

human affairs; and apart from major disaster the growth will certainly continue. But unless the process is critically watched and wisely guided a sort of chain reaction might set in, which could end in science and technology taking charge and leading man—who knows where? It is vitally important, therefore, that thoughtful people of every kind should know something of the origins, the methods and the motives of the sciences, that in fact an enlightened public opinion should be formed: the intelligent and humane cannot hope to guide if they do not understand at all. So a world of good might be done if this book were widely read and discussed. A. V. HILL

## SCIENCE AND LITERATURE

### The Scientific Background

A Prose Anthology. By Prof. A. Norman Jeffares and M. Bryn Davies. Pp. xii+306. (London: Sir Isaac Pitman and Sons, Ltd., 1958.) 21s. net.

THE purpose of this book is two-fold: to demonstrate to science students the precision and lucidity of the best scientific writing, and to offer to arts students and to the general reader a pleasant means of entry into the world of science. The authors have fulfilled their first aim but have left the second in doubt. Certainly the book is pleasant enough and should take its place as one of the most useful of recent bed-side books. The intention of the authors is admirable, necessary and timely. They point out the difficulties of the communication of scientific discoveries and ideas both because of the development of terminologies and professional jargon and the general deterioration in the ability to use language as a precise instrument. The authors show that good scientific prose is good English prose and certainly give pointers towards a closing of the gap between science and arts.

There are several ways of regarding the "background of science". The phrase has been used to describe the philosophy, the methodology, the sociological implications and the history of science. The authors have chosen the literary background, but it still remains true that a great deal of communication in science remains mathematical and diagrammatic; thus, the fundamentally important problem of the semantics of communication theory in science is not explored.

Within the limits of the pages at their disposal the authors have dealt with a part of the problem. Those who expect a documentary history of science or even a series of readings in chronological order will be disappointed.

The introduction is brilliantly written: it should be read and learnt by every student of arts and science and everyone who is interested in education: "The most pressing educational problem of the moment is how to remedy the broad divergence brought about by specialization between the two main branches of knowledge, the sciences and the humanities".

The substance of the book consists of a hundred short extracts of diverse types and purposes. The first half dozen on writing are of great value. Thereafter, there is an intriguing mixture. The Krakatoa sunsets by the poet Gerard Manley Hopkins rubs shoulders with "Mathematics and Beauty" by C. A. Coulson. Among extracts from the literature of the more common grammar school and university sciences

we find "How to Climb the Turret of King's College Chapel, Cambridge"; Hoyle v. Dingle and Dingle v. Hoyle; James Kirkup's poem "A Correct Compassion" on a heart operation. All these make an interesting *mélange*. Some of the passages are too short and scrappy to have more than a sampling value. Since the language of science cannot be divorced from its aims and methods, some longer passages, on the lines of Sir Cecil Dampier's "Cambridge Readings in the History of Science", would be useful.

Sir Isaac Newton on the Law of Gravitation requires more than a page, and Faraday's wonderfully lucid "Chemical History of a Candle" demands a long extract, otherwise we do not see enough of the canvas on which he paints to obtain any idea of the whole picture.

The book concludes with a number of questions which relate to each of the passages. These should provide a useful basis for further analysis and discussion.

W. L. SUMNER

## TOXÆMIA AFTER BURNING

### L'Auto-Intoxication après Brûlure

Par R. Godfraind. Pp. 191. (Bruxelles: Editions Arscia S.A., 1958.) n.p.

THE general effects of extensive burning are so profound and complex that it is not surprising that an all-embracing concept of toxæmia or auto-intoxication was put forward many years ago. The idea, which apparently originated from Avdakoff in 1876 in St. Petersburg, implied that toxin(s) formed in the skin after burning are absorbed into the circulation and may produce illness and death; but the number and variety of the 'toxins' which have been reported over the years in the blood, urine or burned skin are legion and indicate its elusive nature. The hypothesis at one time led to the treatment of burns by tanning, which was said to precipitate the altered skin proteins and prevent absorption of their degradation products; but the tannic acid form of treatment itself produced 'toxic' effects and tanning is now discredited. The concept of toxæmia has lost ground, first, through increasing knowledge of the hæmodynamic nature of burn 'shock', oligæmia and its relationship to the inflammatory exudation into the burned area; and secondly, through the recognition of the importance of bacterial infection of the burned surface and subsequent bacterial invasion of the body which can certainly produce the clinical picture of toxæmia. Nevertheless, a number of important observations on burns remain unexplained, including the experimental observation reported originally by Wilson and his colleagues in Edinburgh that the œdema fluid from the burned skin of rabbits developed lethal properties for other rabbits and mice. This aspect of toxæmia has been experimentally pursued by Simonart and Godfraind in Louvain. Dr. Godfraind's monograph is an account of their work on the role of proteins and their degradation products in burn toxæmia.

The first part is concerned with the toxicity to frogs of heated fibrinogen and serum albumen, their peptic and plasmin hydrolytic products and with the composition of the œdema fluid in burned frogs. The theme is developed in the second part of the book, which is concerned with studies in the rabbit on the toxicity of peptides, particularly when given sub-