

federal aid bills proposed during this thirteen-year period repeatedly went down in defeat.

Central to Smith's study is an analysis of the strains within the fragile pro-federal aid coalition and the persistent obstacles limiting the acceptance of federal aid proposals. When in the depression years educators first began to appeal to Congress for general federal assistance, they faced opposition from the Right and the Left. While some fiscal conservatives saw in federal aid an endless drain on the treasury, others raised questions of constitutionality and voiced concern over the potential threat of federal control. Liberal reformers, more sympathetic to the idea of national solutions to the problems of an interdependent society, were nonetheless cool to pleas for federal aid for education. Some New Dealers, especially those in agencies with some responsibilities for education such as the Civilian Conservation Corps and the National Youth Administration, hoped to institute a thorough restructuring of American education. Seeking to create a parallel educational system that would provide a more direct relationship between education and work, these reformers opposed plans that would channel federal funds through existing state and local agencies.

Even as educators succeeded in defeating the opposition from the Right and Left, two issues, race and religion, continued to divide the coalition of interest groups that advocated federal aid legislation. Blacks resisted measures that failed to guarantee equitable distribution of funds to white and black schools, while white southerners feared that the government would use federal aid to challenge the southern policy of racial segregation. Catholics opposed bills that would aid only public schools and demanded that federal aid extend to students in parochial schools, a position stubbornly resisted by the National Education Association. Inability to find an adequate compromise for these differences and lack of forceful support from the White House were key factors accounting for the failure of federal aid proposals.

Smith's history of this unsuccessful reform effort not only illuminates the early struggles in the federal aid campaign but also sheds light on the nature of the American political climate in the pre- and post-World War II years. A final chapter on "The Politics of Education" provides a useful summary of the achievements and failures of the federal aid movement and includes a brief analysis of the altered conditions that made possible the passage in 1965 of the Elementary and Secondary Education Act.

UNIVERSITY OF VIRGINIA

JENNINGS L. WAGONER, JR.

The Rise of Robert Millikan: Portrait of a Life in American Science. By Robert H. Kargon. (Ithaca: Cornell University Press, 1982. 205 pp. Illustrations, notes, bibliographical note, and index. \$22.50.)

Robert H. Kargon intends his biographical sketch as "an essay, very selective on themes that are illustrated by Millikan's life in American science." Seeking a wider audience than scientists and historians of science, he uses Robert Millikan's life "as a microcosm of new roles assumed by the scientist" during the twentieth century. These roles include teacher, researcher, administrator, fund raiser, consultant, celebrity, and sage. Admirably, Kargon combines institutional with intellectual history. We need such accounts of the univer-

sities, the Carnegie Institution, the National Research Council, the National Laboratories, the Bureau of Standards, and the National Science Foundation; without them we can have no thorough understanding of American science. Through training and funding these organizations played crucial roles in forming American physics. In particular Kargon offers a fascinating discussion of Millikan's and George Hale's contributions to war research, the California Institute of Technology, and the Mount Wilson Observatory. Kargon rightly stresses the collaborators' links with the leaders of finance and industry developing Los Angeles. Millikan's commitment to private industry was ideological, not just practical. He deplored state-supported science up to his vigorous campaign against the 1950 National Science Foundation Act.

When following Millikan's institution-building campaigns Kargon's hit-and-run biographical style works well. Since Millikan was often central to these institutional developments his peregrinations effectively mirror the larger scene. This is not true of Millikan's research and teaching. Despite two fundamental measurements (photoelectric effect, electron charge) Millikan was not at the forefront of twentieth-century physical thought; he resisted both forms of quantum theory. Consequently by focusing on Millikan between 1900 and 1940 we miss two essential developments: the maturation of American quantum physicists and the immigration of European physicists. While Millikan pursued his largely useless polemic on the origin and nature of primary cosmic radiation, the real issues were elsewhere: the discovery of new particles and the quantization of nuclear and electrodynamic forces.

Unfortunately Kargon also follows Millikan's assessment of fundamental physics' societal impact. Except for one item, Kargon's summary could be Millikan's: "The 'scientification' of America eventually touched production, communication, advertising, politics, the making of war, and the making of love." He continues: "Millikan's scientific life highlights part of this process." Aside from war research Kargon never elaborates. Furthermore, though astounding, relativity, quantum mechanics, and cosmic rays little affected pre-World War II life. More relevant were older ideas exploited by chemical, electrical, and mechanical engineering. Only later would (nuclear and solid state) physics influence society to a significant degree.

Nonetheless as a brief sketch of Millikan the scientific institution builder, Kargon's book deserves the wide audience he seeks.

HARVARD UNIVERSITY

PETER GALISON

Social Justice and Church Authority: The Public Life of Archbishop Robert E. Lucey. By Saul E. Bronder. (Philadelphia: Temple University Press, 1982. xi + 215 pp. Illustrations, notes, bibliography, and index. \$20.00.)

The continuing high regard for ecclesiastical biography in American Catholic historiography no doubt has reflected popular opinion concerning the locus of power within the church. Even the appeal of "the new social history" seems not to have diminished the value of a biographical approach toward an interpretation of the Catholic past. Saul E. Bronder's new biography of an important churchman of the Southwest, Archbishop Robert E. Lucey, suggests that historians still have much to learn about the nature of power within the Catholic community. In this volume, the author chronicles the career of an

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