
_Turbulent Times in Mathematics: The Life of J. C. Fields and the History of the Fields Medal_
by Elaine McKinnon Riehm; Frances Hoffman
Review by: Deborah Kent
_Isis, Vol. 105, No. 2 (June 2014), pp. 457-458_
Published by: The University of Chicago Press on behalf of The History of Science Society
Stable URL: http://www.jstor.org/stable/10.1086/678022
Accessed: 29/07/2014 14:09

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ers and those being enumerated. Here, the Qing state met the greatest resistance in frontier and rural regions, where riots against the census operations swept across various corners of the waning empire.

The second half of the book shifts to the Republican period (1912–1949). In this context, the 1928 census implemented by the Nanjing Government provides an even more illuminating point of contrast to earlier apparatuses of the state. By identifying particular individuals and groups as superstitious, culturally backward, and thus lagging behind in historical progress, the Nationalist census created an imagined community of the Chinese nation based on a new temporal notion of simultaneity around which the place-bounded effect of shared destiny readily cohered. The achievements of the 1928 census, alongside the investigations of superstitious behavior by the Social Bureau and academic knowledge about frontier ethnic minorities produced by Chinese ethnologists and philologists, can be viewed as the culminating effort of an entire generation of social science researchers who matured professionally in the early Republican period and who styled their credibility in terms of their extrascientific patriotism and ability to endure hardship. Ultimately, Tong Lam depicts China before Mao as a social laboratory where contending groups and parties did not practice a unitary social science. In the emergent social survey movement that was acquiring an increasing national urgency, not only were key terms such as "ethnicity" and "class" intensely debated, but different players within the movement also experimented with competing research methods and social engineering programs. A contingent result of this seemingly chaotic but extremely creative process was the Chinese social scientists’ self-conscious turn away from the urban population—the research priority of American-style social science—to the rural peasantry as the pivotal object of their political concern and social analysis.

The historiographical significance of Lam’s book is readily apparent when one considers the fact that, between 1927 and 1935, more than nine thousand surveys were conducted in China. The book’s major contributions include the bridging of late imperial statecraft and empirical research with the rise of modern social science; the nuanced historicization of fundamental analytic categories such as “society” and “population,” which China scholars have generally employed in an anachronistic fashion (for example, in the crucial debate on civil society); the placing of China’s nation formation within a broader global context of colonialism; and, above all, the way it shows the heuristic value of historical epistemology in the study of Chinese scientific developments and vice versa.

Howard Chiang

Elaine McKinnon Riehm; Frances Hoffman. Turbulent Times in Mathematics: The Life of J. C. Fields and the History of the Fields Medal. xii + 257 pp., illus., apps., bibl., index. Providence, R.I.: American Mathematical Society, 2011. $45.96 (cloth).

The Fields Medal is traditionally viewed as the most prestigious award in mathematics. It is awarded every four years (next in 2014) to recognize a mathematician under the age of forty for outstanding mathematical achievement. Turbulent Times in Mathematics tells the story of John Charles Fields, the unassuming mathematician and tireless advocate for international scientific cooperation who founded the field’s highest prize. This engaging read presents, for the first time, a thoughtful look at the man behind the medal. What emerges is a compelling picture of an individual mathematician with a deeply Canadian identity and a fully international vision.

While the Fields Medal is well known, Fields himself has been far more obscure. Neither his personal papers nor his records remain at the University of Toronto, which houses only a few mathematical notebooks from Berlin mathematics seminars Fields attended and some detailed notes from his travels in 1917–1918. Elaine McKinnon Riehm and Frances Hoffman nonetheless present a richly detailed picture, pieced together through nearly twenty years of painstaking archival research in varied and far-flung sources, from correspondence to steamship passenger lists.

Riehm and Hoffman do not have specific mathematical training and thus rely on others’ analysis of Fields’s mathematics, which, though essential to his professional position, is not a
central feature of his legacy. The authors’ experiences with genealogical research and expertise in nineteenth-century Canadian social history shine through as they paint the scene of Fields’s childhood in the ambitious industrial town of Hamilton, Ontario, and describe his education there at Hamilton Collegiate Institute, a newly founded model public high school. The book includes period engravings of this high school, as well as pictures of advertisements and a street scene of Fields’s father’s leather business. Combined with pictures of Fields’s teachers and mentors, period transportation, and depictions of campus life, this presents a richly contextualized look at Fields’s life and times.

Fields’s lengthy formation as a research mathematician—through doctoral studies at Johns Hopkins University, extended study in Europe, and a year at the University of Chicago—is likewise carefully documented. In 1901, Fields arrived at the University of Toronto with broad mathematical experience and the beginnings of an international network he would continue carefully to cultivate through extensive correspondence and personal travel over the next thirty years.

Riehm and Hoffman describe mathematics before 1914 as “the golden years,” a time when universities blossomed as international centers of mathematical research and education. Mathematicians rallied around the Hilbert problems and met together at international congresses where interest in mathematics transcended nationality. Riehm and Hoffman share the flavor of mathematical activity in Paris, Göttingen, and Berlin and discuss the influence of these centers on mathematical developments in North America. This background equips the reader to appreciate the dramatic impact of broken international scientific relations resulting from World War II. “Turbulent times” aptly describes the very personal level at which this affected Fields and his fellow mathematicians.

Nearly three full chapters focus on Fields’s significant efforts to host the 1924 International Congress of Mathematicians in Toronto. This sympathetic and perhaps somewhat one-sided account of the delicate ICM meeting negotiations nonetheless communicates the complicated postwar challenges to international scholarly collaboration and Fields’s determination to surmount them—single-handedly, if necessary. Riehm and Hoffman present the poignant story of a man who quite literally worked himself to death for dearly held principles of hospitality and international scientific collaboration. Fields continued his efforts—even leading the post-Congress train trip to western Canada—well past the point of exhaustion, which deteriorated into eventually fatal illness.

The book includes three appendices that complement the main text. The first lists all of J. C. Fields’s scientific and nonscientific publications. The second provides brief academic biographies of all recipients of the Fields Medal from 1936 to 2010 and also refers readers to the complete digitization project of the ICM for further details. The third appendix gives biographical sketches of Fields’s colleagues and friends, featuring well-known figures such as Gosta Mittag-Leffler and E. H. Moore alongside various lesser-known staff members who worked closely with Fields at the University of Toronto.

This highly readable nonmathematical biographical study is a triumph of tenacity. It sheds significant light on the personal life, professional development, and lasting legacy of the foremost Canadian mathematician of his time.

Deborah Kent


Neurasthenia is one of those diagnostic objects in the history of madness that presents an especially elusive, moving target. While a certain cluster of symptoms were commonly associated with the disorder—as David G. Schuster notes, this included “depression, mania, anxiety, irritability, impaired intellect, indigestion, malnourishment, insomnia, physical weakness, and neuralgia” (p. 11)—different observers emphasized different aspects of the malady. Indeed, there has been considerable disagreement among physicians, alienists, and the lay public across the globe as to the existence, core symptoms, etiology, and treatment of neurasthenia.

Schuster’s eminently readable study of neurasthenia in the United States demonstrates an awareness of this diverse reality but nonetheless attempts to draw broad conclusions about the disorder’s presence in American history. His main thesis is that “America’s experience with neurasthenia helped establish the quest for happiness and comfort as a fundamental aspect of modern American culture.” It did so by “making discomfort and unhappiness seem like abnormal conditions—medical symptoms that required therapeutic treatment—and by establishing happiness and comfort as the norm of good health” (pp. 1–2). Together, enterprising physicians and

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