chemicals, and all for less than £1.00. I would suggest it also as necessary reading for industrial medical officers, since as likely as not there will be a well thumbed copy circulating on the shop floor, perhaps to be produced at the next meeting of the joint safety and health committee. Forewarned is forearmed.

P. J. TAYLOR

Pathological Effects of Radio Waves. By M. S. Tolgskaya and Z. V. Gordon. Translated from Russian by Basil Haigh. (Pp. vi + 146; 38 figs; \$23.00) New York: Plenum Publishing Corporation. 1973.

The Western assessment of the hazards of radio waves to human beings has long been more lenient than that of workers in Eastern Europe. For this reason alone a monograph on the pathological effects of radio waves translated from Russian is a welcome addition to the literature in English, doubly so when it derives from the pen of such eminent Soviet authorities.

The first section of the book relates the authors' findings of gross and microscopical postmortem appearances in mice, rats, and rabbits irradiated with single lethal or repeated non-lethal doses of high intensity (40-100 mW/cm²; 2000-9000 V/m) radio waves ranging from medium frequency to extra-high frequency bands. They consider these consistent with hyperthermia in the lethal cases and with acclimatization in the non-lethal. All this accords with Western views.

In the introduction to the second section a series of tables sets out the functional changes which have been observed in living organisms exposed to low intensity radio waves. The literature is reviewed, including observations on man, stressing the effect on the nervous system and in particular the development of the 'diencephalic syndrome'. They subjected their animals to low intensity exposures (10 mW/cm²; 10-2250 V/m) and detail the findings. No gross morphological changes were seen and only occasional degenerative effects were observed by ordinary microscopical methods. Using neurohistological techniques, they demonstrated abundant but delicate changes in the nervous system and histochemistry revealed a decrease in ribonucleoprotein in tissue elements normally rich in this material. The extent of these changes diminished as frequency decreased. In a lengthy discussion it is argued that the changes found are largely the result of a reflex action which arises from the effects of the radiation on cutaneous and visceral sensory receptors, the purpose of which is to maintain homeostasis. This is in line with the Soviet view that the non-thermal impact of radio waves is on the central nervous system. The findings need verification in the West.

There have been many difficulties in the way of a rapprochement on this subject. We have relied on morphological findings and physical theory while the Eastern view has been a functional and behavioural one, but the work reported has a firm morphological basis. There has been a language difficulty, and though one is grateful for an apparently excellent English translation, there are reservations. Of 130 references, 98 are from Soviet sources and 62 are stated to be in Russian while quite a number of the remainder must also be. Only 19 are in

English and none is dated later than 1961. Western workers have also found it difficult to confirm Eastern work owing to inadequate information on experimental method. Unfortunately this volume, too, is not sufficiently communicative in this respect.

Turning to the publication itself, the black-and-white reproductions of photomicrographs appear dull and uninformative at first but careful scrutiny is rewarding. After all, there is no real substitute for the original slides demonstrated by their owners. There is no index, but it is not a textbook nor a work of reference, so perhaps this is excusable. There is an irritating habit of identifying radiation sometimes by frequency and sometimes by wavelength: the translator might have taken the opportunity to express all uniformly in terms of hertz.

The text is somewhat repetitive and the long descriptive sections are definitely only for the interested morphologist. The general review and discussion will appeal to a wider field, though some of that dealing with stress and adaptation might be considered outmoded here. Increasing numbers of workers in various disciplines are interesting themselves in physical environmental hazards but a good grounding in physiology seems essential for any real appreciation of the authors' thesis.

The authors state that the animals irradiated at low intensity remained clinically healthy. This accords with the Western view of harmlessness as well as the view of homeostasis. As there is increasing evidence in the West that low intensity radio waves do have some biological effect, perhaps this note of accord is an omen of eventual agreement as to their nature and importance. Those concerned with man in his occupational environment recognize clearly that homeostatic mechanisms allow him to survive in it.

JOHN RICH

Respiratory Diseases: Task Force Report on Problems, Research Approaches, Needs. The Lung Program, National Heart and Lung Institute, October 1972. (Pp. 243; no price stated.) Copies available from the U.S. Government Printing Office, Washington, D.C. 20402. 1973.

It is an unfortunate feature of the break-neck speed at which medical research gallops along in the United States that no consultant in even a comparatively small specialty like respiratory medicine can have a comprehensive knowledge of more than a tiny corner of his chosen field. This remarkable booklet helps to broaden his horizon by presenting the views of 189 biomedical scientists and one economist, who were called together to discuss the present state of knowledge or dearth of knowledge concerning particular respiratory problems and, taking note of their economic burden on the US community, to recommend specific and practicable steps which might lead to the prevention, treatment, or better understanding of these conditions.

The discussion of environmental and occupational disease is disappointingly humdrum. There seems no solution to the problem set by the long delay between exposure to many industrial hazards and the appearance of clinical disease. Where the response to the hazard is dramatic and early, e.g., biological enzymes or humidi-

fiers, its recognition is fairly easy. Perhaps intense investigation of new processes might give hints of troubles to come in later years as, for example, the response of normal subjects to a few hours' exposure to cotton dust, but there seems no way of detecting a carcinogen at an early date. Emphasis is laid on the additive effects of more than one hazard, and the importance of the tobacco cigarette in potentiating the effects of cotton, silica, asbestos, and uranium is noted. It is hoped that a multidisciplinary approach to the reaction of pulmonary tissue to multiple environmental hazards, or the newer techniques of immunology, may provide a breakthrough; but it seems to me that this must await an entirely new epidemiological technique.

The other sections which deal with allergic and non-allergic airways disease, hypersensitivity pneumonitis, diffuse fibrosis, granulomatous disease, and vascular disease are wholly fascinating, and the bibliography is excellent.

There is no index, but references to industrial situations will be found on pages 10, 65, 69, 75, 77, 88-96, 121-125, 138, and in the financial tables at the end of the volume.

This book can be heartily recommended to the industrial physician who wishes to peer over the fence into fields other than his own. He may look with envy on those who have sufficient financial resources to implement the recommendations of the Task Force but he will certainly find the change of scenery both refreshing and invigorating.

G. L. LEATHART

NOTICES

Recent Advances in the Assessment of the Health Effects of Environmental Pollution

The Commission of the European Communities, the Environmental Protection Agency of the United States, and the World Health Organization are organizing an international symposium to be held in Paris at the UNESCO Building 24-28 June, 1974.

Further information may be obtained from the Secretariat, Commission of the European Communities, Health Protection Directorate, 29 rue Aldringen, Luxembourg (Grand Duchy).

National Research Foundation

A symposium on Environment and Health will take place in Cos, 23-26 June 1974. Further information may be obtained from the Secretariat, National Research Foundation, 48, Vas. Constantinou Avenue, Athens 501/1, Greece.

International Course in Industrial Toxicology

The Institute of Occupational Health, Helsinki, and the Industrial Medical Association of Finland will arrange an International Course in Industrial Toxicology 19-30 August 1974 at the Institute of Occupational Health, Helsinki.

Applications should be sent to Dr. Sven Hernberg. The deadline is 15 May 1974. All applicants will be informed whether they are accepted before 31 May 1974.

For further details, please write to Dr. Sven Hernberg,

Director, Department of Epidemiology and Biometry, Institute of Occupational Health, Haartmaninkatu 1, 00290 Helsinki 29, Finland.

IV International Congress on Burn Injuries

This congress, organized by the Argentine Chapter of the International Society for Burn Injuries, will be held 15-21 September 1974 at the Sheraton Hotel, Buenos Aires.

For further information please write to the Secretariat of the Congress at R. Sáenz Peña 1110, 2nd floor, Buenos Aires, Argentina.

International Symposium on Practical Applications of Ergonomics in Industry, Agriculture and Forestry

The International Labour Office and the Rumanian Ministry of Labour are organizing this symposium to be held in Bucharest 17-20 September 1974.

Further information may be obtained from the Organizing Committee for the International Symposium on Ergonomics, Ministry of Labour, Str. Scaune No. 1-3, Bucharest, Rumania.

Mackenzie Industrial Health Lecture 1974

The Mackenzie Industrial Health Lecture 1974, arranged by the British Medical Association in conjunction with the Society of Occupational Medicine, will be held on Thursday 18 July, 1974 at 10.00 a.m. at Askham Bryan Agricultural College, Tadcaster Road, near York. The Lecture will be delivered by Dr. P. A. B. Raffle, M.D., M.R.C.P., D.P.H., D.I.H., Chief Medical Officer to the London Transport Executive, and his subject will be 'The Purposes of Occupational Medicine'. Dr. Jack E. Miller, J.P., M.R.C.G.P., Treasurer of the British Medical Association, will take the Chair.

Statement of the National Council on Radiation Protection and Measurements (NCRP), Washington, D.C.

Specification of units for natural uranium and natural thorium

Although maximum permissible body burdens (MPBB) and maximum permissible concentrations (MPC) in air and water for natural uranium were originally expressed in units of mass for the maximum permissible body burden and of mass per unit volume for the maximum permissible concentration¹, later usage by the National Committee on Radiation Protection (NCRP) recognized a 'special' curie that was applied specifically to natural uranium and to natural thorium. For natural uranium this 'special' curie was defined . . . to correspond to the sum of 3.7×10^{10} dis/sec from ^{238}U , 3.7×10^{10} dis/sec from ^{234}U , and 1.7×10^9 dis/sec from $^{235}\text{U}^{2,3*}$, the ratio of activities being determined by the usual activity ratio of these uranium isotopes as they occur in nature.

Because, in practice, the 'special' curie for natural uranium has led to confusion and because its use may be regarded as compromising the integrity of the curie as a unit, the NCRP recommends that use of the 'special' curie be discontinued and that mass units be used to