

WATER CONSERVATION

Plastic Coats on Plants

from our Botany Correspondent

THE idea of spraying leaves with plastic films to reduce water loss from plants, which scientists at the University of California at Davis have recently tried out with success, is not new. Early reports of the use of plastics appeared in 1961, but in 1937 nurserymen were using waxes in an attempt to prevent wilting during transplantation. The idea of reducing transpiration has been followed up most thoroughly in countries such as the United States, Israel and Australia, where the need to limit irrigation is a high priority. British botanists have not ignored the possibility of using plastic coatings for this purpose, although none of them seems to be working specifically on this problem now.

At Davis, Drs D. C. Davenport, R. M. Hagan and P. E. Martin have reduced water loss by 30 per cent after spraying film-forming plastic on the leaves of the oleander. This plant is naturally equipped with features which help to reduce transpiration—sunken stomata on the underside of the leaves and a covering of hairs. If the reduction of 30 per cent obtained with plastic sprays in the greenhouse can be repeated at the side of the Californian freeways, there is expected to be a considerable saving in the costs of irrigation.

Work on the reduction of transpiration—long recognized as important—is now concentrated on two lines of attack. The first is to give plants a waterproof jacket by spraying with plastics; the second is to use chemicals, such as phenyl mercuric acetate, to induce the

stomata to close. One of the difficulties of using either of these types of anti-transpiration agent is that they need to be replaced fairly regularly as the leaves enlarge. Both methods have been tried in California and Israel, where the climate makes the problem of irrigation considerable, and where a reduction of 30 per cent in water loss no doubt represents good progress. In Britain, however, where there are also problems of irrigation, it seems to be the general impression that greater reductions would have to be achieved before such methods would be worthwhile. The most likely use for the plastic sprays seems to be short term, and it is already standard practice in Britain to use water-soluble plastics to check transpiration for a few days while shrubs and trees are being transplanted.

The obvious disadvantage of reducing transpiration is that the entry of carbon dioxide necessary for photosynthesis would seem to be restricted. This may not be the problem it seems, for some plastic films will let through carbon dioxide but not water, and using a specific chemical it is possible to reduce transpiration more than photosynthesis until the stomata are very nearly closed. The team at Davis has suggested that plastics sprays, when they have passed the experimental stage, could be used to help protect plants from air pollutants or even from the entry of infectious organisms. Plastic coated plants, unnatural as they may seem, could be here to stay.

CANADIAN POLICY

Dividing to Rule

THE Canadian Government has made a small but significant change in the organizations responsible for providing scientific advice. There are two of them—the Science Council, under the chairmanship of Dr O. M. Solandt, which is a broad policy-making body, and the Science Secretariat, directed by Dr J. R. Weir, which forms part of the Privy Council Office. Until now, the council has had to rely on the secretariat for supporting services such as the collection of information, but at the same time the secretariat has been giving direct advice to the Government. This arrangement has tended to blur the distinction between the two bodies, as well as calling into question the independence of the Science Council. The dangers of the arrangement were probably more apparent than real, but it has nevertheless come under criticism from members of the influential Senate Science Policy Committee.

M. Pierre Trudeau has now achieved a Solomon-like solution by dividing the secretariat into two. The part responsible for supporting the Science Council will now be attached directly to the council, although for

administrative convenience it will for the time being continue to work in the Privy Council office. The staff responsible exclusively to the Science Council will come under the direction of Dr P. D. McTaggart-Cowan, who becomes executive-director of the Science Council.

This is a solution which has been suggested before (see *Nature*, **220**, 218; 1968), and its adoption now may do something to take the wind from the sails of the Senate Science Policy Committee, which is back at work in Ottawa and asking awkward questions. Both Dr Solandt and Dr Roger Gaudry, vice-chairman of the council, believe that the change will give the council “greater flexibility in tackling major problems”, and help it to achieve “free and open discussion of all its work with the scientific community and the public at large”. The effect of the change is likely to be to strengthen the council at the expense of the secretariat, although the secretariat retains most of its most senior staff. But in future it may tend to work more in the background, using its influence with government in a less public way than before.