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NEW SERIES.

CHARLOTTETOWN, PRINCE EDWARD ISLAND, SATURDAY, JANUARY 19, 1884.

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ALMANAC FOR JANUARY, 1884.

MOON'S CHANGES.

First Quarter, 5th day, 5h. 27.6m. p. m.
Full Moon, 12th day, 11h. 14.6m. a. m.
Last Quarter, 20th day, 1h. 10.8m. a. m.
New Moon, 28th day, 1h. 48.7m. a. m.

DAY OF WEEK Sun (Sun) Moon High Days
M rises sets rises water len h.

DAY OF WEEK	Sun	(Sun)	Moon	High	Days
M	rises	sets	rises	water	len h.
1 Tuesday	7 38	4 29	9 18	morn	
2 Wednesday	35	39	9 50	0 42	
3 Thursday	38	31 10	19 1	2 29	
4 Friday	38	32 10	48 2	2 2	
5 Saturday	37	33 11	18 2	5 50	8 55
6 Sunday	37	34 11	51 3	5 2	
7 Monday	37	34 11	18 5	5 9	
8 Tuesday	37	35 1	5 6 52		
9 Wednesday	36	37 1	59 7 52		
10 Thursday	36	38 2	57 8 52		
11 Friday	36	39 4	1 9 44		
12 Saturday	35	40 5	9 10 30	9 7	
13 Sunday	35	42 6	18 11 10		
14 Monday	35	43 7	26 11 50		
15 Tuesday	35	44 8	29 12 28		
16 Wednesday	34	46 9	36 1 3		
17 Thursday	34	47 10	39 1 41		
18 Friday	34	48 11	40 2 21		
19 Saturday	33	49 12	40 3 6	9 17	
20 Sunday	33	50 0	39 4 4		
21 Monday	32	52 1	38 5 9		
22 Tuesday	31	53 2	36 6 21		
23 Wednesday	30	54 3	32 7 28		
24 Thursday	29	55 4	26 8 35		
25 Friday	28	57 5	15 9 9		
26 Saturday	26	59 6	11 9 53	8 7	
27 Sunday	24	5 01	6 41 10 32		
28 Monday	23	2 7	18 11 8		
29 Tuesday	22	4 7	51 11 46		
30 Wednesday	20	5 8	23 12 30		
31 Thursday	19	6 8	52 0 22		

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CHARLOTTETOWN AGENCY,
Savings Bank Department,
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1883. 1884.

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Charlottetown, Dec. 11, 1883.—law and wly

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AGRICULTURAL EDUCATION.

A LECTURE BY THE HON. DONALD FERGUSON,
PROVINCIAL SECRETARY, BEFORE THE Y. M. C. ASSOCIATION.

(Continued.)

In considering what means are best adapted for promoting agricultural education in Prince Edward Island, we must glance at the experience of other countries, but in doing so we must bear in mind that the economic condition of agriculture in all European countries differs greatly from ours, and that a difference, although not so great, exists between the rural economy of Prince Edward Island and that of other parts of the Dominion and the United States.

Methods of education to be most useful must not only be made to suit the circumstances of the country, but they must be subject to constant improvement, so as to make them meet the ever changing circumstances and pursuits of the people. Systems of education, like constitutions, are not made, but grow, and that people will always take the front rank in intelligent and material progress whose education is of the most practical nature.

In most European countries the farms are large and the profits of farming are divided between three classes, the proprietors, the tenant farmers, and the laborers. The first of these are large capitalists, and as the leases are generally short, the proprietors share in the permanent improvement of the land. The tenant farmers are also capitalists. In Prince Edward Island we have only one class, which combines in itself the proprietor, the tenant and the laborer. The profits of farming here are enjoyed by the farmer and his family, except when divided to some extent with laborers. It will at once be seen that collegiate instruction in farming in a country where it is only necessary to educate one man for the management of perhaps thousands of acres of land, can be obtained by means which would prove wholly inadequate where ten or perhaps fifty men require to be trained to produce the same result. The English and Scotch farmers stand less in need of agricultural education than any farmers in the world. Encouraged by the example of men of wealth and education like Alderman Mechi, and stimulated by foreign competition in their home markets, they have been the first to adopt the practice of scientific farming. The system of agriculture, which has enabled them to lay by money after paying enormous rents and maintaining their families, must be particularly good. In fact it is mainly from observation of the rules and practice of the best English and Scotch farmers that the Germans and other nations have formed the science of Agronomy or theoretical agriculture, which is taught in their agricultural colleges. The agricultural colleges of England are used for the education of stewards or farm managers. In Germany a much larger proportion of the people are taking advantage of the higher education which their 153 agricultural colleges or academies offer. While German agriculture is now in a much less advanced state than that of Great Britain, it is not at all improbable that the tables will be turned before many years. What dairy colleges have done for the dairying interest of Denmark, it is more than probable the agricultural colleges will do for the mixed husbandry of the German empire. The first of the dairy schools was started at Copenhagen in 1836, and since that time it has on an average granted diplomas to ten dairymen and nineteen dairymaids annually. Similar schools have been formed in other parts of Denmark and northern Europe.

These institutions have almost revolutionized the butter trade of the world. A few years ago Denmark was comparatively unknown as a dairy country, but her export of butter has reached thirty-five millions of pounds in one year, or nearly eight hundred pounds per head of the population. And what is of still greater significance, Danish butter sells in the English market at higher prices than the best Irish butter, hitherto regarded as the best in the world. By their superior skill in making and curing butter, the Danes are able to send their product to hot countries, and have obtained control of the Brazilian market. The system of dairy education, which has produced such wonderful results in Denmark, could not, however, do as much for Prince Edward Island. In Denmark the average number of cows kept on a dairy farm is fully twenty times as great as in this Island.

France, like Germany, has a system of agricultural education. The Farm Schools of France were founded on a recommendation of M. Cousin who became Minister of Public Instruction in 1840. The scheme embraced one of these schools for each of the eighty-six departments into which France is politically divided. The Farm Schools of France are placed in charge of the best farmer in the departments, as director, and with him are associated instructors in the different department of agricultural education. There are also three Agricultural Colleges in France in which a higher agricultural education is imparted. When it is borne in mind that a system of peasant proprietorship exists in France, the great bulk of the land being divided into farms of less than seven acres each, it must be evident that the common school offers the only feasible medium through which to educate the farmers of the country.

Industrial education has received in the United States a large share of attention during the last twenty years. Under the American constitution, as in the Dominion of Canada, education is assigned to the States or Provincial Authorities, but in 1862 the United States Congress passed an Act setting aside 9,000,000 acres of the Federal lands for the benefit of agriculture and the mechanic arts, on the basis of 30,000 acres to each vote cast by a State for the election of President. The object of the grant is set forth in the fourth section of the Act, which says that the money

obtained from the sale of these lands "shall be inviolably appropriated by each State which may take and claim the benefit of this Act to the endowment, support, and maintenance of at least one college, whose leading object shall be (without excluding other scientific and classical studies) to teach such branches of learning as are related to agriculture and the mechanical arts, in such manner as the Legislature of the State may respectively prescribe in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Thirty-seven States have taken advantage of this Act, and there are at the present time in the United States, forty-four independent colleges or departments in universities supported out of the proceeds of the land grant of 1862. In 1876, or fourteen years after the passing of the Act, the interest from investments from the sale of lands had reached \$449,774.

In determining the best mode of placing this princely endowment within the reach of the people for whose benefit it was intended, much difference of opinion arose. The existing universities scrambled for the grant, alleging that by giving courses in agriculture and mechanics they were complying with the letter of the law. In about one half of the States this view prevailed, and such seats of learning as Yale, Cornell, and Brown, opened their halls to industrial studies. In the other half of the States independent colleges were started, devoted entirely to the study of science related to the farm and the workshop. The industries of each State, the prevailing views regarding education, and the wealth of the people have influenced the character of the education given in these institutions. In California and Missouri, States abounding in mineral resources, there are courses in mining and metallurgy provided in the institutions receiving national aid. In manufacturing States the colleges have generally lent their aid to the prevailing interest. In the great grain producing States of the far west the colleges are rarely devoted to agriculture. It does not require skill to obtain remunerative crops from the newly broken prairie, and it is in the States where the soil is more impoverished, and the rural population more dense, that the need of scientific agriculture is most felt. While it may be admitted that there has been much misdirection in the use of the national bounty towards mechanical and agricultural education in the United States, yet it is abundantly manifest that great good is being done in the promotion of industrial education by the land grant of 1862. Should we not in the Dominion of Canada, profit by the example of our wide-awake neighbors? The Local Governments of the Provinces have now more on their hands than they can find money to provide for. Out of the vast areas of fertile lands in the Northwest the Dominion Parliament should set aside a few millions of acres for the endowment of higher industrial schools in all the Provinces. If this is not attended to soon, the lands will be disposed of, and with them will go the last chance for our children to obtain that training which will enable them to compete with their neighbors in the industrial professions.

Turning to the Dominion, the only College devoted to agriculture is the Ontario Agricultural College, located at Guelph. This institution was opened in 1874, and as its name implies, is devoted exclusively to teaching agriculture and the sciences on which it is based. It is entirely supported by Government, the net annual expenditure in connection with it being about \$200,000, while the expenditure on farm buildings, and on permanent improvements had, up to 1880, reached about \$200,000. There is in this institution a course of study and a course of apprenticeship, the students being required to work from three and a-half to five hours a day, for which they are allowed from four to ten cents per hour, according to the value of their labor. From a statement submitted to the Agricultural Commission of Ontario in 1880, by Mr. Johnson, late President of the College, we learn that 330 students had up to that time entered their names on the Roll. Of that number 238 had left the institution, of whom 172 were known to be following agriculture, horticulture, or the veterinary profession. There is a farm of 550 acres connected with the College, on which experimental farming is being carried on. The number of students vary from 130 to 200. Admitting that the course of instruction at Guelph is very practical, it would almost appear that the results are disproportionate to the outlay. The expenditure on capital account up to 1880 amounted, as already stated, to \$200,000, and the annual expenditure to \$20,000, which, at 5 per cent, represents a capital of \$400,000, while in the first six years the College only sent out 172 students, who adopted agricultural, horticultural or veterinary employments. But this is not a fair way of estimating the good which a school of this kind is effecting. It may be that in the educating influence of their example in farming, in the part which their training enables them to take in agricultural gatherings, and in their contributions to the agricultural press, the students of Guelph are making a return to the Province for the large expenditure incurred in giving them an agricultural education. It must also be observed that notwithstanding the large outlay on this College, it is still a matter of complaint that the equipment is defective. The library is small, the museum is only a mere beginning, and there is no laboratory worthy the name. Looking at the great wealth of the Province of Ontario, and her vast agricultural resources, it cannot be doubted that a thoroughly equipped agricultural college will in the end contribute largely to the improvement of agriculture.

From the hasty glance we have now given at the agricultural colleges of other countries, it must be at once evident that the founding of an agricultural college in this Island, or even the establishment of an efficient department of higher agricultural education in the

Prince of Wales College by local means, is something altogether beyond our reach.

It is also, I think, quite plain that owing to the smallness of our farms the direct advantage from the establishment of such a college, or department of a college, would be proportionately small. It does not, however, follow that because we cannot undertake the greatest task we are unable to accomplish anything. We can give more time and more prominence to the sciences relating to agriculture in the Prince of Wales College, so that all our teachers may in future be qualified to pass an examination in the elements of agriculture before obtaining a license. We can offer an inducement to teachers already licensed so that they can come in for examination in this branch of education. We can, by rigid inspection, provide that the text book on agriculture already prescribed by the Board of Education is thoroughly taught to the pupils in the advanced grades of our schools. When we have done this it will be found in agriculture, as in general education, that a good elementary instruction for the masses is after all far more important than higher attainment placed only within the reach of a few. To make great progress in this direction teachers must all be qualified to handle an elementary text book, and the use of it in our Public Schools must be made compulsory, as has already been done in the State of Tennessee.

But although we must keep our eyes steadily fixed on the schools for the dissemination of knowledge on farming, we ought not to slight other instrumentalities already at work advancing the same object, nor neglect efforts for their more general adoption. The agricultural shows have probably done more within the present century to stimulate good farming than any other agency. These shows took their rise from what was known in England as the Holkham Sheep Shearings, which were commenced over 100 years ago by Mr. Coke, who, as an acknowledgment of his service to agriculture, was created Earl of Leicester. "This annual festival," says Copeland, "will ever claim a page in British agriculture, although in its origin, arrangement, and entire pecuniary support and maintenance, it was strictly a private institution, yet the unbounded public spirit and liberality of its founder gave it a world-wide fame, and drew to its exhibitions men of eminence in every branch of industry, and every station of life, from the globe. Agriculturists, men of science, statesmen, philosophers, merchants, mechanics, manufacturers, &c., were indiscriminately invited to repair to the noble domain at the appointed time (usually the beginning of June) where for three days they were entertained, not only by a display of the finest animals the world could produce, but on each day the hall was thrown open to 500 or 600 guests. Breeders of cattle and sheep were invited to exhibit their particular products by which a spirit of emulation was excited, the influence of which will be felt upon agriculture to the remotest ages. At the dinner given at the close of each day, the subjects that had occupied the attention of the company in the morning were freely discussed. There men of rank and eminence from all parts of the world exchanged information on the different systems of husbandry, practised in different countries and climates. Men of science here began to publicly apply its principles to the practice of husbandry, and to bring home to the mind of the cultivator the importance of a knowledge of the nature of the soil and the products that are raised from it. It was at these gatherings that the embryo Danys and Liebegs first met with that countenance and support which inaugurated the union of practical science with agriculture, and eventually brought forth these systems of agricultural chemistry on which improved farming is now based. All honor to the memory of the man, who more than any one else, assisted in breaking down the barriers which ignorance and prejudice had reared between the cultivator and the men of science, and who prepared the way for that union between them, cemented on principles indissoluble, because founded on truth.

The first agricultural society of which we have any account, is the Highland and Agricultural Society of Scotland, established 1784. The institution of the Board of Agriculture in England followed in 1794. The Highland Society is still in existence, and has exerted a wonderful influence on agriculture in Scotland, and even extending to other countries. Under its auspices, premiums have been given for discoveries in every branch of agriculture. In 1848 it took up the work previously carried on by the Agricultural Chemistry Association, and devoted special attention to the analysis of artificial manures, and the prevention in this way of the enormous frauds perpetrated on farmers by the manufacture and sale of adulterated fertilizers. The English Board of Agriculture was dissolved in 1819, but the Smithfield Farmer's Club was organized immediately afterwards, and under its auspices new and improved breeds of stock were introduced, and farmers were stimulated to enquiry in their profession. The establishment in 1838 of the Royal Agricultural Society of England, under the auspices of the late Prince Albert, may be considered an important era in the history of British agriculture. The membership of the Society embraces a large number of the most influential men in England, and by its publications, and by the great annual show which is held under its auspices, has done an untold amount of good in improving the stock and general husbandry of England. More recently, Agricultural Societies have sprung up all over the world, and the fair and cattle show is an institution of every civilized country. Looking at the great benefits arising from agricultural societies it may well be asked why we have not such an organization in Prince Edward Island? There was at one time an institution of this kind in existence here, but it was allowed to go down for the want of adequate support. While it is highly gratifying to note