MASTER OF SCIENCE

M. Sc. CHEMISTRY

ROBERT DOUGLAS BENNETT

THE RATE OF HYDROGENATION OF CERTAIN OILS.

The thesis contains an account of the investigation of the following:

(a) The rate of hydrogenation of corn and soya bean oils.
(b) The influence of catalyst concentration on the rate of hydrogenation.
(c) A comparison of the rates of hydrogenation of these two oils.
(d) The mechanism of the hydrogenation.
(e) The nature of the hydrogenation reaction; that is, the order of the reaction.

The thesis proper contains a review of the properties of oils, a brief historical account of the main workers and their accomplishments, a brief summary of experimental procedure, a tabulation of results with grapical representation, a discussion of results, and the conclusions drawn.

Full details of apparatus, procedure, etc., have been given in the appendices, for convenience.

M. Sc. BIOCHEMISTRY

LAWRENCE WINSTON BILLINGSLEY

CAROTENE AND VITAMIN A.

An attempt has been made to prove by biological assay that carotene can be converted into vitamin A by treatment with liver extract *in vitro*. The experiment was based on the reported statements:—Firstly, that there is a quantative relationship between the amount of vitamin A fed and the growth it allows; secondly, that the conversion of carotene to vitamin A *in vivo* is only about 10% efficient. The first statement has been partly corroborated, with carotene as source of the vitamin. The second has recently been found erroneous by Moore, and by Carr and Jewell, who state that the conversion *in vivo* of orally-administered carotene is 50-60% efficient, and possibly higher in doses approaching the minimal.

The desired proof of conversion *in vitro* has therefore not been obtained, as the method used is not sufficiently sensitive to demonstrate differences in growth with substances so closely related in physiological activity. If any conversion occurred, it was not enough to compensate for losses in manipulation.

M. Sc. GEOLOGY

ALFRED RODDICK BYERS

THE NATURE AND ORIGIN OF THE GLACIAL AND POST-GLACIAL DEPOSITS LYING BETWEEN THE CITY OF MONTREAL AND THE CANADIAN SHIELD.

A careful examination was made of the Pleistocene and recent deposits, and of the surface forms, in an area 10 miles wide extending from the island of Montreal to the Laurentian front. The deposits above bedrock include, from the bottom up, till, fluvioglacial deposits, extensive areas of marine sands and clays, and recent river and lake deposits. The surface is smooth and almost horizontal except where bedrock or till protrude through the flat-lying Champlain marine deposits. Many of the flat areas are parts of the sea floor, as it was in the closing stages of the Champlain marine invasion. A few are due to erosion by waves and rivers. Irregular surfaces resulted from glacial deposition, river erosion, and river deposition. Terraces and beaches are conspicuous features of the topography. They are satisfactorily explained as products of wave action before, and river erosion after, the withdrawal of the Champlain sea.

M. Sc. ZOOLOGY

ANNIE ELIZABETH CLARK

NEBALIELLA CABOTI N. S.P. WITH OBSERVATIONS ON OTHER NEBALIACEA.

Two new species of Nebaliacea are described, Nebaliella caboti from Cabot Strait, and Epinebalia pugettensis from Puget Sound. The former was the first Nebaliella taken from the North Atlantic; and certain characteristics of the latter warranted the formation of a new genus.