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*Laboratory Disease: Robert Koch's Medical Bacteriology.* By Christoph Gradmann, translated by Elborg Forster. (Baltimore: Johns Hopkins University Press, 2009. 318 p., ill., bibl., index. ISBN 978-0-8018-9313-1 \$37.00)

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[See table of contents](#)

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et les difficultés d'épanouissement en découlant. Enfin, on notera la prédominance des domaines appliqués comme la psychométrie et la psychologie clinique, à partir des années 1950, ainsi que celle des théories piagétienne dans le développement de la recherche, tel que ce fut par ailleurs le cas à l'université de Montréal, comme autres pistes du livre susceptibles de caractériser l'essor de la nouvelle discipline et possiblement, aussi, à en dévoiler les moteurs.

L'ouvrage offre moult détails internes en s'attachant notamment aux créations et modifications de cours et de programmes, ou encore aux décisions d'instances, en se basant principalement sur les annuaires et archives universitaires. Le propos a une portée restreinte et touchera dès lors possiblement au premier chef les psychologues et les membres de l'Université Laval. Pour les historiens et les sociologues des sciences ou des professions, cette naissance racontée présentera trois failles principales, probablement inhérentes au contexte de production de la publication: un caractère anecdotique manquant d'appui sur des sources diversifiées et sur l'historiographie des sciences, de la psychologie ou de l'enseignement supérieur; une absence de références à la conjoncture plus large au Québec, au Canada et en Amérique du Nord; et, par extension, une problématisation limitée, en marge de la ligne directrice plus ou moins explicite de l'institutionnalisation de la psychologie à l'intérieur de la structure universitaire.

Cela dit, l'ouvrage a le mérite de déblayer le chemin et d'ouvrir des pistes pour l'historiographie du sujet, au demeurant toujours peu documenté au Québec et au Canada que ce soit dans l'enseignement supérieur, la recherche, le système professionnel, la vie sociale ou la vie courante, et il permet d'inspirer à ce titre des hypothèses à creuser à propos des motifs de la montée de la psychologie au Québec et au Canada et de ses répercussions sur le savoir, la culture et la société.

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## **Medicine / Médecine**

***Laboratory Disease: Robert Koch's Medical Bacteriology.* By Christoph Gradmann, translated by Elborg Forster.** (Baltimore: Johns Hopkins University Press, 2009. 318 p., ill., bibl., index. ISBN 978-0-8018-9313-1 \$37.00).

Many biographies destroy preconceived notions about the subject matter. Although a thoroughly balanced account, this one was particularly effective and I will never think of Robert Koch, the Nobel Prize-winning

German physician responsible for the discovery of the microorganism responsible for tuberculosis as well as establishing Koch's postulates, in the same way. There are numerous previous biographies glorifying Koch; however, this one is different. It "attempts to understand Robert Koch's bacteriology, its genesis, its content, and its development from the perspective of his experimental practice" (p.3), relying extensively on Koch's diaries, letters, and laboratory notes. Simply, it succeeds.

After a very long preface (chapter 1), the chapter 2 comprises a fascinating analysis of Koch's bold statement, made late in his career (1909), describing the state of bacteriology as a science at the beginning of his career (mid-1870s). Koch claims that he "did not receive any direct stimulus [...] for the simple reason that bacteriology did not exist at the time" (p. 19). Amazingly, Koch credits none of his predecessors, and asks us to believe that his research was not built upon the work of others. Gradmann outlines Jacob Henle's contributions to the concept of causality of contagious diseases as early as 1840; a number of observations by Ernst Hallier and autopsy studies on gunshot wounds by Edwin Klebs also supported microbial causation of disease—all of which had implications for the formation of Koch's postulates. Although it is possible that none of this work played a role in his discoveries, this seems highly unlikely. Koch started his research career while working as a rural physician and was highly dependent upon other scientists, in particular collaborators at the University of Breslow who taught him his most important experimental skills including pathological techniques and staining. Regardless, Koch created a paradigm shift by defining disease by the causal pathogen rather than simply the pathologic anatomy. This chapter ends with a detailed analysis of his experimental work using animal models, a theme that is repeated throughout the book.

Chapter 3 covers Koch's most important discovery, his identification of the organism causing tuberculosis, as well as his seriously flawed research creating and marketing tuberculin as a treatment for tuberculosis. Gradmann dissects rather critically Koch's research in 1882-1884 for which he received the 1905 Nobel Prize but is kinder than some other biographers in his analysis of Koch's tuberculin fiasco. Nevertheless, Koch pushed this product to his financial advantage either through intentional deception of others or through self-deceit. Koch again and again stressed his use of "tried and true methods," even when he diverged from their use, to diffuse criticism of his research. Ironically, pathologic anatomy, a science that's supremacy had been supplanted by the new science of bacteriology, scored a measure of revenge as these techniques played the preeminent role in the demise of tuberculin. This chapter also touches on German nationalism and the rivalry between Koch and Louis Pasteur.

In Chapter 4, we learn that Koch had no interest in clinical studies and, in fact, viewed them with disdain, stating that “the least reliable results were obtained from experiences gathered at the sickbed” and that he preferred to experiment “not with humans but with the parasite alone in pure culture” (p. 115). We also learn that he was very comfortable generating experimental data in mice or guinea pigs and extrapolating this to humans, even though he was aware that the pathology of tuberculosis infection differed in humans and rodents. This actually astounded me as a similar therapeutic jump from rodent experiments to humans would have been unheard of at that time (n.b., cancer researchers were afraid to make this kind of extrapolation even decades later). Related to tuberculin, Koch’s ideas, methodologies, and analyses were not only unsound, but, because of his reputation, they were dangerous as he moved from early animal studies to having his drug on the market with great fanfare in four months. Although it quickly became clear to much of the medical world that tuberculin was ineffective and had serious side effects, Koch continued to support his therapeutic “discovery” and to profit financially from it. Ironically, Koch, who had no interest in clinical studies, was correctly criticized by contemporaries for “human experimentation” when tuberculin was applied clinically. This chapter also critically examines Koch’s sleeping sickness research, conducted almost two decades later when a laboratory attendant was accidentally infected. This research was performed in secrecy, and, in fact, the “patient” was kept in the dark about the nature of his malady; however, he was kept on the payroll, even though he was often unable to work, while he underwent a series of experimental studies and treatments. The account of this patient’s ordeal is highly informative and based upon several primary sources, whereas the only previous account was by Bernhard Möllers, Koch’s second in command who wrote a biography of Koch and who could have been considered responsible for the accident.

Chapter 5 describes Koch’s various travels to visit epidemics and to work in the field, which seemed to bring him much more pleasure than working at his institute in Berlin. Koch clearly used his political and academic clout selfishly, such as excluding competitors from important research expeditions, including a protozoologist rumored to be his competition for the 1905 Nobel Prize. Although Koch made life difficult for others, he was bitter about his professional life, stating “nowadays, whatever I touch or undertake, immediately a crowd of jealous and envious people comes along and tackles the same subject, trying to contest my work or, if unable to do that, spoil my pleasure in it” (p. 172).

The book ends with a very short “Perspective” section, which I had assumed would tie everything together and “re-balance” but rather it heads off

tangentially and provides a rather confusing piece on “popularizing” bacteriology that I read several times and would still be hard pressed to explain.

The book, based upon Gradmann’s postdoctoral thesis at University of Heidelberg, is well-written and does not read like a translation. It is scholarly and fascinating story of a prima donna, who in modern parlance would be labeled by co-workers and administrators as a “difficult” faculty member. I highly recommend it. However, it is sufficiently “dense” that I was never tempted to read it at single sitting.

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***Babies for the Nation: The Medicalization of Motherhood in Quebec, 1910-1970.* By Denyse Baillargeon, translated by W. Donald Wilson.** (Waterloo: Wilfrid Laurier University Press, 2009. xiii + 323 p., ill., notes, bibl., index. ISBN 978-1-55458-058-3 \$42.95).

***The One Best Way? Breastfeeding History, Politics, and Policy in Canada.* By Tasnim Nathoo and Aleck Ostry.** (Waterloo: Wilfrid Laurier University Press, 2009. xvi + 262 p., ill., tab., notes, bibl., index. ISBN 978-1-55458-147-4 \$29.95).

Both *Babies for the Nation* and *The Best Way* are recent publications in Wilfrid Laurier University Press’ Studies in Childhood and Family in Canada Series. Originally published in 2004, Denyse Baillargeon’s *Un Québec en mal d’enfants* has been carefully translated by D. Donald Wilson and republished as *Babies for the Nation*. It is a welcome translation and will ensure that the work of Baillargeon gets a wider reading. There are six main chapters with an introduction and epilogue. Focusing on the pre and extended post birthing periods rather than the actual birth, allows her to address themes of place, culture, nationalism, religion, and gender.

The chapters are organized thematically. Chapter 1 establishes the central issue driving her study on motherhood—Quebec’s high rate of infant mortality especially those experienced by French Catholics. In 1921-25, Canada’s rate was 99 per 1000 live births, Ontario’s 83, and Quebec’s 127.1. Even in 1966-68 the rate remained higher than the national average and that of Ontario. Baillargeon offers a detailed analysis to explain both Quebec’s and French Catholics’ exceptionalism. Poverty was a factor but not enough to explain the higher rates of French Catholics compared to the equally poor or even poorer Irish Catholic and Jewish populations. Poor sanitation, lack of pasteurization of milk, and