such a service be established under the management of an occupational health nurse, it would still be necessary to employ doctors and hygienists to provide occupational health or occupational hygiene advice as required.

Finally, the problem of providing occupational health services for small industries has not been solved, and it is unfortunate that group occupational health services have been dismissed in the light of past experience before the Health and Safety at Work etc., Act was passed.

J. A. BONNELL

Cadmium 77: Proceedings of the First International Cadmium Conference. Edited by C. Cole and S. Hiscock. (Pp. 265; £30.00; $60.00; DM 150.00). Metal Bulletin Ltd, Park House, Park Terrace, Worcester Park, Surrey KT4 7HY.

This is a very well produced report of the First International Cadmium Conference organised by the Cadmium Association, London, the Cadmium Council, New York and the International Lead Zinc Research Association, and held in San Francisco from January 31st to February 2nd 1977.

The conference covered a wide field including a review of the present and future roles of cadmium in industry, a section on the uses of cadmium and its technology, and industrial sources of cadmium in the environment. Part 4 reviews standards and regulations, and Part 5 the presence of cadmium in the environment and in aquatic life and crops. Part 6 is a wide-ranging review of the toxicological effects of cadmium including a number of previously unpublished observations. Finally, Professor K. Tsuchiya discusses the criteria for health standards.

The editors are to be congratulated on putting together the papers given at the conference together with the discussions: this publication brings together the most wide-ranging and comprehensive information on cadmium and its potential industrial and public health problems.

Together with its excellent list of references it will be an essential part of the library of all serious workers in the field of cadmium toxicology and public health control, and for managers who have a responsibility for the protection of the health of employees and the control of effluent in the atmosphere and liquid waste.

There are some differences in the approach to the criteria for health standards. The Task Group on Metal Toxicology held in Tokyo in 1975 defined critical concentration for a cell and also for an organ. This definition has certain difficulties because the 'adverse effect' or 'undesirable functional changes' are interpreted differently by different people. Also, as Professor Tsuchiya points out, critical organ concentrations can be measured only in animal experiments or post mortem. There are not a great number of cadmium-exposed workers in most countries so it is difficult to get adequate statistical evidence in this way.

In the UK, long-term clinical observations on low exposure groups who have not developed any clinical signs or symptoms are now being reinforced by in vivo neutron activation studies to determine organ concentrations of cadmium.

The discussion brings out very clearly the differences of opinion on what changes in renal function are acceptable and what are not acceptable. The quality of the papers is generally excellent and the discussions are particularly well reported.

D. MALCOLM


Women at Work No. 1/1977 is the first of a series of ILO news bulletins which will be published three times a year (March, July and November). It is directed to governments, workers’ and employers’ organisations, research institutes and individuals concerned with women’s questions. In the words of Francis Blanchard, Director General of the ILO, it is intended to inform women, and the institutions concerned with their status, of significant developments in the field of education and exchange of ideas and experience. It is also intended to enlighten them about legislation and organisations that are capable of furthering equality and participation in economic and social development.

The first chapter is devoted to national trends and describes plans and policies laid down in different countries concerning the rights of women workers, outlining the type of institutional machinery which has been developed to deal with women’s problems.

The second chapter deals with the types of jobs which have been undertaken by women in the past, and stresses the need for the acquisition of modern skills, the lack of which encourages discrimination against women. The need for training and for a change in the traditional attitude to the education of women is emphasised, particularly in view of the increasing numbers of women in employment.

Changes in legislation in various countries, designed to promote equal pay for equal work, are discussed and some case histories are described with their legal outcome where women have lost jobs or compensation because of childbirth.

The need for greater involvement by women in trade union activities is touched upon, and developments in a few countries described, including the election of a woman president to the Canadian Union of Public Employees which has well over 210,000 members. The ILO set up an ‘Office for Women Workers’ Questions’ on 1 April 1976 in compliance with a resolution passed at the ILO Conference in June 1975. The ILO medium-term plan for 1976–81 is mentioned, as well as current research and studies geared to promote opportunities for women and to improve their conditions of work. Reference is also made to developments taking place at regional level, to ILO documents on Nursing Personnel and Women on Board Ship and to other events taking place within the UN, UNICEF, ILO/UNESCO and non-governmental organisations with a view to improving the status and role of women. Much of this relates to the developing countries.

The penultimate chapter consists of extracts from the Declaration on equality of opportunity and treatment for women workers which was adopted at the Sixtieth Session of the International Labour Conference in 1975, while the final chapter is devoted to bibliographical references.

The document makes rather dull reading but is important from the point of view of developments in the expanding field of women in the work force. The main emphasis is on equality of opportunity, equal rights between men and women and the removal of discrimination, although there is an implied need to safeguard the family. The question whether,
when viewed from a health and safety angle, equality between the sexes is possible, is not put. Perhaps this is not surprising when one reads in a paragraph headed 'Reducing Women's Workload' such items as introducing improved but cheap cooking and other household utensils and equipment, developing efficient agricultural tools and providing communities with light machinery for grinding millet or grain.

The trends described, however, add to the importance of the proceedings of a symposium on 'Health of Women at Work', organised by the Society of Occupational Medicine Research Panel. This has much relevance to occupational medicine in this country where, as elsewhere, demographic changes in society and the changed pattern of family life permit an increasing number of women to follow gainful employment.

The meaning of the Sex Discrimination Act is clearly defined by Miss (now Baroness) Lockwood and the work of the Equal Opportunities Commission which has, as one of its tasks, the reviewing of protective legislation. Attention by the Commission to evidence that sex discrimination is necessary, might help to prevent this country making the same errors as the United States where, one reads, women are attempting to carry out jobs well beyond their physical capacities and are failing to report their resultant back troubles because of their belief that they must be allowed to carry out jobs equal with men.

The difficult problem of how to protect the foetus in utero is made almost insoluble by the mass of new legislation relating to the employment of women, especially the Sex Discrimination Act of 1975, the Equal Pay Act of 1970, the Health and Safety at Work Act of 1974, and the Congenital Disabilities (Civil Liability) Act of 1976. What these Acts mean with regard to employers' liability is fully discussed by Barbara Calvert, QC. Other papers deal with the Health of Female Air Cabin Crew, Women Asbestos Workers, and Toxicological Problems Related to the Employment of Women. All are important and are of a high standard.

J. W. CUTHERBERT


This international Symposium on the Handling of Radiation Accidents, held in Vienna, was a follow-up to one on the same topic organised by the International Atomic Energy Agency in May 1969. The meeting was attended by approximately 200 delegates representing 39 countries, and was organised in five broad categories: Radiation Accident Case Histories; Organisation and Planning; Training and Exercising; Technical Aspects of Accident Detection and Assessment, and Accident Situation Analysis.

The Conference opened with an introductory paper by Dr. Andrew McLean entitled 'Radiation Accidents, Reflections and Reminiscences'. This was an invited paper and is both an excellent statement of the present views and the past history of radiation accidents and an assessment of the future, based on the experiences which have led to quantitative guides for action to protect the public in the United Kingdom from the effects of such accidents. This paper also reviews the results of investigating 200 cases of actual or suggested radiation overexposure by chromosome analysis. It also reviews methods of accelerating plutonium excretion from the human body. The paper concludes with an outline of lessons learned from the reactor accident at Windscale in 1957. It is of interest that many of the points made in this opening paper represent a distillation of themes which recur frequently as other participants presented their contributions during the symposium. In addition, the fast reactor accident studies outlined in this paper are of particular interest.

The radiation accident case histories include a review of many unusual and unplanned events which occurred in the German Democratic Republic between 1963 and 1976. Another paper gives a detailed account of the Lucens Reactor melt-down accident in Switzerland in January 1969 and a remarkable description of plutonium wound contamination in France when the entire incident, apart from the first twenty minutes, was filmed live by a crew working nearby at the time.

There are several papers on the organisation and pre-planning for accidents involving fixed nuclear facilities or materials in the course of transportation, and on the role of the Employment Protection Agency in the United States in the provision of protective action guides. Other papers describe the emergency plans already in existence for dealing with the transport of radioactive materials and action to be taken at various reactor locations for major accidents involving the general public. As expected, the majority of these plans are very similar in their requirements and in their concept.

Training programmes for staff and the exercises which have been carried out over the years in many facilities, particularly in the United Kingdom, have provided valuable lessons and these are discussed in very considerable detail. An American paper in the training and exercising group describes the facilities needed for the management of radiation casualties. The value of improvisation and adaptability in emergencies is stressed rather than setting aside expensive equipment and personnel to be called upon only in rare events.

The final group of papers on Accident Assessment and Analysis deal with the technical aspects of accident detection and accident analysis. UK experience demonstrated the value of this procedure, in that a simplified system of measurement by mobile survey teams in the field, coupled with early backup, for detailed analysis of radioactive isotopes in air samples, provides flexibility in dealing with releases of mixed fission products from reactors.

In the final paper the role of human error as a factor in nuclear accidents was discussed. Forty incidents in which human error was judged to have contributed significantly to the event were reviewed by a French author; these were selected from a total of 1300 reported incidents occurring between 1972 and 1976. Only three of these had resulted in radiological consequences to individuals; the remainder were controlled by automatic protection systems. A detailed analysis showed that the two most frequent categories of human error were associated with operator faults and those following routine maintenance.

In summing up, the symposium Proceedings present an encouraging view of the nuclear industries' safety record and its state of readiness for dealing with future radiation accidents. The considerable resources devoted both to theoretical assessments or potential accidents and to the training of emergency personnel are clearly demonstrated. Equally, the persons giving the papers stress that there are no grounds for complacency because, even though the accidents or incidents which