Books

Physik im Wandel meiner Zeit. By Max Born. 252 pp. Friedr. Vieweg & Sohn, Braunschweig, Germany, 1957. DM 19.80. *Reviewed by R. Bruce Lindsay, Brown University.*

This is a volume in the series "Einzeldarstellungen aus der Naturwissenschaft und der Technik" and is to a certain extent the German version of the book *Physics in My Generation* published by Pergamon Press (London and New York) in 1956, and already reviewed in *Physics Today* (June, 1957). There are, however, sufficient differences to warrant a separate notice of the present work. The article "Physics in the Last Fifty Years" (first published in *Nature,* **168**, 625, 1951) appears in the English but not in the German version. On the other hand there are two important papers in the book under review which were not included in the English version. Both of these relate to Einstein. The first is a lecture delivered on March 18, 1955 at a meeting of the German Physical Society in Berlin to commemorate the appearance of Einstein's epoch-making work on relativity and light quanta in 1905. The second is a more popular lecture on personal reminiscences of Einstein (April 4, 1956). Both are decidedly worth reading for the keen insight Born displays into the fundamental significance of Einstein's discoveries and the beautiful clarity with which he reviews their essential features. Born's deep affection for Einstein as a man and his admiration for Einstein's genius shine forth from every page. They do not prevent him, however, from expressing his wonderment that the man who had so much to do with the establishment of the fundamental idea of the quantum theory should have found it impossible to accept quantum mechanics and its statistical interpretation as set forth by Bohr and the Copenhagen school, of which Born has been such a staunch defender. All students of physics and its history will find these essays delightful and rewarding reading.

A History of Luminescence: From the Earliest Times Until 1900. Vol. 44 of Memoirs of the American Philosophical Society. By E. Newton Harvey. 692 pp. The American Philosophical Society, Philadelphia, Pa., 1957. $6.00. *Reviewed by L. Marton, National Bureau of Standards.*

One usually judges a book by comparing it with some other book, which covers the same ground. In the case of this particular book, such judgment is impossible. As far as I know, this book is unique in subject matter: I know of no other history of luminescence. All of the work's properties, its advantages and shortcomings have to be judged therefore keeping in mind the uniqueness of its nature.

The author himself (as many of us know), is the greatest living authority on bioluminescence. Here I have given part of my story away. The book is a history of luminescence but not in the interpretation of the word as physicists use it. It contains what physicists call luminescence, but in addition it contains a vast domain of luminescent phenomena such as chemiluminescence, thermoluminescence, bioluminescence, shining fish, flesh, and wood, glowworms, the glowing of cat's eyes, the light in the warrior's eyes during battle, etc. It traces luminescence in history and in literature back to the earliest writings. It isn't a history in the sense of modern historical research where the evolution of ideas is in the foreground. It doesn't try to make us a contemporary of the investigator as is done in other modern books on the history of science as exemplified by the writings of Butterfield. Here we look down from our pinnacle of knowledge upon the less informed ancients, whereas Butterfield would take us back in time and knowledge so that we could experience the struggle to shake off authoritative misinformation and superstition in order to make an advance. In that sense it is old-fashioned history but with the most delightful aspect of old-fashioned history giving verbatim quotations from old writings in abundance. Some of these are so good that I can't resist the temptation of reproducing them here. Take for instance this quotation from Pliny in an early translation:

> "In Hercinia, a forrest of Germanie, wee have heard that there bee straunge kinds of birds, with feathers shining like fire in the night season. In other respects, I have nothing to say of them worth the writing, save only they are of some name, for beeing ferre fetched."

Another example is taken from "Speculum Mundi" by John Swan:

> *"Ignis lambens* is a cleaving and licking fire or light; and is so called because it useth to cleave and stick to the hairs of men or beasts, not hurting them, but rather (as it were) gently licking them. These flames may be caused two wayes, as the learned write.
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> "First, when clammie Exhalations are scattered abroad in the aire in small parts, and in the night are set on fire by an *Antiperistasis*; so that when any shall either ride or walk in such places as are apt to breed them, it is no wonder that they stick either on their horses, or on themselves.
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> "Secondly, they may be caused another way, vis. when the bodies of men or beasts, being chafed, do send out a fat and clammie sweat; which (according to the working of nature in things of this kinde) is kindled and appeareth like a flame.
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> *"Ignis fatuus,* or *foolish Fire* (so called, not that it hurteth, but feareth or scareth fools) is a fat and oily Exhalation hot and drie (as all Exhalations are which are apt to be fired) and also heavie in regard of the glutinous matter whereof it consisteth: in which regard