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White, Richard. *The Skule Story: The University of Toronto Faculty of Applied Science and Engineering, 1873-2000*. Toronto: Faculty of Applied Science and Engineering and the University of Toronto Press, 2000. Pp. xi + 336; illus. CDN\$40.00 (cloth). ISBN: 0-7727-6704-1

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Engineering at the University of Toronto marked several anniversaries in 1998: 130 years since it was first fathomed by the provincial government of Ontario, 125 years since the Ontario School of Practical Science (SPS) was officially created, 120 years since it actually began teaching students, 100 years since SPS was made the Faculty of Applied Science and Engineering by the University (FASE), and 94 years since SPS officially began operations as FASE. Given these multiple birth-dates and stuttered beginnings, it is not surprising to discover that the predominant theme of White's history is progressive change. One can see throughout this book the progressive history of Canadian universities as well: successfully adapting to the utilitarian demands from society and governments to produce an employable, educated youth. Independence is the other theme that runs through this book. Engineers are a unified bunch, identifying themselves as autonomous, unique, and perhaps different from all other faculties, schools, and colleges at university. Within the book emerges a third theme, one that reveals the true mystique and character of SPS/FASE: John Galbraith. Indeed, White begins and ends this book with this legendary man.

Some thirteen years ago, Peter Waite wrote that the history of the University of Toronto may be impossible to write because of its numerous composite parts. Martin Friedland succeeded in writing his one-volume history in part because of books such as White's, of which almost thirty exist. White, however, is not the first to write a history of FASE either. In fact, his work is the fourth history of engineering education at the university.¹ The emphasis on the faculty's past is not surprising given the intense passion shown by students and faculty alike toward the faculty's numerous traditions. This feeling of solidarity became one of the characteristics that they held as a matter of pride and independence within the university. Too many are the examples in which students expressed similar sentiments as their professors. White identifies this as a common bond between engineers and engineers in training, which is not surprising given that professors passed on professional identities to students.

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If one is interested with the development of engineering education at SPS/FASE, a great deal can be gleaned from White's foldout, which is inserted at the very end of the book covering the equivalent of nine or ten pages. This foldout indicates when each new field of engineering emerged at Toronto as a department within this engineering school. The practical foundation of engineering education was reinforced following the end of each world war. At FASE, this manifested itself with the addition of courses and a shift to physics instead of mathematics as the primary academic discipline underpinning engineering education. Indeed, we see the rapid expansion of the Engineering Physics Department began in the mid-1930s eventually subdividing itself into twenty-five different constituent parts, some lasting less than five years (Elasticity of Materials and Structures) while others still exist today (Electrical). Overall, however, we see that the longest continual department at Toronto was Civil Engineering, which is equaled by Mechanical except that it briefly existed as Mechanical and Electrical before reverting back to Mechanical when Electrical became its own department in 1908. Another significant addition to engineering education at Toronto was the Practical Education Year in 1979.

Research at SPS was virtually nonexistent, a condition that did last long after the formation of FASE when the School of Engineering Research (SER) began operations during World War I. By the 1930s, research at the school emerged as a dominant force with the addition of graduate programs and faculty equipped with PhDs eager to continue their research. White reminds the reader that as early as the 1920s, new academic departments reflected the research and professional-practice areas rather than organizing around academic endeavours(121). World War II brought engineering to the fore as a public and utilitarian university-based discipline. While Physics made the greatest contributions to the war effort, engineering built a foundation to build its research activities upon. One of the most important contributions made by a FASE faculty member in World War I was made by H.E.T. Haultain's work with the Invalided Soldiers Commission, which directly led to the development of Occupational Therapy in Canada both as a profession as well as a university-based program(91). While research did not increase exponentially in the postwar years, it was able to sustain itself after government funding began to evaporate slowly beginning in the late 1960s. Indeed, external sources of revenue for FASE soon outweighed the revenue received from the university. Students were also included in furthering the research outputs of FASE, which included undergraduate students who worked on complex problems such as low-emission cars(218).

Students enrolled at SPS/FASE comprised an interesting cross-section of Ontario's population. Following the 1950s and the introduction of graduate studies, international students were soon a vibrant and numerically significant portion of the student body. Unlike some university histories, *The Skule Story* has a substantial portion of each chapter dedicated to student life on campus among engineers. These sections in the book are truly where White excels at illuminating what life was really like at Toronto during each of school's distinguishing periods. This is particularly important given White's emphasis on tradition. Engineers excelled at rough initiations, particularly the veterans who engaged tactical planning into their hazing rituals(114-8). Toronto students during the 1960s were among Canada's most vocal advocates for the reformation of university governing bodies and protesting the Vietnam War.

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Engineering students on the other hand thought of themselves as counter-revolutionaries protecting what was still good in Canadian society. “The heart of the matter might be that a different kind of student was attracted into engineering in the first place, a student who was prepared to accept work within the industrial world as it was and whose flights of fancy, one might say, were constrained by the laws of aerodynamics”(213). Socially conservative in their outlook on politics reflected their close relationships with industry and perhaps the prevailing attitudes among their faculty members.

Despite the many positive aspects of this book, there are some shortcomings that are worthy of attention. There are some instances where greater attention to certain events and people would appear to have been logical inclusions for this text. John Ham, for example, cut his teeth as Dean of Engineering at FASE before serving as the Dean of the School of Graduate Studies. Upon leaving engineering, the faculty was saddened as he had been “universally admired” by his colleagues and students(226). White gives only a couple of pages to Ham’s appointment to the prestigious post of President of the University of Toronto. Ham’s tenure as president did not result in universal admiration because of his budget cuts and opposition to binding negotiations with the faculty association. It is surprising that a member of the FASE family who achieved such a post did not receive greater attention from White.

Within Canadian university historiography, *The Skule Story* differs little from other anniversary-inspired, commissioned histories in that it is celebratory of its tradition and personalities. Where White deviates from most institutional histories is his ability to demonstrate the relationships between university and industry and their historical developments. Work-terms and co-operative education squarely placed students on the path toward their professional careers in industry. Faculty members, building upon their predecessors’ predilection to maintain outside consulting work, were actively engaging in industry- and government-sponsored research that tended to be practical as well as scholastically relevant. Chronicling the spectacularly successful rise of FASE into its current form — a school larger than numerous liberal arts universities across Canada — White succeeds in illustrating that FASE faculty and students had a distinct sense of purpose and community even within the larger University of Toronto community.

Early in the book, White is quite adept at placing FASE within the city of Toronto as well as within the province of Ontario. Following the end of World War II and the passing of the quiet 1950s, however, it becomes very difficult to situate FASE in any community other than that of the University of Toronto. We learn that students were prone to make the city the central focus of their social lives, which includes the time between and after classes whereas previous generations of students spent the majority of their time in engineering buildings. At the same time, we learn very little about faculty within the city or even within the university community. While we are exposed to the reactionary conservatism of students during the 1960s, the attitudes of faculty members toward faculty issues such as unionization are not discussed. The areas that FASE faculty members did show their mettle was in the area of recruiting external monies to further their research, which in turn aided FASE in providing comprehensive engineering education to its students.

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Scholars interested in the history of Canada's universities and their composite parts will find White's history of engineering at Toronto to be a useful and readable introduction to the subject. Historians interested in Galbraith's intellectual legacy will no doubt find much to admire in this book. The role fulfilled by universities during the two wars is a little-understood phenomenon because so many faculty and students left the university to aid the Allied war effort. Engineers across Canada were willing to accept the roles available to them, which in World War II meant recognition of their particular technical skills. Where universities exceeded even their own wildest dreams was in the field of veteran rehabilitation to civilian life. The Ajax campus is one of numerous examples of an administrative apparatus set-up within a very short period of time, extremely successful in its goals, and is a stellar instance of the prominent public reputation that universities achieved as necessary, component, responsive, and accessible institutions capable of returning and rehabilitating Canada's labour force and economy.

Notes

1. C.R. Young, *Early Education at Toronto, 1851-1919* (Toronto: University of Toronto Press, 1958); Robin S. Harris and Ian Montagnes, eds., *Cold Iron and Lady Godiva: Engineering Education at Toronto 1920-1972* (Toronto: University of Toronto Press, 1973); and Barry G. Levine, *A Century of Skill and Vigour* (Toronto: University of Toronto Press, 1985).