leisure. It also stimulates thought concerning present attitudes and practices to the older man at work. For example, the shortage of very “light” work for men in their 60’s suggests to the reviewer that firms might find it worth while to retrain men in middle life known to be on “demanding” jobs. Mr. Le Gros Clark suspected that this was already happening informally and successfully in one of the firms.

This book should be read by all connected with the shaping of industrial policy, whether in a medical, managerial, or trade union capacity. Also, anyone interested in social problems of ageing would do well to read it and to recommend it to others.

Sheila M. Chown


The Medical Research Council, in their second report on radiation hazards, take account of recent radiobiological and genetics research work in their evaluation.

The picture is coming into better focus but remains unaltered in essentials: however, some areas of uncertainty are less blurred than in the first report in 1956.

In the Hiroshima survivors, leukaemia has been shown to have a maximum incidence in the sixth to eighth years after radiation exposure; thereafter the risk of this disease as a sequel diminishes, and there is an increased mortality from cancer, though as yet it is not possible to say whether all forms of cancer contribute to this or only certain types. Since the mean latent period for many types of cancer is more than 10 years, it is too early to say whether a peak has yet been reached in this instance.

Experimental work with mammals shows that loss of fertility is perhaps the most sensitive of all indicators of damage by irradiation and such effects, the report predicts, might be of profound biological significance under conditions of considerable over-exposure as in accidents or nuclear warfare. There is no suggestion of impaired fertility in either sex in occupational radiation exposure.

A survey of the mortality of British radiologists in a 60-year period up to 1956 shows no life-shortening effect of radiation in this group.

The views on genetic effects in the 1956 report are not materially altered. Recent experimental work shows that, in mice, fewer gene mutations are caused in spermatogonia and oocytes if a total radiation dose is spread out over a longer time than if it is given rapidly as a single brief exposure: so in this work, the effect is reduced by a lower dose-rate. This does not affect the “no-threshold” concept for genetic effects. Chromosomal abnormalities, in addition to gene mutations, may be produced by irradiation in man—hence wisdom dictates a cautious attitude at present.

According to the survey of the Adrian Committee, radiation received by the general population from diagnostic radiology is equivalent to a genetically effective dose of 14 milliroentgens (14 mr.). By comparison, the gonad dose-rate from naturally occurring radiation sources is in the range between 85 mr. and 106 mr. The reduction in gonad dose from x-rays used in diagnosis is praiseworthy but not yet equally good in all hospital x-ray departments. If the techniques of all departments could be brought up to the standard present in one-quarter of the hospitals studied, this dose could be further reduced to one-seventh of the present level, that is, about 2 milliroentgens, without any curtailment of the work.

An appendix gives additional data on fall-out from which it appears that short-lived isotopes are relatively more important than in the last report because of the changed pattern of nuclear tests. The amount of fall-out shows a seasonal trend with highest values in Spring. Distribution is non-uniform with the greatest deposition in Northern temperate latitudes. Most fall-out comes down in rain; the amounts recorded at various U.K. sampling stations are proportional to the rainfall there. Short-lived fission products are of significance in contributing to external radiation: long-lived fission products which are important are those stored in the body, strontium-90, caesium-137, and carbon-14, which give internal radiation. Strontium-90, which is concentrated in bone, is regarded as the best single indicator of possible hazard. But a sudden rapid rise in bone retention to levels higher than predicted, which was feared as a possibility in 1956, is now considered to be unlikely, so the warning level need not be quite as low as one-tenth of the permissible average population dose suggested then and is now raised to one-half.

The report concludes by repeating verbatim the views expressed in 1956 on wartime hazards and the biological significance of atomic warfare: “we have no reason to change these views”.

Katharine Williams


This is an important book. It appears just as the new American President focuses attention on the social services and gives a chance for objective evaluation of the parts played so far by the protagonists in the battle to decide the future of medicine in the United States.

To set the stage, the author describes how, in the past 40 years, all attempts to introduce compulsory health insurance at either Federal or State level have been defeated and how the Trade Unions, always the leaders of this movement, changed their tactics without losing sight of their original aim. Instead of beating against the door firmly closed in the face of government-sponsored health insurance, they used their collective bargaining power to force employers to introduce schemes for their employees. The inherent disadvantage of such isolated schemes in tying the employee to his employer has been outweighed by the real need for the benefits. As a result, the number of schemes has increased with great rapidity. Some of the unions found them so lucrative that they abandoned the original idea to use the development of private schemes as a weapon with which