

it has great ambitions for the future. Indeed, the college is hoping that its student population of 350 or so—all of them postgraduates—will increase to about 1,000 in the seventies.

Asbestos in the Lungs

THERE are at present 250 registered cases in Britain of mesothelioma, the cancer tumour associated with asbestos dust contamination. A tumour of the lung lining (and occasionally the peritoneum), it can reach remarkable dimensions, is terminal and has not so far been known to develop without a relationship (however remote) with dust from asbestos of the crocidolite type—blue asbestos.

Four fibrous silicates with the generic name asbestos are in commercial use. These are: crocidolite (blue); amosite (brown); anthrophyllite (white); and chrysotile (also white) which is by far the commonest. Asbestos is in increasing demand for many industrial uses, especially in shipyards and for pipe-lagging. The material must be mined, milled and fabricated and at each of these stages a fine penetrating dust is produced, but this is not the full story. So far, only the dust from blue asbestos has been definitely implicated as carcinogenic. The relationship was established in the 1950s in South Africa, where the principal blue asbestos mine is located. It was found that on average the disease takes 40 years to develop, but that fatal exposure could be as short as three months in childhood. More than half the cases investigated had not worked in the asbestos industry but had been open to environmental exposure only. It is disturbing that these cases arose from exposure in the early days of the Cape industry—it started in 1890—when annual crocidolite production was only 10,000 tons. Now more than 80,000 tons a year are produced, and much of this milled for short fibres.

To define the relative hazards, a world-wide survey is being organized by the International Union against Cancer (UICC), with the active participation of the MRC Pneumoconiosis Unit at Penarth, Glamorgan-shire, where one of the South African researchers, Dr. J. C. Wagner, is now working. To help in comparable laboratory experiments, an international asbestos dust bank of standard samples of the economically important asbestos types has been established. For the epidemiological research it is necessary to go to the asbestos mining countries to look at the communities exposed to only one type of asbestos fibre. Surveys are already in hand in South Africa (crocidolite, chrysotile, amosite), Finland (anthrophyllite) and Canada (chrysotile), and it is hoped that the other chrysotile producers, the Soviet Union and Cyprus, will soon join in.

Follow-up studies of industrial populations where a single type of asbestos has been used are also valuable. In Germany crocidolite was extensively used in the construction of the First World War Grand Fleet. 4,000 people worked in a crocidolite factory in London, in the early 1900s, and Californian shipyards where amosite was employed in World War II. British follow-up studies have been greatly hampered by the eccentric mode of national record keeping. It has taken four years to trace 98 per cent of the men from the London factory, and many of the women employed have escaped the net completely because records lose track of

them at marriage. The Director of the Unit at Penarth is severe on the subject: "In this country we don't make use of modern methods in either record-keeping or retrieval" and compared the situation unfavourably with the United States and Finland—Finland in particular provides "magnificent death certificates". "At present, the Ministry of Health is not interested in occupational disease," he said.

Pugwash in Australia

DR. PATRICIA LINDOP writes: The first South-east Asian Regional Pugwash Conference was held in Melbourne from January 23–27, when scientists from Australia and New Zealand, Japan, Indonesia, Malaysia and Ceylon, India, Pakistan and Singapore discussed the application of science, technology and industry to the development of the region. The conference was yet another experiment and step forward in the evolution of the Pugwash Movement.

During the past ten years, the chief Pugwash activity has been in international conferences discussing, particularly in an East–West context, problems arising from development of weapons of mass destruction, and ways towards reducing the likelihood of their use, by disarmament. Some attention has also been given to the other potential source of international tension—the increasing disparity between the developed and developing nations. It was felt that to tackle this problem effectively, and within the available resources of time and money, it was necessary to deal with some of the problems on a regional basis. The need to discuss regional development as well as South-east Asian security made the initiative of the Australian scientists in organizing this first meeting most timely. Unfortunately, but perhaps understandably, the Chinese scientists did not come to Australia, although it is hoped that they will be interested in future regional meetings.

The meeting itself set one again wondering what exactly is Pugwash and its effectiveness? Each individual scientist probably looks for or finds something different in Pugwash, and the only common factor is in the desire to prevent the misuse of science. But the Pugwash-type discussion is quite different from other more formal international conferences on the same or similar topics. For example, in Melbourne there was no real discussion of "aid" to neighbouring countries—only of the necessity for co-operative action and mutual education and development. There was objective and constructive criticism of the mechanisms of the existing aid schemes from both donor and recipient countries. A need in all countries was for a scientific committee to vet and co-ordinate co-operative projects in science and technology, and to ensure the better use of scientists and equipment. At present, even in a donor country such as Australia, scientific consultation is on an informal and piecemeal basis. In countries of the region where the scientific cadre is at present too small to have much influence in government planning, the support of scientists from other countries in the region in providing an objective assessment of projects was greatly welcomed. And during the few days of the meeting the atmosphere changed from one of helplessness to a realization that the problems were the same in all other countries in the region, whether economically more or less