BUSINESS REVIEWS


This report contains much of general interest as well as particular interest to industrial medicine. It gives an account of the three schemes for which the Ministry of National Insurance is responsible, family allowances, national insurance, and industrial injuries.

The number of families receiving allowances is still rising, and over 3,000,000 families now draw this allowance, at a cost of over £61 million a year. For those who fear deterioration of British family life, it may be consoling to know that in over 93% of cases the allowance was drawn by married couples living together. In only 13% of families, however, were there four or more children under 18 years of age.

The main part of the report deals with the general scheme of National Insurance. Some interesting sickness figures are given. A chart is included which gives the weekly intake of new sickness claims to June, 1951. A comparison of the last three years shows a surprisingly consistent picture except for the period of the influenza epidemic which occurred in January and February, 1951. The increased claims spread slowly from Tyneside in January, 1951, to reach the west coast a month later, and this increase later spread out from the larger centres—Manchester, Glasgow, and Dundee. The epidemic appeared to be confined to the northern half of England and Scotland.

An interesting section of the report deals with retirement. From a study carried out by sampling methods it is concluded that the higher pension (26s. a week), which began in 1946, had little or no effect on the proportion of people who continued to work after reaching pensionable age. It is, perhaps, surprising to find that among men reaching 65, 50% are still at work 18 months later, and 30% are still at work five years later, at 70. The figures for women are considerably lower. It is pointed out that at the retirement age (65 for men and 60 for women) the expectation of life is 12½ and 18½ years, respectively. This is a fact which must be pondered, not only by the elderly but by employed people of younger ages and by employers.

The section on industrial injuries is, perhaps, of special interest to industrial medical officers. Claims for injury benefit remain steady at 15–16,000 a week, and the coal mining industry, which represents less than 5% of the working population, accounts for a third of these claims. This would appear to be a strong argument for providing special rehabilitation facilities for this small and important section of the community. In 10% of all those claiming injury benefit the condition was sufficiently severe for them to claim disablement benefit at the end of six months. It is disappointing to see that in only 150 cases was action taken by the medical boards to see that training courses, made available by the Ministry of Labour, were used for claimants. At present three government departments are interested in the sick or injured workman, namely, the Ministries of Health, Labour and National Service, and National Insurance. The closest cooperation is obviously necessary if workers are to receive the best treatment available and the country is to benefit from their early return to work.

Special mention is made of the addition to the list of prescribed diseases of tuberculosis occurring in nurses and certain other workers in the health services. This decision introduces a new principle into “compensation”, in that tuberculosis is a disease which is prevalent in the population at large. In making their recommendation to the Minister the Committee suggested that prescription of other communicable diseases should not be considered until experience had been gained from the prescription of tuberculosis.

This report is a very readable document. Of necessity there are difficulties, and certain tables relate to awkward periods. For instance, details of pneumoconiosis were not kept until April, 1950, and the report has to deal with a period of nine months. These irregularities have now been smoothed out, and reports which relate to a calendar year are promised for the future. Since nearly the whole working population is insured against sickness, the Ministry of National Insurance should give invaluable information on morbidity in this country. It is to be hoped that before long much more of this information will be widely and readily available.


This report begins with a description of welding processes and distinguishes between the two main types, gas welding and electric welding. In both processes the welder may be exposed to fume from the metal which is being welded or from the “filler” rod which may or may not carry a coating. A mixture of iron oxides and silicates is a common type of coating for welding rods, but many other substances are already in use or are introduced as the use of alloys in industry expands. Small quantities of hydrogen, carbon dioxide, carbon monoxide, nitrous fumes, and ozone may be evolved. Both metal fume, the finely divided oxide of metal
produced by heating, and these gases may cause symptoms, especially when welding is done in confined spaces. Special risks exist when the metal which is being welded is covered with such protective coatings as zinc, which occurs on galvanized iron or steel, lead on painted metal, cadmium in paint or as an electro-plating, and the deposits from water or fuel in boilers. No information is given on the concentrations in the atmosphere of the various harmful contaminants which may occur during welding processes. These clearly depend upon the conditions of each operation and presumably on the methods of the individual workman.

The clinical section of the report begins with a critical review of the literature on health hazards of welding. In this investigation 249 men were examined from 16 firms where welding was done. Two hundred and forty-five were welders. Two had previously been engaged in this trade, and two were foremen who had been exposed to the fumes in welding shops for many years. The firms were chosen so that a representative sample of welding processes and metals used would be included in the survey. Particular enquiry was made as to the type of welding upon which each man was engaged for most of the time, and each man was asked to comment upon the state of his health before he became a welder, and since taking up this occupation. He was asked also to give an opinion on the influence of the work upon his health. The average age of the group of welders examined was 34 years, the range being from 17 to 64. The average length of welding experience was 12.7 years, the longest experience being 37 years, and the shortest one year. The examination included a radiograph of the chest in 180 workmen, a controlled investigation into the effects upon the eyes in which a group of 50 shipyard welders was compared with one of 50 "shipyard non-welders" of the same age groups, and blood examinations in an unselected group of 100 welders.

The analysis of the results of the investigation is very detailed and the frequent interposition of tables and references to them in the text results in a somewhat disjointed description of the findings. These are more clearly presented in the summary.

The protection afforded by the usual clothing, gloves, and face-shield, reduces the risk of dermatitis from exposure to rays, dust, and oil, although multiple small burns result from sparks thrown off by the arc spluttering. The condition known as "arc-eyes" is common and most electric welders have experienced at least one attack. Gas welders do not suffer from this condition unless they have been exposed to unscreened rays from a neighbouring arc. The effects are temporary, but chronic conjunctivitis is found in welders more frequently than in men employed on other jobs. In the group examined no evidence of damage to the lens or deeper structures of the eye was detected. Their average age was 33.5 ± 4.9 years and their average welding experience was 10 ± 4-3 years. Cataract is seldom seen in glass workers when exposure to radiation has been for less than 17 years. No comment is made upon the nutritional state of the group of welders examined for specific lens changes. Minton (1949) states that "welders who may be suffering from some general disease, or those whose state of nutrition is poor are liable to greater damage of the lens as a result of such physical factors as infra-red radiation."

The main positive finding was that approximately 60% of the welders examined had symptoms referable to disease of the respiratory system. Cough was the commonest complaint and abnormal physical signs were detected in about half the men who had symptoms. Of the 180 men radiographed, "definite inhalation changes" were found in 20 and "suspicious" changes in a further 12. The x-ray changes occur in direct proportion to the length of the employment and are more common and occur after a shorter time in electric welders. Symptoms were slightly more frequent and signs definitely more so in the group of welders showing x-ray changes. Two cases are described in which removal from exposure to fume resulted in regression of the shadows seen on x-ray examination. Several other welders had been found on examination 10 years previously to have x-ray changes which had not increased in intensity nor caused any diminution in working capacity. While this knowledge should lead to caution in assessing the significance as to prognosis of x-ray changes in the lungs of welders, it should not result in complacency towards the need for suppression of dust and fume especially when welding is done in confined spaces.

Doig concludes that the condition designated "welder's disease" by other observers is not a specific disease of welders due to their occupation. This, and the available evidence from statistics which suggests that there is no increased mortality or morbidity rate among welders, is reassuring. He recommends that more precise information of a statistical nature is required to ascertain that diseases such as pneumonia and gastro-intestinal disorders are no more frequent among welders than in the general population. The report concludes with a description of the regulations at present in force to protect welders from the effects of inhalation of dusts and fume, and the recommendations for the personal protection of the welder. Further recommendations designed to improve the ventilation in the vicinity of welding processes are made, and where fumes cannot be removed by exhaust ventilation the welders should be provided with breathing apparatus which ensures an adequate supply of air from an uncontaminated source. The variety of conditions which are encountered in different welding processes makes it necessary to consider each job as a separate problem if complete protection and maximum comfort is to be provided for the welder.

Lesley Bidstrup


It is well known that since many foundry workers are exposed to siliceous dusts they run a risk of silicosis and