

charts. In the same way, a more detailed analysis could have been given of the attempted *quantitative* methods, if any, for correlating sunspot activity with F₂ layer critical frequencies and also the methods adopted for forecasting the latter quantity for various months and *latitudes* and for various distances.

There are practically no mistakes in the text except on page 231, line 4, where 'Principal' should be read as 'Principle'.

The new edition, as its predecessors, gives a number of very useful and recent references and there is no doubt that the book will be highly welcomed and valued by those interested in "Wireless".

K. V.

Science for the Prosecution. By Julius Grant, M.Sc., Ph.D., F.I.C. (Chapman and Hall, Ltd., London,) Pp. 302. Price 15sh. nett.

It is refreshing to turn to the part played by Science in the investigation of Crime at a time when what is uppermost in one's mind is the part it has played in the prosecution of wars. The book is not meant to be a treatise for reference by persons engaged in scientific work connected with unravelling of crimes nor is it meant merely to provide material for spending a few pleasant hours reading about the sensational discoveries resulting from the application of science to criminal investigation. The book strikes a happy mean between providing an adequate theoretical treatment to enable the reader to follow the principles on which such scientific work is based, and a narration of actual cases to the investigation of which the scientific method has made such valuable contribution. The book opens with a general chapter on the scientific approach to crime in which the author makes a powerful plea for the establishment of an independent medico-legal institute. The application of science to criminal investigation is then classified as consisting of (1) optical methods; (2) chemical methods and (3) blood group tests. The book closes with a chapter on Psychology and Crime.

The author himself is a distinguished worker in the field of fluorescence analysis and brings his long experience to bear upon his treatment of the subject. The brilliant work of Mitchell in regard to the age and classification of paper and writing materials, the work of Carter and Pollard on classification of paper and that of Professor Laurie in regard to finding the ages of works of art is referred to.

The cases mentioned make interesting reading. Questions pertaining to food adulteration are dealt with and it is indicated how in England the legislative measures "now constitute a true chapter of public food safety". The book will be altogether invaluable not only to scientific workers in the criminological field and to the Police Services, but also to the legal profession who can get an extremely adequate idea of the background of scientific work bearing upon criminal investigation.

One word may be said about the title of the book. The book is no doubt named *Science for the Prosecution* and in the race between the criminal and the forces of law and order

there can be no doubt that scientific knowledge is an invaluable weapon in the hands with the latter. But in a country like India where, owing to various circumstances, scientific evidence adduced in courts is mostly on the prosecution side, the knowledge and guidance provided by the book of this kind will prove invaluable to the defence also.

A list of specialised treatises pertaining to the field increases the value of the book and greatly facilitates pursuit of any particular branch of scientific criminal investigation.

N. S. R.

High Frequency Thermionic Tubes. By A. F. Harvey, with a Foreword by Dr. E. B. Moullin. (Chapman & Hall Ltd., London), 1943. Pp. 235. Price 18sh. net.

The last few years have witnessed a phenomenal increase of interest in the application of ultra high frequencies to practical services such as television, frequency modulation, etc. This has stimulated invention, development and refinement of electronic tubes and circuits suitable for the several applications, of which the book under review gives a short account in six chapters.

After a brief general introduction in Chapter I on the function of electronic tubes as rectifiers, amplifiers, etc., and their feed-back characteristics, the author discusses in Chapter II the influence of the frequency of operation on the tube properties such as input and output impedances and mutual conductance. The limitation in their performance imposed by the finite transit time of electrons at frequencies above 20 megacycles per second and the consequent refinements introduced in tubes of the conventional types, are next discussed and various commercial receiving and transmitting tubes exhibiting a good performance beyond 20 mc./s. are described and illustrated. These include a comprehensive range, from the well-known 'acorn' type of miniature receiving tubes to the water-cooled transmitting tube RCA 888 giving an output of 300 watts at 200 mc./s. The latter half of the same chapter is very usefully devoted to the measurements of tube parameters at U.H.F. by the method developed by M. J. O. Strutt.

This effect of electron inertia has made possible the production of U.H.F. by an unconventional use of existing tubes or by the invention of tubes utilising different principles altogether. To the former category belongs the retarding field or positive grid generator discovered by Barkhausen and Kurz which is dealt with in some detail in the first half of Chapter III; the second half describes "the use of positive ion tubes as a means of studying conveniently effects which are appreciable with electrons only at frequencies so high as to preclude accurate measurements."

The second category includes the magnetron tube described in all its aspects in chapters IV and V which comprise a little under half of the book. Here the author has collected and organised in a thorough and well-balanced manner the fundamental and practical information regarding the magnetron such as the cut-off characteristics, oscillations in the