

# SUMMER SCHOOL OF SCIENCE, Wolfville, N. S.

July 23th to August 5th, 1887.

THE Programme of the SUMMER SCHOOL OF SCIENCE has been prepared with special reference to the preparation of Teachers for the teaching of the *Lessons on Nature* in the prescribed course of study. To obtain suitable illustrations for the various lectures, excursions will be made taking in Horton Bluff, Beech Hill, Gaspereaux Valley and Blomidon. These delightful rambles in localities renowned for their charming scenery, and the necessity for a more general diffusion of scientific information, will doubtless lead many of our more progressive teachers to avail themselves of the advantages offered by the school.

## Programme:

### ZOOLOGY.

By A. H. MacKay, B. A., B. Sc., F. S. Sc.,  
Pictou.

LECTURES—1: On the observation, collection, and classification of animal forms—introductory to general work. 2: The Protozoa, Coelenterata, Echinodermata, and Mollusca, with dissection of a "local mollusc." 3: The Annulosa and Arthropoda—class Crustacea with dissection of a lobster. 4: The Arthropoda—class Insecta with dissection of a "grasshopper." 5: The orders of Insecta with a special reference to species affecting the industries of Nova Scotia. 6: The Vertebrate structure illustrated by the dissection of a "frog." 7: Nova Scotia Vertebrata.

Text books recommended, "Hand-book of Zoology," by Sir William Dawson, (Dawson Bros., Montreal, \$1.25); and "Practical Zoology" by Colton, (D. C. Heath & Co., Boston, \$1)

Each Student should be provided with a lens, and a dissecting knife (a good sharp pocket knife will do), a small pair of forceps and scissors, also insect nets, mounting boxes, pins, etc. (Some of these may be prepared at the School).

### MINERALOGY.

By A. J. Pineo, A. B., Kentville.

LECTURES—1: Introduction—Crystallization: examination and description of minerals; specimens required, Pyrite, Quartz, Linonite, Gypsum, Feldspar, Steatite. 2: Principal characteristics of Minerals. 3: Classification of Minerals. 4: On the Determination of Minerals—use of the blow pipe. 5: Useful Minerals of Nova Scotia; specimens required, Chalcopyrite, Galenite, Hematite, Siderite, Pyrolusite, Stibnite, Gypsum, Calcite, Barite. 6: The varieties of Quartz, Pyroxene and Amphibole. 7: Mica, Feldspar, and the Zeolites. 8: On Rocks.

Text book, "Common Minerals and Rocks," (D. C. Heath & Co., Boston, 60c)

Each Student should provide himself with the mineral specimens required, a blowpipe, small steel chisel, and a hammer. Best reference book, Dana's Manual of Mineralogy and Lithology.

### BOTANY.

By E. J. Lay, Esq., Inspector of Schools,  
Amherst.

LECTURES.—1: Analysis of a few such plants as can be easily obtained, such as *Ranunculus repens*, *Taraxacum dens-leonis*, *Lysimachia stricta*, etc. 2: The relations of the parts of the flower. 3: How to use the Key to the Orders. 4: A few of the principal orders of Nova Scotia Plants discriminated. 5: Nova Scotia Trees. 6. Cryptogamous Plants—a dozen of the more important, named and labelled.

Text book, "How Plants Grow," Asa Gray, (Mackinlay & Co., Halifax, 80c.)

Each student should have a pocket lens, forceps, a knife-trowel, a supply of blotting-paper, and a tin box to preserve specimens until they are examined.

### CHEMISTRY.

By Prof. F. H. Eaton, A. M., Normal  
School.

LECTURES—1 and 2: To illustrate and explain how much chemical knowledge can be taught with the simplest apparatus. 3 and 4: To familiarize students with the use of such terms as "acid," "base," "salt," "chemical equations," "atomicity," "quantivalence" and chemical nomenclature.

### PHYSICS.

Same Lecturer and Plan as in Chemistry.

Text books, Chemistry and Physics Primers.

### URANOLOGY.

By Prof. A. E. Coldwell, A. M., Acadia  
College.

Out-door demonstrations; the use of star-maps; precession of the equinoxes, parallax, right ascension, declination, etc.

### PHYSIOLOGY.

By Prof. H. W. Smith, B. Sc., Normal  
School.

LECTURES—1: Human anatomy. 2: Minute structure of the tissues. 3: Physiology of Nutrition and Respiration. 4: Structure of the Brain and Nervous System, and its bearing upon Psychology and mental development.

NOTE.—Circumstances may require some modifications to be made in this programme. It was thought by some members of the Science Committee that it would be a mistake to crowd much work into the first year's course. For this reason, partly, Geology is omitted, although it is hoped that the Lecturer on Mineralogy will not lose sight of so important a subject.

Students are expected to send in their names to the various lecturers AS SOON AS POSSIBLE, in order that they may be able to make provision for suitable material, etc.

As Acadia College will be placed at the disposal of the School, the opportunities for improvement will be exceptionally good.

For further particulars apply to H. S. Congdon, Principal of the Dartmouth schools, or to the Lecturers.

### DETAILED PROGRAMME.

#### HOURS FOR LECTURES.

Monday—20½–21½, Opening Address by the President.

Tuesday—8–9, Mineralogy; 9–10, Chemistry; 10–11, Zoology; 12:19, to 19:47 excursion to Horton Bluff; 21–22, Uranology.

Wednesday—8–9, Botany; 9–10, Mineralogy; 10–11, Chemistry; 11–12, Zoology; 15–17\*; 19–20, Uranology.

Thursday—8–9, Mineralogy; 9–10\*; 10:52–18:08, excursion to Kentville; 19–20, Chemistry; 20–21, Botany; 21–22, Uranology.

Friday—8–9, Botany; 9–10, Mineralogy; 10–11, Chemistry; 11–12, Zoology; 15–16\*; 16–17, Physics; 20–21, Uranology.

Saturday—8–9, Mineralogy; 9–10\*; 10–11, Zoology; half holiday.

Monday—8–9, Botany; 9–10, Mineralogy; 10–11, Physiology; 11–12, Zoology; afternoon on way to Blomidon.

Tuesday—Visit Blomidon, collect Trap Minerals, rare Plants, etc.

Wednesday—8–9, Botany; 9–10, Mineralogy; 10–11\*; 11–12, Zoology; 15–16, Physics; 16–17, Physiology.

Thursday—8–9, Botany; 9–10\*; 10–11, Physics; 11–12, Physiology; afternoon, Excursion; evening, Public Lectures.

Friday—8–9, Botany; 9–10, Mineralogy; 10–11\*; 11–12, Zoology; 12–13, Physiology.

\* During these hours some attention may be given to local Geology with the help of Prof. Coldwell, or to an extension of the Physics, Chemistry and Physiology, as the Lecturers on these subjects have scarcely time to do justice to their topics.

ALEXANDER MCKAY, on behalf of the Programme Com.