soils, percolation of water, practice in budding, and grafting and testing seeds, judging grain, practice in candling eggs, testing milk, etc.

SPECIAL SCHOOL PLOTS: In order that crops not commonly grown on the school farm may not be wholly strange to pupils, a small area on the farm or garden should be set aside for the growing of some of these plants. Crops commonly grown in the western United States should be given special emphasis. For example, kafir, milo, sweet sorghum, cow peas, soy beans, different kinds of clovers, alfalfa, sweet clover, and other crops might be planted on this small plot. Some of them such as kafir might be planted in entire rows in the cornfield and so make no extra farm work. That portion not needed for class work or seed could be ensiled along with the corn. Different types of corn should be grown for the same purpose. Within two years when the school will have some advanced students, an ear-to-row breeding plot for corn should be established and maintained. This would serve not only to supply seed corn for the farm and perhaps for sale, but it would serve as a laboratory, demonstration and practice plot for the boys. The work of planning and planting this plot, as well as gathering, weighing and selecting the seed in the fall, should be done by second and third year students under the guidance and direction of the teacher of agriculture and the farmer.

LABORATORY EXERCISES IN AGRICULTURE: Because of the opportunity to do real farm and garden work with farm equipment, the amount of material and apparatus needed for laboratory work will not be great. Of the special apparatus needed, much can be made in the school shops. Bins for the different types of soils, corn racks and testing boxes, brooders for poultry work, etc., should all be made at the school. Some equipment must be

purchased, such as a Babcock milk tester, an incubator, glass tubes, and other supplies, for soil experiments, etc. It should be remembered, however, that much of this material may be used for not only agriculture, but for botany, chemistry and physics also. A special laboratory room should be set aside for the grain judging and testing work, germination tests, etc. This room need not be large since much of this work should be conducted in the greenhouses. The special tables and other furniture needed can be made in the school shops.

LIBRARY FACILITIES: There should be ample facility for library reference work in agriculture. This is of special importance, because of the varied conditions and agricultural practices existing in the widely scattered homes of the Carlisle student body. No text-book or series of text-books can be depended upon exclusively.

The library should have the standard publications which are now available in such great numbers. This part of the library should be built up a little at a time and not overstocked at once. By buying a few books yearly, only the best will be secured and the library kept up to date without waste or excessive expense.

The school should be on the mailing list of all the experiment stations and of the U. S. Department of Agriculture. This will bring to the school library the latest and best of scientific information and agricultural practice. These bulletins should be arranged, classified and indexed so as to make them readily accessible for student reference. The best and most important of them should be secured in numbers sufficient to be

used as supplementary texts by members of the respective classes to whose work they may apply.

Some of the best of the farm papers and magazines should be included on the list of periodicals, which come regularly to the library. Some of these should be of a general character, such as The Breeders Gazette, Wallace's Farmer, and The Rural New Yorker. Others should deal with special types of farming, for example, Hoards Dairyman, Greens Fruitgrower, etc. At least one daily of the character of the Drovers Telegram should be on the list. This should be used to train the pupils to study market reports and to form the habit of keeping in touch with markets and marketing. This will be of great importance for boys in the third year, who are studying Farm Management and Accounts.

It appears that provision for all of this material can hardly be made in the present library, therefore, if possible a smaller room should be set aside as a sort of special library or seminar room for the above mentioned matter. Such an arrangement would probably promote the general use of the agricultural literature.

Since all the foregoing might apply just as well to the library facilities for the Mechanic Arts Courses, there is no reason why a room might not house the special library for both vocational courses.

All of this material, especially reference books and past publications of the U. S. Department of Agriculture and the various experiment stations, should be secured at once in order that it may be properly listed and classified during the summer

and so be ready for use when school opens in September, 1915.

THE FARM UNIT BASIS: Perhaps no more practical and helpful addition to the Carlisle school equipment could be made than the small farm home, farm cow barn and cows, farm flock of poultry, and farm garden, now being planned by the Supervisor in Charge. Students in the agriculture and home economics course need not training for work as employees in a large organization, but as masters and mistresses, home makers and farmers, on a small farm with a minimum of equipment and that of the kind which their station in life will probably enable them to provide. If the cottages, small gardens, etc., now being planned by Mr. Lipps, are built and put to the use which can be made of them, the value of these courses ought to be multiplied many times. This will put the management of the home and a part of the farm on the small practical basis, it will teach economy and develop ingenuity and inventiveness as no other arrangement could. While this new departure will not require any considerable expense, ample support should be afforded it.

VOCATIONAL GUIDANCE: At some time during the pupils attendance at school, preferably either during the last year in the grades or the first year in the vocational course, there should be some definite attempt to give boys some positive information, which may help them in making a decision as to their future careers. This may be best done, perhaps, through the reading and English classes, provided proper selection of reading material is made and proper opportunity for discussion given. A part of this work should be done by the superintendent, chief

teacher and teachers of the various industries. The talks should aim to give definite ideas of pay, opportunities for advancement, social conditions, independence, hours and conditions of work,and especially personal ability and characteristics essential to success.

To be of value this work must be done early enough in the term of attendance to help pupils choose wisely. The final choice of a course and assignment to the course should be made by a conference between the student and the chief disciplinarian. The chief disciplinarian should, through conferences with the different persons for whom the student has worked, learn all he can of the peculiar fitness of the individual for one or another of the vocations. He should also learn all he can concerning the boy's property, its location and adaptation for agricultural work or nearness to a favorable location for following a trade. Every possible precaution should be taken to prevent the boy from drifting into the ranks of unskilled labor when he leaves the school.

SCHOOL WORK DURING THE SUMMER.

If possible, some school work should be offered during June and July. This would mean economy in the use of the school plant and equipment, since it would then be in use a greater portion of the year. Some of the teachers would be on duty during those months anyhow, so there would be no added expense for instruction. Many of the students remain to work at the school during the summer, so that the vocational, agricultural, and home economics practice,

are continued during those months. If some school work were offered, it would give pupils an opportunity to shorten the time required to complete the course, or it would offer opportunity to students who had failed in one or two subjects to make up that work and so stay with their class. No work should be offered regularly, but each summer such work as seemed to be needed most, and such as could be most conveniently offered, should be given. In general, the vocational courses should be given the preference in summer work, since it can be very closely connected with practice. Because of shortening the term, longer recitation periods should be planned for, in order to complete a term's work in the two months. Students should carry two or not over three subjects at most, so the number of courses offered need not be large.

If summer work is offered, those students who have failed in one or more subjects should not be sent for "outing" work, but should remain at the school. In addition, those pupils who are of mature age, but who are still in the grades because of a lack of aptness for schoolroom learning and who will, therefore, probably never complete the three year course above the grades, should be admitted to any vocational courses offered during the summer. This should be done regardless of their scholastic grade or standing. It means the most economical and efficient fitting of such persons for independence and production.

GRADE WORK IN AGRICULTURE.

Agriculture should be taught in the last two years of

grade work in the Carlisle school. This should be a general elementary course and should be taken by both boys and girls. For the girls it should give the general knowledge of agriculture, which is so much needed by the farmer's wife. It should also give some helpful training to boys who will leave school when the grades have been completed. It will not come amiss even in the lives of those boys who later take up one of the trade or mechanic arts courses. If possible, some nature study work should be given throughout the grades preceding this work, so that pupils may have some preparation for the work in elementary agriculture.

While this work must be largely text-book work, as much time as possible should be given to work with materials, that is plants, soils, insects, animals, etc. These materials should be available for the teacher's use. Usually, they can be obtained from the farm or grounds. Not only should these materials be used, but the work in the classroom should be related as definitely as possible to the farm, ground and garden work, which some of the pupils may be doing.

Such a plan may be followed more easily if the so-called "seasonal," rather than the "logical" order of arranging the work is followed. The work must be arranged so as to arouse interest on the part of the pupils and lead them to want to know more of the subject.

This work should be presented by the regular grade teachers and not by the teacher of agriculture, unless his duties will allow time for this work. The agricultural teacher should, however, be

required to supervise this work.

The following is suggested as a brief outline of this work in the grades:

FIRST YEAR.

Introduction: Farming as an industry - national economic importance.

Farming as a business - need for training in business management and principles of science.

Some illustrations of science applied to farming - examples of insect control, compounding of fertilizers, balancing of rations, testing of dairy herds, etc., given briefly.

Types of farming - grain, livestock, dairy, general or diversified, truck, etc. Reason for specializing.

Importance of livestock in any of these types - used for power, for converting rough or cheap feed into high priced marketable products, such as wool, butter, eggs, meat, etc.

Study of Livestock:

Horses - Types and breeds - origin, characteristics, uses - special emphasis on draft horses. Parts of the horse, good and poor horses. Care and management of the horse, feeding, housing, working, etc. Feeds and feeding emphasized.

Cattle - Both beef and dairy cattle studied in same way as horses, except that more emphasis is to be placed on feeding for special purposes - fattening and milk production - and to the production of these animals. Care and handling of milk. Elementary work on preparation of rations should be given in this connection.

Hogs and Sheep - Study types and breeds, feeding, housing, production and uses as for horses and cattle.

Poultry - Breeds, production, housing, feeding and general management of the flock. Emphasize feeding and sanitation. Care and marketing of poultry products.

If possible some work should be given to the study of the life history of insects during the spring, so that the work may be continued the following fall and something of the life cycle of insects of economic importance learned before the pupils study crops, orcharding and gardening.

Second Year.

How Plants Grow:

The plant and its parts - flowers, fertilizations, seed production and distribution. (This work should be done early in the fall while materials for study may be secured from fields and grounds).

Parts of plants - Function and structure of parts and processes of growth. Manufacture and storage of foods. Relation of plant to soil. Plants as food for man and animals.

Fungus plants - Bacteria and plant diseases.

The Soil:

Study it in relation to plant growth - Origin, kinds, physical nature - variation in physical characters of different kinds of soils and reason for variations.

Soil moisture and its movements, storage, evaporation, etc.

Plant foods in the soil, kinds, availability, loss, uses to plants, how taken up by plants, relation to soil moisture, etc.

Tillage, soil management for maintainance of fertility and good physical condition, seed bed preparation, cropping, etc.

Crops:

Grain and forage crops. Study each of the important crops - Characteristics and kinds of each. Planting, cultivating, caring for, and harvesting of each. Crop rotation and cropping systems as related to soil, climate and livestock on farm. Weeds, diseases, and insects and their control. Apply here as reasons for agricultural practices the principles learned in the study of plants and the soil. Learn to recognize different grains and crops, select and test corn and other crop seeds.

Gardening and Orcharding:

Selecting a site. Soil preparation and management. Planning a garden, growing plants - hotbeds. Transplanting, planting, care and cultivation. Insect and disease control.

Selecting orchard stock:
Planting, pruning, protecting, cultivating, and caring for trees. Improvement of fruits - budding and grafting. Propagation. Spraying for insects and disease.

This work in orcharding should include both tree and bush fruits.

If possible, a few lessons should be given to flower gardens and general tree and shrub planting, windbreak planting and woodlot management.

To teach the livestock work before the work on the crops and soil is contrary to the most common practice, but experience proves that this order of work is most successful in arousing and continuing the interest of the pupils. However, if necessity arises, there is no reason why the order of work for the two years might not be reversed. Or if the teaching force available is limited and the classes not too large the work might be alternated and the livestock work given to both classes one year and the crop and soil work the next year.

Some industrial training in blacksmithing, painting, carpentering, cement work, harness mending, etc., should be given to boys in the seventh and eighth grades, who expect to farm. This work should be given whether they will remain for the advanced work or not. This can be done by detailing these boys to the shops from time to time.

THE COURSES.

In the detailed planning of the courses, certain minor changes in arrangement and content have been suggested. These have been made only after careful study of the conditions and .

advising with the Supervisor in Charge. All the changes proposed have been sanctioned by the Supervisor. The following general principles have been in mind in making the proposed changes:

AGRICULTURE: The minimum of academic work is placed in the first and last years, not only because prerequisites may thus be most conveniently provided for, but because (1) it is important that first year students devote a major portion of their time and thought to this work in order that they may come to see its importance and the problems to be solved, (2) having realized the problems to be solved they will study such subjects as chemistry and physics with a different interest and with the experience necessary to apply the principles of those sciences, (3) and finally during the third year, after the general training and practice of the preceding years, much time should be given to farm management and accounts in order to develop foresight, business habits and managerial ability.

MECHANIC ARTS: In the first year of this course a maximum amount of different industrial work is given in order to help the boy find himself and choose his trade wisely. During the second year when all the industrial time will be spent on the chosen trade, more academic work is given. In the third year, special emphasis has been placed on the economic and industrial life of the nation, in order that the boy may have some rather definite conception of the social surroundings and organizations by which he will be surrounded.

The work in mathematics and drawing has been distributed throughout the course as largely as possible. This in order

that not too much of work in mathematics may be required at one time, and also that the work in both mathematics and drawing may as largely as possible be applied to the trade work the pupil is then doing.

HOME ECONOMICS: The rearrangement in these courses has been made with a view of putting a maximum of fundamental work for home makers in the first two years and the cultural and management work in the third year. Certain subjects have been put in the third year in order that prerequisites may be given, and that students may be more mature and experienced before these are given. Certain others have been changed to other terms in order that advantage may be taken of favorable seasonal conditions for giving these subjects, e. g. home dairying and poultry raising.

In planning the course, due attention has been given to economy in teaching, that is to arranging work so that wherever possible one teacher may handle in a single class students in the different courses.

The rearranged courses follow:

COURSE IN AGRICULTURE.

First Year.

Fall Term	Winter Term	Spring Term
English Readings	Grammar & Composition	El. Composition I
Farm Arithmetic	Elementary Algebra	Applied Geometry
Elementary Botany	Seed and Soil Study	Elementary Zoology
Stock Judging I	Poultry Raising	Gardening
Farm Practice and Farm Machinery	Farm Blacksmithing	Farm Carpentry
Physical Training	Physical Training	Physical Training
Band or Orchestra*	Band or Orchestra*	Band or Orchestra*

Second Year

English Classics I	El. Composition II	El. Rhetoric
El. Chemistry I	El. Chemistry II	El. Chemistry III
El. English History	American History	Civics
Stock Judging II	Feeds and Feeding and Farm Practice.	Farm Insects and Bee-keeping.
Grain Crops and Farm Practice.	Forage Crops	Fruit Growing and Farm Practice.
Physical Training	Physical Training	Physical Training
Band or Orchestra*	Band or Orchestra*	Band or Orchestra*

Third Year

Rural Economics	Farm Writing	Farm Animals
Agricultural Physics I	Agricultural Physics II	Agricultural Physics III
Farm Management and Accounts	Farm Records and Accounts	Farm Management and Accounts
Breeds and Breeding	Dairying	Livestock Production
Soils and Fertilizers	Handling and Curing Meats	Forestry and Landscape Gardening
Marketing and Farm Practice	Farm Buildings	Road Building, Irrigation and Drainage.
Physical Training	Physical Training	Physical Training
Band or Orchestra*		

*Elective

II. COURSE IN MECHANIC ARTS.

First Year

Fall Term	Winter Term	Spring Term
English Readings	Grammar & Composition	El.Composition I
Industrial Arithmetic	El.Algebra	Applied Geometry
Free-hand Drawing	Object Drawing	Geometrical Drawing
Woodwork#	Painting	Blacksmithing
Vocational Guidance	Vocational Guidance	Trade Practice#
Physical Training	Physical Training	Physical Training
Band or Orchestra*	Band or Orchestra*	Band or Orchestra*

Second Year

English Classics 4(4-0)	El. Composition II 4(4-0)	El. Rhetoric 4(4-0)
Shop Mathematics I 4(4-0)	Shop Mathematics II 4(4-0)	Shop Mathematics III 4(4-0)
El. English History 4(4-0)	American History 4(4-0)	Civics 4(4-0)
Shop Drawing 3(1-4)	Shop Drawing 3(1-4)	Shop Drawing 3(1-4)
Trade Practice# 6(0-12)	Trade Practice# 6(0-12)	Trade Practice# 6(0-12)
Physical Training	Physical Training	Physical Training
Band or Orchestra*	Band or Orchestra*	Band or Orchestra*

Third Year

Fall Term	Winter Term	Spring Term
El. Economics 4(4-0)	Industrial History 4(4-0)	Industrial English 4(4-0)
Materials & Construction 4(4-0)	Trade Calculations 4(4-0)	Labor Problems 4(4-0)
Mechanical Physics I 4(3-2)	Mechanical Physics II 4(3-2)	Mechanical Physics III 4(3-2)
Trade Practice# 12(0-24)	Trade Practice# 12(0-24)	Trade Practice# 14(0-24)
Physical Training	Physical Training	Physical Training
Band or Orchestra*	Band or Orchestra*	Band or Orchestra*

*Elective

#Trade practice periods are given in units of four hours each, or one-half of a school work day.

Trade practice may be elected from any one of the following trades:

Blacksmithing
Carpentry
Masonry, including Cement & Concrete Construction
Painting
Plumbing & Steam-fitting
Printing
Steam Engines & Boilers

III. COURSE IN HOME ECONOMICS.

First Year.

Fall Term	Winter Term	Spring Term
English Readings 4(4-0)	Grammar & Composition 4(4-0)	El.Composition I 4(4-0)
Rural Arithmetic 4(4-0)	Elements of Algebra 4(4-0)	Applied Geometry 4(4-0)
Phys. & Hygiene 4(4-0)	Household Insects and Home Sanitation 4(4-0)	Home Nursing and Care of Children 4(3-4)
Color and Design# 3(0-6)	Color and Design# 3(0-6)	Applied Design 3(0-6)
Cooking & Sewing I# 2(0-12)	Cooking & Sewing II# 2(0-12)	Cooking & Sewing III# 2(0-12)
Physical Training	Physical Training	Physical Training
Music*	Music*	Music*

Second Year.

Eng. Classics I 4(4-0)	El.Composition II 4(4-0)	El.Rhetoric 4(4-0)
El. Eng. History 4(4-0)	American History 4(4-0)	Civics 4(4-0)
Household Chemistry I 4(3-3)	Household Chemistry II 4(3-3)	Household Chemistry III 4(3-3)
Dyeing & Weaving I 2(3-3)	Dyeing & Weaving II 2(3-3)	Home Gardening# 2(3-4)
Home Cooking# I 2(0-8)	Home Cooking# II 2(0-8)	Home Cooking# III 2(0-8)
Shirt Waist Suit# 2(0-8)	Dressmaking 2(0-8)	Home Laundering 2(1-4)
Physical Training	Physical Training	Physical Training
Music*	Music*	Music*

Third Year.

Household English 4(4-0)	Practice Writing 4(4-0)	Eng.Classics II 4(4-0)
Household Physics I 4(3-2)	Household Physics 4(3-2)	Household Physics 4(3-2)
Social Science 4(4-0)	Child Welfare and Motherhood 4(3-2)	Household Accounts and Home Management# 4(3-2)
Manual Training 2(1-4)	Manual Training 2(1-4)	Poultry Raising 2(2-2)
Home Dairying 2(0-4)	Home Arrangement and Decoration# 2(0-4)	Home Millinery# 2(0-4)
Textiles 2(2-0)	Art Needlework 2(0-4)	Advanced Dressmaking 2(0-4)
Physical Training	Physical Training	Physical Training
Music*	Music*	Music*

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*Elective

#Vocational practice periods are given in units of 4 hours each, one-half of a school work day. Practical instruction in these subjects is given in the Domestic Science and the Domestic Art Departments and in the Home Cottage.

DETAILED DESCRIPTION OF COURSES.

ACADEMIC WORK.

FARM ARITHMETIC: This work should not be a review of formal arithmetic work. It should aim to apply the general work of arithmetic to the specific problems of the farmer, mechanic and housewife. It should include such work as estimating lumber and material for small buildings, measuring lands, contents of silos, estimating materials for cement structures, labor cost accounts, computing rations, estimating butter fat from milk tests, computing interest, taxes, tax rates, etc. Texts are available for this type of work. They may need to be modified somewhat, but this can easily be done if the teacher will try to collect and keep a list of practical and helpful problems for supplementary. Boys and girls should take this work together. At times there may be a difference made in the problems to be solved by boys and those to be solved by girls. The teacher must keep continually in mind that this is an applied or vocational course, and that the primary purpose is not to teach arithmetical principles, but to give training and practice in the application of those principles to the solution of farm problems. Whenever possible, problems should be taken from work that is to be done about the school, e. g., estimating lumber needed for repairs, or paint needed for a building, or amount of hay and grain and silage, which will be needed for the farm stock, and other problems of like character.

ELEMENTARY ALGEBRA: The boys and girls may take this work together. The same general principles should be observed here

as in teaching the arithmetic course. The aim is to teach that work most essential to the pupil in his other work and the vocations. This course should emphasize the algebra most essential to the understanding of physics and chemistry and the proper use of formulae in vocational work. Chief emphasis should be placed on elementary processes, the equation, fractions and graphs. The graph is coming to be so commonly used that all pupils should be acquainted with it.

APPLIED GEOMETRY: The same principles apply to the teaching of geometry as to arithmetic. Here should be emphasized those propositions or theorems which have most general application in physics, and farm and shop work. Just as largely as possible, there should be some practical application of each theorem as it is taught. Thus the relation of the hypotenuse and legs of the right angle triangle may be applied to squaring foundations, plumbing posts or buildings, cutting rafters, getting lengths of roof boards, etc. Such an application of these principles will make them a definite part of the pupils equipment for future work.

ENGLISH: This discussion of the courses in English will apply to all of the work in English for all of the vocational courses. The purposes of English in vocational courses are (1) as a means for leisure occupation and general culture, (2) for utilitarian value. While the first of these purposes should not be minimized, it must be remembered that it will function only to a limited extent in the lives of most persons actively engaged in a trade, manufacturing and agriculture or home making. It is a pretty well established fact too that the use of English, either reading or writing as leisure occupation usually results from

interests aroused later in life, than from school training and experience. Considering the foregoing and remembering that the time available for additional training in English is very limited, the importance of applied vocational English in these courses cannot be overestimated. In a utilitarian way it will function both as a means of business intercourse and information, and in training for and the duties of citizenship. On that account practically the entire emphasis of the English work should be placed on the second of these purposes. There should be a definite attempt to modify and to teach the English of these courses, so that it will most directly apply to and assist the vocational work now, and later have a distinct value for vocational and civic purposes. This includes (1) an acquaintance with vocational and civic literature, trade magazines, agricultural papers, womens magazines and papers, and the current magazines dealing with public questions, (2) acquiring the vocabulary of the trade or vocation, (3) drill in the use of the vocabulary, i.e., effectively expressing ideas concerning one's work or public questions.

The selections read by the pupils in these courses should be not the usual classics selected for their literary readers, but the readings should be made up largely of well written articles dealing with vocational or civic problems. The teachers should use the magazines, papers, texts, and literature of the trades of agriculture and of home economics, as the source of most of the readings.

The composition work should be based largely on the same

material. Whenever possible, both the reading and the composition work should be correlated with the work in other classes. This may be done by readings chosen to supplement the trade or agricultural courses being studied by the pupil and by writing compositions, articles or letters, based on the work of the same class. Much attention should be paid to letter writing for information, or ordering goods, requesting catalogues, etc. This will require that the English teacher keep closely in touch with the work and literature of other departments of the school. Teachers of other departments should, of course, be helpful in turn and cooperate with the teacher of English. No written work should be accepted in any class unless it is well written and proper form is observed. No attempt at separating boys in the various vocations should be made.

FARM WRITING: This course in the third year should be given largely to writing contracts, labor agreements, mortgages, deeds, titles, and other legal forms. This should be essentially a term's work in business and commerical English for the farmer. It should aim to fit him to properly conduct his own business so far as written instruments are concerned, and protect himself from poorly written contracts, etc. The work should include some common legal usages, and a full understanding and import of the legal forms studied.

INDUSTRIAL ENGLISH: The reading matter for this course should aim to give the students taking industrial work definite information about labor organizations, relations of employers and employees, labor legislation and regulations, employers liabilities,

shop sanitation. The written work should be contracts, agreements, rent agreements, resolutions, letters of inquiry concerning work, etc. This matter should be presented as an English course, because the aim should be rather to train for intelligent reading of such material, than to implant definite ideas and opinions in the minds of the pupils. The material for this course should be based partly on books but largely on current literature.

HOUSEHOLD ENGLISH: The aim of this course is to train girls to use current literature and especially women's magazines, as a means of self culture and improvement, especially in home management, motherhood and child training,and social duties. The work should be grouped around topics for study and there should be class readings and discussions, oral reports, written papers, etc. In short, the class should be a miniature womans club and might well be organized as such. The topics for the course might well be suggested by the school physician, school nurse, domestic science, and art teacher, and the school matrons. Practice Writing and English Classics II (Home Economics Course) should aim largely at cultural training and training for leisure occupation for the girls. These should be varied to suit the needs and desires of individual classes. In the classics work, some time should be given to a study of childrens books and readings, so that the girls may apply this information as future teachers or mothers.

In the Practice Writing work, practice should be given in writing a secretary's report or minutes of a meeting, writing a report of a meeting for a local paper, preparing sets of

resolutions for various occasions, writing petitions, etc. Some time should be given to training for social correspondence, writing formal notes, invitations, acceptances, etc. With this should be given short talks on customary usages.

ENGLISH AND AMERICAN HISTORY AND CIVICS: This work should aim definitely at training for citizenship. The English History must necessarily be very elementary, but it should aim to give some slight acquaintance with our social, civic and economic institutions, and to aid to a proper understanding of American History. The work in American History should not be a mere repetition of American political history chiefly, but emphasis should be placed on the social, economic and agricultural elements. Some such text as Bogarts Industrial History of the United States should be used.

The work in Civics should be especially broad. There should be much of social and civic relationships and duties, especially those related to the home community. There should be less of formal study of the state and national constitutions, and more of the actual workings of organized social bodies. Some such text as Beards American Citizenship should be used.

INDUSTRIAL HISTORY: It is important that young men who are to enter the trades and skilled industries have a considerable knowledge and understanding of the industrial development of the United States. This is not secured from the ordinary course in American History. Therefore, this course should deal specifically with the industrial and commercial development and progress of the nation. As much of commercial and industrial geography as

possible should be taught in connection with this course. Care must be taken that the emphasis be kept on industrial history. The economic conditions, labor problems, etc., should be thoroughly studied. Some such text as Bogart's or Moore's, preferably the first, should be in the students' hands.

RURAL ECONOMICS: The general principles of economics as applied to Agriculture is a part of the equipment of every farmer, both for his duties as a farmer business man, and as a citizen. The work should include a study of the relations of farming to other forms of productive work, of the relations of capital and labor and land as factors of production, of the investment of capital and labor and proper returns, of ownership and systems of land rental and tenure, and of systems of agriculture and agricultural production. Special attention should be given to agricultural organizations, social and business, cooperative marketing and buying, life and property insurance in mutual and old line companies, benefit societies and fraternal organizations, building and loan associations, savings banks, land companies, loan and mortgage systems. Special attention may be given to commercial organizations of modern times with which the farmer has to deal, especially systems of grain and livestock marketing, commission systems of handling vegetables and produce, banking, etc. Some attention should also be given to social features of farm life and the farmers relations to public enterprises. All this should be applied, and practical rather than such scientific work as is usually given.

SOCIAL SCIENCE: Each girl should get some definite in-

struction concerning the interrelations of the individual and family, and the various social organizations of society, not only state and national, but especially community and independent organizations. The course should deal with both sociology and economics in a general way.

Discussions should center about relations of the family and the individual, especially the mother, to general community welfare, morality and refinement in the community, social life of the community, the school and school influences, child welfare and recreation, character building influences in the community, churches and auxiliary organizations, mothers' clubs, domestic science clubs; fraternal organizations and womens auxiliaries; thrift and savings and investment schemes and their value; relation of economic independence and cultural opportunities; importance of character, honesty and reputation, together with industry, intelligent study of one's work and frugality for success in life.

There should be some discussion from time to time of such topics as crime, leisure, education, charity, health conditions, illiteracy, poverty, immigration, etc., but this should be limited to such an amount as will be helpful. No attempt should be made to pursue a scientific study of suchtopics.

In all this work, due account should be taken of race differences and characteristics. This should include considerations affecting mental, moral, social, and religious organizations, differences of health conditions, birth and death rate, economic conditions, literacy, crime,and consideration of re-

lations with other races, etc.

In every possible way the course should aim to apply to and assist in the solution of the various social and economic problems, as they exist in the life of the Indian and especially on the various reservations.

ELEMENTARY ECONOMICS: This course should emphasize the industrial and commercial field just as the course in Rural Economics is applied to the field of agriculture. It should be a general elementary introduction to economics, dealing with the factors of production and consumption, relations of labor and capital, principles controlling commerce and industry, laws of supply and demand, banking, currency.

Aside from its general cultural value and training for citizenship, the course should function in a positive way in the industrial and economic life of the future wage earner. This course should lay the foundation for the work in Industrial History, Industrial English and Labor Problems, which follow it in the course.

Some elementary text such as Bullock's or Ely and Wicker, should be in the hands of the student.

LABOR PROBLEMS: This work should endeavor to deal more specifically with the industrial and economic problems confronting the laboring man. There should be a careful study of labor conditions, labor legislation, housing conditions, factory or shop sanitation, and safety devices, employers' liability acts, pension systems, fraternal and other insurance, labor organizations, apprenticeship systems, contracts with employers, employ-

ment agencies, problems of the unemployed, etc. The course should aim to give the prospective workmen as intimate an acquaintance with conditions in the industrial world as it is possible to give him in the class-room and library. This work should be closely correlated with the work in Industrial English.

ELEMENTARY BOTANY: The purpose of this work is to give the pupils such a working knowledge of the processes and requirements of plant growth as will enable him to properly understand and later intelligently apply what he is to learn concerning crop production. For those boys who have finished the eighth grade in schools where agriculture is not taught, this must be an introductory course, while for the boys who may have had elementary agriculture in the grades at Carlisle, it will be a rapid review and advanced course. The work must be taught with the applied aim clearly in mind. It must not be the general course in scientific botany. Wherever possible, the materials and illustrations should be the economic plants of the farm, both weeds and crops. The seasonal order should be observed.

The course should include flowers, fertilization, and seed production. (Foundation work for plant improvement, mixing of plants, etc.) How plants secure and manufacture foods, soil moisture and light relations, and kinds of food manufactured. (This bears definitely on soil management for growing crops, moisture control, thickness of planting, depth of cultivation, destruction of weeds, etc.) Plant structure and food storage. (This enables the student to understand the study of feeds and their digestibility and nutritive value, time and methods of

cutting and caring for forage crops, and lays the foundation for such work on trees, as pruning, grafting, and budding, etc.) The pupil must get an idea of annuals, biennials and perennials, of tree growth, budding and fruitbearing, etc. (This study may be made late in the term.)

Some work should be given on fungus plants, bacteria, and plant diseases. Specimens should be secured if possible. The school physician should, during successive laboratory periods, make cultures of some common bacteria to show something of their growth and should prepare stained mounts for demonstration to the class. This course should connect very definitely with the work in Seed and Soil Study. Indeed the study of seeds and the relation of the plant to the soil should be given but little time until the second terms work. The two courses may be taught almost as one continuous course.

ELEMENTARY ZOOLOGY: The course in zoology is necessarily very limited. On that account but a very few lessons should be given to divisions and relationships in the animal kingdom. The major portion of the time should be given to parasitism, including sporozoans causing disease, and the distribution of parasites, to the important orders of insects, their methods of reproduction, life cycle and feeding habits, and to the mammals and birds. The other classes of animals should be given very little attention and the birds should be studied only for comparison of their reproductive processes and digestive system with that of the mammals. In studying the mammals, special emphasis should be placed on physiology and anatomy of digestion and on reproduction,

also on sanitation. The work on digestion, nutrition, etc., may be made comparative physiology. This work on mammals should lay the foundation for the courses on stockfeeding and on breeds and breeding.

CHEMISTRY: This must be as largely as possible an applied or vocational course. Wherever possible, the illustrations and laboratory work should be drawn from processes familiar to the pupils through their daily experiences. The text finally adopted should be selected with this in view. Very little time should be given to the rarer and less important (industrially) elements usually discussed in chemistry courses. The time thus freed should be used in studying chemistry as applied to industries, agriculture, and home economics. Illustrations of such applications are softening of water, refining of various kinds of iron, and making steel, burning lime, soils and fertilizers, applications to feeds and feeding, milk and butter, cement manufacture and uses, making silage, etc. Of course, this will require that more attention be given to organic chemistry than is usually customary. This is justified on account of its application to agriculture and home economics.

The pupils in all three courses should be taught together. The applications made to the different kinds of work will be interesting and helpful to all the students alike. Laboratory work should be given regularly and formally.

PHYSICS: The work in physics should be taught so as to apply just as largely as possible to the problems of agriculture. The mathematical and more purely scientific side should receive

little emphasis, and practical applications should be stressed. For example, little emphasis need be given to laws of falling bodies and some of the more abstract principles of the physics of light and sound, but the laws of machines, of liquids as applied to pumps and waterworks and plumbing systems, should be emphasized. Illustrations of practical applications of physics to agriculture are: Centrifugal force to the cream separator; momentum to fly wheels; latent heat to ice-chests, fireless cookers, icecream freezers, etc., laws of capillarity to soil moisture. These and other like applications will make the course function in the life of the farmer.

Wherever possible, the work in electricity should be given a practical bearing, such as installing doorbells, simple rural telephones, principles of electric wiring, etc.

This course should be taken by boys in the course in agriculture, and mechanic arts, and girls in home economics together. This will necessitate some special applications to those courses as well. But in general, applications may be chosen which will apply to all three courses and such applications are much more likely to come within the range of experience of all the pupils.

Special laboratory exercises may be devised for the girls if that seems desirable. For example the exercises on machines may be made to apply to the sewing machine, wringer, and tools, used by women rather than by men, if time and facilities will allow. The laboratory work should be made as practical as possible rather than scientific. It should include some work

in accurate measurement and weighing.

FREE-HAND DRAWING: This should be a general introduction course in free-hand drawing, aiming to give skill and facility in execution, a knowledge of perspective, use of lines, etc. It should be given as a preparatory course, keeping in mind that the student is to do mechanic arts work. Some work in ornamental drawing and designs may be done at the discretion of the teacher.

OBJECT DRAWING: This course should be in the main a continuation of the preceding, except that in this course all the work should be based on training to faithfully represent objects. Rapidity, clearness and accuracy should be emphasized. As largely as possible, pupils should practice sketching tools, parts of machines, castings, etc. When a boy has completed this work he should be able to sketch quickly a casting, or part of a machine, so accurately and clearly that after he has taken the necessary measurements and recorded them on the drawing, the whole might be sent to the shop drafting room and a working drawing made from the sketch and data. Of course, some instruction in taking the necessary measurements must be given.

GEOMETRICAL DRAWING: This is purely an introductory course, which is to prepare for the courses in shop drawing. Practice should be given in lettering, laying and work, use of T-square, triangles, compasses, and other drawing instruments, or use of lines, methods of layout, inking, various kinds of drawing, etc. Some exercises on working drawings may be given. At the end of the course the student should be ready to do the work in shop drawing with comparative skill and accuracy.

AGRICULTURAL WORK.

First Year.

SEED AND SOIL STUDY: The study of seeds and the soil may be carried along together as the interest of the class and their practical work on the farm may demand.

The seed should be studied as food for man and animals as well as the plants method of reproduction. Study seed storage and viability, size of seed and depth of planting, stratification, seed selection and testing, adulteration of seeds, etc. Seeds to be planted on the farm and in the garden should be tested by the class, and if possible samples should be tested before the seed is purchased, and pupils should study prices, and values of seeds needed on the farms. Pupils should work enough with the seeds of crops and important weeds to enable them to recognize most of them. Drawing and describing the seeds will help to fix their characteristics in the minds of the pupils. Some judging of corn and wheat should be done and pupils should get a definite idea of the important types of corn, wheat and sorghums. The pupils should learn to identify any plants which they do not already know while they are studying the seeds of those plants. This seed study will require considerable laboratory work, which may be done in the laboratory and in the propagating house.

The work in soils should include origin with special attention to humus content, types of soils and characteristics,

soil moisture, its movements, control, etc., soil temperature, plant food in the soil, manures ad fertilizers (very briefly), the plant and the soil (relations of both roots and seeds), tillage and soil management. Special attention should be paid to managing soil so as to prevent washing and blowing, to maintain fertility and physical condition or tilth. In connection with the seed work, special attention should be given to seed bed preparation. Some laboratory work and practice may be given by having the pupils assist the school florist to prepare soils and to pot plants in the greenhouse, and doing the early work in connection with the hotbeds and preparing the garden.

The time available limits this course to a very brief study of soils, so it should be as intensive and applied as possible. Soil samples and apparatus should be available for some laboratory exercises.

GARDENING: This work should be definitely connected with the foregoing. The work of seed selection and planting and the selection of a site and preparation of the soil should be merely an application of the principles learned during the winter term. The pupils should study varieties of garden vegetables, both from texts and from seed catalogues. They should plan a farm garden for a succession of table vegetables, giving dates of planting, etc. They should select varieties and make an order for seed, exactly as they would do if they were on their own farm. Lessons must be given on hotbed construction and management, on transplanting, arranging the garden for tool cultivation, etc. General tillage operations, fertilizing,

and the control of insects and plant diseases must also be given. The study of the different garden vegetables should be connected as closely as possible with the planting of those vegetables in the school garden. Some lessons and practice should be given on preparing vegetables for market and to storing vegetables for winter use. The growing of potatoes may be included here or in Fruit Growing. It belongs here if time is available.

This course may well be given during the summer. The practical work would differ considerably, but the course would be no less valuable given at that time. If given during the summer, the work of preparing vegetables for market, of preserving (canning, pickling, etc.), and of insect control should be emphasized. When given during the summer, boys and girls should take the course together. The boys should do the field work for their practice work and the girls should do some field work in the small school garden, and should gather some of the vegetables and do the work of canning, pickling, preserving, etc.

Gardening (Home Economics Course) should follow much the same outline as that for the boys, except that less attention should be given to soils and tillage. The girls should study varieties of vegetables, make orders for seeds, plan gardens, etc., just as the boys do. The girls should have some practice in managing a small section of the hotbed, transplanting and doing some of the general garden work. This practice can be given in the garden located on the school ground, by detailing the girls for that work on special afternoons. Each girl should spend

three or four afternoons, at least, in the garden.

STOCK JUDGING: This work and the formal recitation on farm machinery, which will be taken at the same time, should be given on that forenoon when recitations are not held in the other subjects which first year students are taking. The terms work should be given to work on horses and hogs. These should be studied and judged from the standpoint of market types and classes rather than breeds. The work on horses should include a knowledge of the parts of a horse, how to tell the age of a horse, unsoundnesses, etc. Emphasis should be placed on draft horses. There should be some classroom work, but much of the work should be discussion and judging of the horses used on the school farm and grounds. Whenever possible, arrangements should be made to visit the best horses in and about Carlisle and to judge them. The class should visit whatever fairs may be accessible, and, with the instructor, should judge, score and place the stock exhibited.

POULTRY RAISING: The terms work should cover breeds of poultry, housing, feeding, incubating and brooding, caring for young poultry, care for and marketing of poultry products. All of this work should be presented from the standpoint of the farm flock and not the poultry farm. The work on housing poultry should be definitely correlated with work in drawing and farm carpentry (spring term), so that some of that work may be applied, e.g., each student should draw a plan for a small poultry house, make out a bill for materials and brief specifications. Each one should have working drawings of feed hoppers, nests, watering

devices, etc., made by himself so that when he left the school he might take them with him as his own property. The work in feeding is the first work students will have on preparing rations and feeding for definite purposes - egg production, growing chicks, etc., - so it should be presented carefully. Samples of the various feeds, grit, shells, etc., should be in the laboratory, so that pupils may be acquainted with them. Practice should come through caring for poultry at the school. Plans are now under way for keeping a flock on the school campus. If possible, this flock should be divided into two or three units, so that different details of boys might care for each unit or colony house, and so all get practice in all departments of the work. By varying the type of house and equipment for each unit or colony, the equipment would be still more educative.

Incubators should be provided and the boys should get experience in all the details of operating them. Brooders and cheap brooding houses can be made by the boys taking shop and carpentry work. These, too, should be operated by the boys. Some practice should be given in raising chickens in the natural way, that is by setting hens and allowing them to brood the chicks. Students should be taught how to clean and keep the houses and yards sanitary, to provide proper food and clean water and to care for eggs so as to have a good product to market. Exercises in candling eggs should be given. For this work, cheap devices,practical for the farm home,should be used. Practice with the incubator and brooder and caring for young chicks, eggs, etc., should be continued throughout the year until the next class is ready to take charge

of the work.

POULTRY RAISING: (Home Economics Course). The class work for boys and girls may be given together with the possible exception of a recitation on breeding, flock management to produce sterile eggs, etc. The practical work for the girls should include all phases of the work, except the heavier and dirtier kind of work. They should do some feeding, watering, candling, incubating, and brooding work. Girls should be given special instruction on caring for setting hens and young chickens. One colony house might be assigned to them for a short time, provided the cleaning and other heavier work is done by the boys.

FARM PRACTICE; FARM MACHINERY, FARM BLACKSMITHING, FARM CARPENTRY: While the emphasis should be placed on this work during the first year, it should be continued throughout the three years. Of course, formal instruction must be given largely during the first year and during the term in which the name of the work appears in the course, yet some instruction must be given at other times. For instance, the study and operation of the ensilage cutter must be given to second year boys as well as first year boys, since the second year boys will be doing the practical work with the cutter. More formal classroom work should be given than is indicated in the course of study. It should be given at the time when it is most needed in connection with the practical farm work.

The teacher of agriculture, the farmer, blacksmith, carpenter, and others should have a part in the instruction. Special periods should be set aside for instruction as there may be

a need for it.

Instruction in farm machinery should include a study of the different kinds and makes of farm tools. The fitness of different kinds of tools and devices for various purposes, and conditions should be discussed. The work should not be limited to tools used on the school farm, but these may be taken as a basis for comparison. Catalogues of the various factories may be used to advantage in this work. A study should be made of tilling, planting, harvesting and other machinery. There should be some instruction on operating gas engines, and, if possible, traction engines. The farm blacksmithing work should give special attention to repair work. The formal instruction should include the regular instruction concerning the fire, handling different kinds of iron and steel, etc., but it should be put on the farm rather than the shop basis. Boys should make out a list, with prices of a minimum equipment for a farm shop. Boys taking this work should have charge of putting the tools on the farms in proper condition for the spring and summer work. This will afford opportunity for additional study of farm machinery.

The work in farm carpentry should emphasize the kind of wood-work the farmer will be required to do; repair machinery, fences and buildings, make gates, wagon boxes, single-trees, eveners, window screens, barn doors, mangers, feed boxes, hog troughs, feed hoppers, etc. Some time should be given to planning and constructing small farm buildings, such as chicken houses and coops, hog houses, sheds for stock, etc. Formal instruction should be given to teach boys to select and care for

tools, sharpen saws, planes, chisels, etc., and to selecting proper lumber for special uses, as well as to make the best use of stock supplied to them, to purchasing proper nails and other hardware for particular jobs. They should get some training in estimating bills of materials for small jobs, etc. As largely as possible, this should be connected with definite working plans which the pupils may work out in the drawing department. At some time during the time of the students attendance at Carlisle, some instruction should be given in rope-tying and splicing, harness mending, cement work, painting, etc.

Second Year.

GRAIN CROPS: Work in grain crops should include work on all the important cereal crops and the grain sorghums. The work should include a study of characters, peculiarities of growth, soil relations, planting, tillage, harvesting and marketing. Through the use of farm bulletins in this and the course on forage crops, each student should be called upon to report on special methods for the state or region in which his land lies. He should also know of the value of the different crops in his locality and of the types or varieties most suitable for plantinng there. As largely as possible, these reports should be in written form and should be preserved by the student for reference when he returns to his farm. Special attention should be given to the fundamental operations in this work, e.g., time of planting as related to soil and moisture conditions and to climate; preparation of soil; depth, frequency and time of intertillage; manage-

ment of soil after crop is removed, etc. It must be borne in mind that except for the experience at the school and under the outing system, boys taking this work will be dealing with strange work. Since they will probably have had little to do with the planning of work on the school farm or at their outing home, they will have given but little thought to reasons for doing things and to planning work, therefore, the teacher must not assume that the important practical operations can be hurried over and emphasis placed on the scientific side. There should be a definite attempt to review and apply their knowledge of farm machinery.

The fact that practice cannot be a definite part of the work while this course is taken, is not a severe handicap, because the practice obtained in other courses and during the spring and summer will overcome the lack here. Two practical operations should be emphasized in connection with this terms work, however,- the making of silage and the selection of seed corn and the sorghum seeds in the field and, of course, the storage and care of seed. This work should be done by members of the class assisted by the teacher of agriculture and the farmer. There should be definite instructions concerning seed selection and crop improvement. In connection with the ensilage of the crops, a careful study should be made of silos, silo machinery, silage crops, and the making of silage. Later this work will be briefly reviewed in the study of feeds and feeding.

Some practical work will be afforded by the fall seeding, and this should be done by members of this class.

FORAGE CROPS: Under this head a careful study of the characteristics and production of the various important forage crops will be made. Attention should also be given to their place in the economy farm management, i.e., systems of rotations, soil fertility,and prevention of erosion,and livestock production. The leading forage crops for the various sections of the United States should, of course, receive chief emphasis, while those grown in smaller areas or of less importance should be treated very briefly. The legumes should receive special emphasis from the standpoint of family characteristics, nitrogen fixation, feeding value, and relation to soil fertility. Brief attention should be given to making pastures and meadows, and the making, storing, and marketing of hay.

Much of the practical work connected with this course must be done during the spring and summer, but while taking the work in class the boys should clean and test seed for the farm, should estimate the seed needed for fields on the farm, plan the manuring, tilling, etc., of the fields, and in connection with this and their feeding work, learn to plan the acreage of forage crops probably necessary to maintain the livestock of the school and the farms.

There should be a review practice in recognition of seeds and plants, so that no boy will leave this work unable to recognize the more common and important forage crops.

FRUIT GROWING: The course in fruit growing should include brief work on the following and other topics - selection of a site; preparation of ground for planting; selecting varieties of

trees; ordering, receiving, and caring for trees; planting (special emphasis); care of trees, tillage, intercropping, etc; pruning young and old trees; spraying and insect control; marketing; grafting; budding; making cuttings, etc; A few lessons should be given to the bush fruits and to strawberries. Potato growing may be treated here or in the gardening course at the discretion of the instructor. It is more strictly gardening, but the time available should determine the disposition of the work.

Laboratory practice should be given in budding, grafting, making grafting wax, mixing sprays, etc. The practice in making cuttings can be given in the practical work in the greenhouse.

As soon as possible, an orchard and bush fruit plantation, and strawberry bed should be started, so that the boys may have a chance to do practical orchard work. The pupils can get practice in pruning ornamental trees on the campus. Of course, much of the practical work of this course must extend throughout the year.

There should be a close correlation between the control of insects and disease, making sprays, etc., and the work on farm insects and the work in chemistry. The English class should give practice in writing orders for trees, spray materials, boxes and supplies, finding prospective buyers, notice of shipments, etc.

STOCK JUDGING II: The work in Stock Judging II should do for cattle and sheep just what Stock Judging I does for horses and hogs. Of course, whenever there is an opportunity to see some exceptionally good stock, both classes should be taken to

judge it, regardless of whether it is stock coming in the first or second year's work. This will make it possible for the classes to visit fairs together and work on all the stock.

The work should be based on Market Types and Classes rather than breeds, though the breeds should be referred to. Much more time should be given to beef and to dairy cattle than to sheep. Pupils should get a definite idea of the purposes of each type, and of the classes of cattle, and should learn to judge them rather quickly and accurately. There must be considerable classroom or lecture and study work along with the judging exercises. Selection of the proper type for the purpose must, of course, be emphasized. The pupils must understand that market demands and the ability of the animal to produce are the determining factors in live stock production. In the work with sheep, special attention should be given to teaching the boys to handle the animals properly.

FEEDS AND FEEDING: This should be a general introductory course, dealing in an elementary way with animal nutrition, feeds, and their nutritive value, relation of grade of feed to feeding value, food demands of different kinds of stock for maintenance, growth, work and production, balancing rations for special purposes, etc. Emphasis may be placed on feeding horses if any time can be given to special work. The teacher should emphasize the value and proper use of silage and should review the work on silo construction and silage making. The nutritive value and digestibility of feeds should be taught, so as to show the value of farm manures as fertilizers.

On account of the opportunity to apply it in practice, special attention should be given to the proper use of feeds available on the school farm, yet feeds more widely grown and used in the Western United States should not be neglected. Practical work will be the feeding and care of the horses and hogs on the farm and at the school.

The special work on dairy cattle and hogs and beef cattle will be taken in the third year, and so these topics should be taught in an elementary way only.

FARM INSECTS AND BEEKEEPING: The study of farm insects should include those insects most common and most injurious to farm, orchard and garden crops. The course cannot be very extensive, so a few of the more destructive insects should be studied and from these generalizations made. The life history and habits of each insect should be studied and methods of controlling or combatting learned. Special emphasis should be placed on crop rotation, soil management, and time of planting as methods of control. AMong those which should receive special attention are the chinch bug, Hessian fly, potato bug, corn ear worm, codling moth, cankerworms, corn root worms, cut worms, grasshoppers, plant lice, etc. This work should not be too techincal. Just enough of anatomy and life history should be taught to insure that the student can intelligently apply methods of combatting and controlling the insects.

Practical application of this work may be secured by correlating it with the orchard and garden work, and as opportunity may occur with the farm work.

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Beekeeping should be largely practical work. This will be possible if the present plans to secure several hives of bees, are fulfilled. At least one of these hives should be an observation hive, accessible to students.

Third Year.

BREEDS AND BREEDING: The livestock work of the first two years is general and fundamental. The third year's work should become more specialized as well as more advanced. In this term's work, a careful study should be made of all the breeds of livestock commonly found on farms. Only a little work should be given to dairy breeds, since these breeds are to be studied next term. The origin and characters of the breeds should be studied along with their peculiar fitness for special purposes or conditions. As often as possible, students should see representatives of the breeds they are studying. On such occasions an exercise in judging from the standpoint of breeds should be given.

A considerable portion of the term should be given to a study of the elementary principles of breeding. Students should understand the meaning of pedigrees and registration, crossing and grading, and should get the principles and practices underlying breeding for the production of better stock. This work must necessarily be classroom work. It should build on the previous work in stockjudging and elementary zoology.

DAIRYING: This work should include a brief story of the dairy breeds and their special fitness for peculiar conditions and purposes. Dairy cattle management and feeding should occupy the

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major portion of the time. A little attention should be given to equipment for keeping dairy cows on the farm. The principles underlying the production of clean, pure milk should be studied and pupils should learn something of the handling and marketing of dairy products.

This work should be definitely connected with the care and feeding of the dairy herd. Special emphasis and attention should be given to the problem of feeding. This should not be confined to winter feeding alone, but to feeding for milk production throughout the year. The instruction should be on the basis of dairy work on the general farm and not special dairy work. The probabilities are that the majority of these students will use this work only as a part of diversified farming. The instructor should keep in mind also that dairying is becoming a more common part of western farming, and so should apply the work to western as well as eastern conditions.

Formal laboratory work should consist of milk testing, buttermaking, dairy records, separating, etc.

LIVE STOCK PRODUCTION: Live stock of some kind should be and is found on nearly every farm, but there are many phases or parts of the live stock business and each part is becoming more and more specialized. Therefore, before the student completes his work, but after he has some knowledge of feeding and breeding, of breed characters, and market demands, he should learn something quite definite of the most approved practices of men engaged in the separate phases of the livestock industry.

A study should be made of the following: Always pay special attention to business management, feeding and general

care. Of course, general care means economy in that particular field of livestock work. The work of the breeder, the producer of pure bred stock which is to be sold to other stockmen for breeding purposes. The work of the producer, the man who grows cattle, horses and hogs especially, but does not finish them for slaughter, that is sells them as stockers or feeders to be finished by other persons. This applies chiefly to horses, sheep and beef cattle, and little or not at all to hogs and dairy cattle. It is most important, of course, in the beef cattle industry. In this connection, the grazing industry, that is the work of the man who buys stockers to pasture and put in condition to be sold as feeders should be studied. And finally, a study should be made of the methods and practices employed by the feeder, the man who usually buys stock to finish for the market, that is fits them for slaughter. This will apply particularly to beef cattle and sheep. It will probably be better to consider the production and finishing of hogs as the work of one man since that is the most common practice.

In this work, special attention should be given to the conditions, size of farm, climatic conditions, kinds of crops grown, nearness to market, etc., which make one or another phase of this work most profitable and practicable. The fitness of the individual for a particular kind of livestock work, the capital available, etc., should not be left out of consideration.

This course must be presented so as to apply to widely varying conditions. It should review, summarize and apply practically all of the preceding work on livestock.

HANDLING AND CURING MEATS: Practice in this work should be given in the fall as well as the winter term. Practice in curing may be given during the winter term only. The work of instruction should be given as informal lectures while the work of slaughtering is going on. Students should learn to kill, clean and dress hogs, and, if possible, sheep and beef animals. Practice should be given in cutting up the carcass, trimming the parts, rendering lard, making sausage, etc. In the winter term, instruction and practice should be given in curing, smoking, and caring for meats. If preferred, only a small amount of meat need be cured and smoked.

This work should be presented on the farm basis. Students should be taught to use such materials and devices as are likely to be available in a country community.

FARM ANIMALS: The study of common diseases of farm animals and their distribution, together with methods of combatting them and of proper livestock sanitation, make the content of this course. Some time should be given to methods of combatting parasitic insects as well. Poultry diseases and parasites should be included. The emphasis should be placed on methods of securing and maintaining sanitary yards and quarters, feeding and watering devices, and disease prevention, then on recognition and simple treatments.

Some of the common diseases which should be studied in an elementary way are hog and chicken cholera, blackleg, footrot, influenza, scab, tuberculosis, bloat, colic, and other common diseases. Some little training in simple obstetries and proper

care of the dam should also be given.

SOILS AND FERTILIZERS: This course should summarize the principles of soil management in the light of crop production and crop requirements, which have already been studied. It should review soil physics and tillage operations. Tillage should be discussed from the points of view of the requirements of the various crops, maintaining fertility, storing moisture, controlling insects, etc. Crop rotation, fertilizers, their use and application, liming, and manuring, should also be carefully studied. Special emphasis and attention should be given to the care and handling of farm manures. Other methods of keeping up the humus supply, such as the use of catch crops, green manuring, spreading straw, etc., should be studied. In all of this work constant reference and application to the previous study of crops should be made.

Samples of fertilizers of various kinds should be available, so that students may examine them. Some practice should be given in testing soils for acidity. Principles of chemistry should be applied to this work in an elementary way, but as generally as possible.

FARM BUILDINGS: While houses, sheds, etc., will be discussed in connection with each class of livestock and to some extent with the courses on crops, this course should bring all that information together and systematize it for the students' use. There should be a brief study of building material and their uses, foundation materials, paints and roofing materials, and then the major portion of the time given to planning the various buildings

found on the average farm.

In connection with the farm management work, exercises should be given in selecting a location for the farmstead, arrangement of house and yard, the garden and orchard, the barn yard and its various buildings, so as to be most orderly and convenient, and at the same time be as economical of time and energy as possible.

If possible, plans for small convenient farm houses should be drawn, as well as plans for barns, poultry houses, granaries, corncribs, hay sheds, feeding or stock sheds, machine sheds, silos, hog houses, ice houses, etc. All of these plans should be for small, simple, but convenient, and durable buildings, such as could be recommended for the small farm with a limited amount of capital to be invested in buildings. If possible each student should work out such a set of plans and to some extent, the materials needed, and retain his plans for his own use when he leaves the school and returns to his allotment.

This work should be given by the agriculture teacher, the teacher of mechanical drawing and woodworking, all cooperating, or at least advising together. The practical work in connection with the course may be given by allowing the boys in the agriculture course to spend some time working with the Mechanic Arts boys on construction and repair work about the farm. It should be remembered that the aim of this course is not to make carpenters, but to enable these students to make practical plans for desirable farm buildings for their farms, that is buildings which shall be within their means and yet best serve their needs.

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Much use should be made of Farmer's Bulletins in this course.

ROAD-BUILDING, IRRIGATION AND DRAINAGE: Practice in this work must be largely incidental and very general. Much can be done by having the students visit and observe work going on in the neighborhood of the farm. Of course, such observation would be limited to roadbuilding and drainage. Elementary lessons on building dirt, or earth, and gravel roads, culverts, etc., should be given. This should include use of machinery, width of roadbed, heighth of crown, width of waterways for different areas, etc.

The chief types of drainage systems and their layout and construction should be given. Some practice in simple leveling should be given, both for this work and the work on irrigation.

Different methods of irrigation and their layout should be studied briefly. Methods of controlling the water, number of times and most favorable time for irrigation, different crops, methods of pumping water and types of reservoirs, water-rights on irrigating ditches, etc., should be briefly discussed. These must be but very brief and elementary lessons. Bulletins may be used to advantage.

FORESTRY AND LANDSCAPE GARDENING: This course should be closely connected with that part of the farm buildings course which has to do with planning the farmstead. A brief time should be given to planting and managing the woodlot, to planting wind-breaks, and to planting the farm yard. How to plant, care for and shape young trees, the selection of varieties of trees that

are hardy in various regions, the proper arrangement of conifers, broadleaved trees and shrubs, and the choice of shrubs for group and hedge planting, should be discussed. Some time should be given to annual and perennial flowering plants and their proper and practical use on the farm grounds.

Practical work may be given in work about the school campus.

Care should be taken in recommending varieties of trees to be used that those which will survive under the conditions in the plains and Western United States are given due prominence. The same consideration, of course, applies to ornamental shrubs and flowering plants.

FARM MARKETING: A study should be made of systems of marketing and preparing products for market. This would include a study of marketing cattle, grain, etc., on the local and on central markets, methods of shipping, receiving and handling such products and caring for them enroute, dealing with commission men, brokers and agents, and consigning goods and receiving payment through banks.

Beside this, market grades and grading of such products as grain, hay, potatoes, and stock should be understood and the reasons for such grades explained. For instances, students should understand why a car-load of feeders and a car-load of stockers will sell for more money than two car-loads of mixed stuff. Instruction in studying and comparing or drawing conclusions from market reports should be given. Early in the term, market reports as they are given in the daily papers should be studied

and explained. Such laboratory work in the library should be planned as will require students to continue the study of market reports throughout the term. This should be made a practical course in training the judgment of the future farmer.

A study should be made of marketing farm produce locally. This should include a comparison of marketing in bulk and in smaller amounts of graded materials, such as apples, or vegetables, etc. Special emphasis should be placed on the value of a uniform product and one which will meet the market demands. The value of branded and guaranteed products should be pointed out, and in this respect the value of a special trade, i.e., regular customers as compared with selling to retailers, should be pointed out. Some discussion should be given to care of products and their preparation for market.

This course should be given on alternate days with farm management, and should connect very closely with that work.

FARM MANAGEMENT AND ACCOUNTS (Fall term), FARM RECORDS AND ACCOUNTS (Winter term), AND FARM MANAGEMENT AND ACCOUNTS (spring term), should constitute a course continuous throughout the year. The work is distributed throughout the year in order that it may be more closely applied to the actual farm problems, and that pupils may have an opportunity to keep real accounts. The farmers on the school farms and the teacher of agriculture must cooperate closely in giving this course. Care must be taken that during the fall term the work given in the course in Rural Economics, that in Farm Marketing and the work in Farm Management is not duplicated.

In the fall term should be given the introductory work,

the business side of farming, types of farming, choosing a farm, land tenure, soil and crop management, systems of cropping, and work on farm accounts.

These topics will correlate closely with the work in Rural Economics, Soils and Soil Fertility and Farm Marketing, and should aim to assist the students in applying that work to practical farm management.

The work in farm accounts should be taken up gradually and applied as directly as possible to the actual work students do on the school farm,and to the products of the school farms, and the sales or other disposition of these products.

For example, students should keep labor accounts of the work done by themselves or the group of men with whom they work, accounts with fields or crop yields, team work, cash expenditures and income, etc. They should help to determine how much of the farm products may be sold and how much must be kept to feed to the farm stock, etc. Some attempt should be made to determine the profits from the different kinds of crops.

In the winter term, the work should include planning the farmstead and the farm, farm equipment, farm improvement, and begin the work on the relation of livestock to farm management. This work will correlate with the course on Farm Buildings, and Dairying, and lay the foundation for the spring termswork in Farm Animals and Live Stock Production.

The farm accounting work for this term should include inventories, expenditures for tools, equipment, and improvements, fertilizers, etc. Further practice may be given in special accounts by having the students keep records and accounts for the dairy herd

in connection with the course in dairying, and with products used on the farm in connection with work in Handling and Curing Meats, Labor and other accounts of that kind may be continued if necessary.

In the spring term, the work on Live Stock in relation to Farm Management should be completed, and there should be a general summary of the work on farm labor, farm records, determining cost and other factors of management. This will summarize the year's work.

During the winter and spring terms, students should have a hand in planning the work of the school farms, deciding how much of each crop should be planted, in what fields it shall be planted, how the soil shall be treated, how much seed and fertilizer is needed, when to plant, etc. In all this work, there should be two definite aims, (1) to develop foresight and managerial ability, and (2) to train the pupil to apply what he has learned in all the preceding work in agriculture.

MECHANICS ARTS COURSES.

WOODWORK: This should be a general course to be taken by all students. It should aim to give them an acquaintance with carpenters tools, their use and care, with woods of various kinds, with common joints, etc. While doing the productive work about the shop, the student should learn to use the tools and materials properly, and get his first lessons on the use of simple blue-prints or working drawings, and some practice in joining, matching and glueing. The definite instruction work should deal with the selection and care of tools, the making of lumber and the fitness of timber from different parts of the log for various purpers, the use of hard and soft woods, some lessons on strength of materials or weight of timber to be used, size, and number of nails and screws, etc.

The course should aim to give the general information and training in woodworking and the use of carpenters tools, which every good mechanic should have. It will also serve to help the instructors and the boy to determine his fitness for one of the woodworking trades.

PAINTING: This general introductory course in painting should have the same general aim as the one in woodwork. Boys should get some practice in painting, mixing paints, staining, varnishing, sandpapering, finishing, etc. Some practice should also be given in glazing and puttying.

The definite class work or instruction should deal with the oils and other materials used in paints, their source and

manufacture, how they may be mixed and combined to produce the proper colors, the relative value of different paints, and the same information concerning waxes, stains, varnishes, etc. Either in this work or the practical work, some definite instructions should be given concerning the choice,use, and care of brushes, tools and materials, commonly used in the trade.

This course should have the same vocational guidance value as the woodworking course.

BLACKSMITHING: This like the courses just described should be a general introductory course. The student should learn to handle the fire, to heat iron and the general use of the tools. There should be general exercises in forging, welding, drilling, use of dies, etc. This course should differ from farm blacksmithing, in that it should apply to shop and mechanical work, rather than the simple blacksmith work of the farm.

The lecture work should deal with shop arrangement, selection of tools, coal and other supplies, with the qualities, uses, and methods, of handling different kinds of iron and steel and with their manufacture. As largely as possible, this like the woodwork and painting should be so taught as to be of the largest general value, whether the student follows one of the metal working trades or not.

VOCATIONAL GUIDANCE: During the first two-thirds of the first year boys are taking the mechanic arts course, they should have some definite help in learning the actual conditions and possibilities in the various trades open to them. This work should be given by the director of the mechanic arts work, and by the different employees best qualified to speak for their trade. The

discussions and information gathered should include such work as the following: Term of apprenticeship; apprenticeship wages; day work or night work; number of hours of work per day and days per week; number of days work per year; wages, daily, weekly, monthly, and total average yearly wage; health conditions in the industry; social conditions for workman and for his family; possibilities of promotion and increase in salary; chance for future independence as owner of a shop or business; living conditions and cost of living, house rent, fuel, garden, etc.; personal fitness for the work, mental and physical; character, habits, and training essential to success and advancement. These and other topics should be discussed. Information may be secured from the current magazines, trade journals, labor reports and other sources.

The aim here should be to help the boy to study himself and the industries, and enable him to choose wisely when he chooses a trade or calling.

SHOP MATHEMATICS: The year's work in shop mathematics should aim to give training in the application of the principles of mathematics to trade and shop problems. The work should be applied mathematics throughout with such review of general mathematics from time to time, as may be necessary to understand and use intelligently the work given in this course. The men in charge of the shop work should assist in building up this course and fitting it to serve the needs of the various trades, by sending problems to the teacher so that these problems may be solved in class and may be made a part of the regular course.

Students should be encouraged to bring new and difficult problems, which they may meet, to the class for solution and explanation. For class use, such problems should be printed by neostyle, or otherwise, and put in the hands of pupils. The course should also correlate closely with the work in Shop Drawing taken by the same students.

The course should include some work in leveling, and the use of measuring instruments, such as the vernier and calipers, and problems applying specifically to the trades, for example, problems involving applications of the lever, pulleys, screws, gears, and gear cutting, thread cutting, belting, horsepower of engines, etc. Likewise, in the building trades, methods of computing and estimating flooring, shingles, stairbuilding, framing, roofwork, masonry, excavating, etc., should be given. Simple problems in triangulation should be included. Short or trade methods and the use of formulae should be emphasized.

During the last term's work, some instruction should be given in systems of time keeping, shop accounting and bookkeeping, cost accounting of labor and materials, etc., so that the boys may be able to keep business accounts for employers or in shops of their own.

SHOP DRAWING: This year of work should be a general course in mechanical and architectural drawing. The course should not differ from the ordinary course of that kind, except that the instructor should continually keep in mind the importance of giving each boy problems applying to the trade he is learning. As largely as possible, these problems should connect definitely with the work to be done in the school shops. Where convenient, the same

boy should work out the plans for a piece of work, and also do the work. Aside from the increased amount of work, the suggestions given would make very little change in the work as it is now being done.

MATERIALS AND CONSTRUCTION: This course should be largely descriptive and partly mathematical. It should serve as a gathering up and organizing of information given at various times during the trade practice work of the students.

It should deal in general with the choice and fitness of different materials for use under various circumstances. It should deal with such problems as the size and kind of timber to be used for framing, trussing, etc., with the use of steel for like purposes, with amount of steel to be used in reenforced concrete, with richness of concrete mixtures for different uses, problems in beam designs, columns, torsion riveted joints, etc. As in other courses, the student should be trained in the use of sources of information which may be available when he is doing work and just depend upon himself.

TRADE CALCULATIONS: This should be a course in planning and estimating, looking forward to training boys to become foremen or contractors in a small way. It should aim to apply the work in shop mathematics and drawing, as well as the preceding general trade practice. Specific problems in the form of jobs or contracts, etc., should be given students to work out. They should be required to work from catalogues, trade journals, etc., specific bills of materials and their cost and to estimate the labor, cost, etc. The work should be varied to fit the trade which each

individual student has chosen. Thus a group of boys may work on the same problem, one calculating the carpentry work, another the masonry and plastering, and a third the painting, papering, etc.

This course should lay special emphasis on the interpretation of plans and specifications, and the use of catalogues and trade journals, as a source of information in making estimates.

This work should be given by the director of the Mechanic Arts work, with such assistance from the men in charge of the various trades as he may desire.

TRADE PRACTICE: The trade practice work in this course must, of course, be very largely if not entirely productive work. However, it should be arranged so as to be as instructive as possible, and to give each individual as wide and general an experience as possible. Care should be taken that a boy is not put on one kind of work, and because he becomes skilled in that work kept there. Trade and shop methods should always be emphasized. It should always be kept in mind that the primary purpose is instruction and training of the students with the greatest economy of time and expense to both the individual and the Government.

The present practice of trying to place boys where they may work at their trade during the summer is highly commendable, and should be continued and encouraged. The directors and instructors should give helpful advice in regard to such summer work to the outing managers, whenever possible. As often as possible, the students should visit shops and factories and learn all they can of shop methods and organization.

HOME ECONOMICS COURSES.

SEWING AND DRESSMAKING: Because of the way this work is organized at present and because of the large amount of productive work that must be done, but slight changes should be made. A course in textiles and a modification of the art needlework are suggested elsewhere. Aside from this, the only change which seems at all necessary is, perhaps, a little more time and, perhaps, more of definiteness and requirements given to the work of instruction. The students should be required to make a very complete sampler and note book, which they can carry away with them and use for reference later.

The present plan of individual promotion as fast as the students' proficiency will allow is highly commendable, and should not be abandoned.

The only real problem that presents itself in connection with the new course is the disposition to be made of girls who have completed the sewing work while in the grades, and who now wish to take the additional three years of work. Provision may be made for these girls by allowing them to serve at various times in the different departments as forewomen and assistant instructors. This will enable them not only to review all their work, but to acquire extra proficiency, experience, and some training in teaching others. If possible, some considerable responsibility should be placed on the older and more competent girls.

Aside from such work in the sewing department, these girls who completed their sewing work in the grades might during their

vocational course, be assigned to any other work which will in the opinion of the matron, furnish a valuable and helpful experience. For example, they might help the assistant matron in charge of the clothing, might be put in charge of the bedding, assist the laundress, or the cooking teacher, or in the dining hall. All such work should have connected with it some training in management and responsibility.

TEXTILES: This should consist of a short study of textiles, their source and manufacture, and their special fitness for special uses. Simple methods of testing various types of goods may be given. This course should sum up much of the work of the sewing courses, and should aim to train girls to test goods and to buy goods well adapted to the purposes for which they are to be used.

ART NEEDLEWORK: This should be the usual course in art needle work, except that it should definitely attempt to make use of Indian art and design. As largely as possible, designs made in the course in applied design should be worked out in this course. Girls should be encouraged to make plain and simple decorative work, as well as the more elaborate kinds. Again in this course the home of moderate means should be considered.

COOKING: The first year's work in cooking should be the usual introduction year of work, dealing with the nature, source, etc., of the common foods and the general principles of cooking them, an introduction to nutrient values, economy and management, and details of cooking and kitchen work.

During the second year of work, the course should apply

much more definitely to the problem of home cooking and management. In a general way, the fall term's work should center about canning, preserving, drying, etc., and the laying in and properly caring for the winter's supply of vegetables, and other food which may best be bought in quantity in the fall time. With this work should be given some training in marketing, and special training in preserving or otherwise making use of materials which might otherwise spoil or be wasted. During this term or the following, the cooking teacher should arrange with the man in charge of the work of butchering to give each girl an opportunity to learn something of the appearance of a properly dressed hog, of how carcasses should be cut up, and the parts trimmed preparatory to curing, and of the location of the various cuts of meat and how they may best be cut. The girls should also get some training in making sausage, rendering lard, etc.

During the winter and spring terms, the general problems of home cooking should be taken up in a more definite way, problems of planning meals not only for one day, but for successive days, of cooking and serving, and general management, should be taken up. Emphasis should be placed on planning to buy the family food and keep within the proper limits of the portion of the family income set asidd for that purpose. The matter of cost of foods in relation to their real food value, and the wise choice to make, should be taken up. Methods of preparing and using the cheaper cuts of meat, of using the fireless cooker, and other matters of economy, should find a place in this part of the work.

A part of the work should be given to table furnishing and service. This work should be demonstrated by members of the class in the school dining room. Here again the emphasis should be placed on the possibilities in the modest home with meagre conveniences.

In connection with the work in cooking and serving, a course in table etiquette for both boys and girls should be given. A few boys should be assigned for this work for a period of two or three weeks, and during this period, they should eat such meals with the domestic science class as the domestic science teacher may direct. The boys should take turns at serving, and the girls at acting hostess. The service should vary from the simplest home meal to the formal dinner. The meal time and after should be used as a time for general instruction and discussion of various points of etiquette. Strong effort should be made to keep this discussion informal and so free, as to encourage questions. Relays of boys should be changed frequently enough to give opportunity to a large number during the year. Only a few should go at any one time. These should be chosen with consideration of their need, fitness, and nearness to the time of leaving school.

PHYSIOLOGY AND HYGIENE: No attempt should be made in this course to review all the work of grade school physiology.

The terms work should give a more complete knowledge of the process of digestion, and to that extent serve as preparatory work for the course in cooking. This should occuply but a small portion of the terms work.

The major portion of the terms work should be given to

personal hygiene and to elementary work on contagious and infectious diseases.

The work on personal hygiene should deal with the commonplace subjects of hygiene, care of eyes, teeth, nails, etc., bathing, and hygiene in relation to clothing, bedding, etc. Since this work will be given to a girl's class, the discussion may be made to apply much more intimately to the problems of young women and mothers, than they could if the work were to be presented to mixed classes.

Each girl should learn the general causes and methods of distribution of contagious and infectious diseases. Some of the commoner and more important of these should be studied somewhat more in detail, for example, measles, diptheria, smallpox, chickenpox, whooping cough, consumption, pneumonia, typhoid, malaria, etc. The discussion of each of these should include sources of infection; methods of distribution; periods of incubation; symptons; treatment; quarantines and methods of isolation; methods of fumigation and sterilization of rooms, bedding, clothing, dishes, etc; disposal of sputum and excreta; and general care and rules to be observed. Aside from its practical application, the latter portion of this work should prepare for the work in home sanitation. Special stress should be placed on the treatment and care of trachoma, and how it spreads from one person to another, especially in the house.

In all of this work from the simple problem of bathing to the treatment and management of diseases, the teacher should keep in mind the conditions in and the materials and supplies

available in the simplest of homes in villages or in the country. The whole problem is one of preparing girls to look after these matters of individual and community health, where the resources of the modern city home are not available.

HOUSEHOLD INSECTS AND HOME SANITATION: Following as it does the work in physiology and hygiene, the portion of this course dealing with home sanitation should be given during the first part of the term, and that on household insects later.

Under home sanitation should be considered problems of sunlight and ventilation (both house and cellar); temperature during winter; general cleanliness; methods of dusting, sweeping and cleaning; care of sleeping rooms and bedding; source of water supply; disposal of waste, excreto, etc; care of food in pantry and cellar; control of molds and bacteria; and a general review of special problems discussed in the course in physiology and hygiene.

Under household insects should be studied the appearance, injury, habits (food, breeding and hiding), and methods of combatting the commoner insects pests of the household. In this list, should be included such insects as the red ant, cockroach, bed bug, carpet moth and buffalo moth, fish moth, head lice, itch mites, flies, mosquitoes, fleas, and various insects injurious to foods. These should be considered with a view to preventing their occurrence and to destroying them before they do serious injury if they do make an appearance.

HOME NURSING AND CARE OF CHILDREN: This course should include emergency treatment for severe wounds, broken bones,

drowning, fainting, etc. Emphasis should be placed on preparation and use of simple aseptic materials for caring for small wounds, burns, etc. Each girl should be taught to apply bandages, and should know something of the use and application of simple home remedies. The very common cry of "no home doctoring" sounds very scientific and may be practical enough for the well-to-do city dweller, but the girls who will be housekeepers on farms, miles from town and a physician and who will often be left alone with children for a half day at a time, are under decidedly different circumstances. The object of the course should be to prepare the girls taking the Home Economics course, to act quickly and intelligently under just such conditions. The girls should learn how to make an emergency bag, or at least to know the important articles for it, such as bandages, absorbent cotton, pins, and the commoner remedies which a home, in which there are young children, should have ready for immediate use. This should include remedies for croup, colds, skin eruptions, etc., the use of physics, enemas, treatment of fever, chills, and other ailments of like character. There should be some training in caring for sick persons, proper ventilation, and heating of the room, bathing sick persons, changing bedding and feeding the sick. All of this should be given in an elementary way with two aims in view; first, to prepare the girl to care properly for simple injuries and indispositions of the family, and to judge when a physician should be called; second, to fit her to follow intelligently and exactly the advice of the physician after he has been called.

Some time should be given to hygiene and care of young children (not very young infants), their hours of sleep, regularity of habits, proper feeding, open air exercise and sleeping, proper clothing, bathing, etc., in addition to the treatment of children's ailments as indicated above.

COLOR AND DESIGN I AND II: This course should include such training in freehand and object drawing, sketching, drafting, drawing to scale, constructive drawings, margins, spacing, etc., as may be necessary. The amount and time given to this work will depend upon the elementary drawing, which pupils have had or the native ability and taste they may have when taking up this course. This should not be preparatory to art work,but to prepare girls to properly design and draft (with the aid of the technical training received in the sewing course) dresses and other garments, millinery, table linens, dresser scarfs, etc., and plan and arrange a simple home artistically. Along with this work should be given the study of colors, their value, combinations and uses, with a view to applying them in the same way.

In the teaching of design, every possible advantage should be taken of native Indian art. This should be fostered and encouraged. There should not be an attempt to standardize this and make it uniform, but to encourage each pupil to use and develop the art and symbolism peculiar to her own tribe or people. The untold and undeveloped native art of the various Indian tribes can not be developed and applied in any other way, and unless its use in this way is encouraged, it is certain to be lost with the breaking up and scattering of the tribes and the death of the older

people.

During these two terms of general work, much of the work in design should be individual rather than class work, and should aim to develop taste and originality rather than adherence to a prescribed course of study. Special effort should be made to encourage designs, which may be applied to Indian arts-crafts work, such as blankets, rugs, basketry, pottery, leather and bead-work.

APPLIED DESIGN: This term's work should attempt to apply in a specific way whatever artistic ability may have been developed during the preceding work. Native Indian Art and symbolism should be fostered here just as carefully, but in this case it should be applied to a specific purpose. Application should be made to dress designing and ornamenting, to millinery, to embroidery and art needlework, hand bags, table runners, belts, marking linen, and various forms of home decoration, finishing and furnishing. This work should have three general aims; first, working and designs, which are later to be made in the sewing department, art needlework, or in the courses in dyeing and weaving; second, practical plans for selecting furniture, rugs, curtains, paint and wall finish for a modest home; third, a training in the application of Indian art to simple handicrafts, with the possibility of girls putting this training to future use as a means of earning pin money or possibly contributing to their support.

DYEING AND WEAVING I AND II: These courses like the preceding should be practical and applied, especially making use

of Indian art and craftsmanship. Students should learn the elementary principles of dyeing with modern commerical dies. This is necessary because the supply of materials, from which the dyes used under primitive conditions were obtained, is rapidly disappearing. Girls should be taught to apply these dyes to leather, basketry materials, and the various textiles and fabrics. Special attention should also be given to stencilling, and leather work.

The work in weaving should include simple lessons in making braided rugs from rags, rag carpet weaving, rug weaving, basketry, mat weaving, etc. Advantage should be taken of not only the materials available near the homes of the girls, but also of commercial materials. The practical work of stenciling curtains, couch covers, table runners, and other like articles and of making rag carpets, rag rugs, etc., should not be overlooked or slighted.

At least one or two weeks at some favorable time during the winter term should be given to making quilts and comforters. Girls should be taught to make patchwork quilts, to make the lining, fasten it in the frames, put on the cotton and to both quilt and knot quilts and comforters. Enough of this work should be done so that each girl may have an intimate knowledge of each part of the process.

Throughout both terms of work, the two-fold aim, the practical work and development of Indian art, should not be lost sight of.

MANUAL TRAINING:I: In this course, girls should learn to use the common tools, saw, hammer, brace and bit, screw driver, etc.,

to know the commoner furniture and finishing woods, to glue, to stain, to wax and to paint. The purpose should be to fit them to be independent so far as the use of tools is concerned, so that they may be able to do many of the little chores that must be done about the house.

While learning to use tools they should be allowed to make articles for their own quarters or work so far as possible.

MANUAL TRAINING II: This work should be closely related to the course in Home Arrangement and Decoration. The work given here should be largely training in the use of materials discussed and selected in the Home Arrangement and Decoration course. It should consist of paints and painting, varnishing, staining, and waxing, (to complete the work of the preceding term), selecting, preparing and applying different kinds of wall finishes, putting on paper, putting up curtain fixtures, etc.

Both terms of work should be practical and aim to give the general experience which is usually furnished by the routine of daily home life..

HOME DAIRY WORK: In this course, girls should get training and instruction in the care of milk vessels and utensils, straining milk, raising cream by the shallow pan method, using separators and keeping them clean, caring for ripening and churning cream, washing, working, and salting butter; making butter into rolls and prints and pound cubes, and thus preparing it for market, and in caring for butter in the home to keep it palatable. The girls should learn to make cottage cheese and other simple dairy products, and to use buttermilk and skimmed milk

in cooking. Economy in the use of the byproducts of farm dairy work should be emphasized. For example, girls should be taught the high feeding value of skim milk, butter milk and washings of milk vessels and butter, for poultry and hogs.

This course should be given during the fall term when weather conditions are most unfavorable for successful butter-making, so that the girls will meet the difficult problems while they can go to the teachers for helpful suggestions. The equipment should be simple, but practical. Perhaps two types of churn should be used, dash and barrel types for example. All the girls should operate and clean at least once the separator used at the farm dairy.

CHILD WELFARE AND MOTHERHOOD: This course should aim to be a careful and intimate preparation for marriage and motherhood. The course should include a brief consideration of the importance of proper parentage, and especially motherhood both to the individual, the home and society at large. Here should be considered the importance of marriage, and especially the habits and health of the contracting parties. Girls should be given a series of lessons concerning their own development, the physiological changes during and after adolescence. This should be followed by brief, but clear and unambiguous lessons concerning the anatomy of the generative and secondary sex organs, of fertilization, embryonic development, and other stages in reproduction. Then should be given lessons on venereal diseases, their distribution and effect both on parents and possible future generations. The lessons should be followed by discussions of the importance of a

clean sex life on the part of both parents, and the importance of the young woman being reasonably sure of the cleanliness of the young man. Next should come lessons on conduct of young men and women, especially concerning behavior and liberties allowed between sweethearts or during courtship.

Special lessons should be given concerning women's care of herself, diet, exercise, frame of mind, etc., during pregnancy, the proper preparation for the child, the making of the infant layette, the bathing and care of the new born infant, and the feeding and care of the child for the first year or two of its life.

Such a course is of special importance to these young girls, who are leaving life under primitive conditions under which their mothers might have advised them to take up life under civilized conditions, and, perhaps, in communities in which there will be no one to whom to go for advice. Such a course should also do much to eradicate vice and drunkenness among Indians.

The course should be given in the main by the matron and in the most intimate kind of a way. It should not be a classroom course, but should be given in a matron's room, a parlor, or girls' reading room, where there may be much of informality and discussion. The class hour should be fixed for the convenience of the matron. Some of the more scientific lectures may be given by the school physician and the school nurse, but the course should be in charge of the matron or such person as she may designate to take charge. Before the end of the course, each girl should be required to make and to keep as her personal property, a complete infant's layette. This she should take with

her when she leaves the school.

The matron should have authority to admit other girls to this course at her discretion. She should consider not school attainment, but age, physical development, and the probability of the individual leaving school before completing the vocational course.

Funds should be available for the purchase of a few books for a matron's library for this work. These books should be for the matron and the girls and should be used at the matron's discretion either by classes or individuals.

HOME ARRANGEMENT AND DECORATION: This course should deal with the arrangement of rooms, closets, cupboards, cellar, and water supply for convenience, comfort and health. It should also deal with the selection of furniture, rugs, curtains, etc., the finishing of walls, woodwork, and floors. All of these things should be considered from the point of view of the modest workman's or farm home.

This course should be made practical and exact by studying prices and wearing qualities,as well as pleasing effects.

HOUSEHOLD ACCOUNTS AND HOME MANAGEMENT: This course should be in a very practical way a summing up and coordinating of all the home economics work.

A simple system of accounting should be taught, so as to train girls not only to keep account of, but to regulate and properly distribute expenses for food, clothing, fuel,and other household expenses.

A study and plan should be made of the minimum equipment for a modest home, and the next most important supplies above

the minimum. This should include cost, prices, etc. It should include a summing up of the furnishings for the whole home, kitchen and cooking utensils, dishes and other table ware, table linen, bed linen, and other bedding, laundry equipment, and other housekeepers supplies.

Helpful training should be given in planning the daily routine of housework and properly caring for the home. This would include sweeping and dusting, care of bedding, soiled clothing and laundry work, care of lamps, cleaning, etc.

A study of marketing should be made, discussing its problems, buying in bulk, putting in supplies from the home or market, such as canning, preserving or drying fruits, vegetables, corn, etc.

These and other general problems, which are comtinually arising to vex the young housekeeper, should be given careful study. As much attention should be given to sources of information for solving problems as to the Solution of the theoretical problems that may be studied.

This course is the more important in this school, because the requirements of productive work will not permit as full and complete a discussion of some of these problems in connection with the sewing and other work as might be given in other schools.

ORGANIZATION OF TEACHING FORCE.

For the proper administration of the new vocational courses, at least a few special teachers will be required. It seems desirable, therefore, to make some reorganization and re-adjustment of the present employees, and at the same time fix the position of new special teachers, who may later be secured to take the place of some now on the force at the school. Therefore the following recommendations are offered:

1. That the title of Principal Teacher, as now in use, be changed to Assistant Superintendent and Director of Academic Work. (The term Director is suggested for all heads of industrial departments, merely to avoid confusion and for the sake of uniformity.) This officer should be the ranking member of the instructional force, should have charge of making the program for school-room work, supervision of school-room teaching, direct charge of all academic work, and teachers of academic subjects, be custodian, under the Superintendent, of all textbooks and laboratory supplies and equipment, and of other school-room supplies in general. He should be the chairman of teachers' meetings, etc., in the same sense as he now is while acting as principal teacher. In the absence of the Superintendent, he would naturally be in charge of the school.

2. The present office of Matron should be made Matron and Director of Girls' Vocational Work. She should have charge of the matron's work as at present, and in addition should have general charge and supervision of the teachers of cooking and

sewing and specific vocational work for girls.

She should have,as at present, the proper number of assistant matrons and a teacher of sewing, a teacher of cooking, and possibly a teacher of household management, together with such assistants as may be necessary, either regularly employed teachers or advanced students.

If deemed best, the teacher of cooking may have charge of the work of cooking and household management, and have assistants in that work. This last plan is the more desirable if a competent teacher is available, and I feel sure that such is the case. Assistants should, of course, be directly responsible to the teacher in charge of the departmental work.

3. The present Chief Disciplinarian should be made Chief Disciplinarian and Director of Agricultural Work. He should be relieved of direct supervision of the shop work and instruction. He should, as at present, have charge of detailing the boys for work, general charge, under the Superintendent, of the farmers, gardeners, and the teacher of agriculture. The Director of Agricultural work should rank next to the Director of Academic Work.

There should be a teacher of Agriculture and such assistant teachers of agriculture as may be necessary for the proper teaching of that subject. The teacher of Agriculture should rank next to the Director of Agricultural Work in his division.

The Director of Agricultural work should have general charge of the work of the farm, garden, grounds, and of specific agricultural properties under the Superintendent.

4. There should be employed a Director of Mechanic Arts Work, who should have direct charge of all shop work and properties, supervise and assist in the work of shop instruction and trade practice, have charge of the instruction in Shop Mathematics, and Drawing, and other specific Mechanic Arts work. The present tradesman in charge of the shops should be responsible to him. The person chosen for this work should have had a good technical or engineering education, and some trade or practical experience.

Such other distribution and assignment of duties might be made as the Superintendent from time to time might see fit.

5. Such changes should be made in the teaching force as may be required to properly teach the work outlined for the new courses. Not many changes will be absolutely necessary until the second and third years of the course are in full operation. There will probably be needed besides the Director of Mechanics Art Work, a teacher and an assistant teacher competent to teach the subjects in agriculture, a teacher of mathematics, a teacher of history and social science, a teacher of English, a teacher of science (botany, zoology, physics, and chemistry), and either a teacher and an assistant teacher of household management and other special work for girls, or both these positions may be made assistants to the teacher of cooking and household management. With the elimination of the lower grades, especially should all grades below the sixth be eliminated, these changes will probably necessitate little if any increase in the total amount of the salary list above what it is at the present time.

In making the above report and recommendations, I have tried to become as familiar as possible with the conditions and requirements of the Carlisle school, and to foresee as clearly as possible the future needs of the Carlisle students. I have tried to keep closely in touch, through conferences, with the Supervisor in Charge and all of his assistants, and to get their suggestions and opinions as to the practicability of the courses and plans proposed. I believe I have made no recommendations which have not seemed possible to carry out, and at the same time which seemed to those with experience to contribute definitely to the solution of the problem of vocational education for the Indian.

H. L. Kent.
Special Supervisor.

Ed-Schools
G A C

SEP 15 1915

Mr. O. H. Lipps,

Superintendent, Carlisle School.

FILED BY C. P. F.

My dear Mr. Lipps:

There is transmitted herewith for your information copy of report of Special Supervisor H. L. Kent on vocational courses in agriculture, mechanical arts and home economics for the Carlisle Indian School.

Very truly yours,

(Signed)E.B.Meritt

Assistant Commissioner.

9-LP-13.

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Education-
Schools

E A C

MAY 20 1915

Mr. O. H. Lipps,
Supervisor of Schools,
Carlisle Indian School.

FILED BY C. P. F.

My dear Mr. Lipps:

I have received the copy of your new and attractive catalogue. The book has been well prepared to serve its intended purpose and I am glad to note that emphasis has been placed upon agricultural education for the boys and upon home economics for the girls.

In planning the outline you have been fortunate to have the assistance of Mr. Kent who has had wide experience in agricultural education. His recommendation for a change in the designation of instructors will be the subject of another communication.

The catalogue will afford the general public and prospective pupils the information which they will require as to the scope of the work accomplished at Carlisle. For the use of teachers, however, I presume you intend having a detailed plan of work for each grade as this is essential in order that there may be no overlapping and that younger teachers especially may have a working basis.

INITIALING COPY - FOR FILE.

I will ask you to send a number of copies for my use.

Very truly yours,

(Signed) C. F. Hauke

2nd asst Commissioner.

For the Com

5-LP-19.

ADMINISTRATION OFFICE

CARLISLE SCHOOL

May 11, 1915.

FILED BY C. P. F.

Mr. Sells:

Please look this over carefully. Your attention is called particularly to the Synopsis of Courses. Please let me know what you think of it.

Sincerely,

Lipps

May 11, 1915.

FILED BY C. P. F.

Mr. Commissioner:

I have hastily examined the proposed vocational courses of study for the Carlisle School and I unhesitatingly endorse them as meeting a long felt need in the Indian School Service.

I have time and again plead for the organization and maintenance of a few secondary schools for Indians who are so situated as to make it impossible for them to avail themselves of public school privileges. The completion of such courses will prepare Indian young people to take their places as leaders among their people, and certainly leadership is a great need. I believe similar courses should be adopted by several of the large non-reservation schools.

J. P. Bearss

Supervisor of Schools.

Education-Schools
35636-15
A V S

APR -5 1915

FILED BY C. R. F.

Professor H. L. Kent,

Kansas State College,

Manhattan, Kansas.

Sir:

I hereby acknowledge receipt of your report as temporary Special Supervisor of Indian Schools, with recommendations and proposed plans for putting into operation the three vocational courses at Carlisle Indian School.

Your plans and recommendations are receiving careful attention.

Respectfully,

(Signed) Cato Sells.

Commissioner.

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O. H. LIPPS, SUPERVISOR IN CHARGE

DEPARTMENT OF THE INTERIOR

UNITED STATES INDIAN SCHOOL

CARLISLE, PA.

The Honorable
Commissioner of Indian Affairs,
Washington, D. C.

Sir:

Complying with your directions of January 7, 1915, (138805-14), I reported to Mr. O. H. Lipps, Supervisor in Charge of the U. S. Indian School, at Carlisle, Pa., on February 23, 1915, and after spending nearly one month at the school in conference with Mr. Lipps and his assistants, I have the honor to submit the inclosed report with recommendations and proposed plans for putting into operation the three vocational courses already approved by your Office.

I desire to recommend most enthusiastically that these courses, as herein outlined, be put into operation as soon as may be possible after your Office has passed upon them. While great care has been exercised to foresee and avoid possible difficulties some may be met with, yet I trust they will be easily overcome.

Esch

In submitting this report I desire to express my appreciation of the assistance, thoughtfulness and foresight of Supervisor Lipps and the uniform courtesy and helpfulness of the officers and students of the school.

Respectfully,

H. L. Keith.

Special Supervisor.