

The Physiography of Southern Ontario

SECOND EDITION

L. J. CHAPMAN AND D. F. PUTNAM

When *The Physiography of Southern Ontario* was first published it was enthusiastically received and soon went out of print. Walter M. Tovell wrote of it in *Canadian Forum*: 'This well written and authoritative work is heartily recommended to all those who are interested aesthetically, professionally, and economically in the countryside of Southern Ontario.' The demand for this unique and valuable work has continued to grow and this enlarged edition is certain to be equally popular.

In the years since the book first appeared more detailed surveys of the Pleistocene deposits of Southern Ontario have been made and the authors themselves have extended their reconnaissance surveys towards North Bay, discovering new information on the recession of the late stages of glaciation from the Ottawa Lowland. The findings of these surveys, as well as an expanded account of land use and settlement, are incorporated in the revision. It provides too an outline and a general interpretation of the glacial history of Southern Ontario as accepted at present, although it cannot be claimed that the glaciology (and its chronology) of the region is fully known yet. The book begins with a brief account of the bedrock of Southern Ontario, continues with its glacial geology, then treats all its surface features, including river valleys, in some detail. The second half describes the physiography and land use and settlement of each of fifty-two regions. It ends with a brief summary, a glossary, and a bibliography.

In this reprinting of the second edition a number of alterations have been made.

The book will be useful as a technical reference and will be enjoyed as well by all those interested in the land and landscape of Southern Ontario.

L. J. CHAPMAN is Director of the Department of Physiography, Ontario Research Foundation, Toronto; D. F. PUTNAM is Professor in the Department of Geography, University of Toronto.

\$17.50 clothbound
ISBN 0-8020-1944-7
LC 66-6736

\$5.95 paperbound
ISBN 0-8020-6071-4
LC 66-6736

Printed in Canada

UNIVERSITY OF TORONTO PRESS

CONTENTS

Foreword to the First Edition	v
Preface to the First Edition	vi
Preface to the Second Edition	xi

1 THE BEDROCK 3

2 GLACIAL GEOLOGY 13

Pre-Wisconsin Beds	13
Wisconsin beds	15
The recession of the Wisconsin glacier	37
Postglacial developments	51

3 SURFACE FEATURES 52

Moraines	52
Drumlins	76
Eskers	82
Abandoned shorelines and lacustrine sediments	85
Loess (aeolian silt)	118
Gravel and sand deposits	120
River valleys	122

4 PHYSIOGRAPHIC REGIONS 172

Niagara escarpment	173
Beaver valley	188
Bighead valley	194
Cape Rich steps	196
Horseshoe moraines	198
Flamborough plain	203
Dundalk till plain	204
Stratford till plain	210
Hillsburgh sandhills	214
Waterloo hills	215
Guelph drumlin field	217
Teeswater drumlin field	222
Arran drumlin field	227
Oxford till plain	231
Mount Elgin ridges	233
Caradoc sand plains and London annex	236
Ekfrid clay plain	238
Bothwell sand plain	238
St. Clair clay plains	240
Pelee Island	246
Erie spits	249
Norfolk sand plain	251
Haldimand clay plain	255
Saugeen clay plain	260
Huron slope	263
Huron fringe	264
Bruce peninsula	267
Manitoulin Island	270
St. Joseph and Cockburn islands	275
Oak Ridges	276
Peterborough drumlin field	280
South slope	287

Peel plain	292
Schomberg clay plains	296
Simcoe lowlands	299
Simcoe uplands	307
Carden plain	312
Dummer moraines	313
Napanee plains	316
Prince Edward peninsula	319
Iroquois plain	324
Leeds knobs and flats	336
Smiths Falls limestone plain	338
Edwardsburg sand plain	343
North Gower drumlin field	344
Glengarry till plain	345
Winchester clay plain	348
Lancaster flats	353
The Ottawa valley clay plains	353
Russell and Prescott sand plains	360
Muskrat Lake ridges	363
Petawawa sand plain	363

5 SUMMARY 364

Glossary	369
Bibliography	371
Index	377