

BOOKS

Vom Radiothor zur Uranspaltung. Eine wissenschaftliche Selbstbiographie (From radiothorium to uranium fission — a scientific autobiography), by Otto Hahn (Brunswick, Friedr. Vieweg und Sohn, 1962 ; DM. 22.50), is really divided into two parts. The first, occupying some 155 pages, is the 'scientific autobiography' itself, the second, 47 pages, contains reprints of three papers by Hahn and his collaborators :

- Nachweis der Entstehung aktiver Ba-isotope aus U und Th durch Neutronenbestrahlung (*Naturwiss.*, **27** (6), 1939),
- Einiges über die experimentelle Entwirrung der bei der Spaltung des U auftretenden Elemente (*Abh. preuss. Akad. Wiss.*, Nr. 3, 1942),
- Die chemische Abscheidung der bei der Spaltung des U entstehenden Elemente (*Abh. preuss. Akad. Wiss.*, Nr. 12, 1944).

The general content of the book is well summed up by the title, and the reader will not find very many personal impressions, anecdotes, etc. There are few things or events that constitute 'la petite histoire'. Most of them concern the earlier periods in London and Montreal, and these sections of the book are, in that respect, much more interesting. The reader gets a fairly good picture of life and research in those days, the people present at the laboratory, embarrassing situations due to all-too-literal translations, and so on. Much more weight is given here to the general background, and Hahn's scientific work is only occasionally mentioned.

Soon, however, in progressing through the book, the situation is reversed. Dealing with the period 1913-1944 at the Kaiser Wilhelm Institute, the emphasis is laid upon his work ; personal impressions and his immediate co-workers are only briefly mentioned. Here one would, for instance, be interested to read more about the last difficult years at the Institute. This part of the book is thus much less interesting, and rather dry. But, according to Hahn's own introduction the author has promised a later biography 'where more weight will be given to his 'personal souvenirs'.

A few photographs illustrate the text. The printing and presentation of the book are good, and the price is not too high.

B. E.

Radioactive isotopes in instrumentation and control, by N. N. Shumilovskii and L. V. Mel'tser (Oxford, Pergamon Press Ltd., 1964 ; 70 s.), is a volume in the series of *International monographs on nuclear energy*, produced by Pergamon Press.

The book deals with an application of radioisotopes which at present is comparatively unknown, except to specialists. It gives an excellent introductory description of the possible uses of radioisotopes in the automation of production processes.

As an introduction there is a very elementary treatment of the different types of nuclear radiations and their detection, including a discussion of various electronic circuits. This section ends with a very careful treatment of the errors that arise in measurements of this type.

Many different kinds of measurements using radioisotopes are discussed, most of them in the fields of chemical and metallurgical industries. Among them are measurement and control of thickness of foils and surface layers, control of liquid levels in containers, flow measurements of liquids and gases, and analysis of reaction mixtures. The theory of each type of measurement is given, and different possible instrumental systems are described.

The book can be recommended especially to those planning chemical plants, because it enables the chemist to look into a field with which he is less familiar. There can be no doubt that isotope instrumentation has a future in the automatic control of industrial processes.

Gunnar Sørensen

The Cavendish Laboratory, by Egon Larson (London, Edmund Ward, 1962 ; 16 s.) is a difficult book to review. It is not a bad book ; many people will no doubt find it entertaining, even instructive ; many will like the journalistic style in which it is written. Yet... It should have been so much better. The author, it appears, has interviewed many of the scientists who worked in this world-famous physics laboratory in the University of Cambridge during and after the great years of J. J. Thomson and Ernest Rutherford, he has studied the history of the laboratory, he has read some of the scientific papers and other publications that have come from there since its foundation in 1871. From this he has distilled a series of anecdotes of the personalities who have led, or worked in the Cavendish, strung on the framework of historical advance and successive scientific discoveries.

We learn of the founding of the laboratory, at a cost of £ 8450, paid for personally by the then Chancellor of the University, the Duke of Devonshire, whose family name of Cavendish gave the laboratory its title. The first professor, James Clerk Maxwell, was brought from retirement at the age of forty, the second, Lord Rayleigh, left his dairy farm and his private laboratory to take over the still young research centre in 1879. Under their successive guidance the new practice of training students in experimental work was steadily developed, and the foundations were laid for the next holder of the chair, J. J. Thomson, who was professor from 1884 until 1919 and afterwards retained a strong interest until his death at the age of 84 in 1940. Gradually the work of the laboratory became concentrated on atomic and then nuclear phenomena, so that during the '20 s and '30 s, under Rutherford's leadership, the Cavendish led the world in experimental work in this field. Rutherford's death in 1937, followed by the war, and the advances of nuclear physics towards higher and higher energies demanding ever more costly equipment, seemed to many to spell the 'end' of the Cavendish. This was a misconception, because in fact the laboratory was not meant just for nuclear physics and, as the book shows, there has been only a shift of emphasis. In the fields of radio-astronomy and molecular biology in particular, the Cavendish tradition is being fully maintained.

Every now and again in the course of his narrative the author has attempted to explain the scientific ideas or discoveries that have given the Cavendish Laboratory its reputation, and it is here that the weaknesses of the book begin to show through. Many of his descriptions are obscure and some of them, on the isotopes of uranium for example, are just incorrect. Again, perhaps in an attempt to show that scientists are human after all, a good deal of attention is paid to the personal idiosyncracies of some of the people who have worked at the Cavendish and to the lighter sides of the laboratory's social activities. It is true that Chadwick is quoted as saying that his discovery of the neutron in 1932 was the culmination of years of hard and sometimes tedious work by many men, but this is not the general impression that one is left with. Perhaps this is not the author's fault; maybe this is the way the laboratory and its world-changing discoveries look to a non-scientific outsider — not very serious, slightly magical, and studded with brilliant and famous men. Probably only someone who has worked there can tell the true story of the Cavendish Laboratory.

A.G.H.

Maybe in this century of scientific revolution the fertile minds of scientists and engineers coin too many new words and phrases, and those who feel that the existing vocabulary suffers from this peaceful invasion take up arms in its defence in various ways, from circumlocutions to the complete outlawing of anything they consider intelligible only to the initiated.

Multilanguage technical dictionaries are obviously of great use to translators as reference books. They offer in addition, however, to the layman and often also to the professional scientist or engineer, a discreet means of acquiring or passing on knowledge. None of these works can hope to be complete, as is shown by the number in existence; their merit, therefore, lies in the usefulness and aptness in a given field of the individual words and phrases they select.

The **Dictionary of nuclear physics and technology**, by Ralf Sube (Berlin, VEB Verlag Technik, 1961; English edition: Oxford, Pergamon Press Ltd., 1962) deals with the subjects of its title in four languages: English, German, French and Russian.

The book has four indexed sections, one for each language, each containing 15 063 terms or expressions from 'A-battery' to 'Zygote'. Each entry has a reference number, by which it can readily be identified in the English section or in the other volumes that the publisher intends to produce later. A short addendum gives brief equivalents in Russian and German of the locations and names of nuclear installations, like Dubna and Saclay. In this list, however, CERN is conspicuous by its absence.

No matter, this large 1600-page volume provides a valuable tool for anyone who has to work in several languages and who does not wish — or is unable — to master the numerous branches of science and, above all, engineering to which the book is devoted.

R.A.

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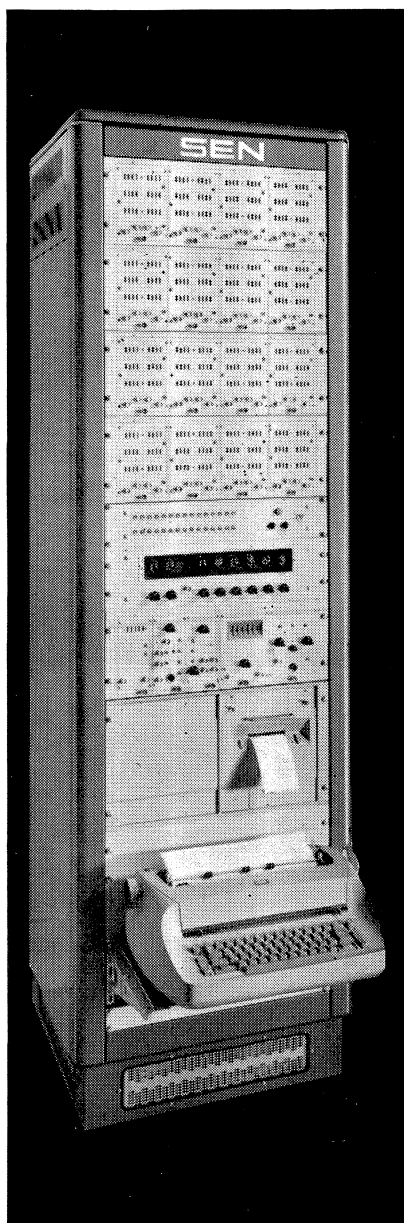
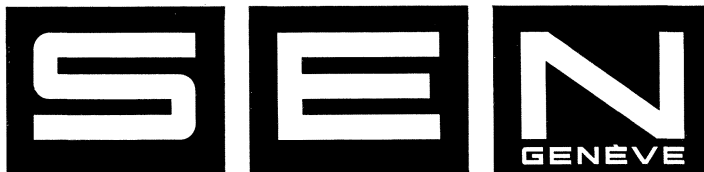
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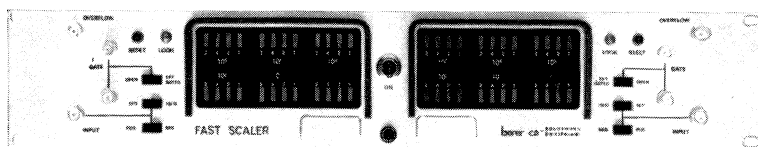
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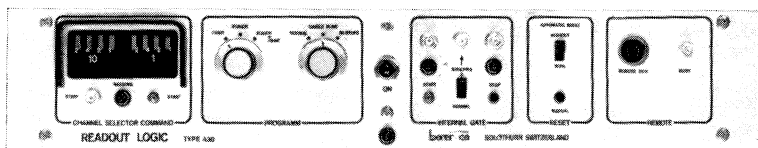
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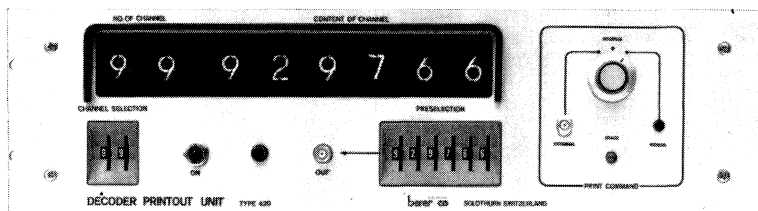
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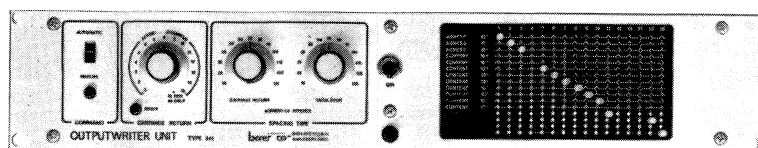
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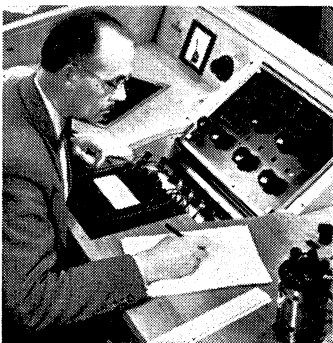
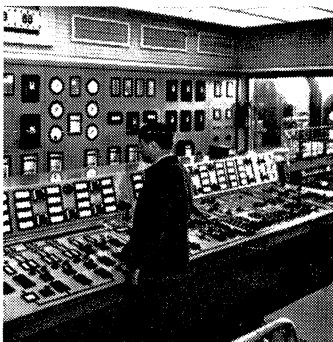
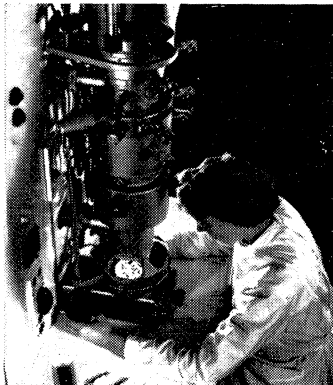
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