

councils". The working party, chaired by Professor A G Mackie, surveyed the university non-tenured research staff and found that only half obtained permanent jobs on completion of their contracts, while 11% were unemployed and 32% had moved to other temporary jobs.

UNEP shames Mediterranean countries to pay bills

A MILITANT speech by United Nations Environmental Programme deputy director, Peter Thacher last week (*Nature*, 14 February page 613) has produced promises of payment by the delinquent participants in the Mediterranean clean-up programme. Italy has promised its \$745,000 arrears by April, Spain its \$412,000 payment by December and France its remaining \$573,000 "sometime this year". In addition cheques which have not arrived from Turkey, Yugoslavia and Monaco will be traced. The pollution programme will be forced to close in seven weeks if part of the money is not made good. In another major result at the three day meeting in Barcelona, Algeria signed the 1976 Barcelona pollution accords leaving Albania and Turkey as the only non-signatories. Algeria's signing signals important Third World support for the clean-up programme, expected ultimately to cost \$15 billion over 10-20 years.

France and India sign new technical agreement

FRANCE and India have signed seven new protocols for technical and economic cooperation which include research in renewable energies, oceanographic technology, and the development of semi-arid regions of the left bank of the Rajasthan Canal and the Bundelkhandmarea of Uttar Pradesh. Signed by French President Valéry Giscard d'Estaing on his visit to India last month, the protocols will also attempt to solve the long standing problem of Franco-Indian cooperation — the inability of India to make use of French credits because of the high cost of French equipment and technical service. **B. Radhakrishna Rao**

Sri Lanka to set up basic research institute

SRI LANKAN President J R Jayawardene announced last week to establish an institute for basic research to be housed at a site near Colombo by November of this year. The culmination of nearly a year of discussions between the President, local scientists, and several expatriate Sri Lankan scientists, the institute will emphasise advanced study in all branches of fundamental science. Professor N C Wickramasinghe, head of the department of mathematics at University College, Cardiff, UK, has been mentioned as a candidate for director of the institute.

FEATURES

Papua New Guinea (PNG) is one of the world's least "developed" countries. A third of its three million people have only emerged from the neolithic age over the past 40 years. The people are divided by mountain ranges reaching 4,700m, torrential rivers, forests, ravines, seas, malarial swamps and language — more than 700 are spoken. But in the five years since independence from Australia, the government has launched an ambitious Improvement Plan, under which western

science and technology are being introduced enthusiastically. All projects are funded by the National Public Expenditure Plan, which absorbs 21% of all spending. The main national aims are equal distribution of development among a population that is 85% rural and largely dependent on subsistence farming and a reduction in the number of western expatriates on whom development still largely depends. Both aims are meeting with mixed results, as **Tony Ades** reports

Appropriate technology:

PAPUA New Guinea's Eight Point Improvement Plan calls for self-reliance, less dependence for its needs on imported goods and services. Most conspicuous among imported services are those of the 4,200 expatriates employed by the government. While nearly all political posts are filled by nationals, expatriates have a dominant role in formulating policy and planning its execution.

Since self-government in 1973 the number of expatriates has fallen from 50,000 to 30,000, partly as a result of the localisation programme, the replacement of expatriates by nationals. In the public service, the proportion of expatriates has dropped by 10%, but there seems to be no hurry to enforce the planned 4% reduction per year because the number of qualified nationals is not increasing as fast as the nation's need for skilled administrators.

There are sound economic reasons for localisation. The average expatriate costs the government four or five times as much as the average national, and even at the same level the expatriate will earn between two and three times more. Also, their incomparably higher standard of living creates unfulfillable hopes in the local population. However, unlike most developing countries, PNG had no western-trained elite to take over at independence. Furthermore, the sheer inaccessibility of much of the country has brought education very unevenly. In the highlands, where many gratefully recall how the first Europeans ended interclan fighting after the Second War, people are

inclined to believe that localisation has been going too fast, leaving them permanently disadvantaged to the coastal peoples whose longer contact with the West and higher levels of education give them disproportionate political power.

Of all government services it is in fact education where localisation has been most dramatic. By 1972 all primary school teachers were nationals. Since then the number of teachers has doubled to 10,000. And although 60% of all children now attend primary school, there has been a serious fall in standards that will take many years to work itself out of the system. In the meantime, localisation of secondary school teaching is going ahead.

The standards problem is most severe in science and mathematics. Complaints that young men and women training to be Health Extension Officers or agriculture technicians cannot calculate drug dosages or areas are commonly expressed, and at all higher education institutions students take remedial maths courses that may delay their regular curriculum by up to a year. Whatever the economic and political advantages of localisation, PNG's ambitious plans for development demand so much gathering of data on every aspect of the land and population, and so much administration, that many are asking whether localisation too early has actually increased dependence on expatriates.

Tony Ades has a Nature writing fellowship and is currently at the PNG Institute for Medical Research, on leave from Sussex University, UK.