Porton lab will study fever virus

by Eleanor Lawrence

THE new laboratory at the Microbiological Research Establishment, Porton Down, formally opened last week by Lord Godber, provides facilities unrivalled in Western Europe for the safe handling of the most dangerous viruses known.

The new facilities will be used first to study the Lassa fever virus, and the other haemorrhagic fever viruses which have mainly been discovered within the past ten years and are virtually untreatable.

Porton, with a long history of handling some of the most dangerous organisms known to man was the obvious location for such a centre. The new laboratory was started two years ago, and has been modelled on facilities at the Communicable Diseases Center at Atlanta, Georgia, which, until now, was the only laboratory considered sufficiently secure to handle the Lassa fever virus.

The first task of the laboratory will be to build up a bank of diagnostic sera against the rare haemorrhagic fevers, such as Bolivian and Congo haemorrhagic fevers, and other exotic tropical virus diseases, such as Marburg disease, that may be brought into the UK. It will also provide this facility for other European countries and, in conjunction with Atlanta, for the areas where these diseases are endemic.

Lassa fever (first recognised in Nigeria) seems to be one of the most virulent virus diseases yet discovered. The mortality in Europeans with diagnosed Lassa fever is around 48% (although it seems to be lower in the native Nigerian population). It is also one of the most infectious virus diseases known. Patients shed virus from all body secretions and through the respiratory tract, and specimens of blood and urine are heavily infected. When the virus is multiplied up in tissue culture or in experimental animals, the risk of infection is greatly magnified.

Apart from its primary use in dealing with the virulent tropical viruses which may be carried into the UK undetected at any time by people returning from abroad, the laboratory will undoubtedly be in demand from research workers wishing to carry out some of the more potentially dangerous genetic engineering experiments in which the DNA of bacteria or viruses is modified by the addition of foreign DNA from other bacteria, viruses or even higher animals. Professor Robert Harris, the Director of Porton, said last week that he had been approached by the Ashby Committee and had agreed that the laboratory facilities could be placed at the

THE BBC has been providing at first 24 and now 50 televised "pages" of printed material by using spare lines in the ordinary BBC 1 TV channel since last September; the service (code-named CEEFAX) is soon to be increased to 100 pages, and a similar service (called Oracle, but using the same standard technology as CEEFAX) will be provided by the Independent Broadcasting Authority (IBA) from next month. Until recently, the cost of a decoder to enable these printed words to be read on an ordinary television set has been prohibitive—at least £300 for a custom-made box of electronic tricks. But last week Texas Instruments, Bedford, announced in London that

they will be producing appropriate decoders on a production-line basis by early next year, when they should be available for about £50. A television set with such a decoder built in at the construction stage should then cost about £100 more than an equivalent set without a decoder, and the industry hopes that prices will fall.

As well as newflashes, sports results, a science page (see above), weather maps and other services already available from CEEFAX, this new technology opens up intriguing possibilities. Using telephone links and a keyboard, this kind of 'teletext' could help to create a home computer terminal, and there are obvious potential applications in education.

disposal of research workers wishing to undertake such experiments, but that he had not yet received any specific proposals. As the laboratory is sufficiently secure to satisfy the most stringent criteria set down by the recent conference called by Professor Paul Berg in California early this year, proposals will probably not be long in materialising.

The Berg conference recommended that experiments in which hybrids of two different viruses were made, or virus DNA (or DNA transcribed from RNA viruses) was linked to bacterial plasmids to multiply up virus genes, or mammalian DNA was linked to bacterial DNA could be carried out under conditions slightly less stringent than those in the new laboratory at Porton but that where the hybrid or the starting organisms were virulent or likely to prove so, the maximum security precautions should be taken. The other proviso of the Berg recommendations was that genetically enfeebled strains should be used.

But the prime object of the new facilities is the identification of the rare but virulent tropical viruses, which pose not just a potential but an actual public health hazard. With aeroplanes bringing their human and animal cargo into European airports every day from the tropics, the possibility of an epidemic of one of these virulent untreatable viruses cannot be discounted.

The only specific therapy which has proved effective against Lassa fever is serum taken from a convalescent patient. But with only three Europeans having recovered from the disease, the supply of convalescent serum is extremely limited. Also, administering convalescent serum from a newly recovered patient can be extremely risky as virus is excreted from the patient for several weeks after clinical recovery. One aim at Porton is to establish a bank of safe serum, either from convalescent patients or from the naturally resistant native population, which can be given to patients once the disease has been diagnosed. □