Modern Physical Laboratory Practice

By Prof. John Strong, in collaboration with Prof. H. Victor Neher, Prof. Albert E. Whitford, Dr. C. Hawley Cartwright, and Roger Hayward. Pp. x+642. (London, Glasgow and Bombay: Blackie and Son, Ltd., 1940.) 25*s*. net.

UNTIL recently, when the physicist wanted a good advanced book on a branch of the subject, he expected to find it in a bibliography of German books. Now he is far more likely to find what he wants in an American publication. The present volume is a striking example. Three physicists, an astronomer and an architect have collaborated to produce a guide of outstanding excellence to the many special techniques now apt to be needed in the advanced or research laboratory. Two chapters at the end of the book deal with moulding, casting, and various workshop operations in metals, together with instrument design, including kinematical design. The rest of the book covers glass-blowing, optical work of all kinds, from grinding to surface coating, high-vacuum technique and such electrical instruments as electrometers, electroscopes, Geiger counters, photo-electric cells, amplifiers, and vacuum thermopiles.

The chapter on photography is a good example of the skill of the authors in giving briefly enough of the theory of an operation to enable the worker to adapt the instructions to his special needs.

Quite outstanding are the diagrams drawn by the architect collaborator, Roger Hayward. Several hundreds consist of perspective drawings with just the right amount of shading to give a pictorial effect. This, together with arrows and concise wording on the actual diagrams, gives the next best substitute for seeing the operations carried out. These diagrams deserve the serious attention of every future illustrator of physics text-books. The strict biological accuracy of including the sweat on the brow of the operator in grinding a 6-inch mirror by hand in the traditional way, adds a touch of humour, as well as giving a subtle warning.

Altogether, the book can be strongly recommended to the attention of all physicists. Several copies kept always at hand would help the work of any large group of physicists who, in times like the present, may be working at high pressure with semi-skilled assistants. W. H. G.

Penobscot Man

The Life-History of a Forest Tribe in Maine. By Prof. Frank G. Speck. Pp. xx+325. (Philadelphia: University of Pennsylvania Press; London: Oxford University Press, 1940.) 24*s*. net.

IT is a matter of frequent remark that in the last ten or fifteen years few if any of the sciences have made more rapid strides than anthropology in the development of methods of inquiry. This applies in particular to researches in social anthropology in the field and no less to the United States than to Great Britain, notwithstanding the differences in aim and outlook which mark the leading schools of thought in the Old World and the New. It is instructive to consider from this point of view the material recorded in a study of the Penobscot, an Algonquian Indian people of the State of Maine, by Prof. F. Speck, whose record of the little-known Naskapi of Labrador aroused no little favourable interest when published a few years ago.

Prof. Speck's observations of the Penobscot began in 1907, were continued until 1912, and resumed in 1918, and his record prepared from then onward. As he recognizes, observations on the lines of modern method would have produced a study of a very different character. Yet his work rounds off an epoch in the development of the Indian tribesmen. When he saw them much of their traditional culture remained unchanged from perhaps so far back as colonial days, when the British administration declared them outlaws and in 1756 was offering so high a price as £300 for an Indian scalp. So great has been the change in the interval since the date of Prof. Speck's investigations, that a student of the Penobscot nowadays would be constrained to make his investigation one of acculturation. Incidentally it may be mentioned that the Penobscot who enjoy an independent system of local administration of their own in the State of Maine and for whom ultimate extinction was prophesied a generation ago, like a number of other Indian tribes, have actually increased in numbers and there are now more than five hundred members in the tribe. They are, however, much mixed in blood.

Strength of Materials

By Dr. Arthur Morley. Ninth edition. Pp. x+571. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1940.) 15*s*. net.

THE late Sir George Greenhill, referring to Rankine's paper on the screw propeller, described it as a classic, adding, "which means something that is seldom read". This cynicism could scarcely apply to the work before us, now in its ninth edition totalling 52,000 copies. But if we accept the Oxford Dictionary as an authority we find Dr. Morley's book admirably qualified as "simple, harmonious, proportioned, and finished".

The first edition, reviewed with pleasure by the present writer thirty-two years ago, marked a distinct advance in engineering literature, and despite the progress in materials since then the book is remarkably modern. This is due to the candid style, rational outlook and clear planning of the original edition; an excellent tree on which shoots could be grafted. Although the book is a students' manual with 'exercises' to each chapter, it is also a lucid, accurate and handy work of reference and refreshment for the practitioner. The specialist may find here and there that the latest work has not been fully embodied into the text, but usually he will see a useful reference in a footnote. In later editions more complete treatment of ideas now fermenting may be possible; plasticity, auto-frettage, notch sensitivity, fretting, damping, and the effects of surface polish and machining stresses. The new plastics and the use of models in plaster and rubber may be added. In any event the book has still a useful future. H. S. R.