temperature of the sole at which the incidence of discomfort began to rise rapidly was about the same as that at which a rapid increase in blood flow through the foot might be expected. The results of the present experiments were compared with the conclusions reached in some earlier investigations. The results of these experiments were published in full in a recent paper in this Journal (14, 13, 1957).

A Universal Entraining Unit for Use in the Determination of Atmospheric Contamination

K. W. HOLMES, J. MACKAY, and R. E. WILSON, Ministry of Supply, described and demonstrated an apparatus which has been constructed for entraining samples of contaminated air without recourse to normal services, such as water or electricity. This apparatus also measured the volume of air passing through the entraining unit.

Beryllium Monitoring

A. H. GILLIESON, Atomic Energy Research Establishment, briefly introduced the nature of and analytical problems presented by the hazard of air-borne beryllium compounds. Two methods for the detection and estimation of beryllium or its compounds, as dust or aerosols, in laboratory or plant atmospheres were outlined. Both methods were spectrographic, the first being a development of the normal filter collection procedure for rapid spectrographic analysis; the second applied a relatively new direct recording spectrographic technique whereby an instantaneous indication of the beryllium content of the sampled air is given. Both methods have been developed by the Research Group of the U.K.A.E.A. by two different teams of spectrographers. The first method is the more accurate, but sampling time being of necessity relatively long the average beryllium concentration over the sampling period is measured. The second method is inherently less accurate because of its sensitivity to particle size, but it gives in practice an almost instantaneous (20 seconds) indication of the presence of an air-borne beryllium hazard.

The Thermal Environment in Non-ferrous Foundries

W. B. LAWRIE, Ministry of Labour and National Service, and D. TURNER, Medical Research Council, reported measurements of the various factors in the thermal environment made in a number of typical die-casting foundries in an attempt to assess the severity of any thermal stress imposed on the foundrymen and to suggest ways in which this stress might be reduced. The degree of stress was found to vary markedly from place to place, being largely dependent upon the melting procedures in use. It was apparent that many conventional furnaces were thermally inefficient. An oil-fired furnace was designed in which the thermal efficiency was much increased, resulting in much cooler working conditions in the foundry. Some of the results obtained, and a full description of the reverberatory furnace, have been published.*

* Turner, D., Lawrie, W. B., Eyden, A., and Edwards, A. (1956). *Metal Ind. (Lond.)*, 88, 393, 413. (See also p. 177 of this issue.)

BOOK REVIEWS

Symposium of Tuberculosis. Edited by F. R. G. Heaf. (Pp. xvi + 755; 78 plates, 54 figures. £5 5s.) London: Cassell. 1957.

This book is a collection of essays of varying style and merit forming a valuable textbook with the emphasis in the right places. The editor, Professor Heaf, states in the foreword that the book is particularly directed towards helping those who work in countries where tuberculosis is still a major health problem. But all except the most complacent in any country can profit from it. Ideas on treatment change so rapidly at present that it is impossible for the critical physician to teach dogma; and to write didactically but still be convincing and clear is very difficult. It is, therefore, not a criticism of the authors to say that the sections on the treatment of pulmonary tuberculosis are not likely to be as useful as some other parts of the book. The deliberate emphasis on prevention and the practical details of chest clinic routine and public health practice is refreshing after a decade of preoccupation with therapeutic advances and the widening clinical interests of the chest specialist. The relatively neglected subject of the relationship between tuberculosis and the industrial environment is well reviewed by Dr. Alice Stewart; and Dr. P. V. Benjamin of India contributes a valuable chapter on the problems of tuberculosis control in the economically underdeveloped countries. The references given with each chapter are useful: but they would be more so if the practice of giving the titles of articles had been adopted. The purpose of a reference in a text-book is not only to authenticate a statement in the text but to show the reader where he can find more details of the subject; and the title of the paper is necessary to show him the scope of the work referred to.

J. R. BIGNALL

Ministry of Fuel and Power: Pneumoconiosis in the Mining and Quarrying Industries. Digest of Statistics, 1955. (Pp. iv + 20. 3s.) London: H.M.S.O. 1956.

This publication is the fifth of an annual series in which statistics relating to pneumoconiosis (including silicosis and asbestosis) are assembled. Although with few exceptions the tables are derived from the records of the Ministry of Pensions and National Insurance, their scope is limited to the mining and quarrying industries, whose health and welfare are the concern of the Ministry of Fuel and Power. This purely administrative distinction means that the tables give no information about some 17% (in 1955) of the cases of pneumoconiosis newly diagnosed, of which more than half come from the pottery and foundry industries. (Ministry of Pensions and National Service. Annual Report, 1955. H.M.S.O. 1956.)

The short title of this publication, "Digest of Pneumoconiosis Statistics", is thus slightly misleading, but within its specified field it brings together most of the useful figures available which relate to applications for compensation for pneumoconiosis. The various tables subdivide the claimants according to their industry of origin (for coal-miners their National Coal Board Division and Area), the outcome of their claim, their age, and the advice as to future employment offered to them. Three tables provided by the National Coal Board analyse the employment of men referred to them by the Pneumoconiosis Panels in relation to the advice offered, showing whether suitable employment was offered and accepted, offered and rejected, or not available. A noteworthy feature is revealed by the table which gives assessments of disability. As high a proportion as 55% of the newly-diagnosed coal-miners were assessed as having 10% disability, or less, and only 2% were thought to be completely disabled. Either many cases are diagnosed at a relatively early stage, or the disability associated with pneumoconiosis is, on the average, small. It would be of value if simple and complicated pneumoconiosis could be distinguished in the tables, since the aetiology of these two forms is thought to be different, and the associated disability to be greater when massive fibrosis is present.

The Digest provides valuable data for those concerned with the problems raised by the application of the Industrial Injuries and Workmen's Compensation Acts to pneumoconiosis, particularly the appropriate Ministries, the employers, and the trade unions. It will inevitably be referred to also by those concerned with the prevention of pneumoconiosis, but here great caution is necessary. The reasons are clearly set out in the introduction to the Digest:

"Current increases in the number of men who are certified to be suffering from pneumoconiosis provide no guide to the present risks of contracting the disease. It must be remembered that pneumoconiosis is the result of many years of exposure to dust in the mining and quarrying industries, and that the majority of cases are in the older age groups. Cases now being diagnosed are the product of dust conditions of many years ago, before the present arrangements for dust suppression were in operation. The rise in numbers of new certifications is mainly attributable to increasing awareness of the disease as a result of which workmen are very sensibly showing a greater readiness to be x-rayed. Mass miniature radiography and other x-ray surveys at the collieries chosen for research on pneumoconiosis have undoubtedly contributed to this awareness. Rises in certification figures therefore should not necessarily be taken as indicating that the true prevalence of the disease is increasing."

Speculations provoked by changes and trends in these annual figures might provide useful guidance; it is far more likely that they would lead to ill-founded criticism of present methods of inspection and control and to unnecessary administrative action.

P. D. OLDHAM

In their Early Twenties: A Study of Glasgow Youth.
By T. Ferguson and J. Cunnison. (Pp. vi + 110.
12s. 6d.) London: Oxford University Press. 1956.

This work presents a follow-up study of a large number of young people who left school in Glasgow in 1947. It excludes those who were serving apprenticeships or receiving special training and who claimed deferment from National Service, approximately 30% of the total. The book, as a whole, is an attempt to estimate the impact of National Service on young people. For this purpose the young men are divided into two groups, those rejected for National Service and those accepted, and a comparison is made between them.

Many interesting points emerge, but in almost every case the differences noted are too small to form the basis of judgment. In many cases the differences are those which might be expected. Nearly one-third of those accepted for National Service had at least started an apprenticeship though nearly 8% had lapsed, while the number of unskilled boys was higher than the average of all boys because of the deferment of the more able and stable lads. National Servicemen form, therefore, to some extent, a selected group. Those rejected for National Service had a definitely poorer background and poorer record.

Ignoring the absence of the apprenticeship element, Professor Ferguson suggests that those accepted conform to the average of performance and says that in considering the record after National Service it would be unrealistic to expect the lads rejected to do as well as those accepted. In spite of this difference the percentages serving apprenticeships at 17 were, rejected 28, accepted 33.3, while at 22 the figures for those in skilled work were rejected 21 and accepted 24.3. Often the unfit and the less intelligent stick more closely to their jobs, some because they value security, others because they lack initiative. The deciding factor with a high proportion of all lads is the way they are treated by the firm, the sense of purpose and personal value they are given. Comparisons are made between boys serving in the R.A.F. and the Army, and the differences should be appreciable because the R.A.F. is known to be more selective; one out of two is rejected and those rejected go automatically into the Army. On the whole the figures show R.A.F. performance on return to civilian life to be better. The proportion of all lads rejected for National Service from Glasgow is 33% compared with about 20% for the country as a whole.

It is certainly not surprising that the great majority said they preferred civilian life and considered that National Service was just a job to be done. On return from National Service approximately 32% of the men continued an apprenticeship or some form of training. Two years later 8.6% were still undergoing training and 15.5% had completed training, a wastage of 8%.

Of those rejected for National Service at 20 about 23.5% were still undergoing training and two years later 18% had either completed training or were still in training, a wastage of 5.5%. This may be due to the unsettling effect of National Service but that may be good rather than bad, if it means that lads are less easily satisfied with the second-rate, and the dull monotony of repetitive work. In any case those who interrupt their apprenticeship to do National Service are on the whole less stable than those who are deferred. The drift from