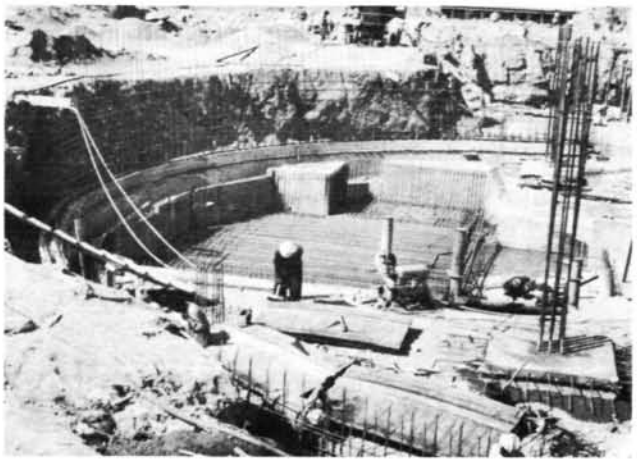


An IAEA nuclear construction adviser, Mr. G. Jenkins, has helped in the building of the new Pakistan Institute for Technology. Foundations for the nuclear reactor. (Photo. Pakistan AEC)

Pakistan has established a centre for post-graduate training and for research in nuclear physics; the Agency is supplying a multi-channel pulse-height analyser and other items.

Thailand is setting up a laboratory for research in agriculture (rice diseases), medicine and biochemistry. An expert and liquid scintillation equipment are being supplied.

Viet-Nam is already being advised on medical uses of radioisotopes by an Agency expert, whose term is being extended.

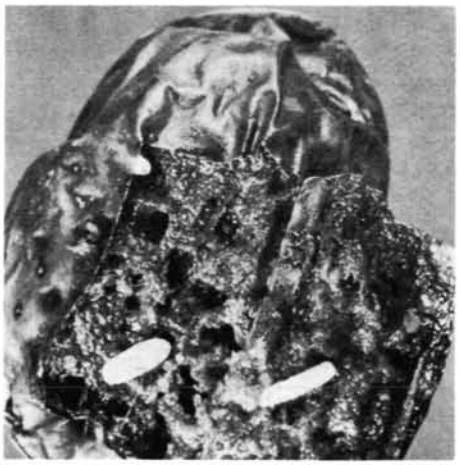
Other Projects

A number of other projects have been approved, subject to the funds being available. These include provision of an expert in reactor physics and some equipment for China, an expert in nuclear chemistry and some equipment for Colombia, equipment for nutrition studies in Guatemala, an expert in nuclear electronics and equipment for Indonesia, an expert in radiochemistry for Iraq, scientific publications and reference books for Korea, an expert in radioisotope training and equipment for Mexico, an expert in radioisotope applications in entomology for Morocco, and an expert in solid-state physics and equipment for Yugoslavia.

RADIATION IN DEFENCE OF THE OLIVE CROP

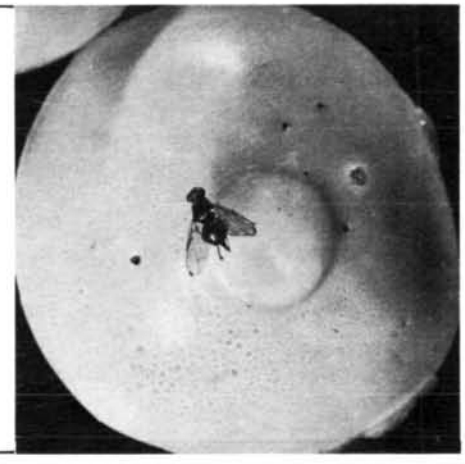
Entire insect populations can sometimes be eliminated, under suitable circumstances, by the "sterile male technique". This necessitates the mass-rearing of large numbers of male insects which are sterilized by radiation and released. IAEA, in collaboration with FAO, is supporting research into the possibility of using the method against the fruit-fly which causes havoc in the Mediterranean olive crop.

Olive-growing is the sole industry which supports the 800 inhabitants of Rovies, Greece. In Greece alone, damage to the extent of about $15 million a year is caused by the fruit-fly, Dacus OLEA.



The fly lays its eggs in the ripening olive, and the resultant larvae consume the fruit. Greek scientists have been studying the habits of the insect and the possibility of eliminating it by the sterile male technique.

A light trap for capturing Dacus flies at Rovies. Flies were trapped and "tagged" by being given radioactive food. In this way their flight habits and dispersal could be accurately checked for the first time. Dr. G. Kitsos examines the trap designed by Dr.Pelekassis of the Benaki Phytopathological Institute in Athens.

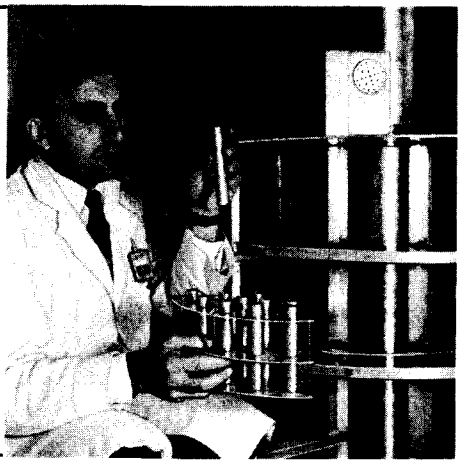


Other flies were used in the laboratory to study methods of mass-rearing. The IAEA provided an expert for this task. Here a female Dacus fly lays its eggs in a dome of thin paraffin wax in a laboratory cage at the Agricultural College of Athens.

The eggs are removed from the domes, and placed on a moist filter paper in a glass dish. At the end of about two and a half days, they are ready to hatch.

The eggs which are about to hatch, together with larvae which have just emerged, are transferred to a layer of artifical food in a plastic dish. The larvae burrow into this; after about two weeks, they return to the surface and pupate.

Preparation of a suitable artificial larval diet involves many problems, including that of expense. Dehydrated carrot, brewer's yeast, agar and olive oil are some of the ingredients employed. The complete food must have the right consistency as well as the right dietary ingredients.



The pupae are sterilized by gamma irradiation at the Democritus Nuclear Research Centre. Dr. M.E. Tzanakakis removing tubes each containing 150 pupae, after they have been exposed to a cobalt source.

After the sterilization of the pupae, the male flies are separated from the females.

The newly-emerged adult insects must be fed for a few days. The food is not the same as for the larvae, and must be liquid. It is placed drop by drop on wax paper, which is then put into the cage.