insistence on up-to-date references to the available literature would have enhanced the value of this work. And much will also depend on the organization of its key—the not-yet-available index.

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History of Biology

The Science of Life. A picture history of biology. Gordon Rattray Taylor. McGraw-Hill, New York, 1963. 368 pp. Illus. $9.95.

The Science of Life is basically a picture book. The illustrations are varied and numerous and average about one to a page. No other history of biology has been so copiously illustrated. Sixteen of the pictures are full-page color plates; the others, in black and white, range in size from whole pages to small figures stuck in the margins. The pictures are clearly reproduced and, on the whole, well chosen. They include, of course, many of the familiar figures, well known to all historians of biology, but they also include many that are refreshingly novel. Unlike our standard histories of biology, *The Science of Life* does not end at some arbitrary date, but the coverage is extended almost to the present—to within a year or two of the time the book went to press. A number of the illustrations are very recent, and photographs of some of our better looking contemporaries are included.

The pictures are accompanied by a text that is replete with odd facts. The mere quantity of information assembled here is extraordinary. Much of the material, however, is trivial and could have been omitted from serious intellectual history, but to condemn the author for including the trivial is to miss the point. The work is not aimed at the academic historian or the professional biologist. It is intended rather for the well-read amateur or even for the beginning student of biology; thus, it meets a real need. A beginning student, introduced for the first time to a history of his science, is often confronted with a mass of unfamiliar names, each of which he must connect with some small event or advance in his subject. Whether the student retains the connection often will depend on a mere memory of words. Oddities and unusual incidents related to historical figures are excellent mnemonic devices, and they can be very helpful, if one has examinations to pass.

The author's own interests seem to be concentrated on the personalities of the biologists but, in a work of this kind, this is an asset rather than a liability. No matter how greatly the author may have emphasized the personal idiosyncrasies of his subject, or how gay and carefree he may have depicted them as being as they went about their work, he does describe the work itself, and he does fit the discoveries into the growing mass of biological information.

The book contains any number of minor and unimportant inaccuracies, which any biologist can recognize, but these can be corrected easily in future editions. However, a more serious consideration arises, for *The Science of Life* is intentionally very elementary. The question is: how shallow must an elementary text be? Here, the very clarity of the writing makes the shallowness stand out vividly. Many interpretations and explanations of biological principles are definitely below the undergraduate level. Incidentally, the dust jacket tells us that the author "is a writer who illuminates contemporary society by interpreting it in terms of new findings in science."

It should be emphasized that the three illustrative, light-weight passages which are cited below, and others like them, set the tone of the whole. The first passage deals with the transition from a belief in special creation to the acceptance of evolution: "And it was the fear of such a change which lent bitterness to the rejection of evolutionary ideas, and which made the work of Lyell and the geologists alarming to the propertied classes. Equally it was this which made them so attractive to the poorer classes" (p. 142).

Here we have a stance—one not entirely divorced from political overtone —that was much more popular 20 years ago than today. It now seems rather dated, at least in the United States, although it may have lingered longer in Britain.

Our second example is from the description of Morgan's discovery of linked genes that are also sex-linked. Taylor writes: "At first Morgan's results were greeted with a customary incredulity. It all seemed too neat" (p. 323).

On the contrary, Morgan's results were greeted with enthusiasm and even with some excitement. In fact, linkage had been reported some years earlier. Morgan simply found experimental proof for an hypothesis originally proposed by T. Boveri, and in so doing converted himself to the chromosome theory of heredity. Taylor, however, has routinely followed the stereotype that depicts new discoveries as being resented and rejected by the bad, conservative majority of biologists, who did not want to be disturbed by the new advances. In this book, it is very easy to separate the "goodies from the baddies." No one need be puzzled.

One final example. Fleeming Jenkins stated that the variations, which Darwin had relied on as raw material for nature to select, would be diluted whenever the variant bred back into the general stock and that this dilution would slow up evolution indefinitely. Here Taylor writes: "In this dilemma, Darwin lost his nerve, and began to insert little Lamarckian loopholes into the new editions of his works" (p. 165).

As this evaluation of Darwin's reaction has become a rather popular cliché, it deserves a little of our attention. From the beginning, Darwin had accepted the inheritance of acquired characters and had relied on it as an ancillary factor to his hypothesis of natural selection. A generation would pass before the inheritance of acquired characters would have to be abandoned and before Mendelism, which would answer Jenkins' objection, would be discovered. Darwin's action was reasonable, in view of what was known at the time, and it indicated not that he had lost his nerve but that he had retained his intellectual honesty. For Darwin to limit himself to explaining evolution by natural selection, at a time when natural selection would not explain it adequately, would have required more dogmatism than intelligence.

The fact that a reviewer could have a field day with *The Science of Life* should not blind us to its many virtues. The author has done many things exceptionally well. For example, he very effectively uses half a page to dispose of Luther Burbank, a job that has needed doing for sometime.

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