

1. The monitoring of certain materials for radioactivity.

It was proposed to institute a nation-wide programme for the assay of some of the more toxic radioactive materials, such as radioactive Strontium 90, in certain substances. This programme has now been started by my Department with very considerable assistance from members of our atomic energy project at Chalk River, Ontario. Later, as the programme develops, the work will be extended to provide for the systematic measurement of other radioactive materials present in the general environment which may be potentially harmful to human health. The whole project will be carried out as a long-term survey.

2. A study of genetic effects of radiation.

Experiments on certain rapidly-breeding lower forms of life, such as bacteria, plants, insects and small mammals, have established the fact that genetic changes can be produced by exposure to radiation. By analogy it is assumed that the same phenomenon will occur in humans, but it will take many generations to assess the magnitude of the problem.

I am told by my medical and technical advisers that, in determining genetic effects on man, there are two principal difficulties. First, most mutations will remain hidden until one individual receives the same mutated gene from both parents. Secondly, naturally occurring genes for recessive defects and abnormalities are already numerous in the population. Neither these naturally occurring mutant genes nor those that might be induced by radiation are likely to produce a significant effect in the children of the individuals carrying them unless the parents have received the same defect from a common ancestor.

The genetic problem is exceedingly complex; the important factors are not known and our scientists are attempting to carry on useful investigations in this field. A great deal of study has gone into this question, and a long range programme is now being developed for the collection and study of human data that will aid in the assessment of this problem.

3. A study of the somatic effects of radiation.

In addition to the possible genetic effects that might show up in future generations, there is the more immediate problem of harmful effects from radiation that might be induced in directly-exposed individuals. A plan for the study of these so-called somatic effects is being worked out for the approval of the national Committee to which I have already referred. Studies of those conditions which might result from undue exposure to radiation will be largely of a statistical nature, although some laboratory work is contemplated.

Much detailed planning has gone into these projects and my Government would be happy to make data available to a special Technical Committee, such as that Proposed by the United States Delegation, so that we may share with other member states of the United Nations information on the techniques employed and the results