

entiated (0), igneous rocks (1), metamorphic rocks (2), clastic sedimentary rocks (3), chemical-biochemical sedimentary rocks (4), soils and residual cumulose deposits (5), mixed mineral assemblages of the commoner metallic and non-metallic minerals (6), minerals (7), and extraterrestrial materials (8). Subsequent digits give a more precise description. Thus a carbonaceous chondrite becomes 8AAE and a lunar breccia 8CAE.

Part of the reason for the code is the boom in geochemical analysis brought about by the introduction of automatic techniques, so that a great deal of chemical information about rocks is becoming available. The code prepared by the Institute of Geological Sciences and published last month will be used by the institute to improve the retrieval of data from its extensive petrological records built up over more than a century. As the system is developed, other codes are envisaged to cover such factors as the geological occurrence, stratigraphy, colour, and physical and chemical data. The working party which was responsible for the present code feels that it has achieved a satisfactory compromise between a compact system which can be described in a small handbook, and a more elaborate system which would have to take into account such factors as where a rock was found. But it emphasizes that the code is open-ended and can be made more precise if time shows that it need be.

AGRICULTURE

FAO sees Brighter Side

ENOUGH food can be grown to feed the world's population within the foreseeable future, according to a survey prepared by the Food and Agriculture Organization (FAO) which predicts the world's agricultural performance up until 1985. But the bottleneck in getting food to the hungry lies not so much in raising but in distributing it. This at least was the theme that emerged most strongly from the Second World Food Congress that concluded its sessions at the Hague this week.

The Indicative World Plan, which the congress was convened to discuss, attempts to forecast the major issues which will confront world agriculture in the 1970s and early 1980s. The FAO believes that if the policies recommended in the Indicative World Plan (IWP) are fulfilled, the world's agricultural production will rise at an average rate of 3.7 per cent per year between now and 1985, which will exceed by one per cent the expected increase in the world's population over this period.

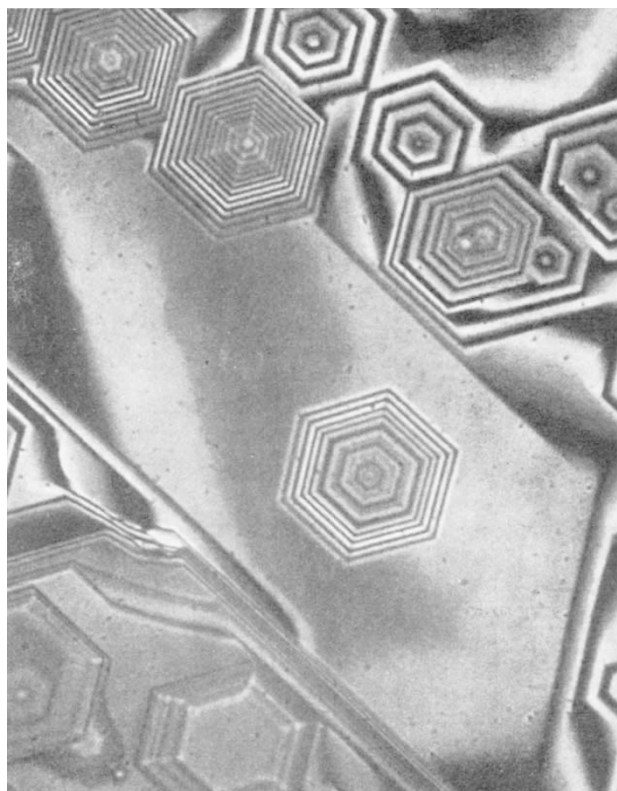
In essence, the Indicative World Plan lays down a general order of priorities for agricultural development. The chief emphasis is on increasing production of livestock so as to fill the protein gap that exists in developing countries. This is to be accomplished in a two stage process, in the first of which priority is to be given to cereal production so as to meet basic calorie requirements, and at the same time to the production of animal products where quick progress is possible; essentially this means poultry, eggs and (where acceptable) pork. Research at this stage should be directed towards the development of high-protein cereals, and high-yielding varieties of pulses, oilseeds, fruit, vegetables and fodder. In the second stage the production of cereals for humans should expand less rapidly as alternative foodstuffs become available; beef and veal

Table 1. PROJECTED GROWTH RATES OF GROSS AGRICULTURAL PRODUCTION, 1962 TO 1985 (PER CENT PER YEAR)

	From the Indicative World Plan of the FAO				
	Africa, south of Sahara	Asia and Far East	Latin America	Near East and North- west Africa	Av.
Crops	3.1	3.9	3.0	3.6	3.6
Livestock	5.0	4.4	3.8	3.8	4.1
Crops and livestock	3.4	3.9	3.3	3.7	3.7
Fisheries	5.3	3.7	3.6	2.8	3.8
Forestry	2.6	4.1	3.7	2.9	3.5
Total agriculture	3.4	3.9	3.4	3.6	3.7

should form an increasing proportion of animal foods and fresh milk should replace the processed milk that will be necessary in the transition stage.

The FAO estimates that more than \$110,000 million in investments will be needed over the 23-year period of the IWP if its objectives are to be met. More than half the expenditure would be in Asia and the Far East and more than a quarter in South America. The largest category of investments would be for improving the land, mainly through irrigation developments. The developing countries will be able to supply some of this capital themselves but the remainder will have to come from increasing aid from and exports to developed countries. In his address to the Congress the FAO Director-General, Mr A. H. Boerma, asked that the governments of the richer countries should move as fast as possible towards the target of one per cent of the gross national product in development aid, and that they should open up their markets to trade from the poorer countries far more liberally than before.



Etch pits in cadmium sulphide crystal, one of a series of photographs illustrating art in research which has been prepared by the General Motors Research Laboratories to mark their fiftieth anniversary.