Oxford University Press

Vertebrates:
Their Structure and Life

By W. B. YAPP, *University of Birmingham, England*
This textbook provides a clearly written, up-to-date introduction to comparative anatomy for undergraduate courses. The first seven chapters survey the vertebrate classes; the last fourteen chapters analyze and compare the organ systems. The author attempts throughout to relate structure to function, thus enabling the student to see the evolutionary value of the parts of the body as they change with time.
1965 544 pp. 200 illus. $8.50

Invertebrate Zoology

By PAUL A. MEGLITSCH, *Drake University*
Offered in this work is a thorough, balanced coverage of invertebrate zoology and a discussion of structure, classification, phylogeny, habits, and development of various invertebrate groups. Considerable attention is given to physiology with the discussion kept at a level that will be intelligible to the general student of zoology. Line drawings with detailed captions are featured.
June 1966 650 pp. 400 illus. prob. $10.00

Inorganic Chemistry
Two Volumes

By C. S. G. PHILLIPS, *Tutor in Chemistry, and* R. J. P. WILLIAMS, *Lecturer in Chemistry, Oxford University*
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Volume I 1965 704 pp. illus. $8.00
Volume II
Spring 1966 700 pp. illus. $8.00

The Mystery of Matter

Prepared by THE AMERICAN FOUNDATION FOR CONTINUING EDUCATION. LOUISE B. YOUNG, *editor*
For students in introductory science courses, this collection of writings by leading scientists and authors traces the development of the concepts of atomic physics and the structure of matter. The articles have been selected and arranged to provide a basis for understanding the problems and implications of the atomic age, to give an insight into scientific method, and to instill a sense of the excitement of discovery that comes with a new understanding of nature.
1965 704 pp. 117 line drawings
51 halftones text edition $7.50

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graph paper. In acoustics, electronics, chemistry, and other fields, logarithmic scales have proved to be invaluable—the decibel scale, for example, or *p*H. Some years ago I presented many unanswerable arguments for using a logarithmic scale [*J. Opt. Soc. Am.* **32**, 229 (1942)]. With the equipment described in that paper, many millions of spectral curves have been plotted—with logarithm-of-frequency used as abscissa—and have had a variety of applications.

WILLIAM A. SHURCLIFF
Cambridge Electron Accelerator,
Harvard University,
Cambridge, Massachusetts

Toward Innovation

In his editorial "Barriers to innovation" (15 Oct., p. 295), Wolfle points out that "In new and undeveloped areas such as space exploration, only cost, ingenuity, and technological feasibility place limits on innovation. But innovation in civilian industry encounters a number of other barriers." There is no question that innovation is primarily controlled by political considerations—economic, social, managerial, fiscal, regulatory. Technological knowledge is an impotent force unless political consensus creates a climate conducive to its application. Such consensus requires fresh attitudes by those who control the resources for innovation—government, industry, labor, and the professions. The problem is how best to gain such new attitudes.

I suggest that we would do well to experiment with new institutional relations between these power groups in order to make them aware of the mutuality of enlightened self-interest in innovation. Such awareness can lead to progressive attitudes and to actions that are complementary instead of antagonistic. The School Construction Systems Development project in California (set up by Educational Facilities Laboratories, 477 Madison Avenue, New York 10022) is one example of a successful experiment where new institutional relations helped create an improved climate for innovation—in this case, in building technology. Plans are now being considered by other groups to conduct similar experiments in other parts of the country on other functional needs of society, for example, transportation and education. . . .

My recent experiences in government and in industry make me as hopeful as Wolfle that increasing attention is being paid to the nontechnical barriers to innovation. As yet, however, we are for the most part still talking singly. Let us experiment together.

MICHAEL MICHAELIS
1735 Eye Street, NW,
Washington, D.C. 20006

How the Spider Got into the Psalm

In 40 years of Old Testament study I have never come across a spider in the Psalms. Frank Allen (Letters, 29 Oct., p. 554) claims he sees one in Psalm 90:9—

> *Ki kal yomenu panu b'ebrascha,*
> *Kilinu shanenu k'mo hegeh,*

the second line of which he translates, "We spend our years like a spider," adding "—spinning our webs of life."

Beautiful poetic imagery, but not a translation of the Hebrew text.

Psalm 90 was written about 550 to 450 B.C. It was incorporated into the final edition of the Psalter circa 100 B.C. The whole of the Hebrew Bible (Law, Prophets, and Hagiographa) was canonized at Jamnia, Palestine, in 93 Christian Era. Then came the translations: Western Aramaic (Targum), Greek (Septuagint), Latin (Vulgate), Arabic (Saadya Gaon), German (Luther), and English (Coverdale, 1535; King James, 1611; Protestant American Standard Version, 1901; Jewish Publication Society, 1917; New American Catholic Edition, 1952; Protestant Revised Standard, 1952). Not one hints of a spider in Psalm 90.

In the University of Chicago's *An American Translation* (1931), J. M. Powis Smith renders Psalm 90:9—

> For all our years vanish in Thy wrath,
> We come to an end; our years are like a cobweb wiped away.

I find no more textual basis for Smith's cobweb than for Allen's spider. The literal translation, the English for every Hebrew word, is:

> For all our days we have faced Thy wrath,
> We end our years as in a sigh.

The Psalms are Hebrew poems. Biblical Hebrew poetry is characterized by parallelism; the words or clauses of the alpha half of a verse parallel those of the beta half. Thus *yomenu* ("our days")