

expressed alarm at the prospects of local education authorities being asked to provide financial support for Open University students together with libraries, premises and even staff. The association said that "it is clear that the possibility of cost to education authorities exists. The need for the forecast expenditure for 1969-70 and 1970-71 to be reduced to meet figures put forward by the Government departments, upon which the amount of Exchequer aid has been decided, makes it inevitable that all financial liabilities from the project must be the central Government's responsibility."

The local education authorities have, of course, good reason to resent the prospect of having to pay anything towards the Open University. Some councils have this year been obliged to cut spending on education by reducing the number of teachers and increasing the size of primary school classes. In these circumstances, the education authorities appear to find the assertions of the Open University Planning Committee (which says that if the Open University increases local government expenditure the amount will be reimbursed, and that the local authorities will be represented on the university's council) less than reassuring.

Whatever the cost to local government of the Open University, local education authorities should find themselves a little better off from 1969, when the responsibility for all postgraduate awards passes to the central government. As things are, the local education authorities make about 2,200 awards a year to postgraduate students, chiefly for vocational training courses, which cost the local authorities about £0.4 million a year. As from October 1969, responsibility for these awards is to pass to the Government, which either directly or through the research councils already makes about 15,000 awards annually, costing about £9 million. The Treasury will apparently absorb the additional cost of £0.4 million under the new arrangement.

STATISTICAL CALCULATIONS

Forms for Confidence

A USEFUL aid for the teaching of statistics has been published by the Commonwealth Forestry Institute of Oxford University (Paper No. 41, 12s 6d). It consists of a set of preprinted formats ready laid out for the performance of simple statistical routines. The whole flow of each calculation is set out in a continuous fashion: labelled spaces are provided for the observed data and for every mathematical operation thereafter. The quarto-sized formats have obviously derived some inspiration from the example of programmed learning, and they should help to ease even the most obdurate student into the disciplines of elementary statistics. For that matter, they may be equally useful for field workers, giving a clear and lasting record for calculations that tend now to be done in snatched moments on the back of envelopes.

Twenty-six routines find a place in the collection, most of them of the type that arise in field biology and perhaps sociology. Chi-squared, linear regression, confidence limits and covariance analysis are all represented. It is strange that it should be a forestry institute that devised this aid—apparently the idea for it arose among field workers of the Uganda Forest Department in 1954.

LOCUST RETURN

Renewed Fight against Insects

THE unusually heavy rains in West Africa, Arabia and the Sudan seem to have received the blame for the resurgence of large desert locust populations and the consequent threat of plague. It is unfortunate that these swarms should have occurred just after the successful conclusion of the Food and Agriculture Organization's project for the development of improved control procedures. The 1967 report of the Anti-Locust Research Centre describes the steps taken by the centre to alleviate the swarm situation and also explains that contributions from the relevant governments and a further grant, this time for \$435,000, from the United Nations Development Fund will make it possible to continue the FAO control development project until 1970.

The importance of information on locust behaviour is reflected in the laboratory investigations at the Anti-Locust Research Centre. Studies on pheromones are designed to work out how these chemical substances act on the physiology and affect the behaviour of the locust. There is, for example, an aggregation pheromone which when secreted by the insect compels its neighbours to "stay put" and aggregate. Found in moulted skins, this substance is thought to be a peptide attached to the cuticle by hydrogen bonds. There is a possibility that it is a similar pheromone which causes genetic changes in the South African brown locust to produce a black skin colour and a gregarizing effect. Completely different, however, is the reproduction synchronizing substance which acts by causing speedier maturation of the pheromone producer.

Another adaptation employed by locusts to ensure efficient breeding is the production of a resistant egg which can survive until the environment provides the damp sand and the green grass essential for developing young. Light is also important; if a dry season is accompanied by a change in day length, the locusts may go into a reproductive diapause which will only be broken when the environment becomes more favourable. The mechanism behind much of the locust behaviour has yet to be investigated; but perhaps eventually synthetic pheromone and anti-pheromones may provide a useful weapon against the threat of rising locust populations caused by the unbeatable wind and rain.

DEVELOPMENT

Another World Plan

EACH year brings a new international organization devoted to aiding the developing countries. Enthusiasm for these bodies, unfortunately, is harder to sustain, and the gap between rich and poor nations continues to widen. At the same time, aid is falling—Britain, France and the United States have all made effective reductions of overseas aid recently. The First Development Decade, loudly heralded by the United Nations in 1960 as the beginning of the end of the world's imbalance of riches, is drawing to a close with some air of disenchantment. But there are some things to offset the gloom: the Overseas Development Institute announced last week that in 1967 the developing nations achieved for the first time what has been a UN target for some years—an overall growth rate of