Role of Science and Scientists in Government

Hailsham's appraisal of the problems in the developing relationship between science and government.

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Lord Hailsham, the world's first Minister for Science, publishes his **Science and Politics** (Faber and Faber, London, 1963. 110 pp. 13s. 6d.) a little too late to get the most sympathetic reception. Not many months ago, the glamor of his new position made scientists everywhere attentive to anything he might say in this field; today, the speculation about the imminent possibility of defeat of the Conservative Government makes the publication of a collection of his revised papers and speeches a little less exciting. Moreover, it was only a few weeks ago that he rose in the House of Lords to denounce American universities and industries for hiring scientists away from Great Britain and to join Admiral Rickover in blaming the inability of the United States to train its own scientists on the deficiencies of the American high school.

That particular speech led to no great stir in the United States; since the days of Frances Trollope and Charles Dickens, the American public has become slightly less sensitive to the views of British critics. But it seems to have excited enough annoyance in British scientific circles—coming as it did from the spokesman of a Conservative Government that had given British research much less money than the university scientists wanted—so that the Cambridge University faculty gave him a vote of no academic confidence by blocking the award of an honorary degree that he had been expected to receive.

These circumstances give no very impressive buildup to the publication of this little volume. And a reviewer in an American scientific journal, whose readers' prejudices are the opposite of Dr. Johnson's, is tempted by minor overtones in the book itself to see that the Tory dog gets the worst of it—such overtones, for example, as the author's occasional tendency to dismiss those two giants of technology, the Soviet Union and the United States, as showing equally bad form; the maintenance of the traditional air of studied amateurism in his approach to both halves of his subject; and his concluding appeal to metaphysics and theology.

Yet this temptation must be avoided, for this is a book worth reading. If Lord Hailsham chooses to denounce the American scientific manhunters, he has every right to do so. After all, as the grandson of the late Judge Trimble Brown of Tennessee, he is entitled by heredity to twit the Yankees, even in the House of Lords. And the surface manner of the book, like the traditional style of Parliamentary debate, only partly conceals the evidences of profound change in the thinking of the English governing class.

In this series of short and lucid essays, Lord Hailsham deals with the role of science and scientists in government, with science as a part of the educational and industrial systems, with the relation of science to international affairs, and with the metaphysical and theological view of science.

Like a number of other authors, in America as well as in Great Britain, Lord Hailsham begins by writing off Sir Charles Snow and then proceeds to illustrate some of his major points. The two men are, of course, widely different in their two cultures, their general style, and their political outlook, and each might dislike being compared with the other. Yet to this American observer of British affairs, who still thinks of the party and social distinctions of the 1930's as normal, the degree of agreement between Hailsham and Snow is a measure of the slow British social revolution.

After dismissing Sir Charles' "two cultures" idea as "perhaps more a reflection of politics in the Senior Common Room, than of life in the real world," Lord Hailsham undertakes to argue a number of major points on which it is hard for the innocent foreign observer to detect much difference between the two writers. He pleads for a revision of the entire English educational system to make science and the scientific method one of the pillars on which all education rests from the beginning, and a major component of general culture. He defends the support of basic science for its own sake, rather than for its economic utility. But he is not content to support the university scientist and his interests. "We know we were wrong, those of us who studied the humanities" a generation ago in a complacent contempt toward the sciences, Lord Hailsham admits as he urges a change in the classic point of view. But he goes on to say that university scientists today are as snobbish toward engineering as the classicists had ever been about the sciences, and to advocate that the status of engineering as a university subject be raised so that engineering can attract a "due proportion of the best intellects in the country."

As for the support of science by government, he writes bluntly that "the marriage between science and defence is corrupting, and will at best turn science from a liberating to a destructive source, and at worst ultimately dry up the wells of inventiveness in the scientist himself." On the other hand, the devotion of scientific knowledge to the economic development of the newly independent countries will help "our Universities and colleges develop mutual ties and links which will consolidate an international republic of learning—the only aristocracy which owes nothing to wealth or privilege, the only democracy where equality of rights is consistent with equity of reward."

More surprising, he joins in the argument that the bureaucracy itself should have some knowledge of science. In a country where the orthodox political opinion, even among socialists, has always been in favor of the amateur gen-

The reviewer is dean of the Graduate School of Public Administration, Harvard University; his book, *Government and Science*, was published by New York University Press in 1954.

eral administrator, he commits the heresy of suggesting that this may require, in some parts of the government, a "specialized administrative class." And Lord Hailsham even agrees with Sir Charles Snow's most apocalyptic warning, saying that "if we go on indefinitely experimenting with these [atomic] weapons . . . and keeping them at instant readiness, sooner or later a situation will arise, sometime, somewhere, where one will go off. If it does, it will give rise to a chain reaction not less predictable because its course and causes are in the realm of politics and not of physics alone."

On these counts Lord Hailsham's opinions are far from those of the traditional classicist or Tory Minister, and to that extent he will please the American scientific community, or at least those who are generally considered its leaders. That community, however, will find several other points in the Hailsham manifesto a little harder to take. As the first Minister for Science in the world (in a more up-to-date manner, as befits even a Conservative in the Space Age, he says "in the Universe"), he was Exhibit A in the case which some American scientists were arguing for separate administrative and budgetary treatment for the sciences, if not for a Department of Science itself. Yet Lord Hailsham is not content merely to make a practical case against the creation of a "real" Ministry of Science that would centralize research functions in government; in such a judgment he would have been supported by the views of most American scientists who have had experience in government administration, and especially by the scientists who have served as Special Assistant to the President for Science and Technology. Lord Hailsham goes further to argue that from the point of view of public affairs there is no such thing as science, but only sciences. For example, he writes that medical research "bears a much closer relation to the climate, population, health, diseases and economic activities of a nation than to their nuclear physics. In terms of science, as distinct from economic policy, it would be meaningless for a Treasury official to try and block a grant for medical research on the ground that the money was needed for a synchrotron." For the American reader not familiar with British administration, it should be added that this argument cuts in different directions in Whitehall and on Capitol Hill: in the United States, it would free the National Institutes of Health and the Atomic Energy Commission to lobby even more freely with their respective appropriations subcommittees; in Great Britain, it exposes their counterparts to the more rigorous restraint of the Treasury with its eye on the national investment program.

Whether the reader will dismiss Lord Hailsham's concluding chapter, "The religious basis," as nonsense, or applaud it, will depend on his philosophical and theological views, if any. I found it congenial, and no less hardheaded than a good many speeches on basic values that are being delivered every week in American scientific gatherings. The author notes the effect on general political ideas of the way in which science first discredited traditional beliefs, and then upset the certainties of the mechanistic philosophy it had itself created. He disarmingly refuses to put his metaphysics or theology on the same plane of logical proof or certainty with the ideas derived from scientific demonstration. Nevertheless, he concludes with a statement of philosophy, which he acknowledges to be old-fashioned, as well as with a staunch affirmation of personal faith.

It is hard not to admire a practicing politician who is venturesome enough to publish an expression of metaphysical and theological opinion; I cannot think of a Cabinet member in Great Britain who has done so since Balfour. In the United States, it would be as politically dangerous to confess an interest in the technical subtleties of metaphysics or theology as to admit a lack of church membership.

A British reviewer might well find it hard to keep an eye on what Lord Hailsham says in this book, being distracted by watching what he does about science as a member of the present Cabinet. One of the weaknesses of science in politics is that scientists find it hard to forgive the compromises that are made by their representatives in the political arena—hard enough when their representative started out with a clear status as a scientist and impossible when he is a classicist or a lawyer. But from the trans-Atlantic perspective, it is easier to read this book as evidence of the growing acceptance of science, even by the conservative and the classicist, as an intellectual and a practical force in British society. And it contains more thoughtful substance, presented in that lucid prose which I hope the English educational system will continue to produce no matter how scientific it may become, than most of the longer and more pretentious books that are written on this fascinating hybrid subject.

Notes

Biography

Chemists, physicists, biologists, and historians of science will all welcome this new edition of Eduard Farber's **Nobel Prize Winners in Chemistry** (Abelard-Schuman, New York, ed. 2, 1963. 351 pp. $6.50). Those interested in the progress of chemistry in the 20th century, and in the latter part of the 19th, *must* have this volume on their shelves, for it is an invaluable reference work.

Farber has done his task well. Brief biographical sketches introduce the man who then describes the work for which the prize was awarded. There is a most valuable bibliography which refers to biographical articles or books as well as to the main publications of the prize winners. In future editions it would be of the greatest value to have a note telling where each living Nobel laureate is now located.

The volume is handsomely produced, complete with a comprehensive index. It is well worth the price.

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Cytology

E. H. Mercer's **Cells: Their Structure and Function** (Doubleday, Garden City, N.Y., 1962. 145 pp. Paper, 95¢), a volume in the Natural History Library Series, is a popular review of our knowledge of the cell, not a critical résumé intended as a reference source. In view of the use for which it is intended, the book is well written and factual. Mercer has attempted to prepare for the layman an up-to-date account of a field which often appears to be a maze of unrelated information. The volume will be interesting and profitable reading for students interested in a general knowledge of cytology.

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