AN ABSTRACT OF THE THESIS OF

Hugh Alton MacGregor for the Doctor's in Education

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Title A PROPOSAL FOR A CANADIAN FEDERAL-PROVINCIAL PARTICIPATION PLAN IN VOCATIONAL AGRICULTURE

Abstract approved

Farming is a business as well as a way of life. It is sprightly rather than static in its fundamental nature. The farmer should be versatile and intelligently resourceful, able to decide at all times which of many things must be done. His work has more variety, more possibilities for initiative and self-determination than the work of a city artisan or foreman. There is as much dignity in tilling a field as in writing a business letter or addressing an audience. The farmer, more than most others, must be able to take the soil, the winds, the clouds, and the sunbeams into active partnership.

The farm has not been holding its young people in sufficient numbers. Many of our farm homes, having little of a physical nature to make them attractive, are centers where old and young enjoy all that is most precious in family living. The necessary young people cannot be held unless rural home and community life can be made more attractive and comfortable; in part this implies that the per capita farm income must be nearer to that which would be earned in urban centers.

In the long run it is only as farm people themselves catch a vision of a better community, and better command the many agencies at their disposal to make it a reality, that farm life will reach its peak of contentment. No social legislation can do this for them; this achievement must arise from the rural community itself.

Agriculture has developed from self-sufficiency into a business enterprise. A greater portion of farm produce is being sold, processed, and transported long distances. Virgin soils are fast disappearing. Depletion of available plant foods as well as wind and water erosion are everywhere causing informed agriculturists deep concern. Conversationists fear the results of such phenomena in terms of national prosperity and economic security.

Much research has been directed toward discovering the relationships of education to farm income, and to the general living standards of farm folk. Educationists for centuries,
particularly the last two or three, have considered ways and means of improving the various areas involved in rural life. In the United States, and more latterly in Canada, much interest has been directed toward discovering the basic needs of our farming population from a long-term viewpoint. The making available of such basic data has made possible an intelligible picture of the rural situation.

Our educationists have made available philosophical and psychological data essential to the analysis of social and political facets of the farming problems of our time.

Adequate education of the farming population appears to be one of the essential means of removing many disabilities which our rural folk are experiencing.

Considerable difference of opinion exists as to the type and extent of education necessary to make farmers and their families sensitive to such disabilities and make them willing to take measures essential to relief from these handicaps. The proponents of general education hold that the traditional academic subjects are sufficient in their effects to assure all who experience them of adequate preparation for dealing with life's problems. Educational research has in later years pointed to the expediency of teaching directly for desired results; this conclusion infers that in the general case transfer only of identical elements in academic education may be expected.

Accepting the more recent viewpoint as the functional one, rural educationists have laid down for our farm folk a course of studies which integrates general and practical education: one-third basic English, Social Studies, Health and Physical Education, with Mathematics and Sciences closely related to agricultural needs; one-third (assuming a four-year period) Vocational Agriculture; a remainder of Fine, Commercial and Industrial Arts to meet variations in individual needs and interests. In a three-year senior high school program Vocational Agriculture should be assigned four-tenths of the credits essential to a General High School Diploma.

The welfare of the farming population is acknowledged to be of national concern and hence a national responsibility. It is recommended that federal concern in education be implemented by federal money appropriations which shall be greatly increased in amounts. These funds should be so distributed that the youth of the less favored sectors of Canada shall be able to enjoy educational opportunities equal to those of more fortunate areas.
A PROPOSAL FOR A CANADIAN FEDERAL-PROVINCIAL PARTICIPATION PLAN IN VOCATIONAL AGRICULTURE

by

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CHAPTER I

INTRODUCTION

A PROPOSAL FOR A CANADIAN FEDERAL-PROVINCIAL PARTICIPATION PLAN IN VOCATIONAL AGRICULTURE

The Prevailing Concern for Rural Welfare

Certain factors have operated to bring about a more realistic national interest in agriculture. With the rapid growth of urban centers agriculture has developed into a more commercial activity. Farmers use their acres to produce more and more food for market purposes rather than for the sole purpose of raising food for themselves. More and more of Canada's food has been coming from points far removed from the place of consumption. In this way the interest in food production has been steadily evolving from a local matter to one of national import, as the food supply of a people is basic to a vigorous national life. Clearly, the remarkable increase of industry and the increase of population in Canada, especially in urban centers, can not continue without a corresponding increase in agricultural production. From this we may deduce that agricultural production is inseparable from national prosperity. While agricultural production may not have increased at the same rate as our population, there seems to be no danger of a depleted national food supply. Our yields per acre are much lower than those in European countries, and when the necessity so to do presents itself we must be able to cause
each acre to produce much more than it is presently yield-
ing.

Many years ago we passed the point at which the amount of virgin farming lands began to dwindle. The point at which there is all too evident a rapid depletion of soil and soil fertility in our fields has been reached. It is evident that continued lack of attention to these problems will result in national poverty. The dwindling of soil fertility and concomitant soil destruction strike directly at the foundations of national prosperity and economic security.

The educational import of the situation is clear. A changing agriculture calls for greater developed intelligence in its practice. To meet the problems of dry farming many new and untried methods were developed. A similar observation applies to the farming of irrigated and drained areas. It seems evident that the solution of further agricultural progress lies in part in agricultural education. In large part the establishment of a system of permanent agriculture depends upon educating the farmer to do his work more intelligently and skilfully.

Again, the sociological aspects of rural life have attracted much attention. Industrial development has brought about a continued cityward migration, developing a situation greatly concerning some leaders of thought who have the
national weal at heart. The alarm seems not to have been occasioned by the numbers of people who flocked from the farms to the cities so much as by the fears of depletion of the farming communities and leadership which it is feared might result from the migration. At the moment in Canada there is extensive research and discussion about the current rural educational, social and economic situation. Agricultural life is fast becoming a question of national concern educationally, as witness the activities of such widely sponsored research agencies as the Canadian Committee on Practical Education. In the not too distant future we may realize a plan of education in vocational agriculture in our secondary high schools as well developed as have been our agricultural extension services during the past forty-three years.

**Canadian Educational Problems**

Fundamentally the Canadian elementary school was established for literacy purposes, that is, it dealt primarily with those skills of reading, writing, and calculating which were considered to be of great personal importance for social beings. Our present understanding of the functions of the elementary schools are very much wider.

At the moment in Canada some concern is being expressed over the amount of schooling which the child
currently receives. Even the casual observer will notice that children tend to leave school early in too large numbers. In Catholic Quebec schools (83, p.52)(84, p.15), the eighth year finds only 31% of the pupils who comprised the first year, and by the eleventh year there are but 5% still attending school; in the 1948-49 Alberta school year 12.76% of the population was in Grade I and but 3.84% was in Grade XII (5, p.96), that is, less than one in four remained to enter Grade XII. The secondary schools serve but a small percentage of our Canadian children.

Many people hold that our secondary schools are not fully adapted to the needs of the masses of our population, most of whom will not engage in literary or professional pursuits. Apparently our secondary schools tend to appeal to and train only select groups. This condition, it is being said, is not at all in keeping with democracy's needs for equality of educational opportunity. Or, it can be said, the attempt to set up a system of democratic education is successful only in part. In this discussion there is still much confusion as to the purposes and possibilities of education.

A vexatious problem is the relation between general and so-called vocational education. One group of educators maintains that a form of general education which trains pupils to act in a broadminded fashion is the prime
consideration. Some even go so far as to insist that our great national success is due principally to the liberal or general education which our public schools offered as contrasted to a highly specialized form of education. There are others who favor a highly specialized education as the means of national security and prosperity. Some educators believe that there is danger in specialized education of the loss of capacity to adapt one's self to changing conditions within an industry or society. Some assert that a vocational education is also a cultural experience, and that the desirable citizen is the one who can honestly and sufficiently make his way among his fellows because he knows how to do something useful.

One System or Two? One question which interests administrators is this: Should there be a single school system including all forms of education, or should there be one set of educational machinery for general education and another for vocational education? In the United States the earlier tendency was toward the dual system of schools; the later tendency has been that of including practical courses in the public school systems. In the United States some felt that separated schools would weaken the rural high schools in many communities. Besides, it was thought that vocational education would suffer as well as general education if separate schools were established, as each needed
the enriching influence of the other to prevent a one-sided education. One thought was that what was needed was a re-direction of the rural schools in the interests of rural life rather than a new kind of schools. (28, pp.305-7)

**Tendency toward Larger Administrative Units**  
Among the important current developments in Canadian educational practice is the tendency toward larger administrative units of support and control. The local district school has given way (e.g., in Ontario to the township unit; in Nova Scotia and New Brunswick to the County unit; in Saskatchewan, Alberta and British Columbia to "divisions") in large portions of Canada to larger and financially stronger units of educational administration. While the provincial departments historically closely supervised the affairs of local districts, only of late has there been generous financial responsibility. This has been greatly increased to insure the success of the more ambitious programs of the enlarged authorities. This important development renders us more able to keep our educational practice in pace with rapid social and economic changes, besides creating accessible secondary school education for a vastly greater number of Canadian rural children.

**Current Pressure toward Federal Financial Aids to Education**  
Another interesting trend is the increased
pressure brought upon the federal government for grants-in-aid to education. A peculiar feature of the Canadian governmental structure is that two sets of governments have been set up covering the same area, with each distinct and more or less independent. The provinces are at times very jealous of "provincial rights" -- a term parallelling in significance that of "states' rights". Both sets of organizations have direct and immediate relations to the citizens and are their creations. Section 93 of the British North America Act(23, 1942, p.52) delineated powers to each kind of government and witheld specific powers in some cases. It might be said in general that the provinces are in charge of affairs of local import, while the Canadian government is in charge of interprovincial, national, and international matters. Education is specifically a responsibility of the provinces. There is a twilight zone where the respective jurisdictions are not too clear, and from time to time provincial governments individually impede federal gestures which, although patently beneficial, may be interpreted by zealots as infringements of provincial prerogatives. Current social and economic developments are slowly but surely forcing the Canadian government into the position of providing financial help to provinces in matters wholly provincial in jurisdiction. In matters which at one time could be locally dealt with but which are
now truly national in their significances, only the federal government's participation can insure conditions essential to the national interest and well-being. In the field of education more and more emphasis is being directed toward federal support to the end that all youth in Canada may be equally well prepared for the solution of life problems. The close of the first half of the twentieth century is witnessing a serious and widely spread search into the ways and means of best directing our educational efforts in this direction.

**Agricultural Education Must be Given More Emphasis**

Agricultural education is a phase of the broader problem of industrial education, and should be looked upon as such. In past and current Canadian educational thought the term *vocational education* has been used to denote that narrow form of education which will fit the learner only for participation in the mechanical pursuits of the shop and the factory. Whatever the merits of this definition may be, the time has come when the basic industry of agriculture must receive more adequate educational consideration. This is particularly necessary in combatting the influence of tradition, which is greater in agricultural practices than in many other industries. Practical knowledges, with a medium of understood theory, have been transmitted from father to son through the generations. We have not as in
other industries generally realized the full import of resultant low ideals of living standards, unsound business management, and unsound farming practices stemming from such conditions. Agriculture must receive the same degree of educational attention which earlier was found expedient in other industries.

In a democracy the education of one section is a matter that concerns all other sections, as all must undertake an equal responsibility in successfully developing the community. An industry which supplies the primary food resources cannot be neglected by the consumers of the nation. The city dweller should be intelligently interested in the origin and the values of the products necessary for his table; the farmer should be vitally concerned with the city market quotations, the costs of processing, transportation, and selling of agricultural products to the consumer. The city is dependent upon the rural community for (a) new life blood and vigor to maintain its population as well as (b) its food supply and (c) 55.8% of all primary products (23, 1945, p.319) used in industry.

Sir Horace Plunkett commented:

".... the well-being of a people is like a tree: agriculture is its root, manufactures and commerce are its branches and its life; if the root is injured the leaves fall, the branches break away, and the tree dies." (81, p.44)

Agricultural prosperity is one of the most essential factors
in national financial stability. This is indicated by the nation-wide fluctuations of business sales and collections and production during periods of alternately high and low prices for farm commodities. Local business men, better than most farmers, have long realized that healthy farming conditions mean increased trade and that farming conditions determine more largely the community's general prosperity than does the success of any other industry. Agricultural income frequently is deemed the barometer of national prosperity.

It is said frequently that the farmer should be well able to look after himself. This assumes (a) that the farmer alone will benefit by any educational aid given to him by the community and (b) that this is the first instance such aid has been initiated. In the past the agricultural population has helped to pay for aid to other industries. The truth is that it is high time that there be a reciprocal assistance. Witness past subsidies and grants to railroads, steamship lines, air lines, the granting of patents to individuals and to corporations, the establishment of protective tariffs and discriminatory taxes of various forms -- all of which have been designed as aids to particular industries. The vocational education of the farming population is a national necessity, not a local or individual one, for at least three cogent reasons:
1. 55.8% of Canada's raw materials originate on her farms. 39% of Canada's manufacturing plants were engaged in processing Canadian farm products. (23, 1945, p.319)

2. Approximately 25% (27.1% on June 2nd, 1941) (21, 8-1, p.20) of Canada's people live on farms; on the prairies, 46% of the total population of 2,562,941 live on farms. (22, p.6)

3. Agriculture is the basic industry of the nation, as no other industry affects the same proportion of the national population or industry.

**Agricultural Education Most Complex**  
Agricultural education, adapted to the problem-solving needs of farming communities, is a much larger and more involved undertaking than is the education of the mechanic or the artisan in other industries. Farming is not one occupation, but is made up of many interrelated and complicated activities, many of which individually involve several sciences and require many kinds of skills. The problem of agricultural education is complex, involving not only the primary need of making the farm pay, but also the development of farm business methods and a higher rural social welfare.

Owing to his limited horizons and individualistic experiences, one of the foremost educational problems is to convince the farmer that the adequate education of his children is at least as important as the fattening of his hogs.
That the adequate education of his children might accelerate the fattening of his porkers is difficult for most farmers to visualize. Unlike many occupations, farming determines the location of the home and the mode of living. These conditions demand that vocational agricultural education must include technical education, education for citizenship, home-making education, community-building education; the rural community organization possesses its own essential attributes.

While the main problem facing agricultural education-ists well may be the greater relative prosperity of the farming population, several closely related considerations are evident:

1. A system of education must be fitted to local conditions and to the everyday experiences of farm children, thus relating them to the environment at hand and developing their capacities through a reasonable agricultural and natural history viewpoint.

2. There must be an orientation of rural education of boys and girls of from 14 to 19 years of age toward productive efficiency along homemaking lines as well as toward productive agricultural efficiency.

3. There must be education of the out-of-school young farmer and the adult farmer in methods of sound management of farm resources according to known sound principles,
along with the widest possible spreading of the pertinent knowledges available from time to time.

4. Agriculture must be dealt with as a home-making industry, appreciating that the work of the farm woman plays a very important part in the success or failure of the family venture. This suggests that serious attention must be given to the status and condition of the farm home.

5. As farming is a business venture for most farmers, sound business methods must be known and understood as involving all cooperative activities contributing to farm successes, the disposal of products and the acquisition of essential supplies.

6. The social as well as economic advantages of facile communication and transportation must be fully understood.

7. In order that the higher aspirations of our farm folk may find their satisfaction in the richer possible life, a revitalization and re-direction of country life is envisaged. (61, pp.xxii-iii)

Secondary Education in Vocational Agriculture

That no scheme of education is complete without an efficient secondary school system is universally conceded. If true of the academic area, it is even more true of vocational education. In rural areas vocational education means vocational agricultural education. The gradual
adoption of more scientific farming methods, the necessity of increasing production through the selection of more effective plant, animal, and soil units, the competition to which the Canadian farmer is subjected on the world's markets, the increasing mechanization of most farming activities -- all these indicate the need for greater developed intelligence and knowledge by the farming folk. Many opponents of secondary education for farm boys hold that this will not make farm boys wealthier farmers. Several studies, made over a long period of time, have indicated that farmers' accumulations vary somewhat directly as do their relative educational attainments: those with higher academic attainments have been more prosperous than have their less fortunate fellows-farmers, and those fortunate enough to enjoy vocational agricultural educations have prospered beyond those who possessed merely academic education.

The National Education Association reported the results of an investigation made by the New York College of Agriculture into the comparative financial status of 859 New York State farmers: of these 859 farmers, 622 had made some progress through the elementary grades of school, 209 farmers had attended high school, and 14 farmers had attended colleges or universities. The capacities and intelligence of the various capital groups of farmers were found to be quite similar. In order to eliminate the possibility
of superior beginning-farming opportunities due to various causes, the farms were arranged in equal-capital groups.

TABLE I

COMPARATIVE FINANCIAL STATUS OF 859 NEW YORK STATE FARMERS OF TWO DIFFERENT EDUCATIONAL GROUPS

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<th>Capital group</th>
<th>Average labor income of farmers with elementary education</th>
<th>Average labor income of farmers with more than elementary education</th>
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<tr>
<td>Up to $2,000</td>
<td>$187</td>
<td>$286</td>
</tr>
<tr>
<td>$2,001 to 4,000</td>
<td>241</td>
<td>275</td>
</tr>
<tr>
<td>4,001 to 6,000</td>
<td>398</td>
<td>466</td>
</tr>
<tr>
<td>6,001 to 8,000</td>
<td>395</td>
<td>709</td>
</tr>
<tr>
<td>8,001 to 10,000</td>
<td>618</td>
<td>796</td>
</tr>
<tr>
<td>10,001 to 15,000</td>
<td>825</td>
<td>1,091</td>
</tr>
<tr>
<td>15,001 and upward</td>
<td>1,054</td>
<td>1,276</td>
</tr>
<tr>
<td>Average</td>
<td>$488</td>
<td>$699</td>
</tr>
</tbody>
</table>

In every group the better (in terms of formal schooling) educated men were able to use their capital to more advantage. There was a differential of $304 annual net income in favor of those farmers who had attended high school; with Dominion of Canada Savings Bonds presently yielding 22% annual interest this differential would be equivalent to an endowment of more than $10,900. (108, p.1096)(109, p.553)

A study made by O. R. Johnson of the University of Missouri from data collected in the 1912 Missouri farm management survey covered the records of 656 farm operators,
of whom 554 or 34.5% had district school education; a very small percentage of the latter had had better than secondary school educations:

TABLE II

DIFFERENCES IN INCOME OF MISSOURI FARMERS OF NOT MORE THAN ELEMENTARY SCHOOL EDUCATION AND THOSE OF MORE THAN ELEMENTARY SCHOOL EDUCATION

<table>
<thead>
<tr>
<th></th>
<th>Elementary or less</th>
<th>More than Elementary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holdings</td>
<td></td>
<td>33% more</td>
</tr>
<tr>
<td>Ownership of lands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>operated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average value per</td>
<td>60%</td>
<td>80%</td>
</tr>
<tr>
<td>acre</td>
<td>$80</td>
<td>$89</td>
</tr>
<tr>
<td>Live stock owned</td>
<td></td>
<td>17% more</td>
</tr>
<tr>
<td>Acres operated per</td>
<td>53.5</td>
<td>61.2</td>
</tr>
<tr>
<td>hired man</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productive work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>units</td>
<td>147</td>
<td>171.7</td>
</tr>
<tr>
<td>Crop index</td>
<td>97</td>
<td>102</td>
</tr>
<tr>
<td>Net income</td>
<td>$382 (100%)</td>
<td>$665 (171.4%)</td>
</tr>
<tr>
<td>Living costs</td>
<td>$390 (100%)</td>
<td>$449 (115.5%)</td>
</tr>
</tbody>
</table>

The better educated group operated 33% more land, owned 33% more land, their land was more highly valued, they had one-sixth more live stock, farmed 14% more acreage per hired man, showed productive work units (units of ten hours' labor per man involved) 16% in excess, and showed crop yields 2% in excess of the community average as against a 3% deficit in crop yields of the lesser educated group in terms of the community average. The net income (after all wages to hired help and family members, all
expenses of operation and interest upon the capital investment, but not living expenses, had been deducted) of the better educated group averaged 71.4% more than that of the lesser educated group; the living costs of the better educated farmers were over 15% greater -- that is, they lived on a higher scale. (56, p. 2)

If there are those who do not believe that education is necessary to successful farming, consider the figures as reported by Lane carefully, and while you are doing so consider also whether the low average income in agriculture may not be due as much as anything else to a low level of education. Lane found further that the education of the farmer's wife is as important in relation to the average net gain per year as the education of the farmer himself. In Table III the records of 1,642 Saskatchewan farm couples are reported:

**TABLE III**

**AVERAGE GAIN IN NET WORTH,**

**1,642 SASKATCHEWAN FARM COUPLES**

<table>
<thead>
<tr>
<th>Population</th>
<th>Education</th>
<th>Years of Records</th>
<th>Average Yearly Gain in Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>146 couples</td>
<td>Grade 3 or less</td>
<td>17</td>
<td>$32</td>
</tr>
<tr>
<td>1,121 couples</td>
<td>Grade 4 to 8</td>
<td>17</td>
<td>63</td>
</tr>
<tr>
<td>282 couples</td>
<td>Grade 9 to 10</td>
<td>17</td>
<td>133</td>
</tr>
<tr>
<td>85 couples</td>
<td>Grade 11 or 12</td>
<td>14</td>
<td>198</td>
</tr>
<tr>
<td>10 couples</td>
<td>Over Grade 12</td>
<td>19</td>
<td>235</td>
</tr>
</tbody>
</table>
Compared with the average annual gain in net worth enjoyed by those with Grade III or less education, the couples with Grades IX or X attainment had four times the gains, while those couples with better than high school education enjoyed nearly eight times the average annual gains in net worth of the least favored group. (59, p.81)

A record of Average Earnings of Heads of Families, Classified by Years of Schooling and Ages for Urban and Rural Canada is found in Table IV. The information was derived from the 1941 census:

TABLE IV

AVERAGE ANNUAL EARNINGS OF HEADS OF FAMILIES, 1941

<table>
<thead>
<tr>
<th>Years of age of Schooling</th>
<th>0 -- 34</th>
<th>35 -- 44</th>
<th>45 -- 64</th>
<th>65 upward</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4</td>
<td>$780</td>
<td>$561</td>
<td>$901</td>
<td>$721</td>
</tr>
<tr>
<td>5 - 8</td>
<td>988</td>
<td>757</td>
<td>1166</td>
<td>950</td>
</tr>
<tr>
<td>9 - 12</td>
<td>1245</td>
<td>1113</td>
<td>1595</td>
<td>1384</td>
</tr>
<tr>
<td>13 &amp; up</td>
<td>1658</td>
<td>1542</td>
<td>2301</td>
<td>2082</td>
</tr>
</tbody>
</table>

It would appear that there is a direct relationship between the number of years' schooling of heads of families and the amounts of their annual incomes in dollars. (23,1947, p.292)

All of the farmers reported upon so far have had academic educations. Further investigations indicate that
farmers with agricultural educations have prospered more than those farmers who attended non-agricultural schools.

H. S. Tyler in his study of the comparative successes of operating farmers of varying amounts and types of education found this illuminating information:

**TABLE V**

**INFLUENCE OF VARYING AMOUNTS AND TYPES OF EDUCATION UPON FARM INCOMES**

<table>
<thead>
<tr>
<th>Education</th>
<th>Samples</th>
<th>%</th>
<th>Age</th>
<th>Per Man Work-Units</th>
<th>Per-man</th>
<th>Labor Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>6,822</td>
<td>62.2</td>
<td>50</td>
<td>402</td>
<td>218</td>
<td>$213</td>
</tr>
<tr>
<td>High Sch'1</td>
<td>2,985</td>
<td>27.2</td>
<td>45</td>
<td>495</td>
<td>236</td>
<td>528</td>
</tr>
<tr>
<td>Bus. Coll.</td>
<td>263</td>
<td>3.3</td>
<td>45</td>
<td>529</td>
<td>237</td>
<td>498</td>
</tr>
<tr>
<td>Non-Agr. Coll.</td>
<td>265</td>
<td>2.4</td>
<td>47</td>
<td>556</td>
<td>241</td>
<td>353</td>
</tr>
<tr>
<td>Agr. College</td>
<td>534</td>
<td>4.9</td>
<td>37</td>
<td>624</td>
<td>251</td>
<td>1,057</td>
</tr>
</tbody>
</table>

The "Elementary" group included a few operators with no formal education; "Agricultural College" included agricultural school and short-course attendance, but did not include agricultural high school attendance.

Six out of ten of those reported upon had not gone through the elementary schools. Nine out of ten had no more than a secondary education. One out of twenty had a non-agricultural post-secondary education, and one out of twenty had some agricultural education (104, p.26)

Dean J. G. McEwen of the Manitoba College of Agriculture says that "science and practice meet on every Canadian
farm and the progressive agriculturist who is actively engaged in farming or any branch of the industry should be an educated man."(62)

Such is the setting in which this dissertation is written. The topic is timely. There is much current questioning of the functionality of our education system, particularly in our rural communities; reasons for certain undesirable tendencies are being sought. The Canadian education Association, the broadly financed Canadian Committee on Practical Education, the School of Education of the University of Toronto, the Agricultural Institute of Canada and other variously sponsored organizations are unearthing significant information upon which future remedial policies may be based.

**Purposes of the Study**

The principal purposes in making this study are:

1. to outline a fundamental philosophy as a guide in the development of a program of vocational education in agriculture in our secondary schools.

2. to provide those administratively responsible for the development of vocational agricultural education with
the necessary information so organized as to form a sound basis of judgment in establishing the program on a local, provincial, and national basis.

3. to suggest how present financial provisions of a federal nature could be altered and made use of in order to accelerate the institution of vocational agriculture in our rural secondary schools.

4. to present a definite program of agricultural education and methods by which this program may become a reality.

The Problem Stated and Defined

In the light of the educational philosophy stated in Chapter IV, at least two requirements are necessary. First, a very complete analysis and evaluation of farmers and farm boys in any area under review must be made. Second, there must be an analysis of the myriad of environmental factors related to the vocational aspects of farm life.

Investigators have already made available to us considerable information related to these problems: the psychologist and the sociologist have given us many facts about people -- the way they learn and their more basic individual and social requirements. Considerable information about the educational environment of farmers and farm boys has been accumulated by investigators in both
Canada and the United States.

The similarities of the Canadian and United States cultures render such data valid in all parts of English-speaking North America and probably in French-speaking Quebec. It is the proposed function of this dissertation to gather and suggest applications of these informations for the purpose of indicating the problems of the farm population requiring vocational education for their solutions -- in a Canadian province and both provincially and federally in Canada.

As is the case with each one of the forty-eight United States, each of the ten provinces making up the settled portions of Canada is in many respects autonomous. In particular, Section 93 of the British North America Act (23, 1942, p. 52) assigned full control of education within its boundaries to the province concerned. Like the individual United States, due to obvious reasons such as racial, religious, social, and economic factors, the philosophies and practices vary somewhat from province to province, particularly in French-speaking Catholic sections of Quebec province. Only in the North West and Yukon Territories is education a federal concern, and until very recently the scattered public schools of those areas were administered much like those of the adjacent province (a supervising official responsible to the Department of the
Interior has recently taken over the administration of Territorial public schools.

For many years Canadian elementary school philosophies and practices have been those of the United States. On the other hand, the Canadian college and university, patterned after the British higher education system of a century ago (not necessarily the British system of today), dominate the objectives and therefore the programs of the Canadian senior secondary schools.

Quantitatively, Canadian institutions of higher learning have been democratized to a degree similar to that in the United States in so far as they are available to students of all colors and creeds and conditions, frequently with proffered scholarships and other aids. Otherwise, Canadian higher education is in a complacent state of narcissism. It has failed to realize the educational implications of a one-class society and is still operating in terms of a two-class social order -- an aristocracy of priests and nobles giving all orders and hence requiring minds capable of clear thinking, of weighing evidence, and grasping all aspects of a problem; a proletariat of workers whose function is that of supporting the aristocracy and carrying out its dictates. Apropos of this viewpoint, E. T. Kirkpatrick said:

The students voiced very strongly their opinions that the first reason for going to the university is
an economic one. The student wants to make sure of his economic status before he leaves the university. Now, do not get the idea that we do not want liberal arts. We do. We feel that they should be intermingled with vocational training. They have to be intermingled, but can this be done in a way that will give us our economic security? These are the conclusions of the student group that discussed economic efficiency aspects.

We want in our final year some wedge that we can use in obtaining a position. Otherwise we shall have to go to some other institution to get this training. We may very often make the wrong choice at first. However, with this assurance of economic security we shall then hold an intense interest in the liberal arts. The implication that we would not hold to be a little false.

It has been said that we do not have an understanding of the liberal arts. I can't see how we can miss that understanding. The very first thing when we come to the university we are told that we must have culture; this is always being drummed into us. The head of our mechanical and electrical department is one of the greatest philosophers on our campus; he can stand up to any one in the philosophy department.

My suggestions are: Bring in the economic aspects in teaching languages and arts, foreign languages especially. Point out their value in travel. The dead languages have economic aspects.

Quite possibly the faculty are not quite prepared to offer the broadening knowledge. They have been chosen because of their outstanding ability in their special fields. The answer calls for further education on the part of the faculty. (Here, it should be said parenthetically that the National Conference of Canadian Universities in the summer of 1950 offered its initial course in university teaching techniques at the Kingston conference.)

Wayne Crews, another undergraduate student at the same conference, said further:

Dr. Cowley said this afternoon that the job of the college is to motivate students to a higher calling to meet the needs of the great community. I believe that every one will agree. I have tried to analyze my own situation as I am getting close to graduation. I have tried to decide whether schooling has fitted me for civic responsibility. Personally, I have thought very
little about it during my years of school life......
College training has not taught me to be a good judge
of propaganda and to avoid the paths that are so well
worn by our politicians.

...................Civic responsibility is not just
politics. As has been pointed out, people all over
the world will have to get along and understand each
other. Our racial discriminations in this country
are a much discussed problem.

...................Often the student placed in a res-
ponsible campus office is merely a figurehead; the
faculty adviser moves right into the activities. No
students learn that way. If civic responsibilities
are important for a student to acquire they should
be given as much emphasis as some of the subjects
that are taught. We should try to provide citizens
who feel responsibility to communities and to soci-
ety as a whole and not just to themselves.(ibid.,p.65)

Canadian higher education has not taken cognizance of
the democratic revolution and the making us all potential
rulers as well as actual doers. In short, Canadian higher
education has failed to liberalize the term "liberal educa-
tion" to include skills as well as understandings, and
hence our secondary schools have been deprived of voca-
tional emphases inherent in a fully democratized educa-
tional organization. Canadian secondary schools at the
senior level are predominantly matriculation centers.
Matriculation subjects carry preponderant prestige, even
though less than five per cent of Canadian high school gradu-
ates may go on to higher institutions of learning; practical
studies carry with them an actual stigma under prevailing
Canadian educational thought. Practical education (for
skills) in secondary schools suffers.
Limitations of the Study

This problem is limited to the selecting, analyzing, organizing, and placing in summarized form of certain available informations about the human resources, the agricultural resources, and educational resources of Alberta as one of the ten Canadian provinces, as well as generally of those of all the provinces now available, and the anticipation of the setting up of departments of vocational agriculture in order to meet these needs:

Human Resources: Trends in the number of farm operators, in rural population; the numbers of farmers and out-of-school boys; the number of farm boys presently in secondary schools; the number of new farm operators annually required to replace those who retire from active farm operation.

Agricultural Resources: Farm trends, number, ownership, and tenancy; yields of the important farm enterprises, plant and animal; types of farming; extent of soil erosion and problems of soil conservation; farm incomes and their relative status; farm homes and equipment; farm equipment.

Educational Resources: Numbers of secondary schools; enrolments; numbers of teachers; teaching loads, tentative indications of potential locations of successful departments of vocational agriculture.
**Procedure**

**Methods of Securing Information**

The methods and sources involved in the preparation of the material include:

1. Published and unpublished theses and dissertations proved to be of inestimable assistance at all times.

2. Extensive correspondence was directed to all provinces of Canada and as far as Georgia, Arizona, and California in the United States.

3. Personal visits and interviews with officials and/or teachers in Ontario, British Columbia, Alberta, Montana, Washington, and Oregon were carried on over a period of four years.

4. Existing programs in vocational agriculture in the United States supplied objective information.

5. The 1901, 1911, 1921, 1931, 1941 Censuses of Canada provided information about people, farms, and rural education. The 1936 and 1946 Censuses of the Prairie Provinces provided additional information about one physiographic unit of Canada.

6. Annual reports of Provincial Departments of Education gave information not otherwise obtainable.

7. Data about soil conservation was secured from technical officers through interviews, correspondence, bulletins and pamphlets, and technical magazine articles.
Organization, Presentation, and Summarization of Information: The information is organized and presented in three fields: (1) human resources and needs in solutions of problems; (2) agricultural resources and problems; (3) school facilities available and those possible.

The Need for the Study

From the information provided by the 1941 Census of Canada (21, 8-1, p.4) we know that in 1941 over 25% of Canada's population lived on farms; from the later 1946 Census (23, 1948-9, p.394) of the Prairie Provinces we learn that Alberta's farm population formed 40.5% of Alberta's total population in 1946. These farm folk are engaged in a highly specialized and integrated way of life. Through the apprentice system and other facets of the Canadian Vocational Training Act considerable attention has been given in helping urban workers and industries to solve their problems; nothing of like systematic and intensive nature has so far been established to provide the farming group of the Canadian citizenry with the same extent and degree of educational direction and assistance.

It appears expedient to discover, analyze, and place in organized form sufficient information about Canadian farming people to indicate the distribution and characteristics of those people who are directly faced with farm
problems.

An organized knowledge of the agricultural resources of an area is required to provide a view of the agricultural environment for the guidance of those administrators responsible for the location of vocational agricultural education departments. Data concerning the size and characteristics of the secondary schools must be organized and analyzed in order to permit of intelligent selections of rural schools suited to the establishment of vocational departments. Some direction in this selection or rejection will be afforded.

The optimum use of public funds for capital and operational expenses should be encouraged. Funds should be made available more freely upon the basis of need in an individual community rather than upon the local ability to match available grants upon a dollar for dollar basis. Larger federal allocations of money will be necessary if vocational agricultural education is to be encouraged to the same extent that other phases of vocational education are presently favored in the majority of the Canadian provinces.
CHAPTER II

HISTORY OF AGRICULTURAL EDUCATION

Development of Agricultural Education in Europe

We might well consider that agricultural education began as a variety of school garden movement. In 1015 B.C. King Solomon had extensive yards in which all sorts of plants, "from the cedar tree that is in Lebanon even unto the hys-sop that springeth out of the wall", were grown; this may have been for instruction and example as well as for ornament. King Cyrus (559-529, B.C.) laid out the first school garden, designed for the instruction in agriculture of the sons of the Persian nobility. (57, p. 11) Aristotle (82-22 B.C.) appreciated the significance of agriculture, for he states in Chapter 2 of Book I in his Oeconomica:

In regard to property the first care is that which comes naturally. Now in the course of nature the art of agriculture is prior, and next come those arts which extract the products of the earth, mining and the like. Agriculture ranks first because of its justice; for it does not take anything away from men, either with their consent, as do retail trading and the mercenary arts, or against their will, as do the warlike arts. Further, agriculture is natural; for by nature all derive their sustenance from their mother, and so men derive it from the earth. In addition to this it also conduces greatly to bravery; for it does not make men's bodies unserviceable, as do the illi-beral arts, but it renders them able to lead an open-air life and work hard; furthermore it makes them adventurous against the foe, for husbandmen are the only citizens whose property lies outside the fortifications. (9, 1-2)

We have a legend to the effect that Oxford University had its beginnings in a farm school established by King
Alfred for the teaching of boys; however, there appears to be no historical confirmation of this.

Gaspar de Gabriel, a wealthy Italian nobleman, in 1525 A.D. laid out in Tuscany the first recorded agricultural education garden; similar gardens were later laid out for the same purpose by such cities as Naples, Venice, and Milan. Because the embroiderers of the court dresses needed new floral designs, in the 1590's a botanical garden was established in the city of Paris.

About the year 1534 the Jesuits propounded the principal of "interest" in education, and argued that learning should have some relationship to living. In this same period Rabelais held that the individuality of the student should be considered, and that educational content should be drawn from the external world of the heavens, the trees and animals, and from the occupations of men, as well as from books. Samuel Hartlib in 1651 published in London a small pamphlet named

An Essay for the Advancement of Husbandry-Learning; of Propositions for the Erecting of a Colledge of Husbandry and, in order, thereunto, for the taking in of pupils as Apprentices; and also Friends of Fellowes of the same Colledge or Society.(51)

Milton, in 1650, in his Tractate of Education addressed to Hartlib, advocated an educational method largely restricted to reading; the sources chosen

.....would be the Authors of Agriculture, Cato, Varro, and Columella: for the matter is most easy, and if the
language be difficult, so much the better, it is not a difficulty above their years: and here will be an occasion of inciting and enabling them hereafter to improve the tillage of their country, to recover the bad soil, and to remedy the waste that is made of good soil; for this was one of Hercules' praises. (66, p.5)

Comenius (1592-1671), in his Didactica Magna referred to knowledge of the outside world thusly:

Come forth, my son, let us go into the open air. There you shall view whatsoever God produced from the beginning and doth yet effect by Nature.

..........a garden should be connected with every school, where children leisurely can gaze on flowers, trees, and herbs, and be taught to enjoy them. (ll, p.356)

Jean Jacques Rousseau in 1762 in his Emile wrote:

Agriculture is the earliest and most honorable of the arts. School gardens have been laid out neither to draw the attention of passers-by, nor to give great returns, but to instruct. (87, p.15)

Pestalozzi was a farmer and employed his wards at Neuhof in the fields and gardens:

I wish to make my estate the central point of my agricultural and educational efforts. (10,356)

Fellenberg, the great Swiss educator (1771-1833), took great interest in the farmers of his country. The announced purpose of his school at Höfwyl was that of educating the student for his trade or occupation, with agricultural education the basic objective. (ibid., p.356)

As a result of the advocacy by the French National Society of Agriculture of the appointment of agricultural professors, in 1763 a school of agriculture was organized at La Rochette and another near to Compiègne in 1771.
Froebel in 1840 in his first child garden at Thuringia included light gardening as one of the occupations. (Ibid., p.356) In 1850 agriculture became an elective on French school curricula. Following a series of bad crop yields and a resultant extended governmental inquiry during 1866-1867, schools of agriculture were organized in 1873. In 1876 the Institut Nationale Agronomique was re-organized in Paris; elementary principles of agriculture were included in the mandatory studies of primary instruction, and reconfirmed in 1882, at which time was included organized agricultural instruction in the primary, elementary, and superior schools of the nation. (107,1,p.5)

Hungary, in the third of its agricultural schools (established in 1797) is said to have "possessed the model agricultural school in Europe" (61,p.5); this institution was suppressed in 1848 because all of its professors and students took an active part in the struggle for independence under Kossuth. In 1850 the present system of agricultural education was instituted in Hungary. (10,p.358)

Albrecht Thaer began giving instruction in agricultural education on his farm at Celle in the year 1802, and laid the foundation from which grew the Agricultural Institute of Celle in Hanover. In 1806 Thaer established the agricultural school at Neeglin, close to Berlin; this latter school became the Royal Academy of Agriculture in 1824. (10,p.358)
History of Agricultural Education in the United States

This story, paralleling in some respects the history of agricultural education in Canada, has been ably and interestingly told by Albert H. Leake(61), W. H. Shepardson (91), Alfred Clarence True (102), Rufus W. Stimson and Frank W. Lathrop(95). The reader may turn to any or all of these authorities for authentic and extensive information of the evolution of agricultural education in the United States.

Early Agricultural Education in Canada

Nothing has been found concerning the history of agricultural education in our newest Canadian province -- Newfoundland, nor is there apparent at present any attention being paid to agriculture in its schools at any level.

Systematic agriculture was evident in Nova Scotia during the 18th century, and our first record of an agricultural society is dated 1789. The War of 1812 was followed by a period of extreme agricultural depression in Nova Scotia, and improvement was accelerated by the efforts of a Scotsman, John Young. In 1818 Agricola began a series of letters to the Acadian Recorder in which he dealt, in a constructive way, with the ills of the time. In all, 38
letters dealing with different phases of agriculture appeared, and a primitive question-and-answer service was inaugurated. The letters later appeared in book form, but are now out of print. One hundred years later the Acadian Recorder republished Agricola's letters in their original order.

On December 15th, 1818, the Central Agricultural Society of Nova Scotia was organized, and Agricola, as yet unknown to his readers, was elected secretary of the Society; thus he was forced to make his identity known. Twenty-five agricultural societies were organized in Nova Scotia in the years 1819-1820, and in 1864 a central body was set up.

A Board of Agriculture was established in 1884, a secretary of agriculture was appointed, and in 1885 a Chair of Agriculture was created in the Provincial Normal School at Truro. The Nova Scotia School of Agriculture was established at Truro in 1888, and the School of Horticulture was set up at Wolfville in 1895; in 1905 the two schools were amalgamated to form the College of Agriculture at Truro.

Trueman (103,p.81) mentions the formation of a Central Agricultural Society in Prince Edward Island in the 1820-1830 decade, and also district societies at Princetown and St. Eleanor's at approximately the same time. In 1865 a Government grant was offered to assist the importation of
good live stock, and the following year a farm was established for the improvement and multiplication of good farm animals. In 1884 there is a record of the first Prince Edward Island agricultural exhibition having been held; however, the first provincial exhibition was not held until 1900, one year previous to the establishment of the provincial Department of Agriculture. (53, pp.5-6)

In New Brunswick, our first record of agricultural education is the establishment of an agricultural society at St. John in the year 1790. In 1825 the Society of Agriculture and Immigration was organized at Fredericton; this society imported the first shipment of pure bred live stock from Britain to arrive in Canada during the British regime. In 1849 Professor Johnson was brought from England to make an agricultural survey of New Brunswick. His report included a recommendation that a provincial agricultural society be organized, and this was done in 1850, its first exhibition was held in 1852. In 1855 a Board of Agriculture was created to take over the Society, and as such functioned until 1875. The establishment of a provincial experimental farm, the first of its kind in Canada and the progenitor of the federal system of experimental farms and stations, is a noteworthy instance of New Brunswick's early contribution to agricultural education.

In 1876 the Provincial Farmers' Association was
organized; this Association was looked upon as the official head of the agricultural societies. Four years later the first official Agriculture Board was made up of six members from the Legislature and six from the agricultural societies. In 1888 a Secretary of Agriculture replaced this Board, and in 1898 a Commissioner of Agriculture replaced the Secretary of Agriculture. The agricultural societies of the province were considered to be the moving forces behind the above developments; in the year 1911 there were ninety-eight societies. Cooperative dairying associations were first organized in 1891, and they have exerted an educative influence down to the present day.(53,pp.9-10)(103, pp.39-77)

In Old Quebec the first Catholic Bishop of New France, Francois de Laval, opened an industrial school in the year 1668 -- it was called the Lesser Seminary, and was where

.........the children of artisans and peasants were taught farming, and the various mechanic arts, and thoroughly grounded in the doctrines of the Church. (80,p.427)

Over one hundred years later comes our next record: In 1789 Lord Dorchester formed a society for the promulgation of agricultural information, and bulletins of a sort were sent out from time to time; the farmers were encouraged to form agricultural societies, and in 1846 the government took action in assisting such organizations. In 1853 the provincial Department of Agriculture was formed and at once announced
a policy of creating more agricultural societies as well as experimental farms and agricultural schools; in that year there were existing fifty-three agricultural societies. Several farm schools were opened: one in 1863, to last but two years; one in 1867, to remain open for thirty-two years; a third school, opened in 1875, lasted fourteen years. The most famous farm school was associated with the College at Sainte-Anne-de-la-Pocatiere, established in 1859 and thus one of the oldest agricultural colleges in North America; this college became an affiliate of Laval University in 1912 and it is still flourishing. Another famous Quebec agricultural school was established in 1893 near Oka at La Trappe; a wonderful example of Trappist efficiency and self-sufficiency, it is now affiliated with the University of Montreal. In 1908 the Macdonald Institute of Agriculture and Home Economics was established; it is now a faculty of McGill University. We should not leave Quebec without mentioning its first Dairy School of 1881 and the Dairymen's Association formed in 1890. (53, pp.11-17)

For many years the settlers of Upper Canada (Old Ontario), in common with those of New York, Pennsylvania and Ohio, were chiefly occupied in burning their trees in order to ship potash to Europe. 1792 saw the first agricultural society in Upper Canada; the Upper Canada Gazette records a banquet held by this organization in July of 1793.
In the year 1830 there were perhaps an half-dozen agricultural societies formed; in that year the government offered grants to assist in sustaining existing societies and to encourage the formation of new ones.

In 1836 there was introduced into the Legislative Assembly of Upper Canada a bill to authorize the trustees of any school district to raise, levy, and collect the moneys as voted, and therewith to lease or purchase a lot or parcel of land or farming utensils, seeds, grains and grasses for the use of the teachers of the school, or to be annually apportioned among the scholars of the school or otherwise employed and occupied for the profit and instruction of the school or parts thereof in horticulture, agriculture, or in otherwise growing plants, fruits, grasses, and grains of the time being, as they may think fit."(43,p.322)

The subject of agriculture was given a prominent place in the curriculum of the first Ontario Normal School when this was established in Toronto in 1847, with daily classes in agricultural chemistry, demonstration plots, and practical experiments in field crops and fertilizers provided for. Two years later Lord Elgin offered two prizes, of five pounds sterling and three pounds sterling respectively, to the two students who should at the end of each semester attain the highest examination marks in agricultural chemistry. (ibid.,p.25)

In 1846 appeared the first Canadian agricultural reader for school use; it was written by John Simpson of Niagara Falls. Dr. Ryerson in 1870 published his First Lessons in Agriculture, the second book of its kind in Canadian
education. Dr. Ryerson's book was followed by Page and Shaw's *Public School Agriculture*; this was the first agricultural reader to be authorized by the Ontario Minister of Education for use in the elementary schools. In 1898 C. C. James, later to be the federal Commissioner of Agriculture, wrote the fourth Canadian text-book in agriculture; this work was authorized for use in "any high school or public school in Ontario, if so ordered by the trustees." (61, p. 12)

In 1846 the Provincial Agricultural Association was formed and the first exhibition was held at Toronto with a plowing match included in the program; the Toronto Royal Agricultural Exhibition is today one of North America's leading agricultural events. The second Ontario agricultural exhibition was held in 1847 at Hamilton, and the third the following year at Coburg (here the showing of farm implements was severely criticized); the fourth Ontario exhibition was held in 1849 at Kingston (where the showing of farm implements was so impressive that it was feared that the array truly must have been confusing to the minds of the attending farmers).

Upper Canada became Ontario in 1841, and in that same year the *British American Cultivator* made its appearance. In 1849 the *Canadian Agriculturist* came into being, and until it was succeeded as such by the *Canada Farmer* in 1864 it was the official organ of the Board of Agriculture.
(created in 1850 to supercede the Provincial Agricultural Association). This Board was somewhat responsible to and functioned by means of governmental support; it was instrumental in its second year in securing the establishment of a Chair of Agriculture in the University of Toronto. A Chair of Veterinary Science was established in the University in 1862. The first Ontario Fruit Growers' Association was organized in the year 1859. Much pressure from agricultural interests brought in 1888 the establishment of the Provincial Department of Agriculture; previously the Commissioner of Public Works had charge of agricultural matters.

In 1869 the Commissioner's second annual report suggested that the existing Department of Agriculture in the University along with other agricultural educational media well might give teachers-in-training some systematic education in agriculture. The comments bore fruit, and the editor of the Canada Farmer was sent to visit the United States agricultural colleges as well as the Federal Bureau of Agriculture at Washington. A comprehensive report referred particularly to the Michigan and Massachusetts agricultural colleges. After some years of difficulties and dissension, the Ontario Agricultural College opened its doors to thirty-one students in 1874; since that time the O. A. C. has become known throughout the agricultural education world. In 1893 the Ontario Agricultural College
offered the first summer school course in agriculture for public school teachers; thirty-four teachers received four weeks' agricultural education. Changes in Department of Education regulations resulted in an attendance of only seven teachers the following summer session, and the course then was abandoned. (53, pp. 22-25)

The first agricultural educational activity carried on in that section of Rupert's Land now known as Manitoba was the soil survey of the Red River Prairie and the Pembina Mountain District in 1784. Two years after Lord Selkirk's death in 1820 the Hay Field Experimental Farm was established at the Red River Settlement. This was the forerunner of two more like ventures planned by Lord Selkirk, all so costly that they soon were abandoned. As the area now known as Manitoba was the property of the Hudson's Bay Company until its purchase by Canada in 1867, little agricultural activity occurred until that time. In 1883 an unsuccessful provincial exhibition was held, but in 1886 a very successful one was carried out at St. Boniface (immediately across the Red River from Winnipeg); later Brandon became the permanent site of the now famous Manitoba Agricultural Exhibition. Around the year 1885 also occurred the organization of the Wakopa Creamery Association, and in 1886 a preliminary meeting was held in Winnipeg to organize the Manitoba Dairymen's Association; the North West Dairy
Association was organized in 1886 also. In 1895 agriculture was introduced into the public school curriculum. Manitobans were participants in the establishment of the Farmers' and Grain Growers' Association at Indian Head in 1901 to combat marketing evils of that time. In 1903 the Manitoba Agricultural College was created in Winnipeg; it is now a faculty of the provincial university. (53, p. 31-34)

Saskatchewan's earliest contribution to agricultural education may have been a fortuitous circumstance of the Riel Rebellion, the discovery of the summer fallow by Angus Mackay and W. R. Motherwell (later federal Minister of Agriculture) in 1885-1886. Saskatchewan's agricultural education story is partially that of Manitoba and partially that of Alberta, due to its geographical position between these two provinces. That there were several agricultural societies existing in 1901 is indicated from the circumstance that four societies were represented at the Indian Head meeting which resulted in the formation of the Territorial Grain Growers' Association early in 1902; this Association was the forerunner of the now strongly inter-provincial United Grain Growers. Since that time the prairie farmers have learned the values of owning their own wheat pool elevator systems, each province wide.

In 1881 an agricultural school and farm was set up for the education of British immigrants; its life was short.
Soon afterward (1885), Angus Mackay became the first superintendent of the Federal Experimental Farm at Indian Head. In the education of farmers with respect to cultivation practices, better seed, and the values of trees and shrubs on prairie farms, this farm has made an outstanding contribution. The provincial College of Agriculture was organized as a faculty of the university at Saskatoon in 1908.

In 1906, the year following the creation as provinces of Alberta and Saskatchewan, the Canada Land and Irrigation Company donated a piece of prairie land four miles east of Lethbridge to the federal government to be used as an experimental station; one half of it lies below the irrigation ditch and the other half above the ditch. In 1907 the federal Department of Agriculture established an experimental station at Beaver Lodge, and stations at Grouard, Grande Prairie, Fort Vermilion, Fort Smith (N.W.T.), Fort Providence (N.W.T.), and Fort Resolution (N.W.T.), all in the Mackenzie watershed. In 1915 the College of Agriculture was established as a faculty of the provincial university at Edmonton; the summers of 1916 and 1917 the College offered courses in elementary agriculture to teachers in the Department of Education summer school. (53, pp. 35-41)

Our first record of a British Columbia agricultural society and its premier exhibition comes from the Victoria district in 1861; about 500 people attended and the exhibits
were creditable even though few -- vegetables, fruits, live stock, and grains. In 1867 the first agricultural exhi-
biton was held at New Westminster; there were but seven head of
stock on show. By 1872 agricultural societies held ex-
hibitions at Victoria, Saanich, Cowichan, as well as at New
Westminster. British Columbia was in the forefront amongst
Canadian provinces in encouraging the formation of farmers'
cooperatives and other educational organizations. In 1873
the Drainage, Diking, and Irrigation Act was passed, such
operations to be carried out cooperatively. In 1890 agri-
cultural societies secured the passage of the Horticultural
and Fruit Growers' Act, and in 1896 a general cooperatives
act was placed in the statutes. As do all other Canadian
provinces, the British Columbia Department of Agriculture
has its staff of district or county agriculturists and home
economists carrying out extension phases of agricultural
education in conjunction with the science and extension
services of the federal Department of Agriculture and of
the provincial agricultural college, which was established
as a faculty of the university in 1915. (53, pp. 50-54)

Current Agricultural Education in Canada

There are three general types of schools offering
vocational agricultural education in Canada: (a) the re-
gional vocational agricultural school offering agriculture
together with the essential academic subjects, (b) the centralized community school offering a varied vocational and general educational program, (c) the agricultural colleges.

The regional type of agricultural school is designed to serve relatively large areas. It provides a desirable quality of dormitory accommodation at province-wide expense and requires extended absences from the home farm. In these schools concomitant, integrated classroom and home-farm experiences are difficult, if not impossible. It cannot provide a full-time agricultural educational service for many students and offers nothing to those who must remain within the home community. Its short, single semester is designed to fit into the slack winter period in farming activities and does so successfully. It provides nothing beyond that series of services which the large divisional centralized schools are now able to institute. The actual per-pupil costs are borne by the province at large; this is a comparatively painless method which is scarcely open to a school division with rampant internal criticism.

The community composite high school has proved to be a community builder of no mean account. It permits its students to live at home the whole school year or at least over week-ends, buses providing the transportation. Vocational agricultural education at the community school insures that a greater number of farm boys will be attracted
to the school for more years. It insures a mingling of all sections of the community in secondary school activities. It provides for a flow of individuals from one group to another group. It tends to prevent the formation of social cliques based upon paternal occupations. It is particularly functional in that it guarantees a healthy social atmosphere among the farm dwellers, who most require stimulation directed toward social mixings. The community school teaching vocational agriculture provides for the integration of supervised home-farm projects with classroom activities. The practicability of teaching vocational education in centralized community schools has been demonstrated throughout the United States during the last thirty years, and in general under conditions which will be found across Canada.

In the era previous to the enlarged school administrative units, with autonomous authorities reigning over a maximum of twenty square miles, the regional agricultural school was our sole means of vocational agricultural schooling. Now, with relatively large numbers of farm youth congregating in many centralized schools it is becoming increasingly possible to inaugurate a program of vocational agricultural education which will reach the masses of farm boys and girls in their own community centers.
Diploma Courses in Agricultural Education

In several Canadian provinces there have been established agricultural schools whose students are expected to return to and remain on the farm; their courses extend over a five- or six-month period for one or two winter semesters, and a diploma is issued to successful candidates at the end of the first or (more frequently) the second winter's term. These schools operate during the months of least essential farming activity, and their courses are typically terminal ones. A few of these schools are associated with the provincial agricultural colleges, but many are quite separate from the colleges with the latter functioning only as the sources of the agricultural school teachers.

Newfoundland, a Canadian province only since July first of 1948, has not as yet developed an agricultural education program for boys and girls of school ages. Doubtless the increased communication with the older Canadian provinces will cause the Newfoundland authorities to consider the establishment in the future of such educational facilities. (70)

The Nova Scotia Agricultural College at Truro offers a five-month practical agriculture course in each of two succeeding winter semesters, with the content so arranged that each course is a unit for the purpose of diploma
issuance. An age of 16 and Grade X achievement are the minimal requirements. (73)

New Brunswick's six vocational agricultural schools have been dealt with in the section describing Canadian high school offerings. In common with other short-term schools, the objective is to accommodate pupils who are fully occupied with farm work during the summer season. Attendances aggregate 130 to 140 students each winter.

Prince Edward Island offers no practical agricultural courses at any level; general agriculture in the secondary schools is the only agricultural education available.

There are twelve regional (technical rather than academic) elementary agricultural district schools in Quebec Province, all receiving funds through the provisions of the Canadian Vocational Training Act and extending tuition from Grade I to the end of Grade IX. The agricultural courses are provided during five winter months in each of the last two years. School farms are available for practical experiences in plant and animal sciences, farm mechanics, and food industries. Agriculture students receive a portion of their living costs through a federal-provincial agreement. The twelve centers are: Magdalen Islands, Val d'Espoir, St. Croix, Mont-Laurier, St. Therese, La Ferme, St. Denis, St. Cesaire, Yamachichi, St. Barthelemy, Beauceville, St. Remi, and La Parade.
Six orphanage schools are operated in Quebec Province -- at St. Ferdinand, Ste. Germaine, Lac Sergent, Sully, Ste. Damien, and Ste. Jean-de-Bosco; students are boys of from 12 to 17 years of age, in Grades I-X. Elementary agriculture is one of the nine trades taught in this system and practical work is required of all students. The largest center, l'Institut St. Jean-de-Bosco, lies just without Quebec City. Its agricultural instructor possesses an agricultural degree. There is a school farm with 300 acres under cultivation, recognized by the Quebec Provincial Department of Agriculture as a demonstration station. Eighty boys attended the agricultural course at St. Jean-de-Bosco during the winter of 1948-49, and all were expected either to return to the parental farms or to enter agricultural industry.

In addition to the above agricultural education facilities there exist the School of Dairy Industry at Ste. Hyacinthe, and twenty home economics schools designed to better prepare farm girls for homemaking. Quebec Province in its Catholic system also is experimenting with a number of one-roomed ungraded rural schools, each of which is manned with a teacher qualified in agricultural education, and so situated that pupils may go home each night. Over ten of these schools have been established, but they are relatively new and as yet not evaluated.
Ecole Superieure d'Agricole de Sainte-Anne-de-la-Pocatiere offers a six-month, one-semester course, and a diploma course of two winter semesters. For those who pass B.A. degrees a three-winter-semester course is offered and for those with honors B.A. courses a four-winter course is provided.

Macdonald College offers a diploma course extending for six months over each of two winters.

L'Institut Agricole de La Trappe offers a diploma course consisting of two six-month winter semesters in practical agricultural education. (23, 1948-9, p.312) (84, pp. 51-60)

The Ontario Agricultural College offers two five-month winter semesters in agricultural and community education for those young people who are above school age. The minimum entrance age is 18 years, and the candidate must be an Ontario resident who has completed at least Grade X. Up until the commencement of the 1947-48 academic semester, those completing the two-semester diploma course could under certain conditions proceed to the degree course, but in order to make the diploma course most useful to beginning farmers it was reorganized and ceased to be an entrance medium to a degree; the diploma course carries no credit toward the degree course. During the academic 1947-48 year 62 students enrolled in the first year and 51
enrolled in the second year of the two-year diploma course.

In addition to the agricultural school operated at the College at Guelph, the Ontario Department of Agriculture operates the Kemptville Agricultural School in Eastern Ontario (36 miles south of Ottawa). This school offers winter courses commencing in the middle of October and ending the middle of April. "A good public school training" and the age of 16 years are the minimal requirements. A two-year diploma course in Agriculture, a two-year diploma course in Home Economics, a one-year home-makers' course, and a twelve-week Cheese and Buttermakers' course are offered at this school. Provided candidates have successfully completed the School program of two years, and hold Grade XIII standings in English Literature, English Composition, Algebra, Trigonometry, Chemistry, Physics, and one foreign-language option, they may be admitted to the second year of the Ontario College of Agriculture. During the 1948-49 session 69 boys (44 first year, 25 second year) were registered in Agriculture, 24 girls took Home Economics, 37 adults enrolled in the Dairy course, and 12 veteran-farmers attended the Veterans' Land Act course of six weeks during the late winter.(77)

The Manitoba College of Agriculture, on the University Campus at Winnipeg has offered since 1906 a two-winter diploma course with each semester of 4½ months. During the
1949-50 session 31 boys were registered in the first course and 54 were enrolled in the second course. Grade VIII or better standing and an age of 16 years are the minimum requirements. In common with the other Canadian agricultural education centers, there is a parallel home economics course for girls and short courses for adults vary in lengths from two days to three months. (63)

The College of Agriculture of Saskatchewan University, Saskatoon, has a separate department in its School of Agriculture. This school offers two winter semesters of five months each in practical agriculture to farm youth of 17 years and older. Projects involving farm management or community needs are required during the intervening summer; these projects are presented each as a small thesis during the second year. There is a nucleus of three staff-members; situated on the University Campus, the University staff is freely drawn upon for instructional purposes and the students of the School are encouraged to mingle freely with the University student body in social affairs. 239 boys were enrolled in 1947-48, (84,p.152) 198 boys in 1948-49, 196 boys in 1949-50, and 140 boys in 1950-51.

In the early 'teens Alberta's Department of Agriculture built six Schools of Agriculture in various parts of the then-settled parts of the Province; at that time there was a farm home on nearly every half-section throughout the
southern or settled half of the Province. Due to the return of normal drought conditions in the early twenties, only the Olds School (60 miles north of Calgary on the Edmonton line) has been continuously operated with a maximum capacity of about 250 boys and girls; the Vermilion School, 130 miles southeast of Edmonton and less favorably situated, has been operated intermittently. In the lean years Olds had an enrolment of around 100 boys and girls. The 1949-50 enrolment of boys was 247 for both schools - 114 first year, 78 second year and 55 two-in-one students. A third School of Agriculture is being built at Fairview in the Peace River Valley, with the use of Canadian Vocational Training Act funds. The four schools erected earlier have been converted into institutional homes operated by the Province or by charitable organizations; their farm lands have been disposed of. The minimum age for admission is 17 years; applicants must possess sufficient elementary education and such command of the English language as will enable them to profit by the experiences available at the Schools. It is worthy of note that while formal schooling below Grade VIII was fairly adequate at one time, now it is considered necessary to have the equivalent in standing of Grade X in order to satisfactorily profit from the current level of instruction. A wide range of studies and activities directly associated with the
business and life of farming are offered at these schools, with up-to-date equipment and practices carried on during the whole year in the Schools' farming operations and available for instructional purposes during the winter months. Likewise, in common with all such schools throughout Canada, much emphasis is placed upon the personal and social development of the students. Dramatics, Music and Physical and Social Education are included in the curriculum.

While the basic arrangement is a five and one-half month course during each of two successive winters, those who come into the Schools with high school standing may take the agricultural or home economics courses in one semester; this is called the "two-in-one" course. Graduates of the Schools who also hold seventy of the high school credits essential to University Matriculation in Agriculture or Home Economics may matriculate in either of those Faculties without further preparation. By special arrangement with the Department of Education a maximum of forty-six credits toward the High School General Diploma may be assigned in instances where School of Agriculture graduates desire to complete programs leading to the High School Diploma.

In the thirty-seven years since their establishment, over 8,000 farm boys and girls have attended these Schools.
Each school has its active Alumni Association, annual reunions are held at each center, in cooperation with the School staffs practical farming and homemaking post-graduate extension services are carried on, and at the close of each semester the Department of Agriculture extension staffs are supplied with the names and home-farm addresses of the students in order that associations may be continued.\(^{(3)(4)}\)

British Columbia is developing its agricultural education at the secondary school age level along distinctly different lines than have other Canadian provinces -- the high school vocational agriculture departments offer the only school courses in agriculture, operated for the full ten-month school year. This development is discussed elsewhere.

These agricultural schools have rendered a service that is highly appreciated in the farming communities in which they function. They have provided educational experiences of inestimable value to the limited number of rural young people able to attend as well as to the farm communities in which these young people return to make their homes. Their constituencies have been healthily critical of their programs, as witness the change in the Ontario Agricultural College program -- the diploma program has been re-organized in order that it can better
serve the needs of those graduates who intend to return directly to farm living.

Notwithstanding their education contributions, it is abundantly clear that these schools will never be able to reach an adequate percentage of the farm girls and boys who should profit through vocational agricultural education. Again, their nature will require that students must travel relatively long distances from their homes, and close association of the school programs with home-farm activities is most difficult if not impracticable. These regional agricultural schools have provided a valuable educational service in the absence of more local and more flexible agricultural education situations; indeed, it is likely that sufficient isolated students will find these regional institutions their best means of obtaining an agricultural or home-making education. With the centralization of schools proceeding across Canada with some rapidity, bringing more and more children of secondary school age within reach of a high school education, we should find it possible and advisable to institute more functional and flexible agricultural education programs in our local community schools. Canada has been very slow in realizing that centralization is the only practical means of providing secondary school education for our farm boys and girls; some communities are well along in this process of
centralization and consequent development of secondary education in rural communities, while in other sections of Canada no apparent progress has been made and their educational attainments are accordingly low in all available phases.¹

Degree Courses in Agricultural Education

In referring to the establishment of the agricultural colleges of the United States, Senator Merrill in a speech at the Louisiana Purchase Exposition at St. Louis in 1904 observed:

It is perhaps needless to say that these colleges were not established for the sole purpose of teaching agriculture. Their object was to give an opportunity to those engaged in agricultural pursuits to obtain some knowledge of the practical sciences relating to agriculture and the mechanic arts; such as they could not obtain at most of our institutions called classical colleges, where the languages, Greek and Latin, French and German, absorbed perhaps two thirds of all the time of all the students in college. (35, p.21)

Later, Senator Merrill said:

I should hope that no farmer or mechanic would be so illiberal as to wish to have the monopoly of education in any of these land-grant colleges. (ibid., p.24)

These colleges, whose appellation "Agricultural College" was originated at the convenience of a filing clerk, were intended to be, in the words of Ezra Cornell and perpetuated on Cornell University's corporate seal: "A place where any person can find instruction in any study."

¹ (Information about agricultural schools and colleges was derived from calendars, Rennie, conversations, letters, personal visits and conclusions.)
The first agricultural college in North America was established at East Lansing, Michigan, in 1857. Canada's first agricultural college was instituted in 1859, but two years later. The establishment of the agricultural and mechanical colleges was a protest directed toward the older education. The expressed desire of the newer education was to set the pupil into relation with his environment and to fit him for the work of the world. It was expected that the agricultural college would stand in intimate relation with the plain farmer; early writings clearly indicate that directly practical institutions were commonly anticipated. Events soon indicated that leadership and ideals were at least equally needed, and two lines of approach to the farm population problems were finally demarked and followed.

This development among other things gave to us the degree courses and the shorter courses; the first is designed to develop the leadership and ideals, and the latter group of courses is directed at the practical problems at the level of the plain farmer. As in the United States, but lacking the rich breadth of courses implementing Ezra Cornell's vision, Canadian agricultural colleges in general offer activities fulfilling the needs for leadership and ideals and research and as well meet the farmer on educational grounds of immediate interest in his daily problem-solving activities.
Newfoundland has no functioning agricultural education program. That of Prince Edward Island is entirely on the junior college level or below and is of the general education type.

The Nova Scotia Agricultural College was organized as such in 1905 as a result of the amalgamation of the School of Agriculture (established 1888) and the School of Horticulture (established 1893). Nova Scotia offers only the first and second years. The third and fourth years of the degree course must be taken elsewhere.

Macdonald College at Ste. Anne-de-Bellevue, P.Q., was organized as the Macdonald Institute of Agriculture and Home Economics in 1908; it is now affiliated with McGill University. A four-year course is offered at Macdonald College, leading to the Bachelor of Scientific Agriculture degree.

Ecole Superieure d'Agriculture de Sainte Anne-de-la-Pocatiere was opened in 1859, and is thus one of the oldest agricultural colleges in America. In 1912 it became an affiliate of Laval University. It offers a three-winter (each seven months) course for holders of the pass B. A. degree, and a four-winter course for selected holders of the B. A. degree, beside a six-month and two six-month diploma courses for present or future farmers. The degree offered is that of Baccalaureat en sciences appliques.
Institut Agricole d'Oka was established in 1893 by the Trappist monks at the Indian village of Oka, on the shores of the Lake of Two Mountains at the confluence of the Ottawa and St. Lawrence Rivers. A two-year diploma course and a four-year degree course are offered here. The degree of Bachelor of Agriculture is awarded at the end of the four-year course. This institution grew out of a famous farming and on-the-farm processing venture started by this band of French vegetarian monks who settled at Oka in 1880. Products of the forests, fields, gardens, and dairy are fully manufactured and sold in that condition directly from this famous farm. (53, p. 17)

The Ontario Agricultural College opened its doors in 1874, following several years of preparatory dissension and investigation which led to its establishment in 1873. The College offers a two-winter-semester course of five months each for present and future farmer boys with a diploma granted at the successful conclusion of the second semester. A four-year course leads to the Bachelor of the Science of Agriculture granted by the University of Toronto (the provincial university). (77)

Manitoba Agricultural College was incorporated in 1903, and opened its doors to students in 1906. It is affiliated with the University of Manitoba and offers a two-winter
five-month diploma course and a four-year course leading to the Bachelor of Scientific Agriculture degree. (63)

Saskatchewan College of Agriculture offers through its School of Agriculture a two-winter five-month semester diploma course and by virtue of its affiliation with the University of Saskatchewan it offers a four-year course leading to the Bachelor of Scientific Agriculture. It was established at Saskatoon in 1908. Through its Extension Department, Boys' and Girls' Farm Clubs in Saskatchewan are instituted and supervised. (23, 1939, pp.1016-17)

The College of Agriculture of the University of Alberta was instituted in 1915; in common with many colleges of agriculture, in its early days it offered a three-winter five-month-semester course leading to the Bachelor of Scientific Agriculture degree; this course was abandoned in the fall of 1926, and in 1927 the first four-year class was graduated with the Bachelor of Science degree granted by the University. No diploma course was ever offered at this institution.

The College of Agriculture at Point Grey is affiliated with the University of British Columbia, and was established in 1915. A four-year course leads to the degree of Bachelor of Scientific Agriculture. (B.S.A.)

With all Canadian Colleges of Agriculture are integrated experimental farms covering a wide range of research
activities. These research organizations cooperate with other research centers throughout the civilized world; they provide undergraduate students with profitable practical experiences and graduate students with research facilities. Research Council of Canada funds, supplemented by grants from other organizations, are available as scholarships and bursaries.

University or Agricultural College Extension Departments and Clerical Exchanges arrange the dissemination of bulletins and other printed materials dealing with a wide range of timely topics on farming and home economics problems; written queries are answered; conference leaders are sent out in response to requests for specific assistances. Rural life institutes and extension meetings or series of meetings are a normal function of agricultural college extension departments.

Whatever may have been the popular rural or urban opinion of the agricultural colleges as institutions of learning in their earlier days, at present their prestige ranks with that of the older classical colleges.

For our secondary teachers, and increasingly for our elementary teachers, we must look to our colleges and universities; for our vocational agricultural teachers, for our agricultural research workers, our administrators in agriculture, and our agricultural extension workers, we
must turn to our agricultural colleges. For our agricultural teachers we must look to the agricultural colleges for the rural philosophy, the technical and general education required, and to the School or Faculty of Education for the knowledge of how children learn -- the principles and practices underlying effective teaching of children. Agricultural education and experience on the one hand, and a thorough knowledge of the learning process on the other, are essentials to successful agricultural education at any level of maturity. The breadth of the Bachelor of Science degree in Agriculture, enhanced by professional education, renders it a most suitable background for any phase of elementary or secondary school science teaching.

Experimental Farms and Stations William Saunders was appointed the first Director of Experimental Farms in Canada in 1886, and within two years a nucleus of experimental farms was in operation. The Central Experimental Farm is at Ottawa. The Maritime Provinces are served through the farm at Nappan, Nova Scotia, a point centrally located with respect to all three provinces. The experimental farm serving Manitoba is at Brandon, that for the then Northwest Territories (now Alberta and Saskatchewan) is at Indian Head, and the farm serving British Columbia was located at Agassiz, in the coastal climatic zone.
Since that time other experimental stations have been established, serving regions as far away as Fort Providence on the middle Mackenzie River. Illustration stations are set up by arrangements with better farmers every few miles apart for local informational purposes. All these federal establishments cooperate with the College of Agriculture farms throughout Canada and likewise with all other agricultural research agencies throughout the world. Their staffs cooperate with provincial agricultural extension agencies in bringing to the farm population all available information relating to the solution of farm problems and the improvement of farm practices.

**Bulletins, pamphlets, etc.** Bulletins, pamphlets, and press releases, dealing with pertinent topics in language suited to their intended readers, are prepared by technical officers of federal, provincial, college and university, and commercial institutions and made freely available to farmers and their families.

**Press and Radio** A vocational agricultural education agency with immense coverage and influence is that section of the press which specifically aims to help in meeting farming problems. There are many excellently staffed periodicals devoted solely to farm life interests and advancements, and many other publications devote a
section of the week's issues to the farm constituency which it serves. Forty-seven Canadian farm papers exceed 2,330,000 copies per issue. (88, p. 4) All too often we read or hear over the radio comments which are misinformations for the region covered, but this criticism is not true of our farm periodicals or of our national network programs; these misinformations are the marks of carelessly recruited or ill-informed individuals posing for the time being as adequately informed persons.

**Clubs** The organization of a Potato Club in Carleton County, Ontario, in 1912 seems to be our earliest record of this type of boys' and girls' clubs activity. Boys' and Girls' Pig, Dairy (Calf, Cattle), Beef (Calf, Cattle), Sheep, Poultry, Wheat, Oat, Potato, Garden, Fruit, and Homemakers' Clubs for farm children in the age group 10 to 21 years are important factors in the agricultural and home education of over 50,000 Canadian youngsters. They are the only forms of Vocational Agricultural Education available in the comparative absence of highschool vocational agricultural departments across Canada. Table VI gives the 1949 numbers and kinds of clubs, with memberships.

Organized and supervised typically by the extension staffs of the Provincial Departments or Colleges of
TABLE VI

1949 CANADIAN BOYS' AND GIRLS' FARM CLUB MEMBERSHIPS

<table>
<thead>
<tr>
<th>Province</th>
<th>Total Clubs</th>
<th>Total Memb.</th>
<th>Livestock &amp; Poultry</th>
<th>Field Crops</th>
<th>Horticulture</th>
<th>Home Ec.</th>
<th>Tractor Maint'ame</th>
<th>Farm Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E.I.</td>
<td>61</td>
<td>859</td>
<td>259</td>
<td>---</td>
<td>---</td>
<td>600</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>N.S.</td>
<td>594</td>
<td>7,774</td>
<td>1,336</td>
<td>235</td>
<td>2,287</td>
<td>3,916</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>N.B.</td>
<td>126</td>
<td>2,248</td>
<td>1,370</td>
<td>---</td>
<td>73</td>
<td>805</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>P.Q.</td>
<td>329</td>
<td>7,715</td>
<td>4,480</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Ont.</td>
<td>1,215</td>
<td>11,501</td>
<td>3,909</td>
<td>1,884</td>
<td>1,771</td>
<td>3,517</td>
<td>205</td>
<td>215</td>
</tr>
<tr>
<td>Man.</td>
<td>496</td>
<td>6,184</td>
<td>1,672</td>
<td>1,081</td>
<td>896</td>
<td>2,535</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Sask.</td>
<td>376</td>
<td>6,212</td>
<td>3,868</td>
<td>1,517</td>
<td>---</td>
<td>---</td>
<td>727</td>
<td>---</td>
</tr>
<tr>
<td>Alta.</td>
<td>357</td>
<td>5,814</td>
<td>2,054</td>
<td>1,903</td>
<td>---</td>
<td>1,857</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>B.C.</td>
<td>181</td>
<td>1,934</td>
<td>1,257</td>
<td>272</td>
<td>112</td>
<td>293</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>3,735</td>
<td>50,241</td>
<td>20,205</td>
<td>6,992</td>
<td>5,139</td>
<td>14,250</td>
<td>205</td>
<td>215</td>
</tr>
</tbody>
</table>

Agriculture, the numbers and memberships evidence the aggressive organization campaign carried on. Whilst their organizations are considerably less intensive, these clubs closely parallel in their objectives and methods the 4H Clubs of the United States. (67, p.19) Boys’ and Girls’ Clubs can never offer complete agricultural educations to their members due to the limited area each club necessarily covers and the restricted time available, e.g., out-of-school-hours only and an extra curricular rather than an activity integrated with general education. As supplements to well organized secondary school practical agricultural programs they would be invaluable. Young Farmers’ and
Young Homemakers' Clubs for those over 21 years of age are filling an evident vocational and social need in the provinces of Ontario and Quebec. In Quebec Province there were 7,715 members in 329 clubs in the year 1949. The United States rural education authorities have long recognized the pressing problems of young farm people who are no longer eligible for membership in the 4H and Future Farmer (or Future Homemaker) of America Clubs and yet have serious difficulties in becoming established in their rural communities; these senior clubs are assisting in the solutions of many personal and community problems in rural areas, and Canadian communities other than Ontario and Quebec would do well to consider their establishment throughout the nation's farming areas. In cooperation with existing agricultural educational agencies, this would appear to be one of the functions of the instructors of vocational agriculture and home economics in community high schools, closely associated as they could be with farm young peoples' problems and their possible solutions.

Future Farmers of America (New Farmers of America for the colored high school boys) and Future Homemakers of America chapters are associated with vocational departments of agriculture and home economics in United States' high schools. Many secondary school vocational agriculture departments consider the Future Farmers of America program
to be an essential element, second only to the supervised home-farm project, in curriculum structuring. In the British Columbia high school vocational agricultural departments the Future Farmers of Canada has been established. The intention is to establish chapters in every future vocational agricultural high school department in Canada.

The 4H, Future Farmers and Future Homemakers and New Farmers Clubs are organized on state and national levels. The Canadian Boys' and Girls' Clubs are organized locally and provincially through the Departments of Agriculture; the Canadian Council of Boys' and Girls' Clubs is the medium of inter-provincial interchange of ideas and information. The members are encouraged to compete locally, then provincially, and finally each autumn at the Toronto Royal Agricultural Exhibition girls and boys from all of the provinces meet each other in competitions. Competition occupies a relatively large part in these activities and thus is for the comparatively few rather than for the many, once the local level is left.

School Fairs

School fairs occur in the autumn -- late August, September, or October. This interesting type of agricultural education began in the Province of Ontario, and spread to other provinces, particularly Alberta and British Columbia. Usually a one-day affair, a lay-executive
aided by the teachers of the five or more schools included in the local association made all local arrangement. The Department of Agriculture and Education cooperatively financed each fair with a grant and their County agents (or district agriculturists), Home Economists, and Inspectors of Schools arranged for the further organization and judging of exhibits; in Alberta the Schools of Agriculture staffs broke up into teams and thus covered the several fair circuits. While the judges were occupied with the exhibits, a program of competitive sports was provided to be carried on by the teachers and local farm folk. The exhibits, besides products of field, garden, stable and yard, included work from the sewing room and kitchen as well as a wide range of school work. These annual events had several values; the pupils had one more objective to work toward. The skills acquired in preparation of the exhibits and later showing them on fair day were considerable. The judges explained why their placings were so and made suggestions for future improvements in the children's work. After the judging of exhibits was concluded, and all present had viewed the placings, the judges were requested to judge an indifferent competition in singing, readings and dramatics. Teachers, children, and parents, but particularly the teachers and children, were able to measure their particular standards of achievement in terms
of those of others; this was invaluable. School fairs have passed out of the picture in Ontario and Alberta, due to various causes, but they are still held in British Columbia. During their later years in Alberta the one-day school fair became a several-day event spread out over the spring and fall, with a day or more of dramatics, readings, and music, and a day for physical education activities separate from the agricultural and classroom exhibitions. With this extension in time, and the dropping of prizes and trophies the educational meanings became more evident and vast improvement was made in the day-to-day reading, musical, and other expressional activities; the use of competent adjudicators or critics was a concomitant cause of this desirable improvement in educational results. These latter school fair developments are still extant.

**Short Courses**

Short courses for farmers and their families, within the local community, began early in the history of our agricultural colleges and departments of agriculture; their popularity was never greater than at the present time. In both summer and winter the federal extension service, the provincial extension services, the federal and provincial experimental farms with their experimental stations and illustration stations, as well as the agricultural extension services of commercial organizations, offer one-day, two- or three-day institutes or
courses at points convenient to farm people; these events
are frequently sponsored by local Boards of Trade. In the
summer tents may be the most convenient shelter, particu-
larly near to illustration stations located out in the open
country. The motion picture made possible a change from
the lecture- to the visual-method of imparting information
of current new developments in the farming and homemaking
fields; this led further to the current practice of machine
and equipment demonstrations in the field, in the amphi-
theatre, or in the home -- a much more effective way of
disseminating information than could the former lecture-
method hope to be. Attendances are high. The plants of
vocational agricultural departments could provide excellent
settings for these short courses in their communities.

Radio Farm Forum The current counterpart of the
evening class in rural communities is the Farm Forum Radio
Broadcast of the Canadian Radio Broadcasting Corporation.
Its Farm Forum has succeeded in having brought together one
winter night weekly, in private homes or other convenient
non-school places, farm discussion groups who listen to the
Forum panel broadcasts and then through the group secretary
report to the provincial Forum office their reactions. The
provincial Forum office weekly makes a radio report on the
previous week's group discussions and in this way each
group learns of others' reactions to the panel discussion. The better equipped schools should invite their local farm forum groups to avail themselves of existing educational and social facilities in their home communities.

**Canadian Forestry Association**

The Canadian Forestry Association operates on the prairies, and periodically visiting every railway "siding", a car fully equipped with visual and other means of developing attitudes and appreciations leading to the establishment of windbreaks composed of trees and shrubs; the Indian Head Experimental Farm and privately operated nurseries stand ready to supply and have supplied millions of woody plants to farm homes in Western Canada.

Many other vocational agricultural education programs similar to the above, or the straight evening class organized on a formal conference-instructional basis, could follow the establishment of a vocational agricultural education department in the rural community high school. The chief lack in most Canadian farm communities is that of a well-prepared vocational agriculture teacher to lend impetus to the initiation of the various educational uses to which the local school plant should be put -- in cooperation with all of the other educational agencies available to the community. The school plant should be viewed as the
potential center of all available vocational education activities serving the community. The vocational agriculture teacher could be the coordinator of all the various available vocational education services in his constituency. Our schools are being used for but a small fraction of their possible functions, and out-of-school boys and girls as well as farmers and their wives would benefit greatly by an extended educational program contributing to the successful solutions of their individual and community problems.

In Central European areas farm families live in hamlets and villages surrounding their community centers; the farm workers go out to their farms in the mornings and return to the village home in the evenings. While North American farmers have traditionally lived upon isolated large holdings of farm lands, there is a tendency on the Canadian prairies for farm families to congregate about the community centralized school, the mother remains with the children of school age throughout the academic year, and the whole family spends the summer vacation on the farm. After the prairie farming season is over, the farm workers tend to remain longer periods in the new school settlement. This arrangement permits of more social intercourse for the whole community. The Royal Commission on Industrial and Technical Education had this to say:

........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 and animals. The place of the latter is to minister to the former. What shall it profit a country to be called the 'granary of the empire' if it loses the soul of happy rural life? (25, p. 1201)

Current Agricultural Education in Canadian Secondary Schools. Mr. G. A. Freiber, Deputy Minister of Education at St. John's, Newfoundland, says:

............this province has no course of agriculture in force in the high Schools. The Memorial University of Newfoundland has a course on paper but I do not believe any students are enrolled in it. The Government Farm at Mount Pearl carries on short courses for field men every year..........I am passing your letter along to........the Director of Agriculture in the Provincial Government.(70)

Allan B. Morrison, Director of Curricula and Research in the Nova Scotia Department of Education, has this information:

Courses in Agriculture are given at the High School level through the Extension Department of the Nova Scotial College of Agriculture in cooperation with the County Agricultural Representatives. In the schools for 1948-49 a total of 382 students enrolled in the Agriculture course, and of this number 277 completed it. The course is set up in three series of lessons which go out from the Extension Department of the Agricultural College. In any one year the student may take one of the three series. The student works in the classroom under the direction of the teacher and must send the completed lessons back to the Agricultural College. At the same time a student taking the course must be a member of a Calf or Garden Club and satisfy certain requirements laid down by the Director of the Extension Service, Dr. W. V. Longley, and the Agricultural Agent for that particular County.

The way the course is set up at present is not entirely satisfactory since the Agricultural Representative is not primarily concerned with schools
and very often has duties with farming groups so that he cannot do justice to the Agricultural Course. The courses may be taken in Grades ten, eleven, and twelve. (75)

Dr. Longley, Director of Agricultural Extension, Nova Scotia Agricultural College says further:

......the final mark is made up 50% on their work in clubs and 50% on the examination on the series of lessons. ....This started with one of the agricultural representatives wanting to give something in one of the schools, and gradually expanded. (72)

Mr. F. C. Purdy, Supervisor of Schools at Digby, Nova Scotia, contributed the following information concerning the Digby Rural High School's 1949-50 Agricultural Education program:

The economy of the rural district served by the Digby Rural High School is based on the small holdings plan and ....seasonal employment in the lumbering, fishing, and tourist industry......Agriculture is the foundation of this economy; not extensive, but the small garden, one or two cows, a small flock of hens, one or two pigs and a small fruits plantation. Back of the small holdings is the family woodlot, which provides sufficient fuel for the household and an occasional cord of pulpwood or merchantable stove wood........

The course.............for the (1949-50) school year is intended to be of service to meet only local needs, not a pattern for the whole province. The course will begin at the Grade VIII level. This class will have two regular periods a week which will be devoted to gardening and garden crops. Grades IX and X, who already have had the first year course, will continue a study of fruit cultivation. Grade XI will take the same class work as Grades IX and X but will also be expected to complete the correspondence course conducted by Dr. Longley.1(76)

1 At this point, it is interesting to know that in 1906 Ontario selected a number of Ontario Agricultural College Graduates for the express purpose of teaching agricultural
A report of the (Nova Scotia) Committee Established to Investigate Agricultural Education favoured general education for all, but recommended that the secondary schools provide for: (1) those students who were definitely interested in agricultural and other rural problems, but who had not decided to become farmers, and (2) students definitely decided on farming who should be prepared for profitable farming. Both groups were to be given the correct philosophy of rural life. (The report further stressed the contribution specialists, as teachers, and the university should make to agriculture in the province.) (24, p.27)(74, pp.137-138)

Several new composite high schools are being planned and built to serve large rural areas in Nova Scotia and it is intended that these rural high schools will include vocational agricultural courses as options. Dr. Longley says of this:

Relative to the Rural High Schools, they are just being established and apparently little or nothing has been done so far in regard to teaching agriculture in them. The first essential would be the appointing of a properly trained agricultural instructor and none thus far have been appointed in this Province.

There is nothing at all here approaching the agricultural departments in high schools of the United States. What will be done is a matter for the future. We hope as these Rural High Schools are established there will be a properly qualified instructor in each of them.(72)

courses in certain secondary schools in the province and at the same time of doing what they could in the way of adult agricultural education amongst the farming community. The high school phase of the venture was unsuccessful. The agricultural graduates lacked the teacher-education essential to success in the high school work, they failed to fit comfortably into the teacher-community and found the adult education part of their duties so much more to their likings that this became their major interest and activity. Although the high school experiment seemed to be a failure, from this experiment stemmed the Ontario Department of Agriculture's Extension Services and eventually were likewise patterned all provincial extension and federal services.
The Nova Scotia Department of Education regulations stipulate that instructors in vocational agriculture shall be employed for a twelve-month year and shall be given special grants for supervising home-farm projects. (74, p.138)

Agricultural science is compulsory in Grades IX and X of the Prince Edward Island schools and in Grade XI of Prince of Wales College and Normal School at Charlottetown. About 450 schools, mostly one-roomed, offer the agricultural science course to approximately 2,100 students; none of the 450-500 teachers involved possesses further qualifications in agriculture than those enumerated above. (84, p.135)

In New Brunswick agricultural education at the secondary school level is presently carried on in five farm training schools offering a diploma at the end of two five-month winter semesters. The Carleton County Vocational School at Woodstock is not a part of the local composite high school, but has its own building and principal (the latter is the County Agricultural Agent); the other four schools are component parts of the local composite high schools at Newcastle and St. Joseph's (both French-language), Edmundston, and Sussex. Woodstock and Sussex schools offer ten-month home economics courses for farm girls, as well. About 110 farm boys attend the vocational agricultural courses in the five schools annually.
Supervised home-farm projects are required during the intervening summer with a minimum of three supervisory visits of the instructor. As more composite high schools are established, more agricultural education courses will be instituted. During the 26 years of its operation the Woodstock school has gained a high local reputation. (ibid., p.146)

The secondary middle (college matriculation) schools at Chicoutimi, Nicolet, Rimouski, and Ville-Marie in the Province of Quebec are operated as adjuncts of classical colleges. The Ste. Martine school is sponsored by the Provincial Department of Agriculture. In common with many schools of this type, the minimal age for entry is 16 years, and the winter semesters are two of six months each. Including the schools mentioned elsewhere in Catholic Quebec, it will be apparent that the Quebec Catholic Committee has provided more vocational agricultural education at the elementary and secondary school levels than has any other Canadian Province.

Protestant school children in Quebec, like the Catholic children may be English-, French-, or bilingual-speaking. Rural children attending schools administered by the Protestant Committee of the Council of Education are very widely scattered; this is a most difficult factor to cope with. These children represent about five per cent of
the total Protestant school population; the remaining eighty per cent of Protestant Committee pupils are in the urban centers of the province. In the sixty centralized rural centers already established an exploratory course in agriculture is provided for in the junior high school level. In only three — Composite High Schools at Lachute, Knowlton, and Ormstown — of the 130 Protestant secondary schools is agricultural education offered as an option; these three schools offer agriculture at some of the Grades VIII-IX-X-XI levels to a total of approximately eighty students; two instructors have agricultural degrees plus teacher-education, and Ormstown center provides for traveling expenses involved in supervision of home-farm projects. (84, p.58)

Of the more than 400 secondary schools in the Province of Ontario, fewer than 180 schools offer agricultural science courses; 66 agricultural departments prevailed in 1949-50. Approximately 3,500 students are receiving some practical agricultural education and another 24,000 high school boys and girls are enrolled in agricultural science in Grades IX, X, XI, and XII. Slightly over 25% of the 260 teachers of practical agriculture and agricultural science possess degrees in agriculture. Travelling expenses are provided where supervised farming projects are a part of the program, and such teachers are then paid upon the
eleven-month basis. About 35 teachers have organized evening classes or short courses in agricultural education for young farmers and adults. In the Ontario educational system credits in agricultural science are accepted in lieu of pure physical science courses for pass University matriculation, Normal School entrance, Nursing School entrance, and for the General High School Leaving Diploma. (36)(79)

Two professional agricultural education certificates are obtainable in Ontario, both presuming the holder to possess extensive practical farming experience and the Ontario College of Education Diploma (or its equivalent): (a) the Specialist's Certificate, available to those who hold a degree from an approved College of Agriculture or who hold a degree in science plus successful completion of three five-week summer session courses in agriculture at the Ontario College of Agriculture; (b) the Intermediate Certificate, which is granted to those holding science degrees plus successful completion of two five-week College of Agriculture summer session courses designed for that purpose.

Agricultural departments in Ontario secondary schools are instituted at the Grade IX level with weekly periods ranging from three to five -- dependent upon the length of class periods. Grade X may be established the second year with four or five periods weekly. If this program is
extended into Grades XI and XII, ten to twelve periods weekly are devoted to agriculture courses; 20% of the student's time must be devoted to agriculture and farm shop or to agriculture and home economics. The minimum age for students in agricultural departments is 15 years. Provision is made for the establishment of short courses or evening classes where such are not already available through the Department of Agriculture Extension Services. (36) (79)

Manitoba offers some agricultural content in the secondary school general science courses. Dauphin, the high school center of an enlarged administrative unit, is the only one of 235 secondary schools in Manitoba which currently offers a vocational agricultural course. In the Dauphin course the student must spend one half of his Grades X and XI school time on agricultural and related studies as required by the provisions of the Canadian Vocational Training Act. Other Manitoba composite high school centers are expected to offer vocational agriculture as these centers are established.

All of the approximately six hundred high school centers in Saskatchewan offer general science courses which are compulsory at the Grades IX and X levels and are composed of agricultural content to the amount of about twenty-five per cent; about 14,000 students are involved in these two grades. Grade XI programs carry
a general agriculture option and over 3,000 students have enrolled in it. Qualifications in agricultural educational are unnecessary for teaching agriculture in Saskatchewan high schools, and no more than a dozen teachers likely will hold an agriculture degree; the teacher in any secondary school who is last appointed to the staff, unless a more senior staff-member is particularly interested, will be the probable agriculture teacher. (84, p.138)

Of the 433 senior secondary Alberta schools, Medicine Hat, Cardston, Glenwood, Magrath, Red Deer, Lacombe, Fort Saskatchewan, Stony Plain, Athabasca, and Spirit River-Rycroft offer varying degrees of vocational agricultural education. Nine of the ten teachers in charge possess degrees in agriculture and all have approved qualifications covering high school teaching. The Canadian Union College at College Heights, near Lacombe, has an agricultural department with a fully qualified instructor; a 1,600-acre farm and associated farm shop provide for practical experiences. Lacombe high school boys are bussed to the College for agricultural classes. Of the ten high school teachers of agriculture, one teaches agriculture on a full-time basis, one teaches on a one-fifth time basis, and the remainder spend from one-quarter to three-quarters of their teaching time in agricultural education. (Table XLVI) Only in the Canadian Junior College is farm shop work taught by
the agriculture teacher-farm manager. In the high schools the farm and home mechanics course is given by the industrial arts teachers. The total number of students enrolled in agriculture courses in schools approved by the Department of Education is (1950-51) 202; this is an increase of twenty-five percent over the 1949-50 enrolment of 160 students. The agriculture teachers are paid for summer supervision of supervised farming programs in salary and mileage; in lieu of mileage school conveyances are supplied.

A total of 100 senior secondary school credits\(^1\) are necessary for the High School Diploma. Students working toward this diploma may earn eight credits each in Animal Science 1 and 2, eight credits each in Plant Science 1 and 2, and eight credits in Farm and Home Mechanics; thus, forty credits are presently available of the one hundred credits necessary to high school graduation in the general or non-matriculation course. The complete series of courses may be covered in two academic years. This possibility contemplates one intervening summer's supervised farming program, -- too brief an opportunity for normal long-term farming practices to be established satisfactorily. As elsewhere, the Alberta secondary school vocational-type agriculture program is impeded in its progress

\(^1\) In Alberta a credit represents a maximum of 35 minutes' class time per week; e.g., a five-credit course may entail up to 175 minutes per week of class-time, while its smallest paper value would be fifty percent less.
toward satisfactory standardization and achievement by the lack of suitably educated teaching personnel. Certification is that of general high school work, with the present additional requirement that the teacher of agriculture must possess a standard College of Agriculture degree. Not all of the instructors have had a maximum of three days' observation and supervised teaching in a department. Their supervising instructors have the qualification of experience in their own classrooms, but no supervised observation and teaching of agriculture in their undergraduate program.

The (Alberta) Preliminary Board of Agricultural Education recommended that only properly qualified teachers teach practical agriculture and then only with adequate equipment. General Agriculture, on the other hand, may be incorporated with General Science. However, Vocational Agriculture, Home Economics, Industrial Arts and other "practical subjects" should find a place of importance on the program of community schools as soon as these are established.(24, p.29)

The general science course in the British Columbia secondary school curriculum deals with significant agricultural content. About 20 of the 163 secondary schools offer a general agriculture option at some level or levels of the Grades VIII-XII range. Previous to 1950, not over 50% of the instructors in agriculture had specific preparation in the way of a degree in agriculture. Creston and Chilliwack high schools have pioneered in this field by setting out to offer the full five years' program of
in-school and home-farm experiences. At Chilliwack Mr. Neil M. MacGregor opened agricultural education classes as far back as 1939, at which time permission was given to Mr. MacGregor by the Provincial Department of Education to extend the time devoted to agriculture and to make up more suitable courses for the Chilliwack farm boy students.

Under date of September 30th, 1949, Mr. MacGregor wrote:

......As at present our course is as follows: Grade 9 - 5 periods (out of 35) per week for agriculture. This is an introductory try-out course which can be taken by any boys, whether they are going on for University Entrance or plan on High School Graduation only. In this, as in all subsequent courses, as many field trips and as much outside work as possible is given.

At the end of Grade 9 those students who are definitely interested in vocational agriculture can choose it as an option for Grades 10, 11, and 12. Because of the time given to agriculture and to farm mechanics, these students can not get the languages, mathematics, etc., that they would need for University Entrance, but finish school with a High School Graduation Certificate.

We give these students fairly large dosages, -

Grade 10 - 10 periods agriculture and 5 periods farm mechanics,

Grade 11 - 10 periods agriculture and 10 periods farm mechanics,

Grade 12 - 10 periods agriculture and 5 periods farm mechanics.

In addition all students are required to take the core subjects of English, Social Studies, Physical Education and Health, — and most students will take the General Science courses.

Furthermore, a home project, similar in nature to those used in United States vocational agriculture high school departments, is required each year of each student taking the vocational agriculture option.

Additional practical work is provided on a plot of about 4 to 5 acres adjacent to the new school, on which acreage we grow a variety of garden and field crops. Under the federal vocational assistance plan the school purchased a fairly full line of farm
machinery, including a tractor, and we will also have a well-equipped farm mechanics shop. The new school is almost completed, and in it we have a vocational agriculture room laboratory, a large farm mechanics shop, greenhouse and root cellar, and various storage rooms for supplies, tools, machinery, etc.

......Our project work has been quite successful...

....I regard it as the key part of the course. We have not encouraged too large projects -- usually expect a turnover of $150-$200 for a grade 10 project, and expect the boys to expand their projects as they gain experience. Our whole aim is to make the course practical.(62)

British Columbia Department of Education officials arranged for a three-month course in the philosophy, organization and practices in secondary school vocational agricultural education held at the University of British Columbia in the summer of 1950. Twelve selected candidates were admitted to the teacher-education course in toto, with additional interested teachers accommodated in the latter half of the course. No difficulty was anticipated in placing all of the institute graduands during the latter part of the course. The course leaders were from the Montana State offices: the State Director of Vocational Education, the State Director of Vocational Agricultural Education, and the head of the Vocational Agriculture Department in a Montana high school. Mr. C. J. Frederickson, Inspector of Schools for the New Westminster Provincial Inspectorate was the co-ordinator for the 1950 institute for educating present and prospective vocational agriculture instructors.(48)
Vocational agricultural education in Canadian high schools is in a period of emergence -- at approximately the stage reached and passed in some regions of the United States forty years ago. Arthur J. Rennie says:

There appear to be three groups among those who have done some thinking on the subject.

Group 1 favors the idea of a general education which would give a good background for any further training desired. This group would exclude all vocational training from the high school and make provision for it at a higher age level.

Group 2 would like to see vocational training provided for early in the high school grades on an extensive scale and preferably in separate vocational schools.

Group 3 considers that a general education is desirable, but that along with it, several vocational options might be made available, particularly at the age sixteen level. These choices would be in the nature of inducements to encourage the student to remain in school longer.

The last group is the largest and is supporting the composite school program for rural areas. (34, pp. 39-40)

A committee established a few years ago to investigate agricultural education in Nova Scotia stated that it favored general education for all, but recommended that the secondary schools provide for (a) those students who are definitely interested in agricultural and other rural problems, but who have not decided to become farmers; and (b) students definitely decided on farming who should be prepared for profitable farming. Both groups are to be instructed on a philosophy of rural life. The Preliminary Board on Agricultural Education further recommended that
general agriculture might be incorporated in general science. However,

Vocational Agriculture, Home Economics, Industrial Arts, and other practical subjects should find a place of importance on the program of community schools as soon as these are established. (24, p. 27)

Rural Schools for Tomorrow dismisses the question as follows:

There are those who still hold that schools should educate for life rather than for making a living. A majority of thinking people, however, believe that it is not an 'either-or' decision that has to be made between vocation and general education. Both are essential just as both protein and carbohydrates are essential in the ration of a dairy cow. The only question is one of deciding upon the proper balance. (6, pp. 139-40)

The 1948 report of the Canadian Research Committee of Practical Education contains a summary of responses from 1,104 farm folk across Canada to the question

Do you think that the High School in your area is serving your community well in giving boys an education and training which will help them to become successful farmers?

Note: Of all those answering the questionnaire, 16.1% thought the schools were giving a suitable education to help boys to become successful farmers. 77.4% did not believe the schools were providing a suitable education for that purpose.

To see what influence the inclusion of special subjects in the school curricula would have, the replies of those who reported these special subjects as taught in the local school were taken: (26, p. 13)

Where farm mechanics is given the percent "Yes" was 70.0
Where practical agriculture " " " " " " 66.6
Where shop work " " " " " " 34.4
Where agricultural science " " " " " " 30.8
Where commercial work " " " " " " 28.3
### TABLE VII

**SUMMARY OF REPLIES TO THE QUESTION:**  
**DO YOU THINK THAT THE HIGH SCHOOL IN YOUR AREA IS SERVING YOUR COMMUNITY WELL BY HELPING THE BOYS BECOME SUCCESSFUL FARMERS?**

<table>
<thead>
<tr>
<th></th>
<th>female</th>
<th></th>
<th>male</th>
<th></th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
<td>ans.</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>10.0</td>
<td>50.0</td>
<td>40.0</td>
<td>0.0</td>
<td>85.7</td>
</tr>
<tr>
<td>N.S.</td>
<td>5.5</td>
<td>85.5</td>
<td>9.0</td>
<td>0.0</td>
<td>85.7</td>
</tr>
<tr>
<td>N.B.</td>
<td>6.1</td>
<td>84.8</td>
<td>9.1</td>
<td>9.5</td>
<td>81.1</td>
</tr>
<tr>
<td>Que.-Fr.</td>
<td>14.3</td>
<td>71.4</td>
<td>14.3</td>
<td>10.4</td>
<td>67.2</td>
</tr>
<tr>
<td>Que.-Eng.</td>
<td>15.4</td>
<td>84.6</td>
<td>0.0</td>
<td>26.5</td>
<td>67.3</td>
</tr>
<tr>
<td>Ont.</td>
<td>25.2</td>
<td>72.5</td>
<td>2.3</td>
<td>25.1</td>
<td>73.3</td>
</tr>
<tr>
<td>Man.</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
<td>3.8</td>
<td>90.6</td>
</tr>
<tr>
<td>Sask.</td>
<td>4.5</td>
<td>79.5</td>
<td>16.0</td>
<td>13.6</td>
<td>79.7</td>
</tr>
<tr>
<td>Alta.</td>
<td>15.8</td>
<td>78.9</td>
<td>5.3</td>
<td>4.7</td>
<td>93.0</td>
</tr>
<tr>
<td>B. C.</td>
<td>23.5</td>
<td>76.5</td>
<td>0.0</td>
<td>53.3</td>
<td>40.0</td>
</tr>
<tr>
<td>Canada</td>
<td>16.2</td>
<td>77.9</td>
<td>5.9</td>
<td>16.1</td>
<td>76.9</td>
</tr>
</tbody>
</table>

Only 16.1% of all of the respondents, representing all kinds of schools, believed that our high schools are serving our future farmers well. Only 34.4% of the respondents where shop work was taught believed that the high school was serving our future farmers well. Only 30.8% of the respondents where agricultural science was taught believed that the high school was serving the future farmers well. Only 28.3% of the respondents where commercial work was taught believed that the high school was serving our future farmers well. However, where practical agriculture was taught 66.6% of the respondents believed that the high
school was serving the community well and giving boys an education which will help them to become successful farmers, and where farm mechanics was taught 77.4% of the respondents believed that the high school was rendering good service along the same lines. The degrees of satisfaction expressed by the respondents of all of the provinces are high in the cases of farm mechanics and practical agriculture -- in both instances almost twice or more than twice as high as where shop work, agricultural science, or commercial work were cited. (26, p.13)

The November, 1950, Annual Convention of the Social Credit League (the organization which in 1948 elected fifty-four of the fifty-seven sitting members of the Legislative Assembly of the province) considered and adopted the following resolution:

WHEREAS the large proportion of Alberta's youth leave school after the compulsory age for attendance and at various stages before completing high school; and

WHEREAS the basic reason they leave school is that they feel ill equipped to tackle the complexities of modern farming and do not see how the lot of the farmer's standard of living can be improved; and

WHEREAS they leave school because they have no interest in the limited scope of present high school curricula:

THEREFORE BE IT RESOLVED that we request the Department of Education to expand the purposes in Agriculture in Alberta schools by adding a major elective course in integrated general practical and scientific agriculture to be available in three stages covering
three successive years as a means of creating interest in good farming and as an incentive to become a part of Alberta's basic and most important industry; and

BE IT FURTHER RESOLVED that this course be offered only in high schools where there is a fully qualified teacher who is also a graduate in Agriculture.

Answering the question:

Statistics indicate that rural boys do not stay in school as long as urban boys do. In your community, which of the following reasons do you think has the greatest influence on boys dropping out of school?

(a) Kept home to help because of scarcity of farm labor.
(b) Parents think that to be a successful farmer a boy does not need a high school education.
(c) The high school is not offering a program that will be of definite value in preparing boys to become successful farmers.

TABLE VIII

REASONS WHY FARM BOYS DROP OUT OF SCHOOL

<table>
<thead>
<tr>
<th></th>
<th>(a) Scarcity of farm labour</th>
<th>(b) Do not need H. S. Educ.</th>
<th>(c) H.S. program inadequate</th>
<th>(d) Other reasons or no answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E.I.</td>
<td>29.6</td>
<td>14.8</td>
<td>44.4</td>
<td>11.2</td>
</tr>
<tr>
<td>N.S.</td>
<td>9.9</td>
<td>7.2</td>
<td>66.7</td>
<td>16.2</td>
</tr>
<tr>
<td>N.B.</td>
<td>16.3</td>
<td>12.8</td>
<td>62.8</td>
<td>9.1</td>
</tr>
<tr>
<td>Que.-Fr.</td>
<td>41.1</td>
<td>25.2</td>
<td>28.0</td>
<td>5.7</td>
</tr>
<tr>
<td>Que.-Eng.</td>
<td>28.7</td>
<td>6.9</td>
<td>48.5</td>
<td>15.9</td>
</tr>
<tr>
<td>Ont.</td>
<td>24.7</td>
<td>11.2</td>
<td>51.3</td>
<td>12.8</td>
</tr>
<tr>
<td>Man.</td>
<td>10.3</td>
<td>8.0</td>
<td>66.7</td>
<td>15.0</td>
</tr>
<tr>
<td>Sask.</td>
<td>27.2</td>
<td>10.7</td>
<td>48.5</td>
<td>13.6</td>
</tr>
<tr>
<td>Alta.</td>
<td>9.7</td>
<td>17.7</td>
<td>59.7</td>
<td>12.9</td>
</tr>
<tr>
<td>B.C.</td>
<td>21.9</td>
<td>9.4</td>
<td>40.6</td>
<td>28.1</td>
</tr>
<tr>
<td>Canada</td>
<td>22.9</td>
<td>12.0</td>
<td>52.2</td>
<td>12.9</td>
</tr>
</tbody>
</table>
52.2% of the total number of respondents, or 60% of those answering one of (a), (b), or (c), believed that the high school did not provide a satisfactory education for the future farmer. 22.9% of those answering the whole questionnaire, or 26% of those responding to (a), (b), or (c), believed that the scarcity of farm help was responsible for the boys' dropping out of school before graduation. Only 12.0% of the 1,104 respondents or 13.7% of those answering (a) or (b) or (c) believed that a future farmer does not need a high school education. (Table VIII) (26, p.17)

Table IX

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E.I.</td>
<td>88.9</td>
<td>3.7</td>
<td>7.4</td>
</tr>
<tr>
<td>N.S.</td>
<td>96.4</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>N.B.</td>
<td>91.9</td>
<td>5.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Que.-Fr.</td>
<td>74.3</td>
<td>10.8</td>
<td>14.9</td>
</tr>
<tr>
<td>Que.-Eng.</td>
<td>88.1</td>
<td>6.9</td>
<td>5.0</td>
</tr>
<tr>
<td>Ont.</td>
<td>83.3</td>
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<td>8.3</td>
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<tr>
<td>Man.</td>
<td>86.2</td>
<td>6.9</td>
<td>6.9</td>
</tr>
<tr>
<td>Sask.</td>
<td>87.4</td>
<td>4.9</td>
<td>7.7</td>
</tr>
<tr>
<td>Alta.</td>
<td>93.5</td>
<td>6.5</td>
<td>0.0</td>
</tr>
<tr>
<td>B.C.</td>
<td>90.6</td>
<td>6.3</td>
<td>3.1</td>
</tr>
<tr>
<td>Canada</td>
<td>86.7</td>
<td>6.8</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Table IX summarizes the replies to the question:

In some parts of the country Composite High Schools are becoming common. These schools have facilities to give a general course, with academic subjects combined
with such subjects as commercial work, home economics, shop work and practical agriculture; or such schools can provide specialized training in some one field of instruction.

Do you think the Composite High School is the type of school that can best serve the needs of a rural community? (Table IX summarizes the answers)

Note the strong endorsement of this type of school. In some cases where the reply was negative it was pointed out that if this central school was located in a town or city the program would likely be too "urban" and not sufficiently "rural" in character. (26, p.18)

Table X summarizes the responses to the question:

Where the subjects referred to...are taught, indicate how valuable you think these subjects are in preparing...boys to become...successful farmers.

**TABLE X**

<table>
<thead>
<tr>
<th>Value</th>
<th>Agric. Science</th>
<th>Farm Mechanics</th>
<th>Pract. Agric.</th>
</tr>
</thead>
<tbody>
<tr>
<td>More</td>
<td>86.7</td>
<td>94.3</td>
<td>98.1</td>
</tr>
<tr>
<td>Less</td>
<td>13.3</td>
<td>5.7</td>
<td>1.9</td>
</tr>
</tbody>
</table>

This is quite a strong endorsement of this work. (ibid., p.19)

Table XI presents the summary of responses to the question:

Various schemes are used in Agricultural Education to make the instruction real and interesting. Sometimes the home farms of the boys are used as a laboratory with actual projects carried to completion; i.e.,
something is produced, marketed, and a profit derived by the boys.

(1) Do you think this type of training is valuable?
(2) Do you think it would be a good idea for the school to operate a farm to provide the actual practical experience?

---

**TABLE XI**

**ENDORSATION OF HOME FARM AS A LABORATORY**

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th></th>
<th></th>
<th>Male</th>
<th></th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
<td>ans.</td>
<td>yes</td>
<td>no</td>
<td>ans.</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>85.0</td>
<td>5.0</td>
<td>10.0</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td>88.9</td>
<td>3.7</td>
</tr>
<tr>
<td>N.S.</td>
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<td>3.6</td>
<td>1.9</td>
<td>94.6</td>
<td>0.0</td>
<td>5.4</td>
<td>94.5</td>
<td>1.9</td>
</tr>
<tr>
<td>N.B.</td>
<td>93.9</td>
<td>0.0</td>
<td>6.1</td>
<td>94.3</td>
<td>1.9</td>
<td>3.8</td>
<td>94.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Que.-Fr.</td>
<td>85.7</td>
<td>0.0</td>
<td>14.3</td>
<td>91.0</td>
<td>7.5</td>
<td>1.5</td>
<td>90.5</td>
<td>6.8</td>
</tr>
<tr>
<td>Que.-Eng.</td>
<td>92.3</td>
<td>5.8</td>
<td>1.9</td>
<td>95.9</td>
<td>2.0</td>
<td>1.1</td>
<td>94.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Ont.</td>
<td>91.5</td>
<td>2.2</td>
<td>6.3</td>
<td>92.8</td>
<td>3.6</td>
<td>3.6</td>
<td>92.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Man.</td>
<td>97.1</td>
<td>2.9</td>
<td>0.0</td>
<td>92.5</td>
<td>1.8</td>
<td>5.7</td>
<td>94.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Sask.</td>
<td>95.5</td>
<td>4.5</td>
<td>0.0</td>
<td>91.5</td>
<td>3.4</td>
<td>5.1</td>
<td>93.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Alta.</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td>95.4</td>
<td>2.3</td>
<td>2.3</td>
<td>96.8</td>
<td>1.6</td>
</tr>
<tr>
<td>B.C.</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
<td>0.0</td>
<td>100.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Canada  | 93.1   | 2.8      | 4.1    | 93.5 | 3.0      | 3.5    | 93.2  | 2.9      | 3.9    |

The strong endorsement of the "school and home-farm cooperation concept" is quite in line with the development of Vocational Agricultural projects in the United States. (ibid., p.21)

The home project, planned at the school, studied at both school and home, executed by the pupil, and sympathetically supervised by the expert agricultural instructor travelling from farm to farm, is the dominant feature of the Massachusetts system of Vocational Agricultural Education......Everywhere it is a system of earning and learning; and the earnings are of considerable economic importance. (95, p.590)

As evidence of the latter comment, witness the financial account\(^\text{1}\) of the Corvallis (Oregon) Chapter of the

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\(^1\) These figures were obtained from Chapter records by writer.
Future Farmers of America under the leadership of its instructor, Donald Kabler, B.Sc., B.Ed.:

### TABLE XII

**AGGREGATE INCOMES OF PRIVATE ENTERPRISES OF CHAPTER MEMBERS OF CORVALLIS (OREGON) FUTURE FARMERS OF AMERICA**

<table>
<thead>
<tr>
<th>Enterprises</th>
<th>1948</th>
<th>1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Crops</td>
<td>654 tons $25,445.63</td>
<td>606 tons $21,532.35</td>
</tr>
<tr>
<td>Truck Crops</td>
<td>47 tons 816.68</td>
<td>51 tons 1,201.35</td>
</tr>
<tr>
<td>Fruit Crops</td>
<td>291.50</td>
<td></td>
</tr>
<tr>
<td>Dairying</td>
<td>20,500 # 2,913.20</td>
<td>53,440 # 3,419.05</td>
</tr>
<tr>
<td>Beef</td>
<td>1,700 # 400.00</td>
<td></td>
</tr>
<tr>
<td>Sheep - wool</td>
<td>145 # 285.18</td>
<td>142 # 144.51</td>
</tr>
<tr>
<td>meat</td>
<td>660 #</td>
<td>75 #</td>
</tr>
<tr>
<td>Swine</td>
<td>1,700 # 520.50</td>
<td>1,658 # 1,295.81</td>
</tr>
<tr>
<td>Poultry</td>
<td>490.77</td>
<td>347.53</td>
</tr>
<tr>
<td>Miscellaneous, incl. honey</td>
<td>45 #</td>
<td></td>
</tr>
<tr>
<td><strong>Average per Chapter Member</strong></td>
<td><strong>$ 491.62</strong></td>
<td><strong># 471.83</strong></td>
</tr>
</tbody>
</table>

The Canadian Committee on Practical Education asked:

(2) Do you think it would be a good idea for the school to operate a farm to provide the actual practical experience?

### TABLE XIII

**SHOULD THE SECONDARY SCHOOL AGRICULTURE DEPARTMENT OPERATE A FARM?**

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No Ans.</td>
<td>Yes</td>
<td>No Ans.</td>
<td>Yes</td>
<td>No Ans.</td>
</tr>
<tr>
<td>Canada</td>
<td>54.6</td>
<td>38.0</td>
<td>7.4</td>
<td>54.6</td>
<td>38.3</td>
<td>7.1</td>
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<tr>
<td></td>
<td>54.6</td>
<td>38.2</td>
<td>7.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comments: (1) Note that slightly more than one-half (54.6%) favor this idea.
(2) Typical comments of those saying "No"; "A good idea but too many practical difficulties."(26, p.22)
(3) In the United States the school farm idea has apparently lost ground:

The school and home-farm cooperation idea, clearly in harmony with the thinking of (previously mentioned) educators, has more and more widely and effectively prevailed. Heavy outlays for school farms have been largely avoided....School farms and school farm equipment and livestock in notable cases have been disposed of and, generally speaking, students now carry on projects and other supervised farm practices on home farms rather than on school-owned farms.(95, p.605)

Question VIII of the questionnaire sent out by Research Director A. G. McColl of the Canadian Research Committee on Practical Education was:

Which of the following general plans do you think would be the best in preparing boys to become successful farmers:

(1) An academic high school course followed by short specialized courses in an agricultural school or college.
(2) A general high school course with academic subjects, business topics, shop work, farm mechanics, and practical agriculture.
(3) A program as in (2) operating 6 months per year, with supervised practical farm experience the other 6 months of the year.

Only one in eight or 12.7% favored the traditional high school set-up with agricultural education provided in separate agricultural schools or colleges.(26, p.23)

Eight out of twenty or 39.0% favor a composite high school operating several months in the winter with supervised farming projects during the summer months. This type
TABLE XIV

AT WHAT SCHOOL LEVEL SHOULD VOCATIONAL AGRICULTURE BE TAUGHT?

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th></th>
<th></th>
<th>Male</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>(2)</td>
<td>(3)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>10.0</td>
<td>30.0</td>
<td>55.0</td>
<td>28.6</td>
<td>42.8</td>
<td>28.6</td>
<td>14.8</td>
<td>33.3</td>
<td>48.1</td>
</tr>
<tr>
<td>N.S.</td>
<td>5.5</td>
<td>49.1</td>
<td>43.6</td>
<td>8.9</td>
<td>51.8</td>
<td>33.9</td>
<td>7.2</td>
<td>50.5</td>
<td>38.7</td>
</tr>
<tr>
<td>N.B.</td>
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<td>54.5</td>
<td>41.4</td>
<td>7.6</td>
<td>43.4</td>
<td>41.5</td>
<td>4.7</td>
<td>47.7</td>
<td>41.9</td>
</tr>
<tr>
<td>Que.-Fr.</td>
<td>28.6</td>
<td>28.6</td>
<td>42.8</td>
<td>22.4</td>
<td>29.9</td>
<td>35.8</td>
<td>22.9</td>
<td>29.7</td>
<td>36.5</td>
</tr>
<tr>
<td>Que.-Eng.</td>
<td>13.5</td>
<td>63.5</td>
<td>23.0</td>
<td>10.2</td>
<td>61.2</td>
<td>28.6</td>
<td>11.9</td>
<td>62.4</td>
<td>25.7</td>
</tr>
<tr>
<td>Ont.</td>
<td>14.2</td>
<td>42.2</td>
<td>43.7</td>
<td>13.8</td>
<td>38.2</td>
<td>37.4</td>
<td>14.0</td>
<td>44.9</td>
<td>40.4</td>
</tr>
<tr>
<td>Man.</td>
<td>11.3</td>
<td>61.8</td>
<td>26.9</td>
<td>15.1</td>
<td>50.9</td>
<td>34.0</td>
<td>13.8</td>
<td>55.2</td>
<td>31.0</td>
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<tr>
<td>Sask.</td>
<td>9.1</td>
<td>43.2</td>
<td>47.7</td>
<td>15.2</td>
<td>40.7</td>
<td>44.1</td>
<td>12.6</td>
<td>41.8</td>
<td>45.6</td>
</tr>
<tr>
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<td>52.6</td>
<td>42.1</td>
<td>9.3</td>
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<td>40.6</td>
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<td></td>
<td></td>
<td>2.2%</td>
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</tbody>
</table>

of educational organization most emphasizes practical projects. The Smith-Hughes Act stipulates that at least six months of directed or supervised practice in agriculture each year shall prevail.

Nine out of twenty, or 46.1% of the answers favored the composite high school operating on the traditional ten-month basis with vocational classes and associated activities.

Seventeen out of twenty or 85.1% favored the composite high school type of organization. (26, p.23)
Dr. C. A. Prosser, deputy commissioner of education and later the first secretary of the National Society for Promotion of Education, carried into his new office in 1912 his good opinion of the general worth and workability of the Massachusetts school and home-farm cooperation concept and "began advocating the project plan throughout the country."

In doing this I pointed out that it was the application of the principles of learning by doing, practice and thinking about practice, learning while earning, in the field of agriculture. I have always contended that agricultural pupils engaged in project work on their home acres are in reality part-time students just as much as part-time students in trade and industrial education. They divide their time on some basis between real work in a shop or on the farm and in the school. (95, p.588)

**TABLE XV**

<table>
<thead>
<tr>
<th></th>
<th>Short Courses</th>
<th>Evening Classes</th>
</tr>
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<tbody>
<tr>
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<td>P.E.I.</td>
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<tr>
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<td>6.2</td>
</tr>
<tr>
<td>Canada</td>
<td>77.6</td>
<td>6.3</td>
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</table>

Table XV is a summarization of answers to the question:
If a well-equipped school with a qualified staff, prepared to offer courses in shop work, farm mechanics, and practical agriculture, was established in your community (or within reasonable distance) do you think it would be of definite value to young adult farmers?

(1) By offering short specialized courses during slack periods of farm work? (Yes, No)
(2) By offering evening classes during winter months? (Yes, No)

The results indicate that there is strong approval of a system of continued education up to and through the adult years. (26, p.26)

A recent tabulation made by the U. S. Office of Education shows that there has been a steady trend toward a 4-year course in vocational agriculture in the high school. However, very few young men step immediately into positions of responsibility following graduations from a 4-year course. There is a period just after young men leave high school when they seem to make little progress vocationally for several years due to economic, physical, legal, and other factors. It is during this period that they are more in need of training, guidance, and direct assistance than during the high school period.

The desirability of a continuous program of vocational education for farm youth and adults has gradually become recognized. The present tendency is to set up a program which provides a 4-year course of instruction in high school followed by a series of part-time courses to assist graduates to become established in farming, as well as a continuous program of instruction in evening classes for adults who have already become established as farmers. When this continuous program of instruction is followed the former student may secure assistance in further developing his supervised farm practice, which he began during his high school course, in developing a partnership at home, or in augmenting his farm experience by working for a time on some outstanding farm. (95, p.614)

It would appear from the differing reactions to short course and evening classes that the short course is
relatively well known to Canadian farm folk and its values are likewise appreciated. Evening courses for farm folk in Canada are as yet novelties.

Respondents were encouraged to suggest other media through which rural high schools might better serve their communities; a large majority took opportunity to do so and suggested, among others:

Related to subjects - either proposed subjects not now on the curriculum, or proposing greater emphasis on certain subjects, (again shown here, in the order of frequency mentioned)

(1) Practical agriculture
   - special topics not previously mentioned were: Farm Accounting, Farm Management, Marketing, Principles of Cooperatives, Soil Conservation, Livestock (care of, feeding, judging), Veterinary Practices, Reforestation;
(2) Cultural subjects, such as Music, Dramatics, etc.;
(3) Public Speaking, Conduct of Meetings, etc.;
(4) Citizenship, civics, politics, economics;
(5) Community leadership;
(6) Physical Education, Health, sports;
(7) Family life, Sex education;
(8) Religion.

Related to Adult Education - short courses; night classes for men and women; folk schools; part-time specialized training for young farmers.

Closer cooperation between Departments of Agriculture and Education - Junior Farmers' Clubs to coordinate with school work; operate schools in conjunction with experimental farms; agricultural representatives to work closer with the schools; schools to provide elementary consulting services for farmers.(26, p.28)

POPULATION TRENDS

Plutarch in his Praecept Politica protested the
invasion of the cities by the rural populations. Cicero likewise deplored this movement. The Emperor Augustus realized the undermining effects of the migration of country people to the towns, and asked the poets of the Roman Empire to sing of the attractions of country life in order to entice people back to the land. (61, p.17) Whether for good or ill, Canada's population has tended for several decades to leave the farms and drift into the villages, towns and cities across the land; this movement was accentuated during the years of the Second Great War.

From 1901 to 1911 the urban population of Canada increased 63 per cent; for the succeeding ten-year periods the increases were, in terms of the 1901 numbers, 146 per cent, 179 per cent, and 212 per cent. In the same forty-year interval the rural population increased 18 per cent, 33 per cent, 43 per cent, and 57 per cent. (Table XVI) In Alberta the total population has increased over that period, while the farming population has consistently shown a decrease in absolute numbers and therefore in per cent of the whole population. (Table XVI) Population tables indicate conclusively that population numbers in Canada have followed the same trends common to almost every Western nation with the possible exception of Denmark.

The shift in rural population to urban centers may be said to be of three types:
1. Movement from the farms to the cities:— for advantages, for the purpose of retiring; a loss is the result.

2. From worn-out lands to virgin soils, due to decreases in fertility.

3. From new lands to older communities, possibly to retire closer to boyhood and girlhood homes.

Even as early as 1911 a survey of 1912 Canadian farms brought forth this comment:

"...........in most of the Provinces the farmers are living on the accumulated capital which nature provided in the soil, leaving their land poorer because they have been on it.(17, p.57)

In the pioneer stage, agriculture has consisted very largely in harvesting the soil, and very little attention has been paid to soil-building. Similarly, the pioneer churches have too generally followed the plan of harvesting a membership by revivalistic methods, and have given too little attention to membership building.......They seem to have relied more upon making converts among mature reprobates than upon the training of successive generations of boys and girls into good neighbors, into efficient farmers,—in short, into good citizens, such as build up a community, increase the production of its farms, and make it a desirable place in which to live.(27, pp.343-44)

There may be several reasons for this city-ward, away-from-the-farm trend:

1. The number of men required on the land, due to mechanization in part, is less than formerly.

2. There is a lack of social opportunities in rural areas, particularly in our sparsely settled areas.

3. There is a lack of educational opportunities in most rural communities.

4. There are fewer opportunities for amusement and recreation in farm areas.

5. Low prestige is still accorded the farm population.
6. The boy or girl may labor on the farm as an unpaid hand or lack partnership arrangement.

7. Small village industries have been removed to cities and large factories.

8. Often there is a lack of adequate road, transportation and communication facilities. (61, pp. 22-31)

There is no turning backward in the matter of farm mechanization; it is a sound movement parallelling developments previously apparent in other Canadian industries. Likewise, there seems to be no good reason to reject the conversion of many small-unit, decentralized industries into larger units. However, there can be something done about rectifying conditions enumerated above, and this is being done in communities where larger units of educational administration have assured community schools large and strong enough to insure the building of a new community with the accessories of modern civilization: the school as the center of wide educational opportunities and to which future citizens turn in ever increasing numbers for development of those appreciations, attitudes, knowledges and skills which will insure adequate social, amusement, and recreational opportunities for all of the rural populations. The low prestige accorded the rural people, all too often the result of past lacks in self-developmental opportunities, will tend to be a thing of the past as soon as the rural folk avail themselves of the opportunities only possible in communities.
possessing well-planned and intelligently carried out rural education programs. Road, transportation and communication facilities are essentials to adequate rural educational programs, and will develop simultaneously.

**Canadian Educational Administration**

The common state administrative center of education is the Department of Education: this Department has jurisdiction over the elementary and secondary and higher education, including teachers' colleges, vocational and general education. As a part of vocational education, the agricultural colleges have on their staffs all agricultural and home economics extension services and the college experimental stations and their staffs. In short, there is a unified administration of educational activities wholly or partially supported by state funds.

Each Canadian province (the counterpart of the state in the United States) has the above-mentioned functions distributed amongst three authorities: (a) The Department of Education is the administrative body in charge of formal education activities -- the elementary and secondary school systems, vocational schools, and their supervision come under the direct authority of the provincial Departments of Education. (b) The provincial Universities are corporations separate from the Departments of Education.
with their own Boards of Governors or similar governing bodies; typically the Board of Governors contains officials of the Department of Education, and the Minister of Education is the responsible Cabinet member. (c) The provincial Departments of Agriculture are usually responsible for the administration of plant and animal pest campaigns, publication of bulletins and other materials prepared by their immediate staffs or in cooperation with the agricultural college staffs and other governmental technical agencies, and extension educational work by the district or county agricultural agents and home economists. In some provinces these Departments have established schools of agricultural education at the elementary and/or the secondary school age-levels, with general education included in their offerings. In Alberta, for example, the Schools of Agriculture prepare students for Faculty of Agriculture and Home Economics university matriculation.

In the provinces of Nova Scotia, Ontario, and Manitoba the agricultural colleges are under the administration of the Departments of Agriculture. Nova Scotia has no provincial university. The Ontario and Manitoba agricultural colleges are affiliated with the respective universities, the Bachelor of Scientific Agriculture degrees being granted by the Universities of Toronto and Manitoba, respectively.
It is not purposed to provide a history of the development of centralized schools in the United States and Canada; the reader can find this story elsewhere. Centralization of educational authority in British Columbia, a very recent development, has resulted in seventy-four large rural administration units and left unattached but fifteen small rural districts. Alberta's fifty-seven school divisions include 3,828 classrooms and enrol 90,857 of the Province's 160,821 pupils. Saskatchewan's program envisages sixty large school administration units; forty-five large units already organized encompass 3,794 school districts. In Manitoba but one large rural unit has been organized (Dauphin). In Ontario, 484 township school areas supplanted 3,070 or 53% of the original number of rural school districts; the township area is proving too limited in material and human resources to provide satisfactory services, in the opinions of some observers. In New Brunswick 1,350 rural school districts were amalgamated into thirty-seven larger administrative areas. Nova Scotia since 1946 has had large educational administrative units in all twenty-four municipalities. (23, 1948-49, pp.309-10)

In the gross amounts of money necessary to provide improved educational services eventually undertaken (this applies to secondary school services or to vocational
phases of secondary school education), centralized schools generally cost much more in the aggregate per month than did all of the constituent small school districts. However, per pupil-days of attendance the former small-district costs may have been the greater. One explanation of this is that transportation of pupils to school invariably raises the average daily attendance to a marked degree. Hugh L. Wilson, superintendent of the Peace River School Division, stated in an interview that for the first three years of van operation north of Peace River the average daily attendance was raised by over ten per cent. That method which is the most successful in placing the greatest number of children into a superior school for the greatest number of days is in the last analysis the cheapest method to employ. The increased cost of educational services is an objection urged against improved educational services. As a better service is made available, people should be led to appreciate this fact; they will be willing to pay for the improved quality once its value is appreciated. The farmer should not be told, erroneously, that centralization of authority and of education will cost less, for such is seldom the case. He should be educated to apply to educational expenditures the same principles applied with the purchase of a tractor, a pair of shoes, a truck, a stove, or other farm equipment. As a rule the purchase of an
article costing the greater sum is greater economy, if by so doing one can secure a relatively better article. Overhead costs are frequently similar and the difference in cost to the consumer is entirely attributable to assurance of superior service.

Lack of good roads is frequently an objection to conveyance of children to a community school. Good roads make transportation easier, whether of school children or of produce or of pleasure-seekers. Dirt roads are no barrier in Massachusetts, Indiana, or Alberta, or should they be in most communities. In the older and better located districts on the prairies centralizations are often fewer than in more remote but more intelligently reacting communities where centralizations have succeeded beyond ordinary expectations. The minimum height of the road crown of a foot or more above the surrounding surface and the clearing away of roadside brush in order to facilitate quick evaporation seem to be the essential factors about school van roads.

Some folk fear the loss of neighborhood solidarity. In many instances the car and concomitant developments had already removed any solidarity that may have existed. On the contrary, large community schools tend to knit together the formerly decomposed small fragments of society into new and vitalized whole communities with the school as the center of a new social and educational life significant in
values not anticipated or experienced before.

Children cannot be schooled by the teacher when bad roads or weathers keep them at home, or when they are habitually tardy. Conveyance to school, with the Family Allowance payments predicated upon regular attendance, has significantly improved attendance at school in a condition conducive to learning.

A further significant gain is the continued regular attendance at school of children in the seventh, eighth and higher grades. While attending the neighboring village or town school required a very positive effort, to interrupt attendance at a school served by a bus loaded with other children requires a negative decision almost as difficult to make. The end result is the tendency of the centralized elementary and secondary school to progressively prolong the school lives of its pupils until achievement of high school graduation is the commonly accepted goal for most children.
CHAPTER III

PROBLEMS IN AGRICULTURAL EDUCATION IN CANADA

The Canadian Physiography

Extent and Soils  Canada consists of all the North American Continent from the northerly United States boundary to the North Pole, excepting Alaska, Greenland, and the two small French island possessions of Miquelon and St. Pierre. Its total area is placed at 3,694,863 square miles (2,364,712,320 acres). This area is almost as large as the United States with its outlying possessions.

Canada may be divided into several distinct regions. (See map: Soil Zone Map of Canada) One scheme would encompass the Pacific Coastal area, the Cordilleras, the Prairies, the Canadian Shield, the Mackenzie Valley, the Tundra, the Hudson's Bay Lowland, the St. Lawrence Lowlands, and the Acadian areas.

The Pacific Coastal region is narrowed and confined by the Cordilleran region. The soils are characterized by a low content of organic matter, are acidic, and are yellowish-brown to reddish-brown at the surface. The mainland lowlands are chiefly alluvial deposits, are quite productive, and are well developed agriculturally.

The Cordilleran region covers British Columbia, the Yukon, and the Rocky Mountain region of Alberta. Only in the narrow valleys is agriculture possible. Soils are
SOIL ZONE MAP OF CANADA

1—Brown Soil Zone
2—Dark Brown Soil Zone
3—Black Soil Zone
4—Grey Wooded Soil Zone
5—Pacific Coast Soil Zone
6—High Lime Soil Zone
7—Eastern Podsol Soil Zone
8—Grey Brown Podsolc Soil Zone
9—Soils of the Precambrian Shield
10—Soils of the Cordillera
variable, with the valley floors covered with good soils and the slopes replicating the prairie soils in types and productivity as they are ascended on either side.

The Prairie region is covered with soils of several blending types. The drier areas in southeastern Alberta and southwestern Saskatchewan are brown and very productive in rainy years; the soils are relatively shallow and lower in organic matter and nitrogen than are other Great Plains soils. Typically, it is a short-grass vegetational region best suited to grazing. Moisture in greater quantities accounts for the dark brown soil area; organic content is relatively high, a lime layer is within fair distance of the surface, and wheat with minor local variations is the major crop. The black prairie soils are the richest of all; organic matter is found to a depth of two feet and the lime is within one and one-half to three feet of the surface; taller grasses merge into parkland poplar "bluffs"; this soil region is characterized by dry depressions encircled with poplar aspen or willow. As one proceeds outward east, north, and west from the Cypress Hills region the next soil region is that of the degraded black soils of much lower fertility. Invasion of forest growth in this region has encouraged leaching and consequently reduced productivity.

The main soils of the wooded parts of the prairie
provinces are grey-wooded soils; parallel conditions are found in the wooded sections of British Columbia's intermountain regions and also in the Clay Belt of Northern Ontario. The soils are badly leached, are greyish in appearance with a darker thin layer of leaf mould; the lime layer is down from two to four or more feet. The shorter growing season and low mineral content coupled with the coming of the rainy season at harvest time, compels a general or mixed-farming type. The natural vegetation is much lower in nutritive value than that of the previously mentioned areas.

A high lime content, coupled with a low phosphorus content, is characteristic of an area roughly lying north of, and between, and south of the Manitoba lakes; productivity is reduced by these excessive conditions.

The grey podzolic soils of the St. Lawrence Lowlands, formed by glacial drift and glacial lake sediments, are characteristic of southwestern and southeastern Ontario and of southern Quebec (the "Eastern Townships"). While relatively productive in their virgin state, excessive water-erosion has greatly depleted their present value for agricultural purposes. Post-glacial sandy deltas supply suitable tobacco-producing soils.

The eastern podzolic soil region covers eastern Quebec and the Maritime Provinces. Due to their varied
geological sources, these soils, all leached greatly, vary much in content and in fertility. This is the Appalachian-Acadian region, and includes Newfoundland.

The tundras are set apart from neighboring soils chiefly because of their Arctic vegetation. The Canadian Shield, including Labrador, is an area of granite outcroppings and peat bogs; a few post-glacial lake beds form isolated clay areas whose streams are so infested with insects that farming is difficult.

The Hudson's Bay Lowland is of no agricultural interest, as it is too close to the Bay and its low temperatures - a 32° high in summer. (See map: Main Types of Farming) The Mackenzie Valley inland will produce, when amply drained and thawed out, the hardier vegetables such as potatoes, carrots, beets, turnips and cabbages on a subsistence basis.

It is evident that several important physical features limit the amount of arable lands in Canada. Mountainous areas in the settled portions of the Quebec Laurentians are often unsuited even for pasture; much of these areas is bare rock. The Pre-Cambrian Shield alone covers 50% of Canada's surface, the Cordilleran region covers about 14%, and another possible 10% of the surface area is similarly unsuited to agricultural pursuits. Within the occupied portions large areas of stony, rolling and steep surfaces are to be found in practically all sections of Canada.
The non-tillable lands are used for pasture and wood-lot purposes as the rule, and the smoother areas are tilled. Smooth, level lands add greatly to the ease with which machinery may be used; particularly has the increased use of farm machinery emphasized the advantage of level fields over rough and rolling lands.

**Total Area** Vast as Canada is, the proportion of utilized land is small -- 375,000 square miles or 240,000,000 acres, according to Jefferson. (55, p.146) (See map: Occupied Farms in Canada) The 1941 Census of Canada (20, 3-1, p.4) estimates the total utilized acreage as 174,673,535 acres (22, 1949, p.xix) (13.5% of the aggregate provincial areas). An estimated 91,636,065 acres (7.1% of the total provincial surfaces) are improved -- either tilled or planted down. An estimated 53,000,000 acres (about 4% of the aggregate provincial areas) are in natural pasture. In all Canada 5\%\% of the nation's surface is termed arable, as compared with an estimated 23\% of the United States' mainland area. (105,p.6) With a maximum north and south extension of 1,500 miles or better, only in the Peace River Valley is extensive settlement found far north of the United States. It is estimated that the settled area across the country averages less than 200 miles in width, with 50\% of the population within 100 miles of the international boundary. "Canada is a strip of territory
north of the United States." (34, p.1) The greater part of
the immense northern area is an undeveloped wilderness,
unsuited by topography and climate for farming. Leahey
(60, p.289) anticipates an increase of tilled area in
Canada, but considers this increase will be small and much
retarded.

The cultivated area is far from being a continuous
ribbon, as it is frequently broken up into small segments
by stretches of bare or snow covered rock. The thinly
populated Cordilleran mountains and intervening plateaux
separate the Pacific coastal region of fisheries, overseas
trade, lumbering, and manufacturing from the agricultural
and mining prairies. The prairies and the thickly popula-
ted St. Lawrence Lowlands are separated by hundreds of
miles of Canadian Shield rock outcroppings and lakes, while
the St. Lawrence Lowlands and the Maritime region are sepa-
rated by the rough and relatively unfertile Appalachians.
The chief activities of one area of Canada are typically
separated from those of another and nearest adjacent
region, and too frequently their basic interests clash --
only the St. Lawrence Lowland folk with their manufacturing
activities are in general in favor of protective tariffs.
Vast mileages of locally unproductive railways connect the
separated segments collectively called "Canada"; these un-
productive mileages must be maintained and traversed by
both passengers and goods, at transportation rates which compare most favorably with rates anywhere else in the world.

**Canada's Climates**

A brief treatment of our Canadian climates is almost too difficult to be attempted. There is a great variety of conditions -- greater climatic ranges prevail in Canada than in the United States, and yet Canadian climates may be successfully interpreted through those experienced by the people of the northerly states; in actual fact, far central United States experience Canadian weathers. The British Columbia coast at Surf Inlet averages 185 inches of rainfall annually, while Clinton, 320 miles S.E. averages six inches. Victoria seldom experiences snow or freezing temperatures, yet Glacier has recorded over thirty-four feet of snowfall. Snag in the Yukon has recorded -81°F. 110°F. has been registered in British Columbia's interior plateau region and in Saskatchewan. Vermilion, about 110 miles east of Edmonton and in the same Great Plains region, will experience winter temperatures over 30°F. colder than will Edmonton; it suffers from the severe cold fronts which later sweep south into the central United States, while Edmonton may not experience these extreme disturbances at all. On the Great Plains, a heavy dust storm typically precedes precipitation; elsewhere, the dust is laid by the rain and then the winds
come. The plains region is one of light annual precipitation and consequently of much sunshine. The great arm of the Arctic, Hudson's Bay, lays a cold influence over the land and diverts the prevailing westerly stream of air far southward as this current of air crosses North America's central plains and Canadian Shield. The St. Lawrence Lowlands have a relatively damp climate; this increases the discomfort of the summer heat and the winter cold, although neither is extreme. The four Maritime provinces are subjected to the cyclonic air currents of the prevailing westerlies, while their oceanic position tempers their weathers considerably.

Like other provinces, Alberta presents a galaxy of characteristics in climate, soil-sources, consequent variations and ranges in plant and animal enterprise, topographical features, cultures of people and resultant variations in attitudes and philosophies concerned with education, and so on; no attempt will be made to suggest any complicated organization essentially differing in one area from that in another area. In all provinces the level lands are the potential agricultural lands, while the hilly lands are set aside either for range or for woodlands. The level areas if of good soil and with sufficient moisture will be the more thickly settled areas; areas of inferior soils or of insufficient available moisture will tend to be the
ALBERTA
SOIL ZONES
AS ESTABLISHED BY ALBERTA SOIL SURVEYS

Dominion Experimental Station
Dominion Illustration Station
1806 Elevation in Feet above Sea Level

Brown Soils  Transition Soils  Grey Wooded Soils
Dark Brown and Shallow  Block Soils  Areas unexplored (Believed to be largely non-agricultural)
regions less thickly populated. Areas of mountains or of rough terrain typically remain thinly populated, with small and scattered settlements here and there. The drier prairies as farming areas are influenced by periodic rainfall possibilities; irrigation now affords dense populations in some areas and as time goes on more lands will be brought under water, but the total areas irrigable in terms of the whole expanse of dry lands amount to but a small percentage, (a possible 2,586,000 acres in Alberta and Saskatchewan, and 68,469 acres in British Columbia). Appended maps will show the general tendency of Canadian population to hug the southerly boundaries of Canada, a situation closely associated with the farming possibilities of the nation. There is still some new land suitable for cultivation, but further expansion will be slow as well as severely limited. Alberta is typical of many of the provinces in that there are 32,802 square miles under cultivation out of a total surface area of 252,000 square miles in that province; after over 70 years of settlement upon sub-marginal, marginal, and the better farming soils, in 1947 52% of the whole surface of the province was withdrawn from settlement because of its unsuitability for agricultural purposes. (46) (See maps: Alberta Soil Zones, Alberta Type of Farming Areas, Occupied Lands in Farms, 1941.)
OCCUPIED LANDS IN FARMS, 1941

(DOT = 20,000 ACRES)
The Canadian People

For Census of Canada purposes, "rural population is that living without the boundaries of incorporated cities, towns, and villages" and "Urban population is that living within the boundaries of incorporated cities, towns, and villages." Rural population is defined as "farm" and "non-farm". (21, 3, p.xiii)

Canada's 1941 Census of Canada population figure of 11,489,713 is a twelfth of the population of the United States; spread all over Canada this would give a per-square-mile population of about 3.3 persons, and spread over the settled portion it would equal 30.7 persons per square mile, as contrasted with 43.4 persons in the United States mainland, (1940) and 489 persons per square mile in Greater Britain (1931). Canada's growth in population is indicated by the figures in Table XVI.

The Census statistics for the populations of Canada (21, 8, p.4) and those of the Prairie Provinces (22, p.165) over several decades tell us that not only is the farm population becoming a lesser per cent of the whole population, but in each case the farm population is growing less in absolute numbers. The 256,305 farm folk were 36.6% of the total Manitoba population of 1931. In 1946 the 224,919 farm folk formed 31.3% of the province's population.
TABLE XVI

CENSUS OF PRAIRIE POPULATIONS, 1921-1946

POPULATIONS OF PRAIRIE PROVINCES

<table>
<thead>
<tr>
<th>Province</th>
<th>1921</th>
<th>1931</th>
<th>1936</th>
<th>1941</th>
<th>1946</th>
</tr>
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<tbody>
<tr>
<td>Manitoba</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total pop'n</td>
<td>610,118</td>
<td>700,139</td>
<td>711,216</td>
<td>729,744</td>
<td>726,923</td>
</tr>
<tr>
<td>Urban</td>
<td>261,616</td>
<td>315,969</td>
<td>310,927</td>
<td>321,873</td>
<td>337,331</td>
</tr>
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<td>Rural</td>
<td>348,502</td>
<td>384,170</td>
<td>400,289</td>
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<td>389,592</td>
</tr>
<tr>
<td>Farm</td>
<td>256,305</td>
<td>261,167</td>
<td>249,599</td>
<td>224,919</td>
<td>31.3%</td>
</tr>
<tr>
<td>% Farm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saskatchewan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total pop'n</td>
<td>757,510</td>
<td>921,785</td>
<td>931,547</td>
<td>895,992</td>
<td>832,688</td>
</tr>
<tr>
<td>Urban</td>
<td>218,552</td>
<td>290,905</td>
<td>280,273</td>
<td>295,146</td>
<td>316,760</td>
</tr>
<tr>
<td>Rural</td>
<td>538,552</td>
<td>630,880</td>
<td>651,274</td>
<td>600,846</td>
<td>515,928</td>
</tr>
<tr>
<td>Farm</td>
<td>564,012</td>
<td>573,894</td>
<td>514,677</td>
<td>434,039</td>
<td>53.3%</td>
</tr>
<tr>
<td>% Farm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alberta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total pop'n</td>
<td>588,454</td>
<td>731,605</td>
<td>772,782</td>
<td>796,169</td>
<td>803,330</td>
</tr>
<tr>
<td>Urban</td>
<td>222,904</td>
<td>278,508</td>
<td>286,447</td>
<td>306,386</td>
<td>354,396</td>
</tr>
<tr>
<td>Rural</td>
<td>365,550</td>
<td>453,097</td>
<td>386,335</td>
<td>489,583</td>
<td>448,934</td>
</tr>
<tr>
<td>Farm</td>
<td>375,097</td>
<td>400,390</td>
<td>383,964</td>
<td>335,750</td>
<td>53.5%</td>
</tr>
<tr>
<td>% Farm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Saskatchewan's 564,012 farm population of 1931 represented 61.3% of the total population of 921,785; in 1946 the 434,039 farm folk represented 53.3% of Saskatchewan's total population.

Alberta's farm folk in 1931 accounted for 51.2% of the total population while in 1946 this percentage had dwindled to 40.5%.
<table>
<thead>
<tr>
<th>Year of Census</th>
<th>1901</th>
<th>1911</th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>5,323,967</td>
<td>7,191,624</td>
<td>8,775,164</td>
<td>10,363,240</td>
<td>11,489,713</td>
</tr>
<tr>
<td>% of total population</td>
<td>100</td>
<td>135</td>
<td>165</td>
<td>195</td>
<td>216</td>
</tr>
<tr>
<td>Urban population</td>
<td>2,005,080</td>
<td>3,269,082</td>
<td>4,850,816</td>
<td>5,570,698</td>
<td>6,250,619</td>
</tr>
<tr>
<td>% of total population</td>
<td>100</td>
<td>163</td>
<td>246</td>
<td>279</td>
<td>312</td>
</tr>
<tr>
<td>Rural population</td>
<td>3,318,887</td>
<td>3,922,542</td>
<td>4,424,348</td>
<td>4,792,542</td>
<td>5,239,094</td>
</tr>
<tr>
<td>% of total population</td>
<td>100</td>
<td>118</td>
<td>135</td>
<td>143</td>
<td>157</td>
</tr>
<tr>
<td>Farm population (total)</td>
<td>3,289,140</td>
<td>3,152,449</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of whole population</td>
<td>31.8</td>
<td>27.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban farm</td>
<td>3,223,422</td>
<td>3,116,922</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural farm</td>
<td>31.5</td>
<td>27.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of farms</td>
<td>738,623</td>
<td>732,832</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persons per farm</td>
<td>4.5</td>
<td>4.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The farm population of Canada in terms of rural population is</td>
<td>59.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The densities of farm population of relatively near areas vary widely; e.g., the Taber irrigated farm area in Alberta may have 25 families per square mile of farm land while the dry-farming area (100 miles north and east) later forming the Department of Defence Experimental Reservation had but 125 farmsteads in its 1,400 square miles. The problem of road-building for transportation of children to centralized schools is greatly increased by the distances between homesteads in the sparsely settled areas.

In 1941 Canadian males to the number of 1,064,341 were gainfully employed; of this number 145,431 or 13.6% were occupied in farming. (23, 1943-4, p.1071)

As on June 2nd, 1941, Canada's farm population was distributed in age categories as shown in Table XVIII. (23, 1945, p.236)

### TABLE XVIII

<table>
<thead>
<tr>
<th>CANADIAN FARM POPULATION, 1941</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Under 14 years of age, males</strong></td>
</tr>
<tr>
<td><strong>Over 14 years of age, males</strong></td>
</tr>
<tr>
<td><strong>Under 14 years of age, females</strong></td>
</tr>
<tr>
<td><strong>Over 14 years of age, females</strong></td>
</tr>
<tr>
<td><strong>Total farm population, '1941</strong></td>
</tr>
</tbody>
</table>

The numbers of Canadian Farm operators classified as to ages are given in Table XIX (21, 8, p.6) and classified as to years of experience are given in Table XX. (21, 8, p.7)
### TABLE XIX

**CANADIAN FARM OPERATORS CLASSIFIED AS TO AGES**

<table>
<thead>
<tr>
<th>Operators reporting</th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20 years of age</td>
<td>27,155</td>
<td>1,763</td>
<td>1,748</td>
</tr>
<tr>
<td>Under 24 years of age</td>
<td>65,013</td>
<td>47,985</td>
<td>48,989 d</td>
</tr>
<tr>
<td>25-29 years of age</td>
<td>83,611</td>
<td>63,364</td>
<td>64,015 d</td>
</tr>
<tr>
<td>30-34 years of age</td>
<td>95,043</td>
<td>79,291</td>
<td>73,318 d</td>
</tr>
<tr>
<td>35-39 years of age</td>
<td>168,953</td>
<td>176,629</td>
<td>156,599 d</td>
</tr>
<tr>
<td>40-49 years of age</td>
<td>129,272</td>
<td>147,083</td>
<td>159,568 i</td>
</tr>
<tr>
<td>50-59 years of age</td>
<td>114,486</td>
<td>94,385</td>
<td>106,897 i</td>
</tr>
<tr>
<td>60-69 years of age</td>
<td>711,090</td>
<td>728,623</td>
<td>732,832 (1)</td>
</tr>
<tr>
<td>Occupied farms in Canada</td>
<td>683,533</td>
<td>670,933</td>
<td>673,800</td>
</tr>
</tbody>
</table>

### TABLE XX

**CANADIAN FARM OPERATORS CLASSIFIED AS TO YEARS OF EXPERIENCE**

<table>
<thead>
<tr>
<th>Operators reporting</th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td>62,119</td>
<td>39,172</td>
<td>10,849 d</td>
</tr>
<tr>
<td>2 years</td>
<td>42,016</td>
<td>30,920</td>
<td>10,640 d</td>
</tr>
<tr>
<td>3 years</td>
<td>35,855</td>
<td>30,510</td>
<td>10,592 d</td>
</tr>
<tr>
<td>4 years</td>
<td>31,115</td>
<td>25,364</td>
<td>10,182 d</td>
</tr>
<tr>
<td>5-9 years</td>
<td>126,108</td>
<td>91,110</td>
<td>57,326 d</td>
</tr>
<tr>
<td>10-14 years</td>
<td>118,400</td>
<td>102,603</td>
<td>87,690 d</td>
</tr>
<tr>
<td>15-19 years</td>
<td>75,192</td>
<td>84,303</td>
<td>78,172</td>
</tr>
<tr>
<td>20-24 years</td>
<td>188,443</td>
<td>248,862</td>
<td>397,246 i</td>
</tr>
<tr>
<td>20 years and over</td>
<td>301,323</td>
<td>(1)</td>
<td></td>
</tr>
</tbody>
</table>

1 d - decrease; i - increase
There appears to be an increase in the numbers of farm operators who are 50 years of age and older; the younger men do not seem to be taking the places of their elders on the farm. This trend is instanced in the table of farm operators enumerated according to ages as well as in the table of farm operators arranged according to years of experience in farm operation.

On the prairies, the number of farms in 1946 was less than at any time since 1931. (Table XXIX) In Alberta, in line with the tendency in the other two prairie provinces, the number of farm operators in 1946 decreased in comparison with those of earlier census returns. (ibid.) This partly may be due to the increased mechanization of farm operations; the latter makes more possible the tillage of large areas with a minimum expense of men and money. Perhaps the low financial returns have prevented recruitment of younger men into the ranks of prairie farmers as well as in other Canadian regions.

In either case, there is a need for future farm operators.

A statement of the nature of employment of graduates of the Faculty of Agriculture of the University of Alberta, prepared in October of 1949 by Mrs. Mary Nairn Crawford as secretary of the Faculty, indicates the broad education afforded to agriculture students: farming and ranching
engaged 16.1%; the Federal Department of Agriculture, Experimental Farms Service, National Research Council, Veterans' Land Act, Federal Wheat Board, etc., absorbed 23.8%; provincial government services such as District Agriculturalist, Schools of Agriculture, various branches of the Departments of Agriculture, Department of Lands and Mines, Department of Education, etc., engaged 14.5%; industries such as meat packing plants, seed companies, creameries, chemical and mining and smelting corporation, farm machinery companies, maltng and brewing companies, sugar companies, canning companies, etc., employed 19.2%; research and teaching in colleges employed 1.9%; insurance, radio broadcasting and journalism 2.3%; post-graduate work attracted 5.4%; professions such as medicine, accounting, and theology absorbed 5.4%; those who had retired, died, or whose current whereabouts were unknown accounted for 4.7%. This recapitulation indicates the educational contribution a typical Canadian agricultural college makes to the wider community. Only one graduate out of six has returned to a career of farming. Eight graduates out of ten have taken up farming or occupations associated with agriculture.

Table XXI gives the numbers of agricultural college degrees granted in the years 1947, 1948 and 1949, and the estimated numbers anticipated in 1950 and 1951. (19, p.369) Clearly our agricultural colleges are not supplying any
considerable numbers of future farm operators.

**TABLE XXI**

**NUMBERS IN AGRICULTURAL COLLEGE GRADUATING CLASSES, 1947-1951**

<table>
<thead>
<tr>
<th>Year</th>
<th>1947</th>
<th>1948</th>
<th>1949</th>
<th>1950</th>
<th>1951</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates</td>
<td>240</td>
<td>400</td>
<td>1000</td>
<td>800x</td>
<td>600x</td>
</tr>
</tbody>
</table>

x - estimated

Fife estimated as twenty years the average period during which farm operators functioned as such. If this period is taken as the criterion in measuring the actual annual need for new farm operators, and thus it is assumed that Canada's annual need for farm operators is one-twentieth of the number reporting (682,687) in the 1941 census, (Table XX) then approximately 35,000 potential farm operators should be graduated from our agricultural education centers annually. Probably not 2,000 future farm operators are so graduated in any one year from our agricultural schools and colleges; the figure may be closer to one-half of this estimate, as the total capacities of all Canadian agricultural diploma-granting schools are well under the 2,000 figure.

Table XXII shows the classification of occupations of males according to their years of schooling, 1941 Census of
# TABLE XXII

**OCCUPATIONS OF CANADIAN MALES IN TERMS OF YEARS OF SCHOOLING**

<table>
<thead>
<tr>
<th>Occupations</th>
<th>Populations</th>
<th>Years of Schooling in %</th>
<th>0 - 4</th>
<th>5 - 8</th>
<th>9 - 12</th>
<th>13 &amp; up</th>
</tr>
</thead>
<tbody>
<tr>
<td>All men gainfully employed</td>
<td>3,355,395</td>
<td>11.9%</td>
<td>51.6%</td>
<td>30.2%</td>
<td>6.3%</td>
<td></td>
</tr>
<tr>
<td>Prof. Service</td>
<td>117,719</td>
<td>0.3</td>
<td>7.2</td>
<td>26.6</td>
<td>63.9</td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td>30,473</td>
<td>1.3</td>
<td>18.2</td>
<td>59.6</td>
<td>20.9</td>
<td></td>
</tr>
<tr>
<td>Clerical</td>
<td>182,520</td>
<td>1.1</td>
<td>21.4</td>
<td>61.9</td>
<td>15.6</td>
<td></td>
</tr>
<tr>
<td>Public Service</td>
<td>45,384</td>
<td>3.5</td>
<td>37.9</td>
<td>45.9</td>
<td>12.7</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>272,591</td>
<td>5.3</td>
<td>36.1</td>
<td>48.6</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>Recreational Serv.</td>
<td>7,636</td>
<td>6.6</td>
<td>39.4</td>
<td>45.5</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>572,850</td>
<td>7.8</td>
<td>50.1</td>
<td>37.5</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Transp'n &amp; Comm'n</td>
<td>254,206</td>
<td>9.3</td>
<td>53.9</td>
<td>33.7</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>202,235</td>
<td>11.0</td>
<td>55.0</td>
<td>30.9</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Personal Service</td>
<td>144,229</td>
<td>14.0</td>
<td>51.1</td>
<td>31.1</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>Mining &amp; Quarry'g</td>
<td>71,726</td>
<td>17.7</td>
<td>55.2</td>
<td>24.0</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Labouring</td>
<td>251,213</td>
<td>18.4</td>
<td>57.4</td>
<td>22.7</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Agriculture (in U.S.)</td>
<td>1,063,557</td>
<td>15.5</td>
<td>65.1</td>
<td>18.1</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>(in U.S.)</td>
<td></td>
<td>(13.3)</td>
<td>(59.4)</td>
<td>(24.2)</td>
<td>(3.1)</td>
<td></td>
</tr>
<tr>
<td>Logging</td>
<td>80,061</td>
<td>29.5</td>
<td>58.2</td>
<td>11.4</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td>Fishing, Hunting</td>
<td>51,038</td>
<td>41.2</td>
<td>46.7</td>
<td>11.5</td>
<td>0.6</td>
<td></td>
</tr>
</tbody>
</table>
## TABLE XXIII

**OCCUPATIONS OF PRAIRIE PROVINCE MALES IN TERMS OF YEARS OF SCHOOLING**

<table>
<thead>
<tr>
<th>Occupations</th>
<th>Populations</th>
<th>Years of Schooling in %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0 - 4</td>
</tr>
<tr>
<td>All men gainfully employed</td>
<td>256,822</td>
<td>24,362</td>
</tr>
<tr>
<td>Professional</td>
<td>7,809</td>
<td>0.2</td>
</tr>
<tr>
<td>Financial</td>
<td>1,333</td>
<td>1.3</td>
</tr>
<tr>
<td>Proprietary &amp; Management</td>
<td>17,150</td>
<td>5.3</td>
</tr>
<tr>
<td>Clerical</td>
<td>8,256</td>
<td>0.8</td>
</tr>
<tr>
<td>Communication</td>
<td>1,487</td>
<td>1.5</td>
</tr>
<tr>
<td>Service</td>
<td>22,028</td>
<td>4.8</td>
</tr>
<tr>
<td>Manufacturing &amp; Mechanical</td>
<td>18,184</td>
<td>5.7</td>
</tr>
<tr>
<td>Electrical &amp; Power</td>
<td>2,232</td>
<td>5.8</td>
</tr>
<tr>
<td>Commercial</td>
<td>8,983</td>
<td>1.7</td>
</tr>
<tr>
<td>Construction</td>
<td>11,574</td>
<td>7.3</td>
</tr>
<tr>
<td>Transportation</td>
<td>15,943</td>
<td>7.4</td>
</tr>
<tr>
<td>Agricultural</td>
<td>119,236</td>
<td>12.6</td>
</tr>
<tr>
<td>Laborers</td>
<td>10,812</td>
<td>13.6</td>
</tr>
<tr>
<td>Mining &amp; Quarry'g</td>
<td>6,586</td>
<td>15.8</td>
</tr>
<tr>
<td>Logging</td>
<td>1,464</td>
<td>16.9</td>
</tr>
<tr>
<td>Fishing, Hunting, &amp; Trapping</td>
<td>1,559</td>
<td>61.5</td>
</tr>
</tbody>
</table>
Canada.

These figures include all males in Canada fourteen years of age and upward. The percentages for the United States are for whites engaged in agriculture, computed from the 1940 Federal Census. (26, p.3)

Table XXIII provides similar information about males of the prairie provinces, and tells a story very similar to that told in Table XXII. In this prairie picture agriculture occupies the same relative position as in the general picture indicated by the 1941 federal census. Data in Table XXIII indicates that agriculture supplies 46.4% of the gainfully employed male population of the three Prairie Provinces, yet the educational rank of the group is 13th; nevertheless, farming necessitates a relatively large investment of capital, a working knowledge of buying and selling, thorough conversance with varied and complicated production factors, cognizance of rapid alterations in approved methods and activities as scientific researches and marketing conditions dictate -- all these factors would seem to demand well-informed, broadly educated individuals with highly specialized vocational training. (22, p.6)

The years of schooling possessed by those now engaged in agriculture compare unfavorably with the educational backgrounds of most other occupational groups. How does the present rural educational attainment compare with
corresponding urban standards of attainment?

In the 1940-1941 school year there were 565,212 males in Canada's 15 - 19 years of age group, of which 281,257 were rural residents and 284,955 were urban dwellers. Attending school were:

69,553 rural males, or 24.7% of the total rural males;

121,637 urban males, or 42.7% of the total urban males. (21, 3, p.618)(85, p.12)

Of the approximately 60% of the rural boys who are farm boys, probably there were far less than 24.7% attending school. Our rural figures indicate that our farm boys are not attending secondary schools in any like proportion to our urban boys in the same age group, and to that degree are less prepared in the things our secondary schools do in preparation for meeting life's problems.

Further, there were 2,003,093 males on June 2nd, 1941, in the nineteen to thirty-four years of age group. Their school achievements were as given in Table XXIV

| TABLE XXIV |
|---|---|---|---|---|---|---|---|
| | 0-4 | 5-6 | 7-8 | 9-10 | 11-12 | 13 & up |
| Urban males - % | 3.9 | 10.1 | 28.9 | 27.8 | 19.4 | 9.9 |
| Rural males - % | 9.4 | 19.9 | 41.4 | 18.7 | 7.4 | 3.2 |
Cumulatively, the percentages indicate that only 42.9% of the urban males stopped attending school below Grade IX, while 70.7% of the rural males left school before that point. In the rural group, one in less than five had had some Grade IX or X education; one in fourteen had had some Grade XI or XII education. (21, 3, p. 619) (26, p. 5)

Farms

For Canadian Census Bureau purposes a farm is "one acre or more, producing a minimum of $50 or more per year, or is in crops or used for pasture." A "part-time" farm is defined as "a farm whose operator and family derive more than 50% of the annual gross family income from sources other than the farm, e.g. fishing, lumbering, keeping overnight tourists, or other chief occupation." A "subsistence" farm is "a farm upon which more than 50% of the annual gross production is consumed on the farm itself." A "combination of subsistence" farming situation is described as "a situation where the produce consumed plus one other type of farming is required to form 50% of the total gross annual revenue". (54, p. 40)

Table XXV gives the total numbers of farms reported as occupied during the fifteen-year period 1931-1946:

(23, 1934-5, pp. 296-7) (23, 1945, p. 237)
### TABLE XXV

**NUMBERS OF OCCUPIED FARMS IN CANADA, 1931-1946**

<table>
<thead>
<tr>
<th></th>
<th>1931</th>
<th>1941</th>
<th>1946</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prince Edward Island</td>
<td>12,865</td>
<td>12,230 d</td>
<td></td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>39,444</td>
<td>32,977 d</td>
<td></td>
</tr>
<tr>
<td>New Brunswick</td>
<td>34,025</td>
<td>31,889 d</td>
<td></td>
</tr>
<tr>
<td>Quebec</td>
<td>135,957</td>
<td>154,669 i</td>
<td>54,448</td>
</tr>
<tr>
<td>Ontario</td>
<td>192,174</td>
<td>178,204 d</td>
<td></td>
</tr>
<tr>
<td>Manitoba</td>
<td>54,199</td>
<td>58,024 i</td>
<td></td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>136,472</td>
<td>138,713 i</td>
<td>125,612 d</td>
</tr>
<tr>
<td>Alberta</td>
<td>97,408</td>
<td>99,732 i</td>
<td>89,541 d</td>
</tr>
<tr>
<td>British Columbia</td>
<td>26,079</td>
<td>26,394 i</td>
<td></td>
</tr>
<tr>
<td></td>
<td>728,623</td>
<td>732,832</td>
<td></td>
</tr>
<tr>
<td>Prairie Provinces</td>
<td>288,079</td>
<td>296,469</td>
<td>269,601 d</td>
</tr>
</tbody>
</table>

1 d - decrease; i - increase

---

**Total Acreages**

Two general classifications of Canadian farms are used by the Census Division of the Dominion Bureau of Statistics: (1) one by the numbers of acres contained in groups of farms and (2) another determined by the kinds and relative amounts of products raised on each farm.

The classification by acreage of reported occupied Canadian farms (21, 8, p.8) is given in Table XXVI.

The classification by land uses of occupied Canadian farms (23, 1945, pp.238-9) in 1941 is given in Table XXVII.
### TABLE XXVI

**TOTAL ACREAGES OF VARIOUSLY SIZED CANADIAN FARMS**

<table>
<thead>
<tr>
<th>Census Year</th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total acreages</td>
<td>140,773,775</td>
<td>163,114,034</td>
<td>173,565,282</td>
</tr>
<tr>
<td>1 - 4</td>
<td>48,191</td>
<td>48,287</td>
<td>29,910 d</td>
</tr>
<tr>
<td>5 - 10</td>
<td>167,664</td>
<td>178,704</td>
<td>162,436 d</td>
</tr>
<tr>
<td>11 - 50</td>
<td>2,945,985</td>
<td>2,767,931</td>
<td>2,610,081 d</td>
</tr>
<tr>
<td>51 - 100</td>
<td>13,865,877</td>
<td>12,866,488</td>
<td>13,647,422 d</td>
</tr>
<tr>
<td>101 - 200</td>
<td>35,810,277</td>
<td>36,284,548</td>
<td>35,253,229 d</td>
</tr>
<tr>
<td>201 - 299</td>
<td>7,649,202</td>
<td>8,629,699</td>
<td>9,025,726 l</td>
</tr>
<tr>
<td>300 - 479</td>
<td>---------</td>
<td>34,531,369</td>
<td>34,616,205 i</td>
</tr>
<tr>
<td>300 and over</td>
<td>80,286,579 (102,338,132)</td>
<td>(112,834,478)i</td>
<td></td>
</tr>
<tr>
<td>480 - 639</td>
<td>---------</td>
<td>18,404,018</td>
<td>19,665,583 i</td>
</tr>
<tr>
<td>640 acres &amp; over</td>
<td>---------</td>
<td>5,402,990</td>
<td>58,562,690 d</td>
</tr>
</tbody>
</table>

### TABLE XXVII

**CLASSIFICATION OF CANADIAN FARMS AS TO LAND USES**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Alberta</th>
<th>All Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grain and hay</td>
<td>46,616</td>
<td>173,836</td>
</tr>
<tr>
<td>Potatoes, roots, etc.</td>
<td>736</td>
<td>8,449</td>
</tr>
<tr>
<td>Vegetables, fruits, nursery</td>
<td>187</td>
<td>15,005</td>
</tr>
<tr>
<td>Dairy products</td>
<td>987</td>
<td>47,625</td>
</tr>
<tr>
<td>Poultry</td>
<td>191</td>
<td>7,205</td>
</tr>
<tr>
<td>Live stock</td>
<td>12,744</td>
<td>65,582</td>
</tr>
<tr>
<td>Forest and apiary</td>
<td>116</td>
<td>14,964</td>
</tr>
<tr>
<td>Subsistence &amp; combinations</td>
<td>14,580</td>
<td>194,590</td>
</tr>
<tr>
<td>Mixed farming</td>
<td>16,575</td>
<td>134,695</td>
</tr>
<tr>
<td>Part-time</td>
<td>3,447</td>
<td>40,437</td>
</tr>
<tr>
<td>Including &quot;unspecified&quot;</td>
<td>99,732 farms</td>
<td>732,832 farms</td>
</tr>
</tbody>
</table>

1 d - decrease; i - increase
The expansion of lands used in growing field crops during the first four decades of the twentieth century in Canada is indicated (21, 8, p.9) in Table XXVIII.

TABLE XXVIII

INCREASES IN NUMBERS OF ACRES OF CANADIAN FARMS IN FIELD CROPS

<table>
<thead>
<tr>
<th>Year</th>
<th>Total acreage in field crops in 1900</th>
<th>1911</th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>19,763,740</td>
<td>35,271,338</td>
<td>49,680,918</td>
<td>57,925,483</td>
<td>55,823,648</td>
</tr>
</tbody>
</table>

TABLE XXIX

ALBERTA FARM HOLDINGS BY SIZES

<table>
<thead>
<tr>
<th>Census year</th>
<th>1921</th>
<th>1931</th>
<th>1936</th>
<th>1941</th>
<th>1946</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Farms</td>
<td>82,954</td>
<td>97,408</td>
<td>100,359</td>
<td>99,732</td>
<td>89,541 d</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Holdings by Sizes</th>
<th>1 - 50</th>
<th>51 - 100</th>
<th>101 - 200</th>
<th>201 - 299</th>
<th>300 - 479</th>
<th>480 - 639</th>
<th>640 upward</th>
<th>Average</th>
<th>Farm operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Farms</td>
<td>1,301</td>
<td>1,216</td>
<td>35,278</td>
<td>2,415</td>
<td>14,746</td>
<td>89,058</td>
<td>90,533</td>
<td>90,750</td>
<td>82,209 d</td>
</tr>
<tr>
<td>Average</td>
<td>353.1</td>
<td>400.0</td>
<td>403.0</td>
<td>433.9</td>
<td>462.9</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 d - decrease; 1 - increase
Farm Size Trends  Canadian farms are classified in the Federal Census returns as to their sizes in numbers of acres contained. Table XXIX gives the story of Alberta's reporting farms.

From the information it is clear that the number of larger farms is increasing. This is due in part to the circumstance that experience has amply indicated the necessity of larger holdings on the drier prairie regions. These holdings often consist of a "deeded" nucleus of one or more quarter-sections plus several sections of agricultural and grazing lands. The latter will be leased from the provincial governments with rate of production payments rather than an arbitrary rental rate. The number of farm operators in 1946 indicated a decrease. (23, 1948-49, p. 394)

Farm Tenure Tendencies  The 1945 Canada Year Book indicates a tendency toward a decrease in the number of owned farms and toward an increase in the number of farms reporting "partly owned and partly rented" and "occupied by tenants" still holds:

TABLE XXX

<table>
<thead>
<tr>
<th>FARMS OWNED AND OCCUPIED BY THE OWNERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Canada</td>
</tr>
<tr>
<td>Farms owned and occupied by owner</td>
</tr>
<tr>
<td>Saskatchewan decrease</td>
</tr>
<tr>
<td>Nova Scotia decrease</td>
</tr>
<tr>
<td>Alberta decrease</td>
</tr>
</tbody>
</table>
The 1945 Canada Year Book affords further light upon the 1931 situation:

**TABLE XXXI**

<table>
<thead>
<tr>
<th>Farms occupied by:</th>
<th>Alberta</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>owner(or manager)</td>
<td>71,060</td>
<td>586,299</td>
</tr>
<tr>
<td>tenant</td>
<td>11,080</td>
<td>74,382</td>
</tr>
<tr>
<td>part owner, part tenant</td>
<td>14,540</td>
<td>67,942</td>
</tr>
<tr>
<td>Total farms reported</td>
<td>97,408</td>
<td>728,623</td>
</tr>
</tbody>
</table>

The 1945 Canada Year Book informs us about the tenure of farms reporting in 1941 (Table XXXII).

**TABLE XXXII**

<table>
<thead>
<tr>
<th>Farms occupied by:</th>
<th>Alberta</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>owner(or manager)</td>
<td>62,366</td>
<td>548,821</td>
</tr>
<tr>
<td>tenant</td>
<td>17,032</td>
<td>94,287</td>
</tr>
<tr>
<td>owner-tenant</td>
<td>19,761</td>
<td>84,396</td>
</tr>
<tr>
<td>Total farms reporting</td>
<td>99,732</td>
<td>732,832</td>
</tr>
</tbody>
</table>

The total acreages involved in farms reporting in the 1931 Census are shown in Table XXXIII.
TABLE XXXIII

NUMBER OF ACRES OPERATED BY OWNERS, MANAGERS & TENANTS, 1931

<table>
<thead>
<tr>
<th>Occupied by owner or manager</th>
<th>Alberta</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot; &quot; tenant</td>
<td>21,423,004</td>
<td>107,184,148</td>
</tr>
<tr>
<td>&quot; &quot; part owner,</td>
<td>3,817,679</td>
<td>20,038,878</td>
</tr>
<tr>
<td>&quot; &quot; part tenant</td>
<td>11,736,774</td>
<td>36,031,933</td>
</tr>
<tr>
<td><strong>Total acreages</strong></td>
<td><strong>38,977,457</strong></td>
<td><strong>163,254,959</strong></td>
</tr>
</tbody>
</table>

The same page affords information as to the areas in acres of Canadian farms reporting in 1941. These figures are shown in Table XXXIV.

TABLE XXXIV

NUMBER OF ACRES OPERATED BY OWNERS, MANAGERS & TENANTS, 1941

<table>
<thead>
<tr>
<th>Occupied by the owners</th>
<th>Alberta</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot; &quot; &quot; managers</td>
<td>18,151,638</td>
<td>96,024,424</td>
</tr>
<tr>
<td>&quot; &quot; &quot; tenants</td>
<td>1,052,279</td>
<td>3,261,435</td>
</tr>
<tr>
<td>&quot; &quot; &quot; part owners,</td>
<td>7,209,490</td>
<td>27,232,250</td>
</tr>
<tr>
<td>&quot; &quot; &quot; part tenants</td>
<td>16,863,888</td>
<td>48,155,426</td>
</tr>
<tr>
<td><strong>Total acreages reporting</strong></td>
<td><strong>43,277,295</strong></td>
<td><strong>174,673,535</strong></td>
</tr>
</tbody>
</table>

It would appear that there is a strong tendency toward a decrease in the number of owner-operated farms during the two decades ending in 1941; it may be that some of this loss would be accounted for by the general trend toward farms of
the larger sizes. There was an increase in the number of part-owners, part-tenants; on the prairies at least this is in part due to the growing practice in the drier areas of the more hardy farmers of holding by deed their original homesteads and then leasing large tracts of adjacent lands long since abandoned by their less fortunate neighbors; also, increased capacities of farm machinery of various kinds would permit younger farmers to rent the adjoining farms of older operators of the retiring age. Again, the relative trends in numbers of operators and tenants might be explained by the increase in prices for farm commodities around 1940 and consequent ability of farms to assure cash returns sufficiently generous to support both owner and renter. (23, 1945, pp.240-2)

The over-all increase in corresponding acreages testifies to the advent of the bulldozer and other heavy equipment used in the clearing of forest-covered lands -- lands that awaited easier and faster methods in the disposal of the woody cover.

Home Equipment

Household conveniences in Urban and Farm Alberta Areas. (as taken from Volume IX of the 1941 Federal Census and from Farm Family Living in the Prairie Provinces by Florence M. Edwards -- Publication 767, Technical Bulletin 57, pp.6-17, Dominion Department of Agriculture, Ottawa). (21, 45, p.7)
HOUSEHOLD EQUIPMENT OF URBAN AND FARM HOMES IN ALBERTA
(adapted from Edwards, p.7)

City of Edmonton, Alberta, 1941 Census tables.

202 farms in the "Central Alberta" black soil area, adjacent to the cities of Wetaskiwin and Red Deer.

95,645 Alberta farms reporting in 1941

Percentages of homes possessing these conveniences

<table>
<thead>
<tr>
<th>Convenience</th>
<th>100</th>
<th>90</th>
<th>80</th>
<th>70</th>
<th>60</th>
<th>50</th>
<th>40</th>
<th>30</th>
<th>20</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Central</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting Heating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathtub-Flush</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shower</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The 1941 Census (21, 9-1, p. 51) supplies information concerning heating systems in Canadian homes as given in Table XXV.

TABLE XXXV

HEATING SYSTEMS IN CANADIAN HOMES

<table>
<thead>
<tr>
<th></th>
<th>Total Canadian homes</th>
<th>Steam or hot water</th>
<th>Hot air</th>
<th>Stove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm homes</td>
<td>703,782</td>
<td>1.2%</td>
<td>12.0%</td>
<td>86.8%</td>
</tr>
<tr>
<td>Rural non farm homes</td>
<td>455,069</td>
<td>6.4%</td>
<td>19.1%</td>
<td>74.5%</td>
</tr>
<tr>
<td>Urban homes</td>
<td>1,416,893</td>
<td>23.3%</td>
<td>32.4%</td>
<td>44.3%</td>
</tr>
<tr>
<td>Centers of over 30,000 population</td>
<td></td>
<td>30.4%</td>
<td>34.2%</td>
<td>35.4%</td>
</tr>
<tr>
<td><strong>Total Alberta homes</strong></td>
<td><strong>173,645</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm homes</td>
<td>95,645</td>
<td>0.8%</td>
<td>10.5%</td>
<td>88.7%</td>
</tr>
<tr>
<td>Non farm rural homes</td>
<td>20,800</td>
<td>1.6%</td>
<td>11.0%</td>
<td>87.4%</td>
</tr>
<tr>
<td>Urban Alberta homes</td>
<td>77,020</td>
<td>10.7%</td>
<td>48.5%</td>
<td>40.8%</td>
</tr>
<tr>
<td>Centers of over 30,000 population</td>
<td></td>
<td>14.6%</td>
<td>60.3%</td>
<td>25.1%</td>
</tr>
</tbody>
</table>

The 1941 Census (21, 9-1, p. 66) supplies data concerning sources of water supply for Canadian homes as given in Table XXXVI.

TABLE XXXVI

RUNNING WATER IN CANADIAN HOMES

<table>
<thead>
<tr>
<th></th>
<th>Canadian farm homes</th>
<th>Rural non farm homes</th>
<th>Urban Canadian homes</th>
<th>Centers of over 30,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>703,782</td>
<td>455,069</td>
<td>1,416,893</td>
<td></td>
</tr>
<tr>
<td>12.2% have running water</td>
<td>41.0%</td>
<td>90.7%</td>
<td>98.5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alberta farm homes</td>
<td>95,645</td>
<td>20,800</td>
<td>77,030</td>
<td></td>
</tr>
<tr>
<td>3.1%</td>
<td>13.5%</td>
<td>73.6%</td>
<td>92.6%</td>
<td></td>
</tr>
<tr>
<td>Alberta non farm rural</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alberta urban homes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centers of over 30,000 population</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table XXXVII has information (21, 9-1, p. 69) about bathing facilities in occupied dwellings.

**TABLE XXXVII**

**BATHTUBS OR SHOWERS IN CANADIAN HOMES**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage have bath or shower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian farm homes</td>
<td>703,782</td>
<td>6.8%</td>
</tr>
<tr>
<td>Non farm rural homes</td>
<td>455,969</td>
<td>31.2%</td>
</tr>
<tr>
<td>Canadian urban homes</td>
<td>1,416,893</td>
<td>76.2%</td>
</tr>
<tr>
<td>Centers of over 30,000 population</td>
<td></td>
<td>88.8%</td>
</tr>
<tr>
<td>Alberta farm homes</td>
<td>95,645</td>
<td>3.2%</td>
</tr>
<tr>
<td>Non farm rural homes</td>
<td>35,969</td>
<td>10.7%</td>
</tr>
<tr>
<td>Alberta urban homes</td>
<td>70,069</td>
<td>63.3%</td>
</tr>
<tr>
<td>Centers of over 30,000 population</td>
<td></td>
<td>84.2%</td>
</tr>
</tbody>
</table>

Table XXXVIII (ibid., p. 77) deals with refrigeration facilities in occupied Canadian dwellings (June 1st, 1941).

**TABLE XXXVIII**

**CANADIAN REFRIGERATION FACILITIES**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage have refrigeration facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian farm homes</td>
<td>22,222</td>
<td>22.2%</td>
</tr>
<tr>
<td>Non rural homes</td>
<td>35,923</td>
<td>35.9%</td>
</tr>
<tr>
<td>Urban Canadian homes</td>
<td>70,069</td>
<td>70.0%</td>
</tr>
<tr>
<td>Centres of over 30,000 population</td>
<td></td>
<td>79.2%</td>
</tr>
<tr>
<td>Alberta farm homes</td>
<td>17,822</td>
<td>17.8%</td>
</tr>
<tr>
<td>Non farm rural homes</td>
<td>15,923</td>
<td>15.9%</td>
</tr>
<tr>
<td>Urban Alberta homes</td>
<td>44,422</td>
<td>44.4%</td>
</tr>
<tr>
<td>Centres of over 30,000 population</td>
<td></td>
<td>49.4%</td>
</tr>
</tbody>
</table>

Table XXXIX (ibid., p. 73) informs us as to the prevalence of outside privies in Canada.
TABLE XXXIX

OUTDOOR PRIVIES IN CANADA

<table>
<thead>
<tr>
<th></th>
<th>Canadian farm homes</th>
<th>Non farm rural homes</th>
<th>Canadian urban homes</th>
<th>Centers of over 30,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>703,782</td>
<td>455,069</td>
<td>1,416,893</td>
<td></td>
</tr>
<tr>
<td></td>
<td>89.2% have outside privies</td>
<td>63.5% &quot; &quot; &quot; &quot;</td>
<td>11.9% &quot; &quot; &quot; &quot;</td>
<td>2.2% &quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>Alberta farm homes</td>
<td>95,645</td>
<td>20,800</td>
<td>77,020</td>
<td></td>
</tr>
<tr>
<td></td>
<td>95.5% &quot; &quot; &quot; &quot;</td>
<td>88.3% &quot; &quot; &quot; &quot;</td>
<td>31.3% &quot; &quot; &quot; &quot;</td>
<td>10.1% &quot; &quot; &quot; &quot;</td>
</tr>
</tbody>
</table>

The frequencies of certain conveniences in Canadian occupied dwellings are given in Table XL. (ibid., p.81)

TABLE XL

RADIOS, TELEPHONES, VACUUM CLEANERS, AUTOMOBILES IN CANADA

<table>
<thead>
<tr>
<th></th>
<th>radios</th>
<th>telephones</th>
<th>vacuum cleaners</th>
<th>automobiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian farm homes</td>
<td>60.6%</td>
<td>29.3%</td>
<td>4.4%</td>
<td>43.8%</td>
</tr>
<tr>
<td>Non farm rural homes</td>
<td>70.6%</td>
<td>27.8%</td>
<td>17.7%</td>
<td>36.9%</td>
</tr>
<tr>
<td>Canadian urban homes</td>
<td>88.6%</td>
<td>49.7%</td>
<td>36.2%</td>
<td>33.1%</td>
</tr>
<tr>
<td>Centres of over 30,000 population</td>
<td>90.6%</td>
<td>57.3%</td>
<td>40.7%</td>
<td>31.0%</td>
</tr>
<tr>
<td>Alberta farm homes</td>
<td>72.7%</td>
<td>18.0%</td>
<td>2.0%</td>
<td>46.4%</td>
</tr>
<tr>
<td>Non farm rural homes</td>
<td>69.4%</td>
<td>10.8%</td>
<td>10.2%</td>
<td>33.8%</td>
</tr>
<tr>
<td>Alberta urban homes</td>
<td>89.1%</td>
<td>43.8%</td>
<td>40.3%</td>
<td>40.8%</td>
</tr>
<tr>
<td>Centres of over 30,000 population</td>
<td>91.6%</td>
<td>56.9%</td>
<td>47.4%</td>
<td>40.3%</td>
</tr>
</tbody>
</table>

Table XLI supplies data about Canadian farming equipment.
In 1941, 41.0% of Canadian farms had automobiles. 66.7% of Ontario’s 178,204 occupied farms possessed 40.8% (128,708) of the nation’s 315,461 farm cars. This means that the remaining 186,753 cars were distributed among the other 417,371 Canadian farms. (23, 1945, pp.239-40)

Automobiles disappeared from the new markets during the war years; when a farmer required transportation, he turned to the more available and universally useful truck.

Tractors increased very considerably. Combine harvesters are displacing binders and threshers. Electrification of farms is making good progress as evidenced by the

### TABLE XLI

**MECHANICAL EQUIPMENT ON CANADIAN FARMS**

<table>
<thead>
<tr>
<th>All Canada</th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
<th>1946</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobiles</td>
<td>157,022</td>
<td>321,284</td>
<td>315,461</td>
<td></td>
</tr>
<tr>
<td>Trucks</td>
<td>48,401</td>
<td>77,480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tractors</td>
<td>47,455</td>
<td>105,360</td>
<td>159,752</td>
<td></td>
</tr>
<tr>
<td>Grain combine harvesters</td>
<td>8,917</td>
<td>19,013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threshers</td>
<td>105,544</td>
<td>93,001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline engines</td>
<td>---</td>
<td>179,765</td>
<td>168,225</td>
<td></td>
</tr>
<tr>
<td>Electric motors</td>
<td>---</td>
<td>18,639</td>
<td>58,192</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alberta</th>
<th>1921</th>
<th>1931</th>
<th>1941</th>
<th>1946</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobiles</td>
<td>20,616</td>
<td>42,817</td>
<td>44,090</td>
<td>41,541</td>
</tr>
<tr>
<td>Motor Trucks</td>
<td></td>
<td>7,319</td>
<td>14,512</td>
<td>18,451</td>
</tr>
<tr>
<td>Tractors</td>
<td>9,215</td>
<td>23,095</td>
<td>36,445</td>
<td>48,763</td>
</tr>
<tr>
<td>Grain combine harvesters</td>
<td>2,532</td>
<td>5,165</td>
<td>10,648</td>
<td></td>
</tr>
<tr>
<td>Threshers</td>
<td>12,457</td>
<td>12,753</td>
<td>12,921</td>
<td></td>
</tr>
<tr>
<td>Gasoline engines</td>
<td>26,938</td>
<td>31,091</td>
<td>36,828</td>
<td></td>
</tr>
<tr>
<td>Electric motors</td>
<td>1,087</td>
<td>2,150</td>
<td>7,980</td>
<td></td>
</tr>
</tbody>
</table>
decrease of internal combustion engines and the increase in electric motors.

In general, farm mechanization, with its demands for adequate knowledges and skills in intelligent selection and maintenance, is decidedly on the increase throughout Canada. This applies equally to the farm home as to the farm itself.

Farm Income

The income of an agricultural area is an important matter. The gross incomes of all farmers in Canada for the year 1930 was $632,462,000. For the year 1935 the figure was $511,537,000, and the 1940 figure for gross farm income mounted to $766,066,000. For the year 1944 the gross farm income across Canada was set at $1,990,600,000; for the year 1946 gross farm income was set at $1,769,600,000; for the year 1947 gross farm income (inclusive of Prairie Farmer Assistance Act, Prairie Farmer Income Act, and Acreage Reduction Acts) was $2,002,195,000. The depression years contributed to the 1935 level of income; after that war years and concomitant relieving measures aided in increasing farm incomes. (23, 1947, p. 318)

The total gross investment in farming operations in Canada in 1944 was given as $5,500,000,000, inclusive of lands, buildings, machinery, livestock. In 1945, this was estimated at $5,549,566,000. (23, 1947, p. 314)
Manufactures in Canada derive 37% of their raw materials from farm production. (23, 1945, p. 405) (44, p. 282)

Net values of primary products in Canada for the year 1944 are given in the 1947 Canada Year Book (23, 1947, p. 318) as shown in Table XLII.

**TABLE XLII**

**NET VALUES OF CANADIAN PRIMARY PRODUCTS IN THE YEAR 1944**

<table>
<thead>
<tr>
<th>Primary Product</th>
<th>Value</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture (some Forest)</td>
<td>$1,533,206,000</td>
<td>53.8% (net)</td>
</tr>
<tr>
<td>Forests</td>
<td>507,359,605</td>
<td>18.5%</td>
</tr>
<tr>
<td>Fisheries</td>
<td>76,889,487</td>
<td>2.8%</td>
</tr>
<tr>
<td>Trapping</td>
<td>23,988,773</td>
<td>0.8%</td>
</tr>
<tr>
<td>Mining</td>
<td>454,022,468</td>
<td>16.5%</td>
</tr>
<tr>
<td>Electric Power</td>
<td>209,757,908</td>
<td>7.6%</td>
</tr>
<tr>
<td>Less duplication in forestry &amp; agriculture</td>
<td>61,357,883</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$2,743,864,408</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Total net value of Canada's production, as estimated for 1944 was: $6,736,806,366 (100%)

of which Agriculture was (less forest duplications) $1,471,858,117 (21.8%)

Canadian farm cash income (23, 1948-9, p. 354) in the year 1946 and 1947 are given in Table XLIII.

The 1947 farm income was placed at 15.2% of the nation's total cash product sales. (16, p. 205) (23, 1948-9, p. xxxi) Burton (16, p. 205) reports the net contribution of Agriculture in per cent of National Net Income as shown in Table XLIV.
TABLE XLIII

CASH INCOME FROM THE SALE OF FARM PRODUCTS, 1946 and 1947

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>1946</th>
<th>1947</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains, Seeds, Hay</td>
<td>$343,865,000</td>
<td>$347,096,000</td>
</tr>
<tr>
<td>Vegetables, other field crops</td>
<td>44,529,000</td>
<td>41,259,000</td>
</tr>
<tr>
<td>Live stock, including Poultry</td>
<td>276,915,000</td>
<td>255,947,000</td>
</tr>
<tr>
<td>Dairy Products</td>
<td>286,399,000</td>
<td>255,947,000</td>
</tr>
<tr>
<td>Fruits</td>
<td>47,736,000</td>
<td>48,868,000</td>
</tr>
<tr>
<td>Other principal farm products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>85,926,000</td>
<td>103,859,000</td>
</tr>
<tr>
<td>Wool</td>
<td>2,872,000</td>
<td>2,573,000</td>
</tr>
<tr>
<td>Honey</td>
<td>4,568,000</td>
<td>7,611,000</td>
</tr>
<tr>
<td>Maple products</td>
<td>4,257,000</td>
<td>9,544,000</td>
</tr>
<tr>
<td>Miscellaneous farm products</td>
<td>28,397,000</td>
<td>32,529,000</td>
</tr>
<tr>
<td>Forest products off farms</td>
<td>45,285,000</td>
<td>55,414,000</td>
</tr>
<tr>
<td>Fur farming</td>
<td>10,459,000</td>
<td>16,220,000</td>
</tr>
<tr>
<td>Total cash sales</td>
<td>1,752,682,000</td>
<td>1,990,619,000</td>
</tr>
<tr>
<td>Supplementary payments</td>
<td>16,950,000</td>
<td>11,576,000</td>
</tr>
<tr>
<td>Total Cash Income</td>
<td>$1,769,632,000</td>
<td>2,002,195,000</td>
</tr>
</tbody>
</table>

TABLE XLIV

NET CONTRIBUTION OF AGRICULTURE AS PER CENT
OF NATIONAL NET INCOME

<table>
<thead>
<tr>
<th>Year</th>
<th>1938</th>
<th>1941</th>
<th>1942(est.)</th>
<th>1946(est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Cent</td>
<td>13.4</td>
<td>10.9</td>
<td>15.6</td>
<td>15.6</td>
</tr>
</tbody>
</table>

1 Wheat Acreage Reduction Act.
   Prairie Farm Assistance Act.
   Prairie Farm Income Order-in-Council
Soil and Water Conservation

It has been well said that the perpetuation of what we are pleased to call civilization depends upon the maintenance of the productive capacity of the ground we walk upon. (69, p.33)

The very existence of all terrestrial life depends upon a certain minimum of productive soil. The history of all known civilizations, such as the Persian, the Carthaginians, the Chinese, the Greek, the Roman, the Hebrew, the Spanish, has been one of reckless exploitation and waste of soil resources, and the creation of deserts from comparative gardens of Eden. Civilized man is the most active, the most dangerous, the most destructive animal in the world. With his axe, fire, plow, and now his bulldozer, he is reenacting the scenes of ultimate soil destruction so often repeated in the historic past.

Soil conservation has become a major topic of widespread interest across Canada among technical agriculturists, and the attention of the farming community is being slowly -- too slowly -- gained. By the term "soil conservation" is meant that phase of soil preservation designed to prevent or reduce soil movement and loss through the natural actions of wind and water on exposed surfaces. To preserve our lands for future generations -- if not for the present one -- our treatment of the soil must be guided and in many instances greatly altered.
Maritime and Pacific Coastal soils are shallow; tillage following the removal of the vegetational cover has facilitated the departure of these soils to the sea. Old Ontario's farmers, also, are faced with heavy expenditures in attempts to partially make up for past heavy losses in soil fertility through erosion. On the prairies "get-rich-quick" methods of tillage have already reduced crop yields to as little as two-thirds of the original bushelages.

The extent of soil erosion in Canada is not accurately known since few surveys adequate enough to give us a true picture have been made. In twenty-four Ontario counties it is estimated that fifty per cent of the surveyed area has suffered from moderate to severe erosion; in some counties as much as seventy-five per cent of the surface surveyed has been damaged through erosion of top soil.

Water erosion is the more universal type, even though it may be the less spectacular. It occurs in some degree wherever there is an exposed land surface. At Ottawa, Ontario, in 1945 fifteen inches of rainfall in four months washed eight tons per acre of top soil from a corn field planted with the rows running up and down a 5% slope. At the same point in 1946 a three-inch, one hour rainfall removed seventy-two tons of top soil per acre on a 11% slope. (101, p.91) Prairie "gulleying" caused by the thunderstorm freshets typical of the region, ruins wagon- and animal-
trails, and renders useless large areas adjacent to coulees which are themselves monuments to water erosion. Sheet erosion of unprotected soil surfaces also occurs with heavy downpours of rain.

In the prairie region, where the cover of native grasses we now know should never have been disturbed by the plow or by over-grazing, wind erosion has been one of the major agricultural problems; soil-blowing dates as far back as 1887 at Indian Head, Saskatchewan, and presently extends as far north as land is tilled. (52, p.3) From two to twelve inches of irreplaceable top soil have been blown away into fence-rows, farm- or school-yards, roadside ditches, and into coulees -- estimates are that from three to ten hundred years are required to create one inch of soil which has in too many cases been blown away in the short space of two days by high winds following bad cultural practices. The early settlers were early warned by Nature that the soil-wasting practices prevalent in their more humid home lands would not be tolerated without swifter and more drastic reprisals in the Great Plains area. "Mulching" was one practice, very wasteful of soil fertility, expensive of time and power and prodigal of moisture outside of an experimentation can, early found dangerous on the prairies of Canada.

An experiment conducted in Minnesota by the United
States Soil Conservation Service is reported by Neatby in Table XLV.

**TABLE XLV**

**TOP SOIL LOSSES**

<table>
<thead>
<tr>
<th>Condition of Soil</th>
<th>Yield in bushels per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oats</td>
</tr>
<tr>
<td>Less than 25% of topsoil lost</td>
<td>51</td>
</tr>
<tr>
<td>25% - 50% of topsoil lost</td>
<td>42</td>
</tr>
<tr>
<td>50% - 75% of topsoil lost</td>
<td>35</td>
</tr>
<tr>
<td>Over 75% of topsoil lost</td>
<td>25</td>
</tr>
</tbody>
</table>

Truly, soil losses are costly. (69, p.3)(86, p.1)

While it may be an exaggeration to warn that areas of North America's once fertile lands are drying up and may become deserts, there is so much truth in the idea that complacency about the continued fruitfulness of our farming areas would be a serious error.

In many farming regions the removal of the forests and the tilling of the soil has led to important changes in the water supply. In the forested areas of the Great Plains farmers have had to dig progressively deeper for well water as the water table has gradually lowered. Ontario streams that in historical times flowed clear and steadily throughout the year, now are alternately muddy torrents and dry beds. On the prairies wells, sloughs, and lakes have gone
dry after removal of the grass-cover of surrounding lands. Water-bodies have been drained deliberately to provide more crop lands, and the water-table lowered thereby.

A survey of King Township in York County, Ontario, in 1937 showed that 200 miles of permanent streams which originally ran in the township had been reduced to less than 30 miles, and that 17% of the wells in the area went dry. A survey made in 1940 in the Toronto-Dundas area showed that 67% of all the streams in the area of 1,300 square miles no longer flowed continuously. On some of them, now dry or reduced to a meager flow in summer, remains of mills and dams indicate that water was sufficient to provide power for grist and saw mills. (33, p.43)

In recognition of the soil and water conservation problem facing prairie Canada the federal government has appropriated $7,000,000 as an initial outlay in investigating ways and means of checking the annual fire loss of 30,000 acres of timber on the eastern slopes of the Rocky Mountains; this waste of resources is alarming responsible authorities by its implications of future drought and increased soil losses. (58, pp.2-3)

The education of good farmers, as of other good people, will probably take care of itself. Incompetent farmers, and those who through no fault of their own lack the resources for good management of the soil, supply our soils
education problem in great part. As to the method of soils education, probably that of demonstration will be far more effective than any other, and illustrations of good and bad soils husbandry will be found side by side in most areas.

Governmental or group action is certain to be increasingly important in soils education, and in our democracy governmental action usually awaits strong public demand. Therefore the public, particularly the farming public, must be persuaded that we should adopt approved soil conservation practices before more damage has been done. It is an essential part of the job of vocational agriculture leaders and teachers to assist in creating such popular demands in all branches of Canadian society.

**Teacher Education**

Teacher education in vocational agriculture, home economics, distributive, industrial, and guidance education must be instituted concomitantly with, if not previous to, the establishment of secondary school vocational departments. Until 1950 no Canadian province has made provisions for such teacher education in the sense that the Smith-Hughes system defines that term. In some earlier instances graduation with a degree from an agricultural college has been the sole prerequisite qualification, with no attention being paid to the problems of the hapless learner.
Nova Scotia's regulations under its Education Act restrict the teaching of agriculture in its rural high schools to graduates of agricultural colleges. Early in 1950 there had been no such appointments made to the then existing rural high school staffs. (e.g., no departments had been established.) (72)

In Ontario under prevailing practices fifteen weeks of agricultural education at the Agricultural College is considered sufficient professional preparation in agriculture to warrant the granting of a "Specialist's" certificate to a non-agricultural college graduate in science who has already satisfied the Ontario College of Education (University of Toronto) requirements. In both Ontario and Alberta graduates of Agricultural Colleges who hold general high school teaching qualifications may teach vocational agricultural classes. In Alberta teacher-education practice, candidates desiring to organize agricultural departments may spend three days of observation and practice-teaching in the classroom of another teacher who may or may not have had pre-service preparation for that field of teaching -- certainly not a sufficient acquaintance with the many and varied facets associated with supervised home-farm projects and related classroom activities.

There would seem to be some intelligent purpose in turning to our southern neighbors for direction in our
agricultural education teacher-preparation, in order to profit by their half-century of experience with this problem.

H. B. Swanson, Specialist in Agricultural Education, U. S. Office of Education, has this to say:

The program of pre-service preparation and in-service training of teachers of vocational agriculture in federally aided classes is unique in that it represents a cooperative venture in education involving teacher-education institutions, State Governments, and the Federal Government. Through the cooperation of these agencies the pre-service preparation of teachers is integrated with the in-service teaching in such a way as to represent a positive program extending from the time the prospective teacher enters upon training and continues to the point at which he leaves the field of vocational teaching. This coordination of effort has been brought about in such a way as to preserve the essential features of programs developing to meet vastly different and changing social and economic conditions of the several States.

The teaching of agriculture in secondary schools is of comparatively recent origin, dating from approximately 1900. . . . . . . . much of the development that has taken place in training for teachers of agriculture dates from the passage of the Smith-Hughes Act in 1917. This act provides specifically for the preparation of teachers and makes provision for teacher-training a requisite for State participation in the other benefits of the Smith-Hughes Act. . . .

At present (1941), 72 colleges and universities are training teachers of vocational agriculture. . . .

The development of teacher training in agriculture is closely identified with the passage of the organic Smith-Hughes Act. Summarised, the act

1. Provides for a permanent and continuing appropriation for the preparation of teachers, supervisors, and directors of agricultural subjects.

2. Makes it mandatory for each State accepting the provisions of the act to designate or create a State board with power to cooperate with the U. S. Office of Education, and stipulates that States must use the minimum
amount for the training of teachers in order to secure the other benefits of the act. Thus added emphasis is given to the importance of adequate supervision being made in each State for the preparation of teachers.

3. Requires State boards to prepare State plans for vocational education which shall include plans for training of teachers.

4. Stipulates that funds appropriated for the preparation of teachers shall be matched dollar for dollar by the State or local community or both and used for the maintenance of such training.

5. Provides that the training of vocational teachers shall be under the supervision of the State Board for vocational education, sets up specifications which must be adhered to in training programs, and provides that not more than 60 per cent or less than 20 per cent of the money appropriated to any State for any year shall be expended for the training of teachers of agriculture.

6. Prohibits the use of funds appropriated under the act for "the purchase, erection, preservation, or repair of any building or buildings or equipment, or for the purchases or rental of lands, or for the support of any religious or privately owned or conducted school or college. (This is not the case with the Canadian Vocational Training Act, which recognizes capital expenditures as reimbursible.)

The George-Deen Act (1936) authorized the appropriation of additional funds for the training of teachers under conditions similar to those laid down by the Smith-Hughes Act........Pre-service preparation as well as certain aspects of in-service training were delegated in a large measure to the land-grant colleges. This gave rise to four years of college training terminating in a degree, as the minimum standard for the preparation of teachers of vocational agriculture........only persons qualified technically and professionally, and with considerable experience in the teaching of vocational agriculture have been employed in teacher-training........the use of teacher-training funds in providing short, intensive technical courses intended to improve the ability of employed teachers and supervisors, represents an extension in the field of in-service training.

........A complete program of teacher-training in agriculture should
1. Provide facilities for pre-employment preparation of teachers of agriculture which result in
   (a) An adequate supply of capable, well-trained beginning teachers.....an adequate plan for the selection of trainees and a plan for the elimination of persons.....also a comparable qualifying plan for former college graduates who desire to enter or re-enter vocational teaching.
   (b) Training (technical and professional) based primarily upon participating experiences and carried to the point of developing "doing" ability. This includes activities such as
      (1) Discovering individual and community needs.
      (2) Establishing and maintaining adequate instructional facilities.
      (3) Establishing and maintaining satisfactory working relationships with fellow-teachers, school officials, and the public.
      (4) Organizing and conducting all-day, part-time, and evening-class instruction designed to assist young men to become established in farming and to assist others in improving their status in farming.
      (5) Supervising the farm practice of all individuals reached by systematic instruction.
      (6) Serving as adviser to a chapter of Future Farmers of America (in British Columbia, Future Farmers of Canada) and working with appropriate community organizations.
      (7) Formulating the immediate and long-time programs of agricultural education for a community.
      (8) Keeping adequate records and preparing reports.
      (9) Informing the public through press, radio, exhibits, demonstrations, and fairs.
      (10) Evaluating the outcomes of the program in agricultural education.
   (c) Placing persons as teachers upon the completion of their training program.....

2. Develop teaching aids for teachers in service.....

3. Provide continuing education for teachers in service through
   (a) Regular term graduate courses and seminars in professional and technical fields.
   (b) Short intensive courses of two to three weeks' duration.....
   (c) Short technical-skills unit courses (on, and off the campus).
4. Provide for follow-up of resident teacher-training through field contacts for the purpose of checking the effectiveness of all units of instruction, and thus improving the teacher-training program... primarily with beginning teachers.......

5. Encourage improvement of college teaching (professional and technical) affecting the learning of prospective teachers. Teacher-trainers should inform other college teachers of the objectives for vocational agriculture...... and the abilities needed by teachers to meet vocational needs.

6. Conduct research and studies making direct contributions to the development of the program of vocational agriculture.......

......By 1930...... 4 years of college became the minimum standard for employment as a teacher......since 1930 the tendency has been to make pre-employment training more effective through more careful selection of trainees, making more functional the training in special methods courses, and providing responsible participation in a greater number of teacher-activities.

Short, intensive courses of from 2 to 4 weeks duration represent a type of continuing education much needed.......Since 1935 there has been a definite move to provide short, intensive courses........

At the present time (1941), approximately two-thirds of the teacher-training institutions have made adequate provision for follow-up.

Early moves were made to strengthen technical instruction in the field of agricultural engineering and farm-shop work. In addition, scattered departments of agricultural education were called upon to assist technical departments in course building and in improving methods of teaching. The most marked advance in the technical preparation of teachers has taken place since 1935.

......There is a definite movement, at the present time, to increase the training period in order to provide more adequately for participating types of experiences and for added technical training in agriculture. The trend is toward a five-year (forty-five months) program......with the added year given over to cadet training or apprentice teaching types of experience and to added technical training in agriculture.
Probably the most striking advances in professional training have been made in the field of student teaching. A few of the changes which appear as trends are:

1. Practically all student teaching has been removed...to typical and normal situations in rural areas.

2. Practically all student teaching is on a full-time basis, in contrast to the almost universal practice in earlier days of sandwiching-in this vital experience between other college assignments.

3. Student teaching is carried on in vocational agriculture.

4. An increasing number.....provide student teaching in evening and part-time classes........and in supervision of farm-practice programs.

5. The time allotted to practice-teaching is being gradually increased and extended.....The present tendency is to require prospective teachers to do directed teaching and observation for one quarter or semester.(95, pp.515-531)

The Smith-Hughes Act of 1917 appropriated the sum of $500,000 for the fiscal year ending June 30th, 1918; each succeeding year there was a $250,000 increase until June 30th, 1924; the increase for the 1924-1925 fiscal year was $500,000, and likewise for the following year. The appropriation then levelled off at $3,000,000 per annum for vocational agricultural education, "allotted in the proportion that the farm population of the State (or Territory) bears to the total farm population of the United States."

The George-Reed Act of 1929 added a further $500,000 annually to the sum available for agricultural education "for the salaries of teachers, supervisors, and directors, and the development and improvement of teaching."
Under the George-Deen Act of 1936 the available funds for vocational agricultural education were increased to $4,000,000, with a further appropriation of $175,000 to insure that each state or territory availing itself of the provisions should receive a minimum annual appropriation of $20,000 in each fiscal year. A minimum of $10,000 per annum for teacher-training was assured by a further appropriation of $54,000 for that purpose.

On August 1st of 1946 the George-Barden became law.

It provided:

$10,000,000 for vocational education in agriculture including supervision by the vocational agriculture teachers of the activities, related to vocational education in agriculture, of the Future Farmers of America and the New Farmers of America, to be apportioned for expenditure in the several States and Territories in the proportion that their farm population bears to the total farm population of the States and Territories...

...(Sec. 3, subsection a, paragraph 1)

.......for salaries and necessary travel expenses of teachers, teacher-trainers, vocational counselors, supervisors and directors of vocational education and vocational guidance; for securing necessary educational information and data.....for the purchase or rent of supplies and equipment.

......the amount to be available for expenditure in any State or Territory shall not be less, in any fiscal year, than $40,000 each for vocational education in agriculture.....(Sec. 3, subsections b and c)

The several States and Territories, in order to receive the benefits of this Act, shall be required to match by State and local funds or both 100 per centum of the appropriations made under authority of section 3. (Section 4)(30, p.802)

We have briefly considered a slow, laborious development which is still progressing toward the expressed goals in many regions. Furthermore, it is a result of mingled
successes and failures. Canadian vocational education authorities can profit by these many years of composite experiences in educating vocational teachers and thus considerably shorten the road to comparative success in preparing these teachers for effective service in helping out farm population to solve the many and integrated problems in rural high school communities.

It appears that prospective vocational teachers under the provisions of the Smith-Hughes and supplementing Acts must have had considerable practical experience in the vocation they intend to educate others in. These teachers must have had approved professional and technical preparation for the job of teaching; the period of twelve to eighteen weeks or more "on-the-job" and "doing" under the supervising teacher's supervision is considered essential. The teacher-educating staff is expected to follow the beginning teacher out into his new community and complete the initial portion of teacher-education before the neophyte is released to the supervisory staff of the State Department of Vocational Education.

In the late summer of 1948 Oregon State College sent its agricultural education cadets out to high school departments before the schools opened, each to live as a member of the local community until the Christmas holidays. This insured the student's experiencing the canvassing of
students and pupil-family conferences on the home-farms, the selection of freshman agriculture students, the orientation of these freshmen in agricultural education, the tour of fairs by the Future Farmers of America chapter, and the organization of the classroom work about the supervised farming projects. This also provided for orientation of the student-teacher toward the functions and responsibilities of the vocational teacher with respect to his own department, to the various facets of the community, to the school administration and to the other staff-members. During this period of cadetship the supervising teacher was in charge of the student-teacher's education. At the close of the apprenticeship period the student returned to college much more able to profit by the ensuing methods and materials courses, and approached the taking-over of his own department after certification and graduation with actual experiences to draw upon. For vocational teachers-in-training the twelve-week period of cadetship is the minimum.

Under the Smith-Hughes training scheme, subsistence or other allowances are not available. Under the provisions of the Canadian Vocational Training Act agreements it is permissible to compensate vocational trainees for expenses incurred while undergoing vocational instruction and practice; this provision would cover, as in British
Columbia during 1950, the apprentice education of teachers.

The Massachusetts Home-Project Plan of Vocational Agricultural Education

The home project......fits in nicely in its relation to the usual farm activities of the boy. The boy may help with the milking throughout his course, where the object is to get the cows milked as quickly as possible and where no records are kept. During certain months of at least one year the school should require whatever time should be necessary for keeping an accurate account in pounds and ounces of the yield of a part of a herd. This may be limited to the weighing of the milk from a single cow and giving the cow credit for what she produces.

It may be part of the boy's business to assist in feeding the cows. During part of the course sufficient time should be given for weighing the ration and charging at least one cow with what it costs to keep her.

In the original routine to which he has been accustomed in milking much or little attention may have been given to the cleanliness of cows, utensils, or the person and clothing of the milker. During part of his time in school the boy should be given whatever time may be necessary for milking at least one cow and preserving her milk under sanitary conditions, and for sampling the milk for bacteriological tests at school.

In the original cropping of the farm, much or little attention may have been paid to leguminous crops. During one season at least facilities should be given to the pupil for growing a moderately sized patch of clover, and for observing the effect of introducing a large proportion of clover into the ration of the cow.

In the original cropping of the farm, much or little attention may have been paid to the selection and testing of grain for seed. Prior to planting, one season at least, the boy should be given whatever time may be necessary for making germination tests of the grain which it is proposed to plant; also during one season the boy should be given control of a portion of the corn field for making an ear to row test, for observing the difference in yield between different ears of corn -- all the kernels from one ear being planted in one row, and all the kernels from another ear being planted in another row.
In the ordinary routine of the farm it may be that the boy is required to tend the poultry. During at least one year he should be given control of at least one pen of poultry, and facilities for feeding a balanced ration and trap nesting individual birds for comparison of productivity in laying.

It may be part of the usual work of the boy to help cultivate and harvest the potato crop. During one season at least he should be given facilities for testing the value of fungicides for the prevention of potato diseases and insecticides for the control of insects.

An essential feature of the home-project plan is the consideration of costs at all points. The boy by this method learns first of all through his own experience that there can be no product without cost and no profit without excess receipts over all expenditures. After such an experience he will not be likely to undertake a new enterprise without a serious attempt to estimate accurately his probable profit. The boy is subjected to the prevailing conditions under which the home farm must yield a profit or loss at the end of each year of work. The methods by which a boy becomes a small scale farmer or business man for himself gives the project which he is carrying on and the school work in which he participates a reality not otherwise obtainable. It heightens measurably his interest in the work and in the related study of the school, and must fix better than by any other device the training which he is receiving.

One indispensable condition prior to the establishment of the agricultural department is that the parents of the boys who desire to take the course shall agree to furnish the facilities necessary for the practical carrying out at the home farms of the boys of the teachings of the agricultural instructors -- not everything in any single year, but something every year. Parents of farm boys who seek admission to a separate or county agricultural school must also meet this condition. In the cases of village or city boys who think they desire to become farmers, either the parents, or the schools on their behalf, must provide the required facilities for productive farm work in connection with the phases of farming taught these boys in the classroom.  

1 Present philosophy of vocational agricultural education suggests that the classroom teaching should be predicated largely by the educational needs of the supervised home projects.
Another condition precedent to the establishment of vocational agricultural education in any locality is the appointment of an 'advisory council' (by the school board) consisting of five (or more) progressive farmers (present practice is to select members from various occupations) to cooperate with the agricultural instructor or instructors, in adapting the agricultural education program to the particular needs of that locality. It is considered desirable, moreover, that at least one member of this committee shall be chosen from among the parents of boys in the agricultural classes and one member should be a farm woman.

The approach is very modest. It is through the boy. The work is done on the father's farm and under the father's and mother's eyes. The father himself may follow the methods taught by the school or department in his own larger-scale operations, and not a few of the fathers of the boys now are doing this. The efforts of the supervising instructors, however, are primarily for the assistance of the boys. If the instructors are scrupulously careful to avoid the slightest appearance of interference with the operations of the fathers, they are no less insistent upon the right of their pupils to follow the methods learned at school in the execution of their supervised home farm projects. This method immediately appeals to the motor instincts and activities of secondary school age. The success of boys in the grain growing clubs of many States, shows that boys instantly respond to help at home...Most boys, like most men, learn best by being told and shown how on the field of action. Moreover, this sort of response, by which the pupil, not the teacher, does most of the questioning, is not only a delightful experience, but it is counted upon as a fundamental educational factor in the Massachusetts supervised farming home-project plan.(94, pp.14-16)

Earning while learning offers the boy, all too eager to quit school for work on reaching the upper age limit of compulsory school attendance, a strong incentive to continue in school because it bids fair to make him an earner while still a learner.

Boys like to feel that as members of the family they are at last able to pay their own way.(94, p.17)
There will be some failures to show profit from supervised farming activities; unseasonable frost, drought, insect infestations and plant diseases often will radically reduce plant and animal yields. Experience over large areas and through many years has taught that on the whole returns will be creditable and satisfying.

Vocational agricultural education in Canadian secondary schools is not approved of by various branches of the Agricultural Institute of Canada. (49) (90) (6) Are the worthy gentlemen-members sufficiently cognizant of what is involved in such a program? As a long-time fellow-member, the author believes not.

Integration of School and Extension Agricultural Education Programs

Any reasonably satisfactory consideration of the problem of serving the agricultural education needs of Canadian farm people should take into account the programs of the various provincial agricultural extension services as well as that of the Canadian Department of Agriculture. Particularly in their Boys' and Girls' Clubs programs, the extension services carried on by the Departments of Agriculture or the Colleges of Agriculture through their District Agriculturalists are in many respects parallel to those which should be carried on in all-day high school vocational agriculture classes, and to those in United States high
school departments affording educational services to young-farmers and adult-farmers within their communities. There is a need for coordinating and integrating these two agricultural education programs to lessen friction and to eliminate duplication of effort, as well as for accelerating any benefits which cooperation may indicate. At the present time many boys are not reached by any agricultural educational agency, and young-farmers and adult-farmers likewise frequently never have the opportunity to meet any agricultural education agent.
A PHILOSOPHY OF AGRICULTURAL EDUCATION

"Liberal" and "Vocational" Education

At a previous point, reference was made to the domination of the senior secondary school philosophy and practice by those of institutions of higher learning in Canada. Furthermore, it was intimated that Canadian colleges and universities have continued to accept at their former face value and without periodical re-examination the philosophies and programs of British colleges and universities of several generations ago.

In that era British life was divided into two separate social castes: (a) the aristocracy of nobles and of clerics, and (b) the working class; the latter class in the eyes of the aristocracy existed for the sole purpose of supporting the aristocracy and carrying out its orders. The then British educational system was devised to meet the needs of the aristocracy. What we term "liberal education" was essentially contemplative, with its focus on the understanding of things rather than upon doing things. It was worked out for a class of society destined to give orders clearly and wisely; this required minds educated to think clearly, weigh evidences, and grasp all aspects of problems. Not having to carry out such orders, education in the specific ways of doing things was irrelevant to them.
The democratic revolution, together with the concomitant growth of technology, destroyed the two-class social structure in Britain, and in America to the extent that it may have been transplanted from the Old Lands. At the same time were destroyed the old simplicities which made logical sharp distinctions between "liberal" and "vocational" educations. The idea of vocational education, as such, is aristocratic and patronizing and implies that there is a class of people who are fit for nothing but to be trained for manual labor. Democracy denies this premise, as democracy is a faith that every person is capable of rising to the levels of political judgment once attributed only to the aristocracy, or "gentlemen of leisure". While this term "gentlemen of leisure" has fallen into disrepute, the forty-hour week is affording a large number of Canadians an amount of leisure which to former generations would have seemed as unbelievable as are our political responsibilities.

Certainly a democratic education must develop those capacities for thinking, understanding, and enjoying which have been the objectives of traditional "liberal" education. The democratic revolution has made nobles of us all.

On the other hand, the democratic revolution has made workers of us all. Popular social disapproval of getting along without working has caused many people to at least
make pretenses of laboring. Important from its educational implications is the fact that many jobs are becoming so specialized and intricate that, increasingly, preparation for them is being pushed from the level of mere apprenticeship to that of formal schooling; trades are unobtrusively but steadily assuming the aspects of professions. Commonly the best technician turns out to be a most highly developed personality.

The limitations of the scope and viewpoint of the older liberal studies must be understood before successful fusion of liberal and vocational education can be appreciated and attained. The liberal studies were contemplative rather than overt, focussed upon understanding and enjoying rather than upon doing. It is a matter of present regret that the social position of the aristocrats, who invented liberal education for their own purposes, blinded themselves to kinds of human activities beyond their own personal experiences, and to a great realm of values which must be experienced and absorbed into our individual thinking if we are to institute an education adapted to a single-class democratic society. It seems that their present successors and heirs in liberal education are likewise blinded by this reflected light. They fail to realize functionally that at least five professions have necessarily combined liberal education with vocational education, emphasizing
skill in doing things with a sense of the importance of understanding in all its ramifications what one is doing: agriculture, divinity, education, law and medicine -- these each require a wide range of vocational and liberal education with no sharp line of demarcation between the two groups. Their courses form a vast spectrum and there is no differentiating between the "liberal" and "vocational".

There is a challenge to the imagination and to the intellect in the evolution of the modern time-piece, whose escapement by an interplay of moving and still parts periodically sets free desired amounts of energy to make our watches and clocks literally "tick".

The well educated man's watch should speak to him not only of the passing seconds; it should bring to his consciousness the long line of artisans whose united efforts of thought and deed have gone into its present perfections. To you your watch could be very like a living thing, with your world as tiny as this masterpiece and yet as vast as the history of recorded time. At every instant at which the lever jewels strike the escape wheel -- 432,000 times each day -- your watch ticks with a constancy unequaled by your heart-beat. A broadly educated man sees in his watch the end-product of skilful and painstaking handicraft resulting from much contemplation, whether he is conscious of the 3600-miles-a-year balance wheel or of the screw which
is much smaller than this period.

This same challenge occurs in the contemplation of the bottling machine which washes, sterilizes, fills, and seals bottles of milk (satisfaction in the skills performed) in order to assure a safe supply (ethically desirable) of food for mankind. One may feast upon the beauties of a moving picture thrown upon the screen or become equally intrigued by the construction and functioning of the complicated, accurately synchronized machine which made that moving picture possible. The romantic story of harvesting machinery's development offers an intellectual challenge fully on a par with those offered by literature and the fine arts. First appeared the rough stone knife. Then in slow succession came the sickle and the cradle. After thousands of years of human contemplation and physical effort came the horse-drawn reaper and the binder with its ingenious and equally efficient knotter; the thresher later cut the bundles, weighed the golden grain and blew the straw into the mow or the stock. More recently appeared the harvester combine, which does all of the things the preceding machines were expected to do over an incredibly greater acreage each day and night. There is an advantage in that people are intensely interested in and daily engaged by essential contacts with automobiles, washing machines, electrical appliances, and so on. Aviators and meteorologists use
the stars as frequently as do our astronomers. Yet nowhere in our liberal education does there seem to be any consideration of the kind of values concerned with skills.

The reason for this blind spot is perfectly clear, once it has been discerned. Skills are values more associated with the interests of servants than with those of masters and they are particularly clear to those who work with their hands. When you delight in skills you are dealing with means, while the traditional types of values are those of ends. As we have abolished class distinctions and class functions, we are to that extent all masters and all servants. As the result, we must envision and accept a philosophy and program of education embracing and interpreting the entire experience of contemporary mankind including that of labor -- of which the value for contemplation is skill.

This implication is that technology in its broadest meaning must be included in general education (secondary and higher) and studied in a searching and understanding mood on identical bases with science, the fine arts, politics, literature, religion and every other interest of the human race. We shall not possess a liberal education in democratic meaning until we provide secondary school and college courses on the turbine or the reciprocating engine or the internal combustion engine as humanely conceived as
courses dealing with the drama. Both are supreme expressions of the human mind and should be regarded and studied as such; although we have no histories of their developments, due to the circumstance that scholars only recorded those things which interested them personally and as scholars they were not interested in skills, the many roots of these wondrous products go back much farther in human activity than do most of our literary accomplishments.

Those so inclined should by all means read, contemplate, and enjoy Shakespeare and Milton, but the average Canadian, less or more educated, has more frequent and meaningful associations with automobiles and radios and washing machines than with the stage of bygone days. Those clustered about a dream house or inspecting its interior finish and fittings indicate an instinctive grasp of the value of skill which was neglected in their education. If that education would lead us to recognize in every complicated machine a milestone of a continuing tradition, a record of human gropings toward perfection, intelligence as well as stupidity, a symbol of our debt to an army of ancestors and an urging that we better serve our own age, humanistic attitudes might be developed more easily than at present, and even the study of Plato and Shakespeare might benefit thereby.

The democratizing of education has only begun in
Canada -- it may be farther along in Britain, as it is in the United States (whose educational system sprang from the British as well as from the Continental situations). In Canada, we have unsuccessively tried to extend to the new nobility of workers the kind of education once the sole perquisite of privileged aristocrats. Failure has come because we have unintelligently ignored the intellectual values of skill -- which always has been and is more vivid and appealing to the great majority of mankind than any other possible values. Properly understood, the value of skill would function as a guide to those values traditionally cultivated in our schools. The democratizing of our education system means far more than the mere sending to school of every person able to profit thereby. It means reconstructing the educational inheritance from the era of the two-class society and widening its content and its attitudes to encompass the needs of our one-class social milieu. (110, pp.1-17)

Relation of Social and Educational Objectives

As earlier comments have indicated, education has always been a product of time, place, and circumstance, reflecting the broader social purposes and experiences, the hopes and fears, and the ambitions of a cultural group at a given point in history. It is always a function of
social conditions rather than possessing elements absolute and universal in themselves. Theoretically and practically it mirrors the ideal of some given society at some given time, either clearly or confusedly. In the time of Christ and for a long time afterward the guilds educated the sons of the guild members. Athens developed its peculiar educational philosophy and program. China developed an educational philosophy and program suited to its situation, Hitler and Mussolini enunciated educational philosophies and inaugurated systems of public education designed to further their personal ideologies. Ironically, Mussolini's teachings made it possible for the Italian people to turn away quickly from Mussolini's own doctrines to a freer philosophy and practice. The Soviets have experimented with various philosophies and practices during the past thirty or more years, endeavoring to fasten upon an educational system which will best prepare their youth to be the kind of citizens meeting Soviet ideals. We in North America are likewise seriously engrossed in the quest of educational philosophy and educational objectives and associated practices which will insure us citizens best prepared to deal with their problems and responsibilities.

An educational system is successful only when in all of its aspects it contributes to the ends of the society in which it lives and has its being. (89, p.17)

Remoteness from thickly settled regions, vast expanses
of lands and other natural resources, and the attitudes engendered by the need for individual self-reliance in a strange environment have developed a pattern of education in North America that is unique. Settlers and their descendants were compelled by circumstances to solve their own multitudinous problems; when assistance was available, it was on the basis of equal need and worth in the community. Millions of Europeans came to our shore to exchange inexorable poverty of mind and body for the freedom and opportunity to enjoy equality in the new land: a condition frequently called the "democratic way of life."

The current conception of democracy involves and is basically concerned with the promotion of common interests and purposes. Only by cooperation can we formulate common purposes and proceed to attain our democratic ends. The individual is recognized as a definite element of the democratic social order. Development of the intelligence of the individual and providing for effective participation in social activities with emphasis on sensitivity to community problems and sharing in their solutions are primary concerns of our Western democracies -- Sweden, Denmark, Norway, Great Britain, the United States, and Canada.

Democracy places emphasis at two points: (a) individual worth and intelligence and (b) cooperative sharing of interests, purposes, and responsibilities.
The Purpose and the Function of the School in a Democracy

In the past the school has functioned in passing on the local social values and mores, as well as affording some proficiency in reading, writing, and arithmetic; in later years, at its best, the school has evolved into a college preparatory medium. Local autonomy and other concomitant factors have influenced the school toward following the "safe and sane" policy of not raising questions concerning local pertinent problems which might disturb the status quo of the local powers that be. Thus the schools have not been encouraged to give direction to altering or improving the social order. In the past our schools have tended to be supplementary rather than primary community institutions; is this to continue to be their function?

The Commission on the Social Studies of the American Historical Society reports:

A supreme purpose of education, in addition to the development of rich and many-sided personalities, is the preparation of the rising generation to enter the society now coming into being through thought, ideal, and knowledge rather than through coercion, regimentation, and ignorance, and to shape the form of that society in accordance with American ideals of popular democracy and personal liberty and dignity. (8, p. 39)

If democracy is to survive (democracies in the past have had comparatively brief histories) the school must be concerned with promoting the democratic way of life, encouraging the individual to develop his or her
intelligence to the optimum, and to cooperate with fellow citizens in formulations of community purposes as well as in working for desired ends. A measure of education has already been accomplished along this road to democracy with favorable results to the agrarians and to labor, but our schools must accept this function as basic to the continuance of democratic society. John Dewey has said:

Democracy will be a farce unless individuals are trained to think for themselves, to judge independently, to be critical, to be able to detect subtle propaganda and motives which inspire it. (41, p. 584)

Intelligence and a willingness to share common interests and the solution of common problems must be promoted if our community, local or national, is to continue to exist as a democracy. John W. Studebaker said:

In those foreign countries where democracy is most virile, and the possibilities of success for dictatorship are most remote -- countries like Norway and Sweden and Denmark -- the educational basis is both broad and vital. This education is not merely vocational or cultural. It is concerned with 'the pursuit of happiness' through democratic processes. Such educational programs are founded upon the proposition that democratic action must come from mass understandings of the problems the people face as citizens...... the assumption in democracy is that the people shall be free to direct 'the pursuit of happiness' for themselves. Democracy more than any other form of social organization requires a mass educational system for its perpetuation and an educational process which fits the social organization and contributes to its stability and growth......I am contending for an educational technique that actually prepares and assists people -- not only as children and adolescents but as adults -- to function effectively in democracy. (97, p. 305)

Omer C. Aderhold in his doctoral thesis had this to say:
To perpetuate this great American heritage the school must become a positive dynamic force. The major objective of the school should be promotion of reflective thinking in all essential aspects of life and of group activity on an intelligent basis of cooperation in the school and in all other institutional and group life must be the school's essential objective. This means that the school will focus its attention at two points:

1. Individual: The school's specific functions here are:
   a. To help the individual discover problems that are more or less personal and individual, such as those involving all forms of expression, speech, music and art, basic disturbances and conflicts, making vocational choices; and to create in him an interest and desire to do something about them. The school must do more than discover problems that students already have; it must cause desirable and appropriate problems to develop.
   b. To develop the technique of reflectively thinking through problem solving. This means:
      (1) Encouraging the individual in drawing inferences or formulating hypotheses about the problems faced.
      (2) Testing inferences. Perhaps at no other point is the process of developing reflective thinking in the school and its influence so needed. It is here that all pertinent facts must be brought into the picture, weighed in the light of the hypotheses formulated, and evaluated with a concern for what is best for the total social order.
      (3) Helping students to arrive at a sound conclusion based upon socially evaluated facts and to draw generalizations from these conclusions and to use these generalizations in further thinking. Dr. W. H. Kilpatrick says that real learning has not taken place until and unless the individual has accepted the generalization as a basis of action.

2. Social: The school will endeavor to promote group living on an intelligent basis of cooperation in the school and in all other institutional and group life:
a. To help the students to discover problems. The school will be so organized that students are faced with and led to recognize problems of concern to the group. The immediate problems of the group are to be used as the beginning point for developing a sensitiveness to and a desire for the solution of the larger social and economic problems of the community, the province, and the world.

b. To develop the technique of reflectively thinking through group problems. This means:

(1) Encouraging the formulation of group hypotheses relative to the problem at hand.

(2) Testing the hypotheses. Here the emphasis is placed upon the techniques of "working together" in testing the hypotheses. The school throws its weight to guiding in the accumulation of facts and information and also helping the individual and group use the criterion of "sharing" in evaluating these facts. It is at this point that the broader social implications of the problem are explored.

(3) Drawing conclusions and generalizations. Help to draw conclusions based upon facts, facts considered and evaluated in the light of sharing with the larger social group. Experience in the applications of these generalizations to further thinking will be provided. The aim here is "self-direction" on the part of the individual and group. The procedure aims to develop an attitude of willingness to act upon the basis of judgments reached.

In conclusion, then, we may say that the objective of the school will be to promote the democratic way of life by encouraging the use of intelligence in the solution of all problems. This objective gives direction to the school program. The use of intelligence makes possible the use of more intelligence, and experience in intelligent sharing makes possible more to share. (1, pp. 26-27)

Relation of Educational Problems and Objectives

The preceding statement of objectives suggests that
individuals and groups are faced with problems and that these problems constitute a sound basis for curriculum building. What is the psychological basis for building an educational program on the problems of the individuals and of the group? After a careful analysis of various points of view the Science Committee of the Progressive Education Association summed up its position with reference to the psychological basis for building a program of instruction upon problems as follows:

......the individual is active, and purposeful, responding to drives which take on meaning and character in interaction with an environment. The multitude of problems which are characteristic of the individual in our culture all grew out of the dynamic quality of human life in interaction with environment. Learning at its best is characterized by the application of intelligence to the meeting of needs. No fixed formula can be prescribed for the appropriate satisfaction of problems, for they are continually developing and expanding and are frequently in conflict with one another....It is the business of the teacher, then, to understand the nature and problems of the individual in his meaningful relationships of living, and to help him meet his problems in such a way as to make life even richer and more meaningful.(82, p.22)

This definition of learning throws the teacher headlong into two essential problems: (a) that of understanding the student -- physically, mentally, and emotionally; and (b) knowing first hand the student's environment. In order to recognize the problems which grow out of this interaction of the individual with his environment the teacher must know both the student and the student's environment. This means the teacher must be a dynamic teacher and
concerned with acquiring and understanding student problems as these problems consecutively develop.

Eikenberry and Aiken, in their "Proposals for the Revision of Ohio High School Standards" suggest this classification of adolescent and adult problems:

(1) physical, intellectual, and emotional;
(2) social;
(3) vocational;
(4) developing a "philosophy of life", or point of view. (1, p.28)

Aderhold suggests a classification of problems as:

(1) personal living;
(2) primary social relationships;
(3) secondary social relationships;
(4) economic relationships. (1, p.29)

Aderhold believes that this classification agrees with psychological and sociological classifications of problems. There may be similar classifications fully as valid; the integration of these and many other categories is necessarily such that a large number of combinations of needs may be indicated and no one classification could be set out as the best. (1, p.29)

Vocational Education (i.e. Vocational Agricultural Education) in the Psychological and Sociological Picture of Educational Problems and Objectives.

The essential role of vocational education in
agriculture would be, as in all education, that of working toward the democratic ideal by placing emphasis upon reflective thinking and upon the sharing of common interests and problems. It should try to discover the real problems of an economic and vocational nature and assist farmers and farm boys in the direction of a higher standard of living through the use of their intelligence in solving their problems. It should be deeply interested in a better understanding of the farm individual, the farm group, and their total environment. Careful examinations of many aspects of farm and rural community living would have to be carried out, such as:

1. Age and interest of the student, size of family, educational status of the family members individually, social activities of the individual family members, family income from other sources than the farm, and so forth.

2. Number of rooms in the farm home, its condition, heating equipment, artificial lighting, water system, sewage disposal, screening, telephone, radios; automobile, landscaping; condition of barn, farm shop, garage, and other outbuildings; types and condition of fences; variety and amount of foods provided and preserved (with methods) for the family use.

3. Size of farm, acres in cultivation, acres in pasture, miles to market, type of roads, number of tenants or
hired help, motive power available for use; tillage, sowing, and harvesting tools; topography of farm; soil kinds and fertility, degree of soil erosion; presence and degree of use of terracing, strip-cropping, contouring, rotation of crops; horticultural practices.

4. Variety, production, and value of enterprises, including field-, truck-, orchard-, and pasture-crops, as well as of live stock and woodlot products.

5. Liabilities for each of the enterprises and for the farm as a whole including taxes, insurance, and labor (either family or hired).

6. A financial recapitulation of the farm business.

A careful canvassing of the student, the farm he lives upon, and the community is required as a basis for the discovery of problems.

Vocational agricultural education has a direct and significant contribution to make to our farm people. Its major contribution is to the rural dwellers; no stretch of the imagination is required to realize that a democratically increased standard of living on the part of our Canadian farming population will surely contribute also to the improvement of the standard of living of the whole population.

There is a tendency for the first agricultural education agency established in a community to view with suspicion the approach of the second agency, too often for
reasons involving prestige only. With both programs organized and fostered by two distinct and unrelated provincial or governmental organizations, and with resultant "empire building", rivalries are prone to come into the picture. Frequently the same boys will be enrolled in both programs, and other boys are inaccessible to either of the programs. These circumstances are regrettable, as both agencies are operating at public expense and it is inexcusable that educational agencies should be fostering a competitive spirit and small-group consciousness of our future farm citizenry on the one hand and on the other hand denying certain sections the opportunity for an essential vocational education.

Where cordial relationships and cooperative attitudes between the various individuals directing the programs exist, we will expect to find cooperative efforts benefitting both the extension and the high school vocational education programs. These two programs should be considered as complementary rather than competitive, and every effort should be made to develop such a relationship. The high school vocational agriculture department should prove of inestimable value to the district agriculturalist's activities in providing not only desirable teaching quarters but also in serving as a medium for organization and communication between the district agriculturalist and the
farm boys and men. The district agriculturalist can never expect to deal with more than a selected few of the boys in the province, while the high school instructor will expect to meet all his farm boy students frequently. This contrast also characterizes the part-time or young-farmer picture. On the prairies there may be sufficient farm youths to make a strong local group. This group will profit more by the direct daily association with the local high school agriculture instructor than is possible with itinerant visitations of the district agriculturalist. Covering a large, thinly-populated constituency reduces the district agriculturalist's potential intensity of attention in many Canadian areas. One possible division of responsibility as between the high school agriculture teacher and the district agriculturalist could be that in which the high school agriculture instructor deals with the education of rank and file farmers and the district agriculturalist emphasizes the development of leaders of agricultural and community life. Needless to say, this differentiation of activity would permit each to assist the other most frequently and freely. Again, the high school teacher will find great difficulty in keeping well abreast of the multitude of developments in the agricultural field; this could well be the function of the district agricultural agent. Such an organization of functions would reduce
duplication and waste of valuable time and effort and lead to a more effective agricultural education program in every Canadian farm community large enough to justify such publicly supported services.

Criteria for the Establishment of Departments of Vocational Agriculture

Superintendents and school boards will be confronted frequently with the necessity of accepting or rejecting proposals leading to the expansion of their educational services through the establishment of vocational agricultural departments. This would be particularly true of secondary school services in rural communities.

These decisions would interest parents of farm boys and the school community generally in terms of educational desirability and need, possible benefits accruing to the community, and administrative feasibility.

Nova Scotia's Interdepartmental Committee on Agricultural Education recommended that a limited number of village or town schools should be selected as centers where agricultural education would be inaugurated. These communities should have the following characteristics:

(a) They should be located in agricultural areas where farming can be profitably followed.
(b) A sufficient number of boys (not fewer than 12) who have definitely decided to become farmers should be available for the course.
(c) The schools should be served, or be able to be served,
by a shopmobile, or a mechanic science shop.

(d) The communities should be geographically central, so that it will be possible for students over a wide area to commute or be transported to the school. (74, p. 138)

The courses should begin in Grade IX. From one third to one-half the pupils' time, inclusive of practical work, should be given to the agricultural courses. Courses should be practical, realistic, and based on farm principles and practices which have been proved to be economically profitable. Content of the courses must be varied to suit local conditions, and formal, prescribed courses should be avoided. Every student of vocational agriculture should be required each year to carry out a successful (program) on the home farm. The farm project should be the vital center of the course around which the theoretical work is built. Teachers of vocational agriculture should be employed for the full year. A great part of their time will be devoted to supervision of the (supervised farming programs). (74, p. 138)

Educational authorities have successfully dealt with this problem in many regions of the United States. Bearing in mind the general similarities in conditions prevalent in the United States and Canada, Canadian authorities would do well to consider conclusions reached south of the international boundary before formulating their own procedures.

Ray Fife, as the result of his investigation into various phases of vocational agricultural education in Ohio secondary schools, concluded that there should be:

- a full-time instructor for a group of 25 or more boys enrolled;
- a half-time instructor for a group of 15 - 25 boys;
- a fifth-time instructor for a group of less than 15 boys enrolled in all-day vocational agriculture classes. (47, p. 48)

C. R. Wiseman concluded that to insure moderate
chances of success in establishment and maintenance of a high school vocational agriculture department there should be:

1. a total enrolment of 100 or more students in the high school; (I11, p.39)

2. the department should be located in a rural community; (Ibid., pp.69-70)

3. an enrolment of more than 20 boys would insure a considerably greater chance of survival of the department than would the enrolment of a lesser number of students. (Ibid., p.58)

Feaster Wolford stated that 30 percent of discontinued departments of vocational agriculture failed because of (a) a lack of farm boys and (b) establishment of the defunct department in a non-farming community. (112, pp.18, 24)

Dickey investigated the possibilities of the establishment and maintenance of vocational agriculture departments in State of Washington secondary schools. Some of his conclusions are:

There is little room for doubt that schools below 100 students total enrolment are in a precarious position in regard to maintaining departments of agricultural education. The schools of from 75 to 100... were selected with great care and because of the excellence of their qualifications other than size. Yet they suffer seriously in comparison with large schools in size of the individual class, and in having sufficient classes in agriculture per school to largely utilize the time of an agricultural instructor and thus secure a man chiefly interested in agriculture. They also suffer as to the salaries they are generally able
to pay, since the larger salaries for agriculture teachers are usually paid in the larger schools and the better instructors tend to be secured by those schools. Yet, for the lower salaried men these schools are forced to pay a higher cost for agricultural instruction per boy than the schools with more enrolment pay for higher salaried and presumably better trained and more experienced men. Consequently, it appears that no schools should be included which have a general enrolment below 75, and those below 100 students should be accepted only with the greatest care that all other criteria for admission are of the very best. Schools with enrolments between 100 and 200 are only better situated in proportion as they advance toward the 200-mark. Above this latter figure the establishment of a department of agriculture in any school seems fairly safe, other conditions being good. Optimum conditions for enrolment in agriculture classes appear to occur most commonly in schools with general enrolment ranging from 300 to 600. (42, p.54)

The area served by the high school should contain between 150 and 300 farms (sizes of these farms is no criterion) to insure reasonable prospects of success of the department; a number of farms greater than 500 assures optimum conditions for such success. A school district is unlikely to maintain a department of agriculture with less than 150 farms, and it does not pass the danger point until it includes 300 farms. (42, p.72)

The possibilities of enrichment and variety in the high school are recognized to increase with the size of the school, within certain limits. The expense of automotive and aviation instruction, for instance, is too great to be borne in behalf of a few pupils in a little school but would not result in excessive per-pupil expense in a very large school where many pupils could be served by the equipment which necessarily must be installed. Hence it requires no difficult assumption to suggest that the likelihood of success in classes in vocational agriculture may also be enhanced in schools of optimum size and decreased in schools with smaller enrolments. (42, p.16)

Valuation per district.....not usually considered a significant factor in arriving at schools to be accepted for establishment of agricultural departments because: the state furnishes enough money to finance departments of agricultural education in any high schools which could otherwise maintain standards sufficient to secure state accreditation.....(p.13)

350-pupil districts composed of a compact plains area with a $900,000 total assessment are probably in a better position than equal area districts assessed at
$2,000,000 but made up of marginal valleys, in so far as transportation costs are involved. (p.89)

Success (in maintaining departments of vocational agricultural education) is understood to mean not merely having a sufficient number of students in classes in agriculture, but also to mean utilization of a full-time or nearly full-time agricultural instructor and the maintenance of agricultural classes at a reasonably low cost for instruction per pupil. (p.163)

There is a definite relationship between the total enrolment of a high school and the number of farm boys enrolled. (p.163)

There is a definite relationship between the number of farms and success in agricultural enrolment. (p.164)

.....the final conclusion regarding the proper base for measuring the agricultural fitness of a school, namely, that the number of farms in a district is in itself the measure of eligibility and not a ratio depending partly upon another factor. (42, p.65)

Omer C. Aderholt, now President of the University of Georgia, in his doctoral dissertation concluded (1, p.89), after canvassing the reactions of sixteen supervisors, twenty-seven teacher-trainers, sixteen teachers, thirty county superintendents, six public school officials: A department with an enrolment of over seventy-five farm boys in more than two in-school or all-day groups would require the full time of the instructor, who could not handle more than fifty additional out-of-school young-farmers or adult-farmers in evening classes; a department of forty to seventy-five farm boys enrolled in two in-school groups would require the half-time attention of an instructor, who could in addition serve seventy-five young-farmers or adult-farmers in classes; ten to forty boys enrolled in day-school would require one-quarter of the instructor's time and would thus
provide for the continuing agricultural education of 100 out-of-school farmer-students; an instructor with no day-school students would be able to enrol 125 out-of-school farmer-students. (p. 39) (At present, it should be said that vocational instructors of veteran-farmers are considered to have a full-load of teaching with an enrolment of 20 to 25 students; these instructors are on the schools' teaching staffs.) Aderholt expressed a conclusion as to the teaching of general agriculture:

Teachers of Georgia are not prepared to give instruction in agriculture, and the result is that this subject either is not given or is poorly taught. It is reasonable to assume that the agricultural program in the common schools of Georgia has made little contribution to the solution of the persistent problems of making a living and living on the farm. (1, p. 21)

Starrak and McClelland investigated several phases of vocational agriculture in Iowa high schools, and said:

High school programs of vocational agriculture have demonstrated their effectiveness, and have gained the confidence of both farmers and school administrators. (p. 800)

Typical programs of nonvocational or general agriculture, as at present conducted in Iowa schools, contribute little to the occupational proficiency of farmers. (p. 800)

The most effective programs of vocational agriculture, are those in which the full time of the instructors in charge is devoted to the various phases of the program. (p. 800)

Until the reorganization of our school districts into larger units of attendance and administration is achieved, one or more of the following plans may be employed: (1) the instructor gives part of his time to agriculture and part to other subjects in the same school; (2) the instructor devotes all his time to vocational agriculture, but in two adjacent high schools; (3) the instructor serves three or more
schools on an itinerant basis. None of these plans has the unqualified approval of leaders in agricultural education; but there are probably some situations where they could be employed with fair satisfaction. (p. 300)

Steps should be taken to promote the introduction of the program...as rapidly as properly qualified instructors are available. Scarcity of such instructors is a chief restrictive factor in the expansion of the program at present. (p. 300)

It has already been pointed out that a large proportion of Iowa's high schools have enrolments and resources much too small to enable them to carry on acceptable programs of vocational agriculture. The added fact that a large percentage of our farm boys attend these small schools (this is equally true of Canadian farm boys), and are not free to attend any others, makes it highly desirable to have vocational agriculture taught in them if at all possible. The problem thus presented is difficult of solution. Other states with large numbers of small high schools have been grappling with this problem. In order to learn of their experience a brief survey was conducted among the supervisors of vocational agriculture in 14 of these states (California, Illinois, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Ohio, Virginia, West Virginia, Wisconsin).

A brief summary of the most significant data obtained in this survey follows:

1. The percentage of high schools considered too small to maintain a full-time vocational agriculture instructor ranged by states from 8 to 75, with a mean of 39.5 percent. In five states less than 25 percent were considered too small; in three, from 25 to 50 percent; in two, from 50 to 75; and in five, 75 percent.

2. The minimum number of high school students recommended for a program in vocational agriculture with a full-time instructor (assuming also young-farmer and adult-farmer classes) ranged from fifteen to forty. Only one thought fifteen were enough; four believed twenty were necessary; four set the minimum at twenty-five; three at thirty; and three, thirty-five to forty.

3. The percentages of teachers in these fourteen states who devoted their full time to vocational agriculture ranged by states from 17 to 100. The median percentage was 70. In all but two states the percentage was 50 or above. In only one state did 100 percent of the teachers devote their full time to vocational agriculture.
The percentages of teachers devoting three-quarters of their time to vocational agriculture ranged by states from 0 to 42, with a median of 7.8. Corresponding figures for one-quarter time were 0 to 11, with a median of 3.2.

4. In 50 percent of the states surveyed the total full-time activities of the teachers of vocational agriculture were restricted to one school each. In remaining states the percentage of teachers serving two schools ranged from two to thirty-five. The median percentage was 7. Only one state had teachers serving three schools each, and that only 2 percent were so employed. No state reported having teachers serving four or more schools.

5. Eight of the fourteen states had one or more schools employing two full-time teachers of vocational agriculture. Three states had only one school each with two such teachers; one had two; one had three; one, four; one, eight; and one, fifteen.

The most common arrangement in the majority of the states surveyed was that in which a full-time instructor was employed in each school. In two states 100 percent of their vocational agriculture teachers were so employed. In only two states were the majority of the teachers employed on any other basis.

In two states the majority of schools offering vocational agriculture employed part-time teachers of the subject. Five states had no schools with part-time teachers. In four states over one-third of the schools offering vocational agriculture employed teachers on a part-time basis.

Eight states had some schools in which the vocational agriculture was carried on by one teacher serving two adjacent schools (twin departments). One state had 154 schools served in this manner; another had sixty-four, another, twenty; while five had from one to ten schools.

6. Five states reported that twin schools had been fairly satisfactory; in the remainder of states they had been regarded as unsatisfactory. Nine believed that the plan of using one teacher to teach in two schools was quite unsatisfactory as a permanent solution, three that it was fairly satisfactory, and one judged it to be fully satisfactory. The following advantages were reported for this plan:

(a) Keeps departments open when teachers are scarce; (b) Uses more of teacher's time in teaching agriculture; (c) provides a way of carrying on vocational
agriculture in small schools; (d) provides well-qualified instructors in the smaller schools; (e) reaches more farm boys with vocational agriculture instruction; (f) increases total enrollment in vocational agriculture for the state.

The disadvantages reported were as follows: (a) Teacher is unable to maintain good supervised farming programs in two communities; (b) Communities object to sharing services of teacher; (c) too much driving involved; (d) difficult to serve two communities; (e) not enough time left for adult-farmer and young-farmer classes.

7. Only five states of the fourteen reported the use of the plan in which an itinerant teacher served three or more schools. Of these five, two regarded it as very unsatisfactory, one as unsatisfactory, while two gave no opinion. None considered it a satisfactory solution to the small school problem. The following disadvantages were mentioned; (a) Teachers don't like it; (b) program is too thin; (c) instructor's time with students is too thin; (d) too much like club work.

8. Five states reported that they expected reorganization of school districts would come soon enough to enable them to meet the need for expansion of the program of vocational agriculture on the basis of one full-time instructor per school. Six states replied in the negative; the remainder were non-committal.

9. Among the miscellaneous suggestions offered for the extension of vocational agriculture in small schools were the following: (a) Require all freshmen boys (Grade IX) to take vocational agriculture......... (e) provide tuition and transportation to schools for those who wish to study the subject; (f) establish area vocational schools (e.g. Olds, Vermilion, Fairview in Alberta) in which vocational agriculture will be taught; (g) have instructor teach vocational agriculture part time and other school subjects part time; (h) put two teachers in larger schools and expand evening and part-time instruction......... (93, pp. 828-31)

Starrak and McClellan offered these principles and recommendations about future direction and development of vocational agriculture programs.
1. High school programs in vocational agriculture have undoubtedly proved their worth; and have gained the confidence of both farmers and school administrators. This is demonstrated by the rapid and steady growth all over the United States, by the reluctance of schools to abandon the program once they have it, and by the long list of high schools which are ready and eager to introduce the program. The chief limiting factors at the present time (1949) are the scarcity of qualified teachers and the shortage of federal and state funds to support an expanded program.

The evening classes for adult farmers appear to be especially appreciated. In several schools programs in vocational agriculture have been introduced because of the insistence of the farmers of the community who wished the opportunity to attend adult evening classes in agriculture. Some adult-farmer classes have been forced to set a limit to the number of enrollees and have waiting lists of farmers who wish to enrol.

2. Programs of nonvocational agriculture (general agriculture) as at present conducted contribute little to the occupational proficiency of prospective farmers. Doubtless the subject could be so organized and taught as to make substantial contributions to the general education of all Iowa youth. But at present the typical teacher of the subject is inadequately prepared in agriculture and has too many other subjects to teach. Until more extended preparation in both the general and specific aspects of agriculture and rural life is required of teachers of general agriculture, and until the subject is given a more important place in the high school curriculum, it will fail to make much of a contribution even to general education.

3. The most effective programs of vocational agriculture are those in which the full time of the instructors in charge is devoted to the various phases of the program, i.e., the all-day, the young-farmer and the adult-farmer classes. These three phases must all be regarded as essential if the program is to serve the educational needs of all the farm people of the community.

4. While programs of vocational agriculture on anything less than a full-time basis for one instructor are not to be recommended, at least as a permanent solution to the problem, they may have to be offered for the present by the smaller schools in order to make instruction in vocational agriculture available to more of the youth who need it. Three plans of achieving this objective, listed in order of their general effectiveness, are in use in the United States today: (a)
that in which the instructor of vocational agriculture gives his services to one school, but devotes only part of his time to teaching agriculture vocational, and the remainder to other subjects; (b) that in which the instructor devotes all of his time to vocational agriculture, but serves two adjacent high schools, carrying on programs in both; and (c) that in which several small high schools engage the services of one instructor who spends only a day or two per week in each school....there is some basis for assuming that in any school the minimum number of farm boys who wish to study vocational agriculture should be thirty-five to forty, in order to justify the introduction of a full-time program (p. 823). Even if the minimum is placed at a much lower figure the majority of Iowa's (and of most Canadian provinces') high schools are too small to qualify by this criterion...

5. There are......high schools not at present offering vocational agriculture which have enough farm boys enrolled to satisfy the proposed standard of thirty-five to forty students in the program. 

6. Although few attempts have been made in Iowa to offer vocational agriculture in towns and cities......there are instances in the state where such programs have been successful. A careful selection could be made among our larger towns and cities, based upon factors known to be essential to an effective program of effective agricultural education. Those ranking high in the possession of essential features could be encouraged to introduce the program.(93, pp. 831-833)

For those farm boys interested in becoming future farmers and who come from areas too sparsely settled to qualify as suitable for the organization and successful carrying on of agricultural education high school departments, the Provincial Agricultural Schools or Agricultural diploma courses offer the advantages of adequate numbers and facilities for educational and social experiences not available locally. Follow-ups through the staff of District Agents and Home Economists, are to some degree
provided for after the student leaves the Agricultural School, but integrated on-the-farm projects concomitant with the school experience generally will be lacking.

United States agricultural education writers concede the functionality of secondary school vocational agriculture teaching. Sufficient numbers of satisfactorily educated agriculture teachers are becoming available. The problem currently appears to be that of determining the minimum rural community high school enrollment which will provide a sufficient number of farm boys interested in taking vocational agriculture in the high school, and render reasonably certain the continued maintenance of the high school vocational agriculture department.

A review of the literature affords a variety of estimates as to the minimum numbers of farm boys necessary to the successful establishment and maintenance of a department of vocational agriculture. All seem agreed that a total enrollment of 100 students in a rural high school center is the minimum below which a continuing successful vocational agriculture department is uncertain. For a full-time instructor the minimum number of boys might be set at twenty-five, with no particular agreement apparent. One investigator sets a minimum of twenty boys as that assuring continued success of the department. In Alberta it has been found that in the cases of small high schools the
number of boys available for vocational agriculture courses is apt to fluctuate to a point below a satisfactory minimum number of agricultural students. These instances are where the minimum of total enrolment is well below the 100 minimum set by investigators in the United States. Wolford (112, p.18; p.24) gives this fluctuation downward along with establishment in non-rural areas as the frequent reason for the discontinuance of departments. The writer is inclined to question the higher demands suggested by Aderholt. Not only is his set of numbers higher than all other investigators' estimates or conclusions, but the present program of veteran-farmers' vocational agriculture in the United States program sets the optimum number of enrollees in a class as in the twenty-thirty range, and a part-time or whole-time instructor is sought after where there are larger numbers desiring this type of adult education. Aderholt's estimate of a class of 125 out-of-school farmer-students is five times the current veteran-farmer class enrolment.

Dickey's(42) investigation in the state of Washington led him to use the number of farms in the high school constituency as an important criterion. He suggested 200 farms as the minimum for the establishment and permanent maintenance of a high school vocational agriculture department; this uses the number of farm homes as the measure of
likely success. Dickey did not say what the relationship was between the total enrolment in a high school and the number of farm boys to be expected.

The various figures presented earlier furnish some guidance to those who are contemplating the establishment of vocational agriculture departments. It must be remembered that in all of the investigations cited the four-year high school was envisioned, and so total enrolments would be for Grades IX, X, XI and XII.

There appears to be no encouragement in the literature available for the teaching of general agriculture by teachers not so technically educated. Nova Scotia through its Department of Education regulations, has restricted the teaching of agriculture in its composite schools to those technically educated in agriculture. Aderhold and Starrak and McClelland (A Canadian) definitely speak against the practice of lay teachers being placed in charge of general agriculture courses in high school. The Saskatchewan Institute of Agrologists' committee on elementary and secondary education at its annual 1948 meeting stressed the need of teachers who would be qualified to give a course in agricultural appreciation for all students in high schools. Special stress was placed upon the need for an appropriate training program for young farm people between the ages of nineteen and thirty. (90, p. 318) We might
conclude from these sources that there is a widely held belief among educators in agricultural education that the teaching of agriculture should be restricted to those with a background of agricultural education. There would seem to be a useful educational function for general agricultural education courses in those schools possessing a vocational agricultural education department. Such courses, given by teachers experienced and educated in agricultural living, could provide vitalizing surveys to urban children and exploratory experiences to farm boys and girls.
CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The English-speaking world has committed itself to a society which it styles a "democracy" -- social and political as distinguished from the economic. Admitting varied and constantly fluxing definitions of democracy, two basic characteristics have remained almost constant during the last three centuries (Chapter IV). These two persistent qualities of democracy are (1) the sharing common interests and purposes and (2) the worth and intelligence of the individual. Our schools must throw their weight toward the development of intelligence in the solution of problems as well as toward the creation of a sincere and sympathetic concern for others in the solution of common problems. One definite function of our schools must be the perpetuation of these fundamental ideas. Teachers must teach for these two qualities directly.

The concern of education with the development of intelligence in problem-solving is not new. In the eighteenth and nineteenth centuries Rousseau and Fellenberg supplied the basic philosophy associated with this idea. Rousseau in stressing the understanding of the child and his environment as the basis for determining education programs, and Fellenberg in his believing that education
could and should take this conception of the child and his environment and become a strong force in improving environmental conditions, made outstanding contributions to educational thought. Judd stressed the value of generalization -- of teaching learners to apply principles to varying situations. Our own John Dewey further developed Rousseau's and Fellenberg's viewpoints and placed emphasis upon the nurture of reflective thinking.

John Dewey believed that the purpose of the school is to develop reflective thinking in the individual. The reflective thought process is pictured as commencing with a difficulty or "crossroads" situation and progressing toward a conclusion and generalization.

The Dewey philosophy implies for vocational education in agriculture (1) that the farm boy and the farmer should be carefully studied so that the teacher may understand the individual himself, his emotions, philosophy, and educational background; (2) that the environment should be carefully studied to uncover situations from which problems might arise; and (3) that the student should be brought face to face with genuine farm problems of his environment and taught to think them through systematically. Reflectively thinking problems through should lead to more intelligent solutions and when executed these solutions should bring about desirable alterations in the farm boy's
environment.

An effort was made in Chapter IV to organize a point of view or philosophy of education akin to those of Rousseau, Fellenberg, and Dewey and to indicate the application of such a point of view to the unique field of vocational agricultural education in rural Canadian secondary schools.

If the major purpose of vocational education in agriculture is that of striving toward the democratic ideal by putting emphasis upon reflective thinking and sharing common interests and concerns, then such education will endeavor to bring into focus the real needs and problems of an economic and vocational nature. It will assist farm boys and farmers in the intelligent solution of such problems in the light of what is best for all who are involved in these problems. The implication is that the agricultural teacher must know in detail much about the farm folk and the environment in which they live their daily lives.

In order to set up such a program (Chapter I), educational administrators must know (1) the number, location, and educational backgrounds of farm folk; (2) the agricultural environments of these people; and (3) the educational facilities available and further facilities essential to the carrying on of an organized instructional program in the problems discovered.

If the philosophy developed in Chapter IV is approved
as a basis for action, an important problem facing administrators laying out a vocational education program is that of delineating the environmental factors which are involved and which must be considered in achieving the purpose. Chapter III provided an analysis, development, and interpretation of resources and needs for an intensified vocational agricultural program in any one or all of the Canadian provinces.

Agricultural education has occupied a prominent place in the educational programs of the majority of western nations since the development of the natural sciences in the seventeenth century. (Chapter II). This development in Europe created a serious realization that science could contribute a great deal toward the strengthening of agriculture and thus make it more able to meet the increasing needs of populations. The rapid growth of the agricultural industry in North America intensified the need in Europe to apply the new knowledges to the promotion of agriculture. The century centering in 1800 witnessed the organization of fairs, agricultural societies, and institutions of agricultural research throughout Europe.

In Canada there was some interest in agricultural education from the earliest days of farm settlement. Quebec agricultural institutions were evident as early as 1668 under Bishop Laval. Records indicate the organization of
agricultural fairs and societies in New Brunswick in 1790 and in what is now Ontario in 1792. Nova Scotia agricultural education activities were evident as early as 1818, and in Prince Edward Island such activities were recorded as at the same time. Provincial Departments of Agriculture took form in Quebec (1853), New Brunswick (1855), Nova Scotia (1884), and in Ontario a Commissioner for Agriculture (1869) preceded the formation of the Department (1888). The federal Department of Agriculture was organized in 1868, and soon after this the extensive interlocking system of experimental farms and stations, agricultural research, regulatory and extension services began to emerge. In the newer provinces Departments of Agriculture were established immediately following the organization of the provincial governments. Agricultural colleges were organized by either Departments of Education or of Agriculture in various provinces; education of research, technical and extension workers, as well as agricultural teachers, are important functions of agricultural colleges. Federal and provincial agricultural authorities are interrelated in their organization and functionings.

The creation of large administrative education units in Canada is a relatively recent development. (Chapter II) Beginning in Alberta in 1936, within six years fifty-six school divisions had absorbed the preponderant portion of
that province's educational machinery; up to June 30th, 1950, 140 Alberta village and town school districts without duress had merged their interests with those of contiguous divisions.

The British Columbia evolution from many small districts to larger, more resourceful units of administration left but fifteen isolated small autonomous school districts. Over three quarters of Saskatchewan's rural school districts have been included in large administrative units.

Protestant Quebec and New Brunswick have established the nuclei of community secondary school systems. Nova Scotia has completed a system of rural secondary community schools serving the whole province. (23, 1948-9, pp.310-12)

In the provinces mentioned above provincial school inspectors took active parts in the large unit establishments and are now attached as superintendents in the capacity of advisers.

Wolford (p.195) emphasized the restriction of vocational agricultural secondary school departments to farming communities with sufficient farm boys to warrant establishment and assure successful continuing maintenance of such departments. (112, p.181)

Aderhold (p.197) concluded that there should be an enrolment of ten to forty boys to justify a quarter-time agricultural teaching program; forty to fifty farm boys to
justify a half-time teaching program; and an enrolment of at least seventy-five farm boys to justify the full-time employment of an agricultural instructor in the secondary school. (1, p. 89)

Rife (p. 194) placed the number of boys essential to a full-time vocational agricultural teaching program in all-day school classes as twenty-five or more, with a half-time teacher engaged with from fifteen to twenty-five boys and a fifth-time teacher engaged with less than fifteen farm boys. (47, p. 48)

Dickey (p. 195) used as a gauge the number of farms in the school's constituency as well as the total enrolment in the four higher grades of the secondary school. He considered 150 farms and/or a total enrolment of 200 pupils as the minima below which departments of vocational agriculture would be in an uncertain or precarious position. (42, pp. 65, 72)

The Nova Scotia Interdepartmental Committee on Agricultural Education recommended that not fewer than twelve boys who have definitely decided to be farmers should be available for the vocational agriculture course. (74, p. 138)

There is considerable agreement in setting the minimum agricultural qualification of the vocational agriculture teacher at the agricultural college degree level. Experience in the education of teachers of agriculture has
indicated that a longer supervised practice teaching program is necessary for teachers of agriculture than for teachers of other fields (84, p.144) (95, pp.515-531) (74, p.138). General secondary school certification is a standard requirement across North America. In the United States specific preparation in the philosophy, psychology, historical development and prevailing programs in vocational agricultural education provided in college Agricultural Education programs.

Canadian Colleges or Faculties of Agriculture, with minor changes or additions in their services, could offer theoretical and practical Agriculture backgrounds adequate for the preparation of secondary school vocational agriculture teachers. Canadian Colleges or Faculties of Education, particularly when associated on the same campus with Agriculture, could with minor additions in services provide the necessary Education backgrounds for these teachers. The University of Alberta is one well situated in such respects; not only are Agriculture and Education closely associated, but the Faculty of Education now offers interested and otherwise qualified students an adequate theoretical background of courses supplemented by a (too) brief supervised practice experience in the excellent Red Deer Composite High School Agricultural Department.

Education authorities of several provinces, particularly
Nova Scotia, New Brunswick, Quebec, Ontario, and British Columbia, have made use of federal vocational education funds in the capital, administrative, teaching-equipment and teacher-education phases of secondary school level agricultural education. Dauphin, Manitoba Composite High School has benefited by the use of federal vocational funds. (84, p.138) The secondary school agricultural department at Chilliwack, British Columbia, likewise has had federal vocational funds for building and equipment purposes. (62) British Columbia provides provincial grants up to 50% of the building and equipment costs (14); this would be matched by federal vocational education funds to the extent that the latter were available. In the instance of the Chilliwack vocational agriculture department, the federal government underwrote 35% of building and equipment costs.

In Alberta federal vocational education grant monies have been used in provincial government Schools of Agriculture building and equipment needs at Fairview, Olds, and Vermilion, and in the construction of vocational secondary schools in the cities of Calgary and Edmonton.

As far back in years as 1913 some interest in vocational education of farm youths was recorded. In that year the report of the Commission of Industrial and Technical Education (25, pp.13, 35) recommended the establishment of
secondary school vocational agricultural courses in Canadian farming communities. The federal governments of the day in 1913 and in 1940 enacted legislation in conformity with such recommendations. Federal grants in aid of vocational education are small in terms of current needs, notwithstanding recommendations from provincial and federal advisory boards periodically addressed to the responsible federal Minister of the Crown.

The fairly common practice among provincial governments of themselves using such federal vocational education funds as are available may be one deterrent in the creation of a public opinion directed toward increased federal appropriations for vocational educational purposes. In Alberta there are indications of growing interest on the parts of rural educational authorities in their participation in the use of such funds.

Alberta became a province in 1905. Six provincial agricultural schools were established in what were in 1913 populous farming areas. The College of Agriculture was established within the University in 1915. Four of the agricultural schools had brief careers and a fifth one has operated but spasmodically, so that instead of the 48,000 student-attendances provided for less than 9,000 boys and girls have enrolled. A new agricultural school has been situated at Fairview in the Peace River Valley to encourage
attendance in that otherwise isolated area; the Fairview school will open in October of 1951 and is designed to accommodate 120 boys and girls.

In the College of Agriculture (now the Faculty of Agriculture) enrolment has kept pace with the growth of the farming population of the province; its 1928 graduating class was eight, while its 1950 graduating class numbered over one-hundred. The first degree offered was that of Bachelor of Scientific Agriculture (B.S.A.) at the end of three five-month winter semesters. By 1924 the semester had been extended to seven months' duration. In 1927 the Bachelor of Science degree was instituted with full university recognition. As page 131 suggests the Faculty has educated few actual farmers, but it has been a source of supply of men required in agricultural and allied industries, as well as in leadership and extension throughout the world; this record is typical of most Canadian agricultural colleges.

During 1937-39 a dormitory for farm students was operated in conjunction with the Taber schools; live stock space was provided for and some students' cows supplied the milk on an accounting basis. In 1940, R. V. McCullough, then transferred as superintendent to the Bassano area, was instrumental in establishing a vocational agriculture department at the Brooks high school, with the agricultural
instructor acting as dean of the boys' dormitory. The Brooks venture, otherwise successful, was closed after two years for the want of a qualified instructor. Cardston high school in the St. Mary's River Division established a vocational agriculture department in 1946. Since 1946 there has been a gradual increase in the number of high school centers offering vocational agriculture, until during 1950-51 there were ten centers employing eleven instructors -- ten of which held college degrees in agriculture plus high school teaching certification.

From the foregoing it will be realized that vocational education in agriculture in Alberta secondary schools has made some progress and that this type of education is gradually finding a place in our program of rural education. There is some reason to state that within the narrow limits so far achieved it is already making a contribution to the intelligent solution of our complicated and pressing rural problems. After school-leaving records of all former agriculture students are being carefully compiled.

About 47% of Alberta farms are termed grain and hay, 16% mixed, 14% subsistence and combination, 13% livestock, 3% part-time dairy, 1% dairy, and 6% miscellaneous in character (Table XXVI). The grain specialty and the livestock specialty farms are mainly in the southerly portion of the settled part of the province, with combination
farming predominant in the south central portion, and mixed farming about the urban centers. (See map: Alberta Types of Farming)

About 28% of Canadian farms are classified as grain and hay, 27% as subsistence and combination, 18% as mixed farming, 9% as livestock, 7% as dairy, 5% as part-time, 2% as vegetable, fruit and nursery, 2% as forest and apiary, and 2% as miscellaneous in character. (Table XXVI and map: Main Types of Farming in Canada)

Six secondary school centers already possessing agricultural departments and having a total enrolment of approximately 200 students or more are Athabasca, Stony Plain, Cardston, Lacombe, Red Deer, and Medicine Hat. (Tables XLVI, XLVII)

Conclusions

Intermediate maxima of centralized school populations will be reached as the immediate result of wholesale enlargements of education administrative areas. As roads are improved and limitations of the smaller concentrations of educational services become apparent to administrators, still stronger centralizations will emerge. Thus more rural secondary schools will come to possess the minimum resources essential to the institution and successful maintenance of vocational education departments.
### TABLE XLVI

**BOYS IN SELECTED ALBERTA SECONDARY SCHOOLS, 1950-51**

<table>
<thead>
<tr>
<th>School</th>
<th>Gr.IX</th>
<th>X</th>
<th>XI</th>
<th>XII</th>
<th>Total</th>
<th>Ag'l Boys</th>
<th>Ag'l T'ch's</th>
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<td>12/12</td>
<td>6/12</td>
<td>74/80</td>
<td>41</td>
<td>Full</td>
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<tr>
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<td>1/</td>
<td>1/</td>
<td>9/</td>
<td>22/</td>
<td>10</td>
<td>1/5</td>
</tr>
<tr>
<td>Magrath(3)</td>
<td>8/22</td>
<td>5/11</td>
<td>7/10</td>
<td>13/16</td>
<td>33/59</td>
<td>18</td>
<td>1/4</td>
</tr>
<tr>
<td>Medicine Hat(4)</td>
<td>3/76</td>
<td>18/92</td>
<td>16/80</td>
<td>1/49</td>
<td>38/297</td>
<td>14</td>
<td>1/2</td>
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<tr>
<td>Red Deer(5)</td>
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<td>53/92</td>
<td>57/103</td>
<td>85/138</td>
<td>195/338</td>
<td>48</td>
<td>2G/5</td>
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<tr>
<td>Lacombe(6)</td>
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<td>5/23</td>
<td>53/106</td>
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<td>1/3</td>
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<td>13/20</td>
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(Numerators, farm boys; denominators, total boys enrolled. Figures in brackets refer to map of Alberta's Soil Zones.)
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TABLE XLVII (continued)

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The tendencies in most provinces across Canada to organize larger units of educational administration presage increasing opportunities for the establishment of educational services which are possible only where sufficient concentrations of pupils prevail. With this rapidly developing situation is evident a keen interest in weighing the relative advantages of combining vocational with general educational services for the great mass of secondary school pupils.

Surveys previously referred to (Chapter III) point to a strong majority opinion in favor of educational services which will appeal to and better prepare our future farming populations for life and their life's work.

The prospects for a larger number of rural secondary schools, sufficiently strong in farm boy enrolments to justify the institution and successful maintenance of vocational agricultural departments, appear to be excellent. These establishments will, as in the past, doubtless be delayed by the traditional shortages of suitable instructors offering themselves for this type of educational service. Such has been the case in Nova Scotia, Ontario, Alberta, and British Columbia. If such a conclusion be a sound interpretation of current tendencies, then we should anticipate far greater demands for capital expenditures. At the same time we should encourage those young farm
people who have the essential capacities and backgrounds of successful vocational agriculture teachers to prepare themselves for this type of community service without delay.

The prairie provinces in general would duplicate those conditions found in Alberta; it is likely that development of secondary school vocational agriculture departments in Saskatchewan and Manitoba high schools could closely parallel that in Alberta. Other Canadian provinces, as well, should scrutinize the history and present status of such establishments in near-by states where climatic conditions would favor similar human adjustments. This reservoir of experiences should not be neglected. Mr. C. J. Frederickson, Inspector of Schools at Chilliwack and Co-ordinator of Vocational Agricultural Education in British Columbia, writes:

While we are depending heavily on the United States' pattern for guidance we feel that considerable modification must be made for the various conditions found in this Province.(13)

Mr. Frederickson has drawn attention to the great variety of conditions to be encountered and to be provided for in any large area. Indeed, similarity of conditions rather than that of distance will govern the tendencies of neighboring agricultural departments to follow similar or quite differing programs.

The number of Alberta rural secondary school communities with sufficient farm boys to warrant the establishment
and continuous maintenance of a vocational agriculture department is not large, but is encouraging. (Tables XLVI, XLVII) This number would be twelve to fifteen rural secondary schools if we accept the total enrolment of 200 pupils as the more or less critical point below which the status of vocational departments is deemed to be precarious. Some cities, such as Camrose, Drumheller and Lethbridge, are rural centers, but as they have no cooperative agreements with contiguous school divisions few farm boys attend their secondary schools. Calgary and Edmonton attract some farm boys (e.g., the Clover Bar School Division vans high school pupils into Edmonton's Garneau High School). Generally, farm children attending city high schools are from remote areas lacking in secondary school facilities and for the purposes of this study they must be disregarded. Adjacent to the city school districts, the common practice is to convey children away from the city boundaries to small divisional high school centers (e.g., Fort Saskatchewan, Leduc, Namao, Stony Plain).

Seven rural Alberta secondary school centers -- Barrhead, Grande Prairie, Leduc, Raymond, Taber, Vegreville, and Wetaskiwin -- would appear to have sufficient farm boy resources for the establishment and successful maintenance of vocational agriculture departments. (Tables XLVI and XLVII) Grande Prairie is seriously considering the establishment of
a department in the summer of 1951 in conjunction with the Grande Prairie School Division.

The four smallest Alberta secondary school centers currently operating vocational agriculture departments are Glenwood, Magrath, Fort Saskatchewan and Spirit-River-Rycroft. (Tables XLVI and XLVII) Spirit River (Prairie River school) and Rycroft are seven miles distant but both are under the Spirit River School Division administration. This latter center has already suffered an embarrassing reduction in the number of boys enrolled in vocational agriculture classes and the future of the department is insecure; fortunately it was expedient during 1950-51 to have a group of twenty-five Grade IX boys in a general agriculture class and thus better employ the agriculture instructor.

The Spirit River-Rycroft experience illustrates the difficulties of maintaining vocational educational services in a marginal or sub-marginal situation. The group of smallest rural secondary school centers must be prepared for frequent occurrences of low enrolments in individual classes other than those basic to general education or matriculation standing. As in all situations, local factors and the influences of the school principal and/or agriculture teacher will prove essential elements in deciding the success or failure of any vocational education venture.

Many major agricultural problems have their beginnings
on individual farms; in number and extent these problems quickly may become community and national problems. The control of Lancaster disease in poultry is one example of a problem which has rapidly evolved from an individual, to a provincial, and then to an interprovincial or national problem. The problems of controlling soil erosion, water conservation, and increasing the farm per capita income are provincial, national, and international in their implications. Solutions of these problems demand education leading to group action of farm folk as well as action on the part of all sections of the community -- local, provincial and national.

The method used in arriving at the needs for secondary school vocational education in one province of Canada may, with minor variations, be used in determining the secondary school vocational agricultural education needs for any other province and thusly for the whole of Canada.

Under prevailing federal dollar-matching schemes, the youth of the poorer states and provinces are denied educational opportunities open to the youth of the richer states and provinces. To that extent such youths are handicapped in preparation to deal with life's problems. In short, the current method of selective distribution of federal grants-in-aid of vocational education withholds assistance to the most needy. By supplying help to the less needy communities
it widens the range of abilities developed through vocational education -- not an intelligent process, or one conducive to national welfares.

Alberta through the provisions of its School Grants Acts has for many years distributed its grants-in-aid of education very much on the basis of relative needs -- at one time the richest districts (in amount of assessment per classroom) received as little as seventy-five cents per room and the poorest districts received a maximum grant not exceeding three quarters of the teacher's salary. In this manner children of the poorer areas were assured of a modicum of educational experience.

Such equalization of opportunity is sensible and just. The federal governments will have no difficulty in finding ways and means of distributing vocational education financial assistance on the basis of relative needs rather than upon the (to them, more economical) present archaic dollar per dollar basis.

In the instance of a Lethargic state administration the local educational authority is nevertheless able to avail itself of federal grants-in-aid of vocational education. In Canada the federal authorities will participate in a venture only to the extent that a provincial authority is prepared to participate. British Columbia provides for a provincial participation of up to 50% of the school
building - equipment and maintenance costs (14); this means that within the limits of available funds the federal authorities will participate to the extent of 50% in school building-, equipment-, and maintenance costs within the scope of the federal vocational training act. In Alberta (7) the maximum provincial grant-in-aid of school building is 20%; this automatically limits the possible federal contribution to 20% in the case of vocational educational buildings; more generous Alberta equipment-, maintenance-, and teaching grants-in-aid do permit of federal participation up to a maximum of 33%.

Local progressiveness and needs in Canada should be considered in the distribution of federal funds in aid of vocational education, rather than variable provincial policies. The proposed policy might require a greater participation by the federal authorities in the distribution of grants, but such participation would lead in many instances to a more just and intelligent distribution.

**Recommendations**

In this dissertation a philosophy of vocational agricultural education has been presented. Extensive analyses of certain human, agricultural, and educational resources have been made. The following recommendations are judgments growing out of the mass of information earlier
presented. These data, along with the point of view expressed in Chapter IV, are the bases for the recommendations.

The recommendations are directed at three areas: (a) the general character of vocational agricultural education in secondary school, (b) the tentative number of departments which might be established, or the number of teachers required to meet the needs with some view to permanence of service, and (c) federal financial participation in establishment and maintenance of vocational agriculture secondary school departments:

1. Those who have the essential capacities and backgrounds for successful teaching of vocational agriculture in secondary schools should be encouraged to prepare themselves for this type of service.

2. Canadian educational authorities should acquaint themselves with the development and current status of secondary school vocational agricultural education in adjacent and other United States.

3. Alberta vocational agricultural programs should include English, Social Studies, and Health and Physical Education to the limit provided in the secondary school system (about one third of the total secondary school program), with mathematics and sciences related to the needs of Agricultural Education students. There should be
opportunity for the satisfaction of individual needs in the areas of the Fine Arts, Industrial Arts (Farm and Home Mechanics is an integral part of the vocational agriculture program), and the universally useful commercial courses.

In the vocational phase, supervised farming programs in our Alberta rural secondary schools must deal with the various local forage crops, dairy- and beef-cattle, poultry, swine, sheep, horticulture and vegetable gardening, canning crops (around Lethbridge and Taber), wheat, oats, rye, and flax in various combinations. The program must deal in all portions of the province with problems of wind and water erosion, increasing yields of crops and livestock, irrigation (flood and sprinkler) on large or small scales, bettering the farm equipment, increasing and improving farm home conveniences and housing, and increasing the farm income.

The vocational agricultural phase per se should absorb approximately 40% of the one hundred credits leading to a General High School Diploma; if introduced at the Grade IX level, vocational agriculture should absorb from 30 to 32% of the credits possible in the four grades. These percentages are based upon examinations by the writer of secondary school programs prevailing in several of the United States.

4. Full-time departments of vocational agricultural
education should be established and/or successfully maintained in the following secondary school centers: Athabasca, Barrhead, Cardston, Grande Prairie, Lacombe (present arrangement with Canadian Union College seems very satisfactory), Medicine Hat, Raymond, Red Deer, Stony Plain, and Taber. Half-time or better-than-half-time teaching programs should be established and/or successfully maintained in these secondary education centers: Magrath, New Vegreville, Wetaskiwin and Canadian Union College. An indefinite number of smaller secondary rural schools, including Fort Saskatchewan, Glenwood, Spirit River-Rycroft, (points already with established departments) could maintain agricultural departments with instructors devoting less than one-half of their teaching times to agricultural education.

5. Group action of farm people in attacking community problems should be directly taught and striven for in all educational activities.

6. Canadian education authorities in constructing rural education programs should carefully investigate the approved experiences, conclusions, and resulting practices in vogue in the United States.

7. Rural education authorities should be fully acquainted with the conditions under which federal grants-in-aid of vocational education may be available to them.

8. Educational authorities should press for the
availability of federal funds in aid of vocational education on the basis of relative needs rather than upon the ability to match available federal monies.

9. Local educational administrative bodies should seek an arrangement whereby federal vocational grants could be secured directly rather than as funds only available when the province participates by matching the federal expenditure.
CHAPTER VI

A GUIDE TO PROGRAM MAKING IN VOCATIONAL AGRICULTURAL EDUCATION

The program in vocational agricultural secondary school education offered in this study for teacher-reference deals with the HOW rather than with the WHAT(100). It is an attempt to assist the teacher by suggesting how a program should be set up rather than what should be included in it. Its use will necessitate the teacher's first thoroughly canvassing the human, environmental, and educational resources of his community. A course of study should also be the result of thorough reference to the local agricultural educational advisory council in the case of an established agricultural department. Major areas for teacher-exploration are (Adapted from Ten Pas):

I The discovering of the human, environmental and educational resources.

II Guidance services extended to boys and their parents in the selection of supervised farming programs based upon expedient agricultural enterprises and resultant problems.

III The organization of a beginning course of studies (around areas I and II based upon conclusions reached during and after the community survey (I) and the final determination of the pupils' supervised farming
programs (II).
These large areas may be broken down as below:--

I Discovering the community resources:

A. Selecting and using available sources of information

1. Records of the school wherever these are available for reference
2. Records of other and agricultural agencies
3. Soil surveys (available for many areas from federal, provincial, or agricultural college departments)
4. Census data
5. Soil Conservation Services (local, provincial, national)
6. Economics Division, Farm Marketing Service
7. Prairie Farm Rehabilitation Administration
8. Provincial and Federal Departments of Agriculture, and Colleges of Agriculture through their various experimental, extension and publication services
9. Provincial and Federal Forestry Services
10. Canadian Council of Agriculture, Provincial Councils of Agriculture, Farmers' Unions, Farm Women's Unions, and other farm organizations
11. Plant and Animal Crop Improvement Associations
12. Extension services of commercial organizations dealing with farmers
13. Newspapers and (especially farm) periodicals
14. Individuals in the community - local farmers, professional workers, business men, public officials
15. Private farm management services, where such are available
16. Farm cooperative services

B. Making community surveys to secure information relating to conditions and needs
   1. General farm surveys
   2. Farm enterprise surveys

C. Discovering kinds and extent of opportunities in farming in community, individuals and farms

D. Discovering what needs to be done to improve the living conditions of the farm people
   1. Building needs
   2. Sanitation needs
   3. Farm home equipment and improvement needs

E. Choosing objectives to meet the needs of the community
   1. Creating and developing healthy interests
   2. Developing fundamental understandings from which will emerge continually desirable
appreciations and receptive attitudes
3. Developing functional, academic and fine arts abilities
4. Developing social skills and graces
5. Maintaining a pleasing environment
6. Becoming established, placed, or employed in farming or related occupations
7. Managing and operating a farm business more effectively
8. Conserving soil and other natural resources
9. Producing farm commodities more efficiently
10. Marketing farm commodities more efficiently

F. Determining how to use the following agencies most effectively:
1. Local advisory committee (appointed by School Board on recommendations of principal and agriculture instructor)
2. All-day instruction - Classroom and Farm Shop activities growing out of
   (a) Supervised Farming Programs and
   (b) Future Farmers of Canada
3. Young farmer supervised farming program and classes
4. Adult farmer supervised farming program and classes
5. Adult organizations
6. Summer program
7. Publicity (whole school rather than agricultural department)
8. Community service
9. Outstanding farmers

G. Evaluating the tentative community vocational agriculture program by
1. Determining evaluative criteria to be used
2. Selecting procedures to be used in making evaluations; persons cooperating, group conferences, field studies, etc.
3. Making evaluation of progress of current school programs
4. Determining progress made
5. Making periodical evaluations of progress

H. Improving and replacing of sections of program as a result of evaluation process - discovering weaknesses and suggesting remedies

II Guidance services extended to boys and their parents in the selection of supervised farming programs

A. Investigating opportunities and facilities for supervised farming programs
1. Discovering personal interests, preferences, hobbies, likes and dislikes of pupils through
personal conference

2. Becoming personally acquainted with the boys' parents

3. Determining financial resources, abilities, intelligence, and willingness of parents to back pupils in their programs

4. Making studies of pupils' home farms to secure first-hand information of specific enterprises, farm practices, soil types, and farm equipment

B. Explaining, and developing interest in, supervised farming enterprises

1. Showing boys the effect of improved farming programs on the efficiency of the farm business - to develop interests

2. Conferring with parents on the home farm to explain supervised farming programs and to gauge the relative influence of the father and mother on the boy's supervised farming program

3. Showing the pupils the opportunity for growing into the farming business afforded through supervised farming programs

4. Developing interest of class by presenting financial returns secured by former pupils from their enterprises

5. Discussing supervised farming programs
thoroughly at informal group meetings with parents, to give information and to gain parents' cooperation

C. Organizing supervised farming programs

1. Securing continuation enterprises with increasing scope and managerial responsibilities for each succeeding year

2. Assisting each pupil in setting up a definite farming goal

3. Assisting local Future Farmers of Canada chapter members in setting up cooperative supervised farming programs

4. Assisting pupils in setting up definite financial goals by years for the entire period of their high school agriculture activities

5. Assisting in the selection of contributory supervised farming program enterprises

III With the above experiences and findings as bases, the organization of a beginning course of studies

A. Advising students in the selection of supervised farming enterprises

1. Helping pupils in selections which will have reasonable chances of being successful under prevailing conditions

2. Helping pupils to determine their facilities
for successfully carrying out a supervised farming enterprise

3. Assisting students in securing projects of sufficient size or scope to assure opportunity for developing initiative, for employing efficient production methods, developing managerial abilities, and a complete natural cycle of activities

4. Helping students to secure enterprises that provide opportunity for developing doing-ability on an occupational level

5. Assisting pupils to select enterprises in the field of their major interests

6. Insuring that enterprises provide an appreciable business risk

7. Insuring that enterprises provide new and varied experiences

B. Assisting pupils in enterprise planning

1. Teaching boys how to make businesslike estimates of probable costs and probable returns in each enterprise

2. Teaching boys how to make essential financial and business arrangements in conducting home-farm enterprises

3. Assisting pupils to make economic studies of
their specific supervised farming program enterprises

4. Demonstrating on one or more jobs how to make an enterprise plan

5. Helping pupils secure the best possible ownership or sharing arrangements

6. Teaching pupils the meaning, function and value of an enterprise plan in order to develop and maintain interest in planning

7. Determining financial standards of proficiency for various program enterprises - amount of margin to be reasonably expected from the enterprise

8. Assisting pupils in making and utilizing analyses of specific supervised farming enterprises

9. Developing in the boys' understandings the correlations between enterprise plans of previous students and related approved practices as entered in their record books

10. Determining **qualitative** standards of proficiency for multi-phase enterprises; (a) quality of product; (b) quality of work done

11. Determining **quantitative** standards of proficiency for multi-phase enterprises; (a) size or
scope; (b) duration, through a natural cycle of production

12. Determining labor standards of proficiency for multi-phase enterprises, yields per acre or per animal unit

13. Determining labor standards of proficiency for multi-phase enterprises, percentage of labor performed by the boy; efficiency of man-, horse- and machine-labor

14. Determining evaluation standards for approval of enterprise plans

15. Having students give consideration to risks caused by weather, insects and fungus diseases

16. Using one or more good enterprise plans as examples for pupils to follow in making their own enterprise plans

C. Supervising farming programs

1. Teaching on the job or giving definite recommendations and suggestions for changing or improving practices to be followed by the pupil where expedient

2. Checking to ascertain general progress and approved practices

3. Checking up on necessary entries in the temporary record book at the time of each
supervisory visit

4. Conferring with parents during the supervisory visit -- further familiarizing them with objectives and purposes of program

5. Developing pride in workmanship during supervisory visits

6. Recording the condition (with reasons for condition) of the enterprise at each visit

7. Conducting enterprise tours for vocational students to inspect, criticize and evaluate their fellows' enterprises and those of neighboring chapters

8. Anticipating seasonal difficulties and making practical advance suggestions as to the best method of coping with them

9. Giving encouragement and inspiration during supervisory visits

10. Providing supervision of farming enterprises of former pupils as routine follow-up service

D. Teaching enterprise record-keeping, accounting and analysis

1. Helping pupils through individual instruction in school and during enterprise supervisory visits in keeping their own enterprise records

2. Helping pupils to interpret and follow
instructions in their enterprise record books

3. Having pupils figure efficiency factors of their own enterprises after such enterprises have been completed

4. Teaching pupils how to use cost account data in figuring efficiency factors

5. Having pupils review and analyze completed enterprise record books of other pupils in order to teach them how to keep and analyze their own records

6. Checking project results against average results in the community for the same enterprise

7. Comparing pupils' proficiency in conducting supervised practice with standards set up under other activities

8. Giving experience in keeping and analyzing enterprise records by means of practice books

9. Explaining to pupils how project records and accounts may be used for making comparative studies in determining costs of production and labor income on similar enterprise projects

10. Having all project record books kept in the school or brought to class at least once a week for posting while school is in session
E. Administrative Activities

1. Making preliminary supervised farming program reports when required
2. Helping pupils determine financial returns or labor income
3. Making final supervised farming program reports when required
4. Keeping a permanent file of supervised project records of all pupils to include either the completed record books of all pupils or a financial cost-of-production summary for each enterprise
5. Maintaining a card index of supervised farming programs of former pupils
6. Keeping **photographic records** of outstanding projects
7. Giving consideration to the age and physical condition of all pupils

F. Obtaining desirable publicity

1. Giving publicity to results of supervised farming activities
2. Surveying the nature and extent of improved practices or methods on the home farms and in the community due to supervised farming programs of all-day pupils
3. Making enterprise exhibits at the local school, community or provincial fair

4. Teaching pupils how their project records and accounts may be used for educational publicity purposes

5. Assisting pupils in making enterprise exhibits in windows of well-situated stores

6. Conducting tours of supervised farming program enterprises in which local business men, farmers, school trustees, principals and superintendents take part

G. Enterprise or project instruction

1. Integrating the classroom and shop experiences with the pupils' programs of supervised farming and of the Future Farmers of Canada

2. Tabulating the supervised farming enterprises before building the content of the course of study for a five year period

3. Providing for individual instruction whenever this is required

4. Arranging class instruction according to seasonal sequence requirements of the farming program enterprises(100)
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Faculty of Education,  
University of Alberta,  
January, 1951.

Dear Mr.______________
Principal ______ School No. _____  
____________, Alberta.

We would very much appreciate your filling the blanks  
and returning this letter to us at your earliest convenience. We are anxious to learn:

1. The total enrolment in Grades
   IX ____ X ____ XI ____ XII ____ aggregate ____

2. The numbers of boys enrolled in Grades
   IX ____ X ____ XI ____ XII ____ aggregate

3. The numbers of farm boys (the census of Canada, 1941, defines a farm as a homestead of one acre or more  
   which produces produce to the value of fifty dollars annually or is cultivated therefor.) enrolled  
in Grades
   IX ____ X ____ XI ____ XII ____ aggregate

4. If there be an agricultural department in your secondary school, how many students are enrolled in this  
department?
   _____

5. If there be an agricultural department in your secondary school, what portion of the instructor's  
teaching time is devoted to agriculture?
   (full-, 3/4-, 2/3-, 3/5-, 1/2-,  
    2/5-, 1/3-, 1/4-, 1/5-time?)

6. Are you of the opinion that we should encourage our  
agriculture students to organize Future Farmers of Canada chapters? British Columbia agriculture  
students have their chapters.  
   (Yes, No)
7. What is the total annual salary of your agriculture instructor? $ __________

What would it be on a ten-month basis of service? $ __________

8. What is the arrangement about travelling to and from student's supervised farming programs?

(a) School bus or private cars? ________________

(b) What was your total mileage in 1949-50? _____

(c) and the remuneration for this service $ ____ if private car(s) used?

Yours sincerely,

Associate Professor.
An Act respecting the carrying on and co-ordination of Vocational Training.

HIS Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:-

1. This Act may be cited as The Vocational Training Co-ordination Act, 1942.

2. In this Act, unless the context otherwise requires,
   (a) "Council" means the Vocational Training Advisory Council appointed under this Act;
   (b) "Minister" means the Minister of Labour;
   (c) "Vocational training" means any form of instruction the purpose of which is to fit any person for gainful employment or to increase his skill or efficiency therein, and, without restricting the generality of the foregoing, includes instruction to fit any person for employment in agriculture, manufacturing, commerce, or in any other primary or secondary industry in Canada.

3. (1) The Minister may undertake projects to provide vocational training
   (a) to fit persons for employment for any purpose contributing to the efficient prosecution of the war whether in industry or in the armed forces;
   (b) to fit for any gainful employment former members of His Majesty's Canadian Forces or former members of any of His Majesty's Forces who were at the time of enlistment domiciled in Canada or any other persons with respect to whom authority for the granting of vocational training is vested in the Minister of Pensions and National Health, if such former members or other persons are approved for such training by such Minister;
Research work

4. (1) The Minister may, with the approval of the Governor-in-Council, enter into an agreement covering any period with any province to provide financial assistance for:

(a) any project, undertaken in the province, to provide vocational training for any of the purposes set out in section three of this Act;

(b) the continuation after March thirty-first, 1942, of any project for training heretofore carried on in the province under The Youth Training Act, 1939;

(c) any vocational training project for the conservation or development of the natural resources vested in the Crown in the right of the province;

(d) the development and carrying on by the province of any project recommended by the Council to provide vocational training for apprentices or supervisors in any industry; and

(e) the development and carrying on after the present war of vocational training on a level equivalent to secondary school level.

(2) No agreement made in respect of any of the matters set out in paragraphs (b) to (e), both inclusive, of subsection one of this section shall provide for payment to the province of a percentage of the cost of any vocational training project, including the cost of the training facilities in excess of the percentage of such cost contributed by the province.
5. There shall be appointed by the Governor-in-Council a council to be called "The Vocational Training Advisory Council."

6. (1) The Council shall consist of a Chairman and not more than sixteen members.

(2) The Chairman and other members of the Council shall hold office for a period of three years except in the case of the members first appointed and of any member appointed to a casual vacancy, who shall hold office for such period, not exceeding three years, as may be determined by the Governor-in-Council.

(3) There shall be equal numbers of members on the Council specially representative of employers and of employees, and the remainder of the members may be representative of such other groups of persons or interests as the Governor-in-Council may determine.

(4) A majority of the members shall form a quorum for any meeting of the Council.

(5) The Council may act notwithstanding any vacancy in its membership, provided that the membership is not fewer than ten members.

(6) The Council may make rules for regulating its proceedings and the performance of its functions and may provide therein for the delegation of any of its duties to any special or standing committees of its members.

(7) The Minister may provide the Council with such professional, technical, secretarial and other assistance as the Council may require but the provision of such assistance otherwise than from the public service of Canada shall be subject to authorization by the Governor-in-Council.

(8) The Minister shall make available to the Council such information as the Council may reasonably require for the proper discharge of its functions under this Act.

(9) The members of the Council shall serve without salary but each member shall receive his actual travelling expenses which have been incurred with the approval of the Minister in connection with the work of the Council and a per diem allowance of ten dollars
for each day he is necessarily absent from his home in connection with such work.

7. The Minister may from time to time refer to the Council for consideration and advice such questions relating to the operation of this Act as he thinks fit and the Council shall investigate and report thereon to the Minister, and shall make such recommendations as the Council see fit in connection therewith.

GENERAL

8. This Act shall be administered by the Minister of Labour.

9. A supervisor of training and such officers, clerks, and other employees necessary for the administration of this Act shall be appointed in the manner authorized by law.

10. The Governor-in-Council may make regulations for the purpose of giving effect to this Act.
May 29, 1950.

Mr. H. A. MacGregor,
225 No. 31st Street,
Corvallis, Oregon.

Dear Mr. MacGregor,

I have your letter of May 22nd regarding grants by the Federal Government to programs of Vocational or Technical Education.

I shall reply briefly and if there are points which require amplification or clarification please feel free to write again.

In general the grants in Canada are based on the Dominion paying 50% of the cost up to a maximum set for each Province, based on population. The programs are carried out under the terms of agreements made from time to time (usually each 3 years) under authority of the Vocational Training Co-Ordination Act.

Aid is available for costs for schools or classes where 50% of time is in shop or related instruction; for classes or institutions training teachers for vocational subjects; (Agriculture is recognized as such) for the preparation and operation of Correspondence Courses in Vocational Subjects; Technical Instruction for Apprentices; Vocational Training of unemployed and handicapped persons.

A portion of the annual allotment of funds may be set aside for capital expenditures.

In 1945 the sum of twenty millions ($20,000,000) was made available by the Dominion to aid with new facilities but this had to be used within 3 years. At present a recommendation is before the Federal Cabinet to increase the Annual Allotment by 50% but there has been no decision as yet although it has the support of the responsible Minister and his Deputy.

Money from the capital fund was used largely in Alberta for the Olds, Vermilion and Fairview Agriculture Schools.
It should be noted that the Federal Government contributes 50% of the Provincial Governments expenditures and not necessarily any local ones unless the Province have contributed some money.

Example: Edmonton has built a Composite School and the Province gave $200,000 to the Edmonton School Board; the Province will receive $100,000 from the Dominion so that their expenditures are equal on this project. If the Province had made no contribution to the cost of construction there could be no re-imbursement from Ottawa.

The Dominion does not exercise any supervision over the instruction after approving of the project. A project may be new construction, a class, a school, or special program of any kind or any other activity which the Province wishes to undertake. The Province prepares the plan in reasonable detail and submits it to Ottawa for approval. It is at this point that any questions may be raised, but once approved it becomes a provincial responsibility except for the auditing of expenditures.

The Dominion has never challenged to salary paid to instructors, leaving this to the Province to set these. Any comments that have been made have been toward raising salaries rather than limiting them.

Yours truly,

(signed) Joe H. Ross
Regional Director.

JHR:vk
INVENTORY OF CORVALLIS CHAPTER OF FUTURE FARMERS OF AMERICA

2 tractors
1 6-foot tractor disc
1 7-foot Oliver seed drill
1 Case 6-foot trailer combine pick-up attachment
2 heavy-duty equipment trailers
1 14-foot 4-wheeled pipe trailer
1 bale stacker
1 power cultivator, extra teeth
1 self-powered air compressor unit, portable
1 portable Chrysler-engined irrigation pumper, 5" intake
300 feet of irrigation hose
1 electrically driven hack saw
- 36 extra blades
1 10-foot endless belt - 3 v-belts
3 rolls aluminum wire
1 cable splicer
1 7-feet by 12-feet tarpaulin
2 gasoline pumps, power & hand
2 heavy-duty jacks
1 fire extinguisher
8 spare truck and trailer tires - all new
1 hog trailer
1 rock fork
1 complete baseball team outfit
1 football
2000 feet lumber
1 piano (2 rebuilt & sold, 1950)
1 complete camping outfit; stove, utensils
12 large water pails
stock of angle iron, scrap iron, rivets, bolts, paints and expendable replacements on farm and shop equipment.

1 Ford two-bottom plow
1 heavy angle-iron spike harrow
1 fertilizer spreader
1 2½-ton G.M.C. truck
1 truck tarpaulin with bows
1 7-foot power mower, extra sickles
2 swathers
1 vetch roller
1 19½-foot tractor sprayer
1 power saw
6 power greasers
1 grease dispenser
2 hand greasers
1 heavy-duty metal slicer
6 heavy C clamps
1 hot-patch
1 vulcanizer, 2 hot-patchers
1 electric generator
1 electrically driven blower
33 gallons lubricating and hydraulic oils
20 pounds grease
10 packages of goggles
1 acetylene welder
1 complete basketball team outfit
1 18-foot boat and trailer
1000 grain sacks
Complete garage outfit of heavy-duty hoist and tools of all types

The above equipment, solely the property of the Corvallis Chapter of the Future Farmers of America, was inventoried on November 1st of 1950 as more than six thousand, five hundred dollars. (57)
<table>
<thead>
<tr>
<th>Acres</th>
<th>Crop Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>sweet corn</td>
</tr>
<tr>
<td>8</td>
<td>hairy vetch, oats, and rye grass</td>
</tr>
<tr>
<td>12</td>
<td>summer fallow</td>
</tr>
<tr>
<td>20</td>
<td>English rye grass</td>
</tr>
<tr>
<td>20</td>
<td>common rye grass and gray oats</td>
</tr>
<tr>
<td>1</td>
<td>51 bearing fruit trees - apples, cherries, pears, etc.</td>
</tr>
<tr>
<td>2</td>
<td>six-rowed barley</td>
</tr>
<tr>
<td>54</td>
<td>two-rowed barley</td>
</tr>
<tr>
<td>125</td>
<td>total corporate farming enterprise (57)</td>
</tr>
</tbody>
</table>

During October of 1950 the string-and-wind band of Corvallis Chapter journeyed to the National Future Farmers of America Annual Convention and during the five days’ visit to Kansas City presented six major musical programs; besides winning top honors at the convention, the band appeared at the Kansas City Kiwanis Club weekly luncheon and performed in a twelve-minute program and later was entertained at luncheon and a tour of its terminal and shops by the Union Pacific Railroad Company. This Chapter band is wholly dissociated from the regular high school band and the high school orchestra. (31, p.3)

One June evening in 1950 the writer accompanied the Corvallis Chapter band and parliamentary procedures team to a Grange dinner meeting at a rural school, during which a short musical program preceded an exposition of parlia-
mentary procedures in a practical demonstration.

The writer's personal visits at various points in Montana, Washington, and Oregon indicated that these few evidences of group activity are among many others commonly experienced by members of agricultural departments in high schools throughout many of the United States.