of the vat under anaerobic conditions, yielding lager beer, are explained.

It is interesting to read that the wine trade has such antiquity dating from Mesolithic time, more than ten thousand years ago, and to follow its progress to modern commercial production where countries and districts specialize to market a characteristic product.

The diseases which affect the vine are many and varied and, until the advent of the newer insecticides and fungicides, the struggle has been intense, with the vine grower barely holding his own in this war of attrition. The commercial fermentation of the juice of the grape to yield wine is performed by the wine yeast *Saccharomyces ellipsoideus* and the growth of the wild yeast and bacteria is discouraged by the addition of sulphur dioxide to the "must" (grape juice) before fermentation.

The section of the book which deals with the famous vintage wines is fascinating and differences in vines, soils, and climates, which combine to give the characteristic types of great wines, are stressed.

It is recorded that Arrach, a spirit made by distilling the juice of the coconut palm, was known in India at least 800 years before the Christian era.

The Irish are given the credit for being the first race to distil whiskey from fermented grain and this preceded the production of brandy by the French. The legend has it that the Irish were originally taught whiskey-making by St. Patrick.

The use of yeast by the baker to lighten his bread has considerable antiquity, as the process was developed by the ancient Egyptians and the same method is used commercially today in all countries of the world.

The chapter on moulds and antibiotics chronicles the tremendous developments in this field in recent years, since the original observation of Fleming when he described the inhibition of cultures of *Staphylococcus aureus* by Penicillium. However, it is pointed out that the Chinese used soy flour poultices to treat infected wounds and the Ebers Papyrus of 1500 B.C. extolled the virtues of "yeast of sweet beer" for similar use.

This book is of importance to doctors who work in industry for great care has been taken to give a concise and accurate description of all the processes in which micro-organisms play a part in industry.

No mention has been made of any occupational diseases attributable to these allies of industry but no doubt the author would consider such information as outside his terms of reference.

JOHN F. EUSTACE

Toxicology and Biochemistry of Aromatic Hydrocarbons. By H. W. Gerarde. (Pp. xiii + 329; 89 figures + 63 tables. 30s.) Amsterdam: Elsevier. 1960.

This book is divided into two parts. The first, General Considerations, includes a brief account of the nomenclature and structure of the aromatic hydrocarbons, also the relationship between chemical constitution and physical properties, taste, smell, toxicity, and biochemistry. The biochemistry of these compounds includes sections on absorption, tissue distribution, excretion, and metabolism. The final chapter of the section discusses what constitutes

an industrial hazard, threshold limits, and treatment.

The second part deals in more detail with 20 aromatic hydrocarbons commonly encountered industrially, under the headings "physical and chemical properties", "sources and probable modes of contact", "analytical methods", "toxicity", "biochemistry", "prevention, detection and treatment of exposure". A brief section on the carcinogenicity of the polycyclic hydrocarbons is included, and an appendix containing a glossary of terms commonly encountered in the petroleum industry.

The industrial hygienist and toxicologist, for whom it is primarily intended, should find this a valuable handbook, containing in one volume much of the chemical, biochemical, and toxicological data he requires, set out in tabular form and including previously unpublished work of the author.

The book is printed on good quality paper, but the binding of the review copy was inadequate, loose pages appearing after minimal usage.

C. J. THRELFALL

Air Pollution. (Monograph Series No. 46.) (Pp. 442; 4 figures. 40s.) Geneva: World Health Organization. 1961.

In the historical review by E. C. Halliday which opens this Monograph there is a clear indication of the rapidly mounting number of papers on air pollution which have been published since the end of the Second World War. There have as yet been few books summarizing these developments, but this well-produced volume goes a considerable way towards bridging the gap. It is intended mainly for the benefit of public health officials and it brings together a series of 14 articles by authors from seven different countries. It suffers from the inevitable time lag involved in the preparation of books with multiple authorship, but it provides a useful survey of world trends in research up to 1957. The coverage is wide, but for British readers it is liable to set a somewhat false perspective. Care has been taken to exclude purely occupational hazards, but throughout there is a tendency to emphasize the importance of industrial emissions. Domestic sources of pollution receive very little attention and nowhere is there any detailed account of the distribution of smoke and sulphur dioxide within large towns.

The individual sections vary widely in length and quality. Some contain a profusion of detail worthy of a reference work whilst others are written in terms too general even for a broad survey. One of the longest and most valuable is by Morris Katz, concerning the physical and chemical nature of air pollution. This is an admirable discussion of the several types of pollution which may be found in urban atmospheres with particular reference to conditions in Great Britain, Los Angeles, and the Detroit—Windsor area. It is followed by an equally long discussion by Harry Heimann on health aspects in which considerable emphasis is placed on the major episodes of high pollution. The amount of overlap which occurs between sections is quite small, but a table showing the average composition of the atmosphere appears in each of these two contributions and the Los

Angeles smog problem is discussed in several places. A section on meteorology by Harry Wexler sets out in quite simple terms the principles underlying the dispersion of pollution. Translation difficulties may account for a few errors which appear in the section on sampling and instrumentation by F. Cambi (*e.g.* the term "colloidal matter" may mean colloid). Not all of the recommendations in this section are appropriate for the study of general air pollution. Many of the methods described are intended for industrial dusts and the sampling and analysis of urban smoke is not properly considered. There is a brief but useful section on the effects on animals by E. J. Catcott and a very well-documented account of the effects on plants by Moyer D. Thomas. This describes the effects of sulphur dioxide, fluorides, and "Los Angeles smog" on sensitive plants and it includes some excellent coloured plates. Legislation is dealt with by Albert Parker, and although he refers to the several Acts which have been passed in Great Britain, the implications of the Clean Air Act, 1956, seem sufficient to justify longer discussion. There is an excellent survey on radioactive pollution by J. P. Jammet, although it goes far beyond the field of practical interest at the present time. It is wise to consider possible hazards from a wide range of radionuclides, but little information is given regarding their actual occurrence in the air and nowhere is the naturally occurring activity of radon daughter products used as a yardstick.

Other sections deal with the identification of the air pollution problem (Louis C. McCabe), economic and social aspects (E. Leclerc), site selection (J. R. Taylor, A. Hasegawa, and Leslie A. Chambers), prevention and control by process changes (Andrew H. Rose Jr., David G. Stephan, and Robert L. Stenborg), and fuel selection and utilization (K. Barker and W. A. Macfarlane). Each section has its own bibliography, extending to over 400 references in one case. There is an index which successfully links similar topics in different sections and, taken as a whole, this inexpensive volume can be recommended as a useful introduction to the subject to those with more than a passing interest in air pollution.

R. E. WALLER

Efficiency and Effort—An Analysis of Industrial Administration. By W. Baldamus. (Pp. viii + 139. 18s.) London: Tavistock Publications. 1961.

The thesis of this book is that industrial organization is inherently unjust since it attempts to impose a disparity between the amount of effort put out by the worker and the wages he receives; industrial unrest on this assumption, so far from being the exception, must be the most characteristic feature of industry. In order to discover the nature of effort, work is analysed into *work realities*, which are the physical working conditions, repetitiveness, and coercive routines, *deprivations*, which are impairment (*i.e.* actual physical discomfort caused by work), tedium, and weariness, and finally there are what Mr. Baldamus reluctantly describes as *relative satisfactions* including inurement, traction, and contentment—the latter term denoting the absence of unpleasant feelings rather than the presence of good ones.

As wages are costs to the firm, so the deprivations inherent in effort represent "costs" to the employee for which he deserves remuneration whilst being continually bilked by the employer who attempts to lower the value of effort. In the process of putting forward these views the writer demolishes, or attempts to demolish, almost every concept in industrial psychology since Elton Mayo: that work can be really satisfying, that high employee morale results in greater efficiency, that formal and informal structures in the firm are of any significance, and so on. As for improving human relations and social satisfactions, their main function is "... to conceal from the worker precisely those managerial objectives which amount to increased wage disparity".

J. A. C. BROWN

Absence from Work: Incidence, Cost and Control. (Pp. 53. 10s. 6d.) London: British Institute of Management. 1961.

This booklet was prepared under the guidance of a committee consisting of representatives of the Institute of Cost and Works Accountants, the Institute of Personnel Management, and the British Institute of Management. It is anonymous, however, so that it is not possible to examine the statistical or medical qualifications of the authors.

The section on Incidence deals with the experience of manual workers in some 70 companies in the 12 months ended June 1956 and with the effect on absence rates of sex, seasonal influences, length of working week, size of firm, industry group, and locality. The interaction of the last four factors suggests that the conclusions based on this small sample of firms should be viewed with caution. The figures are not standardized for age and the effect of age on absence is not studied in detail.

The section on Costs relates to studies in 11 companies. The results varied widely; the total cost of absence to these firms ranged from 9d. to 15s. per week for each employee.

The section dealing with methods of controlling absence in five organizations is based on interviews with Officers of the firms concerned, and is almost entirely descriptive.

There is a useful bibliography.

C. J. CORNWALL

The Health of Executives. (Transactions of the Second Conference November 1960.) (Pp. 112. 15s.) London: The Chest and Heart Association. 1961.

This is an account of the proceedings of the second conference in the Royal Festival Hall promoted by the Chest and Heart Association.

For the industrial physician it contains very little with which he should not be already familiar. For the executives concerned, it must have been a stressful day, with 11 para-medical discourses to absorb, followed by question time. It might be asked for what purpose the Chest and Heart Association (formerly the National Association for the Prevention of Tuberculosis) gathers executives into the arms of its wisdom, when so many