Natural Gas and Natural Gasoline

By Prof. R. L. Huntington. (McGraw-Hill Chemical Engineering Series.) Pp. vii+598. (London: McGraw-Hill Publishing Co., Ltd., 1950.) 68*s*.

ONE of the earlier books on natural gas (Lichty, 1924) is still a favourite to consult on this subject. It is none the less instructive to read a new and up-to-date treatise, in this case extending to natural gasoline, for so much has happened in the evolution of this technology in the intervening time. The author is professor of chemical engineering in the University of Oklahoma where, incidentally, the other book was written. Naturally, appeal is to engineering students taking courses in the production of natural gas from crude oil, condensate, dry-gas fields, and the manufacture of various products from such new materials.

A wide range of cognate subjects is considered. The approach is to some extent academic; but practical field applications are by no means neglected. The course of instruction includes the estimation of gas and gasoline reserves; elements of plant location and design; gathering of raw gas and residue gas; a useful account of cycling efficiencies in the Cotton Valley (La.) gas-condensate reservoir; elements of natural-gas processing; and absorption, distillation, fractionation, dehydration, storage and transportation. That difficult subject, high-pressure pipe-line research, is treated with all the mathematical background necessarily entailed, and then the book concludes with a number of useful and practical appendixes, ranging from current specifications to methods of test.

This is a text-book which can be confidently recommended to oil technologists, both in the making and of ripe experience.

Statistics for Medical and other Biological Students

By L. Bernstein and M. Weatherall. Pp. xii+180. (Edinburgh and London: E. and S. Livingstone, Ltd., 1952.) 18*s*. net.

THE introduction of statistical methods in medicine has to some extent been uphill work, so many practitioners by occupation, tradition and inclination being more concerned with the individual case-study than with the broad survey. It is now generally recognized, however, that the medical curriculum should include some elements of statistics. Drs. L. Bernstein and M. Weatherall have written this text-book on the basis of lectures and practical classes given by them to medical students in the first year of preclinical studies.

The development of the book follows fairly standard lines. Two chapters on scientific method and probability precede a set on frequency distributions and measures of location and dispersion. There follow three chapters on sampling, two on regression and correlation, and introductory chapters on transformations, the analysis of variance, experimental design, therapeutic experiments and the interpretation of observations. Much has had to be omitted, and a great deal more dealt with by passing reference, but these limitations are presumably imposed by the size of the book.

The authors have rightly concentrated on the logic of statistical methods and their use in medicine. The mathematics involved in the derivation of these methods have either been omitted or reduced to the point where they can be mastered by the use of elementary algebra. The result is very readable, and if the book does not carry the medical student as far along the path as a statistician would like to see him go—or as he must go if he needs to use statistical methods himself—it at least points his feet in the right direction and gives him a useful introduction to the statistical problems he will have to face.

Practical Pharmacology

By Prof. J. H. Burn. Pp. viii+72. (Oxford: Blackwell Scientific Publications, 1952.) 12*s*. 6*d*. net.

IT would not be easy to invent at short notice a course of practical work for medical students. The experiments must arouse interest and have some relation to practical medicine; but they must also be fairly simple to perform and not take too long. Such courses grow gradually as the years go by; active teachers try out new methods and add the best of them to their repertoire in the place of older methods which have lost their original importance. The result of this process of evolution is an elaborate set of instructions which is issued to the students and contains the results of the accumulated experience of many years. These courses evolve on parallel lines in different places; but those who are responsible for them are always anxious to profit by the experience of others, and every teacher of pharmacology will be glad to have the chance of learning exactly what is done in the pharmacological laboratory in the University of Oxford, which is justly famous for its technical skill and the variety of its experiments.

Prof. J. H. Burn has written a clear account of eleven experiments on isolated organs, seven experiments on mammals with their circulations (but not their brains) intact, two on frogs and one on man. These experiments are all described in full detail, with clear drawings by Dr. E. M. Vaughan Williams, and a number of beautiful figures showing the results. A few of these experiments have been in all practical courses for a long time; but many of them are quite new, and it is clear that the Oxford pharmacologists have not been resting on their laurels. The book is so beautifully printed on glossy paper that it is a little sad to think that many copies of it will soon be exposed to all the dangers of the laboratory.

Technical Publications, 1947

Pp. xi+499. (New York: Standard Oil Development Co.; London: Esso Development Co., Ltd., 1950.) n.p.

THIS second annual volume of papers, by members of the Standard Oil Co. (New Jersey) and five affiliated organizations in the United States, which were contributed to technical magazines during 1947, bears testimony to the talent and diligence, and also to what the president of the Company in his foreword picturesquely describes as the "aggressive research" of the scientific workers and engineers concerned. The volume is divided into papers on geology and production research, manufacturing research, production quality research, and analysis. The subjects range over the determination of oil in place and connate water; oil in Florida; ambiguity in gravity interpretation; palæogeography of South America; consolidation of sands in oil wells; retorting oil shale by fluidized solids; testing cracking-catalysts; liquid—and vapour—liquid extraction; naphthas from fluid catalyst cracking; butadiene resinous polymers; polymers and viscosity index; pour-depressant treated oils; butyl inner