

letter from Dundee



# Locking barn doors

**Scientists  
urge international  
control of a scarce  
commodity: brains**

by F. C. Livingstone

**R**estriction by law of the movement of scientists, engineers and technologists to the United States was urged at the recent meeting of the British Association for the Advancement of Science in Dundee, Scotland. Closing the doors was suggested by Sir Gordon Sutherland, former Director of the National Physical Laboratory and now Master of Emmanuel College, Cambridge.

"Migration by technical people should be prevented," he believes, "for the ultimate good of their own countries, in much the same way that the movement of gold has been brought under some form of international control for the good of all concerned."

Sir Gordon notes that, apart from the Communist countries, there is a general pattern visible all over the world in which rich nations draw trained manpower from those countries which are most in need of it, thus making them more and more dependent on foreign aid.

He says: "The scramble for human capital in the technological field which is going to develop in the next five years is likely to be formidable." It seems inevitable that some form of internationally agreed on control of immigration will have to be devised by the richer countries for the protection of less developed ones.

"Knowing how great is the concern of the developed countries about their losses to the U.S., how much greater must it be for the poorer countries?" he asks.

Canada and Britain can replace at least a fair fraction of their losses to the U.S. from the developing countries and indeed do, but this is impossible for countries like India. "The developing countries must beg foreign aid so that scientists from the advanced countries can come for short periods to help alleviate their distress."

His call for cooperation was echoed in Australia by Prof. Philip Baxter, chairman of the Australian Atomic Energy Commission, who asked for international agreement on the problem.

"America steals from Britain, Europe, Canada and Australia," he told a conference of commonwealth universities in Sydney. "Europe and the Commonwealth in turn, in order of their wealth, retaliate on their poorer neighbors, endangering ultimately the prosperity of the world."

Britain's present annual immigration limit into the U.S. of 17,000 scientists, engineers and physicians is far too high,

Sir Gordon thinks. He suggests the figure should be set at around 8,000 and reduced to around 2,000 over five years. "All other developed countries could and should impose on themselves similar decreasing quotas."

In 1966, 800 scientists and 2,000 engineers emigrated from Britain, largely to the U.S. The brain drain for that year cost the British economy some \$250 million, based on the cost to the community of first educating and then job training these highly qualified individuals. It is estimated that about \$15,000 is the cost of training a typical bachelor of science or engineering, while the cost for a typical Ph.D. in physics is \$40,000.

Sir Gordon admits that the U.S. needs as many scientists and skilled engineers as it can get. In a recent year, while the U.S. budget on basic physics research alone was close to \$500 million, the total expenditure in Britain by all the research councils and universities on all branches of science and technology was about \$180 million.

Many cures for the brain drain have been suggested. One proposal is that the receiving country should pay the donor country some financial compensation for the cost of the immigrant's education. "Quite apart from the difficulty of assessing the amount to be paid, the idea of one country selling its nationals to another is sufficiently repugnant to cause its rejection," says Sir Gordon. Another proposal is that the donor country should attempt to recover from the emigrant the cost of his education.

Still another approach to the problem would be to make the British Association even more attractive for the young. This will be the aim of Sir Peter Medawar, the president-elect for the coming year.

Sir Peter, at 53, will be one of the youngest presidents for some years. He is the director of the National Institute of Medical Research at Mill Hill, London, and a 1960 Nobel Prize winner.

"In this coming year we hope to expand the British Association to interest and involve the young and to make them responsible members," he says, "As such they learn to control their own affairs to some extent."

But when all is said the solution to the brain drain—outside of emigration quotas—will probably await the day when an engineer or scientist in the U.S. earns about the same salary as the world average for his profession—instead of several times as much.