

SHORTER COMMUNICATIONS

STUDY OF A CORE FROM BRAS D'OR LAKE, NOVA SCOTIA

DHARAM PRAKASH¹

Department of Chemistry, Dalhousie University, Halifax, N.S.

During a cruise on the CNAV Fort Frances in 1961, a series of Kullenburg piston cores were made in the bottom sediment, along the center line of the St. Andrews Channel of the Bras D'or Lake (Fig. 1). One of the longest cores (core K₄ Institute of Oceanography notation) was

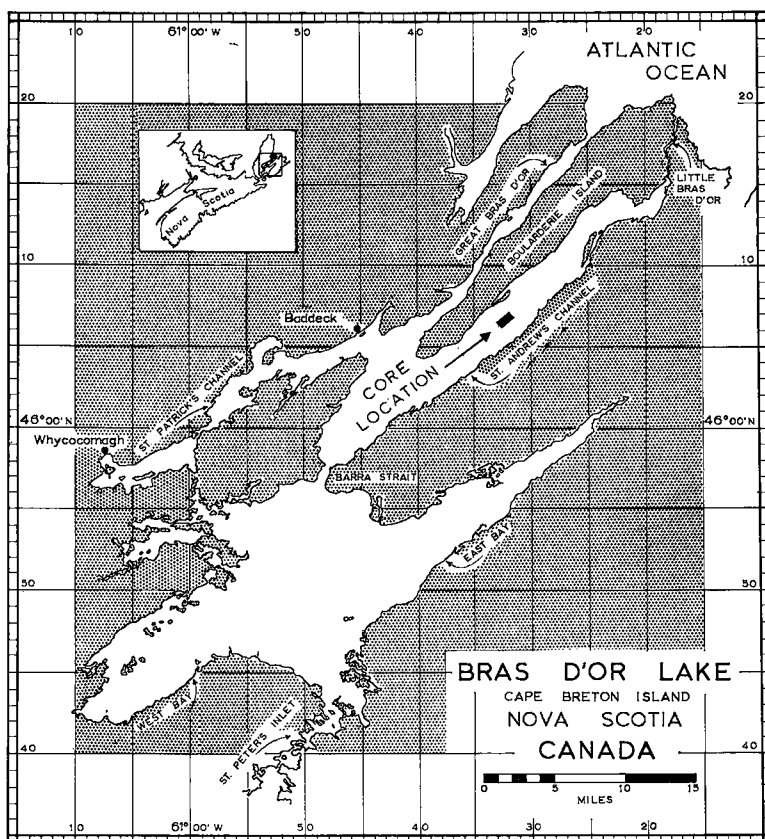


FIG. 1. Map showing core sample locality.

¹Present address: Directorate of Geology and Mining, Uttar Pradesh, Lucknow, India.

TABLE 1.—MAJOR ELEMENTAL ANALYSIS OF CORE K₄ IN ST. ANDREWS CHANNEL, BRAS D'OR LAKE

Depth in Core	Top 2 ft.	2'-3'	3'-4'	4'-5'	5'-6'	6'-7'	7'-8'	8'-9'	9'-10'	10'-11'	Mean Value
SiO ₂ + Insol.	44.95	44.66	44.52	44.35	44.57	44.74	44.35	43.54	44.49	43.99	44.51
TiO ₂	0.72	0.72	0.71	0.68	0.71	0.71	0.69	0.69	0.73	0.68	0.71
Al ₂ O ₃	21.96	22.46	23.02	22.01	23.05	28.81	22.92	23.20	23.24	23.73	22.84
Fe ₂ O ₃	10.19	10.55	10.39	11.05	11.29	11.37	11.47	11.52	11.62	11.47	11.09
MnO	0.46	0.53	0.37	0.36	0.37	0.37	0.41	0.37	0.48	0.43	0.43
CaO	2.22	2.22	2.21	2.13	2.11	2.08	2.07	2.12	2.06	2.03	2.12
MgO	3.06	3.03	2.94	2.91	2.84	2.83	2.8	2.77	2.75	2.74	2.86
Na ₂ O	0.73	0.79	0.61	0.77	0.46	0.65	0.49	0.76	0.40	0.37	0.60
K ₂ O	1.67	1.68	1.61	1.58	1.58	1.46	1.55	1.59	1.53	1.40	1.56
P ₂ O ₅	0.12	0.08	0.09	0.10	0.10	0.09	0.08	0.09	0.07	0.07	0.09
L.O.I.	14.26	13.78	13.89	14.11	13.21	12.83	13.54	13.76	12.92	13.32	13.56

selected for mineralogic and chemical investigation. Sediment samples (a total of 10) were taken at one-foot intervals in the eleven-foot core. The sediment is a brown (7.5 YR4/2) clay which has only a minor silt fraction. It shows no vertical variation but it contains some plant fragments.

Chemical analysis for the major elements using the techniques described by Groves (1951) were made on one part of each sample. Both D.T.A. methods and *x*-ray Debye-Scherrer powder photographs were used to identify the mineral components of the sediment.

Little vertical mineralogic variation is apparent in the core. The basic constituents are quartz and feldspar with illite the predominant clay mineral though some kaolinite is present in part of the core. The results of the chemical analyses are shown in Table 1.

Acknowledgments. The author wishes to express his thanks to Dr. W. R. Trost, to the Faculty of Graduate Studies, and to the Institute of Oceanography at Dalhousie University for guidance, research facilities and financial support.

REFERENCE

GROVES, A. W., (1951): *Silicate analysis*. Allen and Unwin Ltd., London.

Manuscript received March 25, 1963, resubmitted October 31, 1965

UNDULATORY RANGE AND CRYSTAL SIZE OF QUARTZ

FRED M. NAKASHIRO

Department of Geology, Carleton University, Ottawa, Ontario

Some sedimentary petrologists have investigated the relation between undulatory extinction in quartz and other properties. So far, studies have been made on undulatory range of quartz and the age of the rocks (DeHills & Corvalán, 1964), the percentage of undulatory to the total quartz (Blatt & Christie, 1963) and the relation between the range of undulatory extinction of quartz and the average quartz crystal sizes of sandstone (Conolly, 1965).

The purpose of this study is to determine if the range of undulatory extinction varies within a rock, and if so, if it correlates with crystal size of quartz in the rock.

Experimental procedure

Measurements of crystal size of thin sections were done with Leitz