Army and Navy? Thousands and tens of thousands of young men who neglected to conquer General Physics while in civilian clothes must now face him in uniform in preparation for encounters with foes that are still more formidable.

None but the oldest oldsters can recall the days before there was a "Duff's Physics." And it now seems altogether likely that youngsters yet unborn will study "Duff" in their turn. Let's create a list of the perennial texts with Duff's "Physics" at the top. Its lucidity, thoroughness, meticulous accuracy and usableness have been recognized for decades. And now Professor Masius joins Professor Duff in a revision of Duff's "College Physics." "Vitai lampada tradunt."

Perkins's "College Physics" has gone through six printings and an "abridged edition" in five years, and now is issued as a revision. The author has been alert to opportunities to improve his original text. New problems, without answers, have been added to match the original ones, with answers, which are retained. New topics have been added, and some old topics have been rewritten. The claims that the book is meaty, thorough, sound, conservative and attractively written are in accord with the reviewer's personal experience in using it. For instance, compare Perkins's treatment of "Waves" with run-of-the-mine treatments. This book has earned a place for itself.

Saunders's "Survey of Physics" has been in use for thirteen years. The third edition has just appeared.

One envies the student who uses this text. One reads, and reads on, just for the joy of reading English that says things so frankly and clearly, so convincingly, so attractively—even humorously at times. The illustrations are right to the point. And the paragraphs in fine print present interesting topics, such as: "the fission of uranium," "the ultra-red telescope," "theories of magnetism," "Foucault's pendulum." The recommended reading includes the old classics and the latest word—"Heat as Mode of Motion" and "Phenomena at the Temperature of Liquid Helium"—side by side.

The M-K-S system is put in fine print as a proposal of merit and promise, to be learned along with the other systems.

He who masters this "Survey" learns a lot of solid, live and growing physics.

Robeson's "Physics" and Howe's "Introduction to Physics" made their bows during the past year. A preliminary examination of both books reveals all the signs of texts well written. All the old familiar landmarks are preserved, and the new find their places among the old. As in Duff and Masius and in Perkins and in Saunders the M-K-S system is recognized and is given its place. It supplants nothing. Time only will decide the place it will occupy. Both Robeson and Howe are to be commended for many original and striking ways of presenting old concepts and familiar principles. The reviewer could use either text with confidence.

For the reception of Lemon and Ference's "Analytical Experimental Physics" the reviewer's mind had been conditioned by "From Galileo to Cosmic Rays" and by "Cosmic Rays so Far." Imagine then his surprise when handed five pounds, 250 cubic inches and seven dollars worth of book! And between the covers one finds good straightforward physics, at an advanced undergraduate level, set forth with unusual clarity in great detail and beautifully illustrated with diagrams, photographs and strips from motion picture films. This book invites perusal. It promises to be worth all that it costs, all the space that it occupies, and all the effort required to lift it and carry it.

For some years past consistent effort has been made at the University of Chicago to bring the students into more intimate contact with physical phenomena by the use of moving pictures and of the demonstration laboratory. And now the moving pictures and the demonstration laboratory have been put, in part at least, between the covers of a book.

When the reader opens Lemon and Ference he steps into the presence of the phenomena, and on the printed page he reads the language, the equations and the graphs that men employ when thinking and speaking about the phenomena. Has there not appeared a new and a significant development of the art of writing text-books?

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MAN AND HIS PHYSICAL WORLD

Man and His Physical World. By DWIGHT E. GRAY. Van Nostrand, 1942. 665 pp. $3.75.

THIS is a remarkable book. If I had to describe it in a single phrase, I should say that the author has managed to be encyclopaedic without being ponderous, no mean achievement! The mere scope of the book is startling. I can give a notion thereof in no better way than by listing the chapter-titles, numerous as they are: Science and the Scientific Method—The Solar System—The Universe Beyond the Solar System—Astronomical Measurements—The Earth as an Astronomical Body—Factors Which Change the Surface of the Earth—Clues to Earth History—Geological History—Numbers and Number Systems—Units of Measurement—The Nature of Matter—Air and Water—Fuels—Metals and Alloys—Colloids and Rubber—Synthetics—Force, Work and Power—Energy and Its Transformations—Heat Engines—Magnetism—Static Electricity—Current Electricity—Electricity

and the Atom—Wave Motion—Sound—Light—Communication — Illumination — Refrigeration. Such a book would be expected to proceed from the conjoined efforts of many professors, or if from one, then from the occupant of a chair in General Science and Engineering or in "Natural Philosophy" of the eighteenth-century sense. Mr. Gray is designated as an Associate Professor of Physics (in the University of Akron) but I suspect and hope that his lectures range over a wider field.

The style is conversational, at times even chatty, with flashes of humor. Among the sections which I found most readable are the chapters on the solar system, the passages on the atmosphere and on weather (tucked away in the chapter oddly entitled "Factors Which Change the Surface of the Earth"), the chapters on fuels, on alloys and on synthetics including plastics, and that entitled "Heat Engines" and devoted largely to the automobile. Another reader would probably make another selection, depending upon the distribution of his interests and of his ignorances: it would be difficult to find a reviewer capable of making an impartial judgment, for he would have to bring an equal interest and an equal state of knowledge to every subject, and probably no such person exists.

There is a rather depressing joke to the effect that an encyclopaedia is a book of which one likes the treatment of every subject except one's own. The errors which I find in the treatment of physics do not vitiate the book, but they do suggest that in the to-be-hoped-for second edition each part should be submitted to the inspection of a narrower expert. Cohesive forces between molecules do *not* vary inversely as the square of the distance; a liquid may be denser than the solid into which it freezes; the constituents of a mixture do not boil off individually and completely at the respective temperatures at which they would boil if pure; Franklin's kite experiment is now regarded by the historians as a myth; the reason given for believing that e/m is the same for all electrons is not a valid reason; the nuclear atom-model was invented by Rutherford and also by Nagaoka, but not by Bohr; there are several natural radioactive substances lighter than lead, and *all* elements can be obtained in radioactive forms, not "just a few." I could go on like this, but do not wish to leave the impression that the flaws are more numerous than the right statements, a danger which reviewers often incur. The difficulty is that correct statements are not news.

Some passages which I marked for favorable quotation are: the very timely reference to the 1886 Commissioner of Labor who stated "in his annual report that . . . the next fifty years would see no such advance as the previous half century"; the clever definition of plastics, including the phrase "only man can make a plastic"; the definition of force in the words: "Our purposes in this discussion will be adequately served if we define force simply as 'push or pull.' The fact that the definition contains only words of one syllable may keep it from sounding very impressive, but it covers the ground satisfactorily." And again: "An individual whom we describe as having a great deal of energy is one whom we think of as being able to accomplish a lot. Very much the same idea is involved in the scientific definition which states 'Energy is the capacity for doing work.'" And to terminate: "Radio-active disintegration is somewhat as though a large brick factory building should shoot out a lot of bricks and become a theater, which after a time would emit more bricks and settle down into a dwelling-house, which later on would repeat the procedure and continue its existence as a hamburg stand."

I hope that these remarks and quotations will entice many to read this book. It remains to be said that there are many striking photographs, and that for the benefit of those who wish to test their absorptive powers and their memories the author has supplied after each of the chapters a multitude of questions, classified as "Discussion," "Multiple-Choice," and "True-False."

KARL K. DARROW

SOCIETIES AND MEETINGS

THE KANSAS ACADEMY OF SCIENCE

THE seventy-fifth annual meeting of the Kansas Academy of Science was held at Lawrence, Kansas, on April 10, with Dr. Raymond H. Wheeler, University of Kansas, Lawrence, Kansas, presiding. The affiliated society, The Kansas Entomological Society, met with the Academy. Other state societies which held their meetings in cooperation with the Academy were The Kansas Association of Teachers of Mathematics and the Kansas Chapter of The Mathematical Association of America.

This was the Diamond Jubilee Meeting of the society, the first meeting having been held in 1868. Originally it had been the intention to celebrate this milestone along the lines of the Golden Anniversary held in Lawrence in 1918, but such plans were abandoned and this meeting, shortened to one day, was conducted in a conservative manner. The goal was a vigorous, effective meeting to maintain the virility of the organization without handicap to the war effort.

During the morning, section meetings were held for Biology Teachers, Botany, Chemistry, Geology,