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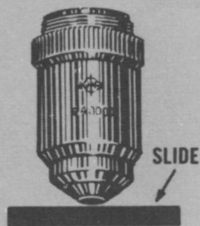
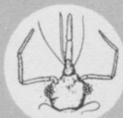
prime examples of microscope practicality

Retractable spring-loaded objectives slide into lens on slightest contact to protect valuable slides.



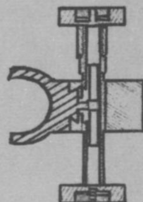
SWIFT 2241-B
Widefield W 10x Eyepiece, 4x, 10x, 40xR.

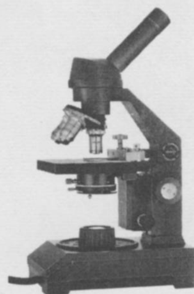
Widefield eyepiece is 10 power with high eyepoint of 15.5 mm., designed to accept eyepiece scale.



Durable is the word for SWIFT M-2240 Series Microscopes. They are meticulously manufactured to withstand all manner of classroom punishment. Stage clips are **locked** to stage plate. Eyepiece tubes are **oversize. Built-in** illuminator. **Heavy-duty,** 3-wire, **approved** power lead for extra safety. And, of course, each instrument has the famed SWIFT lifetime warranty.

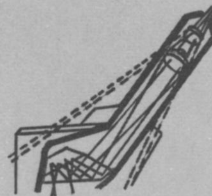
Rack and pinion tension adjustment is tamper-proof, with exclusive patented slip clutch to prevent gear damage.





SWIFT 2246-B
10x, 40xR, 100xR, Oil Immersion.

Prisms, as used in research bodies, (NOT mirrors), facilitate optical angle for greater control over light rays.



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the animals back into their shells and dunked the collectors in the ocean.

Now he has produced a bigger book, which is devoted in nearly equal parts to molluscan biology, to the place of seashells in human affairs, and to conchology. (In the U.S., amateur students of shells are conchologists and scientific investigators of Mollusca are malacologists.) With the help of well-chosen photographs, many of them in handsome color, Abbott presents the marine mollusks in all their diversity, tells where and how they live, and recounts their uses in art, religion, heraldry, adornment, medicine, and cookery. There are warnings about shellfish poisoning and the fatally venomous cones and squids; and—up-to-date touches—there are pages about mollusks as pollution indicators and even about the psychiatric benefits of shell-collecting. Some of the best sections have to do with the history of the hobby—a matter that is treated sketchily, if at all, in most nature-study books.

Abbott, in his chatty prose, conveys a lot of information. He is also a quiet moralist. Rather than rape the seashore, he says, we should spend time *watching* mollusks—and he tells how to do so. He discusses the techniques of collecting and the care of shells, of course; but he also comments judiciously on shows and auctions. He examines the notion of "rarities," such as the famous Glory of the Seas Cone: unlike postage stamps and paintings, shells become less valuable with time, because the home grounds of little-known species or variants are eventually discovered. The message is clear: aesthetic and biologic interest, not avarice, should be the shell collector's joy.

*Kingdom of the Seashell* is a beautiful, useful book. It is sure to become a favorite in school libraries.

*Sam Gadd*
Colorado Springs, Colo.

ATLAS OF DESCRIPTIVE EMBRYOLOGY, by Willis W. Mathews. 1972. Macmillan Co., New York. 148 p. $4.95 (softback).

With the tremendous growth of the field of developmental biology in recent years there has been a tendency in many biology departments to devote little time to classical descriptive embryology. This excellent atlas was prepared to meet the need for a rapid but thorough exposure to sea urchin, frog, chick, and pig development. Using over 130 well-labeled photographs of whole mounts, cross-sections, and sagittal sections of progressive embryonic stages of these organisms, the author presents a remarkably effective synopsis of their development. I know of no other source of more uniformly excellent photographs and accurate labels for the material covered. In addition, each cross-section of the chick and the pig embryo has an accompanying sagittal-section drawing indicating the plane of section. No textual material supplements the atlas, but all labeled structures are defined and their development summarized in a glossary. Several of our students with no prior knowledge of embryology were able to gain a surprising amount of information in a short time by using this atlas and having minimal help from an instructor. Perhaps this atlas will permit the recrudescence of descriptive embryology as part of the lab in many modern developmental-biology courses.

*Bruce B. Criley*
Illinois Wesleyan University
Bloomington

A FIELD GUIDE TO THE BIRDS OF MEXICO AND CENTRAL AMERICA, by L. Irby Davis. 1972. University of Texas Press, Austin. 297 p. $10.00 hardback, $6.50 softback.

A FIELD GUIDE TO THE BIRDS OF MEXICO, by Ernest P. Edwards. 1972. Privately printed, Sweet Briar, Va. 306 p. $8.50 (softback).

U.S. biology teachers and their students, in droves, are enjoying spring-break trips to Mexico. The bird life is spectacular: nearly 1,000 species, from tinamous and trogons to ground-doves and grassquits. To locate and identify them, heretofore, one relied on Emmet Blake's *Birds of Mexico: a Guide for*



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*Field Identification* (1953), which makes do chiefly with keys; Peter Alden's attractive but limited *Finding the Birds in Western Mexico* (1969); and Ernest P. Edwards' excellent *Finding Birds in Mexico* (2nd ed., 1968; currently offered, in the hardback version, with Edwards' new field guide at a combined price of $14.75). But fully illustrated bird books for Mexico weren't to be had.

Now they are; and you'll need both of them. Davis, who covers more territory, pictures 1,000 species; Edwards pictures 500 and briefly describes about 100 non-Mexican birds residing southward through Nicaragua. (Both authors saw no need to duplicate illustrations of northward-ranging and migrant species—so be sure to take along your Audubon, Golden, and Peterson books.) In neither book are the plates very good—the birds just perch there, in dubious color—but their usefulness is real where almost nothing was available before. As for the texts: Davis is precise on vocalizations (his specialty) but otherwise too sketchy; Edwards is thorough on field marks and much else, and his work is augmented with Spanish. Still, Blake's familiar guide should be kept at hand for confirmatory details. You may also have occasion to consult, for widely distributed tropical species, Rodolphe Meyer de Schauensee's *Guide to the Birds of South America* (1970) and Hugh C. Land's *Birds of Guatemala* (1970).

The next edition of the American Ornithologists' Union's *Check-list of North American Birds* will include the birds of Mexico: official recognition that they "belong" to the continent. Many U.S. birders have already made that happy discovery, and now Edwards and Davis are greatly aiding the astonished eye and ear.

*Sam Gadd*
Colorado Springs, Colo.

THE INVERTEBRATE PANORAMA, by J. E. Smith, J. D. Carthy, Garth Chapman, R. B. Clark, and David Nichols. 1971. Universe Books, New York. 416 p. $12.50.

In this eighth volume in the "Universe Natural History" series, five prominent British invertebrate zoologists attempt a fresh look at invertebrate forms (mostly marine, and not including protozoa and insects) and some of their ways of life. Smith treats of the history of the field and the "personae"—an inventory of invertebrate groups; Carthy, nervous systems, behavior, and animal associations; Chapman, movement and locomotion; Clark, structure, places of occurrence, feeding, reproduction, and development; and Nichols, paleontology and phylogeny. The book, which the jacket blurb calls "an invaluable work of reference," includes some excellent discussions and illustrations suitable for expanding one's lectures or for assigned readings in a general-biology or zoology course or in elementary invertebrate zoology. The book is pleasing in appearance, well printed, and well bound. Unfortunately, much of it seems hastily written—words poorly chosen, grammar bruised, and ideas uncertainly expressed; some of the discussions are poor and include inaccuracies; and the figures often are badly drawn or inadequately explained. The introduction and the opening chapters are particularly weak: almost certainly they will confuse any but advanced students (for whom the book is not appropriate). For example, the names Bryozoa, Polyzoa (these two in the same table), and Ectoprocta are used essentially interchangeably but in contexts that do not make obvious the fact that they stand for a single group. Anthropomorphism (for example, echinoderms are "opportunist and conventional") invites loose thinking from the reader. Choice of words jumps from oversimplified to arch.

Much of what is wrong with the book can be seen in the two pages of photographs of Precambrian fossils at the middle of the book—photos illuminating the text (p. 348-50) near the end. Nichols discusses, exceedingly briefly but rather well, the roughly 1,500 individual Australian fossils that are our earliest known remnants of multicellular animals—highly interesting and


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