

physics, starting with those at the high-school level. If this educational girding of the loins is not a passing fad, its benefits may filter up to the graduate school in time.

The specific contents of this book are worthy of note. The publishers' assertion that here one is offered a comprehensive exposition of quantum mechanics is certainly a justified claim. Not much of importance is omitted and there are several topics, usually treated in skimpy fashion if at all, which here receive something like an adequate discussion. Under the latter heading we mention Chapter 4 on angular momentum and group theoretic discussions of identical particles (Chapter 9, which also includes sections on second quantization) and the theory of symmetry (Chapter 12, a rather full discussion of finite groups).

One of the basic rules of reviewmanship is the requirement that one find some fault with the book under review. For the most part such remarks as could properly come under this heading are concerned with matters of taste. For example, the treatment of magnetic field effects (Chapter 16) is rather skimpy and would well be expanded at the expense of the two chapters on molecular physics. The only objective value of the foregoing statement is to be found in the observation that probably more people are interested in the former topic than in the latter—or that more is to be learned from a study of the former. An objection of a somewhat different nature is the peculiar circumstance that Chapter 4 is written without introducing the *concept* of the vector addition coefficients although several special examples are calculated in the course of events. Although these quantities have since become very popular, they were well known in 1947. The failure to introduce them makes the formulae for matrix elements of irreducible tensor operators (Wigner-Eckart theorem) appear very mysterious and, in general, the woods are obscured by the trees. Nevertheless, in Chapter 12 these coefficients do appear and their unitary character is made apparent.

Throughout the book a number of well-thought-out problems are given together with the solutions thereof. The mathematical appendices are useful and the physical appearance of the book is pleasing.

The Story of Albert Einstein. By Mae Blacker Freeman. 178 pp. Random House, New York, 1958. \$2.95. Reviewed by P. Morrison, Cornell University.

There are three Einsteins: the mythical archetypal professor without worldly cares, lost in the incomprehensible world of his thoughts; the real prince of theorists, who published in a single year or two a handful of papers, any one of which might have earned the Nobel Prize and all of which stand in the very foundation of our present physics; and the warm, independent, humorous author of hundreds of letters, interviews, petitions, telegrams, bespeaking a score of causes in the interests of the poor, the forgotten, the oppressed, or of the peace. No one has been able to draw this great

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Attention C. H. GOLDTHWAITE, Assistant Manager

and by no means disingenuous man in his pages, to present his life, so much a microcosm of our complex century, in any roundness.

Here we see one version of that life, in "a biography for young readers", by an experienced and successful writer for the junior-high-school set, Mrs. Mae Freeman. Mrs. Freeman sets as her main goal an attack on the myth of the Einsteinian mind, byword of Americans for being just plain smart. The fellow who is asked to add up your supermarket check too fast is apt to tell you "I'm no Einstein"; the real Einstein would likely have done very much worse. Mrs. Freeman lays great emphasis on Einstein, the unpromising, slow, shy student. She plainly wishes to draw from this therapeutic values for the kids of today who don't stand very high in class. The first third of the book takes Albert Einstein, very much an original, but not visibly successful, up to that golden time of the Bern patent office. The middle third of the book, or a little more, recounts the rise to fame, and the final break with a Germany falling fatally ill with the Nazi disease. A scant thirty pages span the American period, with emphasis on the modesty of the man who didn't know he was famous, and the odd but good-humored neighbor of Mercer Street.

All this is cheerful, pleasant, and warm. It is very well illustrated, both by neat little chapter-head sketches, usually relevant only as marking cities (the Duomo of Milan, the Berlin Academy), and by some first-rate photos. These last include a six-year old Einstein and dapper young student, both from that treasury of Lotte Jacobi, a few of the more familiar portraits from Princeton, and one of a seminar in which Mrs. Freeman's husband, Professor Wigner, Professor M. G. White, and a few other familiar faces can be made out, besides that white head. There is no doubt that Einstein is made believable and close at hand.

But the method pays a price. The book is pretty bland. It cannot even outline, beyond one single sentence about time and space, what Einstein did. It does not gloss over into mere controversy the appalling tale of the Nazi years, but it omits entirely the embattled cold-war decade before Einstein's death. Of course, it looks apart from the estranged relationship between the Einstein after 1930 and the main stream of quantum physics.

I suppose all this is as it should be. The kids will learn something of a great man, and a note of tragedy does enter. But it also adds up to a new myth. The nonsensical one about a thinking machine is gone, and absent-mindedness is no longer a price for thinking, but a minor and endearing foible. In its place, there is beginning to arise a new figure, one who began haltingly, but who finished honored and successful among all men. This is closer to the truth, and much better to read. But the old man with the crinkly eyes would have been embarrassed a little by it. And he would have missed dearly any effort to tell what physics is. Only the little magnetic compass Einstein got when he was five remains to suggest that world of wonder into which Professor Einstein voyaged so far.