An Institute of Technology

Engineering the New South. Georgia Tech, 1885–1985. ROBERT C. MCMATH, JR., RONALD H. BAYOR, JAMES E. BRITTAIN, LAWRENCE FOSTER, AUGUST W. GIEBELHAUS, and GERMAINE M. REED. University of Georgia Press, Athens, 1985. xiv, 560 pp., illus. $37.50.

The names of America's prominent technical schools—the Massachusetts Institute of Technology, the California Institute of Technology, the Georgia Institute of Technology—are so much alike it is easy to imagine the schools themselves are the same. But this well-researched centennial history of Georgia Tech reminds us of the special nature of the Southern experience and the region's institutions.

The Institute grew out of Atlanta's 1881 International Cotton Exposition and the vision it inspired of a "New South," economically emancipated from the North's manufacturing supremacy. From the outset, the founders meant to imitate New England's industrial success, and they looked there for educational models, too. But it was not MIT, with its intellectual sophistication, that caught their eye. Instead, they fastened on the Worcester Free Institute, a sort of high-level trade school that met its expenses by selling the shop work of students.

The need for ingenious solutions to the problems of finance was to prove an enduring element in Georgia Tech's history, but the Worcester example was also attractive because it promised immediately practical benefits and a solution to certain social problems; among other things, Georgians looked for their projected school to employ the idle, "stop the drift towards communism, and insure subordination to law and order in all classes of our complex population." That seems a tall order, but a rigorous military-like discipline explicitly emphasized hard work, respect for authority, and cooperative behavior to create, as one commencement speaker claimed, "cadets in the West Point of industry."

This language of economic warfare also characterized the introduction of new courses of study in textile and electrical engineering, since the electrification of cotton mills might overcome the advantage of New England's cheap water power. But Georgia Tech had battles to fight at home, too. The University of Georgia, with its rural setting and classical tradition, always proved better able to command tax dollars. Yet if the university embodied the old values of Southern culture, the technical school's fate reflected the state's economic and political realities. As a consequence, Georgia Tech long remained a local or at best a regional institution, where an underpaid faculty devoted itself almost entirely to undergraduate instruction. In 1906, for example, the total payroll for a teaching staff of 45 was $46,520. At the same time, Dugald C. Jackson, an MIT professor of electrical engineering, earned twice that amount in outside consulting.

"Hog and Hominy Parade." [From *Engineering the New South*]

Though Georgia Tech steadily grew in size and in reputation, its essential character remained unchanged until after World War II. Only then did graduate programs and advanced study become significant. With that development, and with defense-related federal funding, the teaching staff more and more resembled that of other technical schools. Indeed, now they come from Stanford, MIT, and Caltech, and with research as their vehicle move easily between government, the private sector, and the academic world. Yet for all the changes, there are familiar echoes. The students are still mainly from the South and those who give Georgia Tech its current direction tend still to look elsewhere—to Silicon Valley and Route 128—for models to emulate.

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A Soviet Physicist

Rem Khokhlov. V. I. GRIGORYEV. Mir, Moscow, 1985 (U.S. distributor, Imported Publications, Chicago). 110 pp., illus. Paper, $2.95. Outstanding Soviet Scientists. Translated with revisions from the Russian edition (1981) by G. G. Egorov.

The death of the Soviet physicist Rem Khokhlov in 1977, at the age of 51, was a tragedy for the Soviet Union and the Western world as well; we have been deprived of a truly fine "gentleman and scholar." Khokhlov was a master tactician of management and politics as well as an outstanding scientist. But the image I retain of him, since our first meeting at the Nonlinear Optics Conference in Puerto Rico in 1965, is that of a truly gentle person. I have known many very ambitious and "achievement-oriented" people in many countries, but never one whose kindness and humane sensitivities matched Khokhlov's. Had he lived I am convinced that he would today be playing a vital part in nurturing collaboration between the United States and the Soviet Union.

Khokhlov's career, both in science and in administration, was meteoric, especially by standards in the Soviet Union, where (until recently) the ascendancy of a young person would be most unusual. In his science, Khokhlov developed a premier group at Moscow State University which in the 1960's made many noteworthy advances in nonlinear optics, advances that were all the more remarkable considering the paucity of