as 0.0004 μU/ml and seems to be similarly sensitive to LATS but with a different time course. Plasma gastrin activity can be bioassayed by the induced stimulation of carbonic anhydrase in the parietal cells of the fundus of the stomach of guinea-pigs, and the assay has a sensitivity equivalent to 55g/ml of pentagastrin.

The principles explored by these new cytochemical techniques for hormone bioassay are of fundamental importance and we shall see their rapid application to the measurement of many hormones as well as other biologically active substances for which bioassays or radioimmunoassays do not exist or are unsatisfactory.

3 Proceedings of symposium to be published in Clinical Endocrinology.
4 Chayen, J., Loveridge, N., and Daly, J. R., Clinical Endocrinology, 1972, 1, 219.


The Rival World

"Wherever man grows food insects are there to profit by his labours and wherever he stores his crops he will find insects are waiting for their share." These are the opening words of the Shell Film Unit's magnificent film of 1955 when there was so much hope that chemical pesticides could restore to man the third of his crops which the insects of the "rival world" were destroying. Today more than 300 insect species have already become resistant to these chemicals and the additional contribution which pesticides make to environmental pollution cannot be ignored. A joint party of experts from the Food and Agriculture Organization and the World Health Organization have recently considered an alternative method—namely, the use of viruses that kill insects.

Two groups of viruses, those of nuclear polyhedrosis and granulosis, show considerable promise as selective control agents, and some of the former have already been licensed for temporary use in the U.S.A. There is no suggestion that such viruses, however specific, would be able to control a pest, and other integrated measures must be used. Further research must take into account two desiderata. The first is that the virus must not infect or harm domestic or wild animals, plants, or man, nor must it be able to mutate to become a harmful virus. All countries proposing to use these viruses should set up a control authority to regulate which viruses are developed and how they should be used. This safety testing must be taken from the laboratory, where the initial studies can be made, to field trials, where the total impact of the virus on the fauna and flora of the area surrounding the treated area can be tested. An important implication in such a trial is that the base-line situation should have been recorded in terms of the target insect species, its predators, and pathogens—the whole ecological net. Virus is a self-multiplying pesticide, and, though in theory it may be possible for a farmer to collect this year's virus-filled corpses to store for next year's application, in practice this will inevitably lead to ecological calamity.

Secondly there must be research to find, evaluate, and develop viruses to control insects important in human and veterinary medicine, and especially those for which the insect vectors are already becoming resistant to chemical pesticides. The working party considered that priority should be given to virological means of controlling the desert locust, the principal pests of stored products, and the stem-borers of rice and maize. It also recommends that infection-free insect colonies should be established and that any insect cell lines which may be set up for production purposes should be free of extraneous micro-organisms.

The U.S. Department of Agriculture Protocols for Safety are detailed in Annex 2 and encompass acute and chronic oral toxicity for rats, dermal toxicity for guinea-pigs, and eye and skin irritation for rabbits, and acute inhalation toxicity. The U.S. Environmental Protection Agency is concerned about long-term studies (for carcinogenicity), replication in mammalian cells, immunogenicity, mutation, and toxicity to beneficial organisms such as bees, fish, birds, and plants.

It is difficult to see how these various stages in developing a virus as a control agent can be covered in less than five or six years. The experts who produced this report will be encouraged by the FAO and WHO to remain in liaison so that the development of viruses for insect control can be kept under review within the context of an integrated programme for the worldwide control of pests.

Commonwealth Foundation

Quietly, since 1966 the Commonwealth Foundation has established itself as one of the small number of international agencies of real practical value. It was set up to encourage and assist movement of professional men and women within the Commonwealth, and in eight years it has supplied travel grants for nearly two thousand individuals as well as supporting the Commonwealth Medical Association and similar associations for 14 other professions including lawyers, nurses, and pharmacists. Medicine and professions ancillary to medicine have received over £200,000 in grants out of a total of £1½ million.

The foundation’s income has come mainly from subscribing governments, now totalling 30; though in the last three years it has raised some funds from the private sector. It is not an aid-giving agency, and perhaps its outstanding achievements have been its provision of financial help to individuals and the sponsorship of international conferences; yet about one third of its recent expenditure has been on the professional associations. In its current report the foundation firmly rejects the idea that seven years should be the upper limit for a trust to support an organization. “As a relative latecomer to the field of philanthropy,” says the report, the foundation “has been able to spot the numerous white elephants languishing on the horizons of the newer world—languishing simply because some Trust or agency has, with the best of original intentions, launched a major scheme only to withdraw support those few vital years before the project could become self-sustaining.” At the same time it is clear that the foundation will be able to enlarge the scope of its work only if the more firmly established professional groups become self-sufficient as soon as reasonably possible.