HYDROLOGY UNDER DIFFICULTIES

An unusual hydrological investigation is being carried out in Kenya by IAEA, at Lake Chala, a volcanic crater with no visible inlet or outlet.

The problem is to determine whether the lake has any connection with a number of springs near Taveta, some six miles distant: this relationship is important in assessing the possibility of expanding the Taveta irrigation scheme. Questions of water rights and utilization are involved, since the lake is situated on the Tanganyikan border.

The method adopted is that of labelling the waters of the lake with small quantities of water containing radioactive hydrogen (tritium). There are some special features in this instance, one being the difficulty of access. The lake is entirely surrounded by steep cliffs. A track was cut by British Army engineers, and the boat and all supplies were taken down by this route.

Another problem was presented by the depth of the lake, which amounts to 300 feet. It is necessary to ensure the regular mixing of the tritium throughout. This has been done by means of hundreds of plastic bottles, which were dropped from the boat at regular intervals as it made a series of carefully-plotted traverses.

Each bottle had a weight attached, and was perforated by two small holes. By this means, as the bottle sank the contents were progressively released until it reached the bottom, thus ensuring an even diffusion of tritium throughout the lake.

Lake Chala (Photo. British Land Forces, Kenya)

Track to the lake, prepared by Army engineers. The boat and all supplies had to be taken to the water's edge by this route.

A raft of oil drums being brought to the lake (Photo. British Land Forces, Kenya).

Filling plastic bottles with tritium-labelled water: Mr. Proctor and Mr. T.T. Bestow, both of the Hydraulic Branch, Ministry of Works, Nairobi.

Mr. A.E. Peckham, Section of Hydrology, IAEA determining the line of traverse for dropping bottles containing tritium-labelled water.

Setting a plastic bottle ready for sinking into the lake.