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W. Gillies Ross

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produire une œuvre magistrale qui restera longtemps la base de la géographie des Prairies parce que, comme l'a dit si justement Warkentin, « *It will not be superseded until many more detailed research findings are published, which will provide new data for a synthesis at a deeper lever of explanation* ».³

Nous félicitons vivement le professeur Karl Lenz de la publication de cette brillante thèse que nous considérons comme l'une des plus importantes contributions à la géographie du Canada.

John M. CROWLEY

HABITAT

REMPEL, John I. **Building With Wood and Other Aspects of Nineteenth-Century Building in Ontario.** Toronto, University of Toronto Press, 1967, 287 pages, photographs, sketches, bibliography, index.

RITCHIE, T., and the staff of the Division of Building Research, National Research Council. **Canada Builds, 1867-1967.** Toronto, University of Toronto Press, 1967, 406 pages, photographs, sketches, bibliography, index.

Centennial Year brought forth a number of useful books on aspects of Canadian development. In the first of the two reviewed here John Rempel, a Toronto architect and teacher, has made a significant contribution to the history of building methods in Ontario. His book consists of expanded versions of earlier journal articles, re-enforced by almost 200 of his own photographs, many of his excellent sketches, and a bibliography of 122 items. It is a large, handsome, interesting, and expensive book.

Rempel's emphasis on techniques of building « average, usually unpretentious structures » is a refreshing change from the too-common descriptions of selected, outstanding buildings, chiefly in cities. Many books have described churches, public buildings and the houses of the rich, while ignoring the ordinary buildings of the towns, the architectural features of the rural landscape, and the buildings that have played useful economic roles. In Québec, for example, the book by Traquair,¹ despite its inclusive title, omits factories, shops, barns and silos, contains only a few words on mills, and discusses the « Québec cottage » from the point of view of its rusticity rather than its utility and distribution. Rempel's book will therefore be of greater interest to historical and cultural geographers than most standard architectural studies.

The book discusses in turn the use of round and squared logs, plank construction, timber framing, balloon framing, and exterior decorative woodwork. The theme of wood construction is then abandoned and the last chapters deal respectively with polygonal buildings, cobblestone treatment, unburnt brick (mud) construction, woodworking tools and the restoration of old houses. This diversity of topics disturbs the unity of the book, and the inclusion of chapters on polygonal buildings and cobblestone technique appears to conflict with the author's stated intention to examine the « average, usually unpretentious structures ». Nevertheless, Rempel's study of the origin, diffusion and present distribution of these specific features is essentially a geographical approach, and one welcomes it in the book.

The chapter on polygonal buildings which discusses many-sided churches, cemetery vaults, schools, houses, barns, jails, and even privies, contains an annotated list of 100 buildings, by type, with three distribution maps. Unfortunately, the maps lack scales, have no explanation of symbols, and show all areas outside Ontario, both land and water, by one symbol, which makes orientation difficult. Nevertheless, they are useful, and other chapters could have benefitted from cartographic presentation, not only to show the distribution of architectural features recorded, but also to show aspects of physical and cultural geography that may have had a bearing on the utilization of wood in building. Did the unequal distribution of certain tree species cause regional differences in building materials and techniques? What effect did the depletion of forests in successive stages of settlement have on construction methods? How closely were certain architectural styles or building traditions

³ *Ibid.*, p. 143.

¹ TRAQUAIR, Ramsay, *The Old Architecture of Québec, A Study of the Buildings Erected in New France From the Earliest Explorers to the Middle of the Nineteenth Century*, Toronto, Macmillan, 1947.

associated with specific ethnic groups? The investigation of such topics would lend force to the author's statement in the preface that « to be properly understood and appreciated, buildings should thus be studied in the context of their environment. »

The second book, by T. Ritchie and the staff of the Division of Building Research, National Research Council, Ottawa, is a broader treatment, covering all of Canada and (despite the dates in the title) reaching back into the country's early history. It is less specialized, dealing with all the common building materials. With over 500 illustrations, including many fascinating nineteenth century photographs, it provides a readable and interesting survey of the history of building in Canada.

Organized in four parts, the book opens with a description of Canada in the 1860's, a « vast land, scarcely developed, » containing three million people, mostly rural. Only five cities were larger than 20,000 and even the best had dirt streets, inefficient lighting, limited domestic water distribution primitive sewage collection and disposal (and resultant epidemics), and severe fire hazards. The tallest building in the country was a grain elevator rising to 100 feet. Against this effective scene-setting, the following chapter on the construction of the Parliament Buildings in Ottawa after 1859 serves to illustrate the problems and accomplishments of the building trade in Canada at the time, and is an effective point of departure for the rest of the book.

Part II sketches the evolution of settlement and building in each of six major regions in Canada, including the North. Recalling the dates 1867-1967 which appear in the title, it is curious that all these regional chapters begin either with pre-European occupancy or the arrival of the first European explorers, and continue through the history of settlement. In the chapter on Ontario the discussion of early settlement takes up 15 pages including the illustrations, while the period since Confederation, which one would take to be the real concern of the book, comprises less than three pages. This emphasis, apparently at odds with the book's title, is continued in Part III, which examines the historical changes in use of building materials such as wood, stone, brick, concrete, iron and steel. In the 31 pages on wood, for example, only eight deal with development since 1867. And in the section on iron and steel, in which the introduction of steel frame construction after 1900 is recognized as a major factor in altering the architecture of downtown areas, modern skyscrapers -- the kind that have appeared in Montréal only within the last decade or so -- receive no attention at all. Surely a book outlining the development of building in Canada within the last century should have something to say about the most recent advances in technology and design.

This is not to say that Ritchie's discussion of early historical developments is not interesting, but simply that the emphasis is not what one would expect from the title of the book. Indeed the analysis of the introduction of new building materials, the invention of new building methods and the resultant changes in architectural styles is fascinating.

Part IV, « The Growth Of Communities », outlines the steady increase in building services during the past century. The conveniences of running water, central heating, sewage disposal, and electricity, which we now take so much for granted, have become widely applied only since 1900, and the experimentation which preceded these systems was both vigorous and interesting. Ritchie outlines the pioneer attempts in 1847 of a Montréal tin and copper smith, George Prowse, to develop a hot air furnace to circulate humidified, warmed, scented air through houses: central heating did not become widespread until after 1900, however. The first use of electric lights in a Canadian house in 1885 was preceded by a flickering, uncertain period of candles, whale oil, « burning fluid », kerosene, illuminating gas, and even gas manufactured from sunflower seeds. In 1850 only four Canadian cities had water mains, designed primarily for fire fighting and secondarily for domestic water supply. Most houses obtained water from wells, cisterns, or water vendors, and heated it on stoves when necessary. Baths and showers were rare. In the second half of the nineteenth century privies were gradually replaced by flush toilets, but houses beyond the reach of inexpensive water supply and disposal services continued to use privies or ash closets. As late as 1801 Toronto had 12 000 outdoor toilets and Brantford, Ontario, had 3 000 ash closets. The night soil from receptacles was regularly collected, and frequently used as farmland fertilizer. The construction of city sewage systems made less visible the entire nasty business of sewage disposal but did not entirely eliminate the health hazards. Sewage disposal often polluted domestic water sources.

The book reveals that our present-day problems of downtown congestion and water pollution are not new, but merely have new dimensions and complexity because of the « unprecedented rampant

expansion in the twentieth century ». One gets the sobering impression that although Canadian building has made great progress in the last hundred years, the concepts of environmental conservation and regional and urban planning have not.

These two books, one a specialized study of the use of wood in nineteenth century Ontario building, and the other a historical survey of Canadian building techniques, styles, materials, and problems, are valuable contributions which will hopefully stimulate more research by architects, historians and geographers.

Architects should extend their research to other parts of Canada and should examine functional structures such as barns and mills, and bridges. John Rempel acknowledges that his five pages on barns are insufficient, and his present research is on that topic. Another Toronto architect, Eric Arthur, and a colleague, Dudley Witney, are carrying out a « study of barns, mills, and rural architecture in Québec, Ontario, and the bordering states », with the support of the Canada Council.

Historians could develop some of the themes touched on in Ritchie's book. Topics such as the development of urban services for fire fighting, water supply and sewage disposal, and the gradual shift from private to municipal responsibility for such services, require elaboration in the manner of Carl Bridenbaugh's studies of early city development on the American seaboard.²

Among geographers, Trewartha has examined regional characteristics of farmsteads in the United States,³ Durand has sought a relationship between dairy barn appearance and ethnic background of settlers;⁴ Zelinsky has mapped the distribution of the New England connecting barn and suggested its diffusion from a Massachusetts Bay hearth;⁵ Kniffen and Glassie have studied the changing distribution of certain wood-building techniques.⁶ Others have classified or described architectural features in selected areas,^{7, 8, 9} along traverses,¹⁰ in specific ethnic groups,¹¹ or at earlier time periods.^{12, 13} The topic of houses as indicators of land use in an area near an expanding city has received some attention.¹⁴

Although much remains to be done by historical and cultural geographers, especially in Canada, it is encouraging at least to note the appearance of a few university theses dealing with the diffusion, distribution and classification of architectural features, and other aspects of material culture.

In Québec the architectural forms of the Saint Lawrence valley have dominated the standard works by Traquair,¹⁵ Gowans,¹⁶ and others. The useful study of early Québec barns by Séguin,¹⁷ has a

² BRIDENBAUGH, Carl, *Cities in the Wilderness, the First Century of Urban Life in America 1625-1742*, New York, Capricorn, 1955 (originally published in 1938); and *Cities in Revolt, Urban Life in America 1743-1776*, New York, Capricorn, 1955.

³ TREWARTHA, G. T., *Some Regional Characteristics of American Farmsteads*, in *Annals of the Amer. Assoc. of Geogr.*, vol. 38, 1948, pp. 169-225.

⁴ DURAND, Loyal, *Dairy Barns of Southeastern Wisconsin*, in *Econ. Geog.*, vol. 19, 1943.

⁵ ZELINSKY, Wilbur, *The New England Connecting Barn*, in *Geogr. Rev.*, vol. 48, 1958, pp. 540-553.

⁶ KNIFFEN, F., and GLASSIE, H., *Building in Wood in the Eastern United States: A Time-Place Perspective*, in *Geogr. Rev.*, vol. 56, 1966, pp. 40-66.

⁷ GUÉRIN, M. A., *Une classification des maisons rurales du comté de Napierville-Laprairie*, in *Cahiers de Géog. de Québec*, No. 6, Avril-Sept., 1959.

⁸ GUÉRIN, M. A., *La maison de chaume des Basses-Terres du Saint-Laurent*, in *Rev. canadienne de géog.*, vol. XI, n° I, 1957, pp. 47-50.

⁹ SPENCER, J. E., *House Types of Southern Utah*, in *Geogr. Rev.*, vol. 35, 1945, pp. 444-457.

¹⁰ MATHER, C., and HART, J. F., *Fences and Farms*, in *Geogr. Rev.*, vol. 44, 1954, pp. 201-223.

¹¹ WARKENTIN, J., *Mennonite Agricultural Settlements of Manitoba*, in *Geogr. Rev.*, vol. 49, 1959, pp. 342-368.

¹² WACKER, Peter O., *Dutch Barns and Barracks in New Jersey During the Eighteenth Century*, paper presented to the AAG, 63rd annual meeting, Saint Louis, April, 1967.

¹³ WACKER, Peter O., *The Log House in New Jersey*, paper circulated in open sessions, AAG, 62nd annual meeting Toronto, 1966.

¹⁴ MATHER, E. C., *One Hundred Houses West*, in *Can. Geog.*, vol. VII, No. I, 1963, pp. 1-13.

¹⁵ TRAQUAIR, *op. cit.*

¹⁶ GOWANS, Alan, *Building Canada An Architectural History of Canadian Life*, Toronto, Oxford University Press, 1966.

¹⁷ SÉGUIN, R. L., *Les granges du Québec du XVII^e au XIX^e siècle*, Ottawa, Musée national du Canada, Bulletin n° 192, 1963.

similar geographical emphasis, and while it admits to American influence in barn design in the heart of French Québec, it fails to examine nineteenth century barn architecture in the American-settled Eastern Townships from which some of this influence may have derived. It is precisely in the southern border area of the province that research on the diffusion of architectural features and traditions should now concentrate. The area was crossed by a northward-moving frontier of American settlement in the nineteenth century, and a southward-moving frontier of French Canadian settlement later, and the extent to which each group transported its architectural traditions and field patterns can only be determined by research in this mixing zone.

A preliminary step in such research has been taken in southern Québec with the help of geography students at Bishop's University, Lennoxville, and the McGill Geography Summer School, Stanstead. Since 1966 several characteristics of farms buildings (including barn and silo roof material, color and type, wall material and color, foundation material, dormers, ramps, cupolas, wooden fences, connecting barns, and abandoned farms) have been recorded on bus and car traverses in the Eastern Townships and northern New England. Although these observations, which now cover more than 2 300 barns, have not yet been thoroughly analysed, they reveal a few themes that could be followed up in the future:

1. Taken together such observations will permit a general statement on the characteristics of barns throughout the region. For example it appears that in the study area approximately 41% of barns have simple gable roofs; about 15% have ramps to second floors; 17% have wood shingle roofs; and 16% of barns are accompanied by silos. Once determined, the regional characteristics of barn architecture can then be compared with the results of Trewartha for parts of the United States.

2. The mapping of the occurrence of specific features or types of buildings (such as covered ramps, dormers, or round barns) should provide some insight into the diffusion of architectural traditions and innovations.

3. The occurrence of certain features may reveal something of the nature of farm operation. The percentage of barns with silos, for example, varies from lows of 3 to 6% in remote hill country south of Québec city to highs of 35 to 40% in northern Vermont and the Saint Lawrence lowlands.

4. The prevalence of some features may indicate the level of social and economic vitality in an area. In remote parts of Mégantic, Wolfe and Frontenac counties, for example, observations reveal a high proportion of stone foundations, unpainted wooden walls, shingle roofs, wood fences, and abandoned farms, all symptoms of economic stagnation.

As these surveys are made from moving vehicles without stops to examine barns in detail, no data has been obtained on the finer points of building techniques, such as those collected by Rempel in Ontario. But these surveys will permit a comparison with his observations on roof types, the distribution of octagonal or round buildings, and other major features. Aside from supplying an image of the characteristics of barn architecture throughout the Eastern Townships, these observations should contribute towards an understanding of the routes of introduction and diffusion of building traditions, and the degree of mixing of the two main influences, New England and French Canadian.

W. Gillies Ross,
*Scott Polar Research Institute,
 Cambridge.*

CHORONYMIE

HAMELIN, Louis-Edmond, et DORION, Henri. **Réflexions méthodologiques sur le langage géographique.** Université Laval, Institut de géographie, Publications du Groupe d'étude de choronymie et de terminologie géographique, 1966, n° 1, 57 p. dactylographiées au recto, 21 × 29.5 cm.

Suscités par l'activité bien canalisée d'animateurs actifs, des projets nombreux et variés ont été réalisés depuis la création de l'Institut de géographie de l'université Laval il y a une vingtaine