

by the use of gas centrifuges. The communiqué issued after the meeting is heavy with phrases such as "questions of substance still to be decided". What seems to have happened is that the ministers of the three countries—two from each side—were presented with a report on progress so far towards the solution of technical and political problems together with a draft of a treaty. Some points in the documents prepared by the officials have plainly been accepted by the politicians, although the communiqué says that the draft treaty will have to be amended in the light of the discussions at Bonn. Enough progress towards an agreement seems to have been made for the three governments to have agreed that industrial enterprises—including public corporations such as the British fuel manufacturing company—should be brought into the discussions. (From the beginning, the intention has been that industrial companies should be tightly integrated with the plans for making centrifuges.) But there is no longer any of the optimism which allowed people to say, as recently as March, that it might be possible to sign an agreement in principle at the meeting which took place earlier this week.

What lies ahead? Although it has plainly been something of a surprise that the negotiations have turned out to be as tough as Monday showed them to be, cheerfulness is still the order of the day among the negotiators. Most probably it is a combination of technical and political considerations which has made the going unexpectedly difficult, and certainly there will be great rejoicing among those who make and sell fissile materials when eventually it is possible to understand the commercial advantages of the bulk production of uranium-235 by gas centrifuge. Certainly there seems to be no doubt that the intervention of Euratom has been unimportant. Nobody seems to be concerned at the clarion call from Brussels that the use of this technique should be organized on an international basis, preferably within the EEC. This, however, probably explains the statement in the Bonn communiqué that there would be consideration for the participation of other governments once the tripartite enterprise had become a going concern.

DRUG CONSUMPTION

Eating More Pills

PEOPLE seem to have an insatiable appetite for pills, and the richer they are the more they take and the more they are prepared to spend on medicines in general. Doctors seem equally happy to prescribe more medicines. These apparently universal trends, which carry the risk of sickness through excessive use of drugs as well as waste of money, prompted the Swedish Government in the spring of 1964 to suggest that the World Health Organization should make a survey of European drug consumption. The report of a pilot survey in six European countries—Austria, France, Hungary, the Netherlands, Sweden and the United Kingdom—will do nothing to dispel the Swedish Government's alarm.

In all six countries, the increase in drug consumption and its cost is now a cause for anxiety. The WHO consultants say that the amount of information they were able to collect was insufficient to suggest how best to obtain the optimum level of drug consumption

or to make strict comparisons of the situation in different countries.

As would be expected, there is considerable variation in the pattern of drug consumption not only between but within the six countries. In general, urban communities consume and spend more on medicaments and medical care than their rural counterparts. The people of Budapest spent 349 florints on medicines in 1965, while the average spending in the rest of Hungary was 200 florints. There are also considerable differences in the amount spent on drugs in the six countries and the types of drugs used for particular diseases.

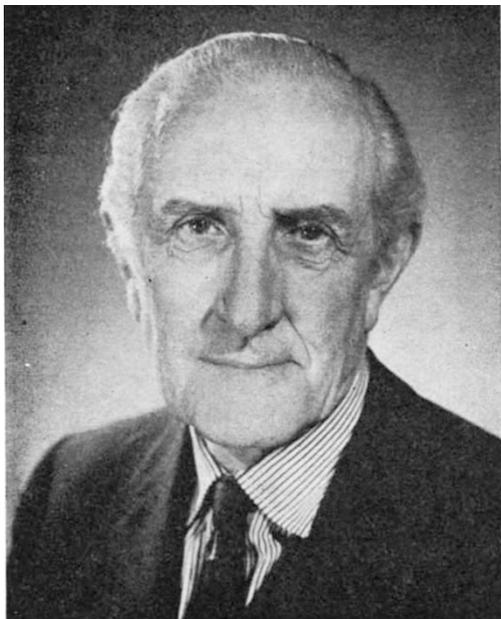
The rise in cost of prescribed drugs in the past ten years has generally outstripped the increase of national incomes, and is more evident in general practice than in the hospitals. One common cause is the tendency of general practitioners to prescribe proprietary drugs. The clearest example of this trend is in Britain. In 1949 the average cost per ingredient in the 202 million prescriptions was 16.4 pence, but by 1965 the comparable figure had increased to 84.4 pence. And in Sweden, the average cost per prescription rose from 6.49 to 12.36 kronor between 1955 and 1964. The increasing consumption of proprietary drugs—in Britain in 1964–65 they constituted 75 per cent of all drugs prescribed—is familiar enough. The report notes, for example, that several committees in Britain have commented on the fact that the medical profession, while stoutly defending the right of each doctor to have maximum freedom to prescribe any drug for his patient, too often succumbs to advertising and ends up by prescribing costly proprietary medicines for which there are cheaper alternatives.

Among the six countries surveyed, the number of prescription items per head of the population correlates with the number of doctors per head of the population. There was no correlation between consumption of prescription of over-the-counter drugs with the number of pharmacies. The survey also could find neither evidence that rigid government control of manufacture or marketing of drugs influences total consumption, nor evidence for the assumption that the availability of a large number of drugs affects total consumption. On the other hand, a liberal policy of admitting drugs to the market increases the risk of consumption of less effective drugs. The report also calls for more non-commercial communication about drugs in addition to the ever growing "commercial communication"—its euphemism for advertising. This is steadily intensifying in Europe, although it has not yet reached the levels in the United States, where the drug companies spend about \$4,000 a year per physician.

PHARMACEUTICALS

Keeping Watch on Drugs

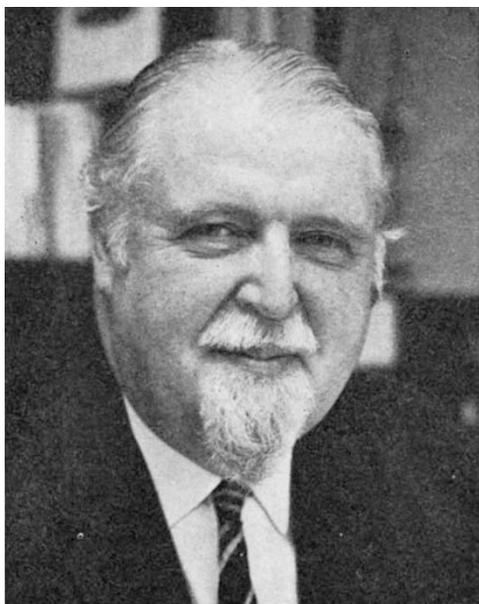
It will be interesting to see whether the Dunlop Committee becomes known as the Frazer Committee now that Sir Derrick Dunlop has resigned the chairmanship of the British Government's Committee on Safety of Drugs and Dr A. C. Frazer has succeeded him. Certainly that is likely to be the most noticeable change. Sir Derrick, who has been chairman of the committee, which acts as a watchdog for the British Government on the new drugs and formulations put on the market



Sir Derrick Dunlop.

in Britain, since it was set up in 1963, has now become chairman of the Medicines Commission, to be established under the 1968 Medicines Act. As such, he is likely to preserve close relations with Dr Frazer, who is expected to take the chair at the next meeting of the main committee later this month.

Dr Frazer is no newcomer to the Dunlop Committee. Like Sir Derrick he joined it, as a member, in 1963 and for some time has served as chairman of the sub-committee dealing with the toxicity, clinical trials and therapeutic efficacy of new drugs and formulations. He is a strong advocate of the principle that the pharmaceutical industry, and for that matter the food industry—he is director-general of the infant British



Dr A. C. Frazer.

Nutrition Foundation and president of the British Food Manufacturing Industries Research Association—should be responsible for the safety of its products. He does not believe, for example, that developing the Dunlop Committee or any other government agency along the lines of the US Food and Drug Administration would serve any useful purpose when the gentleman's agreement between the drug companies and the Dunlop Committee has worked so well. The Dunlop Committee receives about 800 new formulations or new drugs each year and the industry for the past six years has been careful to submit all its new preparations for vetting both at the stage of clinical trials and when it intends to market them. It also voluntarily supplies the committee with an adverse reactions register covering the first two years after the preparation is marketed. Dr Frazer said he could only recollect two or three occasions when a company had dodged this procedure and in these cases a quick word from the committee to the Government quickly brought the offenders to heel. There was a tinge of regret in his voice when he explained that, when the Medicines Act comes into full force, this informal but successful arrangement will be replaced by a more formal and rigorous, but inevitably more bureaucratic, procedure.

METEOROLOGY

Still Cooling Down

A SURVEY of the world's weather conditions during 1968 (*WMO Bulletin*, 18, 72; 1969) has shown that for much of the globe it was considerably colder than normal last year. In Franz-Joseph Land, indeed, average temperatures were about 7°C less than during the period 1931–60. To what extent this fall of temperature reflects a reduction in the amount of solar radiation reaching the surface of the Earth is not yet clear, but the slight cooling of the large Eurasian and North American land masses is likely to be directly linked to the amount of incoming radiation from the Sun.

The temperature on the surface of the Earth has been falling slowly for the past twenty to twenty-five years. Dr J. M. Mitchell of the US Weather Bureau carried out a survey a few years ago of the global temperature for the eighty years up to 1960, and he found a general rise for the period up to the early nineteen forties and a steady decline thereafter. This analysis has been extended by Professor R. A. Bryson and his team at the University of Wisconsin to include the past decade, and they have found a continuation of the downward temperature trend.

Particular features of the world's weather during 1968 were the heavy precipitation in the northern hemisphere and the very widespread subnormal temperatures. The only areas in the northern hemisphere to experience above normal temperatures were a belt across the Soviet Union from southern Siberia to central Europe and a few parts of Canada. In contrast to the abundance of rain in Europe, the Soviet Union and North America, many subtropical areas in Asia and North Africa experienced unusually light rainfalls, and droughts seem to have been widespread in the southern hemisphere.

The study of radiation climatology is still in its infancy. Meteorologists differ on the extent to which