

A Macdonald College selection of oats, designated as 2015 M.C. was found to be most resistant to halo-blight. Certain other varieties proved very susceptible to this disease. Tests to determine whether there were any physiological factors connected with differences in varietal susceptibility gave negative results.

Symptom expression of another type of blighting which occurred later in the life of the plants, as well as inoculation and isolation experiments demonstrated the occurrence of what is believed to be grey speck — a physiological disease resulting from manganese deficiency of the soil. Indications were obtained that control of this disease was accomplished by steam sterilization, or the application of manganese sulphate to susceptible soils.

A review of pertinent literature in connection with the work outlined in this paper is given, and a bibliography is included.

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M. Sc.

GEOLOGY

JULIUS JACK HARRIS

THE BLACK RIVER GROUP IN THE VICINITY OF MONTREAL

The Black River group constitutes the lower formations of the Ordovician period and occurs between the Chazy and the Trenton limestones. In general it includes the Pamela, Lowville, Leray, Watertown and Amsterdam limestones but in the vicinity of Montreal it is represented only by the Pamela, Lowville and Leray members.

Although the Black River group has received thorough study in the lower Ottawa valley and in New York state, there has, up to the present, been no detailed stratigraphic analysis of these beds as they occur in the immediate vicinity of Montreal. The boundaries of the formations here constituting the group have never been definitely fixed nor have the strata comprising these formations been adequately described or analysed. The work in hand is an attempt to bridge this gap in the geological knowledge of the district in the vicinity of Montreal. A field survey of the main exposures of this group was made during the months of October and November 1932 and the data so gathered, along with such information as could be derived from former works, constitute the basis of the thesis here presented.

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M. Sc.

CHEMISTRY

JAMES F. HORWOOD

STUDIES IN ORGANIC OXIDATION.

The oxidation of allyl alcohol and acetone by sodium hypoiodite has been studied. It has been found that allyl alcohol is not attacked by sodium hypoiodite under the most favorable conditions. Acetone is oxidised by sodium hypoiodite. The orders acetone-alkali-iodine, acetone-iodine-alkali and alkali-iodine-acetone give optimum, smaller and still smaller percentage oxidation respectively, other conditions being the same. The sodium hydroxide must be present in amounts considerably greater than the stoichiometric proportion. The extent to which the reaction goes is directly proportional to the concentration of sodium hydroxide. With a given amount of sodium hydroxide the reaction goes so far and no farther. The reaction is trimolecular. It is suggested that the first step is an intramolecular change, such as enolisation, induced by NaOH. The concentration of sodium hypoiodite is apparently without significance.

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M. Sc.

GEOLOGY

BERNARD JOSEPH KEATING

THE PRE-CARBONIFEROUS ROCKS OF THE WENTWORTH SECTION OF THE COBEQUID HILLS, N. S.

The pre-Carboniferous rocks of the Cobequids comprise a series of sedimentary, metamorphic, and igneous types. They have suffered deformation during the various Palaeozoic orogenic periods.

Lower Carboniferous sediments on the north and south sides of the range dip away steeply.

The several groups of the pre-Carboniferous Series with their assigned horizons are:

Pre-Carboniferous Intrusives

Devonian }

Silurian }

Pre-Silurian

Pre-Silurian

Granite

Gabbro, diabase, augite diorite.

Both acid and basic intrusives are present. The sequence of the "plutonic phase" follows the normal one of decreasing basicity. The types represented, in order of intrusion are:

Granite

Gabbro, diabase, augite diorite.