CHAPTER IX: EDUCATION FOR RURAL COMMUNITIES.

INTRODUCTORY.

Canada is not wholly free from anxiety regarding the movement of population from the open country into towns and cities.

The total population increased from 5,371,315 in 1901 to 7,204,838 in 1911 or 34 per cent. From 1901 to 1911 the urban population increased from 2,021,799 to 3,280,444 or 62 per cent; the rural population in the same period increased from 3,259,516 to 3,924,394 or 20 per cent. That is to say, notwithstanding the opening up and occupation of vast areas of virgin land in the western Provinces, the total rural population of Canada increased during ten years by 664,878 while during the same period the urban population increased by 1,258,645.

A similar movement of population from the country to the towns is going on in the other countries visited with the exception of Denmark.

Among the undisputed factors which cause a flow of population from agriculture to other occupations are: (1) the use of improved machinery, whereby the number of units of human labor required on land to produce a given quantity of food is less than formerly; (2) the desire of some farmers to leave the rural parts for towns and cities to obtain what they think to be a better chance for the education of the children; (3) the fact that money circulates more freely in towns than in the country; (4) the attractiveness to young people of the amusements and excitements afforded by town and city life.

QUALITIES OF COUNTRY LIFE AND AGRICULTURE.

Difference of opinion may exist as to remedies, but there is substantial agreement as to the desirability of having a large percentage of the population living in the country, engaged in agriculture and other rural occupations. Four chief considerations are urged in that behalf:

(1) Country life contributes to the virility of the race in body, mind and morals.

(2) Agriculture is a means of creating wealth annually out of the resources of nature without consequent exhaustion of the fertility of the soil. Countries where agriculture is centuries old, such as England, Scotland, France and Germany, report yields of crops higher on the average per acre than at any previous time in their history.

(3) Successful farming maintains a basis for prosperity in manufacturing, transportation and other businesses; and affords stable support to all prudent national undertakings.

(4) The increased cost of living in towns and cities is a pressing problem. A larger production of food-stuffs in Canada might not at once reduce materially

the retail prices; but the further organization of producers and consumers, for doing business closer together, would reduce the amounts which are absorbed during the progress of the food products from the farm to the consumer's table.

The chief forms of satisfaction which any worker seeks to obtain by labor are possession of material things, opportunity for social enjoyments, and pleasure from doing the work itself, in addition to the wages or money returns from the product. Whatever enables the rural population to obtain worthy satisfactions in these respects is to be sought for their benefit, and likewise for the advantage of the country as a whole.

Nothing can be done by legislation to compel people to stay in the country, but much may be done by education to cause them to prefer to stay there. The saying: "Where there is no vision the people perish" was never truer than at present in its application to the movement from the country and the attenuation of rural life in Canada.

Education by Self-Help.

Whether the movement of population at present flowing from rural to urban areas goes on, ceases, or takes an opposite direction, the rural communities for their own sakes are entitled to and must have education suited to the needs of all their members. Education cannot be conferred upon them; it may not be beneficially imposed upon them; it must be evolved by themselves by self-help, if need be by some measure of self-sacrifice, with the co-operating assistance of Governments.

The conservation of a vigorous, intelligent and prosperous population in the country stands out among the foremost duties of the whole nation; and any necessary burden of expense for that purpose might well be undertaken as a wise national investment. The practical ends to be aimed at, as likely to be effective for the accomplishment of the national objects, are summed up in the words attributed to Sir Horace Plunkett: "Better farming, better business, better living." Acceptable instruction, adequate education, capable leadership and hearty co-operation are necessary means.

In all progressive countries education is being adjusted to meet the needs of the children of the rural population, to interest them in rural life and to qualify them to follow it with advantage; and keen attention is being directed to means for the instruction and guidance of the adult population. France, Germany and Denmark are noteworthy examples of what has been done in that respect. More recently Ireland and England are bending their energies, in some measure successfully, towards the same end. The question is significantly prominent in the United States.

United States Country Life Commission.

In 1910 there was published, as a United States Senate document, the Report of the Commission on Country Life. In it attention is called to the desirability of a campaign for rural progress by the holding of local, State and even National

conferences on rural progress, designed to unite the interests of education, organization and religion into one forward movement for the rebuilding of country life. That Commission also recommends Nationalized extension work through the Colleges of Agriculture, in order to reach every person on the land with both information and inspiration. The Report says that such work should include forms of extension teaching by lectures, bulletins, reading courses, correspondence courses, demonstrations, and other means of reaching the people at home and on their farms; and that it should be designed not only to forward the business of agriculture, but sanitation, education, home-making and all the interests of country life.

New Use of Home Work.

As the rural home and farming provide educational opportunities, whereby children can be trained into ability for the work of after life by participating in it, it may not be necessary to equip the rural school with materials, tools and utensils for practical work towards vocational efficiency to the same extent as has become necessary in the city and town schools. A better result may be obtained at less cost by including Farming-Projects and Housekeeping-Projects, to be carried on by the children at their homes, as an integral part of the school course and work. These Educational-Projects would not be of the sort that would interfere with the work of the farm or the usefulness of the boy on the farm or of the girl in the home; and they should have certain defined limits in order that the pupil might receive educational advantage from carrying them on.

Home-Projects as Part of Course.

Examples of such Educational-Projects would be doing the work and keeping the records in connection with growing an acre of corn, a seed grain plot, part of an acre of potatoes, caring for a few cows, caring for a few sheep, looking after a flock of hens, etc.

In the housekeeping department, the Housekeeping-Project, or work to be done at home, might be followed from week to week or month to month, according to the suggestion and preference of the girl's mother. One week it might be a certain part of the housekeeping work in the morning or evening or on Saturdays. The point is to have the girl pupil recognize the defined limits of the Housekeeping-Project, in order that she may have a sense of responsibility for doing it completely and doing it well, and for having her effort and her progress in it recorded and credited to her as part of the educational progress of the week or month.

Expense and other serious obstacles in the way of providing and maintaining School Gardens and Domestic Science equipment, of such a character as to give the children full opportunity to learn by doing, would thus be obviated. The Home-Project plan would bring the educational plant of the farms and the homes to the use of the school, and secure the active co-operation of the parents

with the teachers in the industrial and technical education of the pupils for rural life. The School Garden would still have an important use, particularly in the education of the pupils between 8 and 12 years of age.

Co-ordinations between Farm, Home and School.

It would appear highly desirable that the rural teacher, after conference with the pupil and the parents, should, wherever practicable, arrange for some part of each day of the week, to be devoted by the pupil to carrying out some definite farming or housekeeping project upon the farm or at the home as part of the education. Even if the number of hours of attendance at the school building should be reduced to accomplish this end, that would seem wholly desirable in the interests of the pupil, of the home, of the farm work, of the school and of the teacher.

Such a division of work between the rural school, the farm and the home is similar to the co-ordinated work in the Co-operative or Co-ordinated Industrial Schools. Where it may be, from local conditions, out of the question to carry on much of this work with the Elementary School, it would be wholly desirable and advantageous to combine Farming-Projects and Housekeeping-Projects with the school work and study in the Intermediate Rural Schools and Rural High Schools. Home work ofthis sort would be a new connecting interest between the home and the school.

Teacher Should be Permanent.

The Commission is aware that to carry on the Rural School in the manner suggested would require a teacher of ability, a teacher who might reasonably be expected to continue in the service of the one school for a considerable number of years. Whatever would help to bring about that condition would be entirely advantageous and wholly desirable.

Particularly in technical schools of the highest order, such as the Industrial Art Schools, and also in other technical schools abroad, not only are regular instructors given permission to follow the occupation or art in connection with which they teach, and to earn remuneration for themselves thereby, but they are encouraged to do so, in order that they may be kept in direct and active touch with the practical and business side of the industry or art. If a good farmer properly trained and qualified could at the same time be a teacher of the Rural School, particularly the Rural High School, his efficiency as a teacher and his force and influence as a leader in the locality would be increased rather than diminished. Whatever would help towards the permanency of his tenure and service as a teacher in a locality would be advantageous.

Salaries and Residences.

If the salaries which the people of the locality are willing to pay are not adequate to secure that end it is wise to consider what other inducements, attractions, remunerations or satisfactions might be provided for the teacher. A school residence and grounds, part of which might be used for garden purposes

as in France, would help to retain the teacher and dispose capable young men to select teaching in the country as a permanent occupation. Particularly in the case of Rural High Schools, residences are an essential part of the educational equipment for rural communities, and under present conditions in Canada their erection and maintenance would be Development Work of great value and benefit to the State—doubtless more than Development Work which concerns itself only or chiefly with material resources and results from them.

The permanency of the service of teachers in Germany impressed the Commission as one of the strongest factors in what has brought about the efficiency of their schools. Whatever cost would be necessary, to ensure the training of the young people into ability for rural life and towards a liking for it, might be counted as a profitable investment on the part of the community and the State. Fortunate are the people who learn to use, and choose to use, their material wealth for the enrichment of life itself and the improvement of opportunities for boys and girls in the country.

The Other Interests to be Considered.

It is not enough that the adult population should be given assistance in matters directly concerned with their schools and occupations only. The experience of other countries reveals the distinction between the development of agriculture and the uplift of rural life. Every department of rural life must be taken into account.

The problems of the farm itself in regard to crops, fertility, weeds, labor and profits are foremost. Close beside them are the problems of the farm home. More than any other calling, farming is a mode of life as well as an occupation. Here the home plays an important part in the occupation as well as in the domestic and social life of the community.

The Rural School is capable of immensely greater service in ministering to the intellectual, social and spiritual needs of the population; and the instruction and training of the adolescent youth towards efficiency for rural life under educated, acceptable and capable leadership is an obligation of urgency and highest importance.

Greater facilities for, and a better public spirit towards, wholesome recreations are necessary. It is eminently important that the farming operations should be profitable; but that is not enough. It is necessary that rural life should be interesting and satisfying to young people. The exciting and even sensational entertainments and amusements of the town are a strong magnet on many natures. Competition in kind by the country in this field of distraction is neither possible nor desirable. Finer music is ever the attraction which prevails over the call of the sirens. And the taste for the pleasures of playing, working and living in the country, the capacity for helping to provide them, and the preference for staying there to enjoy them, are to be conserved and developed in youth.

Co-operation is Wholly Beneficial.

Organized co-operation in business has been found beneficial financially, intellectually and socially. Men and women, who associate themselves for business purposes to accomplish ends for their common good, gain respect for and confidence in each other as they come together. The natural leaders find their place of willing service for the community. The benefits to the locality are not opposed to personal advantage. Individual effort finds its best opportunity in the prosperous neighborhood; and prosperity which is shared adds to the richness of living as well as to the wealth which is possessed.

It is high time for Canada to recognize the difference between the primitive conditions of the undeveloped country and the complexities of advanced rural life in a democratic civilization. The way to satisfaction and success in rural life is by pooling the intelligence, the business ability and the social spirit of the neighborhood, and then, with local, Provincial and Dominion assistance, organizing that illimitable fund of self-help for application to the community.

The problems and needs of one neighbourhood are in their essence substantially the same as those of a township, a county, a province and the nation. The national problem is so large that it seems beyond the capacity of any individual or organization. On the other hand the betterment of the situation in one neighbourhood is within the power of those who live there. That may be advanced by community effort, competent leadership, financial assistance, and the enthusiasm which finds from "something attempted, something done," new confidence and strength for wider tasks unto the perfect day.

DIFFERENT KINDS OF PROVISIONS.

Before submitting a statement of the kinds of classes and schools for Agricultural and Housekeeping Education for rural communities in Canada, a brief survey is presented of some questions in connection with Rural Elementary Schools. What has been said earlier in this Report (pages 73 to 121) regarding general elementary education applies to rural as well as urban schools; and what is said in this Chapter under the heading: "*The Sompting School in Sussex*" is applicable in the main to town and city schools also.

After statements on the teaching of Agriculture in the schools of Ontario and the Consolidation of Rural Schools in the Dominion, a brief summary is given of some forms of Agricultural Instruction and of schools in Europe and the United States. The divisions of education as well as the organization of occupations have been carried further in European countries than in Canada. Institutions and organizations for Agricultural Education are so various in kind that it would not appear to be useful, even if it were practicable, to enumerate them all or to describe many of them in detail. Different forms of service meet the varying conditions in the different countries. Race qualities and traditions, customs, family, social and national ideals, as well as conditions of farming, have played important parts in shaping institutions and policies.

It is not intended to suggest that any form of Agricultural Education copied from abroad would serve adequately the community in the midst of which it might be established in Canada. The conditions of settlement, of farming, of roads, of social organization, of previous education and the habits of living are all to be taken into account. The name of the classes or school is of little consequence compared with the character of the work which is done. A study of the Reports on Ireland, Denmark, France and Germany is commended to supplement this Chapter.

The kinds of Provisions which are briefly considered here are as follows:

(1) Rural Elementary Schools.
(2) Winter Evening Classes or Schools.
(3) Various forms of instruction in Europe.
(4) County or District Agricultural and Housekeeping Schools of the United States.

WHAT THE COMMISSION RECOMMENDS FOR CANADA.

(5) Intermediate Rural Classes (or Schools).
(6) Rural High Schools.
(7) Resident or Travelling Instructors and Instructresses.
(8) County or District Agricultural and Housekeeping Schools.
(9) Young People's Social Service Schools.
(10) Schools for Agricultural Apprentices.
(11) Agricultural Colleges.

Educational work of a most useful kind is promoted by Students' Associations and Experimental Unions and also by Travelling Scholarships.

Closely associated with the Agricultural Schools and in some cases as an integral part of them are Schools of Housekeeping. The education of girls and women for rural occupations and in rural communities has been actively promoted by organizations of women. That question is reported upon under the different countries and also in a separate Chapter on Education for Housekeeping Occupations (p. 361).

SECTION 1: RURAL ELEMENTARY SCHOOLS.

INTRODUCTION.

It is generally accepted that the proper place at which to learn farming is a farm, managed as a business concern to provide a living and a competence for the farmer. It is not so generally recognized that the proper place at which to learn how to learn to farm is a school. The real object and meaning of the school and schooling is to put the pupil in possession of himself and of knowledge for effective use.

What is said in the beginning of this Report regarding Elementary Education is applicable to Rural Elementary Schools. The limitations in numbers of

children and in the resources of the community may prevent the full equipment of all Rural Schools to the extent which is desirable, but the underlying principles, of what is recommended for Elementary Education in Chapter I, may be applied in rural communities as well as in urban communities.

In the opinion of the Commission, it is of importance that the work of Rural Schools, from the elementary grades upwards, should be of such a character that the interests of the children in their surroundings and in the activities of rural life will be preserved, deepened and enlarged.

There is general agreement as to the need for bringing the curricula of the Rural Schools into touch with the practical life of those whom the schools serve. Recent years have witnessed the introduction of Manual Instruction to take its place beside the traditional intellectual instruction. It has not yet become generally clear to teachers, parents and pupils that intellectual instruction and intellectual culture of children can be advanced better and further by means of Manual Training, School Gardens, Nature Study, Domestic Science and other practical construction and conserving work than by book studies only.

Text-books and other books serve their best purpose by supplementing the information which the pupils are led to acquire by means of observation, discussion, examination and management of work by themselves. Such books should contain a good deal of matter which will inform the children on rural questions and interest them in rural conditions and progress. The content of the courses of practical work and study should be such as to provide for series of experiences which will piece on to those which the children have had, and which will prepare and qualify them to enjoy and to prefer work and life in the country.

It is important that the kind of ability developed should be suitable to the life to be lived; and that the habits formed should be such as will make for the largest measure of satisfaction and success in country life. Frequency of experience is what forms habits, and not repetitions of instructions or information. Habits are grown in quiet ways, like the shapes of trees and the budding and ripening of fruit; they become the destiny "which shapes our ends, rough-hew them how we will".

SOME OF THE PRINCIPLES AND METHODS RECOMMENDED IN ENGLAND.

The Board of Education of England sets forth some of the principles and methods of Rural Education in a Memorandum issued for official use in 1911. These are so appropriate and suggestive for Canada that the following extracts are presented.

"It is by small beginnings from within that most of the really successful rural schools have grown into making full use of the great wealth of material which country life affords for good teaching. Often enough when he commences the teacher is conscious that he is only partially master of what he sets out to do; but, by maintaining for himself the spirit of enquiry and by learning along with his children, his powers and his courage develop until he feels himself capable of launching out upon a completely new scheme. The necessaries for such a

beginning are but two, (i) a real interest in rural affairs, and (ii) willingness and sufficient courage to try experiments and to learn from others. Thus a teacher, starting with the keeping of poultry, finds in a short time that he must join up to it light woodwork and practical arithmetic, and this leads on to correlation with Drawing and English.

"The improvement of the rural schools as places of rural teaching is so intimately connected with the personal tastes and opportunities of individual teachers that those County Authorities have, upon the whole, been most successful which have refrained from planning in any detail the manner in which the teachers are to have recourse to country life for the material of their lessons. One County Authority, for example, has encouraged its rural teachers to take up, as part of their school work, any hobby in which they are interested; with the result that bee-keeping, poultry-rearing, practical land measurements, eradication of insects injurious to the farmer or gardener, such as the ox-warble fly, rose culture, carnation culture, simple cooking and other practical developments are included in the schemes of Nature Study for the various schools.

ENGLISH.

"Where the principle is adopted that the teaching should bear upon the life the child leads and the things he understands from daily experience, it may be, and often is, applied to all the lessons of the country school. Thus, in the course of their lessons in English the children are taught to describe common objects and typical sights and sounds, the changing seasons, the harvest, the wood-cutting, the farm-yard, the hunt. In the process of learning to describe they also learn to see and to appreciate. There is still room for improvement in the reading lessons. Simplicity and truth in the description of the lives and work of country men in this and other lands are to be sought, rather than the introduction of lectures under the guise of stories. Passages of prose and verse describing country scenes could be studied more than they are—there is no lack of material—and the children could be led to some appreciation of the great writers who have written of country life, realising from their daily experience the truth of the literature, and from their literature in turn the richness and beauty of the life.

ARITHMETIC

"In the Arithmetic taught in country schools there is a steady if not rapid improvement. It now includes actual measurements in and out of school; weighing and calculations involving the weights and measures commonly used in the district; the gathering of ideas about current prices from the local newspaper, the market and elsewhere, *e.g.*, the price of corn, butter, and eggs; the cost of farming operations such as ploughing, hay-making, hedging and draining; the wages of labourers; estimates of cost of transport and haulage, by post, road, canal, and rail; quick measurement by the eye and otherwise of distances, heights, and volumes—a wall, a tree, a church spire, a hayrick; the preparation

of statements, charts, and statistics, *e.g.*, on the temperature of the school, the gallons of milk per cow, and the number of eggs per score of fowls for different periods of the year; the cost of making articles such as troughs, pens, gates, doors, etc., and of erecting simple buildings like farm sheds and Dutch barns.

GEOGRAPHY

"No one who is acquainted with modern developments in the teaching of Geography will fail to see in it a powerful aid in the work of giving to the country child an intelligent and practical interest in his surroundings. It is based largely on the observations of local conditions, climate, prevailing winds, rainfall, lowlands and hills, rivers, soils, and it traces the effect of such conditions on vegetables, on animal life, and on the occupations and activities of mankind. It needs no stretch of imagination to conceive how teaching on these lines can give interest even to the most monotonous village life. There are as yet few schools which have developed their Geography teaching far in this direction, but enough has been done to justify confident hopes for the future.

HISTORY

"History is in much the same position, except that whereas every village will afford abundant illustrations of important principles in Geography it can hardly be said that every village has a known and interesting connection with History. Still, a great deal more could be done than often is done in the teaching of local History in village schools.

NATURE STUDY

"In some counties the attempt to pursue Nature Study is almost universal, and there is no reason to complain of a want of variety in the conceptions which prevail as to the scope and content of this topic. In the schools where the teaching is best the children are taught to make and keep daily records of temperature, sunshine, winds and rain, to note the seasonal appearances of birds, fruits, crops and flowers, to study the life history of plants and common insects, caterpillars, and grubs, kept in school, and to watch the stages of their growth and decay, and with the help of drawings and paintings to build up a valuable record of their own making in their note-books. Where there is no expert knowledge to draw upon, much less is attempted, and rightly; but even in the schools least fortunate in this respect simple observations and records are made.

"Much of the Nature Study can be combined with Geography, Practical Arithmetic, and Drawing. Thus the farm and the home, the countryside and the garden lead naturally to discussions, *e.g.*, on position, slope of the ground, soil, streams, wind and weather, and the vegetable and animal life of the district. The vegetation may be expressed in a series of crop maps; articles when measured may be drawn to scale; Geometry is needed if maps of the premises and the

district are to be prepared from observations; while drawing itself seeks to express the knowledge gained from direct contact with natural objects—twigs, buds, fruits and flowers, bulbs in various stages of growth, the life history of insects, common objects of daily use.

SCHOOL GARDENS

"The school gardens, in skilful hands, are the means of furnishing material for lessons in arithmetic and mensuration, descriptive composition and orderly records, book-keeping; and of quickening the interest and directing the attention of the scholars to the plants, flowers, trees and crops of garden and field; the influence of wind and weather; and the appearance and habits of birds and insects, especially those which are useful or harmful to the garden.

"In the Lindsey Division of Lincolnshire, where there are about 40 school gardens, a system of experimental schools has been instituted, which owes much to the initiative and enthusisam of Mr. Christopher Turnor, a member of the County Council. An extensive use is made of handicraft methods in these schools; and in a recent report upon them, H.M. Inspector notes four points: first, that it is quite clear that the new work has aroused the children's interest; second, that in the opinion of the teachers the manual work has had a beneficial effect upon the general work of the school; third, that children who are backward in the ordinary subjects are encouraged and brightened by the discovery that they can hold their own in manual exercises; and last, that a great deal of manual skill has been acquired by the pupils at these schools.

"In Staffordshire, where eight years ago there were 3 and now there are 171 School Gardens, the Director, amongst other interesting matter, reports that there is one very successful little school where the class is taught by a Headmistress. This County directs that all the children of a school, not only those who are in the Gardening Class, shall learn about their school garden by being taken to visit it under the supervision of a teacher.

BEE-KEEPING AND POULTRY

"In an increasing number of country schools bee-keeping and poultry management are being taught. They should not be merely demonstrations by the teacher. The children should take a share in all ordinary operations so that they may be enabled to put the teaching into practice in after-school life. Moreover, they should learn something about the varieties best suited to local conditions; to recognise the pests and diseases which attack their stock and how to deal with them; and also the best ways of preparing their products—wax and honey, fowls and eggs for the market."

A SCHOOL IN NORTHUMBERLAND.

Experience at many places indicates that increase of interest and benefit to the pupils follows when some of the school work, in such subjects as Arithmetic, Nature Study and Composition, is based upon the actual work done

on the farm or in the home during the week. With children of the age of 12 it seems highly important that the theoretical, explanatory and informational content of their school work should, in point of time as well as in character of interest, be as close as may be to their practical experience in the doing of things. An example of a Rural School where this plan was carried out with admirable results was found at the *Netherwitton Council School* in Northumberland, England.

The Headmaster, Mr. Peter J. Robertson, was most enthusiastic in the effort to make school a means of interesting children in rural life and of qualifying them to do well. The School Garden contained a plot for each of the older pupils. It was in excellent condition for educational purposes and also as an illustration of what might be done in gardening in the locality.

In connection with the Nature Study work, each of the older pupils chooses a tree in spring, then makes drawings and notes from time to time, showing its growth and the changes in appearance from spring to autumn and winter.

In connection with the regular work, the pupils bring specimens of poultry, etc. to the school for discussion. They also bring weekly a copy of market reports. Then work in Arithmetic is based upon the data obtained from these reports and from visits to farms in the neighborhood.

The teacher takes the older pupils to the farms frequently, and discusses with them the operations and conditions observed, the breeds of cattle, poultry, etc. The farmers are reported to welcome these visits, and occasionally one of them will accompany the children over the fields or through the buildings.

The spirit of the school, its setting and the appreciation expressed of it in the neighborhood, made it clear that it fulfils the true function of a Rural School, as indicated by the aim of the lessons on country life.

The following statements regarding the lessons on country life and extracts from the reports of H. M. Inspectors, were furnished by Mr. Robertson, who writes:—

"I have given a detailed account of farming lessons, as at present I am devoting most of the attention to them, with the object of trying to link the school and the farm."

Lessons on Country Life.

AIM OF LESSONS—

1. To teach children to love Nature, and
2. To take an intelligent interest in Rural Pursuits.

Lessons given:—

Cattle Farming.

Principal breeds:—Aberdeen Angus, Shorthorn, Irish, Galloway, Hereford.

How to distinguish the above. Beef Producers, Milk Producers.

Kinds kept in this district:—Shorthorn and Irish. Why? A full description of these, and their management.

Information obtained from children by actual observation of above animals.

Arithmetic on above consists largely in working actual transactions in the local farmer's business. Local Market Prices are hung up in school every week.

Sheep Farming.

Principal Breeds:—Leicester, Cheviot, Black Face, Pure and Half Bred.
Kinds kept in this district:—Cheviot and Black Face.
Description and management of these.
Arithmetic similar to that on Cattle. Best wool producers and price of wool. Number of pounds in a Stone, fleeces in a Pack. Washing and shearing operations. Diseases of Sheep and Remedies.

Poultry Farming.

Chief Breeds:—Leghorn, Minorca, Buff Orpington, Wyandotte.
Best Cross Breeds.
Table Birds, Egg Producers.
Birds brought to school and examined by the children.
Care and feeding of chickens.
The success of these lessons has been largely due to the kindly help of the parents of the children.

Garden Work.

Lessons on common vegetables.
Crops weighed and measured.
Arithmetic. Areas measured. Land Surveying. Measuring of stone heaps and hay stacks, and finding value of same.

Trees.

Names of common trees of the district. Children supplied with note and sketch books. Each child takes a particular tree and visits it throughout the year, drawing sketches showing different stages in the growth of the tree.

Flowers.

Common wild flowers. Situation and date of bloom.
Grasses of the district.

Birds.

Migrants of the district. Date of coming and nesting places. Eggs *not* collected.
In lessons on birds, trees and flowers, the children tell orally, or write, what they have found out themselves, before the teacher gives the lesson.

English.

All subjects mentioned form suitable themes for Composition.
Every child brings an *Observation Paper* on Monday mornings.
Examples:—
a. Date of first straw in the building of a nest. Time taken to complete nest and hatch young.
b. Time various seeds take to germinate.

EXTRACTS FROM HIS MAJESTY'S INSPECTOR'S REPORTS.

"It would be hard to speak too highly of the enthusiasm and good sense which the Head Master throws into all his work.

"The attainments of the children are a testimony to the soundness of his methods, and he is to be particularly congratulated on the response which his scholars make to his efforts to interest them.

"An excellent feature of the school work, and one for which the children are well prepared by their good training, is the Nature Study. It is not at all bookish, though books are available for consultation, but consists of actual observation of animals and plants as well as of farming operations, in which the children take a lively interest."

The School Garden.

"Excellent all-round work is done here. Not only is the garden in perfect order, but it is made the means of giving concrete form to many of the school lessons. The actual experience of the boys in cropping their plots is made the base for calculations of quantities required for larger areas, both as regards seeds, manures, crops and profits.

"Practical Arithmetic is on sound lines, and the first principles of surveying have been taught with a view to practical field measuring next year."

THE SOMPTING SCHOOL IN SUSSEX.

The Commission visited a number of other Elementary Rural Schools in England and found evidence of much successful effort, particularly through Nature Study work, to direct the attention of the pupils to rural interests and to develop their ability in that direction. The case of the Sompting School in a quiet Sussex village, as described by Mr. Edmond Holmes, until recently Chief Inspector of Elementary Education for England, reveals so much that is suggestive and instructive for Canada that a brief description of some of its features is presented by means of extracts from his book "*What is and What Might be*"* and excerpts from a Paper read before an Education Club. Particular attention is directed to what is recorded on the subject of *Drawing*. That agrees with what the Commission learned, as being the judgment of the highest authorities with whom it had "Conversations", and with the practice in the best classes for Drawing, Design and Art which the Commission saw.

The extracts are as follows:—

PERCEPTION AND EXPRESSION.

Let us for a moment accept as valid a distinction which may easily become a snare and a delusion.

The perceptive faculties—those which enable us to grasp what is around us and draw it into ourselves and make it our own—seem to fall into two sub-groups. The first are the more

*Constable & Co., Ltd., (1911).

strictly mental faculties—those by means of which we see, observe, reflect, think, reason understand, know. The second are in greater or less degree emotional; and the emotions which tinge them may perhaps be grouped under the two comprehensive heads of sympathy and admiration (with their respective opposites).

The expressive faculties may be classified according to the channels through which they act. Of these there are four which the teacher is free to make use of. The first is *Language*. The second is *personal action*. The third is *handwork*. The fourth is *art*. Under the first head may be taught such subjects as composition (oral and written), reading aloud, recitation. Under the second head, such subjects as physical exercises, outdoor games, dancing, acting. Under the third, such subjects as carpentering, gardening, dressmaking, cooking. Under the fourth, such subjects as drawing, painting, modelling, music.

We have now to ask ourselves in what relation do the perceptive faculties stand to the expressive? Is it possible to devote this hour or half-hour to the training of perception, and that to the training of expression? Surely not. Perception and expression are not two faculties, but one. Each is the very counterpart and correlate, each is the very life and soul, of the other. Each, when divorced from the other, ceases to be its own true self. When perception is real, living, informed with personal feeling, it must needs find for itself the outlet of expression. When expression is real, living, informed with personal feeling, perception—the child's own perception of things—must needs be behind it. More than that. The perceptive faculties (at any rate in childhood) grow through the interpretation which expression gives them, and in no other way. And the expressive faculties grow by interpreting perception, and in no other way. The child who tries to draw what he sees is training his power of observation not less than his power of expression. As he passes and repasses between the object of his perception and his representation of it, there is a continuous gain both to his vision and to his technique. The more faithfully he tries to render his impression of his object, the more does that impression gain in truth and strength; and in proportion as the impression becomes truer and stronger, so does the rendering of it become more masterly and more correct.

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In the case of the child who tries to draw what he sees there is a continuous reciprocal action between perception and expression in virtue of which each in turn helps forward the evolution of the other. Even in so abstract and impersonal a subject as mathematics, the reaction of expression on perception is strong and salutary. The student who wishes to master a difficult piece of bookwork should try to write it out in his own words; in the effort to set it forth concisely and lucidly he will gradually perfect his apprehension of it. Were he to solve a difficult problem, he would probably regard his grasp of the solution as insecure and incomplete until he had succeeded in making it intelligible to another's mind. When perception is deeply tinged with emotion, as when one sees what is beautiful, or admires what is noble, the attempt to express it in language, action or art seems to be dictated by some inner necessity of one's nature. The meaning of this is that the perception itself imperatively demands expression in order that, in and through the struggle of the artistic consciousness to do full justice to it, it may gradually realize its hidden potentialities, discover its inner meaning, and find its true self.

ATTAINABLE IN ANY VILLAGE SCHOOL.

The ends which I am about to set before managers and teachers are ends which have been achieved, and are being achieved, *under entirely normal conditions*, in various parts of the country, and which are therefore not impracticable. There are many elementary schools in England in which bold and successful departures have been made from the beaten track; and in each of these cases what is at present a mere possibility for most schools has been actually realized. And there is one elementary school at least in which the beaten track has been entirely abandoned, with the result that possibilities (as I may now call them) which I might perhaps have dismissed on *a priori* grounds as too fantastic for serious consideration, have become part of the everyday life of the scholars.

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I will now try to describe a school in which one cannot spend five minutes without feeling that the prevailing atmosphere is entirely different from that of the ordinary elementary school, —that other ideals are in the ascendant, that other ends are aimed at, that other results are being achieved.

The school belongs to a quiet Sussex village called Sompting, which lies at the foot of the South Downs, about three miles inland from Worthing. It is attended by about 120 children. The head teacher, Miss Harriet Johnson, has had charge of this school for nine or ten years. Her staff is composed of her sister, who is uncertificated, and two 'supplementary' teachers. She herself has to take all the children above Standard II. There are some fifty of these in the main room, in two groups. The premises are quite mediocre, but there is a fairly large playground.

The first thing that strikes one on entering the school, is the bright and happy look on every face. The Sussex rustic is proverbially dull, but there is no sign of dullness on any face in this school.

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ACTIVITY AND HAPPINESS.

Two things will strike the stranger who pays his first visit to this school. One is the ceaseless activity of the children. The other is the bright and happy look on every face. In too many elementary schools the children are engaged either in laboriously doing nothing—in listening, for example, with ill-concealed yawns, to *lectures* on history, geography, nature-study, and the rest; or in doing what is only one degree removed from nothing,—working mechanical sums, transcribing lists of spellings or pieces of composition, drawing diagrams which have no meaning for them, and so forth. But in this school every child is, as a rule, actively employed. And bearing in mind that "unimpeded energy" is a recognized source of happiness, the visitor will probably conjecture that there is a close connection between the activity of the children and the brightness of their faces.

There is no trace in this school of the mental lethargy, which, in spite of the ceaseless activity of the teachers, pervades the atmosphere of so many elementary schools; no trace of the fatal inertness on the part of the child, which is the outcome of five or six years of systematic repression and compulsory inaction. The air of the school is electrical with energy. We are obviously in the presence of an active and vigorous life.

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SELF-EXPRESSION.

The third thing that strikes the visitor is that the various activities that are in progress are all forms of self-expression. The child himself is behind everything that he does; and he is nearly always doing something. The number of channels of self-expression which have been opened up for the children in this school is remarkable. Here are some of them:—

(1) *Talking*, including the free expression of opinions and experiences, the free asking of questions, formal debating, the making up of dialogues, etc.
(2) *Written composition* of various kinds, including the making of notes by the children for their own use, descriptions of nature, the making up of stories, verses, etc.
(3) *Reading* aloud (by individual children to the rest of the class).
(4) *Recitation* of poetry.
(5) *Singing*, including the old English Folk Songs, which are partly dramatic.
(6) *Morris dancing*, which is also partly dramatic.
(7) *Dancing*, in the ordinary sense of the word.
(8) *Acting*, including the dramatic treatment of history, geography and even arithmetic, the dramatic interpretation of Shakespeare's dialogues, scenes from Dickens, etc.
(9) *Drawing* with pencil, brush and chalk.
(10) *Clay modelling*.
(11) *Informal gardening*, including observations of plant life.
(12) *Informal carpentering*, including the making of useful things, such as sheds and fences.
(13) *Informal cookery*.
(14) *Cutting out and making garments*, including the making of simple fancy costumes for the girls themselves, and armour (made of tea-paper) and other historical costumes for the boys.

Behind all these various modes of expression stands, as I have said, the child himself. The expression is always self-expression. There is no fraud about it, no hypocrisy, no cant. Miss Johnson's one idea is to help the children to educate themselves. She gives them the three things which every teacher ought to give his pupils—material, stimulus, guidance. The rest they must do for themselves. Whether she has thought out the great problem which she has solved so successfully, or whether, by the exercise of that faculty of divination with which her sex is more richly endowed than ours, she has felt her way to the true solution of it, I cannot say. But the fact remains that the whole of her work is based on the fundamental assumption that real education is self-education, and that for self-education we need, first and foremost, self-expression. In everything that she does, in everything that the children do, she gives proof of her deep-seated conviction that growth comes from within the soul, and cannot be imposed upon it from without; that the soul grows in and through the growth of its perceptive faculties; that the perceptive faculties grow by expressing themselves; and therefore—as the conclusion of the whole matter—that to foster self-expression is the first and last duty of the teacher.

HISTORY.

Let us now consider in detail how some of the subjects are taught. The treatment of *History* is in the main dramatic. When they come to an episode which lends itself to dramatic

treatment, the older children proceed to dramatise it. With this end in view, they consult some advanced historical manual, or some historical novel, and having studied with care the particular chapter in which they are interested, they proceed to make up their own dialogues, and their own costumes and other accessories. They then act the scene, putting their own interpretation on the various parts, and receiving, as usual, the stimulus and guidance of Miss Johnson's sympathetic and helpful criticism. The rest of the class (or rather all the children in the main room) look on, with the history books open in front of them, and applaud; and, by gradually familiarising themselves with the parts, qualify themselves half-unconsciously to act as understudies in the particular scene, and in due course to play their own parts as interpreters of some other historical episode. I know of no treatment of history which is so effective as this for young children. The actual knowledge of the facts of history which a child carries away with him from an elementary school is as rule nil (for he has been spending his time listening to dull lectures which went in at one ear and out at the other), and is, in any case, a negligible quantity. But the child who has once acted history will always be interested in it, and being interested in it, will be able, without making a formal study of it, to absorb its spirit, its atmosphere, and the more significant of its facts. But the advantages of the dramatic treatment of history do not end with the subject itself. The actors in these historical scenes are expressing their own interpretation of the various parts, and their own perception of the meaning of each episode as a whole. This means that they are training, *inter alia*, two sovereign faculties—imagination and sympathy—and training them, as I can testify, with striking success; for the dramatic power which they display is remarkable, and can have been generated by nothing less than sympathetic insight into the feelings of the various historical personages and the possibilities of the various situations.

NATURE STUDY.

Nature-study has always been a prominent feature in the work of this school. Whenever a lesson is given on a given subject, *e.g.* on a holly leaf, every child has a specimen and a lens. They observe the characteristics of the object closely and carefully, in order to discover facts which might escape the unobservant. Having discovered these, they try to account for them. In these attempts they display much ingenuity and intelligence, and are led on by Miss Johnson in the direction of the true explanation of each phenomenon, and the relation of this to what they know of the object as a whole, and of its meaning and function. In the questions which the children ask, and in their own tentative answers to them, they express their perception of the features and properties of the object which has been placed before them. The faculty of observation grows with the attempts that are made to interpret its data (for some obscure fact, as yet unnoticed, may throw light on the meaning of one which has already been observed); and as it grows it makes a further demand on the ingenuity and intelligence of the child who exercises it. The nature ramble, in which the children make notes and sketches of what they see, is another aspect of nature study. The experimental study of plant life in the garden is a third. The drawing of beautiful natural objects is a fourth. The search for appropriate poetical questions is a fifth. The training which the child is receiving in nature-study, when it is so treated, is something more than mental. His more emotional qualities—his sympathy with other forms of life than his own, his subtle insight into, and feeling for, the general life of nature, his admiration of what is beautiful—are allowed, and therefore encouraged, to exercise themselves; and their consequent growth carries with it the general expansion of the inner life of the child.

DRAWING.

This leads me to speak of a subject in the treatment of which the advantages and possibilities of self-education are aptly and forcibly illustrated—*Drawing*. The production of outward and visible results is the last thing that Miss Johnson thinks of; and she is right to ignore it, for the only results of education that really matter are the kind and the degree of mental growth that the child has made. But whenever the production of what we call results happens to be compatible with true progress, Miss Johnson's very indifference to 'show' work makes her conspicuously successful in producing it. Now it happens that drawing is one of the subjects in which what is outward and visible, when judged by a really competent critic, gives a fairly correct idea of the inward and spiritual state of the child. And it also happens that the drawing of this school—the actual work done by the children—has been judged by one who, being in equal degrees an artist and an educationist, is unquestionably a 'really competent critic'. Of the four women who teach in this school, three cannot draw a line, and the fourth, Miss Johnson herself, is easily beaten at drawing by the more forward of her pupils. It is clear, then, that in this subject, at any rate, these children have been compelled by the force of circumstances to educate themselves. That being so, it is interesting to hear what our critic has to say about their drawings. Here is his report:—

"In this school the teaching of Drawing reaches the highest educational level I have hitherto met with in our elementary schools, and the results are the genuine expression of the children's own thoughts. Flat copies are not used, and the scholars evolve their own technique, for the head teacher, Miss Johnson, is not strong herself in this respect. The development of thought carries with it the development of skill, and this is clearly seen in the children's drawings, which

show good form and proportion, some knowledge of light and shade, a delicate and refined perception of colour, and a wonderful power of dealing with the difficulties of foreshortening. The central law is *self-effort*—confidence and self-reliance follow. The spontaneous activities of the children are duly recognized, and the latter decide what to draw, how to draw it, and the materials to be used. One cannot remain in the school long without observing the absence of that timidity, that haunting fear of making a mistake, which paralyses the minds and bodies of so many of our children. Under Miss Johnson's influence the children become acute critics. Her methods coincide so exactly with those which I have long been advocating, that I give them in her own words:—

I gave each child an ivy leaf, and said, 'Now look well at it'. We talked about its peculiarities, looking all the time, and then I told them to draw one, still looking back to the leaf from time to time. Then I examined results. A good many were, of course, faulty. In those cases I did not say, 'No, you are wrong, this is the way', and go to the black board. I said, 'In such and such a part is yours the same as the leaf? 'What is different? How can you alter it?', etc., etc. I make *them tell me their faults.* There was no black board demonstration".

THE PATH OF TRUE PROGRESS.

From a careful examination of their work it is clear that the children have not only been taught to draw, but that they love and enjoy their drawing. Form and colour are not only seen, but understood and felt. The children are impelled by an irresistible desire to reach and express the truth, and are thus carried along an ever-moving path of educative action. I am told that scholars may sometimes be seen seated on a bank in the lanes depicting some object which has attracted their attention and excited their admiration.

Could we have stronger proof than this that the path of self-education is the path of true progress?

So much for the mental training of the children. But, after all, the soul of man is not divisible into water-tight compartments; and the mental training of the child must needs affect, for good or for evil, the whole range as well as the whole course of his development. There was a time when every elementary school received a large grant for instruction and a small grant for discipline, and Inspectors were supposed to report separately on each of these aspects of the school's life. A strange misconception of the meaning and purpose of education underlay this artificial distinction; but on that we need not dwell. Were I called upon to report on the discipline of this school, my report would be brief. There is no discipline in this school. There is no need for any. Apart from his love of his teacher and his pride in his school, each child in turn is so happy in his work that the idea of being naughty never enters his head. Those energies which, when kept in a state of forced inaction, or otherwise subjected to undue constraint, break out into various forms of naughtiness, are so fully and so happily occupied that the safety-valve of misconduct has never to be used. It is patent to the most careless observer that in the atmosphere of this school—

"Love is an unerring light
And joy its own security."

"A WAY TO UNITE SCHOOL AND HOME."

It seems desirable that part of the work carried on by the pupils on the farms and in the homes after they are 12 years of age should be recognized as an integral part of the school course. At various places in Canada the Commission learned of individual teachers who gave credit, on the record of school progress, for home work outside the range of school studies. A recent publication by Mr. L. R. Alderman, State Superintendent of Public Instruction for Oregon, has come under the notice of the Commission. It contains information, of a similar character to that which has come to the knowledge of the Commission in fragmentary ways, in such a lucid and complete form that the following extracts from Mr. Alderman's pamphlet on "A Way to Unite School and Home" are presented. It will be observed that in the article by Mr. Alderman the experiences at the Spring Valley School and at the Ontario School are cited, together with extracts from a communication made by Mr. T. J. Garing, Superintendent of Education for the County of Clackamas, Oregon.

SESSIONAL PAPER No. 191d

HOW IT CAME ABOUT.

The idea of giving school credit for home work first occurred to me nine years ago when I was a school principal. I had noticed that one of my rosiest-cheeked, most vigorous appearing girls spent much time on the streets after school. One day Mary's mother was pointed out to me. She was a pale, nervous little woman with several children. Knowing that the family was not very well to do I felt myself burning with indignation at the circumstances that were drawing Mary away from interest in her home. I thought, "What is the use of my teaching that girl algebra and general history, when what she most needs to be taught is that her mother is her best friend and needs her help?"

At the algebra recitation the next day I announced that the lesson for the following day would consist of ten problems as usual, but that five would be from the book, and five not from the book. The five not from the book would consist for the girls of helping cook supper, helping to do up the kitchen work after supper, preparing breakfast, helping with the dishes and kitchen work after breakfast, and putting a bedroom in order. When I asked for "hands up" on all the problems the following day, I noticed that Mary kept her hand raised after the others were down. "What is it?" I asked. "I worked five in advance," she replied with sparkling eyes, "I worked five ahead in the book, besides the ten that you gave us." From that time Mary's interest in all school work was doubled. She was right up in the first rank. The rest of the year we regularly talked over the girls' home work. School public opinion encouraged the girls so that more and more reported on what they had done in house-work and sewing, and felt proud of it. Best of all, our discussions brought the school and the home together. The year was successful for all of us. More parents visited the school, and there was a concerted movement for the betterment of school conditions.

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UNPROFESSIONAL TEACHERS.

The plan I have in mind will cost no money, will take but little school time, and can be put into operation in every part of the State at once. It will create a demand for expert instruction later on. It is to give school credit for industrial work done at home. The mother and father are to be recognized as teachers, and the school teacher put into the position of one who cares about the habits and tastes of the whole child. Then the teacher and the parents will have much in common. Every home has the equipment for industrial work and has someone who uses it with more or less skill.

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The school has made so many demands on the home that the parents have in some cases felt that all the time of the child must be given to the school. But an important thing that the child needs along with school work is established habits of home making. What one does depends as much upon habit as upon knowledge. The criticism that is most often made upon industrial work at school is that it is so different from the work done at the home that it does not put the child into that sympathetic relation with the home, which after all is for him and the home the most important thing in the world.

But one says: "How can it be brought about? How can the school give credit for industrial work done at home?" This may be accomplished by printed slips asking the home to take account of the work that the child does at home under the instruction of the home, and explaining that credit will be given this work on the school record. These slips must be prepared for children according to age so that the child will not be asked to do too much, for it must be clearly recognized that children must have time for real play. The required tasks must not be too arduous, yet they must be real tasks. They must not be tasks that will put extra work on parents except in the matter of instruction and observation. They may well call for the care of animals, and should include garden work for both boys and girls. Credit in school for home industrial work (with the parents' consent) should count as much as any one study in school.

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SPRING VALLEY SCHOOL.

A. I. O'Reilly, a young man who is just completing his third year at the Spring-Valley School a country district in Polk County, determined last September (1911) to test the plan of giving credit to his pupils for the work they did at home. He went to his directors, and secured their promise to give money from the general school funds to be awarded to the pupils earning the most credit in a home-work contest. He then proceeded to work out his plans, the contest idea in bringing about the results being original with him.

The duties for which home credit is offered on Mr. O'Reilly's credit schedule are these: Building fire in the morning, 5 minutes; milking a cow, 5 minutes; cleaning out the barn, 10 minutes; splitting and carrying in wood (12 hours' supply), 10 minutes; turning cream separator, 10 minutes; cleaning horse (each horse), 10 minutes; gathering eggs, 10 minutes; feeding chickens 5 minutes; feeding pigs, 5 minutes; feeding horse, 5 minutes; feeding cows, 5 minutes; churning

butter, 10 minutes; making butter, 10 minutes; blacking stove, 5 minutes; making and baking bread, 1 hour; making biscuits, 10 minutes; preparing the breakfast for family, 30 minutes; preparing supper for family, 30 minutes; washing and wiping dishes (one meal), 15 minutes; sweeping floor, 5 minutes; dusting furniture (rugs, etc., one room), 5 minutes; scrubbing floor, 20 minutes; making beds (must be made after school), each bed 5 minutes; washing, ironing and starching own clothes that are worn at school (each week), 2 hours; bathing (each bath), 30 minutes; arriving at school with clean hands, face, teeth, and nails, and with hair combed, 10 minutes; practising music lesson (for 30 minutes), 10 minutes; retiring on or before 9 o'clock, 5 minutes; bathing and dressing baby, 10 minutes; sleeping with window boards in bedroom (each night), 5 minutes; other work not listed, reasonable credit.

All of Mr. O'Reilly's pupils, thirty-one in number, entered the contest with the vim and eagerness for which children are noted, and have faithfully kept up their home work throughout the year. The parents have co-operated by sending in the lists of work done by the children at home. Every morning Mr. O'Reilly receives these notes, which are usually written by the children and signed by the parents. Here are a few samples of parents' reports:—

Flora Mortensen,

April 17, 1912—

	Min.
Fed the chickens	5
Gathered the eggs	15
Set the table	5
Wiped the dishes	5
Tended flowers	20
Swept one floor	5
Was in bed before 9	5
Washed my teeth	10
Prepared one lunch	5
Total	75

Henry Davidson,

April 17, 1912—

	Min.
Milked cows	20
Curried horses	10
Hunted eggs	10
Fed chickens	10
Fed pigs	10
Fed horses	10
Fed cows	10
Cut wood	10
To bed before 9	5
Total	95

La Verne Holdridge,

April 16, 1912—

	Min.
Fed chickens	5
Gathered eggs	15
Split kindling	10
Carried in wood	15
Swept four floors	20
Fed one horse	5
Dried dishes	15
In bed before 9	5
Total	90

Evangeline Jennings,

April 16, 1912—

	Min.
Prepared supper	30
Washed and dried dishes	15
Gathered eggs	15
Fed the chickens	5
Put separator together	10
Turned separator	10
Made one bed	5
Cleaned my teeth	10
Retired before 9	5
Total	105

Not only the girls and boys of 10, 12 and 14 years of age are interested in the contest, but the smaller children have gone into the contest with a great deal of zeal.

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EXAMINED BY COUNTY SCHOOL SUPERINTENDENTS.

What was being done in the little school in Spring Valley was soon talked of. Early in December, 1911, the Portland papers discussed the novel experiment. Early in January, 1912 the county school superintendents from all over the State assembled at Salem, as is the custom twice each year, to grade examination papers. Superintendent H. C. Seymour of Polk County invited all the superintendents to visit the Spring Valley school, and provided carriages for the eight-mile drive. Excerpts from a first-hand impression of this day's visit written for the Oregon City paper by County Superintendent T. J. Gary of Clackamas County.

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"These things were all of interest to us, but the one thing we were most curious to know about was the system the teacher had of giving credits for home work, not school work done at home, but all kinds of honest work a country girl or boy can find to do. Pupils were given five minutes for milking a cow, five minutes for lighting a fire, five minutes for sleeping in fresh air, five minutes for taking a bath, and so on through the long list of common duties incident to home life and country. The rule of the school is that any pupil who has earned 600 minutes may have a holiday, at the discretion of the teacher. If the pupil asks for a holiday to use for some worthy cause the teacher grants it providing it will not interfere too much with his school work. It is further provided that no pupil may have more than one holiday in 20 days.

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TESTIMONY OF PARENTS.

"The chairman called upon the parents to give their testimony as to the success of the movement. I cannot write here all that was said, but will give two as fair samples of all.

One good motherly looking country woman said: 'Before this plan was started I got up in the morning and prepared breakfast for the family and after breakfast gave time to the preparation of the children for school. Now, when morning comes the girls insist upon my lying in bed so that they may get breakfast. After breakfast they wash the dishes, sweep the kitchen, and do many other things as well as make their own preparation for school. I think the plan is a success. My only fear is that it will make me lazy.'

"One father said: 'I have two boys—one in the high school and Jack, here. It was as hard work to get the older boy out in the morning as it was to do the chores, and as Jack was too young to be compelled to do the work, I let them both sleep while I did it. Now, when the alarm sounds, I hear Jack tumbling out of bed and when I get up I find the fires burning and the stock at the barn cared for, so all I have to do is to look happy, eat my breakfast, and go about my business. Yes, it is a great success in our home.'

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"It is the universal testimony of the parents in this district that the children are co-operating with them, and becoming interested in their home as never before. One mother said that it seemed that her duties were reduced by half, and that the children were eager to do more, for more work meant more school credit."

TESTIMONY OF THE TEACHER.

To the question, "Does this work interfere with the work of the school?" the teacher said, "No, I find that the children have taken more interest in their school work and are making more progress than before."

"This contest plan ought to be contagious," continued the teacher, "for it is the best thing I have ever tried in the way of getting the children completely in sympathy with both school and home duties. It is not my intention to give full credit for time necessarily spent in home duties. I have explained to the children that it is best to go out into the world expecting, if necessary, to give more than they get."

"The plan is an agreement between the pupil and myself. If he fails to live up to his part of it he learns that his failure works a real hardship upon him. Perhaps I am teaching some practical law here. The plan of awards has started them on a commercial future and has resulted in my having to tell them all about savings accounts. The plan is going without a hitch."

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THE ONTARIO SCHOOL.

Other schools of the State are now becoming deeply interested in the new educational field. There is not much doubt that next fall it will be introduced into a great number of schools. E. B. Conklin, city superintendent of Ontario, and W. W. Wiley, city superintendent of Athena, have gotten out printed home-work cards. Mr. Conklin's card leaves space opposite each home duty for the grade obtained for the months beginning with February of this year till the close of the term. The regular school marks are offered: F, fair; P, poor; G, good; and E, excellent. These cards are sent home with the regular monthly report card. The parent is to grade and sign the card, returning it to the teacher. The duties on the card are: Sewing and mending, bread making, general cooking, setting and serving table, washing and wiping dishes, washing and ironing, sweeping and making beds, mopping and care of kitchen, care of younger children, making fires, getting water, coal, kindling, etc., feeding stock or poultry, milking cows, barn or yard work, garden or field work, errands. This card also takes into consideration the character development of the child, and names the following to be graded by the parent: Cheerfulness, kindness, order and care of clothes, cleanliness, bathing, table manners, politeness, keeping temper, doing before told, care of language at home, off street, courtesy to parents, kindness to animals, care of playthings, home study, ambition to succeed.

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MR. ALDERMAN'S OPINION.

On a recent visit to Ontario I was much gratified to find that Mr. Conklin's plan was working out with great success. I asked no questions concerning it at first, but before I had been in the city long a number of parents came to me with enthusiastic expressions of approval of the manner in which the plan was engaging the attention of the children, and was serving as an incentive to interest them in the duties of their home.

In my opinion the giving of school credit for home work is like opening great reservoirs of power which as yet have scarcely been tapped.

AGRICULTURE IN THE SCHOOLS OF ONTARIO.

Attempts have been made for more than 60 years to include instruction in Agriculture in the curriculum of the schools. Until the combination arrived of the School Garden, systematized Nature Study and the Trained Teacher, but little progress was made. The wide range of the agencies at work for promoting the teaching of Agriculture in the schools is set forth in a publication issued by the Department of Education, Circular No. 3, August 1912, as follows:—

IN 1903. The Macdonald Institute was established at the Ontario Agricultural College, having as one of its purposes the special training of teachers in Agriculture. At this time five so-called Macdonald School Gardens were commenced in Carleton County.

IN 1904. The first *Summer School for Teachers* was held at Macdonald Institute, and in the fall term the first Interprovincial Teachers' Class was held under the Macdonald Scholarship scheme.

At this date another important step was taken in the direction of Agricultural education by the incorporation of the subject of *Nature Study* into the Public School Course of Study.

At the same time, the work in Elementary Science for the first two years in the High Schools was re-arranged, giving the affairs of Agriculture—though not using the name—considerable prominence.

IN 1907. The Government made special grants available to schools and teachers for carrying on school gardening; arrangements were made also for granting certificates in Agriculture to teachers.

IN 1909. The first Normal Teachers' Class in Elementary Agriculture and Horticulture was held at the Ontario Agricultural College.

IN 1910. Fifteen schools qualified for grants for school gardening.

IN 1911. Thirty-three schools qualified for grants for school gardens. A Director of Elementary Agricultural Education was appointed to oversee and promote the work.

IN 1912. Regulations made the "teaching of Agriculture" the basis for special grants, in place of the school-garden merely, and over one hundred schools signified their intention of *teaching agriculture;* this means that practical work is to be carried on in gardens, and systematic instruction given in the school.

AT THE PRESENT TIME.

IN THE PUBLIC SCHOOLS. The subject of Nature Study, introduced in 1904, is becoming better understood year by year, and gradually taking its place in the schools. This subject is essentially agricultural; for its materials, it uses the natural objects or phenomena that concern the farmer—soils, weather, plants and animals. The rural school-teacher, in leading her pupils to grow plants, to care for animals, and to observe the phenomena of their environment, is teaching *Elementary Agriculture.*

Besides this general work, carried on under the name of Nature Study, several hundred schools are this year giving special attention to agriculture in school gardens, home gardens, corn clubs or poultry clubs. This phase of the work is apparently growing rapidly. Where, in 1910, 15 schools qualified for the special grants given for School Gardens, in 1911 there were 33, and this year over 100 schools have signified their intention of teaching agriculture through practical work in gardening.

There is no special text-book prescribed in Agriculture, but schools are encouraged to provide agricultural books and papers for their libraries. The best lessons will be learned by observation and experiment, but the use of books for reference is encouraged.

IN THE HIGH SCHOOLS. Perhaps it is not generally known that a considerable amount of agriculture is taught in all our 284 High and Continuation Schools. But the so-called Elementary Science taken in the two first years by all pupils has a decided agricultural bias, and includes such topics as economic insects, farm animals, plant diseases, plant propagation, and weed-seed impurities. Moreover, liberal options are allowed, so that teachers may substitute for some of the out-door work special agricultural topics, such as poultry, bee-keeping, live stock, dairying, soils, and experiments in grain-growing, fertilizers, etc.; it is possible for any High or Continuation School catering to rural communities to arrange to have this work carried out; our science teachers are adapting themselves to the work very well.

IN THE NORMAL SCHOOLS. In the Nature Study and Science work taken up with the teachers-in-training at the Normal Schools, emphasis is laid on agricultural studies suitable for rural schools. School Garden work is carried on also.

A special year's course to supplement the High School Agriculture is to be arranged for also; teachers who have taken Agriculture in the High and Normal Schools will be eligible for a certificate in Elementary Agriculture then on completing one summer session at the Agricultural College.

AT THE ONTARIO AGRICULTURAL COLLEGE. The work of teacher-training in Agriculture has been carried on at the O.A.C. since 1904. Special Courses of Instruction are given in spring and summer terms. The teachers taking the Spring Course come for ten weeks from the Normal Schools after their graduation at Easter. In the summer holidays, five weeks' courses are held for teachers engaged in teaching during the regular school term; in two summer terms, the work of the ten weeks' spring term is covered. In both cases certificates in *Elementary Agriculture and Horticulture* are awarded successful students. In the instruction given to teachers by the College, the boys and girls in the country schools are kept in view always.

More than 800 teachers have received instruction during the past nine years.

The District Agricultural Representatives are all trained at the Agricultural College also.

IN CONJUNCTION WITH THE UNIVERSITIES arrangements have been recently made for another branch of teacher-training to be carried out by the Agricultural College. This is to be in conjunction with Toronto, McMaster and Queen's Universities. By the arrangement students taking the first two years in Science at the Universities will be permitted to take their last two years in Agricultural Science at Guelph. This course will lead to the degree B.Sc. (Agr.) and qualify for specialist standing in Science. Science masters so trained will be able to introduce agriculture into our rural High Schools and to carry out experiments of local interest.

THE DOMINION GOVERNMENT. From the special appropriation made to the Province of Ontario for the promotion of agriculture at the last session of the Dominion Parliament, $10,000 was set aside for the encouragement of the teaching of Agriculture in the Public Schools.

DISTRICT AGRICULTURAL REPRESENTATIVES. At the present time there are thirty graduates of the Agricultural College established in as many counties. Amongst the many duties they have found for themselves as agricultural propagandists, many of them have co-operated with the schools in teaching agriculture through the distribution of seed for home gardening, through the organization of corn clubs, children's fairs, etc.

In the High Schools, many of them conduct four or six weeks' short courses for farmers' sons during the winter months. At some centres, the Representatives have taken the Agriculture part of the Elementary Science course throughout the year with the first year pupils in the High Schools.

THE SCHOOLS' DIVISION OF THE EXPERIMENTAL UNION. This branch of The Experimental Union was established in 1909 to assist the schools in carrying out practical studies in agriculture. It distributes agricultural books and bulletins, flower and vegetable seeds, grain, bulbs, shrubs, vines and forest tree seedlings. It issues instruction sheets to teachers and circulars for the pupils. This year (1912) it has furnished material to 218 schools.

THE DIRECTOR OF ELEMENTARY AGRICULTURAL EDUCATION. The duty of this officer is to help teachers, trustees and inspectors to carry on the work in the best possible way. Under his direction schools are supplied with charts, circulars and bulletins. The teacher-training at the Agricultural College is under his supervision as well as the work of the Schools' Division of the Experimental Union.

The director of Elementary Agricultural Education has his headquarters at the Ontario Agricultural College, Guelph, Ont. From time to time excellent circulars regarding School Gardens and pupils' work in them are published by the Department of Education in co-operation with the Department of Agriculture and the Schools' Division of the Ontario Experimental Union.

THE ONTARIO AGRICULTURAL AND EXPERIMENTAL UNION.

The Experimental Union, as it is usually called, was formed in 1879 for the purpose of encouraging the scientific study of farm crops and farm operations amongst the students of the Ontario Agricultural College.

While actual membership has been restricted to students, ex-students and teachers of the College, it offers every one the opportunity of taking part in its co-operative experiments. Up to the end of 1911 over 70,000 experiments were carried on by members and associates in the Province of Ontario in different lines of work relating to Agriculture, Farm Crops, Fertilizers, Poultry, Fruits, Vegetables, and Forestry. This has helped very much in advancing the chief industry of the Province.

A *Schools' Division* of this Union was organized in 1909. It aims to adapt the work of the Union to the needs of the schools, giving to our boys and girls a training in careful work and observation, so that when they are older they may take up some of the larger experiments or solve for themselves the problems that will arise in their daily work.

"To be a good member of the Union implies:—

1. That you will learn to look forward and plan your work.
2. That you will follow instructions carefully.
3. That you will do your work well and not neglect it.
4. That you will observe closely what is happening to the plants in your garden; that every day you will learn a little more and become a little wiser and a little more patient.
5. That you will grow the very best flowers and the very best vegetables that can be grown in your garden, and the very best grain in your experimental plots, and that you will not be satisfied with anything but the best.
6. That you will be interested in your schoolmate's efforts; ready to help him and ready to acknowledge his helpfulness to you.

CIRCULARS AS TO SCHOOL GARDENS.

The circulars of the Department are appropriately illustrated. One deals with the general subject of Childrens' Gardening under such headings as:—

How to keep your Garden Journal;
Garden Tools and their Care;
What to grow and how to procure seed;
Locating and laying out a garden at home;
Preparation of the soil;
Planning the plot and planting the seed;
Protecting seedlings;
Mulching, Watering and Cultivating;
Thinning and Transplanting;
Picking flowers;
Gathering seed; growing bulbs;
Garden Rubbish, etc.

Circulars are also issued giving detailed information on the work of a school experiment, with a particular plant or crop. Under the subsidiary *Cultural Directions* useful suggestions and directions are offered in regard to:—Time of Planting; Soil and Manuring; Sowing; Cultivating; Weeding; Thinning; Harvesting; Storing; Estimate of Yield; Using; Reporting.

Other circulars contain the requisite information on the carrying on of simple experiments with cereals and are accompanied by charts which illustrate some of the experimental work at the Agricultural College. Another chart with its supplemental circular contains just the information boys and girls in rural districts should have on Alfalfa or Lucerne, with the offer of seed to sow a small plot and directions how to care for the crop.

THE CONSOLIDATION OF RURAL SCHOOLS.

A brief statement regarding this matter was presented in Chapter III, page 156. Some further particulars of interest are contained in the following extracts taken from a *Schools' and Teachers' Bulletin* issued from the Ontario Agricultural College in February 1911.

In a recent bulletin published by the United States Department of Agriculture "Consolidated Rural Schools and Organization of a County System," by Geo. W. Knorr, Esq., one learns that in 32 States, there are about 1,800 typical and graded consolidated schools, i.e. schools giving instruction in High School subjects, and 2,000 other consolidations which cover the work of the Public School courses only. The large growth of the movement in recent years points to a new order of things in the American Rural School System.

A brief survey of the status of consolidation in Canada may be of hopeful interest to those who look for great good from it as well as to those who may have considered it an impracticable and unsuccessful experiment.

THE CONSOLIDATION OF SCHOOLS IN CANADA.

In the Macdonald-Robertson scheme for the improvement of Canadian Rural Schools, Consolidated Schools, after the type of some of those organized in Ohio and Indiana, were established in each of the five eastern provinces with the exception of Quebec. After six years'

experience with these schools it must be acknowledged, that while the principle of consolidation has been confirmed in undoubted pedagogical successes, these two educational reformers have been in advance of their times. None of these provinces was ready to incorporate into its body educational the highly organized Rural Graded School that had met with a large and favourable acceptance in another country. All the schools continue in operation, but on a reduced scale. The times were not ready for such large Rural Schools or for such extensive additions of vocational subjects.

The explanation is not far to seek. There was no keenly-felt need for reform. The condition of the schools was not felt to be so bad as to require any large change in organization. In school matters, the disposition is to conservatism. People were getting for their children as good an education as they wanted for them. They had always had the one-teacher, ungraded Rural School; it was still giving satisfactory account of itself. They were still giving the children a sufficient grounding in reading, writing and arithmetic; other things were not considered requisite. So there was not a sufficient force of enlightened public sentiment generated with the introduction of the reform to sustain and expand it. There was perhaps need for more missionary work preliminary to the establishment of the schools that were to serve as object lessons. Some of the criticism should have exhausted itself though propaganda and discussion.

The small should have preceded the large. It is now known that it would have been better to have commenced the schools on a smaller scale, taking in fewer school districts. Although it would have prevented, possibly, the most satisfactory introduction of Domestic Science and Manual Training teaching, it would have greatly lessened the costliness of the experiment and saved the hardest criticism of it—the increased expense.

ONTARIO.

The Macdonald Consolidated School, at Guelph, commenced in 1904 with five schools joined. At the present time two districts comprise the consolidation with about forty additional pupils from the surrounding districts in attendance. That the school has won the approval of parents is evidenced in the fact that at the close of the three-year trial period, when the vote to decide whether or not to continue in consolidation, was taken, only one ratepayer, with children at school, in the three retiring districts voted for withdrawal. In every case there was only a small majority against continuing even with the necessity for increased taxation before the ratepayers.

The special education which the school was established to exemplify still continues. The pupils receive special instruction in Manual Training, Domestic Science and Elementary Agriculture. With the approval of the Department of Education the continuation classes have adapted their studies this year to specially fit the needs of the home and the farm, breaking away from the more literary studies prescribed in our High School courses. The work of the school has the hearty endorsation of parents, inspectors and visitors.

PRINCE EDWARD ISLAND.

The case for and against consolidation is very concisely and admirably set forth in the Report of a Special Commission on Education which investigated the matter in 1909, as follows:—

The benefits to be derived from the principle of centralization or consolidation, experience has shown to be:—

(a) Increase in the number of pupils in a school, giving them contact with larger numbers and so widening their experience and developing them socially, which is one of the chief functions of the school;

(b) Increase in the number of pupils, rendering a close classification possible, and so forming classes the members of which can advance as a unit;

(c) Better work, inasmuch as class work is more beneficial than work with the individual pupil as in the small school;

(d) Greater progress in work, resulting from the companionship and emulation of the class members, and from the fact that the class is longer in contact with the teacher in the recitations, by reason of the smaller number of classes in the graded school;

(e) Increased percentage in average daily attendance as a result of the increase of life, interest and activity in the school;

(f) Better school buildings and school equipment, possible by reason of the greater property valuation of the district; and so, a greater public interest in the school: "Make the school worth seeing and the people will come to see it."

(g) Better inspection and supervision, as the inspector's time is not wastefully occupied in inspecting a large number of small schools. For rural schools full and frequent inspection is of paramount importance;

(h) Enlarged opportunity for doing work in new branches that are practically impossible in the small school with the poor equipment; e. g., music, drawing, manual training, household science, school-gardening.

The chief arguments against centralization are:—

(a) *Closing of Schools. The loss to the district of the school that has been closed;*

(b) *Distance. The difficulties and exposure in the work of transportation;*

(c) *Cost. The increased cost chiefly attributable to transportation;*

(d) *Depreciation of property in districts from which the schools have been removed.*

The cost of consolidation is the weighty argument against it. The expense is made up of several items: (a) School building; (b) School upkeep; (c) School equipment; (d) Transportation; (e) Teachers' salaries.

(a) *As consolidation is a matter primarily concerning small schools it naturally reduces the number of school buildings and school departments. So that there should be a saving in respect to cost of buildings and of school grounds; fewer are required.*

(b) *The fewer departments the smaller the cost of janitor work of heating, of repairing, etc.; another economy.*

(c) *The school furniture, the seats and desks, maps, black-boards, etc., needed for the lesser number of school departments would allow a saving in expenditure, which money could be devoted to larger equipment at no increase of cost to the consolidated district ratepayers.*

(d) *Transportation in vans that would ensure the comfort of the child against wet clothing, etc. and exposure to inclemency of weather would cost more money, it is true, but would prevent the loss of much time and money arising from ill-health. But this added cost in dollars and cents is oftentimes counter-balanced by the saving in teachers' salaries, consequent on the reduction in the number of teachers required.*

(e) *Consolidation does not necessarily increase the amount of school grant that may be voted to the teacher.*

NEW BRUNSWICK.

The first Consolidated School established in this Province was one of the Macdonald series at Kingston, in Kings County. Three others are in operation also; one at Riverside, in Albert County, another at Florenceville, in Carleton County, and one at Hampton, in Kings County. Several other districts have the matter under consideration, but have not yet taken definite steps to realize it.

In the report of the Special Agricultural Commission appointed in 1908 to enquire into the agricultural conditions of the Province and the means of improving them, the question of consolidating schools was considered. A series of questions dealing with the matter were sent to the Boards of Trustees of the 1,420 rural school districts. Replies were received from 219 of these to the following effect:—24 districts would support Consolidated Schools and 106 districts were not in favour of such schools, 22 districts expressed themselves as willing to submit to higher taxation for consolidation purposes, and 117 districts did not want higher taxation for such purposes.

So far as the schools answering represent all the districts, this shows that only about 20 per cent of the trustees of the New Brunswick schools favoured this method of improving the status of the rural schools two years ago. From the fact that no further consolidations have taken place recently, this might be accepted as the present attitude of public opinion on the question.

QUEBEC.

The question of consolidation is not an issue at all amongst the French Canadians. Their farms are deep and narrow and the families very large; as a consequence all the rural schools are attended by 30 or 40 pupils each, and are within reasonable distance from one another. It is quite different with the sparse school population in the English rural parts of the Province.

The need and advantages of consolidation are pretty generally recognized by the English population in the rural parts. The opposition to any proposal to consolidate schools generally comes from the ratepayers who live in close proximity to the schools that would disappear with consolidation; these people generally prefer an inferior school close at hand to a better one at a distance. So far, only two Protestant schools in the Province are consolidated.

The law permits School Boards to close the school in a district where there are less than ten children of school age, and, if necessary, have the children conveyed free of charge to one or more adjoining schools of the municipality. They may also annex the district temporarily or permanently to one or more other districts, and buy vehicles for transportation purposes. During 1909 the Protestant elementary schools have diminished by twenty-three in number, and presumably the pupils in the districts where the schools have been closed are attending schools in neighbouring districts. In some cases parents are allowed the remission of their taxes on condition that they convey their children to the nearest school when conveyance is necessary.

MANITOBA.

The problem of improving the Rural Schools in this Province has been boldly attacked under the leadership of the Hon. G. R. Coldwell, Minister of Education. The conditions of settlement are not the same in Manitoba as they are in Old Ontario; farms are larger and school

population in many districts is sparse. With a progressive people who are keenly interested in securing good educational facilities there has been in consequence a decided interest taken in this phase of school organization. At the present time there are 16 Consolidated Districts in operation, with some of these covering 50 to 59 square miles of territory and having schools which have cost as much as $16,000, this including the equipment. The majority of the consolidations have been made in conjunction with a small town or village; such are in operation at Tilston, Melita, Miniota, Virden, Darlingford, Holland, Starbuck, Teulon, Elphinstone, Dauphin, Gilbert Plains, and Sperling. At St. Patrick and Brigdenley the consolidations are strictly rural propositions.

Interest is growing in the question and a series of meetings to discuss it is being held throughout the Province this winter. The Department of Education has arranged for an officer to devote his whole time to the work from early in November until next midsummer. Meetings are held wherever a district wishes to hear the matter explained.

NOVA SCOTIA.

A large number of consolidations of a small rural type have grown up in the Province in the past few years. About 60 school sections in all have condensed into about 28 schools, with two or sometimes three united at one centre.

The Macdonald Consolidated School, established at Middleton, continues in operation with only one of the original outside sections sending in all its pupils. Advanced pupils from the other surrounding sections continue in attendance, however. This is somewhat similar to the situation in regard to the Guelph school.

Dr. MacKay, Superintendent of Schools for Nova Scotia, writes: "It looks very much at present as if is it easier to provide a teacher and a small school house than to transport the school three or four miles to a well-graded educational institution; and because it is cheaper, it is considered to be better. There is need of education on the difference and value between the cheap miscellaneous rural school and the well-graded village school. I find also that pupils become tired of starting so much earlier in the morning in order to be ready for the vans, and of the monotony of the ride in the van both to and from the school house. They appear to enjoy the freedom of travelling on the road a short distance better than an enforced long ride every day. We find it to work at present only in attaching a small settlement which can hardly support a school by itself to the nearest school centre. That means, as a rule, that our consolidations consist of the union of one or two small sections with a central one. This we find to be useful and every year a few more of such small consolidations are being organized."

SECTION 2: WINTER EVENING SCHOOLS.

WÜRTTEMBERG.

In many States of Germany, of which Württemberg may be taken as an example, instruction in Agriculture in the rural districts is universal and compulsory. Nature Study and object lessons are given in every village school, and the teaching of Agriculture begins in the Winter Evening Schools. This is a development of the original Sunday evening school, where instruction, partly general and partly agricultural, was given to young men between 14 and 18 years of age. Out of this grew the week-evening schools held in the winter months. Pupils are required to attend at least two evenings in the week during 6 months of the year. In Württemberg alone there are over 700 such schools, with a total attendance of over 16,000 pupils. Württemberg has a total population of about 2,400,000.

ENGLAND.

In England much attention has been devoted in recent years to the consideration of the best means of organizing and promoting the Rural Evening School work. Various local Education Authorities have begun to organize

and then to supervise such schools. With that, provision has been made of Vacation Courses for teachers in Nature Study, in Rural Science, and in minor rural industries. The general opinion expressed by the Board of Education is as follows:—

"The two parts of the course, which in the absence of satisfactory terminology may be described respectively as the "human" and the "technical" sides, are of equal importance. The former promotes the latter: indeed there is evidence that a purely "technical" curriculum may, for want of variety, repel the students. Both parts of the course if properly carried out will develop intelligence. From another point of view also the work of an Evening School has a two-fold aspect which requires that the course of training should be a two-stranded cord. One strand is individualistic; it helps the student to "get on" in life. The other lifts him on to a higher plane of thought and feeling as a member of the village community.

"Bearing in mind the fact that the total normal duration of the class meetings should not be less than four hours per week, it is found that in the best organised schools a suitable distribution of time is that in which one to one and a half hours are devoted to the "human" subjects and two and a half to three hours to the "technical" subjects."

The following are sample courses:—

Course A:—	
On one evening per week	Reading from a good modern author; composition based on the reading; and dictation—one hour.
	Principles of gardening—one hour.
On a second evening	Rural science—one hour.
	Arithmetic; sketching and simple scale drawing of garden plots and the like—one hour.
Course B:—	
On one evening per week	English (including local) history—one hour.
	Arithmetic and mensuration—one hour.
On a second evening	Woodwork and drawing—two hours.

SECTION 3: VARIOUS FORMS OF INSTRUCTION IN EUROPE.

SCOTLAND.

There is a growing appreciation of the differences between the needs of communities and also the needs of individual children. These must be considered for the highest interest of the individual as well as for general welfare. The Supplementary Courses provide for differentiation in the elementary classes. They are given during the last two or three years of attendance at the public board school. The usual age at which children begin them is from 11 to 12 years. They must first have passed the required test of qualification. The

subjects of the Supplementary Courses are arranged in four groups (1)Commercial, (2) Industrial, (3) For Rural Schools, (4) Household Management for Girls. Detailed schedules are published by the Scottish Education Department under each division to serve as models. Special grants are made by the Department to Local Authorities conducting these courses. The special subjects in the Supplementary Courses for rural schools are Nature Study, Geometry, the study of newspaper market reports and the keeping of accounts. Woodworking or Ironworking is optional. The Code of Regulations insists that the instruction in the above subjects must throughout be of a practical character.

When the instruction is of a sufficiently practical character, given through the medium of a School Garden, special grants are allowed. Many gardens were started originally for the purpose of Nature Study, and they are now turned to the service of practical training without loss to the earlier interest.

The inspectors and experts interested in the practical side of Rural Supplementary Courses generally agree as to the essentials for success. Teachers, it is declared, must be specially trained for the work; counties must aid by maintaining staffs of itinerant teachers and by helping in the expense for equipments, such as garden tools, workshops, etc., and small parishes must be combined for the support of Supplementary Courses at a common centre. It is necessary also to do a great deal of missionary work to overcome the preference for theoretical studies and the opposition of parish school boards to increased expenditures.

IRELAND.

The Winter Agricultural Courses in Ireland belong more to the class of work done by the Travelling Instructors than to that of a definite, located and organized school. They are usually held during two half days a week for a period of four months during the winter. The Instructor is thus able to take charge of three classes and carry on educational work at three different places every week. (For further information see Report on inquiry in Ireland in Part III.)

DENMARK.

The Agricultural Schools of Denmark are carried on during the winter and generally provide only one course of six months' duration. They are attended by students who have already received a good elementary education, have worked for several years after leaving school, and in many cases have attended one session of a People's High School. In Denmark as in France, and also in many cases in Germany, the Agricultural School is the property of the Principal or Director and the farm attached to it is farmed by him for his own profit in so far as he can make it pay. There are advantages in that case from the fact that the various farm processes, as they are observed and taken part in by the students, are all upon a scale and of a character similar to what they would carry out on their own farms at home. The disadvantages are that the students may be kept too much at work for profit without due regard for their instruction and training. This, however, does not apply to the Agricultural Schools of Denmark. (For full information see Report on inquiry in Denmark in Part III.)

FRANCE.

In France instruction in agricultural subjects is given in the Superior Primary Schools, at the Farm Schools, at 38 Practical Schools of Agriculture, and for those who are able to proceed further at the 3 National Schools of Agriculture. Particulars regarding these may be found in the report on Agricultural Education in France in Part III.

GERMANY.

Since it is not considered that details of the organization or of the courses in Agricultural Schools would be useful in Canada, only an outline is presented. The features of importance are the general adhesion of the rural population to the belief that education is advantageous to agriculture and the working out of their salvation by making that belief vital in the affairs of the locality.

The farmers live in villages and not on isolated farm steadings as in Canada, and almost every village has its Agricultural Club or Association in touch with a Provincial Chamber of Agriculture.

There is a lesson in those matters for Canada. The policy of village settlements rather than isolated homesteads is well worth considering, and recommending for the unsettled districts; and even where surveys have been made and settlement effected the question need not be looked upon as finally settled. Contented women, good chances for the education of the children, and a reasonably richly developed social life are in the long run of immensely more consequence than conveniences for growing crops. The place of the latter is to minister to the former. What shall it profit a country to be called, or to be, the Granary of the Empire if it loses the soul of happy rural life?

The Lower Winter Agricultural Schools of Germany were founded to enable the young sons of small farmers or peasants to acquire a theoretical training for their work without having to give it up during the summer months. Instruction is given during the winter only, and the whole time of the student is devoted to it during that period. The schools are quite inexpensive and have been successful in improving the agricultural conditions of the locality. They increased rapidly during the past fifteen years, there being now over 200 of them in Prussia.

In Germany some of the Realschulen (that is a Secondary School paying attention chiefly to science and mathematics) have an agricultural top. These Secondary Schools with an agricultural department from 13 or 14 to 16 or 17 years of age are quite different from the Agricultural Schools of Denmark with only a six months course.

There are in Prussia also some 20 Agricultural Middle Schools. These are attended by about 3,000 pupils and are supported in part by the State and in part by the Province, District, Communal Funds, Societies and Endowments. In other States of Germany there are some 130 Agricultural Schools of this class. They have a general Agricultural curriculum. Besides these there

are large numbers of special schools such as Dairy Schools, Schools for Bee-keeping, Poultry-keeping, Horticulture, etc.

In the State of Württemberg, for example, there are four Farm Schools, one in each of the four departments of the Kingdom, which are different from these Agricultural Middle Schools. The course is for three years. Students are admitted from 16 to 20 years of age. They live at the Schools, which are situated on Crown land. They give their labor on the model farm which is attached to the School in exchange for instruction and board. In summer the students work about ten hours per day and receive theoretical instruction during 12 hours per week. In winter they work about 8 hours per day and receive theoretical instruction during 16 hours per week. (For further information see Report on inquiry in Germany in Part III.

SECTION 4: COUNTY OR DISTRICT AGRICULTURAL AND HOUSEKEEPING SCHOOLS OF THE UNITED STATES.

The Commission is of opinion that County or District Agricultural Schools, with courses covering two winters, following closely the lines of the Wisconsin County Schools of Agriculture and Domestic Economy and the Danish Agricultural Schools, would be of the greatest service to Canada.

These schools for Canada would differ from Rural High Schools, inasmuch as they would be residential Schools and would provide opportunity for education for those, chiefly young men and women from 17 years of age upward, who had already been engaged in practical work for several years after leaving the Elementary School.

SMITH'S AGRICULTURAL SCHOOL AND NORTHAMPTON SCHOOL OF TECHNOLOGY.

This School may be cited as the place where the most progress has been made in carrying out the Co-ordinated Courses of Home and School work. The Commission was most favorably impressed by the character of the institution itself and the evident effectiveness of the courses for the education of young persons for agriculture and industry in the locality.

THE INSTITUTION.

Smith's Agricultural School and Northampton School of Technology, located at Northampton, Mass., is an independent agricultural and industrial school, opened in 1908, supported in part by the State and in part by the income of funds bequeathed to Northampton by Oliver Smith. This fund now amounts to about $310,660 and yields annually approximately $12,000. The total annual maintenance budget of the school is about $20,000. The institution is controlled

by a local board of trustees elected by the voters of the city of Northampton. It has a main building costing $60,000, and farm buildings, equipment, and land valued at $25,000. The farm contains 100 acres.

A striking feature of the school plant is the main building, which consists in fact of four separate buildings arranged in such a way as to inclose completely a rectangle one-quarter of an acre in extent and about twice as long as wide. At the front, on one of the long sides of the rectangle, stands the office building, containing several recitation rooms; at the ends are the science building and the trades building, respectively; and in the rear is an auditorium with raised seats facing the inclosure. The inclosed rectangle is covered with a trestle roof, the four buildings with their connecting walls forming the sides of this inclosed and covered arena, which is well lighted from above. The partition between the arena and the auditorium is movable, and when pushed aside allows persons seated in the auditorium a view of the entire floor space, nearly one-fourth of an acre in extent. The buildings are of brick and limestone. The floor of the arena is cement.

Students 14 years of age or over are admitted to the school without further entrance requirements. They are allowed to remain only so long as they continue to show themselves able to do the required work. Three four-year courses of study are given, each strictly vocational in its purpose, designed respectively to prepare for farming, for mechanical work, and for housekeeping and home making.

On the occasion of the Commission's visit, the School was attended by about 120 students, 40 in the Industrial Department, 22 in the Agricultural Department and 60 in the Housekeeping and Homemaking Department.

The following information was gained, partly from observation and partly from "Conversations" with Mr. Rufus W. Stimson, Agent for Agricultural Education of the Massachusetts State Board of Education, and formerly Director of Smith's Agricultural School.

Mechanical Department.

To ensure that class-room instruction shall directly relate to shop work, first and second year boys are together in the shop under one man, who the next week teaches them shop mathematics. He is a skilled pattern-maker, hired out of the trade, and not a school teacher. He is looking at this matter from a practical point of view to get at the minimum of mathematics for classes in his department. The same thing is true of the instructor for the upper two years. He deals with the mathematics and shop science of those boys.

To widen the students' understanding of the field of industry as a whole, the school subscribes for about 25 papers and magazines, and the instructors mark articles which they assign to boys in the senior and the junior years to read, digest and make reports. When the written reports are up to a certain grade in spelling, penmanship, grammar, etc., the teacher hands them to the head of the mechanical department, and the boys get mechanical credit as well as English credit for them. That is a strong incentive to good English work.

Agricultural Department.

Emphasis is laid on productive work in the Agricultural Department also—it being directed to result in a crop or something else. With the opening term in the fall of 1911 the school looked forward to the crop of 1912, not only on the school farm, but on 22 farms represented by the boys who were taking the course. The method of training is this:—one agricultural instructor takes his vacation in winter, being with the boys at the school in the fall and spring terms. Through out the summer he visits their farms, studying their actual home conditions and helping them to carry out on their own land Farming-Projects which they planned with him. Some of the boys who live in the Eastern part of the State get work on the school premises until the middle of June, and are then allowed to substitute other work till the middle of September.

The school instructor visits the farms, knows what each pupil is doing, and gives credit for what is done. The main consideration is given to boys who live on their own farms within striking distance of the school, and who intend to be farmers.

Close to Practical Farming.

The school does not own a herd of cows; it sold one it did own, because it wanted to make a thorough-going test of dealing with strictly economic propositions in the school work. It is hard to convince anybody that a school proposition is or can be made a strictly economic proposition. Booker Washington's famous Tuskegee Institute in Alabama is a proposition closely approximating to the strictly economic. The vocational form of training is followed, and Washington himself says that he is always going up to the point of breaking even or turning a profit—never getting above it. It is his business, as soon as the school has developed a boy so that he can profitably employ his own labour, to send him out where he can employ himself for his own or somebody else's benefit. In vocational training you are always just below the line of any economic return for the labour of the pupils.

The Follow-up System.

What Northampton is trying to do—without any necessity for doing it, because they had the land and equipment, and could have done the other thing—is to make a thorough-going experiment in the utilization of home farms for practical work, and of the school premises for theoretical or scientific work, with the institution on the "follow-up" system. In Mr. Stimson's opinion the difficulty with such first-rate schools as the Minnesota Agricultural School, and the Alfred School in New York more recently created, is that the boys are taken away from the home farm for six months and pumped full of theory. So far as they have been given practical training it has been under artificial conditions and not under out-door conditions such as obtain on their home farms. Then the boys are cut loose and sent back to the farm to work on without any guidance from the school.

Theory and Practice.

Over and over again in Massachusetts and Connecticut complaints have been made that graduates of the Agricultural College came back home and amounted to nothing, "therefore there was no use making any State appropriation to the Agricultural College." The officers have to combat that every year in the Legislatures in asking for their appropriation. The deficiency is not with the boy, but with the system; the boy has been asked to do the impossible. Practically every boy learns more easily by seeing and hearing than by reading, and certainly succeeds better when he is able to take a theory and test it out immediately, rather than defer the application until some future date.

With a good deal of school work there is so much theory and so little opportunity for practice that it gets to be a training under somewhat artificial conditions so far as it is goes at all—chiefly observation of what some body else is doing, and a study of theory. That is far better than nothing, for you are going to establish ideals there, and you are going to give a certain fund of information, and the boy of abstract mind will grasp the principles and hold them before his mental vision with just as much tenacity as though he had fed the ration. That type of boy will profit to a considerable extent by that kind of training; but the type of boy who, more than likely, is going to be found on the farm in future, is not the type that can turn that kind of training to the best possible account.

Working it out in Potatoes.

The following two examples are given substantially in Mr. Stimson's words The thing is to commit the school to considering the farms of the boys as going enterprises, and the things on those farms that the boys could do to improve their knowledge and farm practice. The school could not interfere to any considerable extent with the farm. That would have to be "a boy matter"; the Smith School authorities have recognized that frankly. Take an example from a crop of potatoes of ten acres. The father—a man of moderate circumstances—depends on that crop; he needs the boy's help in growing that crop. How can the school fit in its plan under such circumstances? It can agree with the father that the boy shall have one quarter, one-half or three-quarters of an acre, or say a tenth of the whole crop to grow, with the privilege, right and every facility for doing on that acre what the school believes to be the best practice. His father may do as he likes with the rest.

The father would carry out his plan on the nine acres, and the boy would manage his acre as the instructor told him was the best. He would cultivate it either flat or by hill cultivation, depending on the nature of the soil and what he believed was the best method. He would spray when he thought best, and so on. The boy would have a stake in the crop. He might "get by" as the saying is, on 20 hills, and get a big rate per acre of return, through some quality of the soil or some chance circumstance; but it is to "get by" with the

acre or ten acres that the farmer is concerned. It is the really productive work on an economic scale that gives the boy a stake of considerable magnitude and the incentive to this work.

Working it out with Cows.

Last winter the boys were studying cows. They had studied breeds and type and feeds, and had found there was a balanced ration, a certain standard; then they began to study their own problems. Each boy brought in the problem based on what his farm produced, and each one figured out what combination of those feeds would give him an approximation to the balanced standard. In all cases it was found among those boys that the ration that was being fed was an unbalanced ration. The problem was to get the boys to make up their mind what feed they ought to buy considering the market, and the standard, in order to supplement the home-grown feeds and give their cows a balanced ration. After they got that all figured out, the next thing was to decide that they would feed the balanced ration to one cow. The instructors had led up to this by another thing; when studying types of cows the boys had studied economy of production—whether a general type of cow would give a better yield than the dairy type. That led to weighing milk and testing for butter fat; they had had weighings for the month before they got to the point where they asked the boys to feed. One case in particular was that of Bartlett, whose father has pure-bred Jerseys; the boy was doing the feeding. The school supervisor found that Bartlett came to the school not because he wanted to come himself, but because his father wanted him to come, having said: "If you are going to be a farmer you must go to that school and get all you can to help yourself." Bartlett was not one of the shining lights in the school, and he knew it, so he said to himself: "As soon as I am 14 I am going to quit school and work; I can almost do a man's work now." Bartlett began to stand straighter when the boys in testing their cows found that Bartlett had the cow that gave the highest butter-fat test of the whole school. When the question came up as to the boys feeding one cow at home, Bartlett said he didn't think his father would want to bother. The teacher in charge thought that if any man would bother, it would be Bartlett's father, and he said to the boy: "Look here, Bartlett, what would your father say if he saw you go to the grain bin with a scoop-shovel, fill it, throw it out in the barn-yard and repeat that operation at night?" The boy said he guessed his father would think him crazy. The teacher said, "Well, according to your figures that is exactly what you are doing, isn't it? You are feeding more grain than you can expect to get a reasonable return for. You had better ask your father if he will let you feed." All the other boys had the privilege of feeding one cow. Bartlett came in a few days after and said, "Father says I'd better not bother with one cow, I'd better feed them all, if he was throwing grain in the barn-yard." Within a few days all the cows except two had shown a very considerable increase in milk on a ration that was costing less than before. He was getting the advantage

at both ends—less cost and more product. Those cows that did not show an increase were too far in the period of lactation to be influenced by any system of feeding.

At Rural High Schools.

Mr. Stimson intimated that it is proposed to put the plan outlined into operation in connection with Rural High Schools. It does not call for expensive equipment at the school, the vital things being the boy, the instructor, and the home farm. The State is prepared to help to pay half the running expenses of schools like Smith's School. It will also pay two-thirds of the salary of an agricultural instructor who will give all his time to agriculture, and do this type of co-operative work on the home farm in the vicinity of any school in the State up to the limit of $10,000 for the State at the present time.

Each year of instruction would be complete in itself, so that if a boy dropped out he would have something he could use. One year would lead to another year; and it is proposed to bracket this training in groups of two years. To reinforce the influence on the boy there is a daily time-sheet marked off from four o'clock in the morning till nine at night. These are rendered in duplicate. The boy keeps one for himself and furnishes the other to the school with an "O.K." on his part. Those sheets go to the office of the State with the 'O.K." of the inspector—all of which tends to emphasize the attention to to home work of a productive nature.

The following is a sample of these daily time-sheets :—

SESSIONAL PAPER No. 191d

AGRICULTURAL STUDENT'S DAILY TIME SHEET.

SMITH'S AGRICULTURAL SCHOOL
IN CO-OPERATION WITH C. A. SMITH, Northampton, Mass.
Name of Parent, Proprietor or Superintendent.

Day of Week, *Tuesday*, Date *April, 28,* 1911.

	KIND OF WORK Include implements used, number of loads, etc.	FIELD	MAN HOURS	HORSE No.	HORSE HOURS
4.30					
5.00	Care of Horses. See Note 8		½		
5.30					
6.00	Feeding cows and milking. See Notes		1		
6.30	3 (c) and 8 Home project		½		
7.00	Breakfast		—		
7.30					See Note 3 (b)
8.00					
8.30	Plowing for corn, 7 in. deep, 16 in. riding	A	3	3	9
9.00	plow. See Note 4				
9.30	Home Project				
10.00					
10.30					
11.00	Disking for corn (John Deere 12 disk)	B	1½	4	7
11.30	See Note 4				
12.00					
12.30	Dinner			—	
1.00					
1.30	Hauling manure—spreader, 3 loads	A	2		
2.00	Ed. Moore helping. See Note 5				
2.30	Home Project				
3.00					
3.30	Rain—Nothing done. See Note 6		—		
4.00					
4.30	Fixing fence		1		
5.00					
5.30	Feeding cows and milking Home Project		1½		
6.00					
6.30	Care of horses		½		
7.00					
7.30	Supper				
8.00					
STUDENT	*Stanley Smith*	TOTAL HOURS	10½		16

REMARKS

REPORT O. K.
C. A. S., P., P., or Supt.
F. B., Instructor.

Housekeeping and Homemaking Department.

The girls who attend the School live at home, and roughly one half of their time is spent on productive work. In the cookery room, for example they fill orders for canned tomatoes and other things of that kind; in the dressmaking room, they make things for themselves. At "Commencement" girls were wearing gowns such as they never wore before and such as they could not have worn, considering their financial circumstance in life, if they have been obliged to pay for anything more than the raw material. The nice artistic work that had gone into their dresses had been their contribution, and they were as finely gowned as any girls in town, so far as workmanship and materials were concerned. The girls are very careful of their material because they have bought it. There is very little sample work done. If a teacher finds that a girl cannot make a buttonhole she gives her some exercise work on buttonholes of the size that are going to be used in a dress, and the girl is merely held away from buttonhole work on that dress until she cannot spoil the garment.

The Academic is not Neglected.

The teachers of English teach English to the girls and the Agricultural as well as the Mechanical students, but in separate classes. For example, Shakespeare is studied some of the time. The boys read "Julius Caesar" last year, and Mr. Allen of the State Board of Education happened to be present when the exercise was going on. He said, "The idea of Shakespeare for boys of this type!" He went into the class, where there was a very interesting discussion; the boys liked to reel off those big speeches of Julius Caesar and had prepared themselves for it. Different parts had been assigned. It was a very interesting exercise, and the boys asked the privilege of staying half an hour over at the end of the day to finish the Act that they were at. That was fairly conclusive proof that because the boys were interested in shop English, they need not be debarred from being interested in cultural English as such. But the foundation work, the essential work of the course, is the English related to the shop work.

COUNTY SCHOOL IN WISCONSIN.

The Dunn County School of Agriculture and Domestic Economy (Wisconsin) was the first school of this type started in the United States. From the statement of its courses there does not appear to be much difference between such a school and a Rural High School. However, a visit to Menomonie, Wis, brings out the fact that the practical and vocational side of the instruction is dominant. The school meets the needs of pupils in rural districts who have passed the usual rural High School age of entrance, and may have forgotten some of the academic studies or subjects of the conventional High School course, and yet who are not able or disposed to seek a course at the State Agricultural College.

The Courses of Study.

The Dunn County School has evidently realised its object, which was to enable boys and girls to acquire more intimate knowledge of the things they are to be concerned with in after life, and more ability to manage them successfully. For the young men, the main interests taken up at the school are Stock-raising, Dairying, Market Gardening, with attention to separate subjects such as soils, crops, weeds, cultivation, etc. Attention is also given to the scientific principles which underlie the processes and methods of farming. Instruction and practice are given in farm carpentry, simple blacksmithing, mending and repairing of machinery, and the operation of farm engines.

For the girls, the interests chiefly centre around Cooking, Sewing, Millinery and Home Management, with instruction in the principles of economics, of foods, hygiene, etc.

For both boys and girls courses include English, Mathematics, Elementary Science, Physical Geography and Physiology.

Historical Statement.

The following information is from the official publications of the School which is under the direction of Dr. Harvey formerly State Superintendent of Education for Wisconsin.

In 1899 the Wisconsin Legislature appointed a commissioner to investigate and report upon the methods of procedure in this and other States and countries in giving instruction in Manual Training and in the theory and art of agriculture in the public schools.

Among the recommendations in that report was one for the enactment of a law authorizing counties to establish secondary schools of agriculture and domestic economy. The Legislature in 1901 enacted a law providing for such schools and proffering State aid to the first two schools thus organized. In 1902, two schools of this class were established; one in Menomonie, Dunn county, and the other in Wausau, Marathon county. There was a good attendance at the opening of each school which has steadily increased each year.

The Legislature of 1903 increased the number of schools entitled to State aid to four, increased the amount of aid in each case, and authorized two or more counties to unite in establishing and maintaining a school.

Position of School in State System.

The chief purpose of the County Agricultural Schools, as now established in Wisconsin, is to popularize agricultural education more than can be done by a State Agricultual College. The schools are below the Agricultural College in that they are not so advanced, especially in their academic subjects. Students are admitted directly from the rural schools. Most of them would never go to an agricultural school, if this new class of schools were not brought close to

them. Some students board at home and help with home chores, others visit home at the end of each week and are dominated by the home spirit throughout their school life. Certainly these County Schools in Wisconsin reach a class of pupils that would not feel that they could spare the money necessary to attend the State Agricultural College. And yet there are students who, after getting the work of the County School, will feel like continuing their education and will attend the State College of Agriculture. Several graduates are already planning such a course.

General Equipment.

The Dunn County School of Agriculture has three buildings located on a half block in the centre of Menomonie, the county seat, Here there is room for poultry runs and a small garden for girls' practice. Philanthropic citizens and the city gave these grounds to the school. The school farm consists of six acres located on the county fair grounds nearly one mile from the school. Here the boys of the school have practice in farm, orchard and nursery work. The area may be increased from time to time.

Cost of Running the School.

The State law authorizes any county (not to exceed four) to build and equip a School of Agriculture and pay the running expense for one year. After that the State will pay two-thirds of the annual cost of maintaining the school—not to exceed $4,000 for each school. Experience shows that the annual running expense is about $6,000, two-thirds of which is paid by the State and only one-third by the County.

The assessed value of taxable property in Dunn county is about $10,500,000. Any person with an assessment of $100 will pay less than two cents to support the school. Property assessed at $1,000 requires a payment of less than 20 cents a year to run this school. Thus it is seen that the annual cost is almost nothing to the individual tax-payer in the county.

When such are the facts, all who may have had some fears regarding the matter of annual cost may feel at ease; for surely a county in an agricultural region can easily support its own "farmers' school."

Correlated Work for Farmers and Teachers.

Much agricultural information is disseminated from the Agricultural School to the farmers of the county. Directions for planting, suggestions as to varieties, combatting noxious weeds, helping establish co-operative creameries, planning barns, silos, school-houses, dwellings, devising ventilators, selecting stock, and many other subjects are taken up by the instructors with individual farmers. The school has done a great deal of milk and cream testing for farmers for the purpose of helping to improve dairy herds. On the school farm such

new crops are tried as should be used by those living in the section. Many hundreds of bulletins on special farm topics have been placed in the hands of farmers desiring information on these subjects.

A novel feature of the school's work in Dunn county is the introduction, through the rural teachers, of Elementary Agriculture and Manual Training into District Schools of the county. By an interchange of classes with the County Teachers' Training School the Agricultural School teaches the rural teachers to handle these subjects in their school in a very creditable manner.

Character of the Instruction.

In all the instruction in the Dunn County School of Agriculture the useful side of the knowledge and training given to the students is emphasized. This is the principle on which the school is founded. The extended knowledge which the farmer must have should be made as practical as possible. At every point the school is made to co-operate with the farm, the shop, the dairy, and the home. The Manual Training courses are made far more practical and useful than such courses usually are. Nearly all of the time of the classes has been engaged in making articles of use on the farm, in the home, in the school and shop. The same feature of useful training has prevailed in domestic economy, plant life, farm accounts, study of soils, poultry, and in fact all subjects.

The regular course of study covers two years of 8 months each, beginning in October and closing in May. In addition there are Winter Term Short Courses.

Winter Term Short Course.

There are large numbers of young people who, from lack of means or time, are unable to take an extended course of study, but whose usefulness in the world would be much increased by a little special training. Their earning capacity in the household or on the farm is far from what it might be. The Winter Short Course at the Agricultural School is for the benefit of such persons. The Short Course is primarily intended for persons of advanced age. Younger pupils are advised to take the regular course. The complete Short Course covers two winter terms, twelve weeks each, beginning in January and ending in March.

The following are the subjects:—

For men, first winter: Science of Agriculture, Farm Accounts and Commerce, Dairying, Farm Carpentry, English.

For men, second winter: Feeding and Care of Stock, Soils and Fertilizers, Farm Blacksmithing, Rural Architecture, English.

For women, first winter: Home Economy, Cooking, Sewing, Laundering, English.

For women, second winter: Cooking, Sewing, Millinery, Personal and Domestic Hygiene, English.

COUNTY SCHOOL OF AGRICULTURE, MANUAL TRAINING AND DOMESTIC ECONOMY IN MICHIGAN.

This school is of a similar character to the one at Menomonie, Wis. Details of its courses are given as being very suggestive and instructive for communities in Canada.

The school is located on the Agricultural School Farm, comprising 107 acres of land in the western part of the city of Menominee, the leading city of the upper peninsula of Michigan. It can be reached by a street car from any part of Menominee (Michigan), and Marinette (Wisconsin). The two cities combined have a population of 31,000 inhabitants.

The school was established in 1907 by the State Legislature which appropriates $4,000 annually. It is controlled by a County School Board of five members, four of whom are appointed by the Board of Supervisors, the County Commissioner of Schools being ex-officio member and secretary, with the same powers as the other members. The aim of the school is to furnish a thoroughly practical and scientific course in work pertaining to farms and farm homes to young men and women unable to leave home and attend college for a number of years, either because of limited means or college entrance qualification. In practical work on the school farm, the aim is to assist farmers to work out their many problems; to furnish up-to-date ideas and ideals so that the farm work may be done more advantageously and profitably; to determine the best crops for local conditions of soil, moisture and climate and by systematic selection and plant breeding to evolve varieties of grain, grasses, root crops and corn adapted to local needs and conditions.

COURSES OFFERED.

The Regular Course covers a period of two years of thirty-six weeks each, beginning September and ending June.

The word semester here used represents a period of one half of the school year's work or eighteen weeks. The numerals inclosed in parentheses indicate the number of times a study is given during the week.

FIRST YEAR CLASS

First Semester.

For Men.	*For Men and Women.*	*For Women.*
Stock Judging (2)	Plant Life (3)	Sewing (5)
Field Crops (3)	Arithmetic (5)	Cooking (4)
Practice in Field Work (1)	Grammar (3)	Food Study (1)
Carpentry (5)	Spelling (4)	
Drawing (farm buildings) (3)		

Second Semester.

For Men.	*For Men and Women.*	*For Women.*
Soils and Fertilizers (3)	Flower, Fruit and Vegetable Gardening (4)	Cooking (4)
Insects and Weeds (2)	Poultry (1)	Sewing (5)
Carpentry (5)	Business Correspondence (3)	Household (1)
Study of Breeds (2)	Arithmetic (5)	Hygiene (1)
Mechanical Drawing (3)	Composition (3)	
Blacksmithing (3)	Spelling (4)	

SECOND YEAR CLASS.

First Semester.

For Men.	*For Men and Women.*	*For Women.*
Agricultural Chemistry (3)	Dairying (5)	Laundry (2)
Drainage (2)	Farm Accounts (4)	Dietaries (2)
Stock Judging Adv. (2)	U.S. History (3)	Sewing (4)
Field Crops Adv. (3)	Emergencies (1)	Home Decoration (1)
Practical Mechanics (2)		
Carpentry Adv. (3)		
Blacksmithing (3)		

Second Semester.

For Men.	*For Men and Women.*	*For Women.*
Farm Management (2)	Landscape Gardening (1)	Domestic Chemistry (3)
Judging and Grading Farm Crops (3)	Civics (3)	Home Nursing (1)
Feeds and Feeding (3)	Commercial Geography (3)	Serving (1)
Practice in Field Work (1)	Thesis (1)	Sewing (4)
Farm Machinery (2)		Millinery (1)
Cabinet Making (5)		
Architectural Drawing (2)		

Writing and music are given one period a week each for the entire school year to all the students. Debating and parliamentary practice is given two periods, every second Friday during the year.

Students who satisfactorily complete the work of the regular two year course, of nine months each, are given a Diploma upon graduation. Those graduating from the Student's Short Course are granted a certificate.

The Material Equipment.

The six school buildings include a barn 36 x 70, implement shed 18 x 56, superintendent's and janitor's residences, poultry house and main building 45 x 90, three stories high. The basement or the first floor is devoted to carpentry, blacksmithing, dairying and three store rooms. The second floor to domestic science, chemical laboratory, museum, mechanical drawing room and superintendent's office. The third floor is given up to a large assembly room, library, field crops, two class recitation rooms and cloak rooms. The student's house contains dining room, laundries, and sixteen living rooms for students, so divided that one half is occupied by young men and the other half by young women. The rooms are furnished with bedstead, mattress, two pillows, bureau, table, rocker and chair. The rooms are heated by steam and lighted by gas and electricity. The "Home" will accommodate thirty-two students. A regularly appointed matron is in charge of the Home who devotes her time to the comfort and welfare of the resident students.

Board and room at the Student Home are furnished at $2.60 a week to resident students. A considerable portion of the crops grown at the School Farm is made use of in the kitchen, and in that way the cost of living to students is materially reduced. Each student intending to room in the "Home" must provide himself or herself with four bed sheets, two pillow cases, a blanket, a comforter and two towels. All of these can be purchased for about $6.

Neighboring farms are utilized for instruction and illustration in live stock, silos, special crops, fruit, orchards, farm buildings and machinery, etc. Students pruned over 700 fruit trees in the county last year. The school has now been in operation for four years and is proving its usefulness to the farmers and others in this section of the State in many ways. The enrolment of students the past year has by far exceeded the expectation of the most hopeful. Most of the students come from the farms, some of these using bicycles and teams in going to and coming from the school to their homes every morning and every evening, a distance ranging from three to eighteen miles.

Qualifications for Admission.

Studends are admitted at 14 if unusually proficient in common school branches. Students holding eighth grade diplomas or certificates issued by the county commissioners are admitted without further examination. Students who have completed eighth grade work in the rural school, and those who have equivalent training in other schools are admitted upon presenting proper records of their work. Applicants for admission whose home schools cannot afford complete instruction in the common branches are admitted provisionally. Applicants having only a limited amount of preparation, and who wish to take up the regular work of the school with a view of graduation, must pass an entrance examination in arithmetic, grammar, spelling and reading. Students from the city or graded schools are not admitted until their former records have been passed upon by the superintendent.

No entrance examination or special qualifications are required and no age limit is prescribed for entrance to the Short Course. The school is free to all resident students of the State of Michigan. Students from other States are charged $1 per month.

Subjects of the Courses.

Agricultural Chemistry:—

In agricultural chemistry the object sought is to give the student a reasonable amount of training in elementary science, in the more common chemical elements and their chief compounds. These lessons lead up to the principles underlying the practical work in the everyday farm life. Laboratory work leads to observation of the more important phenomena in the field of chemistry. The work for boys is along practical lines in dairying, soils and fertilizers, insecticides and feed stuffs. That for girls includes analysis of foods, value of foods, laws governing their correct use, their digestibility, composition of plant and animal bodies.

Animal Husbandry:—

In animal husbandry the course is fitted to the needs of the up-to-date farmer and to those who intend to become managers of large special and livestock farms.

Arithmetic:—

The instruction deals with problems which give the student thorough drill in practical labour-saving methods, such as will be of use to him on the farm. Drill in measurements of material extension, capacity, percentage and the application of its principles to all kinds of farm problems.

Blacksmithing:—

The object of the work is to enable students to repair and place in position the broken or otherwise injured parts of machinery commonly found about the farm. The work covers methods of firing, the use of different grades of coal; drawing out, shaping and welding iron; brazing rings with copper; chisels; fitting water and gas pipe; chiselling and filing; thread cutting, tempering and other useful work usually found about the farm.

Business Correspondence:—

A short and useful course is given in the principles of letter writing, billing, invoicing, making out receipts, contracts, deeds, mortaging, farm accounts showing profit and loss in any branch, settling estates, notes, postal regulations, laws governing the foregoing, and other information such as the farmer needs to have in executing his work on the farm lawfully and successfully.

Carpentry:—

The course in carpentry is designed to give the student a practical training in high class work, and also to establish confidence in himself in the use of tools. The work covers sharpening and handling of tools, laying out work, making trestles, tool chests, tool boxes, farm gates, tables, rafter cutting, greenhouse and hot-house construction, barn and house models, in short, everything pertaining to a neat high grade class of work for the farm and the farm-house.

Civics:—

Civics is taught so as to give the student a good understanding of the necessity, origin and nature of the different forms of governments. Beginning with the organisation and management of local institutions, such as school districts, townships, county, village city and state and carrying up this relation to the general government. This course aids the understanding of the principles of law, and cultivates patriotism and an intelligent appreciation of our free institutions. It relates itself to making the student a useful, honored and law-abiding citizen of the community in which he lives.

Cooking:—

The purpose of the course in cooking is to give the young woman a sufficient amount of practice in the kitchen to illustrate the principles brought out, and to train her to make discreet and intelligent use of the food materials at her command at her home. Cooking extends through a period of two years ,and in the first year covers the study of fire, water and air; cooking starchy foods, cooking with fats, cooking meats, cooking food mixtures, such as biscuits, muffins waffles, cakes and cookies; making salads, bread, candy, sugar frosting, ice cream, cocoa, coffee and tea. The second year cooking includes work in the study of bacteria, canning pickles, fruit and vegetables, jellies, and preserves, invalid cookery and the study of food rations, bills of fare, dietaries in the best and most approved way.

Dairying:—

The purpose of the course in dairying is to give the student uesful training in the handling of dairy herds and the farm dairy. The work in the laboratory covers a study of milk, the different methods employed in testing for butterfat, in whole milk, skim milk, cream and its acidity, curd test, fermentation test, the bacteria test, the Irish moisture butter test, and other tests for preservatives. The use of lactometers and thermometers. The handling of different kinds of hand separators, the principles involved in ripening and churning of cream under farm conditions. Practice is also given in detection of milk adulteration, milk inspection and testing cattle for tuberculosis.

Drawing:—

The object of the drawing course is to give the student a better understanding of the work pertaining to the most modern rural architecture; how to do the work more systematically and economically than he has been ordinarily doing. It treats of straight line, angle, circle, shading work, lettering, stencil, flat and relief designing, outdoor sketching, perspective and model work. It also includes plans, farm homes, barns, stables, silos, wood, stone and cement structure.

Embroidery:—

The embroidery work is intended to show girls the use of the most modern methods in knitting, crocheting, darning lace, making eyelets, French shadow work, etc.

English:—

English composition includes oral and written drill in the correct use of different forms of speech in everyday life, including punctuation. Courses are also given in Grammar, Writing and Spelling.

Live Stock:—

The live-stock course covers feeding, breeding and caring for stock; study of animal organs as related to laws of nutrition and breeding; composition and nutritive value of feeding stuffs, field crops, working out rations.

Field Crops:—

The course in Field Crops gives a thorough understanding of latest methods in handling them; teaches how to adapt and breed grains and forage plants for various soils under different conditions of fertility, moisture and climate; how to select seed oats, barley, rye, corn, sugar beets, etc, millet, flax, clover, timothy and other commonly grown small grains and grasses. Particular attention is given to the different methods of cultivation of grain, root crops and corn; storing, grading and judging of grains and grasses. Weeds and insects are also studied; the cause and remedies of the more common plant diseases, as the mildew, smut, rust, etc., and their relation to crops they attack, are taught. Practical applications of sprays are made. Abundant practice is given in seed testing, for vitality and power of germination.

Farm Machinery:—

The farm machinery course acquaints the student with the different parts of machinery, their construction and the principles involved when the machine is in working order. The student makes special adjustments with reference to durability of parts. Gasolene engines, seed drills, harrows, ploughs, mowers, cream separators and self-binders are studied.

Food Adulteration:—

The object in giving the work in food adulteration is to acquaint the student with the most common adulterations and the foods in which they are apt to occur. The different tests for their detection are taught and discussions of pure food laws encouraged.

Farm Management:—

The farm management course is chiefly designed to bring before the student, in an economic way, all that he has learned in the school as regards facts, principles, sciences and practices in the field of agriculture. It includes various plans and schemes in the selecting, organizing and conducting of farms; also studies with reference to gain or loss in planning rotations and cultivating grains, root and forage crops; managing fields, laying out roads, fences, ditches and lanes; in short, a proper business and executive management of farms.

Fruit, Vegetable and Flower Gardening:—

The course offered in fruit, vegetables and flower gardening gives the student a thorough working knowledge of the principles and practices of the most important lines of gardening work. It includes practical work in the orchard and garden, hot-beds, forcing-houses, cold frames, their construction and manipulation. Methods of planting, cultivating and managing garden crops Principles of pruning, grafting, budding trees, training grapes and studying landscape gardening. The causes of plant disease and insects are discussed and remedies for combating the same are taught. A free use of State and Government bulletins pertaining to this work is made.

Home Nursing:—

Home nursing deals with a study of the composition of the human body; digestion, food in sickness, disease such as scarlet fever, measles, consumption, etc., lifting and handling of patients, local applications, emergencies and bandaging.

Household Economy:—

Household economy is the study of the different sources of income, particularly with reference to the farm, taught from the standpoint of existence, comfort, culture, and philanthropy. The work comprises furnishing houses, decorating houses and cost in maintaining them.

Household Hygiene:—

The purpose of household hygiene is to give the student instruction in taste and the laws of hygiene that should influence the selection of styles of building, furnishing and maintaining a house. Work is given in the disposal of water, heat, light, surroundings, insects, such as house flies, mosquitos, ants and bed bugs. Government bulletins along these lines are also studied and discussed in the class.

Laundering:—

The laundering course teaches the principles of laundering as is ordinarily done in a modern home. It covers a study of water, soap, starch, washing blues, acids, disinfectants, washing and ironing flannels, cottons, colours, and other useful things.

Millinery:—

The aim in giving millinery is to teach young women how best to make use of materials with the means at hand. This work is given in the Fall and again in the Spring. Fall millinery includes wire and buckram frames, renovating tinting, remodelling, preparing of trimmings, making folds, bows, hats, etc. Spring millinery consists in studying styles, materials, making lace, embroidered hats, etc.

Music:—

Chorus music is taught in general exercises to all members of the school. Music is considered a valuable factor in home and social life.

Plant Life:—

The course acquaints the student with the workings of the natural laws in growth and habits of plants. Seeds and plantlets of oats, corn, clover, potato, sugar beet, bean, radish and acorn, their similarities and dissimilarities in structure, power of germination and vitality are studied. Functions of root, stem, leaves, buds, flowers, fruit and seed are taken up systematically. Magnifying lens and microscope are used freely whenever necessary and possible.

Poultry:—

The poultry course gives the best methods of raising feeding and managing fowls for the home and for the market; egg production, marketing, managing incubators and brooders; planning and building poultry houses, etc.

Practical Mechanics:—

The work includes pattern making, moulding and casting. Working in Portland cement, rope splicing and knot tying, harness repairing and varnishing; also in home decoration both interior and exterior.

Practice and Science of Agriculture:—

During both the first and the second years the young men spend four hours of each week in doing practical work in the fields barns, shops and orchards. The exercises and lessons cover such work as planting, cultivating, hoeing, harvesting and storing crops, making drains, planting, grafting and pruning trees, laying out drives and lanes, building fences, repairing and oiling harnesses, making halters, setting up farm machinery. Work is also given in most approved ways of manure spreading and different methods of ploughing in the field, etc.

Sewing:—

The work is designed to train the student in the use of healthful and appropriate clothing and also in the needle work of the home. The work extends through two years. The first year's work covers model work, such as stitches, button holes, hems, darning and various kinds of mending and patching, drafting patterns for and making a suit of underwear. The student obtains much practice in hand and machine work during the year.

The second year's work consists in drafting, designing and making patterns for heavy and thin dresses and shirtwaists. Each girl makes her own graduation dress.

Soils and Fertilizers:—

The work in soils and fertilizers familiarizes the student with the origin, formation, composition, tilth and fertility of different soils and different commercial fertilizers. It includes lectures and laboratory work on soil temperature, movement of moisture, preparation of seed beds, methods of cultivation, implements of tillage, drainage, management of clayey, sandy marshy soils. Values and preservation of farms manures, their application and the effect of various systems of farming on the maintenance of fertility. Much of this work is given in the laboratory and in the field.

Stock Judging:—

The work in live stock judging includes text book work, lectures and a study of the points, characteristics and the laws governing them in the various breeds of horses, cattle, sheep and swine. Practice is given in judging live stock by visiting with students, large live stock farms in the country during the year.

Back to the Farms.

Three classes of students have graduated and it would appear that what is true of the graduates of the Menominee school would in large measure be true of similar schools operated in other States. Of the graduates of 1909, 1910 and 1911, 72%, 89% and 76% respectively have gone back to the farm and the home. Only in one case has a city young man graduate accepted a position in a factory, but this year he attends the Agricultural College. Several graduates have filled the positions of inspectors of milk and cream for the State during the summer months for the past few years. A few have gone into the dairy business and a number have been placed in responsible positions leading up to managers of large farms. Practically all of the men graduates are on the farm or work along some special phase of farming.

Those of the young women who are not engaged on the farm or in the kitchen have taken an extra year's work in the Normal Training School for teachers in the city and are now actively engaged in teaching rural schools and are doing good work.

LEGISLATION IN THE UNITED STATES.

As showing the direction of effort and progress in the United States in connection with this movement for County Farm Life Schools, five items are submitted from the Report of the Commissioner of Education of the United States (1911).

Minnesota.

Fifty consolidated rural schools were authorized in 1905, each to have ten acres of land for instruction in farming; special State aid to not more than one school in each county. County

agricultural High Schools were authorized in 1905. For properly equipped High Schools maintaining agricultural departments approved by the State Department of Education, the State will contribute two-thirds the cost of maintenance not exceeding $2,500 annually. Ten such schools are now established, located at Albert Lea, Alexandria, Canby, Cokato, Glencoe, Hinckley Lewiston, McIntosh, Red Wing, and Wells. A recent act of the Legislature permits the establishment of 20 more such schools. These schools are to be located at Kasson, Warren, Sleepy Eye, Westbrook, Worthington, St. James, Northfield, Litchfield, Little Falls, Willmar, Madison Hector, Wheaton, Cloquet, Deer River, Milaca, Bemidji, Fergus Falls, Thief River Falls, and Spring Valley A law effective August 1, 1911, provides $1,000 to each of such high and graded schools as shall maintain a course prescribed by the High School Board in Agriculture and either in Home Economics or Manual Training. This shall not apply to any schools receiving aid for industrial courses under any other act. Agriculture is taught in the State Normal Schools at Duluth, Moorhead, St. Cloud and Winona. Three Secondary Schools of Agriculture giving three year courses are maintained by the State University. They are located at Crookston, Morris, and at the University farm at St. Paul.

NORTH DAKOTA.

The Legislature of North Dakota in the 1911 session passed several Acts of importance relative to agricultural aducation. Lessons in Nature Study and Elements of Agriculture have been added to the branches to be taught in all common schools, and Agriculture may be offered as an optiona. subject for a teachers' certificate. A law to provide for the establishment and maintenance of a department of agriculture, manual training and domestic science in state high graded and consolidated schools provides that any such school having the proper facilities may, upon application to the high school board, be designated to maintain an agricultural department. Each such school shall employ trained instructors in agriculture, manual training, and domestic science, and provide at least ten acres of land suitable for a school garden. Said Department shall offer instruction in soils, crops, fertilizers, drainage, farm machinery, farm buildings breeds of live stock, stock judging, animal diseases and remedies, production, testing and hauling of cream, the manufacture of butter and cheese, the growth of fruit and berries, management of orchards, market garden and vegetable crops, cereal grains, fine seeds, book-keeping and farm accounts and all other matters pertaining to general practice. Each school shall receive annually $2,500 State aid. This Bill will not become effective immediately as the section appropriating the money for such for 1911-12, was vetoed by the Governor for the reason that the revenues of the State had been exceeded by other appropriations. All other portions of the Bill were approved.

NORTH CAROLINA.

The Legislature of North Carolina in an Act approved March, 3 1911, made provision for "country farm life schools "for the training and preparation of boys and girls for farm life and home making. The course of study subject to the approval of the State Superintendent of Public Instruction, shall include practical work on the farm by the boys and practical work in all subjects relating to housekeeping and home making by the girls. A high school department shall be conducted in connection with these schools, offering the course of study prescribed under the public high school law of the State for first grade high schools. The farm life school and the high school department shall both be under the control and management of a Board of Trustees consisting of one member from each township of the county. The schools may not be located in any city or town of more than 1,000 inhabitants, nor within two miles of the corporate limits of any city or town of more than 5,000 inhabitants. For maintenace the county or township or school district, or all conbined where the school is located shall provided a school building, dormitory buildings with accommodation for at least 25 boys and 25 girls, a barn and dairy with necessary equipment, and a farm of not less than 25 acres, all subject to the approval of the State Superintendent of Public Instruction. The State will pay annually to each approved school $2,500. No person shall be employed as principal of such a school who does not hold a high school teacher's certificate on all required subjects except Latin, Greek and modern languages, including an additional certificate from the State Board of Examiners and the President of the North Carolina College of Agriculture and Mechanic Arts, stating that he has furnished evidence satisfactory to them of his qualifications by special training and practical experience for said position. A similar certificate is required for teachers for the special training of girls for home-making and house-keeping.

In addition to the regular courses these schools shall conduct agricultural farm life extension and demonstration work and shall offer short courses in farm life studies for adult men and women. All of the work of each school shall be under the general supervision of the County Superintendent of Public Instruction, the school being in all respects an organic part of the county public school system.

Craven county voted, during the past summer, to establish a school under the provisions of this Act. In Guilford county, under a special provision of the Legislature, the agricultural work began in September in three public high schools.

NEW YORK.

An Act in New York State, approved July 26, 1911, provides for an advisory board to consider plans for the promotion and direction of agricultural education and the advancement of country life. This board is to consist of twelve members, including the Director of the State Agricultural College, the Director of the State Experiment Station, the Deans of the State Schools of Agriculture at Alfred University, St. Lawrence University and Morrisville, a member of the State Fair Commission and three other persons appointed by the governor. An Act approved July 28, 1911, provides for a new State School of Agriculture to be located at Cobleskill, Schoharie county, to be known as Schoharie State School of Agriculture. The school will give instruction in agriculture, mechanic arts and home-making and will engage in agricultural extension teaching. It shall be controlled by a board of Trustees, including the State Commissioners of Education and Agriculture and five others appointed by the Governor. For establishing the school $50,000 is appropriated.

MASSACHUSETTS.

Cities and towns may establish independent agricultural schools, which may receive State aid equal to one half the cost of maintenance. Smith's Agricultural School at Northampton is the only one in operation. The Montague Agricultural School, after receiving State aid for three years has been closed. By Act of the Legislature in 1911, State aid equal to two-thirds of the salary of a special instructor devoting his entire time to agriculture is given to high schools establishing departments of agriculture of the type recommended by the State board of education in its report on agriculture and industrial education. The Petersham Agricultural High school gives a four year course in Agriculture and now receives State aid under this act. The State Board of Education has appointed an agent to supervise agricultural departments so established. Agriculture is taught in at least 18 high schools and in the State Normal Schools at Bridgewater, Hyannis, and North Adams. A Commission appointed by the State Board of Education to investigate the needs of Agricultural education in the State has made an extensive study and submitted a valuable report, in which they recommend State aid for agricultural departments in existing high schools.

WHAT THE COMMISSION RECOMMENDS FOR CANADA.

SECTION 5: INTERMEDIATE RURAL CLASSES OR SCHOOLS.

In general the training at these schools would prepare pupils for engaging in farming and housekeeping occupations and for admission to the third year of Rural High Schools.

The qualifications for admission should be 13 years of age and over and the completion of the work of the Elementary School or ability to write, read, draw and calculate to the satisfaction of the Principal or Committee on Admission. Some of the classes would be separate for boys and girls. The courses would continue two years of five to seven months each at the school, and the rest of the year at the farm or home according to local conditions.

The kind of work to be done at the school would provide for series of experiences in proper sequence and have regard to the conditions of farming and housekeeping in the locality.

The qualifications of teachers, accommodations and equipment and the classes themselves would be similar, as far as practicable, to those provided for by regulations and courses of study for the agricultural department of Continuation Schools, High Schools and Collegiate Institutes issued by the Department of Education of Ontario for the Session of 1911-12.

Ontario Regulations.

The following extracts set forth the main points to be considered in this regard:—

Qualifications of Teacher: (1) The teacher of Agriculture shall hold the degree of B.S.A. from the University of Toronto, or a certificate of qualification from the Ontario Agricultural College. Such teacher may also take part in the Science work of the school at the discretion of the High or Continuation School Board and of the Principal, and with the approval of the Ministers of Education and Agriculture.

(2) Except when otherwise provided by the Minister of Education, the county representative alone shall teach the agricultural classes under the control of the advisory Agricultural Committee.

Accommodations and Equipment: When rendered necessary by the course of study the following shall be provided:

(1) A suitable laboratory and the equipment necessary to carry out the work as outlined in the course of study.

(2) Experimental grounds, separate from the ordinary grounds, for illustration purposes in the growing of various classes of farm crops and for training in experimental work. The area of the grounds shall be determined by local conditions.

School Agricultural Classes.

8. Pupils at a High or Continuation School centre may take the agricultural classes either alone or in addition to one or more of the other school classes.

9. (1) The courses shall be arranged with a view to meet the needs of the local farming community and shall be selected from the subjoined lists of subjects, with such additions or modifications as may be approved by the Advisory Agricultural Committee and the Minister of Education.

(2) The courses should be prepared by the teacher of agriculture for submission to the Advisory Agricultural Committee and, when approved by it and the Board, should be transmitted promptly to the Minister of Education for his consideration.

10. (1) The minimum length of a school course in agriculture shall be four weeks. Shorter courses for farmers are provided under the authority of the Minister of Agriculture.

(2) The total amount of time to be given each class per week shall be settled by the Advisory Agricultural Committee, after consultation with the teacher of agriculture.

(3) In the construction of his time-table and the management of his school classes, the teacher of agriculture shall be subject to the Principal of the High or Continuation School.

School Departments of Agriculture.

11. (1) A Department of Agriculture may also be provided in a High or Continuation School with a maximum course of two years.

(2) Pupils taking such Agricultural department shall take in addition to the agricultural classes, which also shall be selected from the subjoined list of subjects, the academic subjects which are obligatory upon all High or Continuation School pupils; namely, geography, arithmetic and mensuration, English grammar, writing, reading, English composition, English literature and history, with such suitable modifications and with such additional subjects as may be deemed expedient by the Principal and the parent or guardian of the pupil

(3) Pupils who take the two years' Course of the Agricultural Department herein provided for, and whose competency is attested by the principal of the school and the teacher of agriculture, shall be eligible for entrance to the second year work of the Ontario Agricultural College.

Note.—*It is not expected that agricultural departments, separately organized, can be established for some time. The Advisory Agricultural Committee and the teacher of agriculture should, however, keep constantly in view the desirability of such establishment.*

The list of subjects at these Agricultural Classes is as follows. The detailed elaboration of each subject is omitted from this statement.

(1) Field Husbandry, (2) Animal Husbandry, (3) Dairy Husbandry, (4) Poultry, (5) Horticulture, (6) Forestry, (7) Agricultural Botany, (8) Entomology, (9) Agricultural Physics, (10) Agricultural Chemistry.

The Co-ordination of Subjects.

The work at the Intermediate Rural School building should be co-ordinated in the case of every pupil with some definite, practical work (Farming-Project or Housekeeping-Project) carried out at home or elsewhere. Effort and progress in this home-work should be regarded by the teacher as an integral part of the educational course.

Science subjects should be taught particularly in the relation of their application to rural work, rural problems, and the principles underlying the systems, methods and operations of farming and housekeeping.

On the literary, social and cultural side, special attention should be given to language, literature, history, physical culture, singing and such experiences as make for the enrichment and efficiency of intellectual and social life in rural districts.

In cases where the teacher is not qualified to direct and estimate the progress and values of the work of the pupils in the Farming-Projects or the Housekeeping-Projects, a committee of one, two or three should be appointed to co-operate with the teacher. The District or County Instructors would be competent to counsel on what to do and how to do it in these educational projects. They could assist in co-ordinating the Farming-Projects and the Housekeeping-Projects with the work of the school.

Chief Objects of the Course.

The object of the school would be the preparation for general farming and successful life in a rural community. The course of work should be provided with that in view, and the methods of instruction to be followed should be subordinate to that chief aim. Too often the method of instruction in rural and other schools has been the one which seemed the best adapted to preparing pupils to pass examinations for which the chief qualification has been the possession and exercise of an excellent verbal memory. There should be the maximum of practical work arranged in proper sequence for the development of the pupil and, consistent with that, the use of books. So far as the benefit to the pupil is concerned, this minimum of time on books would likely result in the use of books in such a way as to render the student the maximum of service.

Throughout the whole course, and in all the work and study, due regard should be had to the development of a spirit and habit of good citizenship. That may be best accomplished by the student participating in forms of activity which are part of the social life of the community and of the social and intellectual life of the school as an institution.

SESSIONAL PAPER No. 191d

CO-ORDINATED AGRICULTURAL EDUCATION.

The Intermediate Rural School would seem to be well suited for carrying out the principles which underlie the plan of co-operative or co-ordinated industrial education. The best known of the co-operative industrial schools are in the State of Massachusetts. Information regarding them is contained in Part III of the Report. The Board of Education there has, in various publications, presented detailed information on Co-operative Agricultural Education. The information published by that body has been freely drawn upon for what appears on that subject in the following part of this Section. The Commission is also indebted to Mr. Rufus W. Stimson, Agent for Agricultural Education of the Mass. State Board of Education, for valuable information obtained from "Conversations" with him, part of which is given under the Report on Smith's Agricultural School and Northampton School of Technology. (See page 317).

FARMING-PROJECTS AND STUDY-PROJECTS.

Co-ordinated Agricultural Education is made up of two parts co-ordinated in educational courses for boys and young men from 14 years of age onwards. One part is made up of some definite undertaking to be carried on by the boy at the farm where he lives, the other part is made up of the instruction, study and practical work to be carried on at the school which he attends. The productive work at the farm is called a Farming-Project and the work at the school with the reading, discussions and study at home become the Study-project. The Study-Project is different from the study of subjects as such in the order of the logical presentation common in text-books. The Farming-Project and the Study-Project are arranged to supplement each other.

OBJECTS OF FARMING-PROJECTS.

The Farming-Project, in a part-time co-ordinated Rural High School or Intermediate Rural School, may be indicated as some definite piece or part of productive or conserving farm work, (1) planned to yield results available in material or money values to the pupil, and (2) carried on within specified limits in such a way as to yield educational results in the pupil by practice in observing, thinking, learning, planning, managing and co-operating with others.

That is to say the Farming-Project, or undertaking to be carried out, should be of a sort requiring, systematic study, reasoning, planning and action by the pupil without compulsory direction. It should be arranged for the sake of the undertaking itself and for the sake of the educational benefit to the pupil from the training he would receive thereby. The latter would be the chief end, while the former would be the chief means.

For pupils in rural schools, perhaps more than others, it is wholly beneficial if indeed not entirely necessary that the experiences of practical work and the theoretical instructions which they receive, or studies which they follow, should

come close together in point of time as well as in character of content. It may be taken as a sound principle in education that the main steps in every complete educational experience are observing, thinking, feeling, reasoning or planning and managing towards and into some form of expression. The closer in point of time the steps are taken together, the greater the growth of power, the surer the formation of habits, and the more certain the acquisition of knowledge which will not be forgotten and will be available in every-day life.

The Part-Time Features.

The co-ordinated plan provides, in the main, for the pupil giving continuous attendance at a Rural High School or Intermediate Rural School during about six months of the year, when he can be spared most conveniently and advantageously from the work of the farm, and devoting his time to work on the farm during the remainder of the year.

During the period when the attendance at the school is continuous, it is desirable that some Farming-Project which would not require a large portion of the pupil's time should be carried on.

During the period when the pupil is working continuously on the farm, the Farming-Project, carried on as part of his school course and training, should not be of such a large character as to occupy more than from one-sixth to one quarter of his working time. The remainder of his working time should be available for the general work of the farm as required by his father or other person in charge. The Farming-Project should not be so small as to tempt the boy by its smallness to consider it a negligible part of the actual productive work of the week.

Other subjects to be taken up during the courses would be Agricultural Chemistry, Agricultural Botany, English or French, Mathematics, History, Good Citizenship, Singing and Physical Culture. An effort should be made to relate them as far as practicable to the Farming-Projects and the Project-Studies.

It has been suggested that the division of time in carrying out the School, Home and Farm Co-ordinated method of training might with advantage be as follows:—For the execution of the projects, including work during vacations and other out-of-school hours, 50%; for the related study, 30%; for systematic courses of composition, literature, history, civics, mathematics and other subjects of general culture and good citizenship, the remaining 20%.

The information acquired by the boy in connection with work of this kind would be retained as part of his mental equipment; it would be organized as part of his real knowledge for application, instead of being remembered for only a short time as part of the information which he could merely state in words somewhat similar to those through which he acquired a verbal acquaintance with it. There would be no likelihood of a boy forgetting information which he had acquired from observation, discussions or reading, when he had transmuted it into effort in connection with his Farming-Project, and had realized upon the application of it either through failure or success or partly the one and partly the other.

Variety of Farming-Projects.

The Farming-Project might be growing vegetables for the house or for sale; growing a quarter of an acre of potatoes; growing half an acre of Indian corn; growing seed grain on a hand-selected plot, etc., etc. Or the Farming-Project might be caring for some kind of live-stock, such as a flock of hens; a number of pigs; a number of sheep; three or four cows; two or three horses, etc. Or the Farming-Project might take the form of carrying out some necessary part of farm management or farm work suited to the boy's age and ability. In the care of live stock a record should be made of the amounts and kinds of feed consumed and of the products obtained, as for example, the number of eggs or the quantity of milk.

Arranged Progressively.

The Farming-Projects should be arranged in progressive sequence beginning with the more elementary and simple undertakings. During the first year the Farming-Projects would deal with one or more crops and would be Farming-Projects with plants; during the second year the Farming-Projects might deal with the care of animals and go under the name of Farming-Projects with animals; during the third year more advanced work might be undertaken with plants; and during the fourth year more advanced work might be undertaken with animals. As for example: if during the first year the Farming-Project had to do with the growing of vegetables or cereals, during the third year the Farming-Project might take the form of growing fruits, small or large, or growing a small area of potatoes, of Indian corn, or some other cereal with a view to the improvement of seed or crop by means of selection or some special treatment. During the second year the Farming-Projects with animals might be confined to poultry, pigs or sheep, and during the fourth year they might be concerned chiefly with cows or horses.

There is no good reason why there should not be a continuation of the Farming-Project of any one year during the succeeding year in addition to the Farming-Project which was proper in sequence for that year. However, the chief attention of both the pupil and instructor should be concentrated on the particular Farming-Project for that year. While each year would be complete in itself, there would be advantage to the pupil from following a two or a four year course in succession as arranged by competent authorities.

All Interests Consulted.

The Farming-Project to be carried on by the pupil could be arranged to advantage only after consultation and careful consideration by the parents, the teacher and the pupil. It is desirable and preferable that the Farming-Project should be one which would appeal to the boy's taste and preference and lead to definite revenue or profit from the work done. The interest awakened and kept active in the boy from the latter consideration is a very important factor.

The choice of Farming-Projects will be determined to a certain extent by:—

(1). The attitude of the farmer and the kind of farming which is or can be carried on;

(2). The teacher, the course of study, and the equipment of the school;

(3). Most of all, the pupil himself and his preference or tastes for certain lines of work.

To ensure success it is necessary that there should be a full measure of hearty and sympathetic co-operation between the farmer, the teacher and the boy. That will lead to the boy getting the use of as much of the farm plant as is necessary and being allowed as much of his time as is required to carry through his Farming-Project.

Supervision by Competent Teacher.

It is desirable that the teacher should visit the boy at the farm at least once every month and go over and discuss with him the progress of his Farming-Project. At the same time the teacher should examine and criticise the records of the Farming-Project, which would be kept regularly and systematically. These records should contain a statement of the dates and time spent on the work, the kind of weather, the results observed, the progress of the crop, and the boy's judgment of what should be undertaken the following week. The examination of these records of his intentions for the future, made once a month with the teacher in the light of what actually had been done, would be valuable in developing the habit of exercising good judgment on conditions as they arose. The school should provide blank forms for these records to assist the boy in making them regularly, and in such a form as to be advantageous for his own education and for comparison with other records.

This implies that the instructor or teacher, under whose supervision this work is undertaken and carried on, must be thoroughly competent, in attitude of mind, in knowledge, in practical ability to do and to manage, and in enthusiasm for boys as well as for farming. Such teachers working with from fifty to seventy-five boys each would provide the farmers-that-are-to-be with the best of qualifications for practical farming and rural leadership.

Qualifications of Teachers.

As a rule the teacher or instructor in charge of Co-ordinated Agricultural Education should be a graduate of an Agricultural College. He should have had practical knowledge of and experience in farming operations and farm management such as prevail in the locality. It would be all the better if he had some intimate knowledge of local climatic and marketing conditions. One of his main duties would be to supervise acceptably and efficiently the Farming-Projects of the pupils. Another part of his task, not less difficult, would be to lead the pupil to take up and follow systematic study bearing directly upon the Farming-Project. That would advance his education by a wider and more systematic acquaintance with the agricultural sciences which relate to farming.

The instructor, by his discussions of the Farming-Projects at the home or at the school, should aim to develop in the pupil the power and the habit of clear thinking, of correct and accurate statement, and of planning work to conform to the practice believed by him to be best.

Some of the Advantages.

Where no provision has existed for the carrying on of systematic productive work, in connection with the organized studies at the school, the pupil has been unable to bring the different elements together for his growth in either intelligence or ability. When the Subject-Study has been carried on by itself, unrelated at the time to practical or manipulative work in connection with it, only a few pupils are usually able to profit by the information thus acquired. When both are carried on together and the pupil writes up a record of what he has observed, what he has planned or reasoned, and what he has done, the record itself is both a means toward and an evidence of clear and consecutive thinking on the part of the pupil. The habit of putting ideas into written form is in itself good mental training and also puts the ideas thus expressed better within the command of the pupil.

The progress to be expected in the boy himself would be, in the main, along five lines:

(1). The development of the habit of observing and learning by trying to accomplish a definite useful piece of work in which his interest was keen and continuous.

(2). The development of practical ability from trial and experience in carrying out processes necessary to give effect to his plans; the development of skill in work and of power in managing himself with the least waste of time and strength, and in managing tools, machinery and materials to the greatest advantage.

(3). The formation of the habit of seeking information which could be depended upon to enable him to understand the principles underlying what he was planning to do and trying to do. That would be fostered by discussion with his father, the teacher and others as to how best to accomplish the desired ends, by conferences and discussions with other boys who were carrying on Farming-Projects, and by the Study-Project of reading and study arranged in proper sequence to give him a wider range of knowledge of use to him in the definite Farming-Project which he had in hand.

(4). The establishment of habits of forming reasoned judgments and opinions upon situations, conditions, theories, principles and methods of farm work and management.

(5). The development of will-energy to give effect to his decisions and of desire and ability to co-operate with others in useful undertakings.

SECTION 6: RURAL HIGH SCHOOLS.

The Rural High School, with its four year course, would give a wide basis of general training and knowledge upon which to base further study and work. It is an institution which should give an excellent and suitable education for rural life and should prepare students for admission to an Agricultural College.

The Agricultural College for its part should be occupied chiefly with training men for the higher grades of professional work, their training and status being in every way equal to that of technical engineers.

Moreover, the Rural High School would be different from the County or District Agricultural School in so far as the latter would be a residential school and have only one and two year courses, each complete in itself. The latter would be attended only by pupils of the age of 17 years and over.

The qualification for admission to the Rural High School would be 13 years of age and over and the completion of the work of the Elementary School, or ability to read, write, draw and calculate to the satisfaction of the Principal or a Committee on Admission. Some of the classes would be separate for boys and girls.

The course would be four years. During the first two years the work to be done would be similar to that in the Intermediate Rural School with the difference that the work at the High School might continue longer each year.

Science subjects should be taught particularly in the relation of their application to rural work, rural problems and the principles underlying the systems, methods and operations of farming and housekeeping.

On the literary social and cultural side, special attention should be given to language, literature, history, physical culture, singing and such experiences as make for the enrichment and efficiency of intellectual and social life in rural districts.

In general the training at this school would prepare pupils for engaging in rural occupations and housekeeping and for admission to Agricultural, Housekeeping and Arts Colleges.

In cases where the teacher is not qualified to direct and estimate the progress and values of the work of the pupils in the Farming-Projects or the Housekeeping-Projects, a committee of one, two or three should be appointed to co-operate with the teacher. The District or County Instructors or Supervisors would be competent to counsel on what to do and how to do it in these educational projects. They could assist in co-ordinating the Farming-Projects and the Housekeeping-Projects with the work at the school.

The qualifications for the teachers would be similar to those described under the Intermediate Rural Schools at page 336.)

SECTION 7: RESIDENT OR TRAVELLING INSTRUCTORS AND INSTRUCTRESSES.

A: INSTRUCTORS FOR FARMING.

The employment of District Agricultural Representatives has become general in the Province of Ontario, and four areas in the Province of Quebec are served by the Macdonald College District Instructors. That work has proven itself to be eminently useful and acceptable to the farming communities. In the opinion of the Commission similar provision should be made throughout Canada as soon as competent men and women are available for the positions. Since the work reported upon at length in connection with the Province of Ontario and Ireland includes most of the good features found elsewhere, it is not thought necessary to report upon itinerant instruction in detail as examined in other places.

ORGANIZATION IN ENGLAND.

The *Rural Education Conference* is a body which was constituted in England by Minutes of the Presidents of the Board of Agriculture and Fisheries and of the Board of Education, to consider all questions regarding rural education which might be submitted to them by either Department. On the 1st December 1910 it submitted a report on County Staffs of Instructors in Agricultural subjects, which contains information of value to Local Rural Development Boards or other authorities in Canada in charge of the development of agriculture within county areas. In England many counties are associated with some Agricultural College or other higher institution of education as a centre. The report says in part:

10. Any County Council not associated with an efficient centre which finds itself unable or unwilling to establish a minimum Staff of its own should associate itself with the Council of an adjoining county.

The minimum Staff should be made up as follows:—

(a) *Agricultural Organiser and Adviser*, who should, as a rule, supervise the agricultural and horticultural work done by the county, and act as secretaty to the Agricultural Education Committee or Sub-Committee. He should be in close touch with the Head of any Centre with which the county is associated. He should (so far as his other duties may permit) give some instruction himself, but as a rule he would require competent instructors to assist him.

His main functions would be to get into touch with farmers and other agriculturists, and for this purpose to visit local markets and shows and farmers' clubs as well as individual farms and small holdings. He should also enlist the sympathy and help of agricultural associations. He would discuss, and advise agriculturists on, such questions as diseases in crops and animals, manures, cropping, insect pests, &c. He would distribute leaflets or pamphlets relating to rural work (such as those published by the Board of Agriculture), explain them and possibly make them a basis of discussion. He would organise and supervise illustrative experiments and demonstration plots. He would organise classes for instruction in farm labour subjects and prize competitions in connection with such subjects as hedging, ditching, thatching, &c.

After becoming thoroughly acquainted with the county, he would advise the Committee as to the establishment of permanent centres for agricultural instruction, such as Farm Institutes, Winter Schools, &c.

(*b*) *Horticultural Instructor*, who should give courses of instruction at approved centres, carry out demonstrations on approved horticultural practice, give advice to small holders, allotment holders, cottagers, and others. He should have special charge of the work connected with school gardens and such nature study as may be connected with them. In counties in which Horticulture is of special importance it may be desirable that the Horticultural Instructor should be independent of the Agricultural Organiser. He should be in touch with any Centre of Horticultural Instruction with which the county is associated, and might, by arrangement, give some of the instruction therein.

(*c*) In most counties a *Dairying Instructor* will also be required, who should conduct a fixed or migratory dairy school and give advice when required to farmers and others in dairy practice. In many counties separate instructors would be required to give instruction in the different branches of the dairy industry.

II. This *minimum* Staff would require to be supplemented by—

(*a*) Competent scientific Investigators and Analysts, who would ordinarily be supplied by the centre with which the county is associated or from some University or Agricultural College.

(*b*) Instructors in special branches of industry, *e.g.* Farriery and Veterinary Hygiene, Poultry and Bee-keeping, Cider-making, Hop-growing and such manual processes as Hedging, Thatching, Sheep-shearing, &c.

These practical Instructors would in most cases be regular members of the staff of the larger, or combined, counties, but in other cases (*e.g.*, manual processes) local experts might more conveniently be employed as required.

(*c*) Instructor in Forestry, who should be supplied from one of the recognised Forestry Centres.

(*d*) Organisers and Instructors in the Economics of Agriculture, *e.g.* Co-operation and Credit Banks for occupiers of land, the grading and marketing of produce, insurance of stock, &c. These would ordinarily be required to cover larger areas than counties, and might be supplied through a central body, such as the Agricultural Organisation Society, subsidised by the Government or by the County Councils employing the Instructors.

Although perhaps not strictly within the terms of our reference, we think it of vital importance that the Agricultural Staff of a county should work under a special committee or sub-committee of the County Council in accordance with the recommendation of the Departmental Committee on Agricultural Education as contained in paragraph 117 of their report.

The paragraph runs as follows:—

"Each county may be left to adopt the system best suited to its own requirements, but the Committee would lay stress on the expediency of there being in every county a special committee, or its equivalent, to organize and supervise Agricultural Education. It is moreover essential that in order to gain the confidence of the farming classes any such special committee should include a large proportion of members engaged, or directly interested, in agriculture or its allied industries."

The Example of Lancashire.

The following is a statement of the staff actually provided for the county of Lancashire, in which mixed farming is followed:—

Area.	Population.	Number of Agricultural Holdings.	
		Owned or mainly Owned.	Rented or mainly Rented.
1,089,255 acres.....	1,751,449	1,841	17,718

Permanent County Staff:—

1. Organiser or Secretary of Agriculture, Horticulture, and Lecturer in Agriculture.
†2. Lecturer in Agriculture.
†3. Lecturer in Agriculture and Bacteriology.
4. Lecturer and Instructor in Horticulture..
5. Instructress in Dairying (at County Dairy School).
6. Assistant Instructress in Dairying (at County Dairy School).
7. Migratory Instructress in Dairying.
8. Migratory Instructor in Cheese-making (in season only).
9. Instructress in Poultry-keeping (at County Poultry School), also Migratory Instructress.
10. Assistant Instructress (at County Poultry School).
11. Migratory Milk-tester.

Staff giving part-time to Work:—

†1. Lecturer in Chemistry.
†2. Lecturer in Agricultural Chemistry.
†3. Lecturer in Botany and Geology.
†4. Lecturers in Veterinary Science.
†5. Lecturer in Engineering and Mechanics.
†6. Lecturer in Physics.
†7. Lecturer in Mathemathics.
†8. Lecturer in English.
†9. Lecturer in Book-keeping.
†10. Instructor in Drawing.
†11. Instructor in Woodwork.
12. Instructor in Bee-keeping.

Cost Trifling Compared with Benefit.

In the memorandum of the English Board of Education, published in 1911, the experience of a medium sized county is cited, showing that work similar to what has been indicated, but not so complete, can be carried on quite effectively there for a total annual expenditure of $12,500. With the provision of a farm school it is estimated that a total annual expenditure of about $15,000 would be required, apart from the capital charges.

The same memorandum says:—"Wherever such work has been effectively done, farmers declare that the expenditure is trifling compared with the benefit to the agricultural community."

Lessons from Belgium.

Particularly fruitful work has been done by itinerant instructors in France and Belgium. The report of Mr. R. B. Greig to the Board of Education in England in 1912 says:—

> The State Agronomist or itinerant agricultural instructor is generally admitted to be the chief cause of the wonderful improvement which has taken place in Belgian agriculture during the last quarter of a century.. The results of his instruction can be measured in various ways, and quite definitely by the Agricultural statistics, which show that Belgian farms produce £10,000,000 more annually than they did 25 years ago at a cost for every kind of agricultural education of not more than £40,000 a year. What is now the densest population in Europe is almost supported by the product of its own farms, which yield an average of £20 per annum per acre as compared with less than half from British land.
>
> The State Agronomists, who are stationed, one or more, in every Commune, met at first with some opposition and much apathy. For the first few years they delivered single lectures at any centre likely to produce an audience, but as interest increased they developed their lectures into courses, and now they base their instruction on ten groups of subjects from which a course of fifteen lectures extending over the winter months is selected.
>
> The groups are:
>
> (1) General conceptions of Agriculture.
> (2) The rational feeding of cattle.

†Forming the Staff of the Agricultural Department of the Harris Institute, Preston.

(3) Zoo-technique and farm hygiene.
(4) The rational treatment of milk, butter and cheese.
(5) Agricultural book-keeping and accounts.
(6) The raising of poultry.
(7) Rural Law.
(8) Elementary ideas of rural economy.
(9) Co-operation and Insurance.
(10) Agricultural hydraulics.

A village selects a course from these groups and the State Agronomist arranges for the instruction, much of which must be supplied by specialists. As a rule a number of farmers, chemists, managers of creameries, and accountants who are qualified by education and experience to instruct in their own specialities, are employed for part of the course and paid a fee for each lecture. A State Agronomist may thus have ten or fifteen colleagues under his direction and supervision. A somewhat similar procedure has been tried successfully in Canada. The lines indicated are those on which some English counties are now working, with this important difference, that, as a rule, there is no continuous course of instruction in any one village throughout the winter. The result of all this mental activity in Belgium is a rapid increase in rural prosperity, shown not only by the growth of the national agricultural income, but by the numerous co-operative societies (some of which contain 50,000 members), stock insurance associations, credit banks and farmers' creameries.

Duties of District Representatives in Ontario.

This information regarding Belgium was cited chiefly to illustrate the fact that the work is organized and that a State Agronomist stationed in a single commune may have 10 or 15 colleagues under his direction and supervision. That applies also to a County Organiser and Instructor in England.

Dr. C. C. James, at that time Deputy Minister of Agriculture for the Province of Ontario, presented terse information on this matter before the Commission of Conservation at its annual meeting, January 1911. He reports in a summary the work undertaken by the District Representative in the county of Dundas, Ont., as follows:—

1. Making the personal acquaintance of as many citizens of my district as possible and the revealing of myself to them that they may have confidence in me.
2. Advisory work from office, personal and by correspondence.
3. Three months' Short Course for boys in Collegiate Institute.
4. Organizing and conducting of 3-day Short Courses (5 Short Courses, 1 Fruit Institute).
5. Organizing and supervision of Farmers' Clubs.
6. Assistance in conducting excursions to places of learning—2 to Macdonald College during 1910.
7. Preparatory work leading up to organization of Horticultural Societies.
8. The interesting of Agricultural Societies and farmers in Standing Field Crop Competitions.
9. Distribution to good farmers of seed grain from prize-winning fields in Field Crop Competition of 1909.
10. Demonstrations (three) in spraying of mustard.
11. Making of drainage surveys for farmers. Drainage demonstrations.
12. Demonstrations of value of underdrainage by draining of low-lying portion of school grounds, 6 acres.
13. Conducting of demonstration plots on school grounds. Plots 3 acres in extent.
14. Conducting of fertilizer experiments on 3 different farms.
15. Conducting of stock judging competitions for boys at fall fair—4 in all.
16. Exhibit at County Fair, Morrisburg:—Insects, plant diseases, weeds, products of sprayed orchards, spraying materials, apparatus, etc., produce of Demonstration Plots, distribution of bulletins, etc.
17. In 1909, during fair, actual drainage work going on. Taking of levels, grading, etc. demonstrated.
18. Demonstration of good orchard culture by personal (assistant and myself) care of 4 orchards; constant supervision and direction of care of another.

Different kinds of work are undertaken by the District Representatives in different areas to meet local conditions and local needs. The duties of the

District Representative are as various as the conditions of rural life in the place. At one time the Representative is required to give one or more lectures, then to carry on practical demonstrations, and again to offer practical advice on some particular farming problem. It does not seem feasible for one individual to carry on these multitudinous duties satisfactorily and effectively, particularly as in each division more and more will be expected and more and more is required.

Outline of Work for a County.

The matters of first importance to be provided for in Canada at the present time are:—

(1) Visits of inspection and instruction and advice to the individual farmers on their own places.

(2) Holding field meetings with farmers in connection with field crops, fruit culture, live stock, etc.

(3) Interesting the rural teachers in Rural Elementary Education so conducted as to serve agricultural and rural life.

(4) Arranging for and taking part in courses of instruction in Elementary Agriculture and School Gardening for rural teachers at convenient centres.

(5) Arranging annual gatherings and exhibitions to illustrate the year's work and progress in agricultural education.

(6) Arranging for short courses of from two to four days' duration at convenient centres throughout the county or district.

(7) Arranging for longer courses of systematic instruction during four months of winter. These may take the form of the Irish short courses, being held two half days a week at each place, classes at three centres being carried on each week.

(8) Arranging and giving lectures to Farmers' Clubs, Farmers' Institutes and other local organizations.

(9) Advising by correspondence and reporting on specimens of insect pests, weeds, soils, etc., sent in for examination.

(10) Distributing bulletins and other printed matter from the Departments of Agriculture and Education.

In general these Instructors would carry on work similar to some of that undertaken at present by District Representatives in Ontario and Quebec. It would be extended, according to the conditions of the districts, along the following lines:—

(*a*) They (the Instructors) should act in the capacity of co-ordinators between the school work and the Farming-Projects carried on at home by pupils attending the Intermediate Rural Schools and the Rural High School;

(*b*) They should arrange for short courses of instruction for young men who do not attend the Intermediate Rural School or the Rural High School.

Such courses might be given at one place during two half days in the week. That plan would enable the District Travelling Instructor to conduct one course at each of three centres concurrently.

The courses should be arranged in progressive sequence, and a course of reading should be provided in connection with each course.

(*c*) They (the Instructors) should provide systematic short demonstration courses in soils, crops, live stock, farm machinery, etc., etc., for the adult farming population.

(*d*) As soon as practicable they should be associated with the work of a Neighborhood Improvement Association and an Illustration Farm for the locality, similar to those arranged for by the Committee on Lands of the Commission of Conservation.

(*e*) As soon as practicable, they should be associated with the short courses as mentioned under Section 8: County or District Agricultural and Housekeeping Schools.

Adults and Young Pupils.

It is necessary to distinguish clearly and continuously between the kind of instruction and demonstration to be provided for adult pupils who are actually engaged in farming work, and the kind of educational help to be given to pupils at the Intermediate Rural Schools and the Rural High Schools.

When the adult pupils meet the instructor they have had considerable experience in the doing of things, and know the "How" of farming operations. They need instruction (information and guidance) to enable them to understand the "Why" of farming operations, and suggestions (explanations and information) concerning methods of management and the principles that underlie systems and methods of farming, such as preserving fertility of soil, selection of seeds, controlling weeds, rotation of crops, keeping live stock, etc.

On the other hand it is desirable that the Instructor should let the young pupils work out problems in Farming-Projects as part of the course (or series of experiences arranged in proper sequence). His main helpfulness would come from giving the work to be undertaken as a Farming-Project a didactic or educational setting, from directing the sequence in which different Farming-Projects should be taken up, and indicating sources whence the necessary information might be obtained. It is better in the case of young pupils that they should dig it out for themselves than that they should have full information presented in a pre-digested state in a lesson package.

One of the District Instructors might become a County Superintendent, supervising and correlating all the Industrial Training and Technical Education for development work within a County or larger area. After the first year or two more than one Instructor would be required in an ordinary County area.

B: INSTRUCTRESSES FOR HOUSEKEEPING.

These might carry on work, for the Housekeeping interests of the district, similar to that undertaken by the Resident or Travelling District Instructors for Farming.

1. As a beginning, a Travelling Instructress in Housekeeping might meet a class of women arranged for by a Women's Institute, or other similar organization in the locality, one half day per week for a term of 20 weeks.

The other half of the same day the Travelling Instructress might carry on work with the girls and teacher in the school (Elementary, Intermediate or High) of the locality.

2. They should be connected, when necessary, in the capacity of co-ordinators, with the Housekeeping-Projects carried on at home by pupils attending the Intermediate Rural Schools and the Rural High School.

3. These Instructresses should provide demonstration lectures in Cooking and Housekeeping work, chiefly as a means of directing public attention towards channels along which systematic educational work could be conducted.

4. As soon as practicable, they should be associated with the Short Courses of a County or District Housekeeping School in the country or a Middle Housekeeping School in a town.

As soon as practicable, they should be associated with the work of Neighborhood Improvement Associations similar to those arranged for by the Committee on Lands of the Commission of Conservation.

It is important to bear in mind that there is an essential and fundamental difference between the kind of instruction and demonstration suitable for the women and that which would be advantageous to the girls in school. Practically what is said under "Adults and Young Pupils" on page 350 applies here.

After the first year or two, more than one Instructress would be required for an ordinary County area.

This matter is discussed more fully in the Chapter on Classes (or Schools) for Housekeeping.

SECTION 8: COUNTY OR DISTRICT AGRICULTURAL AND HOUSEKEEPING SCHOOLS.

These schools would serve the rural population to some extent as the industrial population of the towns would be served by the Middle Technical Schools for apprentices, skilled workmen and foremen and superintendents.

Courses: One or two years and also short courses of from one to three months for special subjects and industries. The courses would provide for a series of experiences in proper sequence, arranged to enable the student to acquire, (1) a wider knowledge of the principles underlying the systems, methods, operations and processes of their special occupation; (2) a wider range of knowledge and skill in the actual management of soils, crops, live stock products and homes, in the use of machines, tools and utensils, and in the making of things.

It is necessary to distinguish between the kind of instruction and demonstration for those who are practically adult pupils, and who have had considerable experience and practical work, and the kind of educational help to be given to pupils at Intermediate Rural and Rural High Schools. When the adult pupils

meet the Instructor they have had considerable experience in the doing of things and know the "How" of farming operations. They need instruction, information and guidance to enable them to understand the "Why" of farming operations, and require suggestions, explanations and information concerning methods of management and the principles that underlie systems and methods of farming, such as preserving fertility of soil, selection of seeds, controlling weeds, rotation of crops, keeping live-stock, etc.

On the other hand it is desirable that the young people at the Intermediate Rural and Rural High Schools should work out problems in Farming-Projects as part of the course. To them the teacher's main helpfulness would come from giving the work to be undertaken as a Farming-Project a didactic or educational setting, directing the sequence in which different Farming-Projects should be taken up, and indicating whence the necessary information might be obtained. It is better in the case of young pupils that they should dig it out for themselves than that they should have full information presented in a pre-digested state in a lesson package.

These County or District Agricultural Schools would be residential schools, and wherever it was practicable arrangements might be made to let the Young People's Social Service Schools occupy the premises at such times of the year as they would not be in use for the regular courses.

These schools would be suitable places at which to provide short courses and special courses in such branches as Dairying, Fruit, Vegetable and Flower Growing, Poultry-keeping, Bee-keeping, etc.

The classes and courses at these County or District Agricultural Schools would be much like the two year courses given at the present time at the Agricultural Colleges in Canada. An essential difference would be that the courses would not be framed for the purpose of preparing students to go on with the College education in agriculture, but would be specifically directed to qualifying those who took them to carry on the work of farming. (See Reports on County Schools at Menomonie, Wis. and Menominee, Mich. pages 324 and 328).

SECTION 9: YOUNG PEOPLE'S SOCIAL SERVICE SCHOOLS.

The People's High Schools of Denmark have supplemented the general education of the Elementary Schools. Their object has been to develop social and patriotic qualities of a high order in individuals and communities. The Agricultural Schools grew out of them, and they help to increase the attendance at all the Vocational Schools. They are regarded by the Danes themselves as among the chief factors in conserving and promoting national prosperity and strength.

They are schools in which the pupils are in residence. The young men attend during five months in winter; the young women during three months in summer.

The schools, in most cases, are owned and carried on by private individuals under the supervision of the State. They receive small subsidies from the Government. They charge fees. A large number of Scholarships provided by the State are available to young men and women. These Scholarships provide about one half the total cost to a student for fees, which include board, living accommodation, etc. Ordinarily as many as one half of the pupils attending a school may be there on Scholarships.

There are about 70 People's High Schools in Denmark. It is estimated that about 7,000 young people attend them annually. That is equal to about one in every five of all the young people who come to 18 years of age annually in the rural population.

It would appear to be highly desirable that schools of this type should be established for the rural population in Canada. A beginning might be made by providing courses for young women at a few existing institutions, such as Agricultural Colleges, or other residential schools or colleges during summer vacation periods.

They might also be organized in connection with County or District Agricultural and Housekeeping Schools as under Division V.

To qualify for admission the candidates should be between 18 and 25 years of age and have educational attainment and character to the satisfaction of the Principal or a Committee on Admission.

The courses would be from three to five months, and the young men and young women would not be in residence at the same time.

The courses should be arranged and given for the purpose of cultivating and developing a sense of responsibility for life and its opportunities, social efficiency, public spirit and devotion to the country.

Emphasis should be laid upon Canadian and British History, Literature, Ability to use Books, Singing, Physical Culture and Social Service in the community. In this connection see extended Report on People's High Schools of Denmark in Part III).

SECTION 10: SCHOOLS FOR AGRICULTURAL APPRENTICES.

Such schools on the Continent of Europe, in Ireland, and to a limited extent in England, pay particular attention to the training of pupils in manual dexterity and familiarity with the ordinary operations of farm work, such as ploughing, seeding, stacking, threshing, etc. The report on the Agricultural Apprentices' School at Clonakilty, in Ireland, gives as full information as may be necessary in this connection.

Only in the portions of Canada where settlement is comparatively new, are Farm Schools for the purpose of teaching the ordinary farming operations necessary. In the older districts, before a pupil is admitted to the County or District Agricultural School, he should have spent long enough at practical farm work to have learned all the operations thoroughly. At the same time it is

to be remembered that the actual practice of farm work in many parts of Canada is greatly below the standard of ordinary practice in England, Scotland, Germany, France and Denmark. The remedy for this state of affairs can only be gradual and comparatively slow. It may perhaps best be brought about through the co-ordinated Farming-Projects in connection with the Intermediate Rural Schools and the Rural High Schools. The influence and instruction of the Travelling Instructors would doubtless also have a marked effect on the skill and effectiveness with which the farm work is done.

Farm Schools.

The proper place at which to learn farming is a farm, managed as a business concern to provide a living and competence for the owner or worker. Farm Schools, where young men would learn how to do the work of farming and the methods of management, would be advantageous for people who have come to Canada from other countries without any experience of farm work under conditions similar to those of Canada or with implements and tools like those used in Canada. Particularly in the districts which are being settled by those who come from countries whose climatic or soil conditions and farming methods are different from those of Canada, it would be advantageous if a farm such as an "Illustration Farm" could be designated to receive such people for short courses, lasting from a week at a time up to a longer period, according to their needs.

The Commission recommends for such districts an Illustration Farm on a plan somewhat similar to those arranged for by the Committee on Lands of the Commission of Conservation, It might be the headquarters of a Travelling Instructor. To supplement the information and advice which such an Instructor could give on their own farms, he could meet the newcomers in groups from time to time at the Illustration Farm to give illustration and demonstration of the operations and methods of farming suitable to the district and to the resources of those who are settling in it. The waste of time which often occurs, the loss of crop which sometimes ensues, and the disappointment for a period of one or more years which frequently comes to the beginner, might be in a large measure prevented. Whatever would accomplish that would be of economic advantage to the whole community, not merely from the immediate saving and prevention of loss, but from the ability, knowledge and spirit resultant in these new settlers. The benefit would be to the individuals themselves, to their community, and to the business and transportation interests.

SECTION 11: AGRICULTURAL COLLEGES.

The Agricultural Colleges in Europe do not differ from Canadian Agricultural Colleges in such a way as to make it necessary or useful to give outlines of their courses in detail. One outstanding difference inheres in the fact that the Canadian Agricultural Colleges have professedly aimed to educate young men

to go back to the farms to carry on farming there. They claim credit for the extent to which they have accomplished that. On the other hand, the Agricultural Colleges of Europe definitely profess to train young men for professional service in connection with agricultural and rural life.

It appears to the Commission that the time has arrived when a similar aim and course should be followed at the Agricultural Colleges in Canada. The need for capable and thoroughly trained men is already so great that the present capacity of the Agricultural Colleges would not suffice to meet it for several years to come.

TO TRAIN PUBLIC SERVANTS.

To meet that need, it appears to the Commission that the Agricultural Colleges maintained by public funds should devote themselves chiefly to the education of those who would serve the rural community. Under present conditions it does not seem probable that any large percentage of the working farmers can be spared from their occupations or can have opportunity to take a full course at an Agricultural College. The helpfulness of the Agricultural College can be carried to every community through the labors, knowledge and character of men and women who are trained at the College for professional service; and it can best serve the rural population through the education of such men and women.

The training and the education of the practical working farmer should be provided for in the Elementary School, the Intermediate Rural Classes, the Rural High School, the County Agricultural School, and by short courses at district centres, all of which should be easily accessible to him. The advantage to the practical working farmer who can take a full course at an Agricultural College will be largely of a personal character for his own benefit.

This is all in line with the systems of Industrial and Technical Education for industrial and technical workers in Germany and other countries. The working mechanic and also the foreman, in the workshop or factory, receive their education at the Continuation Schools, and at the Lower and Middle Technical Schools. Only those who are to become foremost leaders and directors of industry in a large way, and those who are to teach, take the full course in a Technical College.

This is also in accord with the methods followed in Denmark and Germany for the education of farmers and rural communities.

TRAINING AGRICULTURAL TEACHERS IN GERMANY.

In Germany the training of teachers is recognized as essential for every order of instruction. The teacher of any practical branch must add to his professional or trade experience training in the art of teaching before he can secure recognition. The staff of itinerant lecturers maintained by the Agricultural Department in the interests of the farmers must have in addition to the usual qualifications, ability as popular speakers and readiness in discussion. The official regulations in regard to the preparation of teachers of agriculture are very explicit.

There are in Prussia two well known pedagogical seminaries for training teachers for this work—one at Hildesheim and the other at Weilburg. The latest official regulations on the subject provide that after April 1, 1911 no one shall be appointed as Professor of Agriculture, even in the Elementary Schools of Agriculture receiving State grants, unless he possesses certificates proving (1) that he has at least the general education required for those who are admitted to the military service of one year; (2) that he has had four years of practical work in agriculture under proper supervision; (3) that he has pursued for three years the higher course in agricultural studies in a University or in a Technical High School, and that he has passed the examination for a Professor of Agriculture; (4) that he has successfully followed a professional course in a Normal School.

Training Experts and Leaders in Ireland.

Frequent reference has been made to the policy and methods followed in Ireland. The plan of the Irish Department of Agriculture and Technical Instruction for training leaders is recommended to Canadian authorities. The Irish Department had the advantage of being created after a thorough and intimate study of the systems of the leading European countries. It was organized in such a way as to enable it to give effect to the best that had been learned from these countries. After some 12 years of experience, with a reasonably free hand given to eminently capable, highly trained, public-spirited and unselfish officials in developing its work, what is found in the Department in Ireland now includes much of the best which the Commission found in Europe. It is not meant by this to intimate, or give rise to the inference, that the educational attainments of the Irish people, in that brief period, bring them abreast of those in Germany, France and Denmark from whom they learned the lessons which they have put to such good account.

The plan of the Department whereby men are trained up through the Albert Agricultural College at Glasnevin and the Royal College of Science at Dublin is providing a supply of competent experts. The courses for women through the Munster Institute at Cork and the Central School of Domestic Economy at St. Kevin's Park, Dublin, furnish trained women teachers.

The Training of Instructors and Teachers in England.

In England the authorities are active in planning for and providing for the further preparation of teachers of agricultural subjects. An official document of the Board of Education from which quotations have already been made says:

(i) *Agricultural Instructors.*

70. It is obvious that the provision of the scheme of rural education set out in the foregoing chapters depends upon an adequate supply of properly prepared teachers. First of all it is necessary to consider the supply of highly educated men who can act as the expert staffs of the Agricultural Institutes and as instructors in the Farm Schools. The difficulty of getting good men

for such posts is a very real one. This is partly because the salaries offered by County Education Authorities are too low to induce men to prepare themselves for county work or to accept county posts when better pay is offered for Indian and Colonial appointments, and partly because the means of preparation available are not in all cases suitable for the purpose. The preparation for the more important posts should be obtained at an Agricultural College or a University, and should include a thorough grounding in the sciences underlying agriculture, practical experience in the branch of agriculture which is to be followed, and practical instruction in science as applied to that branch of agriculture. With the recognition of nearly all the Agricultural Colleges as University departments, and with an increase in their financial resources, there is reason to believe that a sufficient supply of adequately prepared men can in future be provided, and it now rests with the County Education Authorities (1) to offer facilities to promising students by scholarships to prepare themselves as experts and (2) by offering adequate salaries to hold out prospects of sufficiently remunerative employment.

(ii) *Rural Science Masters.*

71. If work * * * is to be developed in rural Secondary Schools, science masters will be needed who possess a practical knowledge of biology in addition to chemistry and physics, together with such a knowledge of agriculture or horticulture as will enable them to give a rural bias to their teaching. Suitable teachers have been secured in several schools by the appointment of men who have taken their science course in the Agricultural Department of a University. In other schools, science masters who possessed no agricultural knowledge have attended vacation courses at the Agricultural Departments, such as the course held at Cambridge during the summer of 1909, nearly half of the students of which were teachers in Secondary Schools. It is to be hoped, on the one hand, that the Agricultural Departments, remembering that they must depend largely upon the rural Secondary Schools for a supply of well prepared students, will provide both appropriate courses for intending science masters and summer courses for existing science masters, and, on the other hand, that Local Education Authorities and Governors of rural Secondary Schools will provide facilities and encouragement to science masters to take advantage of these courses.

Findings of the Rural Education Conference.

More recently the Rural Education Conference issued a Report on the Qualification of Teachers of Rural Subjects. The chief findings of the Conference are in the concluding paragraph of the Report as follows:—

13. In our opinion there are several ways in which the difficulty in connection with increasing the supply of teachers properly qualified to give instruction in rural schools might gradually be overcome:—

(1) The Training College course might be extended for all students to at any rate three years so as to allow of their acquiring the special knowledge necessary in the third year. This third year need not necessarily be consecutive with the first two years.

(2) Special courses in rural subjects might be included in the curriculum for bursars and other intending teachers at rural Secondary Schools. In many cases such courses would be equally beneficial to all the pupils in the school.

(3) Local Education Authorities might be encouraged to provide systematic courses of instruction of a suitable character through which as many as possible of the teachers in rural Elementary Schools might be passed. Such courses would be held most conveniently, under the supervision of the county staff teachers referred to in the first Report of the Conference, on Saturdays, lasting over a period of two years, and in conjunction with these Saturday courses, further courses of two or three months' duration might be arranged at an Agricultural or Horticultural College or Farm School, the places of the teachers being filled temporarily while they were undergoing this further training.

(4) The pay of teachers in rural schools might be brought up to a level more nearly approaching that which obtains in the towns, and greater opportunities of promotion than they at present enjoy might be given to them. If this were not feasible, special remuneration should be given by Local Education Authorities to specially qualified rural teachers.

14. From the evidence which we have received we are convinced that it is not at present possible for county Education Authorities generally to undertake the responsibilities referred to above to any large extent for financial reasons, and because of the feeling prevalent among ratepayers that the training of teachers is a national question rather than one for each county to undertake for itself.

We therefore recommend—

(1) That the length of the ordinary Training College course should be extended by one year, during which teachers would be able to specialize. This third year need not necessarily be consecutive with the first two years, and those teachers who desire to take up rural subjects during this period might be allowed to do so at University or Agricultural or Horticultural Colleges or Farm Institutes.

(2) That all county Local Education Authorities should be required to provide for their existing teachers, or for such future teachers as have not attended a Training College Evening, Saturday or Vacation classes, and, in connection with these classes, courses of two or three months' duration at an Agricultural or Horticultural College or Farm Institute where the teachers would receive free instruction and their ordinary pay.

(3) That Local Education Authorities should encourage rural teachers, both head teachers and assistants, by assimilating their pay more nearly to that obtaining in the towns.

(4) That the curriculum of rural Secondary Schools should be modified to include special courses in rural subjects for bursars and other intending rural teachers.

(5) That increased grants should be given by the Treasury to county Local Educational Authorities to enable them to carry out the suggestions which we have made in (2) and (3) of this paragraph.

Preparation of Teachers of Agriculture in Agricultural Colleges in the United States.

The Commissioner of Education in his Report for 1911 says:—

The introduction of instruction in agriculture into the school curriculum has created a greater demand for teachers with special training for the work than can at present be supplied. While agriculture as a high-school science is being rapidly rounded into pedagogical form, it is yet so far in the experimental stage of its development that teachers with special training are essential. Probably no factor has had more influence in retarding the introduction of instruction in this subject into the public schools than the lack of instructors properly qualified with training in both pedagogy and in technical and practical agriculture.

The majority of such teachers must be supplied by the State colleges of agriculture and mechanic arts. To encourage these institutions to prepare special teachers of agriculture Congress in the Nelson amendment to the appropriation bill for the Department of Agriculture approved March 4, 1907, providing further aid to the colleges of agriculture and mechanic arts established under the provisions of the land-grant Act of 1862 and receiving the benefits of the Act of August 30, 1890, added the proviso "that said colleges may use a portion of this money for providing courses for the special preparation of instructors for teaching the elements of agriculture and the mechanic arts." Under this Act each State is now receiving annually for the benefit of its college of agriculture and mechanic arts the sum of $25,000.

"A special inquiry was made of these institutions by the Bureau of Education during the past summer to determine what each is doing to prepare special teachers of agriculture. There are 50 of these colleges, not including the separate institutions for colored students; 12 of them are offering no special courses for students preparing to teach, although many of their graduates with no preparation but their general college course and technical agriculture courses have become instructors in agriculture in secondary schools; 3 of these offer summer-school courses in agriculture for elementary teachers. 13 others, having already a department or school of education when the Act of Congress was passed, now allow students in the agricultural courses to elect certain courses in education. 10 others have added courses in psychology and general education, and 13 have added departments of agricultural education, which give courses in methods of teaching agriculture and in school agriculture as well as in general pedagogy. 9 offer special one or two year courses for teachers of agriculture, and 30 conduct summer schools offering courses in agriculture for elementary teachers. The departments of agricultural education in many cases are giving special aid to instructors in public schools teaching agriculture, and are also giving special instruction in agricultural pedagogy and agriculture for teachers in summer schools. Among the 17 institutions for colored students, Hampton Institute (Virginia) is the only one preparing special teachers of agriculture; 8 others require pupils in their normal course to take an elementary course in agriculture.

An Extension in Ontario.

In August, 1912, a circular was issued by the Department of Education of Ontario, setting forth the recent provision made in that Province to increase

the number of persons competent to serve as Specialists in Science and Agriculture. The first three paragraphs are as follows:—

COURSES AND EXAMINATIONS FOR THE DEGREE OF B.SC. (AGR.) AND SPECIALISTS' CERTIFICATES IN SCIENCE AND AGRICULTURE.

Under the present scheme for the advancement of Agricultural Education, the County Representative of the Department of Agriculture is expected to teach Agriculture in the High and Continuation Schools and the Collegiate Institutes. The latter function, however, he is usually unable to perform satisfactorily, partly owing to the pressure and importance of his duties as representative, and partly to the difficulties connected with arranging for his classes in the time tables of the Schools. The experience of five years has shown that in order to secure for the subject of agriculture its due share of attention, the teacher of agriculture must be a regular member of the staff. For some years at any rate not all the time of such teacher would be taken up with classes in agriculture, and accordingly, at the request of the Minister of Education, the Universities of Toronto, Queen's and McMaster have established the new degree of Bachelor of Science in Agriculture [B.Sc. (Agr.)] the course for which covers four years, the first two being taken at the Uuiversities and the last two at the Ontario Agricultural College, Guelph. These courses provide a good general education as well as a special knowledge of both science and agriculture. In order, also, to increase their knowledge of practical agriculture, candidates for the degree will be expected to work during the summer vacation between the third and fourth year's course, either on the College farm or on some other farm in the Province of Ontario which, in the opinion of the President of the College, is well managed. The conditions under which this work is to be done may be ascertained from the President. An outline of the courses, as well as the regulations governing them, is given below; full details will be found in the Calendars of the College and the aforesaid Universities.

The degree B.Sc. (Agr.) the Department of Education will accept as the academic qualification for a Specialist's Certificate in both Science and Agriculture and for a Public School Inspector's Certificate. The Specialist's Certificate will be granted after a year's professional training at either of the Faculties of Education, and the holder will be qualified to teach both Science and Agriculture in a High or Continuation School or a Collegiate Institute. Under this new scheme, the County Representative will continue to discharge his duties as such, and will, in addition, conduct, under the School Board concerned, classes for farmers and farmers' sons throughout the county, while the duties of the holder of the new Specialist's Certificate will be confined to the regular Secondary School Classes.

With a view to furthering the success of this scheme and thereby improving the agricultural teaching in the schools, the Government will give, at the end of each of the two years taken at the Agricultural College, a scholarship of $100 to each candidate for the degree who passes the final examinations of the year and is recommended therefor by the President of the College. Moreover, as soon as the new class of specialists is available, the Government will make liberal grants for the encouragement of Secondary School Classes in Agriculture, in the form of contributions to their maintenance and of additions to the teacher's salary. The aforesaid payments to teachers will, however, carry with them an obligation on the teacher's part to teach for at least two years in the Province of Ontario; but, as in the case of similar grants made by the Department of Education, the return of a proportionate amount of the total will release the teacher from this obligation.

Experimental Unions and Students' Associations.

One of the means whereby the Agricultural College can continue to affect the education of the ex-students, and through them the progress of agriculture in the locality, is by keeping in touch with them. That may be done through Students' Associations and Experimental Unions, such as exist at the Ontario Agricultural College, and by other means. In the beginning, such Students' Associations require to be fostered by the College; after the ex-student body becomes numerous enough, the Students' Association can take care of its own affairs, and serve the College in advisory and other capacities in most helpful ways.

Travelling Scholarships.

In France, Germany and Denmark it is the custom for sons of farmers to travel for information and to observe and learn the methods of the best farmers in different districts. Much is made of that means of instruction. In Denmark the Commission met an excursion of small farmers to the Husmand School at Ringsted. In this connection it is worth while to consider what has been done by the Royal Agricultural Society of Denmark as reported in Part III.

In Canada excursions to Agricultural Colleges and Experimental Farms have awakened much interest in the work of these institutions; but the time devoted to the visit as a rule is all too short to enable visitors to derive full educational benefit.

Real Scarcity of Trained Men.

At the present time the supply of competent men obtainable as Instructors in Agriculture is entirely inadequate to meet the demand. It is important that thoroughly trained men should be available. Men for this educational work need liberal education and practical experience of work similar to that of the department which they are to direct. Their general education should give them a good grounding in the natural sciences, particularly in their relation to the science and art of agriculture. They should have a good knowledge of technical and practical agriculture and farm practice, and have sound acquaintance with the important questions in economics and sociology, as applicable to rural communities. It is also important that they should have a good knowledge of the art of teaching and the underlying principles of it.

It would seem necessary that the District Instructor should be a graduate of an Agricultural College or have the education of a Rural High School and be a graduate of the Science Department of an Arts College. The qualification for a teacher in a Rural High School or a County or District Agricultural School should not be less thorough and wide.

The First Duty of Agricultural Colleges.

When the Agricultural Colleges devote far more attention to the training of men and women who will become teachers, instructors and executive officers in connection with the organized system of agricultural education, it will not be necessary and it may not be advantageous for them to give up their 2-year courses and shorter courses.

The holding of short courses in each Agricultural College would continue to attract to the College large numbers who might not attend short courses in their own locality, and others for whom more advanced instruction could be provided at the headquarters.

It is not suggested that the Agricultural Colleges should drop any of the work they have been doing, but that each College should as a first duty direct its efforts to provide suitable courses for men and women required to fill

the professional or official positions in connection with the further development of agriculture and agricultural education.

It would seem desirable that the 4-year courses should be specially for those who are being educated to render professional and continuous service in some public capacity; that the 2-year courses should qualify men and women for public work or to return to their farms and homes; that the 1-year courses should serve also those who are to return to their farms, and those who are to occupy public positions requiring long practical experience and acquaintance with farm management, in connection with county work and Illustration Farms.

SECTION 12: ORDER OF PROCEDURE.

Rural Elementary Schools.

The question of prime importance is to get the teachers and courses of the Rural Elementary Schools faced aright. A good deal is being done in several Provinces, notably those which have Agricultural Colleges and provide special courses for rural teachers, but years of time will be required.

Intermediate and Rural High Schools.

Early efforts should be made to establish or extend Intermediate Rural Classes (or Schools) and suitable Rural High Schools for pupils of both sexes from 13 years of age upwards.

Resident or Travelling Instructors.

Resident or Travelling County or District Instructors for Farming and Housekeeping should be provided as soon as is practicable. These Instructors would carry on work similar to much of what is undertaken at present by District Agricultural Representatives in Ontario and Quebec. The character and extent of the work would be adapted to the conditions of the district and should follow along the lines indicated in this Chapter. As soon as provision is made for Intermediate Rural Schools or Rural High Schools the Instructors should be associated with them; they would be particularly useful in helping to co-ordinate work on the farms with the work at the schools—the Agricultural Projects with the Educational Projects.

It would be an advantage, and it has almost become a necessity, for the County or District Instructor to have both suitable headquarters and an assisting staff adequate in numbers and efficient in qualifications.

As soon as the County or District Instructors could be associated with Illustration Farms, such as those arranged for by the Committee on Lands of the Commission of Conservation, it would be feasible to develop the various divisions of the work to much greater advantage. The Neighborhood Improvement Associations, which co-operate with the expert in the development of the Illustration Farms, would be good local bodies with which to work.

County Agricultural and Housekeeping Schools.

Concurrently, a beginning should be made in the establishment of County or District Agricultural and Housekeeping Schools for young men and women from 17 years of age onwards. These would be somewhat similar in purpose and organization to the Danish Agricultural Schools and the County, District or State Agricultural Schools of the United States. Of these latter there are now more than 100, located in 17 different States which support them in whole or in part. They are distinct from the Agricultural Colleges. Two features distinguish these County or District Agricultural and Housekeeping Schools. The courses are short, each complete in itself and directly and specifically vocational for those who have already had a few years of experience in practical work; and the Schools are residential.

Training of Experts.

Particularly from the action of Germany, France, England, Ireland and the United States, it is evident that the State as a whole regards a supply of thoroughly trained and competent teachers, specialists and leaders as a prime necessity for the promotion of agricultural education and the continuous betterment of agriculture and rural conditions.

While the Commission recognizes the excellence of the work being done at the several Agricultural Colleges in Canada at the present time, it is of opinion that extensions of their work are required to meet the growing needs of the agricultural population, and to be ready for the Provisions recommended for Education for Rural Communities. These extensions should be provided for at once in the following directions:—

1. Courses for the preparation of teachers qualified to carry on the science work and practical work in connection with Intermediate Rural Schools, Rural High Schools and County or District Agricultural Schools.

2. Courses for the purpose of preparing District Instructors who, in addition to technical and practical instruction in agricultural work, would receive training in the art of teaching and in the administration of affairs in rural communities.

Organization of Local Rural Development Boards.

While these matters are in progress for the training of suitable men in sufficient numbers, at the Agricultural Colleges and elsewhere, for directive positions and as teachers and instructors, the organization of Local Rural Development Boards should be gone on with.

The first steps to be taken in a County, after the formation of a Local Rural Development Board, would be the making of a Census Survey of the numbers, ages and previous education of the young people needing further education. Early in its work of investigating and planning, the Local Development Board should obtain the advice of an expert or experts, preferably by means of personal conference after having gone over the ground.

Then a statement of a proposed plan of the *Development Service* with the *Budget* could be sent on to the Provincial Authority. After that, experience, discussion, counsel and co-operation would make the path to follow plain and clear.

In this way Canada could bring into full operation a system of instruction for the whole rural population more complete than has been found in any one country, but not less thorough than is required by Canadian conditions.

CHAPTER X: EDUCATION FOR HOUSE-KEEPING OCCUPATIONS.

INTRODUCTORY.

It cannot be insisted upon too much that the occupations of the people have a far-reaching influence and effect on the quality of national life. The homes are the units on which civilization is based and out of which it grows. For every reason it is important that the girls and young women should be given a chance to develop vocational ability for housekeeping and homemaking.

The influence of the homes on the children is direct and continuous. Good homes minister to the welfare of the people by ensuring conditions under which the children may be healthy, wholesome and happy, and may be directed towards the exercise of right ambitions and aspirations. The effect of the homes on the level of the community is like the influence of the moon on the level of the sea. While individual achievement in any one direction may raise the person to the top, the crest of the wave is only a little above the general level ordained by gravitation and the tide. Good homes well-kept keep the tide of life high for the whole of the community and the State.

Other Countries are Doing Much.

In European countries much attention has been given in recent years to the question of the vocational education of woman, particularly for housekeeping and homemaking.

In England and Scotland, lessons in domestic subjects are provided for in elementary and secondary schools, and also in a number of special Polytechnics and Central Institutions, particularly for the training of teachers and leaders.

In Ireland much attention has been paid to this branch of vocational education by the Department of Agriculture and Technical Instruction. A Central Training School for Teachers in Domestic Economy subjects is maintained at St. Kevin's Park near Dublin for those who are to teach in urban communities. Those who are to teach in rural communities receive their training at the Munster Institute near Cork. The School for Girls at Loughglynn has some suggestions of value for rural communities in Canada.

In Denmark the provision of Schools of Housekeeping is more recent and less complete than in some other countries. The report of the School of Housekeeping near Askov contains information that might be useful to rural communities in Canada.

In France special courses are provided for girls from 11 and 12 years of age onwards; and the vocational education of girls toward housekeeping is everywhere emphasised.

A statement of some of the provisions in Germany is given in the report on that country. In the Kingdom of Prussia alone there are 50 Stationary

Housekeeping Schools, 41 Itinerant Housekeeping Schools, and 3,781 Rural Continuation Schools where Housekeeping is taught.

In the elementary schools of Switzerland much care is taken to instruct the girls in sewing, knitting, darning, crochetting and mending. In the schools of some cantons from 6 to 8 hours per week are allotted to these branches during at least four years.

The United States has been regarded for many years as leading in the matter of the vocational education of women. If there be any respect in which a comparison of merits might be made to the credit of Europe, it is in regard to the training and qualification of those who are appointed as teachers. The European countries follow the practice of a prolonged and thorough training of those who are to teach, whereas in the United States, as in Canada, a good deal of importance is attached to resourcefulness and ability to make a good showing to the public.

In all countries voluntary associations of women have taken the lead in pressing for improvements and advances in the education of girls and women, and have thereby accomplished much. Their efforts have led to the maintenance of special classes and schools by public authorities. Most of the progress in Germany was due to the work of voluntary associations. Reference has been made in the report on Germany to the Lette-Verein and to the Swabian Women's Society and the Women's Society of Frankfurt.

The reports on all these matters, as learnt from the inquiry in the different countries are contained in Part III.

SECTION 1: THE NATIONAL COUNCIL OF WOMEN.

In Canada several associations of women, notably the National Council of Women, have been active in seeking for the inclusion of provision for the training of girls for housekeeping and home-making in the elementary and secondary schools. Mrs. Lyle appeared before the Commission at Hamilton, Ont., with others representing the Hamilton Local Council of Women. Her statements may be taken as representative of the attitude and desire of other women who testified before the Commission. Some of the main features of her evidence are as follows:—

In a city like Hamilton, if the early training of the schools is to be fruitful of good results, there should be classes where girls, who do not go to the Collegiate Institute and who are obliged to earn their living, could have further instruction.

A large proportion of the girls leave school at 14 years of age when their public school course is ended, many of them going into factories and stores. The Local Council of Women would like to see day and evening classes established in the Technical School whereby girls would be enabled to continue their studies until they were qualified to enter a higher class, such as a Housekeeper's Course embracing every phase of work necessary in a well-ordered home. These classes should be open to the children of the well-to-do equally with the girl who works to earn her living; the former needs to supplement her school training as well as the latter.

The present difficulties in Hamilton are two:—

1. Many of the pupils, owing to various circumstances, never enter the Collegiate Institute. They are thus prevented from receiving the instruction given there.

2. The lack of training in domestic subjects prevents them from going to Macdonald Institute or Macdonald College.

The Local Council of Women would like to see service in the home lifted to the same plane as the profession of nursing. The Council does not believe the home should continue to be the only place for which special training is not regarded as necessary.

Domestic Service is Looked Down Upon.

As matters are at present the better class of intelligent girls prefer to go to work in stores or to become stenographers. The reasons they give for reluctance to work for wages in homes are varied, such as: "If I go to domestic service my friends will cut me"; "If in service you are looked down upon"; "I have a sister who is a trained nurse; she seems not only to keep her old friends but gains new ones, while I am regarded as an outsider."

If girls could pass the necessary examinations, and receive certificates showing their qualifications for service, as a nurse does, the Council thinks that in time it would revolutionize the household service question. At present high wages must be paid for inefficient work. The training in Domestic Science at little expense in their own town or city would produce a body of skilled workers who could command the highest wages.

To be able to engage skilled help by the day, week or month would be a blessing in many homes. In apartment houses, where there is often no bedroom accommodation for a maid, it would be invaluable. Under some such system, servants would be paid for the time they worked, and thus be enabled to take as many or as few hours for rest or holidays as they chose.

These points from Mrs. Lyle's statement are practically a summary of much that was brought before the Commission throughout Canada.

SECTION 2: WOMEN'S INSTITUTES.

In Belgium.

Perhaps nowhere else have the Women's Institutes made more progress than in the Province of Ontario. Belgium has adopted a similar scheme. These Institutes have for their objects the social, economic and moral improvement of country life. They pay much heed to the acquisition of knowledge useful in regard to farm and home work, but their field of discussion is usually the advancement of the rural life of the community. The following is taken from a statement of the Women's Institutes in Belgium by Mr. R. B. Greig to the Board of Education of England:

"The Women's Institute is an association of farmers' wives, daughters and sisters, who meet periodically for the following among other purposes: to hear lectures, read papers, and study books on professional subjects, i.e., dairying, poultry keeping, gardening and all the minor rural industries, on cooking, laundry work and dressmaking; on household sanitation, home hygiene and ambulance

methods; on the choice and care of furniture and pictures; on the rearing and education of children, and on any other means for the improvement of country life. The institutes have also a recreative side, and attention is given to music and literary subjects.

"The women work in association with the State Agronomist, the peripatetic classes, and the local schools of domestic economy. Assistance is given by the Government, under certain regulations, and the members pay a small subscription, but as the conferences and discussions are chiefly addressed by members, by teachers in State Institutions, and by others who give their services free, the expenses are not great.

"A National Committee co-ordinates all the Institutes, and one or two periodicals, notably *La Fermière*, have been created for, and are entirely devoted to, the service of the Institutes. There can be no doubt that these Institutes will exert an incalculable influence upon the social life of rural Belgium."

REPORT OF FIRST COURSE IN ONTARIO.

A beginning was made in the autumn of 1911 to provide a course of instruction in Household Subjects in connection with the Women's Institutes of Ontario. The report of the first Demonstration Lecture Course made by Mrs. C. H. Burns to the Department of Agriculture of Ontario gives information of such clearness and detail that it is presented here in full for the service of Women's Institutes when they begin to take up this matter in all the Provinces of Canada.

"If we refer back to the Convention of Women's Institutes of November 1910, those of us who were there, or who read the report of that Convention, will remember that the question was brought up at that Convention of the possibility of sending out trained teachers to give a series of lectures to the Women and young girls of Ontario, who are unable to leave home to avail themselves of a Domestic Science Course. At this Convention a committee was appointed to see what could be done towards accomplishing this object. This Committee met in May, 1911, to devise ways and means for carrying out this scheme, with the result that finally the Women's Institutes branch of the Ontario Department of Agriculture agreed to become responsible for the cost of a trial course.

Demonstration Lecture Course.

"The Superintendent of Institutes engaged the writer, a graduate of Macdonald Institute, to give a Demonstration Lecture Course consisting of fifteen lessons to a group of adjacent Institutes:—Cayuga, Dunnville, Hagersville, Canfield and Caledonia in Haldimand County, and Delhi in Norfolk County.

This group of Institutes entered into a contract with the Department of Agriculture:

To guarantee twenty-five full course members at $1.00 each.

To make the classes as large and as profitable as possible.

To make the work of the Demonstrator as valuable as possible by giving such assistance as would aid in making the work run smoothly; such as appoint-

ing an assistant who would become responsible for the opening of the room, do the local marketing, and assist in clearing up and washing the dishes.

The Department agreed to send to this group of Institutes a trained Donestic Science teacher to give a Demonstration Lecture Course in Cookery. This Course covered a period of fifteen weeks. Each Institute was given a class one day weekly until each Institute received the full fifteen lessons. The teacher instructed each local assistant in her duties, and furnished her with written directions one week in advance.

It was the teacher's duty, as well as privilege, to make an initial trip to each of the Institutes chosen, in order to organize classes, to make preliminary arrangements and to help each Institute select its lecture list.

The Superintendent suggested that where possible it would be well to have the High School girls take advantage of this Course. This plan was carried out in two towns, Dunnville and Caledonia, and necessitated having an evening class, as well as an afternoon class in both towns, because of the large attendance. This made in all eight Demonstration Lectures a week.

The classes were held in the afternoons at 2.30 or 3 o'clock, as best suited the convenience of the class, and lasted for an hour and a half to two hours. The evening classes began at 7.30.

Some of the Institutes thought it was advisable to issue course tickets to those taking the whole course of lessons. These tickets were shown on entering the hall. The secretary of each Institute, every week, regularly entered in a book the attendance of those taking the single lectures. In this way the total attendance at each class and the attendance of those taking the single lectures could be kept separate. The total membership of regular full course members from all of the six towns amounted to two hundred and forty-four (244) persons.

The Attendance was Good.

"The total attendance at the lectures throughout the course amounted to three thousand, one hundred and fifty four (3,154).

The above figures do not include any of the High School girls.

The highest attendance at any place was seventy-six (76).

The average weekly attendance at classes was thirty-five (35).

The lowest attendance was ten (10). This was at a small Institute in the country, when the roads were in a very bad condition, and where most of the members had to drive some distance to the hall. The attendance throughout the course was most encouraging, for during the fall and winter we experienced so much bad weather and bad roads that it was difficult for many to attend the classes.

The Local Management.

"It will, I am sure, be of interest to you to know how these six Institutes managed their part of the work, and how they financed their share of the expenses.

Four of the Institutes were fortunate in that they were given the use of the "Town Hall" or Council Chamber in their respective towns. This kept

down their expenses considerably. The additional expense, over and above rent for a hall, that each Institute would have to meet, was for fuel and supplies to cook with. In one small Institute, where the hall was given free of charge, the Institute members took turns in giving the supplies for each class, and any time the supplies exceeded the average amount called for, two members united in giving the supplies for that day. One member gave fire-wood as her share. In this way the cost of the Demonstration Lecture Course to the members of this Institute amounted to very little more than the price of their course tickets. This proved to be a very satisfactory arrangement for this small Institute, that had no prospect of having as large classes as the larger town; and the members said they did not feel the expense of giving the supplies in this way.

The Institutes in the larger towns, because of their larger classes, had no trouble whatever in financing their respective courses. All of these Institutes purchased their supplies, or the major portion of their supplies. Where it was possible or convenient a supply of staples was purchased, such as sugar, flour, flavoring, and any materials that would be used frequently throughout the course. By having these supplies on hand, the few extras supplies for each week were procured with less expenditure of time. Whenever the requisitions for supplies called for some trifling things, such as a few vegetables, spices, or three or four apples, some of the members donated these; and in this way the expenses were kept down to an average cost of from 60 to 65 cents per class per week.

As regards the assistant, the Institutes found it was not feasible to secure one assistant to undertake the necessary duties throughout the whole course. The Institutes arranged that two members should be appointed each week to procure the supplies for the following week, and to assist the Demonstrator in whatever way was necessary. The Demonstrator was always to leave, a week in advance, the list of supplies for the following week. This plan was most agreeable to all, and by the members so staunchly helping their presidents, no one member felt the responsibility a burden.

To carry a Demonstration through successfully and smoothly, it is necessary that the supplies are at the hall in time for the Demonstrator to arrange some simple preliminary work, and to feel assured that there is nothing forgotten.

Character of the Lessons.

"The Demonstrator begins her lesson by giving a short talk on the subject to be demonstrated. She gives the food value of the food itself, the uses of such food in the diet, and shows its economic food value by comparing it with the more expensive foods of similar composition.

The next step is a practical demonstration of cooking this food or foods, with full directions and reasons given for each step in the process. For example: one day the lesson was on Milk, Soups, Puddings and combinations, with special relation to infant, children's, and invalid diet. Suitable dishes were prepared as would carry out this idea, as, two cream soups (cream of tomato and cream of pea soups); also a milk and bread pudding, and a caramel blanc mange pudding. The lighter invalid dishes were taken later in a lesson by itself.

The audience is always at liberty to ask the Demonstrator any questions that have a bearing on the work that is being demonstrated. The members of the classes gladly and freely availed themselves of this privilege, thus adding to their own knowledge and to the general interest of the lesson.

At the conclusion the dishes that have been prepared are passed, so that everyone who wishes may taste of them.

At the close of each class the Demonstrator announces the subject for the following week.

Much of the success of this Demonstration Lecture Course has been due to the hearty co-operation of the presidents and secretaries of these six Institutes, in assisting the Demonstrator to organize the classes, in securing as many regular members as possible, and in advertising the course of Demonstration Lectures to be given. Their support and enthusiasm did not stop when the classes were organized, but extended throughout the whole course.

The special instruction received by the lecturer from Miss M. U. Watson and her staff at Macdonald Institute, Guelph, by way of planning the course and preparing the details of each lecture, was responsible largely for the marked success attending our efforts." (Mrs. Burns' Report ends).

EXTENSION IN ONTARIO.

This initial course was followed up and arrangements made for other courses in Ontario. At some points some of the High School class, or the senior girls of the Elementary School, receive domestic instruction. In that case arrangements are made with the Instructress to hold special classes for them. That is done without additional cost, except for meeting place and supplies. The Demonstration Lecture List for 1912-13 indicates rather than defines what might be undertaken to suit local needs. The following is the announcement by the Ontario Department of Agriculture:

DEMONSTRATION LECTURE LIST, 1912-13.

Each Institute concerned may select fifteen lectures from the following list.

If any Institute wishes to enlarge any one subject into two lectures in order to cover the ground more thoroughly, it may be so arranged.

The sequence of the lectures should be left to the lecturer to arrange. She will, however, defer to the wishes of the Institutes as far as the proper development of the whole series will permit.

The lecturer will place especial emphasis in all lectures upon the food value of the foodstuffs used, and upon the comparison of money value of the different foodstuffs, as related to food value.

REGULAR LIST.

Lecture No. 1. Fruit—Typical methods of cooking; combinations; different ways of serving fresh fruit.

2. Vegetables—Fresh, starchy and dried.

3. Milk—Soups, puddings and combinations, with especial relation to infant, child and invalid diet.

4. Cereals and Cheese—Various methods of cooking; their high food value compared with other more expensive foods.

5. Eggs—Correct methods of cooking; variations on methods; storage.

6. Tender Meats—Roasting and broiling; the correct cuts; food value compared with other meat cuts and other foods.

Lecture No. 7. Tough Meat—Braised dishes, stews and soups.
8. Substitutes for meat—Nuts, beans, fish.
9. Baking-powder breads.
10. Yeast Bread and Fancy Breads.
11. Cake and little cakes.
12. Puddings and Desserts.
13. Salads—Preparation of the ingredients, dressings, etc.
14. Poultry—Drawing, trussing, roasting; fricassee, etc.
15. Invalid Cookery—Liquid diet, semi-solid, etc.

OPTIONAL LIST.

1. Vegetables—fresh, starchy and dried.
2. Made-over dishes.
3. Gelatin Dishes.
4. Hot weather Foods.
5. Breakfast Dishes.
6. Fireless Cookery.
7. Frozen Dishes.

The Department prefers to have the Institutes choose the Demonstration Lectures indicated in the "regular list." If, however, there is a strong preference for one or more of the topics given in the "optional list" in place of some of the "regular" subjects, they may be substituted.

HOME NURSING LECTURE LIST.

There is also a Home Nursing Lecture List for such Institutes as prefer to have those subjects dealt with. A list of those lectures is as follows:—

1. Sick Room—Sanitation, Ventilation, care, etc.
2. Bed-making for various forms of sickness.
3. The Bath.
4. Hot and Cold Applications.
5. The Administration of Food and Medicine.
6. Emergencies.
7. Bandaging.
8. Disinfectants, their use and abuse.

There is also a Sewing Course, which consists of 7 or 8 lessons in the making of Shirtwaists and Plain Sewing. The Institutes are not required to furnish supplies for either the Home Nursing or Sewing Courses. The charge for each is the same as for the longer course in Domestic Science.

SECTION 3: MISS WATSON'S SUGGESTIONS.

The Commission obtained information of real value regarding work by District or Travelling Instructresses and Short Courses by them, from "Conversation" with Miss Mary U. Watson, Director of Home Economics, Macdonald Institute, Guelph, Ont.

The following are the main points, arranged from that source:

ORGANIZATION.

In the Province of Ontario, a good arrangement would be to take a County as an area and make arrangements with five Women's Institutes to receive demonstration lessons or instruction once a week. At each of the five places,

arrangements could be made for the Itinerant Instructress to carry on the work in the Elementary School or High School with pupils who are ready for it. Such a course might continue for twenty weeks. Once a week would seem, for the women of the Women's Institutes, often enough. Other interests would prevent the women from attending more frequently, and the time between the demonstrations would give them the opportunity to think over what they had seen and heard, put some of it to the proof, and absorb it into their own methods of work.

A second group of five Centres within the County could be chosen for the second half of the year. In that way, one Travelling Instructress would provide demonstrations for 10 Women's Institutes and 10 Elementary rural or village schools.

Each place might with advantage receive a second course, also lasting 20 weeks.

Advantage of Planning.

In providing courses for Women's Institutes, it would be advantageous to have a full synopsis or record of the information to be given during the illustration lesson. At the beginning of all such lessons for women it is desirable to give an outline of the plan which it is proposed to follow. This impresses the desirability of planning for the work of each day in advance. A general statement from the women's meetings is to the effect that planning the day's work in advance and carrying it through according to plan, in marketing as well as in inside management, saves time and brings good results.

Training and Salary.

For Women's Institutes it is essential that the Instructress should have had practical experience in housekeeping. In addition to that, unless she were already a trained teacher, she would require a course of two years at such an institution as the Macdonald Institute. If she were already a trained teacher and had had practical experience in housekeeping, a course of one year would be enough. Such women could probably be obtained at a salary of $1,000 per annum plus out-of-pocket expenses for travelling. A lower rate for the Maritime Provinces would be equivalent to a higher rate, than the salary mentioned, in the Western Provinces.

As the work would develop, such a Travelling Instructress might become a County Supervisor for Housekeeping as taught in the Elementary and High Schools.

Preparation of Teachers.

Miss Watson laid emphasis on the essential difference in the character of the demonstration lessons to be given to the women who are already employed in housekeeping, and to the girl pupils in the schools. Chiefly for that reason, she did not think that one of the women, who attended only the demonstration

course for 20 weeks, could afterwards conduct the work as a non-professional assistant to the teacher in charge of the Elementary School.

For Housekeeping work in Elementary Schools the ordinary teacher, who has come up through the classes in an Elementary School (with proper work and co-ordination of work in needlework and housework), could teach those branches in the Elementary School, but would not be so well qualified or properly qualified to carry on work in the branch dealing with foods.

The elementary teacher, after the 20 weeks' course at her school, might carry on the needlework and housework, but would not be qualified for the work on foods and cooking. After a time a headquarters in the County might be developed at which such teachers could receive supplementary training. Besides, one or more headquarters should be developed in the Province as centres for the training of teachers in Dressmaking and Millinery for small towns.

Method of Instruction.

The "How" only should chiefly be given regarding foods and cooking in the Elementary Schools, from age of 11 or 12 to 15 years; the "Why" during the High School period. The preparation of foods and serving of meals should be in this branch the culmination of work in the public schools for girls. It is a good plan to begin with simple statements, simple problems and simple situations for school effort. A good plan is to make the conditions, as far as possible, such as to lead the pupils to discover things for themselves. That applies more to the children in schools than to the adults at the demonstration lessons. Experience has proven it to be advantageous and necessary to proceed with the work very slowly at first, and to make sure that the work to be done is planned for and undertaken in the best way for educational ends. A process of unlearning is difficult and long.

Miss Watson had found text-books for the pupils of public schools to be neither suitable nor useful. By the time the children come to the High School they should be trained how to use books. The using of a textbook does not train the pupil to use a book or books; it often has quite the opposite effect.

Simple Equipment.

In the equipment for single Rural School Centres, kerosene or gasolene individual stoves may be used. The Macdonald Institute has the specification of an equipment, including covers for the desks, which costs about $70 for 12 pupils. Children should be encouraged to practise on the home stove and in home work. Hitherto the main cost in fitting up housekeeping centres has been the cost of the special table and the plumbing work.

The Home and the School.

One of the finest results from having housekeeping work in public schools is the way it keeps up the interest between the school and the home.

There would be great difficulties in making the homework of girls in this connection an integral part of school training on a plan similar to the Farming-Projects of the Massachusetts plan for Co-ordinated Agricultural Education. For pupils in or beyond the High School age, that might be feasible.

Regarding a law for compulsory attendance of girls at Continuation Classes, it would be difficult to get it passed in Ontario, but its effects, if passed and acted upon, would be wholly beneficial.

Physical Culture.

If the exercises are to be at all strenuous in mature pupils, the training should be begun while they are quite young. Otherwise the exercises for pupils from 15 to 18 years and upwards should rather be such as to give poise and grace. It is most desirable that the games and exercises should be arranged by a competent teacher, as they have an influence on the development of sets of muscles and powers. A good Physical Director would arrange for games for certain results on health and enjoyment. Much of the drill for girls in the schools at present is useless from want of plan and from want of energy in execution. Without energy on the part of the teacher and pupils, the result is about the same as that from a dawdling stroll compared with brisk walking in the open air.

Correspondence-study Courses.

Correspondence-study Courses could be provided with very great benefit to women who are unable to attend a course of instruction under a teacher. (Report of Miss Watson's suggestions ends here.)

SECTION 4: SOME CONCLUSIONS.

Elementary Schools.

The Commission is of opinion that preparation for Housekeeping should be provided for in all the courses for girls from the age of 11 or 12 onwards. Such part of the courses would be in the nature of Pre-Vocational Education for Housekeeping. Such courses are at present provided in many of the Elementary Schools in all the Provinces of Canada. They are provided in the Supplementary Courses of the Public Schools in Scotland, at many of the Elementary Schools throughout England, and in France.

Two departures from the usual form of organization may be mentioned; in Aberdeen the girls devoted 3 weeks continuously, before they left the Elementary School, to practice and training in domestic subjects. Another example was a residential school maintained by the County Education Committee at Northampton, England. In this instance, girls in the rural Elementary Schools might win Scholarships. These entitled them to a course of 3 months practical training in the County residential School for Domestic Science. The whole cost

to the County Education Committee, not including charges on capital account, was reported to amount to less than $2 per week per pupil. The School had about 30 pupils in attendance. Other County Education authorities in England have similar centres.

Secondary Schools.

The Commission is of opinion that it is desirable to provide Secondary Education for girls with particular regard to instruction and training in the preparation and serving of foods, the preparation, cleansing and use of clothing, housekeeping including ventilation, heating, lighting and sanitary administration. This might be done at the Housekeeping Department of an urban High School or at a Rural High School, with some co-ordination between the home and school work.

Continuation Classes.

The Commission is of opinion that Continuation Classes for young women, devoted to instruction and training for housekeeping occupations, should be provided in all cities and towns. Attendance at these, during at least one period per week, should be continued until 18 years of age, unless the girl is receiving some other form of education. These might be arranged for in connection with (a) the Public School System (b) a Technical Institute (c) or a separate school such as a Middle Housekeeping School.

Middle Housekeeping Classes (or Schools).

The Commission recommends that Classes be provided for:—

(a) Housekeepers who can devote one or more periods per week for a term of 3 months.
(b) Young girls who have left school and who desire training as house-workers and home-helpers.
(c) Women in domestic service or seeking to qualify for domestic service.
(d) Women employed at industrial and business occupations during the day.

Courses for those who had had experience in housekeeping would be chiefly by demonstrations, instructions, lectures and reading. Particular attention should be given, as in the German schools, to the study of costs and values, to analysis and allotment of income to different classes of expenditure, and to simple book-keeping.

The courses for those who require it should provide enough practice in Cooking, Sewing, Millinery and Housekeeping to enable them to profit in a practical way by attendance.

For those to whom it was practicable, Housekeeping-Projects in the daily work of the home could with advantage form part of the school course.

This School might form part of a Middle Technical School; but it would appear desirable to aim for a separate institution under separate management.

In carrying on the work of the School a good plan might be to arrange forenoons for mistresses in charge of their own homes, afternoons for young girls and for house servants and girls preparing for service, and evenings for those employed at industrial and business occupations during the day.

The Training of House-workers.

The Commission is of opinion that general provision should be made for the instruction and training of those who desire to qualify for service for wages in the homes of the people. Testimony was brought before the Commission from various quarters, to the effect that competent young women are unwilling to accept places as workers in homes because the terms "domestic", "hired girl" and "house servant" have come to be regarded as indicating a condition of social inferiority which they are unwilling to accept. It appears desirable in the interest of good citizenship to remove the prejudice which has thus been created, and at the same time to give the house-workers an opportunity for thorough qualification for their duties.

The Commission is of opinion that short courses of instruction and training in housework and housekeeping should be provided. These might be of from one to six months' duration. The pupil taking a course satisfactorily would upon examination be entitled to receive a certificate of competence as a "Home-helper" or "House-worker" of the first, second or third class.

Provision should be made in Continuation Housekeeping Classes to enable the "Home-helper" or "House-worker" who could not devote time continuously to such training, to cover the ground and obtain the certificate by devoting one or two half-days per week to the classes.

To meet the case of housekeepers who desire to obtain competent house-help for a portion of a day or week, or house-help which would not reside in the home of the employer, it would seem desirable to have a trial made as to whether that could be furnished in connection with a Middle Housekeeping School. If a residence were part of the institution, living accommodation might be provided at rates to cover the cost.

If a "Home-helper" or "House-worker" held a first-class certificate she should be entitled to remuneration adequate to her training and ability. Such workers would serve the community, in respect to housekeeping under normal conditions of health, in a manner somewhat similar to that of trained nurses in time of sickness. Whatever promises a remedy for present conditions in the supply of labor available as "Home-helpers" and "House-workers" is worthy of careful consideration and fair trial.

It is a trite saying that people are more moved by instincts, prejudice and fashion than by judgment. The harmful notion has spread and is spreading throughout Canada that the doing of housework, and serving as a home-helper for pay, is less appropriate for and worthy of young women than serving as office, shop or factory workers. To eradicate that should engage the efforts of women and men, who all are directly concerned with home-making and housekeeping.

RESIDENT OR TRAVELLING DISTRICT INSTRUCTRESSES FOR HOUSEKEEPING.

The Commission recommends the employment of Instructresses to carry on for the housekeeping interests of rural districts work similar to that undertaken by the Resident or Travelling District Instructors for Farming.

1. As a beginning, a Travelling Instructress in Housekeeping might meet a class of women arranged for by a Women's Institute, or other similar organization in the locality, one half day per week for a term of 20 weeks.

The other half of the same day the Travelling Instructress might carry on work with the girls and teacher in the school (Elementary, Intermediate or High) of the locality.

2. They should be associated when necessary, in the capacity of co-ordinators, with the Housekeeping-Projects carried on at home by pupils attending the Intermediate Rural Schools and the Rural High School.

3. These Instructresses should provide demonstration lectures in Cooking and Housekeeping work, chiefly as a means of directing public attention towards channels along which systematic educational work could be conducted.

4. As soon as practicable, they should be associated with the Short Courses of a County or District School or a Middle Housekeeping School.

As soon as practicable, they should be associated with the work of a Neighborhood Improvement Association and an Illustration Farm for the locality, similar to those arranged for by the Committee on Lands of the Commission of Conservation.

It is important to bear in mind that there is an essential and fundamental difference between the kind of instruction and demonstration suitable for the women and that which would be advantageous to the girls in school.

After the first year or two more than one Instructress would be required for an ordinary county area.

TRAINING TEACHERS AND LEADERS.

The Commission is of opinion that advanced education for the purpose of training teachers, instructors and leaders to serve in professional capacities, should be provided in the Colleges of Household Science and Home Economics. Such Colleges, by means of short and long courses, would prepare the teachers and instructors for the work of Housekeeping Education in cities and towns, and also educate Travelling Instructresses required in connection with the adult population in rural communities. Such courses would be similar to those already provided at some of the Normal Schools, at Macdonald Institute in connection with the O.A.C., Guelph, Ont., and at Macdonald College, Que.

In this connection it would be worth looking into the organization and courses of study at the Munster Institute, Cork, and the Central Training School of Domestic Economy at St. Kevin's Park, Dublin. There would be advantage from a study of the courses provided and the work done at the Margaret Morrison Carnegie School at Pittsburgh, Pa. Useful information would be found

also from a study of the Domestic Science, Domestic Art and Domestic Industries School in connection with Teachers' College, New York. And the highest form of training, that in the Faculty of Household Science of the University of Toronto, should not be overlooked.

CHAPTER XI: INDUSTRIAL RESEARCH.

The field of Industrial Research may not be mapped off definitely from the area in which any seeker after knowledge labors for the service of mankind. No one can tell in advance what discovery of today in "Pure Science" may be "Applied Science" in everyday affairs of tomorrow.

In the course of its enquiries the Commission learned of and looked into the work of the Bureau of Industrial Research of the Universities of Pittsburgh, Pa., and Kansas under the Directorship of Dr. Robert K. Duncan, the originator of the plan which has been developed at these two institutions. The plan provides for the creation and maintenance of Industrial Fellowships in connection with the Universities. In brief the chief features of these Fellowships are:—

(1) The University provides the laboratory accommodation and selects the Investigators (the Researchers).

(2) The manufacturer, or other donor, indicates the specific subject or matter to be investigated and provides funds to support the Fellowship for the purpose of such investigation.

(3) Any discoveries become the property of the manufacturer (or the donor of the Fellowship) subject to certain conditions, contained in the agreement between the donor and the University, at the time the foundation of the Fellowship is accepted.

A copy of the agreement and a list of the Fellowships are given hereafter.

Without forgetting the immensities of realized values and unrealized possibilities of other arrangements and provisions for Research work, the Commission considers the Duncan plan to be so suitable and adaptable to Canadian conditions that it contents itself for the purpose of this Chapter with only the presentation of Dr. Duncan's scheme in somewhat full detail.

SUMMARY OF STATEMENT BY DR: ROBERT K. DUNCAN *RE* BUREAU OF INDUSTRIAL RESEARCH.*

At the University of Kansas in 1907 Dr. Duncan entered into negotiation with an eastern corporation for the establishment of some type of co-operative work by which the corporation, with its knowledge of the art and its facilities

*This statement is summarized from Dr. Duncan's book, "Some Chemical Problems of Today," published by Harper & Brothers, 1911; and contains extracts from a paper presented by Dr. Duncan at the meeting of the Section of Physics and Chemistry held October 3, 1912, and published in the Journal of the Franklin Institute, January, 1913. Dr. Duncan's "Conversations" with the Commission on the occasion of a visit to the Laboratories at the University of Pittsburgh and the observations of the Commission while there furnished the substance of the data, but not so completely as presented here.

for large-scale experimentation, might work hand-in-glove with the University of Kansas with its large laboratory, library, and consultative faculties, for the solution of some one important problem. The corporation concerned entered heartily into the idea, and they fought it out back and forth, they representing the corporations of the country and Dr. Duncan representing the Universities of the Republic, until finally they had together worked out what appeared to be a sane, practical scheme for the betterment of American industry and of the industrialists and University concerned, as well as for the advance of useful knowledge and the public good.

The scheme, which is now in operation in both the above Universities under Dr. Duncan's management, depends for its value and acceptance upon the mutually advantageous arrangement between manufacturing companies on the one hand, and the University on the other for the adequate solution of important manufacturing problems.

Inefficiency and its Cause.

The present condition of American manufacture is one of inefficiency. Every informed manufacturer, as well as most of those uninformed, knows that he has serious problems of such importance that in the conditions obtaining today their lack of solution means imminent loss for his individual instance of the industry. It may be safely said that wherever there is the smoke of a factory chimney, there are serious problems. Any intelligent chemist might very cheerfully accept a wager to go into any factory and within three days point out problems whose reasonable solution would make large differences in the dividends of the company; and these problems can be solved only by the chemist. Many a story might be told illustrating the amateurishness which pervades American manufacture, as differentiated from its expert office management.

The reasons for this inefficiency, as it appears in waste and lack of progressive factory practice, are clear and evident. Manufacturers of the past, though practically knowing nothing of applied science, forced their way to success through sheer fighting manhood and through the application of principles which they *did* understand. First among these principles was the creation of a tariff, which has injured the efficiency of American manufacture by shutting out the competition of the efficiency of foreign manufacture working through the application of modern knowledge; by hiding the importance of, and indeed by masking, the very presence of waste and non-progressive factory practice. To the difference between the cost of labor at home and abroad there has been added, among other things, the difference between scientific efficiency at home and abroad. In proof of this Dr. Duncan cites the procession of manufacturers before the Committee on Ways and Means, who in instance after instance, either consciously or unconsciously, claimed protection because of the waste and non-progressive character of his specific instance of the industry. Furthermore, many American manufacturers found it possible to rid themselves of the necessity for efficiency through the creation of combinations for the elimination of competition. Combined with these two methods of making financial progress

at the expense of efficiency, there were large stores of raw material everywhere at hand, and the needs of a rapidly expanding and rather extravagant population which swallowed anything presented to it. Because of these reasons American manufacture flourished.

Disappearance of Foregoing Conditions.

Conditions now are rapidly changing. Every sensible man knows that the tariff on its present high pinnacle lies in an unstable equilibrium. Combinations for the elimination of competition are now illegal and ever more and more dangerous. The vast stores of raw material are now segregated into the holdings of a few men, who will release them only at an onerous and sometimes distressful rate. The increase of the population, though rapid, has not kept up with manufacturing production, and in certain lines manufacture is threatened with overproduction. In addition, economy in purchasing is taking the place of extravagance. Finally, there is a world-wide increase in living expenses, necessitating increase in salaries, in cost of materials and transportation rates, to such an extent that even in the immediate future success or failure in many manufacturing operations will depend on the extent to which the manufacturer can eliminate waste and increase the value of his product. Speaking frankly and advisedly, and within the knowledge of all, American manufacture is proceeding to a crisis from the successful issue of which only efficiency will count. Most manufacturers now understand this, some of them dimly and gropingly, yet actually.

Applied Science and Shop Jealousies.

The American manufacturer, considering him in general terms, to which there are unmistakable exceptions, does not know how to proceed in order to gain this efficiency. For the main part he is ignorant of his own factory problems, at any rate of their full extent. He does not know how to go about the obtaining of adequate chemical aid, or how to choose the chemist, or the laboratory and library facilities with which this chemist should be provided; he submits the chemist to the jealousies of foremen, and by not granting him adequate power, to the stupidity and opposition of workmen; he does not know how to gauge his progress, and consequently subjects him to intolerable conditions of suspicion, intrigue and harassment. For the above reasons 90% of so-called research work carried on in factories is many times worse than loss, because failure places the finale on the possibility of that particular factory to understand the advantages of applied science.

Manufacturers as Amateurs in Applied Science.

Though the facts above stated are valid, it must not be inferred that because of them the American manufacturer is lacking in sense and judgment; for in shrewdness, acumen and energy, he may be compared with the representative manufacturers of any country on earth. His failure in successful factory practice is due, not to lack of ability, but rather to the fact that because of his

many abilities he has so far managed to do without efficiency in his factory practice, so that when thrown suddenly into the necessity of this efficiency he finds himself outside his field of knowledge, and hence peculiarly liable to amateurishness and to the mistakes that follow it. The Keely motor and the idea of making gold from sea water are merely gross instances of the general amateurishness that pervades all manufacturing practice wherever it comes in contact with natural knowledge and modern science.

It may be said then, that the American manufacturer is inefficient sometimes to the extent of 50% of the value of his product; that he is confessedly so; and that today he knows he is inefficient, though he does not generally know this to the full extent; and that being an American, he is quick to learn and to act, and he desires help. This he can obtain by means of these Industrial Fellowships.

The practicability and value of these Fellowships come from the fact that they truly mirror the spirit of the times, which is steadily and inevitably doing away with the old age of destructive competition and placing in its stead an era of sympathetic co-operation; for men have discovered that they can do together what they could not do in conflict.

From the standpoint of the industrialist this arrangement is an immense privilege. The extraordinary facilities and powers which arise therefrom give him results which cannot be otherwise obtained, and the responsibility for obtaining these results is shifted from the officials of the company, who in most instances are wholly amateurs.

Mutual Benefits to Manufacturers, Universities and Public.

When the young men who are conducting the experiments pass over to the corporations, the Universities do not lose interest in them or in the corporations; and the result is becoming apparent that through this arrangement industrialists may learn how to apply science to practical ends. Wholly unexpected and valuable relations have also developed as the number of Fellowships has increased, in the way in which these Fellows are able to help one another; and it seems that, as their number increases, this power of discreet mutual helpfulness increases in what may be called geometrical progression. It will be understood that personal integrity is a *sine qua non* to election into these Fellowships, and hence it is in a certain sense a fraternity.

With the increase in the number of Fellowships, there has appeared an increase of mutual helpfulness of the constituent corporations one to another, with striking results. Although these corporations do not know one another, as nearly all desire no publicity in the establishment of a Fellowship, yet the business of all of them passes through the office of the Director, and remarkable opportunities for helpfulness appear and are taken advantage of, some of these opportunities being for general helpfulness to the corporations quite outside of the actual direct business of the Fellowships.

It may be said, further, that what is called in chemistry the "catalytic influence" of these Fellowships is already beginning to be felt in regard to the industrialists of the country, and as the number increases, it may be reasonably

predicted that their influence will leaven the whole loaf of American industry. As a matter of fact, they have proved to be a most efficient ferment.

The public is assured of benefit from every one of these investigations, the results of which will be published within reasonable time free to everyone to read and improve upon. While patents may be taken out at any time, as is the right of every human being, it is not generally understood as it should be, that the results of scientific investigation can reach the public only through the industrialists. Röntgen took out no patents on his discovery of the X-rays, but he did not give this discovery to the people, for it could only go into medical practice by the use of X-ray bulbs, and these were manufactured and improved by various corporations through whose factories they went to the people. These corporations, naturally and not at all improperly, placed on these X-ray bulbs all that the trade would bear. The fact that Röntgen took no money for his research simply added that much to the corporations concerned; his generosity did not make the slightest difference in what the people paid. But while industrialists may come and industrialists may go, every new significant fact hangs on forever as a permanent gift to the human race in its struggle for that unknown goal towards which it is proceeding.

A Proper University Function.

There can be not the slightest question that the establishment of these Fellowships is properly a University function, for the objects of every University worthy of the name are three:—(1) the adequate instruction of the young men and women who frequent its halls; (2) the creation of knowledge, both pure and applied; (3) the dissemination of knowledge, both pure and applied, and the rendering of service through such to its outside environment. This tripartite ideal is not to be questioned, nor is any one factor of the three any more important than the others. The University which does not devote itself to research, both pure and applied, is a dead limb on the tree of our civilization, for without research it can neither teach nor be of service. Researches carried on in accordance with these Fellowships result in new knowledge, both pure and applied. When the researches are ultimately published, it will be found that each and every one has increased the sum of human knowledge quite outside of practical ends, though the latter function does not render them any the less valuable.

New useful knowledge obtained mainly at the expense of a private corporation is surely as valuable to the human race as the academic knowledge obtained through the expenditure of millions on the part of private benevolence. Through these Fellowships a University fulfils its educational function. It can take the best brains and training of the whole country, and form them, through notable and useful achievement, into the highly specialized service which modern manufacture and the human needs of modern men require. No one who has met the young men constituting the staff of these industrial Fellowships would for an instant doubt that they would grow into men of power and influence for good. It must be remembered that they are trained men, fully half of them having already their degree of Doctor of Philosophy from the

great Universities, and that the University in giving them the opportunity of applying themselves to these highest and noblest ends is doing the highest University service.

Financial Support by Manufacturers.

Various corporations, mostly eastern, have within two years placed the sum of $26,850 with the University of Kansas for the support of eleven Fellowships, as well as prizes, apparatus, travelling expenses of Fellows, etc. The amount placed with the University of Pittsburgh is $39,700.

The investigations cover a great variety of subjects and substances, including laundering, baking, glue, soap, cement, glass-making, optical properties of glass, waste from fruit and petroleum, enamel for steel tanks, ozone, ductless glands of deep-sea mammals, abatement of smoke nuisance, composition flooring, natural gas, and a search for a new diastase.

The Fellowship on the Chemistry of Bread gives an interesting illustration of the work. The donors of Mr. H. A. Kohman's Fellowship, the National Association of Master Bakers, in recognition of the value of his other work in behalf of the association, at the termination of his Fellowship conferred upon him all proprietary rights in his process of standardizing the large-scale manufacture of salt-rising bread. Mr. Kohman discovered the efficient bacillus for its manufacture, isolated it, grew it in large quantities, and through its use has been able to turn out salt-rising bread of beautifully uniform quality at the rate of a thousand loaves a day for over a week. He has been offered large considerations for the right of this process, and on the basis of his general work and at the request of a certain corporation he has been appointed to a new Fellowship on bread at the University of Pittsburgh, yielding $2,500 a year. In recognition of Mr. Kohman's work, the University of Kansas conferred upon him the degree of Ph. D.

Copy of Agreement.

Agreement for Industrial Fellowship No.....

For the purpose of promoting the increase of useful knowledge, the University of (Pittsburgh or Kansas) accepts from.....
having head offices at.....the foundation of an Industrial Fellowship to be known as.....Fellowship.

It is mutually understood and agreed that the conditions governing this Fellowship shall be as follows:

The exclusive purpose of this Fellowship is.....
to the furtherance of which the holder thereof shall give his whole time and attention, with the exception of three hours a week, which he shall give to instructional work in the University.

The Fellow shall be appointed by the Chancellor of the University and the Director of Industrial Research; he shall be provided with a separate laboratory

and all supplies, reagents, etc., which could be reasonably expected to be in the possession of a large University, for the cost and payment of which his lectures shall be taken in lieu. The donating corporation, on its part, undertakes to co-operate with the University in this research, in providing him with its sympathy and, on prior consideration, with its factory facilities for large-scale experimentation. The Fellow shall work under the advice and direction of the Director of Industrial Research, and he shall forward periodically through the Director of Research reports of the progress of his work to.....

For the support of this Fellowship, which shall extend through a period of .....years,.....agrees to pay..... per year, payable annually in advance to the University of (Pittsburgh or Kansas), which sum shall be paid by the University in monthly instalments to the holder of the Fellowship.

Any and all discoveries made by the Fellow during the tenure of this Fellowship shall become the property of.....subject, however, to the payment by it to the Fellow of an additional consideration. This additional consideration to the Fellow shall depend upon the value of the services rendered, and shall not exceed..... The character of this additional consideration (whether royalties, stock, or what not), its amount, the time or times of its payment, shall be determined by the Board of Arbitration provided for herein. At any time during the tenure of this Fellowship the holder may, at the option of the donor, take out patents at the expense of the donor, on condition that at the time of making application therefor he assigns all his rights to the donor under the conditions of this Agreement.

At or before the expiration of the Fellowship, the business services of the Fellow may be secured by the donor, for a period of three years, on condition that the terms of such service are satisfactory to the parties at interest.

In the event of any disagreement between the donor and the holder of this Fellowship, it is understood and agreed that such disagreement shall be settled, in so far as the dispute relates to matters of fact, by a Board of Arbitration, consisting of a Representative of the University, a Representative of the Donor, and a Third Person whom these two shall select, that the decisions of this Board shall be binding upon the parties at issue, and that they shall obtain such decision before having recourse to the courts.

It is also understood and agreed that during the tenure of this Fellowship the holder may publish such results of his investigations as do not in the opinion of the donor injure his interests, and that, on the expiration of the Fellowship, the holder thereof shall have completed a comprehensive monograph on the subject of his research, containing what both he and others have been able to discover. A copy of this monograph shall be forwarded to..... .....and a copy shall be signed and placed in the archives of the University until the expiration of three years from that date, when the University shall be at liberty to publish it for the use and benefit of the public. In the event that, in the opinion of the company, publication three years after the termination of the Fellowship would unduly injure its interests, the corporation concerned is at liberty to appeal for an extension of time to the Board of

Arbitration provided for herein, which, after consideration of this appeal, is at liberty to extend the time of publication to a period which, in its belief, conserves the interests of all concerned.

Dated: Signed on Behalf of the University of (Pittsburgh or Kansas)

....

Dated: Signed on Behalf of.....

....

EXTRACTS FROM DR. DUNCAN'S PAPER*.

A careful reading and re-reading of this agreement will make it evident that it relates to four different factors, and the degree to which it harmonizes with these different factors determines its acceptability and its chance of becoming a permanent relation.

These factors are:

(a) The University.
(b) The Company.
(c) The Public.
(d) The Researcher or Researchers engaged.

(a) *The University.*

The University is fulfilling its function in increasing the sum of knowledge; the fact that it is useful knowledge does not make it any the less valuable. Furthermore, the right to publish such knowledge is assured to the University under the agreement. An additional advantage lies in the large teaching force which, in accordance with the agreements, is provided for gratuitous instructional service in teaching chemistry. Still another advantage to the University lies in the relation of this system to its graduate school. Many of the "Fellows," as they are called, already hold graduate degrees; others, junior Fellows, hold Fellowships which are advisedly provided for young men who have just graduated from their college and who are men of promise. They are carefully chosen from the best Universities and constitute, naturally, a strong element in a graduate school.

(b) *The Company.*

From the standpoint of the company, the system has gone past the experimental stage and now unquestionably constitutes a privilege; it has been demonstrated over and over that, working in accordance with this system, it is possible to accomplish results that cannot otherwise be obtained. And this is but reasonable.

The University is provided with an equipment for experimentation immeasurably larger than that in the possession of any but the fewest factory laboratories.

Equally important are library facilities, without which no research can progress. The University, as a matter of course, is in possession of the stores of past and contemporary scientific literature; factories, on the contrary, with, let us say, half a dozen exceptions, are barren of such; factory sites are not placed with a view to library facilities, and yet the lack of such facilities is undoubtedly a contributing cause to the normal failure of factory research.

Still again, the University is in possession of large and important consultat .e facilities—mathematical, physical, engineering, bacteriological, etc.—and these are, of course, freely offered to the chemical researchers working under this system.

Finally, there is about university work, as differentiated from the factory, freedom from interference, correct judgments concerning progress, and an atmosphere sympathetic to research.

All these advantages, laboratory, library, consultative, and inspirational, together with the supervision and administration of these Fellowships, the University offers gratuitously to any company having important problems offering a reasonable chance of solution, and it undertakes, as well, to surround these researches with necessary secrecy.

(c) *The Public.*

The public is largely advantaged through this system. No discovery can go to the public as a useful actuality of achievement except through some company, or, to use what in these days

*"Industrial Fellowship: Five years of an Educational Industrial Experiment," by Robert Kennedy Duncan, Sc.D., in the Journal of the Franklin Institute, January, 1913.

is an invidious term, some *corporation*. Corporations may be good or bad, or both, and the people of this country may be depended upon ultimately to take care that they are made subservient to the public good; but every useful and significant fact is a permanent good to the human race. Even today, if manufacturing waste were eliminated and full advantage were taken of significant contemporary discovery, shorter hours of labor would obtain and human need would vanish; in fact, it may be said that never until such a condition does obtain shall we pass out of our materialistic, neurasthenic civilization.

(*d*) *The Researchers.*

For the Fellows, the young men engaged in these researches, the opportunites are unique. If they do not already possess their Ph.D., they may proceed for it in the University, using as their dissertation such portion of their research as we may permit; they are provided with a stipend such as they can show that they deserve; they are given every opportunity for genuine achievement; and, what is more, a full recognition of such achievement; and finally, if they succeed in a practical way, they are assured through their bonus of a substantial, material reward.

A full list of these Fellowships as so far established in both universities, together with the subjects of Research, etc., is herewith appended.

University of Kansas Fellowships in order of Acceptance by University of Kansas.

Fellowships marked * have been completed.

I. **Laundering.*

$500 a year for 2 years.
Additional consideration 10 per cent. of net profits.
Fellow: Fred. Faragher, A.B.
January 29, 1907.

II. **Diastase.*

$500 a year for 2 years (continued 3rd year).
10 per cent. of gross profits.
Fellow: Ralph C. Shuey, B.S. (U. of Kansas).
June 14, 1907.

III. **Bread.*

$500 a year for 2 years.
Additional consideration.
Fellow: H. A. Kohman, A.B. (U. of Kansas).
April 27, 1908.

IV. **Casein.*

$500 a year for 2 years.
10 per cent. of net profits.
Fellow: E. L. Tague, A.M.
April 27, 1908.

V. **Petroleum.*

$1,000 a year for 2 years.
10 per cent. of net profits.
Fellow: F. W. Bushong, Ph.D.
April 27, 1908.

VI. **Enamel.*

$1,300 a year for 2 years.
Fellows: A. J. Weith, B.S.
F. P. Brock, B.S.
September 10, 1908.

VII. *Glass.*

$1,500 a year for 4 years.
10 per cent. of net profits.
Fellow: E. Ward Tillotson, Ph.D.
March 9, 1909. (Now in its fourth year).

VIII. **Cement.*

$1,500 a year for 2 years.
Additional consideration.
Fellow: J. F. MacKey, Ph.D.
March 9, 1909.

IX. *Varnish.*

$1,500 1st year; $2,700 2nd year; $3,900 3rd year.
Additional consideration.
Fellow: 1st year, L. V. Redman, Ph.D.
2nd year, L. V. Redman, Ph.D., Senior Fellow,
A. J. Weith, B.S.
F. P. Brock, B.S.
November 10, 1909. (Now in its fourth year.)

X. **Borax.*

$750 a year for 2 years.
Fellow B. C. Frichot, B.S.
November 29, 1909.

XI. **Ductless Glands of Deep-sea Mammals.*

$1000 a year for 2 years.
Additional consideration.
Fellow: E. R. Weidlein, A.B.
March 1, 1910.

XII. **Vegetable Ivory.*

$2,750 a year for 2 years.
$2,000 bonus.
Fellow: J. P. Trickey, A.B. (New Hampshire College).
June 3, 1910.

XIII. *Petroleum.*

$2,750 a year for 2 years.
$,000 bonus.
Fellows: F. W. Bushong, Ph. D. (Senior).
J. W. Humphreys, B.S.
April 26, 1911.

XIV. **Gilson'te.*

$750 a year for one year.
$2,000 bonus.
Fellow: W. E. Vawter, B.S. (U. of Kansas).
April 26, 1911.

XV. *Fats, Hardening of.*

$1,300 a year for 2 years.
49 per cent interest.
Fellow: E. O. Rhodes (U. of Kansas).
Sept. 19, 1912.

XVI. *Leather-Scrap.*

$1,200 a year for 2 years.
10 per cent interest.
Fellow: R. Phillips Rose, A.B. (U. of Ohio).
October 22, 1912.

XVII. *Copper.*

$1,800 a year for 1 year, $500 a paratus fund.
Additional consideration.
Fellow: E. R. Weidlein, A.M.
November 11, 1912.

XVIII. *Copper.*

$1,000 a year for 1 year.
Additional consideration.
Fellow: G. A. Bragg, B.S. (U. of Kansas).

UNIVERSITY OF PITTSBURGH FELLOWSHIPS IN ORDER OF ACCEPTANCE BY UNIVERSITY OF PITTSBURGH.

I. *Baking.*

$750 a year for 2 years.
Additional cash bonus of $2,000.
Fellow: Wilbur A. Hobbs, A.B. (U. of Kansas).
November 30, 1910.

II. *Abatement of the Smoke Nuisance.*

$12,000 first year; $15,000 2nd year.
Additional consideration 49 per cent, collective interest.

Staff in Charge.

Fellows:—

R. C. Benner, Ph. D. (U. of Wis.) (Chief Fellow).
W. W. Strong, Ph. D. (Johns Hopkins), Physicist.
J. A. Beck, LL. B. (U. of Pittsburgh), Attorney.
H. H. Kimball, Ph. D. (Geo. Wash. U.), Metereologist.
A. B. Bellows, B.S. (Mass. Inst. of Tech.), Engineer.
O. R. McBride, B.S. (Purdue U.) Engineer.
A. F. Nesbit, B.S. (Mass. Inst. Tech.) Electrical Engineer.
J. J. O'Connor, Jr., A.B. (Univ. of Pittsburgh), Economist.
E. H. McClelland, Ph.B (Lafayette College), Bibliographer.
J. F. Clevenger, M.S. (Ohio State U.), Botanist.
C. H. Marcy, Bacteriologist.
J. E. W. Wallin, Ph.D., Psychologist.

Advisory Staff.

Oskar Klotz, M.D., C.M. (McGill U.) Senior Fellow.
E. W. Day, A.M., M.D.
W. C. White, M.D.
R. T. Miller, Jr., M.D.
W. W. Blair, M.D.
B. A. Cohoe, A.B., M.D.
S. R. Haythorn, M.D.
W. L. Holman, M.D.
E. B. Lee, Architect, Senior Fellow.
Richard Hooker, B.S.
C. T. Ingham.
Richard Kiehnel.
Carlton Strong.
K. K. Stevens, B.S.
November 30, 1910; revised, June 24, 1911.

III. *On the Relation of the Pots to Glass in Glass-Making and the Elimination of "Strea."*

$1,500 a year for 2 years.....
Additional cash bonus of $2,000.
Fellow: Samuel R. Scholes, Ph.D. (Yale University).
January 25, 1911.

IV. *Baking* (Wholly Independent of but with Acquiescence of No. 1).

$4,750 a year for 2 years.
Additional consideration of $10,000.
Fellows: Henry A. Kohman, Ph.D. (U. of Kansas), Senior Fellow.
Charles Hoffman, Ph.D. (Yale University).
Alfred E. Blake, A.B. (New Hampshire College).
January 25, 1911.

V. *Glue.*

$1,200 a year for 2 years.
Fellow: Ralph C. Shuey, B.S. (U. of Kansas).
February 3, 1911.

VI. *Soap.*

$1,200 a year for 2 years.
Fellow: Paul R. Parmelee, B.S. (U. of Kansas).
February 3, 1911.

VII. *Utilization of Fruit Waste.*

$1,000 a year for 2 years.
Additional consideration of $10,000.
Fellow: F. Alexander McDermott (Geo. Wash. University).
May 12, 1911.

VIII. *Composition Flooring.*

$1,500 a year for 2 years.
1 per cent of sales for 5 years.
Fellow: R. R. Shivley, B.S. (Okla. A. and M. College).
August 15, 1911.

IX. *Crude Petroleum.*

$10,000 a year for 2 years.
Collective interest of 10 per cent.
Fellows: Benjamin T. Brooks, Ph.D. (U. of Göttingen), Senior Fellow.

X. *Natural Gas.*

$4,000 a year for 2 years.
5 per cent of industrial results.
Fellows: R. H. Brownlee, Ph.D. (University of Chicago). Senior Fellow.
Roy Uhlinger, M.A. (U. of Pittsburgh).
September 22, 1911.

XI. *Cement.*

$1,800 a year for 2 years.
$10,000 additional consideration.
Fellow: J. F. MacKey, Ph.D. (University of Toronto).
September 22, 1911.

XII. *Foods, Problems Related to the Manufacture of.*

$5,000 a year for 2 years.
$10,000 additional consideration.
Fellows: Clarence C. Vogt, Ph.D. (Ohio State University). Senior Fellow.
Harry P. Corliss, B.S. (New Hampshire College).
W. E. Vawter, B.S. (U. of Kansas).
May 20, 1912.

XIII. *Fats and Oils, Bleaching of.*

$1,800 a year for 2 years.
Fellow: Leonard M. Liddle, Ph.D. (Yale University).
May 22, 1912.

XIV. *Effect of High Potential Electricity on Chemical Reaction.*

$1,000 a year for 2 years; $300 apparatus fund.
Additional consideration.
Fellow not yet appointed.
October 28, 1912.

XV. *Discovery of Methods of Coating Steel or other Metals with Copper or other metals.*

$1,500 a year for 1 year; $500 apparatus fund.
Additional consideration $10,000.
Fellow: C. L. Perkins, B.S. (New Hampshire College).
December 4, 1912.

XVI. *Copper, Extraction of from its Ores and from Copper "Tailings."*

$1,500 a year for 1 year.
Teaching Fellow: Howard D. Clayton, B.A. (Ohio State University).
December 1, 1912.

A Basis of Progressive Success.

After the system had gotten well under way it became possible and advisable to establish Multiple Fellowships, as differentiated from Individual Fellowships. Multiple Fellowships employ the intensive services of several men under the immediate direction of a Senior Fellow, who is responsible for his juniors to the Director and his Associate. An Individual Fellowship relates to one Fellow only, who is responsible directly to the Associate Director, and through him, to the Director. Such Multiple Fellowships, for example, are K9, K13, P2, P4, P9.

While the time has not yet arrived in any one case for the publication of results, it may be said that these results on the whole have been most gratifying; indeed, the system could not have survived, much less grown, except on the basis of progressive success. Quite apart from industrial results involving temporary secrecy, it has been found possible from time to time to publish papers of academic interest; such, for example, are Tillotson's papers on the "Surface Tension of Molten Glass," Weidlein's work on "Adrenalin," or Bushong's paper on "Iso-naphthenic Acids."

From the industrialists themselves we have received a generous, broadminded trust and co-operation and the donation of many thousands of dollars' worth of apparatus in recognition of our progress.

The Fellows engaged in these researches, while they have been drawn from many different Universities and other sources, have shown a complete understanding of the high trust which they hold and have developed a spirit of mutual helpfulness and an *esprit de corps* that is invariably a subject of favorable comment from visiting colleagues.

During the five years of actual development that this scheme has undergone, any inherent weakness must surely have appeared. It is most gratifying, then, at the conclusion of this paper, to state that none of us engaged in this work is aware of any such weakness. We look forward with confidence to the ultimate establishment of this system of Industrial Fellowships as a permanent relation between Industry and Learning.

CHAPTER XII: VOCATIONAL GUIDANCE.

INTRODUCTORY.

In the administration of education, as planned to make the schools more effective in preparing the pupils for their vocations, organized efforts have been introduced for the purpose of guiding them in respect to occupation. Stress is laid upon the desirability of impressing them with a sense of the importance and dignity of work of all kinds as the foundation of individual and social welfare. Efforts are made, in many of the leading centres, to furnish information regarding trades and occupations and to give the pupils such assistance as may be furnished by a Public Body towards preparing them for such places and afterwards helping them to obtain suitable situations.

Vocational Guidance does not mean only helping boys and girls to find work, that is work of any kind. It does mean helping them to find the kind of work which they are best fitted by nature and training to do well. It does not mean choosing vocations for them. It does mean bringing to bear on the choice of a vocation organized information and organized common sense. Boys and girls choose occupations often from the ease by which fairly good wages can be obtained, without regard to whether the occupation leads towards satisfactory employment in adult life.

The body politic or society gains hardly anything by the labour of thousands of its children at the most important period of their growth and development, mainly because they are not guided into the occupations for which they are best fitted. In cases like this the employer is often as great a loser as the boy or girl who works for him. Discontent with the job, more than the wages from it, will make a boy skip from one place to another. That leads to the destruction of the sense of responsibility and the loss of any habit of persevering application from a sense of duty.

Much Co-operation is Necessary.

The co-operation between the teachers in the Elementary Schools when the children leave them, and those in charge of the Continuation Schools is desirable. It seems equally desirable that there should be some definite arrangement or connection between the Day School and the Continuation School on the one hand, and the trades and industries on the other.

The content of the Courses of Study and the kind of work done in the Elementary Schools during the final two years have a good deal to do with shaping the preferences of pupils, and directing their tastes and ambitions.

Attendance at Continuation Classes enables the School Authorities to co-operate with parents and employers toward discovering the aptitudes and abilities

of the pupils. An indication is thus obtained of the occupations for which they are best fitted, and they can be helped to get a start in them.

In this connection the reports of Labor Unions and Trade Organizations help to prevent an excessive number of young people taking Industrial Training or Technical Education for particular industries, where opportunities for employment are already limited.

In cities in England and Scotland the work of Vocational Guidance is carried on by the School Authorities in co-operation with the juvenile branch of the Employment Bureau; though the administration of these two public services is in other respects distinct and separate.

Because of the comparative newness, in Canada, of public activity in this connection, extended reports are hereafter presented indicating what is done in one place in the United Kingdom, two places in the United States and one place in Canada. Attention is also called to the remarkably effective work being done in a similar connection at Halifax, England. That reveals notable success in securing attendance at Continuation Classes of boys and girls who have left the Day Elementary School.

Necessarily in reporting on such a matter the material presented is taken from official or other authoritative sources. That regarding Edinburgh is presented first and is taken from one of the most excellent reports by Mr. McNally, Organizer of Continuation Classes, the official who is more directly responsible than any other for the work of the Educational Information and Employment Bureau.

SECTION I: EDINBURGH EDUCATIONAL INFORMATION AND EMPLOYMENT BUREAU.

The Education (Scotland) Act, 1908, which became operative on 1st January, 1909, empowered School Boards to maintain or combine with other bodies to maintain "any agency for collecting and distributing information as to employments open to children on leaving school" (Section 3, subsection 5). Thus it became possible for School Boards to use, in their discretion, moneys from the School Fund for this important purpose, and the Scotch Education Department have in two circulars, dated 27th August 1909 and 10th August 1910 respectively, pressed upon all the Scottish Boards the advisability of taking action. No special grant of money was, however, allotted for such purposes. It should be noted that the Act refers to information as to employments. The phrase might or might not be held to cover the detailed work of registration for specific vacancies.

The opening of the Edinburgh Bureau, which had been deferred until the Education (Scotland) Act came into force, took place in September 1909. The work of organizing and superintending the Bureau was entrusted to the Organizer of Continuation Classes, who had been for three years in close touch with employers in the city. It was felt that the further education of adolescents is

closely related to their employment, and that the operations of the Bureau, if properly directed, would exercise a strengthening effect on the link between the Day School and the Continuation Classes. This belief has been amply justified by the distinct increase in the number who proceed direct from the Day School to the Continuation Classes.

THE FUNCTIONS OF THE BUREAU.

The functions of a juvenile employment organization are briefly as follows:—

1. Advising juveniles as to the pursuits for which they are by ability, taste, character and education suited.
2. Informing juveniles as to the opportunities which exist in the various occupations.
3. Collecting and promulgating general information in regard to industrial conditions.
4. Registration, *i.e.* bringing into contact the employer, with a specific position to offer, and the juvenile suited for and desiring such a position.
5. The supervision, in certain cases, of the juvenile after he has obtained employment, so that he is induced to take advantage of all educational facilities pertinent to his work, and is advised as to the various steps in his industrial career.
6. Keeping the system of 'further education' in real touch with the industrial needs of the locality.

EDUCATIONAL CENSUS.

In the summer of 1910 an Educational Census was taken of the children and young persons in the City of Edinburgh with a view to determining two main points—(*a*) the actual number of young persons for whom Continuation Class arrangements should be made; (*b*) the nature of the industries of the various districts in which these young persons were then employed. The census was confined to houses of a rental of £30 per annum and less. It was ascertained that on 1st June, 1910, the number of young persons between 14 and 18 years of age was 14,988, and that of these 3,366, or 22.4 per cent, were in attendance at Day Schools; 3,948, or 26.6 per cent were attending Continuation Classes or other institutions for further study not including Day Schools; 7,674, or 51 per cent, were not taking advantage of any facilities for further study.

Calculated on the basis of the 1901 Census, the total number of young persons between 14 and 17 in Edinburgh in 1910 may be stated to be 19,094, the number receiving instruction during the day, 5,021, and the number attending Continuation Classes, Central Institutions and Private Schools, 5,758. Apparently then there were on 1st June, 1910, in round numbers, 8,000, or 43.5 per cent. of the total population between 14 and 17, who were not in attendance at either Day or Evening Classes. Almost 1,000 of these have since been enrolled in the Continuation Schools.

There are 43 occupations in the city in which more than 50 workers between the ages of 14 and 18 are engaged. These important groups of industries will be carefully surveyed, with a view to showing to what extent provision has already been made in the Continuation Schools for giving instruction in the subjects which are directly related to them, and what further organization is required to meet the necessities of occupations still unprovided for. Valuable assistance in this connection will be given by the Sectional Committees of the Advisory Council.

Continuation Classes Committee.

It was at first intended that the Bureau should be under the charge of a Standing Committee of the Board consisting of seven members, but on 21st April, 1909, the number of members was altered to five. Two years' actual experience of this arrangement has led the Board to see the necessity of conjoining the management of the Bureau and of the Continuation Classes. These two organizations deal with the same problem, the future of the child after he has left the Day School, and as the Continuation Classes are now expected to provide instruction having a direct bearing upon the crafts and industries of the district, the Board decided to form a special committee to deal with all matters relating to the conduct and control of the Bureau and the Continuation Classes.

Advisory Council—Sectional Committees.

Associated with this Committee, which is called "The Continuation Classes Committee," there is an Advisory Council comprising representatives of public bodies, trade associations, employers and educational experts. It is the duty of the Advisory Council to give advice to the Board on all matters connected with the education required for the various trades and occupations in the city and on the conditions of employment. In order that the attention of each member may be concentrated on the industry with which he or she is connected, eighteen Sectional Committees of the Council have been formed to deal with the following subjects, viz.:—

1. Printing.
2. Engineering.
3. Brassfinishers' work.
4. Tinsmiths' Work.
5. Moulding.
6. Building Construction.
7. Plumbers' Work.
8. Carpentry and Joinery.
9. Cabinetmaking.
10. Upholstery.
11. French Polishing.
12. Baking and Confectionery.
13. Tailors' Work.
14. Plasterers' Work.
15. Art.
16. English.
17. Commercial Subjects.
18. Domestic Subjects.

The Duties of Sectional Committees.

The duties of these Sectional Committees are as follows:—

(*a*) To visit the particular classes with which they are chosen to deal.

(*b*) To offer suggestions to the Board as to the equipment and schemes of work of those classes, the qualifications of teachers, and as to further means calculated to increase interest on the part of the workers concerned.

(*c*) To advise as to the general working of the machinery for placing young persons in employment and as to the conditions obtaining in the various industries.

(*d*) To make an annual report to the Board on all these matters.

The work of the Sectional Committees has been carried on with much earnestness, and valuable reports have been furnished to the Board. In this way the workshop, the counting-room, and the business establishment are brought into close contact with the school, and a definite practical bent is given to the instruction.

The following extracts are taken from the Report of the Continuation Classes Committee for the Session of 1910-11 :—

Co-operation of Employers.

A special report on this all-important aspect of Continuation Class development has been prepared by the Organiser, and copies may be had by employers and education authorities on application to the School Board Offices. Attention may be directed to the following quotations as showing the response which employers make year after year to the Board's appeal for co-operation, and the variety of ways in which this co-operation grows:—

"All that has been said in previous reports as to the admirable spirit with which the Board's advances are received, and as to the readiness with which all reasonable requests are granted, still holds good. Through the activities of the Advisory Council of the Educational Information and Employment Department, employers are being brought into close personal touch with the work of the Continuation Classes, with the natural result, that, as their interest increases, their desire to develop the organisation grows, and they come to feel that they themselves are a most necessary part of the whole system."

"Within the last two years valuable help has been given by certain employers or their representatives in the drafting of schemes of work for new trade classes, and in the drawing up of the equipment and apparatus necessary for the proper teaching of these classes. In this way the Board have learned what can be taught in the trade classes to supplement without substituting what is done in the workshop."

"Further, in the work of the Sectional Committees of the Advisory Council employers have taken a prominent part, not only in visiting the classes but also in drawing up reports and suggestions to the Board. It is believed that these Sectional Committees will help to raise the whole standard of trade and technical instruction and will do much to remove the reproach that technical education in this country is neither up-to-date nor in line with the practical needs of the leading industries."

Advertising.

A copy of the prospectus was, as formerly, sent to every pupil who had left the Day School during the previous session. The methods adopted during the four previous years for advertising the classes were continued. A throughly systematic and comprehensive visitation of employers was carried on by the Organiser, who, in the course of five weeks, made 808 calls and arranged for 91 meetings of work-people, nearly all of which were addressed by a Member of the Board as well as by the Organiser. In the course of his report on this work the Organiser states that each year all the chief employers are visited, and an effort is made to break fresh ground so far as the smaller shopkeepers and less important business people are concerned.

A detailed statement of the other methods adopted for advertising the classes is given in Appendix A of the Organiser's Report. The following steps taken for the first time in the past session may be specially mentioned, viz.:—(1) Evening meetings of leaving pupils and of their

parents were addressed in the various schools by Members of the Board during the month of February. (2) A special circular letter was sent in September to all young persons between 14 and 18 years of age who, according to the census taken by the Board's officers in June 1910, had not previously enrolled in a Continuation Class. (3) The Head Teachers were asked to use every reasonable means for putting into effect in their respective districts the suggestions of the Scotch Education Department as set forth in Circulars 426 and 433. (4) Special circular letters were issued to the employers in those trades in connexion with which arrangements had been made for giving instruction for the first time.

Informational Cards are Passed Around.

The action is as follows:—Two months before the fixed date for leaving, each Headmaster fills up, in respect of all pupils who will leave, cards giving particulars of age, physical condition, ability, attainment and employment desired. The card also contains the opinion of the teacher as to the occupation for which the pupil is suited, notes as to proposed employment and further education, and spaces for general remarks. These cards are sent in to the Education Officer, who goes through them, making such summaries of educational and physical facts as may be desired. The cards are then passed on to the Exchange Officer, who files them in a cabinet. Smaller cards containing information as to age, record of attendance and behaviour, attainments in English, Arithmetic and Intelligence, length of time in Supplementary Course, and date of gaining Merit Certificate, are given to the pupils themselves when they leave School.

Parents are Invited.

Meanwhile the fixed date approaches. The parents of all pupils leaving school are invited to an evening meeting at the school, with tea as an inducement. They are addressed by Members of the Board and by the teachers, and stress is laid on two points, viz. (*a*) that though their children are leaving school, further education of the kind appropriate to their work should be pursued; (*b*) that the children or their parents or both should call at the School Board Office some evening to receive such detailed advice as could not be given at a general meeting, and to register for employment. To these parents and also to those who do not come to the meetings a circular letter is sent. The meetings are attended by about 80 per cent of the parents concerned.

The Candidate is Interviewed.

The consequence is that large numbers of boys and girls come to the Board Office to follow up the card. The candidate first goes to the Exchange Officer's room, and receives his card stamped with reference number of the trade desired. He passes to the Education Officer's room and has a talk about his aims, his further education, and the suitability of the career for which he has expressed a preference. The parents are strongly advised to be present at this interview. The boy or girl then passes back to the Exchange Officer's room, and is definitely registered as a candidate for a particular kind of employment. The cards of

those who have made this personal application are separated from the others, and they receive priority in filling vacancies.

The Contacts with Employers.

The other side of the process now falls to be described. A circular letter is sent to all large employers in the City, informing them of the joint arrangement and requesting their co-operation. When the employer writes or telephones asking for candidates for a certain position, the register of personal applicants is first consulted (and in default of that the remainder of the register), and three or four of the most likely candidates are sent along to the employer for interview. Details of the request and also of the candidates are entered on the employer's card. Beyond the two sets (both of which are filed by the Exchange Officer, but are always open to the inspection of the Educational Officer), no other registers are kept. In the placing of pupils who have left school at either of the last fixed dates, the two officers act jointly, and when any difficulty arises as to those who left prior to those dates, they render each other whatever assistance they can.

Periodic renewal by the pupils is desirable if their names are to be kept on the personal application register.

Both the Educational Officer and the Exchange Officer make systematic visits to employers, the former to study industrial conditions, to enlist sympathy with and support for the further education of the employees, and to gain ideas for improving the Continuation Class system; the latter to bring to the employers' notice the facilities for securing suitable workers through the Exchange.

The nature and scope of the work which has been done by the Bureau since its opening on 6th September, 1909, as well as the extent to which its services have been utilised by employers, and those seeking information and advice as to further education, are fully brought out in the following statement issued by the Director in May, 1911, viz.:—

Director's Statement regarding the Work.

	For month of Apr. 1911.	Total since opening (8th Sept. 1909.)
Number of pupils reported as leaving school at or since Summer Holidays, 1909, and concerning whom Bureau Cards have been received	14	5,670
Number of above who have stated their intention to enrol in Continuation Classes	6	3,266
Number of above 5,670 who have made personal application to the Bureau for employment	115	1,920
Number of above 1,920 who have entered on an occupation.	140	1,209

SECTION 2: VOCATIONAL GUIDANCE IN NEW YORK CITY.

A statement of the situation as it exists in the United States was presented in the Report of the Commissioner of Labor for 1910 on Industrial Education. It contains in greater detail than the notes of the Commission the information which was obtained in the two cities of New York and Boston. Consequently the following extracts are taken from it with grateful acknowledgment of their service.

Movements to promote vocational guidance have been undertaken in New York, Boston, Chicago, Cleveland, Philadelphia, Pittsburgh, St. Louis, and several other cities. In some cities, as New York, this work developed directly from the effort to place pupils who were ready to leave or obliged to leave the public schools. In others, as Boston, the features of guidance and counsel have from the first been prominent. The work in these two cities will be described at some length, as the newness of the subject and the present great interest in it seem to justify considerable detail.

As already stated, in New York this work began in an attempt to place pupils, from which effort other features of vocational guidance have developed. The High School Teachers' Association, through its students' aid committee, has taken the lead, its work in this direction being the outgrowth of the efforts of one teacher to help his students in choosing and securing work suited to their abilities and offering some prospect for the future. By 1908 in each day and evening High School there was a teacher or a committee of teachers to help students not only in deciding what vocation to choose, but in learning how to enter it. This work was purely voluntary on the part of the teachers and was carried on in addition to their regular duties.

Objects of Students' Aid Committee.

At this time the Students' Aid Committee stated its objects as follows:—

In order that local committees and the teachers of the several schools may be better prepared to help pupils who leave school to fit themselves to their environment, the general Committee has planned to collect and make available information regarding—

(1) The necessary and prescribed qualifications for entering the skilled trades and learned professions in this city.

(2) The opportunities which are furnished to the young people of this city for acquiring these necessary qualifications, the time usually required, and the expense to the individual of qualifying himself.

(3) The restrictions which are placed by labor unions and professional bodies upon candidates who desire to enter the several skilled trades or professions.

(4) The average remuneration and the relative permanency of employment which a properly qualified person of either sex may expect in each of the skilled trades, the learned professions, and the commercial pursuits in which young people are usually employed.

In order to furnish this information in convenient form, the Committee undertook the preparation of a series of vocation leaflets, of which a dozen or more have appeared, with such titles as "Choosing a Career," of which there are two issues, one for boys and one for girls; "Openings for Boys in Machine Shops," and "The Vocational Adjustment of the Children of the Public Schools." These pamphlets are definite and practical. The two on choosing a career contain, in addition to concise information respecting the various pursuits, lists of books, reports, and magazine articles dealing with the different occupations, and lists of institutions giving special training to boys, to girls, or to both sexes, their location, requirements for entrance, etc.

These pamphlets are utilized throughout the High School course in directing the students' attention to the importance of choosing a vocation and preparing for it. From the beginning of the course every effort is made to rouse the students' interest in this matter. In four of the High Schools the pupils are definitely required to prepare regular plans for their future careers, including a study of their own capacities. In others, while not so definitely required, this is strongly urged. One of the plans outlined for such work is as follows:

Suggestions.

1. Let the student select an occupation, find some acquaintance engaged in that work, secure an interview, and write out the results of the interview as if for a newspaper. It will add to the interest if several members of the class have the same topic.

2. Let the student select an occupation for himself and plan for himself a career.

3. Let suitable questions for the debating society be so framed that pupils will discuss the opportunities in one line of work as against the opportunities in another; the requirements for success in one line, as against the requirements in another; the rewards of a profession as against the possible returns from a trade or a business.

4. Let the pupils select a line of work in which they are interested and write a review of one of the books of reference dealing with that occupation.

5. Let the student select some particular line in which he may be interested, and write an answer to some newspaper advertisement for help in that line.

A Plan for a Career.

In writing a plan for a career a student should set forth:

1. (*a*) His preferences; (*b*) the expressed wishes of his parents and friends in regard to his future.

II. (*a*) His own reasons for his choice; (*b*) reasons in favor of or against his choice which were gleaned from books and magazine articles; (*c*) arguments in favor of or against his choice which were advanced by parents and friends who were consulted.

III. His personal characteristics by the aid of which he hopes to win success in his chosen vocation.

IV. The legal requirements for admission to the practice of the chosen trade or profession.

V. The schools to be attended to meet these requirements and the estimated time and expense involved in preparation.

VI. The possible rewards as stated in the authorities which were consulted.

As has been mentioned, this work has been carried on by many volunteer workers and by voluntary contributions from interested persons. By 1910 it was felt that it had sufficiently proved its usefulness to justify asking public support, and in its report for that year the Students' Aid Committee urged the formation of a central vocational bureau to take general charge and oversight. This has not yet been established, but an appropriation of $250 was granted each High School for expenses connected with the work The plan outlined by the committee is here given in full, as showing what it is felt should be the scope of such a bureau.

A Central Vocational Bureau.

I. MANAGEMENT.

A. By an executive committee composed of representatives of associations of employers, labor unions, educational, social, and church workers, or of contributors.

B. By the school authorities under the direction of the Superintendent of Schools.

II. FUNCTIONS.

A. To offer advice and direction to young people of exceptional abilities who cannot receive the necessary assistance from the vocational teachers of their respective schools.

B. To serve as a means of communication between employers and the employment agencies or vocation teachers of the several schools and colleges from which students go out to work.

C. To collect information in regard to the opportunities for workers of ordinary ability and others of exceptional training; information concerning the personal and educational qualifications required for admission into different lines of work, and concerning the tests of efficiency which are set for promotion into the different grades of the same lines of work; and information regarding legal enactments and labor-union restrictions, this information to be gathered from:

1. Associations of employers.

2. Individual employers.
3. Statistical publications and Government reports.
4. Social workers.
5. Vocational records of workers of known capacities.

D. To make available through special publications, lectures, pamphlets, and conferences, for the use of students who are to choose a vocation and also for parents and social workers, general information in regard to the opportunities which are offered in the city, and to supply committees on courses of study or on syllabi of instruction with material which will enable them to increase the vocational content of the teaching material in the several subjects of study; and to supply the employment agencies of the several schools with specific and confidential information in regard to the terms and conditions of work with particular employers.

E. To keep a registry of students of the evening, trade, and continuation schools who are prepared, because of the completion of the prescribed courses of study, for employment in higher forms of service than those in which they are engaged.

F. To assist students of high capacity to complete advanced courses of study:

1. By means of scholarships.
2. Through part-time employment.
3. Through vacation employment.

Examples of How it Works.

The work of vocational guidance has been much more developed in the High Schools than elsewhere, but it is not confined to them. In Brooklyn a number of grade teachers are counselling and following up in precisely the same manner the pupils who must leave before even entering a High School. This work is so entirely individual, however, that it is difficult to say how extensive it is.

In 1910 one of the District Superintendents, on the lower east side of New York, employed a young woman who devotes all her time to finding positions suitable for untrained boys and girls who must leave school at 14. When a pupil who has fulfilled the school requirements says that he must go to work, he is sent to this agent who, by personal interviews with him and consultation with his teacher, tries to learn his tastes, ambitions, and capacity, and to secure for him a place adapted to his abilities and needs. The agent also visits employers, inspects the conditions under which children would have to work, learns the opportunities for advancement, considers the influence of the foreman or employer with whom a child would come in contact, etc. Unless the result of her investigations is satisfactory children are not sent.

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SECTION 3: THE BOSTON PLAN.

The leading organization in Boston for vocational guidance is the Vocation Bureau, but either affiliated or working in the closest harmony with it are four other organizations—the Committee on Vocational Direction of the Boston School Board, the Boston Home and School Association, the Girls' Trade Education League, and the Women's Municipal League.

Of these the Committee on Vocational Direction was formed expressly that, in co-operation with the Vocation Bureau, it might begin the work of guidance within the schools, before the pupils leave even the grammar grades. The other three are independent organizations which carry on specific work along the lines of vocational guidance as only one among varied activities.

The Vocation Bureau was the pioneer in the field, and forms a kind of inspirational center for the later comers. During the last year the three independent organizations sent representatives, by invitation, to sit with the executive board of the Vocation Bureau, that the plans, both of the Bureau and the other bodies, might be discussed and carried out co-operatively and that all might be kept informed of the progress of each. It is likely that during the coming year a plan of even closer co-operation will be worked out. It is also likely that two at least, and possibly all, of the other bodies will remove their offices for vocation service so as to make a continuous suite of offices in connection with the Vocation Bureau. Owing to this close co-operation of all interested there has been very little, if any, duplication of effort and the field has been covered with unusual thoroughness.

The Vocation Bureau.

The Vocation Bureau is an extension of the work of the late Prof. Frank Parsons, who, as educational director of the Civic Service House, organized in 1907 a bureau for the purpose of advising young men in their choice of a vocation. The present Bureau, organized June 19, 1909, represents a co-operative effort on the part of public-spirited men and women in the fields of labor, education, commerce, manufactures, and social work, to organize and put into operation a comprehensive plan of vocational advice and assistance for the children and young people of Boston. Its work is carried on by a director and an executive board of thirteen members; there is no fee nor charge of any kind for its services.

The organizers of the bureau believe that proper guidance at the critical period of adolescence will enable beginners to find themselves early and to make good in the work they are doing, and will, moreover, stimulate them to fit themselves for advancement. In return for this increased interest in their pursuit, manufacturers and business men are asked to co-operate in securing for their young employees the largest opportunities for progress in the work assigned them.

What the Vocation Bureau Does.

The Bureau does not prescribe vocations, nor is it conducted as an employment office. Its chief service is in bringing together the best occupational information and in devising the best methods of applying such information in assisting the child and its parents to make an intelligent choice of a career. At the invitation of the Boston School Board the Bureau is co-operating with the schools in outlining methods of helping pupils choose their life work and prepare for it. It is also conducting a training school for teachers and school officials who have been appointed as vocational counselors by the school department.

The activities of the Vocation Bureau fall into four general groups:

1. The maintenance of an office, centrally located, for the collection and study of information concerning the various occupations of the community. When secured, this information is classified and made public in such a way as to help young people, teachers, and parents to understand what the occupations hold out, their advantages and disadvantages, and the conditions for efficiency and success in each.

2. To make clear the need of training and educational equipment for the desirable occupations, and by advice and co-operation to prolong the school period of young people, whether by day, evening, or part-time courses, and also to secure other educational opportunities when needed.

3. To organize personal vocational counseling both for those in school and for those already at work, in order to enable them to plan intelligently for their educational and vocational progress.

4. To furnish opportunities for consultation to people of all ages, who have personal problems concerning the trades, the professions, and academic or industrial pursuits.

The first centers about the acquisition and use of the material on which counsel is based, to secure which the Bureau has undertaken the investigation of occupations open to boys and young men. Professions, trades, and different kinds of business are included. There is no bias in the Bureau's plan in favor of industrial over non-industrial pursuits, all vocations being given equal attention in the collection and presentation of facts relating thereto, but the trades and manual occupations come in for a considerable share of study.

To make these researches the Bureau employs two expert investigators, who are expected to learn what an occupation is, its conditions and openings, what it demands of a boy, what it offers in pay and advancement, what opportunities are open for securing the specific training it requires, and what the general conditions of employment are as regards health and effect upon the life of the individual. This investigation is conducted by making personal visits to firms, shops, or factories, and by consultation with employers, superintendents, foremen, employees, and labor men, and also by the use of books dealing with occupations, and of trade periodicals.

Over 100 occupations have been thus investigated and the results carefully filed for use as a basis for vocational counsel. In addition, in occupations which seem adapted to such treatment, the facts gathered are worked up into a bulletin

for the use of those interested either in choosing a vocation for themselves or helping others to make a choice. The bulletins are not meant to furnish strictly scientific or technical treatment of the occupations, but it is intended that the information they give shall be thoroughly reliable. To this end each bulletin is carefully scrutinized, by the persons furnishing the information on the investigation cards, by an economist, a labor union official, and others.*

*It has already been indicated that this Report re New York City and Boston is taken from the Report of the Commissioner of Labor of the United States, 1910. The extracts are not put in small type, as is the custom in this Report, only for the reason that they may be more easily read owing to their extent.

SECTION 4: VOCATIONAL GUIDANCE OF BOYS AT WINNIPEG.

The Winnipeg Industrial Bureau is a body of public-spirited men representing twenty business organizations of Winnipeg whose object is the development of opportunities in Winnipeg and Western Canada.

This Bureau has an Educational Committee, which has definitely taken in hand the vocational guidance of boys, by means of plain talks by leading men in each trade and profession. These talks are afterwards printed and distributed to the parents by means of the scholars.

The Lieutenant Governor is taking great interest, and the whole movement is one of the Bureau's activities, called into being as a result of trying to create a good environment and outlook for the children.

The Educational Committee has a fund of $3,000 per year for paying expenses of bringing lecturers. The Trades Unions are taking an interest in the work and helping in the lecture work.

The talks are short, practical and inspiring, and deal with railway work, machinist trades, pattern making, lithographing, salesmanship, etc.

Subjects of Talks by Citizens.

Among the subjects presented to the Schools by these public-spirited citizens of Winnipeg are the following:—"The possibilities for Success in Railway Work," by Geo. Bury, Esq; "The Lithographing Trade," by W J. Bulman, Esq., of Bulman Bros. Ltd. Lithographers, Printers, etc., and President of the Winnipeg Industrial Bureau; "The Training of an Electrical Expert," by Professor E P. Featherstonhaugh, of the University of Manitoba; "Machinist Trades," by R. R. Nield, Esq , Foreman of the C.P.R Shops; "Pattern Making." by E Stewart, Esq., Mechanical Superintendent Manitoba Bridge and Iron Works Ltd.; "Salesmanship," by A. L. Struthers, Esq , representative of the Business Science Club.

Vocational Training.

The Committee has issued the Chart, shown on the following page which is hung in Public Schools, and used by Teachers, Vocational Counsellors, Parents' Associations and others interested in the Vocational Guidance of youth

WINNIPEG VOCATIONAL CHART.

TO ASSIST PUBLIC SCHOOL BOYS

To select a trade or profession.
To have a knowledge of each trade.
To understand the value of efficiency.
To understand the horror and irritation of the life of the inefficient.
To realize that the basis of their future is the "know how" of to-day, and that the basis of that "know how" they are gaining at school.
To specialize and not form the habit of changing trades for little financial gains, for time is going and they must not become men with five hungry senses and no available facility whatever.

We are having the leading men in each trade or profession visit each school and tell the boys about their trade, what it is, what it produces, what future, what wages, what a boy should know, and in short, make as clear as he can with his trade as a text the answer to opposite suggestions.
Eighteen talks have already been given and masters and business men believe a profound impression for good will result.

TO AWAKEN THE MOTHER'S INFLUENCE

And in an indirect way give her a general idea of the future possible callings of her boy.

What is said is printed in leaflet form and is taken home by the children. Being written for them the parents can easily understand, and when the mother reads the opinion of the leading men in each trade in our city, all of which will make clear the horrible future of her boy if he is inefficient, and the sure future, if he is able to fit himself, we hope the mother will not allow any little immediate gain to ruin her boy's future.

The curse of our city is that children can so easily earn money.

TO HELP THOSE ALREADY AT WORK

To awaken a desire for better ability in themselves.

To give voice to the wants of the workers educationally.

To let them see in their own trade men that possess knowledge they never dreamed of.

To create environment for the young workers by stimulating the educational interest of the older ones.

We propose to have lectures selected by unions and employers in each trade that will be entirely for that trade, but all lectures will be to show the workers what they might know, and the School Board have provided night classes and teachers for any class that can be organized.

We have now $3,000 per year to pay expenses of bringing the lecturers here, and unions and vocations generally are taking an interest.

CHAPTER XIII: WIDER USE OF THE SCHOOL PLANT.

In recent years a movement for the wider use of the School Plant has taken the form of Evening Classes, Vacation Schools, Public Evening Lectures and Social and Recreation Centres. As these have a direct bearing upon industrial efficiency an example is given of each. Many other cities might be mentioned as carrying on similar work. The four places chosen are Buffalo, N.Y.; New York City, Rochester, N Y. and Ottawa, Ont. Each represents some special feature.

SECTION 1: AT BUFFALO, N. Y.

Continuation Classes.

A word first as to Evening Classes. The first use of the school plant, in addition to the ordinary day classes, is assigned to the holding of Evening Continuation Classes. The fact that a very large percentage of the pupils in the public schools leave before they have completed the full course of the Elementary School is a reason why every effort is made to let the school serve them at least in the evenings, after they have begun to work. To attract their attendance and keep their interest, such classes provide practical instruction in subjects of recognized value to the boys and girls themselves. Those who have given attention to the subject declare that the immediate returns to any city from classes of this nature will be very great and may approach in value, by any measure that can be applied, the returns from the regular High School Courses. The evening students have a definite end in following certain studies. The instruction they receive will be made use of at once in the occupations they follow. In that way they make real educational progress, as well as acquire industrial proficiency. The benefits of progress made in this way are less likely to be lost through forgetfulness or want of suitability in later years.

The Evening Schools.

The Evening Schools hold a place all their own. No other institution so completely meets the needs of the people at large. Each school is a civic centre, in the best sense of the word, where thousands go to satisfy the need they find most urgent in their daily lives. The year 1909–10 surpassed all former records, both as to attendance and effectiveness. In the fourteen Grammar and two High Schools 8,947 pupils were registered as compared with 7,874 the preceding year, a gain of 1,073 About 3,000 of these were under sixteen years; over 3,500 were between 16 and 21; and the balance, or nearly 3,000 were over 21. 2,500 were foreigners. Over 3,000 girls and women were registered and over

2,000 of these took domestic subjects. Never before, in the history of the city, has so abundant provision been made for those who are ambitious to improve themselves and increase their earning power. We have only to note the above figures to realize how eagerly the opportunity has been grasped. The cost per pupil, on basis of registration, was $5.

The problem of Evening School work is the boy from 14 to 16 years of age. This class of pupils left the day school in the majority of cases because of lack of ability or interest. Regular grade work appeals to him no more at evening than at day school. To keep these boys profitably employed, vocational departments were opened in four schools and the experiment was made of forming a class in practical elementary science with the thought of giving the boys a broader outlook. So far the results are even better than expected.

Provision has been made for small groups of girls in sewing and millinery with adequate supervision. Greater interest, more and better work is the result. Pupils no longer come simply to get a dress made, or a hat trimmed, but are taught the art from the beginning and so are able to turn their instruction to practical benefit.

Vacation Schools.

The city of Buffalo in 1910 had no less than 12 Vacation Schools. The registration was 3,600 and the average daily attendance 2 687,or 75 per cent. The appropriation was $2.08 per capita. The interest was sustained and the results were excellent. All the older children recognized the commodity value as well as the beauty value of the things which their hands fashioned. Most of them felt dimly, but pleasurably, the power which they were gaining. Perhaps none were conscious of the disciplinary value or realized that character was making fast while they were "developing motor-brain areas." The older girls were delighted to find that by skillful and painstaking work they might transform a half dollar's worth of material into a lace handkerchief valued at from $5 to $8; that in every department of needlework their careful workmanship enhanced the value of the material many fold.

SECTION 2: AT NEW YORK CITY.

Free Lecture Courses.

Free lectures are provided in many cities The following is a brief summary of what is done under the Department of Education in New York City:—

These courses cover about 100 lectures given in different sections of greater New York, generally in school buildings and such other institutions as the American Museum of Natural History. In some centres the lectures are given weekly; in others semi-weekly.

During the year there are provided a course of 11 lectures on American History and a course of 11 on American Geography. Those who attend 90 per

cent of the course and pass examinations in January and June receive certificates from the Department. School children are not admitted.

The lecturers are paid about $10 per lecture and expenses. Stereopticon, when required, is furnished by the Department.

The New York Public Library announces, in connection with above lectures, that a book on the subjects dealt with may be borrowed without charge by any resident of the city.

In visiting the Stuyvesant High School it was observed from conspicuous advertisements that this was one of the Lecture Centres. Upwards of a million of the people of New York attend these lectures, a good proportion of which are on scientific subjects. In some cases after the audience is dismissed a conference is held of those most interested, and points of difficulty are discussed. In this way many have been led to go on to a more systematic and educative part of practical science. The Principal of the Stuyvesant School, Mr. Von Nardroff, who has been a lecturer on the subject of Physics, stated that he believed no money spent by the School Board led to greater educational and cultural results than do those lectures.

SECTION 3: AT ROCHESTER, N.Y.

Social Centres.

At Rochester a movement was begun some years ago which culminated in the opening of the school buildings as Social Centres.

"The Social Centre was not to take the place of any existing institution, it was not to be a charitable medium for the service particularly of the poor; it was not to be a new kind of evening school; it was not to take the place of any church or other institution of moral uplift; it was not to serve as simply an 'improvement association' by which the people in one community should seek only the welfare of their district; it was not to be a 'Civic Reform' organization, pledged to some change in city or State or national administration; it was intended to be the restoration to its true place in social life of the public school, in order that through this extended use of the school building, might be developed the community interest and the neighbourly spirit."

PROVISION FOR RECREATION.

It was decided that the Social Centre should provide opportunities for physical activity by means of gymnasium equipment and direction, baths, etc.; opportunities for recreation, in addition to those which the gymnasium would offer, by the provision of various innocent table games; opportunities for intellectual activity by the provision of a library and reading room and by the giving of a lecture or an entertainment at least once a week. The more directly social service of the Centres was to be gained through the opportunities offered for the organization of self-governing clubs of men, of women, of boys and of girls.

THE DISCUSSION OF PUBLIC QUESTIONS.

The use of the Centres for free, untramelled discussion of public questions was carefully considered and the fact was cited that the school extension committee had already gone over this matter and had passed a motion that "The committee should insist upon the free use of the school buildings chosen for neighbourhood meetings, even politics and religion not being tabooed." And this was decided as the rule that should prevail because such freedom was, of course, essential to the development of an institution "which shall serve the people in the city as the Little Red School House served the folks back home."

DIVISION OF TIME.

It was decided that the Social Centre should be open from 7.30 to 10.00 o'clock every evening in the week except Sunday. One evening was set apart for a general gathering of the men and women, boys and girls of the Centre. On this evening it was proposed that a lecture or entertainment, somewhat after the pattern of those which are provided in New York City, should be given.

The School Board should assume complete responsibility for the character of these entertainments. Like the lectures given in New York City, these general lectures were to cost not more than $10 a piece in addition to the expenses of the speakers. Unlike the lectures given in New York, these were to be provided without expense to the city whenever they could be secured without imposition.

It was decided that Friday evening should be used as the evening for the general lecture or entertainment. The other five evenings of the week were to be divided between the men and boys, who should have three, and the women and girls who should have the other two. Tuesday, Thursday and Saturday were set apart for the use of the men and boys, Monday and Wednesday for the women and girls.

DIRECTORS AND VOLUNTARY CLUBS.

Directors were appointed for the various departments of the work. The Director was appointed to a position somewhat similar to that of the principal of a school, overseeing the various activities and being present whenever the building was open. In addition to the Director, an assistant was appointed in the person of a woman to take charge of the womens' and girls' activities of the Centre and serve as their club Director. Besides, a Director of the boys' clubs was appointed. His duties required him to be present three evenings each week, prepare programmes for the boys' organizations, help the debaters and other speakers from among the boys themselves in their work of preparation and guide them in the orderly conduct of their club meetings.

Various clubs were organized. These took the form of boys' clubs and girls' clubs, adult clubs for men and adult clubs for women. Clubs were

organized for study as well as for games and play. Friday evening as a general evening was made the occasion of the coming together of all of the people in the Social Centre every week.

Wide Activities Under Principal Moulthrop.

The example of a school which was used in a very wide manner outside the regular day classes was that of the Washington Grammar School of which Col. S. P. Moulthrop was Principal. The plan of the school building itself had been worked out by the students of the Evening School and then worked out by the Architects for the final plans of the building itself. There are 64 rooms, 1,863 pupils in the day time and 1,432 pupils in the evening. The auditorium seats 1,800. Among the features of the school are:—

Swimming: There is a large swimming tank and shower bath. Swimming is taught during two afternoons a week for boys and two afternoons a week for girls. Every boy above the 4th grade has swimming.

Dental Clinic: There is a fine equipment for this work presented by a friend of the school.

Medical Inspection: The doctor and supervisor keep a close observation on all the children. Physico-psychological records of these students are taken by the teachers.

Domestic Science: Girls prepare meals in the course of lessons and ask their mothers to come and eat with them. Forty-four teachers take their meals in this department, the girls serving the tables.

Library: There is an excellent library which is taken charge of by the Association of Graduates of the School, who come back three evenings a week, have meetings and enjoy the evening school. A number of them take care of the library. Last year 2,900 books were taken out by the evening pupils and not one lost.

Auditorium: Open in the evenings for gatherings at which patriotic songs are sung, concerts held, etc., etc.

To Serve Civic Ends.

The experience at Rochester, notwithstanding some difficulties that arose, points to the fact that the wider use of the school plant is practicable, and desirable for social development and improvement and also for the promotion of strictly educational work.

A good feature of the Social Centre work is the awakening of interest and the development of ability not merely in the discussion but in the understanding of and participation in civic work which is concerned with the efficient administration of streets, water supply, sewerage system, lighting, transportation, etc. The school buildings, which are the property of the people, may with advantage be used by the people without any interference with the primary purposes of the school in the education of the children of the locality.

SECTION 4: AT OTTAWA, ONT.

Larger Use of Buildings and Equipment.

In his Annual Report (1912) Dr. J. H. Putman, Inspector of Public Schools, says:

"We have public school buildings and equipment worth a million dollars, all bought and paid for by the public. The buildings are kept in repair, heated and cleaned by public taxes. We can scarcely think of any other public utility which is in a more real sense the property of the people than a public school. These schools are built and maintained primarily for the education of young children, but those who would restrict the use of schools to this purpose alone take a very narrow view of their possibilities. Time was when people looked upon a school merely as a place where children learned the three R's. The more modern and truer conception of a school is that it should be a social agency primarily to plan and control profitable experiences for children, but beyond that a rallying centre for the educational life of the community.

"The schools are used barely 200 days a year and for five hours each day. They are heated and cared for during the whole year. It does seem that their usefulness in educating the people might be greatly extended if there could be in them public lectures and public meetings for the discussion of public topics. It does seem that evening classes, literary societies, reading rooms and debating clubs in the schools might be a means of doing much for the thousands of young men and women who have left school but have a desire for self-improvement.

"Perhaps I may take the public into my confidence by telling them that I have proposed to the Management Committee such a radical innovation as the installing in our schools one or more Kinemacolour machines for instruction and entertainment, allowing school children to attend exhibitions in the late afternoons and giving open entertainments to the older members of the family in the evenings.

The Use of Moving Pictures Suggested.

"I see that Mr. Edison proposes to so perfect moving pictures that they will transform the modern school and give a complete education to children who will have nothing to do except watch pictures. Mr. Edison is a great scientist but if he really believes what he is reported to have said, he knows very little about the real problems of education. Human beings are not educated by what they see but through what they do. Impression without expression has no value, and a child might spend his time watching the most perfect and elaborate moving pictures that it is possible to produce and yet make no progress toward real education.

"On the other hand no person who has had experience in teaching children can watch such Kinemacolour exhibitions as the Coronation of King George V. or the Indian Durbar without realizing that the moving picture might be a great

aid in teaching, especially with such subjects as geography and history. Already New York and Chicago in America, London, and other European cities are using the moving picture as an aid in school work.

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"The moving picture has come to stay. We may put it in the school, control the character of the pictures and satisfy the child's craving for such entertainment while leaving him in his own school and under the supervision of his own teacher.

"We may in some cases prevent him from witnessing such shows as are now being given in amusement halls, but sooner or later he will satisfy his natural craving for colour and movement. In hundreds of cases our public school children are now going at night to badly ventilated halls, listening to coarse jokes and vulgar songs, while watching picture films which perhaps barely escaped the disapproval of the public censor. What shall our policy be?"

MOVING PICTURES TO ATTRACT AND INSTRUCT.

At the Industrial Art School, at Zurich, the Director had a suitable room fitted up for the use of Moving Pictures. He used them to illustrate scenes, processes and conditions for the benefit of the students. He also employed them to interest public gatherings in subjects that were connected with the School and its progress and the development of good taste and artistic ability. A firm in Paris was making films for the particular purpose of their being used for educational ends.

The Commission found similar use being made of a room fitted for the purpose at the Normal School at Fitchburg, Mass.

The use of Moving Pictures for educational purposes in connection with Industrial Training was brought before the Commission at London, Ont., by the testimony of Mr. Frank Leonard. Many scenes in connection with raw materials, transportation and manufacturing processes might be provided to instruct and entertain at the same time. The public response to the opportunity which has been provided in Moving Picture halls reveals the existence of an appetite and taste. It becomes the education authorities to see that these are improved by good food for the eyes and mind.

The use of Moving Pictures to illustrate some interesting features of industrial processes and manufacturing plants might be a means of attracting young people to the classes for training until the intrinsic value of the training became recognized and appealed to the higher motives.

It would be worth while in Canada to devote most of one evening a week to the recreational and entertaining side of education in connection with the movement for Industrial Training and Technical Education. The lantern with slides and the reflectograph are already in use in some Colleges. Consideration of the means, best suited to attract the attendance of those to be served, should be in the mind of those who are planning a system or method for the further education of those who have already left school at fourteen.

CHAPTER XIV: COMPULSORY ATTENDANCE AT CONTINUATION CLASSES AFTER FOURTEEN.

SECTION 1: THE SITUATION IN GERMANY.

Practically everybody with whom the Commission discussed the question in Germany, is convinced that voluntary Continuation Schools will not meet all the educational needs of modern communities. Employers may not allow their apprentices to attend the Continuation School unless it be in the evening, when they are too fatigued to profit fully by the instruction. Under those conditions the efficiency and satisfaction in work which are so necessary an influence in training for citizenship are out of the question, except for the vigorous and ambitious; and they are not the boys and girls who most require the educational supervision and help. The large majority of the school men in Germany are in favour of compulsory attendance at Continuation Schools carried on during week days and closing before seven o'clock in the evening. Most states of Germany have such schools in the large cities.

Where the attendance is compulsory by law it was learned, in the cases enquired into, that during the first two years there was considerable opposition on the part of numbers of employers, considerable indifference on the part of numbers of parents and considerable unwillingness on the part of numbers of pupils. After two years of operation the general opinion was that attendance at Continuation Classes is of such a wholesome and beneficial character that it is accepted as a regular part of the life of the community and that even if the compulsory requirement were withdrawn the attendance would continue and include the larger part of the youth of the locality.

Berlin and Prussia.

In Berlin the attendance at the Continuation Schools is obligatory from the fourteenth to the seventeenth year, that is to say, three years of 6 hours per week. The hours for instruction generally fall twice a week between 5 and 8 o'clock p.m. In some cases a whole afternoon is devoted to the Continuation Class.

Statistics show that about 59% of the boy workers in Prussia attend some Continuation School. The percentage of girls who attend is very much less. The introduction of compulsion has been gradually and greatly increasing the percentage who attend, but since the law applies only to the larger places, a large proportion of the young people in the Kingdom are not affected by it.

Notes From the Visit to Chemnitz.

Since 1873 in Saxony it has been necessary for boys in all communities to attend the Continuation School from the ages of 14 to 17 years, at least two hours per week. In Chemnitz four hours per week have been required since that time. The boys from some trades are now required to attend five hours per week. The expectation is that shortly it will become necessary for the boys in all trades to give this amount of time.

At the present time public opinion is strongly in favour of the Continuation Schools. The Secretary gave it as his opinion that if the compulsory law were removed now the boys would still continue to attend, either voluntarily or by request of their parents or employers. Formerly employers were strongly opposed to compulsory attendance at Continuation Classes, but now they are strongly in favour of them.

At the present time there is no Sunday or evening instruction for apprentices between the ages of 14 and 17. These all come in the day time. They have abandoned the previous system of giving the boys two periods of two hours per week and now they give them the instruction in one continuous session of four or five hours. The boys usually go in the morning, before they go to work at all, and so are fresh.

In Saxony the compulsory attendance applies to all communities, whereas in Prussia it applies only to towns of over 10,000 inhabitants.

The Secretary thought that public support of all education had been increased from the contact of so many workers with the Continuation Schools. The schools offer evening voluntary classes for journeymen.

Notes from the Visit to Dresden.

Dr. Lyon, Oberschulrat, said that the Continuation Schools were really introduced by the Government and not by the people, as employers or employees. There was opposition from the employers when compulsory attendance was required, but it disappeared in about a year. He favored the school workshop, although the Continuation Schools in Dresden have no workshops and not very much tool or machine equipment. Some Continuation School work was initiated by the different Trades Guilds, but attendance was made compulsory by the Government.

Notes from the Visit to Bremen.

Dr. Oebrichs, a member of the Senate in Bremen, has been largely responsible for the establishment and improvement of the school system in that city.

Bremen is a free city and the citizens are very independent. Therefore they were reluctant to establish anything which seemed like a trespass on personal freedom, such as the compulsory Continuation Schools. The large employers were opposed to it because it took the apprentices out of the factories in working hours. The smaller employers were more in favor of it because it gave their apprentices

greater intelligence, and they could thus compete with larger factories. The real movement for compulsory attendance came from the Senate of Bremen, and it actually was a little ahead of the public sentiment.

Compulsory attendance in the daytime had been in force 2 years at the time of our visit, and now there is very little opposition to it. It was for the benefit of the whole community. Workmen were strongly in favor of it.

Dr. Oebrichs' advice to Canada as a new country was to establish compulsory attendance Continuation Schools from the first, if possible.

BADEN.

In the Grand Duchy of Baden attendance at Continuation Schools has been compulsory since 1874. The employers generally are as friendly to the Continuation Schools as are the parents of the children.

Regierungsrat Dr. Meir expressed the opinion that a compulsory requirement for attendance at Continuation Classes was necessary for at least a full generation of time. The compulsory law of Baden is applicable to the whole community, including the rural districts. The minimum of attendance is 3 hours per week. In most cases the instruction is given by the ordinary teachers, which Dr. Meir thinks not as satisfactory as though it were more professional and practical. Much stress is laid upon the teaching of the duties of citizenship.

WURTTEMBERG.

In the Kingdom of Wurttemberg the law is now general requiring all boys who are working to attend Continuation Classes until their 18th year. The compulsory law, as passed in 1909, was for one year of attendance only; next year the law extended the period to 2 years of attendance, and in 1911 it was made 3 years. Regierungsrat Dr. Hartmann is of the opinion that the compulsory law will be supported by public opinion and maintained.

BAVARIA.

The compulsory attendance law prevails. The interest taken in the work and the support accorded to the Continuation Schools in Munich by the employers and trade association of masters, workmen and of assistants, leads one to the conclusion that the ultimate influence for the schools will not be compulsion alone, but their intelligent sympathy and collaboration. That is the opinion expressed by Mr. H. A. Clay in his pamphlet prepared for the Board of Education in England, *Compulsory Continuation Schools in Germany*. The following are quotations from that Report, indicating the attitude of representative societies:

Munich Society of Printers (Verein Munchener Buchdruckereibesitzer), representing proprietors of printing works:

"The new organization of the Technical Continuation Schools has according to our observations affected very advantageously the school attendance of the pupils and their desire to learn. In this respect very few complaints have been made, and they were only concerning voluntary

pupils who wished to enjoy the technical instruction, but did not submit readily to the discipline. The moral effect is extremely favourable. In particular the technical teaching was a necessity, for in the workshops this cannot be carried out in the requisite degree".

The Catholic "Hansa" Society of Merchants (Katholischer Kaufmannischer Verein "Hansa"):

"Nowadays when there are such great demands on the principal, it is scarcely possible for him any longer to train his young clerks in the way required by their interests and those of the profession in general. This is especially the case with the book-keeping which is particularly neglected, so that many a young man goes out into the world at the end of his indentures without a knowledge of the simplest principles of this subject and of correspondence; indeed, he scarcely understands the difference between debit and credit.....We do not hesitate to say to-day that many of our fears have proved unfounded, and that some of them were based on misconceptions..... It is not easy to give an opinion as to the effect of the school on character. We are, however, firmly convinced that the doing away with the evening instruction is a great advantage, and the moral gain far outweighs any objections to the early morning hours."

Munich Society of Lithographers (Proprietors)* (Verein Munchener Lithographie-und Steindruckereibesitzer):

"It cannot be sufficiently emphasized how great a need the Continuation School meets, and how desirable it is that this view should spread and deepen among the employers. It must be stated that the compulsory pupils attend the instruction with the greatest zeal and follow the lectures and practical exercises with interest and diligence. This is also particularly apparent from the large attendance of the so-called voluntary pupils. There is no question that the school, moreover, exerts an excellent influence on the moral behaviour of the boys, though there must naturally be exceptions here and there".

The Society of Shoemakers wrote:—

"A number of employers have not sufficient new work to enable them to train their apprentices so that at the end of their time they can complete the prescribed example of work. This shows that it is just the practical instruction which is of the utmost importance, for it is to this that two-thirds of the apprentices owe their success in qualifying. The shoemakers attach great value to the technical education. This is shown by the fact that several masters voluntarily send their apprentices a year and even longer to the school".

The Munich Society of Watchmakers said:—

"The establishing of the workshops increases the satisfaction in attending the school, and gives the opportunity of judging of the progress of the apprenticeship. The practical value cannot be too highly prized."

The German Society of Metalworkers replied:—

"The chief share of the success is due to the technical training. There can be no doubt that the practical teaching, hand in hand with the theoretical, can assure a better general training than a longer apprenticeship in the workshop without theoretical help. The loss of time which the master suffers through the teaching during the day is compensated many times over by what the pupil learns during school as it is now organized".

Mr. Clay says further:—"Inquiries made of a large firm of lithographers showed that there is a very decided feeling in favour of compulsory attendance at the Technical Continuation School, on the ground, among others, that the larger the firm the more likely is the training of the apprentice in the workshop to be one-sided. The head of the Munich Union of Printers (Proprietors) pointed out that each firm has its special line of work, and that thus it is impossible without the Continuation School, for the apprentice to get a survey of the whole scope of his trade. He is of opinion that the majority of his firms would not let the matter drop if there were no compulsion, for his society had pressed for the classes to coincide with the period of apprenticeship. Not much would be possible without the associations of employers, and, though at first many made

*Lithography is one of the largest industries of Munich.

difficulties, they, as well as the workmen's unions, are now all very much in favour of the Continuation Schools. The loss of time and disturbance of routine are not serious."

The following are further quotations from the excellent pamphlet by Mr. H. A. Clay, already referred to:

Attitude of Employers and Parents.

After this general survey of the activity of the evening schools, we may consider their relation to the employers, or rather the attitude of the employers to them. As was to be expected, when compulsion first was brought in there was some amount of hostility and even indirect resistance. There was the loss of the boys' time to create a feeling of dislike, and the annoyance at being obliged by law to pay the school fees, where these are charged, moderate as they are. As a result, many boys at first lost their employment, though the Labour Bureau was able to re-place some of them. Others again deducted the amount of the school fees from the wages earned, or made systematic difficulties as to sending their boys to the classes. But within less than five years one can say that the initial opposition has died away.

Apart from this, the employers are in close connection with the technical classes, through their advisory school committees. Thus there are expert groups (Fachschulkommissionen) of mechanicians, masons, photographers, grocers, butchers, and hairdressers, for instance, representing every imaginable trade. These have the right to and do visit the classes, and give valuable opinions as to the direction of the theoretical and practical teaching.

The parents—who are the third of the three factors, parents, school and employers—have presented no serious difficulty. Poverty only too often compels them to place their sons in unskilled work to earn an immediate wage. But they regard the compulsory attendance as a survival or continuation of the elementary school time. They are pleased to feel their boys are learning, and are ready to complain when the employer prevents them from going to the classses or when he does not teach them in the workshop all that might be expected.

It is here we see the value of a strong authority with a fixed policy. Experience shows that the boys who most needed it did not attend the Continuation Schools, and that, as in England, of those who did join, a large number fell out by the middle of each session. The Secretary of the Handwerkerkammer puts it, "without compulsion there are no Continuation Schools." The German looks on his compulsory service in the army as the best school for youth; he feels that the discipline has made a man of him, and he believes therefore in discipline for those who are not yet of age for the army, the discipline of attending classes that bear on the work of life, and of being bound or indentured to a fixed employment for a definite term of years.

Dr. Kerschensteiner's Opinion.

The information furnished by Dr. Kerschensteiner indicates his opinion as being strongly in favour of attendance being made compulsory, particularly to prevent the neglect of education by the indifferent and those who are not ambitious. He says:

People tell us industry requires thousands of hands fit to perform the same manipulation with the same unerring skill hour by hour, month by month, year by year. I fully believe that industry does require them. Division of labour is the vital element of industry. But industry is not the aim of human society. The aim of society is the increase of justice and culture. And if industry permanently continues to recklessly disregard this aim it becomes a danger, not only for the state, but also, in the end, for itself as well. A democratic or even a constitutional state that is ruled exclusively by the lust of gain, by money and the machine slaves that money buys, is doomed to inevitable ruin, as soon as the natural riches of the soil become exhausted and the population becomes too dense.

There is no escape from this natural fate of industry but state intervention, not too long postponed, to supplement the one-sided education afforded by industry, trade and traffic. It is in fact an entirely new duty that has arisen for the community since the economic revolutions of the last century. It arose not only in the interests of industry but in the most vital interests of the community itself. It is the imperative duty of the state to create school organizations which deal with the trade-training of boys and girls, which enter into the question with the utmost thoroughness, enlarging and deepening it, and thereby awakening in boys and girls many-sided capacity for work and a living joy in work.

It is a most important thing for a democratic country, or even a constitutional State like Germany, to have this new type of school which Germans call simply Continuation Schools. The conviction of their necessity for the whole life of the state has taken possession of the entire

population more and more during the last twenty years. In South Germany there is no city or town, however small, without one such school, at least for all boys. In North Germany the great industrial town of Essen is the only larger town in which such a school is wanting. These schools are compulsory in Bavaria, Wurttemberg, Saxony, Baden, and Hessen, both for town and country population, up to the age of sixteen, seventeen, or eighteen. They are not everywhere of equal educational value. There are still many town executives that have not yet been able to relinquish the old traditions out of which the schools arose as places for repetition of elementary school work. Not all those who are called upon to give judgment in this matter are thus far penetrated by the deep conviction that they have to deal with an independent school organism, requiring exactly the same budget, the same solicitude, and the same possibilities of expansion, as the primary schools. But everywhere the organizations are progressing, everywhere the representatives of industry and trade are, with few exceptions, beginning to realize that this new form of school can prove a blessing whenever its inner organization adapts itself to the calling of the boy or girl.

SECTION 2: THE SITUATION IN ENGLAND.

The Evening Schools of England have constituted an influential part of the educational effort for many years. They include Continuation classes in general school subjects, and classes with Technical, Commercial and Domestic Economy courses. According to the annual report (1908–9) of the Education Committee of Manchester, in nine of the more important towns (Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bradford, Newcastle, Nottingham and Salford), with a population in 1907–8 of 3,974,012, there were 105,503 individual students attending Evening Classes.

CONSIDERATION BY THE CONSULTATIVE COMMITTEE.

The question of compulsory attendance has been considered by the Consultative Committee, who issued a most comprehensive and valuable Report on the subject. While it deprecates the quoting as its conclusions the short summary of its Principal Recommendations, that objection would be applicable to the use of such a quotation for other than educational purposes in England. For the enlightenment of Canadians, and with due appreciation of the indebtedness of this Commission for dependable and appropriate information which has already been quoted, some paragraphs from the Short Summary of Principal Recommendations as it appears in the Committee's Report are submitted.

Before those are given, some extracts from other parts of the Report are presented.

The main purpose of the Continuation Schools is to provide, at convenient hours and under conditions compatible with the physical welfare of the pupils, further instruction for those who have entered upon the practical work of life, whether as apprentices or as independent wage earners, or in the duties of the home. It endeavours to meet the needs of both sexes. It presupposes a sufficient basis of elementary education, but, where that is defective, attempts to supply it. The lower age limit of its pupils varies, in the main, according to the age at which, under differing local by laws, boys and girls are released from compulsory attendance at the Day Schools. In the more advanced stages of its work, the Continuation School thus falls into two main, though not clearly demarcated, divisions—the Elementary and the Advanced. Its function is twofold: to prepare its pupils for the efficient discharge of the duties of citizenship, and to increase their adaptability and skill in bread-winning occupations.

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The first point that arises is whether these children are fitted when they leave the Day School to be transferred to their various callings or occupations without further school education.

The simplest way to approach the problem is to consider what happens to those children who leave the Day School at an early age and attend no further classes of any sort. It is some times urged that children who are preparing to earn their living either by purely manual labour, or by occupations in which manual labour holds at least a prominent part, are injuring their chances of industrial efficiency by remaining too long at their books. What they need, it is said, is early contact with the realities of the mill, the shop, or the desk. Thus, it is argued, did their fathers learn their trade and it is still the best method of training. A fatal objection to this argument however, is found in the fundamental changes of the conditions of industry in recent years of which the most important are the decay of the old system of apprenticeship, and the increasing influence of scientific knowledge upon trade conditions. In earlier days a boy who exchanged school for apprenticeship did not cease his education or his general training. Under the system at its best he was still definitely under tuition, and that of a fairly general and unspecialized kind. Above all, he was under continued discipline.

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In no country have Evening Schools and Classes played a more important part in popular education than in England and Wales. For more than two generations they attempted to supply the defects of a wholly insufficient provision of Elementary Day Schools. They supplied the first beginnings of a system of technical instruction. They have been intimately connected with the social and economic ideals of the skilled workers. They have given scope to individual energy and have helped in training the power of voluntary organization. On the other hand, they have been little more than an appendage to the more highly organized system of Elementary Day Schools. They have never yet been worked into a coherent system of national training. Their courses of instruction lack discipline because many of their pupils had no sound foundation of elementary knowledge.

It may truly be said, therefore, that the Evening Schools in England and Wales have offered useful opportunities to many of those whose force of character and physical vigour have enabled them to fight their way through difficulties to positions of responsibility and leadership. But they have failed, in great measure, to touch the less strenuous or the idle, and they have been too little adjusted to the needs of the rank and file, especially during the critical years of adolescence.

Thus the modern developments of the Continuation School in Germany have been closely connected with the work of the Sunday Schools. In many parts of Germany Continuation Schools still meet on Sunday, though there is a growing tendency to confine the more technical classes to other days of the week. It is not too much to say, however, that without the free use of the early hours of Sunday morning for purposes of secular or even technical instruction, the German system of Continuation Schools, which is now exerting a decisive influence upon educational opinion in France, Switzerland, and America as well as in Great Britain, could never have so quickly attained to its present development.

SOME OF THE CONSULTATIVE COMMITTEE'S CONCLUSIONS.

"The record of the struggles of the Evening Schools points to the conclusion that this branch of national education can dispense with neither the self-sacrificing energy of individuals nor with the co-ordinating authority of the State. When the latter is lacking, we find an immense waste of effort in organization and a faltering indecision in educational aims. But without the hearty co-operation of volunteer helpers and without determination on the part of the students to battle against difficulties and to overcome them, Government grants and official regulations produce but disappointing results."

The paragraphs from the *Short Summary of Principal Recommendations* which deal directly with compulsory attendance are as follows:—

"Inasmuch as the foundations of a successful system of Continuation Schools must be laid in the Day School, the Committee recommend that increased attention should be given to the connection between the Continuation School and the Public Elementary School, in order that there may be less discontinuity of attendance, and that by the improved equipment of the pupils increased

expenditure upon Continuation Schools may be fully remunerative. With this object in view, the education given in the Day School should be improved by reducing the size of classes, by increasing the proportion of qualified teachers, by introducing more manual work (including domestic subjects in the case of girls), and by improving the regularity of attendance.

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"Junior Employment Registries should be established to give skilled advice to parents, managers, and teachers, in the selection of suitable occupations for the children between the time when they leave the Day School and their 17th birthday, and in the children's choice of such further courses of instruction as will help in qualifying for future skilled employment. These registries should be subsidized from public funds and should be closely related to any system of Adult Labour Bureaux which may hereafter be established.

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"It should be lawful for the Education Authority of any county borough to make by-laws (subject to confirmation by the Board of Education) for requiring the attendance at Continuation Classes, to an age to be fixed by the by-laws, but not exceeding 17 years, of any young persons resident or working in their district who are not otherwise receiving a suitable education. By-laws should be distinct for boys and girls. It should be left to the discretion of the Local Education Authority (*a*) to frame by-laws (1) for one sex only, (2) for part or parts of its district, (3) for those engaged in particular trades or occupations in that district, and (*b*) to determine the age or ages up to which the by-laws should be applicable within the limit of 17 years of age. No young persons should be required by such by-law to attend a Continuation Class held more than 2 miles from his or her place of residence.

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"It should be the statutory duty of every employer of any young person under 17 years of age (*a*) to enable him or her to attend Continuation Classes for such period of time and at such hours as may be required by the by-laws of the Local Education Authority of the district in which such young person either works or resides, and (*b*) to supply the names of all such persons to the Local Authority on demand. Further, in order to secure the regular attendance of pupils at Continuation Schools in areas where such attendance is made compulsory by by-law, all employers, in such trades or parts of the district as the by-law may specify, should be forbidden under penalty to employ or continue to employ any young person under 17 years of age who failed periodically to produce a card attesting his or her attendance at Continuation Classes in conformity with the terms of the local by-law.

"The Local Education Authority should have power to fix, after consultation with representatives of the employers and of the workpeople in each trade, the hours and seasons at which the compulsory Continuation Classes should be held. With a view to protecting young people from over-strain, the Local Edu-

cation Authority should have the further power of prescribing the limit of hours which may not be exceeded in any day or week, as the case may be, by employment and further education combined. Such restriction should be adjusted to the different conditions of the various trades and callings concerned."

SECTION 3: THE SITUATION IN SCOTLAND.

Under the Education (Scotland) Act of 1908 authority is given to municipalities to enact by-laws requiring attendance. When the Commission was in Scotland (1911) as far as could be learned the Act had not been actually put into operation, although by-laws had been made in two places. The following are paragraphs of the Act in question:

"(1) Without prejudice to any other power of a school board to provide instruction in continuation classes, it shall be the duty of a school board to make suitable provision of continuation classes for the further instruction of young persons above the age of fourteen with reference to the crafts and industries practised in the district (including agriculture if so practised and the domestic arts), or to such other crafts and industries as the school board, with the consent of the Department, may select, and also for their instruction in the English language and literature, and in Gaelic-speaking districts, if the school board so resolve, in the Gaelic language and literature. It shall also be their duty to make provision for their instruction in the laws of health and to afford opportunity for suitable physical training.

"(2) If it is represented to the Department on the petition of not less than ten ratepayers of the district that a school board are persistently failing in their duty under the foregoing subsection, the Department shall cause inquiry to be made and call upon the board to institute such continuation classes as appear to the Department to be expedient, and, failing compliance, may withhold or reduce any of the grants in use to be made to the board.

"(3) It shall be lawful for a school board from time to time to make, vary, and revoke bylaws for requiring the attendance at continuation classes, until such age, not exceeding seventeen years, as may be specified in the bylaws, of young persons above the age of fourteen years within their district who are not otherwise receiving a suitable education, or are not specially exempted by the school board from the operation of the bylaws, and that at such times and for such periods as may in such bylaws be specified. Such bylaws may also require all persons within the district having in regular employment any young person to whom such bylaws apply, to notify the same to the board at times specified in the bylaws, with particulars as to the hours during which the young person is employed by them:

Provided that no young person shall be required to attend a continuation class held beyond two miles measured along the nearest road from the residence of such young person.

"(5) If any person fails to notify the school board in terms of any such bylaws in regard to young persons employed by him, or knowingly employs a young person at any time when his attendance is by any such bylaw required at a continuation class, or for a number of hours which, when added to the time required under any such bylaw to be spent at a continuation class, causes the hours of employment and the time so spent, taken together, to exceed in any day or week, as the case may be, the period of employment permitted for such young person by any Act of Parliament, he shall be liable on summary conviction to a penalty not exceeding twenty shillings, or in case of a second or subsequent offence, whether relating to the same or another young person, not exceeding five pounds.

"(6) If any parent of a young person by wilful default, or by habitually neglecting to exercise due care, has conduced to the commission of an offence under the immediately preceding subsection or otherwise, through failure on the part of the young person to attend a continuation class as required in any such bylaw, he shall be liable on summary conviction to the like penalties as aforesaid."

SECTION 4: THE SITUATION IN THE UNITED STATES.

OHIO.

The two most significant pieces of legislation with reference to Vocational Education in 1910–11 were the innovations introduced into the laws of Ohio and Wisconsin. In both these commonwealths, the emphasis has been laid upon the encouragement of part-time and Continuation Schools; in both the approach has been partly through an attempt to claim by law a portion of the working day of the adolescent for after-training at the expense of the public.

In 1910, Ohio, without any previous legislation on the subject, injected a provision for part-time and continuation education into the attendance laws of the State. (House Bill 452—Ohio Session Laws 1910). No state aid is given to vocational training of any kind and there is no State Board of Education for the administration of either general or practical training. The Ohio statute, which was the first enacted in this country for the compulsory part-time schooling of those who are engaged in wage-earning occupations, required the attendance at school of all those under 16 years of age who are not able to meet a test for fifth-year pupils in reading, spelling, writing, English, grammar, geography and arithmetic. Those who have satisfactorily completed the eighth year of the common schools but are not regularly employed are required to attend the regular schools until they secure employment or have reached their seventeenth birthday. Whether or not a town or city shall establish part-time classes for those who have gone to work is left as a referendum to the Board of Education of the community. In school districts where no part-time day classes are provided all those fourteen years of age who have accepted regular employment after meeting the fifth grade test either in class or by examination are exempt from further school attendance; but wherever the Board of Education provides part-time day classes for the instruction of youths over fourteen years of age who have taken employment, attendance by such pupils upon this instruction is obligatory until they have either completed the eighth grade of the common schools or reached their seventeenth birthday.

WISCONSIN.

As the result of the recommendations of the Wisconsin Commission on Industrial Education, 1910, laws were passed in 1911 in which the responsibility of the State for the training of all adolescents up to the age of sixteen, whether they remain in school or go to work, is asserted; the State taking complete control educationally, so to speak, of the child from his seventh to his sixteenth year.

No child under sixteen is permitted to work at any occupation hazardous to body, health or character. Every normal child is required to attend regularly the public school, or other equivalent school, from the seventh to the fourteenth year. Between fourteen and sixteen years of age there is an alternative;

every child shall continue to attend the common school faithfully or, upon obtaining a definite permit from the Commission of Labour, a truancy officer, or the judge of a state, county, or municipal court, the child may enter upon a definitely specified useful occupation, working thereat not more than 48 hours per week, including five hours per week to be spent in the industrial school. If he discontinues the permitted occupation at any time he must return at once to the public school and the employer must return the permit for cancellation.

Every child in Wisconsin between fourteen and sixteen years of age, who, under a special permit enters upon some useful employment, must go to an industrial, commercial, continuation or evening school for five hours each week, the employer continuing the wages during those hours, the attendance upon school being for such hours, and at such places, as the local Board of Education prescribes.

The Cincinnati, Ohio, Compulsory Education Law.

The Compulsory Education Law, which went into effect in May, 1910, provides that all children not regularly employed must remain in school until they are sixteen years of age. In order to be employed it is necessary for them to get "Certificates to Work" from the Superintendent of Schools in the school district in which they are employed. The law expressly provides that certificates are to be given only to youths, between 14 and 16 years of age, who have completed the fifth grade.

In order to get a certificate, pupils must bring with them to the Superintendent of Schools' office:

1st. A school record properly filled out and signed by their teacher or principal giving their (1) name, (2) date of birth, (3) residence, (4) grade (year in the course), (5) standing in their studies and general conduct, (6) number of weeks in attendance in the year previous to the date of applying for the school record.

2nd. A birth record duly attested: either a copy of the baptismal or birth certificate from a church, or the birth record from the City Health Department, or the affidavit of the parent or guardian made in person at the office issuing the certificate.

SECTION 5: THE SITUATION IN ONTARIO.

The following is a synopsis of the "School Attendance Adolescent Act" as published in Bulletin No. 2 by the Department of Education for Ontario:

Jurisdiction of the Boards.

(1) The jurisdiction of the Boards which possess the power of enforcing compulsory attendance under this Act is as follows:

Schools and classes of the High School grade are under the Boards of High School Trustees, the Boards of Education, and Continuation School Boards of

urban Continuation School districts; and schools and classes provided for under *The Industrial Education Act,* that is, industrial, technical, and art schools and classes and commercial schools and classes, are under the Advisory Industrial and Commercial Committees respectively.

(2) Schools and classes of the Public School grade are under the Boards of Education, and urban Public and Separate School Boards.

Local Option.

As the establishment of schools under this Act limits the control by the parent or guardian and the employer over the adolescent, and as it might involve a large expenditure by the ratepayers, the Act provides that no classes shall be established under it without an opportunity being given to the ratepayers for passing judgment on any proposed by-law.

The provisions are as follows:

(1) The by-laws must be passed by the Board at a special meeting, after due public notice of the meeting and the object thereof has been given by advertisement. Under this provision, a ratepayer may bring his views before his representatives on the School Board and so indirectly control the result.

(2) If within thirty days after the passing of the by-law under the Act, ten per cent of the electors of the municipality petition the Council, praying that the by-law shall be submitted to the electors, the Council shall do so, not later than the next general municipal election. Under this provision, the ratepayer may directly control the result.

By-Laws.

Under the Act, the Board has full discretionary powers which it is expected to exercise in accordance with the needs and capabilities of the locality.

The Board may provide compulsory attendance at the classes or schools, either established by the Board or at some other school in the municipality, of every adolescent who is not exempt under the by-law, provided, however, no child of the supporter of a Roman Catholic Separate School shall be required to attend any of the classes of a Public School.

It may provide courses of study and appoint teachers and instructors, and, in addition to the regular day classes, it may also establish and require attendance at special day and evening classes, including special classes for either sex or for both, and for those engaged in particular trades or other occupations. It may fix the seasons of the year and the number of hours in each day and in each week for the compulsory attendance.

And further, in accordance with the object of *The Industrial Education Act,* the details of the courses for those engaged in trades or like occupations are to be settled by the Advisory Industrial Committee and the details of the Commercial course by the Advisory Commercial Committee.

The Classes provided may, accordingly, be:

(1) The ordinary Day School Classes;

(2) Ordinary Evening Classes; and

(3) Other Day and Evening Classes which employees shall attend at certain seasons for a certain number of days in each week and of hours in each day as may be determined by the by-laws.

The Act also provides for the exemption from attendance of individuals or classes of individuals who are so provided for in the Act or the by-laws.

Duties of Parents and Guardians and of Employers.

Under the Act, the employer is obliged to give notice to the Board of the names of the adolescents in his employment and the hours which they work for him. He is also obliged to release the adolescent for the number of hours during which he may be required to attend the day classes provided for him by the Board, with the provision that the total daily number of hours of employment and of attendance at compulsory classes shall together not exceed the total numbers of hours during which the adolescent may be lawfully employed.

The parent or guardian is also required to see that the adolescent attends the classes provided for him.

In the case of disregard of the provisions of the Act, the employer or parent or guardian incurs a penalty not exceeding $5 for the first offence and not exceeding $25 in the case of the second offence.

Powers and Duties of Truant Officers.

For the purpose of enforcing the by-laws, the Truant Officer appointed under *The Truancy Act* possesses the power and shall perform the duties enforced and imposed upon him by that Act.

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