

amounts too small to combat disease but which ensure maximum growth rate and weight gain by overcoming sub-acute infections such as chicken pest. The Ministry of Agriculture considers it unlikely that the very small amounts of antibiotics given in foodstuffs could produce a resistance to antibiotic drugs, but the last word on that subject will have to be the report of the Swann Committee, now sitting. In the meantime, the Therapeutic Substances Act decrees that antibiotics require a veterinary prescription and has made special regulations which allow the addition of penicillins and some tetracyclines to foodstuffs in specified amounts. The amounts laid down are precise and vary for the different drugs: thus, for example, a feed supplement may contain only 1 part of procaine benzyl penicillin to 90 parts of the supplement which is then added to the total feed to give an antibiotic : feed ratio of 1 : 10,000. Non-antibiotics such as nitrofurazone are controlled by the Veterinary Products Safety Precaution Scheme, a voluntary scheme run by the Ministry of Agriculture in conjunction with the food-stuff manufacturers.

In Britain, in contrast with the United States, there is no absolute legislation controlling the amounts of pesticides allowed in foodstuffs. The Food and Drug Act merely says that food must not contain injurious substances. If, however, residue analysis shows that the animal tissues contain too much of the pesticide metabolite, prosecution may result. In other words, the analysis service now offered by the Government Chemist should help in two ways. First, it provides information for the public analyst or buyer of animal foodstuffs—and also the manufacturer—to ensure that the food does indeed contain prophylactic agents and in what amounts. The very high price of these drugs makes this economically worthwhile. But it should also help that there is now a way of spotting high levels of these agents while they are still only in animal foods.

## EDUCATION

### Higher Degrees

THE second largest degree-awarding organization in Britain is not an ancient university, a red-brick or even a plate-glass university and, indeed, not a university at all but the Council for National Academic Awards. Like any university, the council is empowered by its Royal Charter to award first degrees, masters' degrees and doctorates and, in addition, diplomas and certificates. (The last have not yet been used.) Since its establishment in 1964, chiefly as a result of recommendations in the Robbins Report, the number of students on the CNAA's books had risen from about 3,000 to 15,500 by October 1968 and should be close to 20,000 by next October. The University of London apart, the council is the organization with the largest enrolment of degree candidates in Britain.

The CNAA now offers more than 230 full-time, part-time and sandwich degree courses at fifty-odd polytechnics and colleges of technology, compared with the eighty courses available in 1964. This route to a degree seems destined to play an increasingly important part in British higher education, especially now that rapid growth in the number of arts and social sciences courses and candidates is drawing many of the colleges away from their overwhelming preoccupation with

science and technology. Of the 15,500 candidates enrolled in 1968, 3,800 were studying the arts and social sciences.

The CNAA took over the overall supervision of the former Dip.Tech. courses at the best of the technical colleges and the twenty-six polytechnics after the colleges of advanced technology had been hived off as independent technical universities. If all the plans for the large-scale expansion of the polytechnics materialize, the polytechnics should become the council's chief customers in the future. With the example of the City and Guilds course and examination programmes in front of it, the council will have to fight hard to avoid the same fate of becoming smothered by its own red tape.

In a country with more than its fair share of academic snobbery, it is particularly important that this should not happen. The CNAA has the crucial function of ensuring that education to degree standard outside the universities is both expanded and rewarded by a degree. By the same token it has the complementary role of ensuring that courses eligible for degrees at the polytechnics and technical colleges are really of degree standard.

As things stand, the council works by vetting the course proposals of the colleges and giving them a stamp of approval. Naturally enough, with the tradition of technical education behind it and candidates drawn from industry, the sort of courses the CNAA deals with are designed to be more in tune with the demands of industry and commerce than those offered by the universities. The committees and boards which vet the proposals are made up of representatives of industry, the universities and the colleges and polytechnics in equal proportions.

To judge from the striking proliferation of approved courses and the number of degrees awarded (in 1967-68 there were 1,100), as well as the increasing enrolment, the council has found a particularly rich vein in the British academic set-up to exploit. Nobody seems quite certain about that other crucial statistic, the failure rate—the Department of Education and Science is in the process of making a survey—but there is no reason to think that it is anything out of the ordinary. The 1,100 who graduated in 1967-68, for example, came from a fourth year class of 1,311.

But, apart from ensuring that the part-time and sandwich-course degree candidate does not suffer in status as well as having a harder life than his full-time university counterpart, the council has the equally important job of giving status and credit to serious research done in industry. There are 600 higher degree candidates. The council registers students at an early stage in a project and helps to recruit approved supervisors, one from industry and one from the academic world. It will be interesting to see whether its degree holders are more to the taste of industry and commerce than those emerging from the universities.

## COMPUTERS

### Generating Good Figures

THERE has been a large increase in the sale of electronic computers in Britain during the first quarter of 1969, compared with the same period in 1968. Although the