dency to degenerate into travelogue, the book is readable and interesting; we encounter both the crusty and forbidding professor and the shy man at ease holidaying with his friends. We even find him in 1888 complaining of the declining number of students because for scientists "the outlook is gloomy".

D. M. KNIGHT

Illuminating Letters

The Born Einstein Letters. By M. Born, Translated by I. Born. Pp. xi+240+4 plates. (Macmillan: London and Basingstoke, May 1971.) £3.85.

THIS volume consists of 120 letters between Einstein and Max and Hedwig Born, the first written by Einstein in 1916 as the General Theory was breaking on the world, the last by Born in January 1955, as both men became involved in the events leading up to the Russell–Einstein Manifesto. Commentaries written by Born in 1965, when he was already in his eighties, fill in details, add later judgments, and provide a background to the men, and the occasional woman, who lived through the dramatic era of physics between the two world wars.

The principal scientific interest in the correspondence lies of course in the long debate between the two men, and most, although not quite all, of their long discussions can be followed here. Their first meeting was at Salzburg in 1909 when Einstein, justy thirty, giving his first big invited paper, declared "a profound change in our views of the nature and constitution of light" to be indispensable. Born himself finds it hard to believe that he did not correspond with Einstein when working on the latter's theory of specific heats three years later.

The letters touch on the anti-Einstein movement of the early 1920s in Germany and on the confrontation between Einstein and Lenard at Bad Nauheim in 1920, in some ways comparable with the Wilberforce–Huxley dispute at Oxford in 1860. (Interestingly enough, no full verbatim account of either seems to have survived.) They add to the material on the birth of quantum mechanics already available in the Einstein–Sommerfeld letters and in the *Letters on Wave Mechanics* by Einstein, Schroedinger, Planck and Lorentz published four years ago. And they carry the debate on quantum mechanics into the 1950s.

Yet their interest does not lie solely in the contemporary comments of two masters, made as the new physics evolved. There is also their parallel reaction to events in Germany, to the birth of nuclear weapons and to the increased responsibility of scientists for the ways in which their work is utilized. While Einstein signed the momentous letter to Roosevelt which helped launch the American atomic effort, Born found the idea of nuclear weapons so distasteful that he avoided personal involvement and tried—unsuccessfully—to dissuade one of his workers in Edinburgh from joining the British effort: Klaus Fuchs. And when Born returned from Britain to Germany after the Second World War, Einstein noted that he was going back "to the land of the mass-murderers of our kinsmen".

There is a third interest in the correspondence, in some ways almost as important as the light cast on the argument between the standard-bearers for two opposing scientific views. Both Max Born and Albert Einstein reveal in these letters not only great intellects, but a warmth and humanity sometimes considered—rightly or wrongly—to be rare among scientists.

R. W. CLARK

Physics Performed

Physics: Demonstration Experiments. Edited by Harry F. Meiners. Vol. 1: Mechanics and Wave Motion. Pp. x+1–654. Vol. 2: Heat, Electricity and Magnetism, Optics, Atomic and Nuclear Physics. Pp. iv+655–1395+36. (Ronald: New York, 1970.) $30 per set.

ONE of the opening chapters of the two volumes entitled *Physics, Demonstration Experiments* was written by the late Sir Lawrence Bragg. His association alone makes these two books not just another pair of books on physics demonstrations but an inspiration—an inspiration to all those who wish to make a physics course in school or at university really alive.

The two volumes are divided into a subject classification of, volume I: *Mechanics and Wave Motion,* and volume II: *Heat, Electricity and Magnetism, Optics, Atomic and Nuclear Physics.* A great bonus in each book is an additional chapter: in volume I the whole philosophy and art of the use of demonstrations to teach physics is discussed, while in volume II the additional chapter discusses the use of closed circuit television, overhead projectors, stroboscopic effects and other modern teaching devices which are now becoming commonplace in the lecture room.

Not since *Demonstration Experiments in Physics* by R. M. Sutton has there appeared a work which deals with the subject so well. Professor Harry F. Meiners, the editor, has gathered the cream of international physics demonstration techniques and methods into these two volumes. Contributions from the United States, Britain, Israel and Russia are all included, together with many others.

From this mine of information for teachers and lecturers, it would be impossible to summarize, or even give a list of the demonstrations in these volumes, which together add up to 1,400 pages. It is easier to say that from a simple demonstration of shadow projection to solid state physics or the application of a laser, all are included.

On reading these books the complexity of some of the apparatus is a little worrying until it is realized that apart from the description of the demonstration in the text, full constructional details and drawings, almost down to the last nut and bolt, are given in an appendix at the end of each volume. If commercial apparatus is used a list of suppliers or manufacturers is given. This publication was sponsored by the American Association of Physics Teachers, and being American, most of the suppliers are American. This need not deter the English reader as equivalent equipment is obtainable in this country.

These books, which have some 2,000 photographs as well as line drawings, would be excellent additions to any Science Library.

To conclude, Sir Lawrence Bragg's advice to a lecturer was to not just talk about science, but, if possible, to demonstrate it. These books show the way.

W. A. COATES

Anaesthetic Collection

International Encyclopedia of Pharmacology and Therapeutics. Section 8, Vol. 1: Local Anesthetics. Section edited by P. Lechat. Pp. ix+377. (Pergamon: Oxford and New York, April 1971.) £6; $16.

THIS volume of the *International Encyclopedia of Pharmacology and Therapeutics* comprises ten chapters written by internationally known authors, two of whom are now unfortunately deceased. It amply justifies the title encyclopaedia, and covers in exceptional detail the various aspects of local anaesthetics, which range from historical development to current clinical application, and deals with structure–activity relations, mode of action, pharmacological properties and their modification, methods for comparison of activity and finally the toxicity and side effects of these substances.

Each chapter is very fully referenced and the individual authors are to be complimented on the fullness of their text which is amply illustrated with photographs, diagrams and tables, although the first chapter on the historical development of local anaesthesia tends toward over illustration. A strong emphasis is placed throughout the book