

LETTER FROM LONDON



Malaise in technology

Industry is not getting the people it needs nor using those it gets

by Larry Miller

Plagued by money problems, entirely dependent on boosting technical efficiency to provide the exports which will pay the island's way, British industry is struggling to lift itself up by its technological bootstraps.

Out of the reports of several committees appointed to study different aspects of the technological problem comes a clearer picture of the sources of difficulty and the ways to overcome them.

Whatever difficulties exist do not indict British workers. Says Minister of Technology Anthony Wedgwood Benn, "when economists say that the average American worker produces two and a half times as much as his British counterpart, this is not because he works harder or is more intelligent, it is because he has more technological aids to help him."

Britain's technological malaise seems to lie partly in the educational system, which industrialists say does not produce enough graduates attuned to the needs of industry, and partly to the reluctance of industrialists themselves to make proper use of the right kind of people when they do get them. Too few technologists get into management. There is the belief in management circles that nonscientists can get by perfectly well using scientists simply as consultants. And likewise in scientific circles there is the belief that anything less than complete subject specialization is a waste of time.

Although the output of scientists and technologists has grown considerably in the last 10 years, industry is still unable to attract as many of the ablest graduates as it says it needs. This was brought home by the Working Party on Manpower for Scientific Growth, under the chairmanship of Prof. Michael Swann. The Swann report shows that almost three-quarters of the scientists and nearly half the technologists obtaining first-class honors degrees in Britain proceed to postgraduate work. Most of them go on to do research at universities and Government establishments. Once at these establishments, as a report on the workings of the British Civil Service makes clear, they cannot readily switch to industry, particularly not for short periods. Non-transferable pension schemes and the career prospects of the job keep them rigid in their bureaucratic posts.

Coupled with all this is the swing by sixth-formers (the equivalent of college freshmen) away from the physical sci-

ences. A committee examining the flow of candidates in science and technology, under the chairmanship of Dr. Frederick S. Dainton, reports that students show a preference for social science.

This is borne out by yet another report, just published, which shows that at Keele University in Sussex one student in three drops science after only a year. Keele is unique among British universities in having a four-year first-degree course, starting with a foundation year of general education. Research conducted by a senior tutor at the university, and paid for by the Nuffield Foundation, shows that there is a clear tendency at the end of the first year for many students who had previously chosen to specialize in arts or science to move over to major in social science subjects. They encounter these subjects for the first time in the foundation year. There is a particularly strong drain from the natural sciences.

Then there is the brain drain. This too robs industry of scientists. Some prominent people have suggested that the brain drain should be severely curtailed. This point was forcibly made by Sir Gordon Sutherland at the last annual meeting of the British Association for the Advancement of Science (SN: 10/12, p. 376). There is the fear that once Britain gets caught in the brain drain spiral, steadily losing more scientists each year, she will not readily break free.

At the heart of Britain's malaise, therefore, is the fact that schools and universities are producing talent that has little relevance to the needs of industry. This is not the only factor. But precisely because industry gets the wrong people, it is fearful of putting too much faith in science.

Industry's main need, apart from the needs of specialized industries such as chemicals and electronics, is for well trained science generalists rather than science-based specialists. These are not being produced either in anything like the proportions in the United States.

Possibly the reaction of sixth-formers provides the key to the future. To ensure a permanent supply of scientists and technologists it is necessary to produce a scientifically educated population which will understand and support them. This is more likely to be achieved through the medium of social sciences than by equating science with abstruse mathematical concepts and hoping the people and the jobs will somehow gravitate to each other.