

15. Axis of the earth. — Terrestrial Poles. — Meridian. — Equator.

16. Geographical longitudes. First meridian.
17. Determination of longitude and of latitude.
18. Parallel, oblique and right spheres.
19. Rotatory motion of the earth; principal facts which prove it.

## IV.

20. The sun's annual change of position.
21. Ecliptic; its obliquity.
22. Equinoxes and solstices; change of the equinoxes.
23. Polar circles. — Colure.
24. Signs of the Zodiac.
25. Radius, size, mass and density of the sun.
26. Distance of the sun from the earth.
27. Spots in the sun; — revolution of the sun on his axis.
28. Physical constitution of the sun.

## V.

29. True solar day; mean day; — true solar time; mean time.
30. Commencement of civil day and solar day.
31. Length of civil year.
32. Calendar; — Gregorian Calendar.
33. Cause of inequality in the duration of day and night.
34. Duration of day in arctic regions.
35. Seasons; cause; unequal length.

## VI.

36. Moon; its light; motion round the earth.
37. Lunar month; lunar day.
38. Distance of the moon from the earth.
39. Radius and size of the moon.
40. Mass and density of the moon.
41. Phases of the moon.
42. Rotatory motion of the moon.
43. Mountains and valleys of the moon.
44. Atmosphere and climate of the moon.
45. Tides and their cause.

## VII.

46. Eclipses of the sun and moon; — cause.
47. Difference in these eclipses.
48. Umbra and penumbra.
49. Conditions necessary to produce an eclipse.
50. Partial, total and annular eclipse.

## VIII.

51. Planets; difference between planets and fixed stars.
52. *Inferior* and *superior* planets.
53. Names of the principal planets.
54. Universal principle of gravitation.
55. Particulars about Mercury.
56. Particulars about Venus.
57. Particulars about Mars.
58. Particulars about Jupiter.
59. Particulars about Saturn.
60. Particulars about Uranus.
61. Particulars about Neptune.
62. Asteroids.
63. Comets. — Nuclens. — Envelope. — Tail.

## PROGRAMME N° 5.

## AGRICULTURE.

## I.

1. Object and utility of lessons in agriculture.
2. Conditions necessary to successful germination.

3. Names of the different kinds of soil.
4. Substances of which different soils are composed; define those that impart valuable properties to the soil.
5. Influences of sub-soil on the quality of land; — sloping land.

## II.

6. Modes of improving the soil.
7. Distribution of crops; its principle.
8. Organic fertilizers; principal fertilizers of this class.
9. Particulars about the relative properties of fertilizers, and methods of application to the soil.
10. Fermentation of manures; method of obtaining the best results.
11. Mineral fertilizers; — kinds of soils which derive benefit from the application of lime; — utility of plaster.
12. Object to be kept in view in the improvement of stock, and the best methods to insure success.
13. Choice of breeding stock; — care which should be bestowed on the sanitary condition of animals.

## III.

14. Care which should be taken in selecting a farm; — what its size should be.
15. Buildings necessary to a farm; — their arrangement.
16. Principal agricultural implements, and description of their essential parts.
17. Drainage; its utility; — best method to be employed.
18. What constitutes good ploughing; size and depth of the furrow, and size of the beds.
19. Best time for ploughing, and the reasons which should induce a farmer to avail himself of it; — object of harrowing.
20. Rotation of crops; — the most common system employed.
21. Fallow land; benefits to be derived from fallow, and the method usually employed.

## IV.

22. Care which should be taken in selecting seed, and the benefits to be derived from an occasional change.
23. Names of the plants most generally cultivated in Canada; — advantages of mowing before grasses have attained their full maturity.
24. Land most suited for the cultivation of wheat; time of sowing.
25. Cultivation of rye and barley; — land best adapted to these crops; — practical culture of barley.
26. Cultivation of oats, and their use.
27. Cultivation of Indian corn, and its use.
28. Soil best adapted to the culture of peas; mode of culture.
29. Cultivation of the potatoe; — soil best adapted.
30. Method of cultivating carrots and turnips; — their use.
31. Method of sowing and mowing clover; its use.
32. Particulars about the cultivation of hay; its use.
33. Live stock necessary to the farmer, and its care.
34. Description of a model dairy; — method of making butter.
35. Method of making cheese.

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