

of the efficiency of his method for various types of cancer at different stages of development cannot be made.

The treatment given at Dr Issels's Ringberg clinic is a mixture of immunotherapy, chemotherapy and psychotherapy, based on the concept that cancer is a chronic systemic disease. Elimination of the original tumour is carried out by surgery, irradiation, chemotherapy, enzyme therapy and "immunotherapy by both active immunization with mycoplasma vaccine (developed by Dr Gerlach) and passive immunization with antibodies prepared from cancer cells". The most interesting part of the immunotherapy is the use of the Gerlach vaccine, but, unfortunately, few details are given in Dr Issels's article. He says that the vaccine is a mixture of pure cultures of tumour mycoplasmas obtained after ultracentrifugation from tumour tissues of heterogeneous malignant growths. The vaccine is injected intramuscularly or intravenously "for weeks or months in doses depending on the patient's condition". With this sort of vague information to go on, the MRC was right to emphasize that no conclusive evaluation of Dr Issels's methods can yet be made.

POLLUTION

Dangers in Tinned Tuna

AFTER the finding of dangerous concentrations of mercury in tinned tuna fish in the United States, it is not surprising that the laboratory of the Government Chemist has reported similar concentrations in British tins. Although the Ministry of Agriculture has not released the precise results of the preliminary emergency survey of the tinned fish, the nature of the reports suggests that concentrations between 0.3 and 1.0 parts per million—similar to those found in the American fish—have been found. The Government Chemistry Laboratory itself, in its annual report last September, generally allayed the concern about mercury contamination and failed to detect mercury in the total British diet.

In the laboratory's preliminary survey, "a range of mercury levels" was found in samples of tuna, bonito and Ship Jack fish from Japan, Peru, Russia and Yugoslavia. Accordingly, the Ministry of Agriculture and Fisheries warned the public that no assurance could be given that all tinned tuna fish is safe for consumption in quantity over a long period. But "because the consumption a head in this country is only 10 per cent of that in the United States, and in the light of the figures revealed from the small sample examined so far, the problem does not require additional action before more complete information and expert advice has been obtained". This advice will come from the government laboratory after a more extensive examination of fifty species of fish.

This recent wave of concern comes at the end of a year during which the inadequacy of restrictions on the disposal of mercurial residues in industrial wastes have been made painfully clear. In the United States, the widespread contamination of lakes and the high concentrations found in some bird species are causing considerable concern; in Canada, 0.3 p.p.m. have been found in chicken livers and 0.2 p.p.m. have been found in bread. What has also been made clear is that nobody knows what the effects of smaller, sublethal concentra-

tions of mercury are. Whilst it is well known that the metal persists and accumulates in the body, with a multitude of effects ranging from skin rashes to insomnia and loss of memory, very little is known about the long-term effects of concentrations well below the generally accepted safety limit of 0.5 p.p.m. on, for example, phytoplankton, the first link in the food chain. As long as this ignorance persists, safeguards to protect water quality standards will remain inadequate.

NEWCASTLE DISEASE

Live Vaccine Approved

ALMOST nineteen million birds in forty-three counties in Britain are now suffering from fowl pest, and there is little sign that the epidemic has spent its force. Some weeks ago it seemed that the worst was over, but the dismal daily tally of fresh outbreaks has, at last, forced the hand of the Minister of Agriculture—poultry farmers will in future be permitted to use the hitherto illegal live vaccine.

This last ditch attempt to turn the tide of infection follows six weeks of intensive field trials in which the live vaccine was tested for efficacy and safety under close Ministry supervision. The results of these trials indicated that live vaccine—only the strain Hitchener B1 has so far been permitted—may give somewhat better protection to very young birds, and it will have few adverse side effects. No significant side effects were detected when the vaccine was used on 10–14 day old chicks. The chief advantage of the live vaccine lies in its cheapness of manufacture, and the ease with which it can be used to treat poultry *en masse*. Whereas inactivated vaccine has to be administered to each bird individually, the live equivalent can be applied as an aerosol to many birds simultaneously.

It has been suggested that the virulence of the present epidemic, and the necessity to use live vaccine are evidence that Newcastle disease is now endemic in Britain, but this the Ministry have denied. However difficult it may prove to break the hold the disease has, there can be no doubt that the use of live vaccine will have economic repercussions. The veterinary controls which have previously invalidated the use of live vaccine have similarly excluded the import of cheap overseas poultry. When the use of live vaccine becomes general, this ban will no longer apply. The Minister of Agriculture said last week that when the ban is lifted, arrangements would have to be made to safeguard the home market from being undermined by unduly low priced imports.

COUNTRYSIDE COMMISSION

Causes for Dissatisfaction

THE Countryside Commission has good cause for dissatisfaction. It has a staff complement of little more than two-thirds that originally envisaged in the Countryside Act, 1968, and a budget substantially less than the £2 million considered necessary in 1967 for its new powers and responsibilities. And it is also unhappy about the low priority given by the government to landscape values and to conservation in general and in particular, in the national parks and areas of outstanding natural beauty. In its latest annual report (HMSO, 13s.) the commission criticizes government