French science is still dominated by the tradition of Napoleonic bureaucratic centralization, which makes it difficult to vary conditions to suit individual talents. He quotes Monod as having serious doubts whether recent attempts to modify it would be successful. The result is a tendency for creative work to be done mainly by those on the fringe of the intellectual bureaucracy, with small resources.

German science in the nineteenth and early twentieth century was regarded by many as leading the world. The contrast with the vacuum under the Nazis and the peculiar features of the post-war reconstruction are described.

Wilson's American cultural presuppositions are even more evident in his account of Soviet than of British science. While he includes interviews with Tamm, Frumkin, and Engelhardt, he does not sufficiently distinguish between criticism and oppression. Wilson conveys the impression that Joffe was oppressed by the Soviet authorities. In fact he was personally requested by Lenin to train a new generation of Soviet physicists, which he did. Several of the famous institutes mentioned by Wilson were created by Joffe, and many of the eminent Soviet scientists he cites were trained by him. Joffe was a statesman of science, whose influential advice inevitably attracted a number of critics.

One of the problems of Israeli science is the recruitment of scientists from the culturally very varied immigrants.

The sections on Japan and India illustrate the extremely different social and philosophical backgrounds of science in those countries compared with Europe. Consequently their national styles of science appear to us strange.

In the section on Australia an interview with E. G. Bowen, and the rise of radio astronomy, are prominent.

The book contains a number of errors and misprints. The English publisher might have ensured that Ritchie-Calder did not appear in the index under "Calder" and "Galder". As for myself, I do not care for the initials "G. C.".

J. G. CROWTHER

Grubby Shirt in 'Stereoscan'

Epithelial cells adhering to the collar of a cotton-polyester shirt as seen under the scanning electron microscope. The photograph is reproduced by courtesy of 'Stereoscan', Kent Cambridge Scientific, Inc., in *Detergency*, part 1 of volume 5 of the surfactant science series, edited by W. G. Cutler and R. C. Davis (Marcel Dekker, New York, 1972).

Politics in Academe

The University and Military Research: Moral Politics at MIT. By Dorothy Nelkin. Pp. xi+195. (Cornell University: Ithaca and London, 1972.) $7.95; £3.80.

IN 1939, when Charles S. Draper became a full professor of aeronautics, the Massachusetts Institute of Technology was almost entirely financed from student fees and endowment income. During the war it grew big with defence research: $44 million in 1944–5. Draper's team helped win the war (and a good thing too, if I may say so!) by developing gyroscopic gunsights for aircraft. This work was administered and financed by the standard device of giving research contracts to an "Instrumentation Laboratory" ("I-Lab.") which was legally part of MIT but in practice under Professor Draper's personal direction.

After the war, this convenient legal fiction was perpetuated. Until 1969, all parties to the arrangement were very satisfied. Draper and his colleagues—a technical staff of 700—enjoyed the prestige and personal independence of an academic environment, and went on doing the beautiful precision engineering in which they excelled. The United States Government was getting splendid value, by way of complete inertial guidance systems for submarines, missiles and space systems, for the trifling sum of $50 million a year. MIT (with an overall budget of $200 million) was picking up a comfortable percentage of this in overhead costs, staff time for teaching, graduate research projects etc. Many British academics envied this perfect example of the consumer-contractor principle in action.

The boat was rocked by a distant storm—the Vietnam War. Radical or "radicalized" students and faculty began to ask whether universities should undertake military research. The usual happenings, sit-ins, teach-ins, riots, gestures, postures, commissions and so on occurred. At first, it was thought that I-Lab. might be "converted" to more peaceful work like urban transportation; but nobody had the big contract money to offer for that sort of thing—which the I-Lab. engineers didn't care for, anyway. Eventually the president of MIT, Howard Johnson, decided that MIT would "divest" itself of the I-Lab., which could thus go on doing its proper business as a legally independent corporation. This is going to cost MIT