

proper frequency, in order to achieve a "population inversion"—in which more of the atoms are in the excited state than exist in the normal ground state. And if enough energy can be "pumped" into the medium, atoms in a metastable state can thus be created and stored, ready to release energy in bursts containing an immense number of photons in a very short period of time.

The most exciting, but probably least explored, uses of the laser are in biomedical research; for example, the use of the argon laser which can control haemorrhage more effectively even than the electrosurgical knife; but many technical problems have bedeviled the establishment of a satisfactory unit, quite apart from the hazards of eye-exposure and so on, from these high-output laser gases. And research has been more fruitful in the relatively remunerative fields of weaponry, communications, measurements and calibrations, computers, alignments, ranging, drilling, welding, cutting, wheel-balancing and laser holography (three-dimensional photography).

The possible biomedical uses of the laser are again so varied that it is only possible to refer to them in a review of this size. Perhaps the most important use is in ophthalmic therapy—in sealing retinal tears and shallow detachments, in destroying intra-ocular tumours, and possibly in retinal vascular disorders (the micro-aneurysms of diabetes, retinal oedema and thromboses). Tumours elsewhere, especially the more accessible ones (such as those of the skin) and in areas where open surgery is particularly hazardous (such as in the central nervous system), equally lend themselves to laser-coagulation, but again much time and patient analysis must precede this use outside the very specialized unit.

This is an important book in that it relates the complex theoretical background of this recondite phenomenon, the practical problems in harnessing such emissions, and the very varied disciplines in which laser energy can be and is being used; and it marshals all this material into the confines of a slim textbook. It must be admitted that the amalgam is in consequence very condensed and hard to read, although a more fluent writer with a happier style could probably have made it much more assimilable. Fortunately, each of the short chapters is followed by a summary of its contents and a comprehensive list of references, so that the book should be a great help to the technician with specific issues to resolve, even if indigestible for the more casual reader.

P. D. TREVOR-ROPER

CLEFT PALATE AND SPEECH

Cleft Palate and Communication

Edited by D. C. Spriestersbach and Dorothy Sherman. Pp. xv + 291. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1968.) 112s.

THE purpose of this book is to present a systematic review of what has been done to solve the communication problems of patients with cleft palate. It is written primarily for the speech pathologist, but it will be of value to other members of the cleft palate team—plastic surgeons, dentists, otolaryngologists, audiologists and speech therapists. The book assumes that the reader has considerable knowledge of cleft palate problems.

Communication through speech is based on three main factors: (a) the physiology of vocalization and articulation; (b) the acoustic signals produced by these processes; and (c) the psycho-acoustic events which allow a listener to convert the acoustic signals into a perceived message. The first two chapters deal with the anatomy and physiology of the speech processes and the requirements for communication. Chapter 3 deals with the communication problems in patients with cleft lip and cleft palate. Reports on speech after surgery in different centres are reviewed, but the wide variations in research results preclude an

accurate assessment of the incidence of speech disorders. The available knowledge about speech and language characteristics in patients with clefts is fully summarized in this chapter. Chapter 4 reviews different methods and techniques used in assessing the aetiological bases of speech and communication defects. In the fifth chapter the effects of hearing loss are discussed and aural pathology is reviewed in relation to speech defects. Long-term audiological testing is combined with regular otological examination and treatment. The psychological aspects of lip and palatal clefts are discussed in chapter 6 and the psychological problems of both the patient and the parents are reviewed. Much of the parents' concern can be alleviated by early professional counselling. The seventh chapter reviews the state of knowledge concerning diagnostic and therapeutic techniques and evaluates their place in the treatment of communication problems of patients with clefts. In chapter 8 there is a commentary on the cleft palate team in general and on the speech pathologist in particular.

There is an extensive list of references at the end of each chapter and an adequate author and subject index.

This book should serve as a standard reference work for advanced students and research workers concerned with the communication problems of patients with cleft lip and cleft palate.

WALLACE M. DENNISON

SEMINAL MOLECULES AGAIN

Prostaglandins

By U. S. von Euler and Rune Eliasson. (Medicinal Chemistry: a Series of Monographs, Volume 8.) Pp. x + 164. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1967.) 84s.

THE story of the prostaglandins, from the early 1930s to about 1966, was recounted in a recent review (*Nature*, 218, 52; 1968). Their existence and possible functions in the genital system, and something of their chemical nature, were recognized first by biologists, one of whom (the senior author of the present monograph) introduced the name "prostaglandin". Independent studies of similar or identical substances in the iris, brain, intestine and endometrium added a wealth of detail. The complete chemical identification by Bergström's group and the more recent availability of small amounts of the pure substances greatly broadened the scope of biological investigation. The discovery by van Dorp and by Bergström that the prostaglandins are biosynthesized from the "essential fatty acids" may well have implications for nutritional science. The past two years have seen an explosive rise in the number of publications, and the appearance of this new monograph is most timely.

It is small enough to be read at one sitting, and is not too expensive, yet it contains almost all the important biological facts and a fair outline of the chemistry up to the time the manuscript was completed. It contains numerous tables and figures, some of which have been noticeably improved by having been redrawn from the original sources; a bibliography which is essentially complete up to 1967; and a helpful list of previous reviews. The presentation is clear and factual, and speculation about the possible functions of prostaglandins is minimal. Indeed, it might even be claimed that the authors have done less than justice both to others and perhaps to themselves in this respect. It is undoubtedly very difficult to establish the precise physiological function of somewhat unstable substances that are biologically active in nanomolar concentrations and are rapidly destroyed in the body; yet considerations of function are an essential part of biological thought, and it seems to me better to set them out openly for scrutiny than to pretend they do not exist. It has reasonably been asked, for example, whether the brain prostaglandins are transmitters or modulators