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The Dirt: Industrial Disease and Conflict at St. Lawrence, Newfoundland. By Rick Rennie. (Halifax: Fernwood Publishing, 2008. 150 p., iii, maps, notes. ISBN 978-1-55266-259-5 \$19.95)

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The Dirt: Industrial Disease and Conflict at St. Lawrence, Newfoundland. By Rick Rennie. (Halifax: Fernwood Publishing, 2008. 150 p., iii, maps, notes. ISBN 978-1-55266-259-5 \$19.95).

This short volume examines the community of St. Lawrence on the south coast of Newfoundland where mining for fluorspar began in 1933. While fluorspar mining represents a small component of Canada's mining history, the story of the St. Lawrence miners is of special interest. Over the next half century, over 200 workers would die a premature death from industrial diseases as a result of work in these mines. Many of these deaths were unnecessary, and a compassionate reader can only come away from this book with a sense of anger; anger at the original private investors who began mining with minimal capital investment using machinery described by an industry observer as "second-hand junk" that would be "discarded" by any mine using up-to-date technology. Rather than employ wet drilling to minimize dust levels, mine owners relied on the older dry drilling method, a technology still in use in St. Lawrence in the 1950s. As early as 1913, Ontario began phasing out the use of dry drilling, and the fluorspar mines in Kentucky and Illinois had made the switch during the 1920s.

Readers will come away angry at the officials responsible for regulating working conditions and their reluctance to hire a full-time mine inspector until the early 1950s. The five mine deaths in 1935 did not justify the expense to the unelected Commission of Government managing the colony for Great Britain. Nor did the report of the Ontario mine inspector who surveyed conditions in 1936 and who reported concern about cave-ins and flooding in the open drifts, a lack of toilet facilities and a lack of clean drinking water. Nearly a decade later, another visit by an Ontario mine inspector again noted the hazardous working conditions and the lack of ventilation. Again, the government was urged to appoint a full-time mine inspector, but again the government took no action. Comprehensive legislation regulating mines would only be passed in 1951 and the first mines inspector was appointed shortly after. Even then, the Newfoundland regulations fell short of those in other provinces such as Ontario and Nova Scotia that required regular examinations for workers at risk of diseases of the respiratory system, as well as the banning of dry drilling.

The workers, isolated with few alternative employment prospects, did not accept these risks without struggle. The first semi-organized protest against poor working conditions took place in 1937. There is no evidence that this led to a change, with government officials of the view that the workers of St. Lawrence were fortunate to have paying jobs. By early 1939, illness patterns suggested something was wrong at the mines. This led to the formation of the first formal union, the St. Lawrence Miners and Labourers Protective Union that demanded better working conditions,

improved ventilation, access to clean water and better sanitation. Little came of this effort, despite several of the mines having been taken over by ALCAN in 1940. During 1942, the workforce again walked off the job demanding safer working conditions. This time the government was forced to intervene and seek a solution in order to maintain the flow of fluorspar necessary for the war effort. But rather than force the employer to improve ventilation and abandon dry drilling, the trades dispute board ruled that the workers' union should be recognized and that they should be granted a pay increase. Despite government claims that conditions were acceptable in the mines, first hand reports continued to point to inadequate ventilation, continued use of dry drilling, workers collapsing in the mines due to lack of air, and dust so thick that you could hardly see the person working next to you.

By the 1950s, many workers in St. Lawrence contracted a form of tuberculosis that did not respond to standard treatment. Over time, it was revealed that these workers were also affected by silicosis. Evidence that conditions were hazardous in St. Lawrence became undeniable after a 1957 study revealed dust levels several times the acceptable Threshold Limit Values (TLVs). However, a downturn in the demand for fluorspar and the coming online of cheap sources from Mexico spelled the temporary end of employment in the mines and stalled the call for safer working conditions.

The slow response of the government to the welfare of St. Lawrence workers continued into the mid-1950s, with its reluctance to recognize the health risks, fearing such recognition would result in the demand for compensation. By the end of the decade, increased rates of cancer began to appear, attributed to the high levels of radiation in the mines, a risk compounded by the lack of proper ventilation. Local officials, who also happened to be mine managers, tried to convince the workers and the public that exposure to radiation was part of the "ordinary" hazard of mining in St. Lawrence. The workers responded by closing down the mines and demanding improved ventilation. While there appears to have been an improvement in some of the mines, labour relations in St. Lawrence remained strained and wild-cat strikes over working conditions took place with some regularity into the early 1960s.

A federal review of mortality rates in St. Lawrence completed in the mid-1960s revealed the extent of the health costs of inaction by mine owners and government officials. St. Lawrence miners were dying at elevated rates from silicosis, lung cancer, and circulatory diseases. The average age at death of cancer patients was 47 and the average time from first exposure to death was 19 years. The findings led to the appointment of a Royal Commission whose main focus was compensation for ill workers and widows. It found that compensation was woefully inadequate

and that many deserving claims were rejected on technical grounds. It recommended that a “Special Fund” be created to rectify this situation. It also called on the provincial government to step up monitoring of health risks. The government’s response was partial; only 7 of 52 claims the Commission deemed worth of compensation were compensated. No action was taken on improving the monitoring of risks.

Labour unrest continued into the 1970s with the spouses of miners playing a prominent role in blocking the shipping of fluorspar from the docks and demanding justice for workers and their families. This new form of protest was associated both with company decisions to increase monitoring of health risks and with the creation of a “Special Fund” to extend compensation benefits to more workers and their families.

Mining ended in St. Lawrence in early 1978. The death toll from industrial disease exceeded 200 in a community of barely a few thousand. Rennie has done a service to Canadian history exposing the poor treatment of the St. Lawrence workers and the cost of private greed and government inaction.

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Science

***Histoire des sciences au Québec, de la Nouvelle-France à nos jours.* Par Luc Chartrand, Raymond Duchesne et Yves Gingras. (Montréal : Boréal, nouvelle édition, 2008. 535 p., ill., bibl., index. ISBN 978-2-7646-0623-0 32,95 \$)**

Les sciences au Québec ont leur histoire, qui fait l’objet d’un volume de synthèse destiné au grand public cultivé et publié pour la première fois en 1988. Les auteurs ont eu la bonne idée de le rééditer et de le compléter pour tenir compte des travaux de ces vingt dernières années. Dans cet ouvrage, consacré non seulement aux sciences exactes mais aussi à la médecine et en partie aux techniques, se retrouvent les qualités de la première édition : une synthèse approfondie et cependant accessible à un public large, qui se lit avec un intérêt soutenu. Chose rare pour un ouvrage historique collectif, son unité de ton contribue à sa bonne lisibilité.

L’ouvrage met en évidence les temps forts de mutations qui se réalisent de façon non linéaire, avec leurs grandes figures emblématiques et des créations institutionnelles majeures, l’ensemble étant étudié en interaction avec les évolutions de la société globale. Pendant la période coloniale, comme dans tout territoire à découvrir, conquérir et peupler, l’arpentage, l’hydrographie et la cartographie sont prioritaires. Si le savant le plus