

The advantages to be obtained by the close co-operation between meteorologists and engineers for the solution of these problems is obvious. Unfortunately, in the past, this co-operation has not always been attained, but for future work it is hoped that the Bureau's hydrometeorological section will provide the required link.

27 April 1961

Some Impressions of Micro-Meteorology Abroad

by I.C.McIlroy

Mr. McIlroy of the Division of Meteorological Physics, C.S.I.R.O., discussed briefly a small selection of the more interesting micro-meteorological work he had seen while overseas recently.

During the first month of his trip he had directed a course in Arid Zone Micro-Climatology for U.N.E.S.C.O. This was held in Cairo in November 1960, and was attended by thirty graduates from eight Middle East countries. The participants were competent, enthusiastic and comparatively well-informed but somewhat lacking in practical experience. It became obvious that both in Egypt and most other countries of the region little real micro-meteorology had been done as yet.

As might be expected micro-meteorology in England was fairly well based and advancing steadily. A number of organizations were active, the fields of those visited ranging from more or less fundamental work at Rothamsted Experimental Station, Cambridge Met. Office Research Unit, Chemical Defence Research Establishment at Porton and Imperial College, London, to work of direct agricultural application at Nat. Vegetable Research Station, Met. Office Agricultural Service, and again at Rothamsted.

In several instances (notably at R.E.S. and N.V.R.S.), major benefits could be seen from close teamwork between specialists in several fields - a practice which should be more widely adopted here!

In Holland conditions were somewhat similar, with a number of teams and individuals doing very good work. At Wageningen at least the emphasis seemed very much on controlled experiments ("phytatronics" and lysimetry) - so much so in some cases as to give an appearance of artificiality to the work.

Israel's climate and social and economic circumstances lead to micro-climatic problems and priorities somewhat different from those of Europe, and typical rather of the Middle East and the arid or semi-arid regions of Pakistan and India. However the scientific atmosphere is generally similar to that of Europe, while the enthusiasm, ingenuity and adaptability displayed are extremely refreshing.

Of special interest are the rapid and extensive reafforestation program, the many-sided approach to utilisation of solar energy (in particular the development of shallow brine ponds with thermal circulation reduced by maintaining a steep density "lapse", to act as cheap large-scale heat collectors), and the reconstruction of ancient runoff concentration schemes for farming in the heart of the desert.

With some notable exceptions work in Egypt, Pakistan and India appeared as yet hardly past the descriptive stage, although most of the rather few workers in the field seem capable of doing much more than this, given suitable support.

In all these countries research generally is up against a number of difficulties not met with in Europe, North America or Aüstralasia. Chief amongst these is the shortage of skilled assistance, little technical training being available apart from the Universities.

There are also shortages of many supplies and facilities which are taken for granted here, in particular good workshops. The absence of a literate and scientifically minded background amongst people at large leads to an intellectual isolation which at the same time conflicts with the tremendous urgency of the problems to be solved. There also appears to be relatively little co-ordination, or co-operation between individuals or organizations in the same or related fields.

All this leads to a lack of good research experience, which itself helps to perpetuate the whole state of affairs.

Vastly speeded up education programs, plus much more extensive technical aid from overseas, seems to hold the only promise of breaking the vicious circle. In the meantime the gap between the more and the less developed countries is widening rather than closing.

In discussion Dr. Loewe pointed out the existence in Hungary of a natural phenomenon, where a sweet water stream ran into a salt lake, similar to the solar ponds being worked on in Israel. It also emerged that Israel opinion is now that the importance of dew had been over-rated in the past.