elsewhere, due to their poor color and scanty yield. The key for descriptions of variety, however, might well be adopted by all who attempt to describe varieties of mango.

A brief chapter on the botany and cytogenics of the mango is well done. The balance of this volume (about 40 pages) is devoted to cultivation and to insect pests and diseases. In centuries past, Indian princes used to pride themselves on the possession of exclusive varieties and on large mango gardens. Akbar, the great Mughal Emperor, is said to have had a garden of 100,000 trees. These were chiefly, if not entirely, seedling trees, whereas most plantings now are vegetatively propagated. The book gives considerable detail on methods of vegetative propagation and of top-working, little of which is not well known to mango growers everywhere. Planting, irrigation, and manuring (fertilization) practices are discussed and serve to point up the fact that very little of an exact nature is known regarding the culture of this fruit, despite its antiquity. Irregular bearing of most varieties is a problem in India, as in other areas where mangos are grown. The insect pests and diseases of the mango in India are well presented; in each case the scientific name, the nature of the injury, and the control measures are given. A comprehensive bibliography of 162 citations is useful and also indicates that the authors are cognizant of such scientific work as has been done with this fruit.

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A Pictorial History of Science and Engineering. The story of man's technological and scientific progress from the dawn of history to the present, told in 1,000 pictures and 75,000 words. By the editors of *Year*. *Year,* New York, 1958. 263 pp. Illus. $7.95.

The lack of an adequate, brief, and popular history of modern science leaves unsatisfied an obvious demand which must seek its fulfillment in highly specialized works or in "picture histories" such as this. The editors of *Year* have endeavored to be up to date, even touching—the word should be emphasized—on automation and the Russian satellite. They have also done more justice than might have been expected to the science of antiquity and the other benighted centuries before modern times.

The topical subdivision is well conceived, and the narrative on the centuries up through the eighteenth is excellent, showing commendable concern for accuracy. The 19th and 20th centuries, however, seem to have been the editors' undoing, as they have been the undoing of others who have attempted to deal with them historically. The text here tends increasingly to vagueness—a vagueness liberally salted with names of inventors and inventions.

Many of the illustrations are interesting, but few are spectacular and many are very ordinary. On the whole, the selection of pictures is only fair, and the effectiveness of those that are included is badly marred by the editors' failure to identify them adequately; the reader is thus left free to suppose, for example, that some primordial photographer caught the cave men painting mammoths (page 16). Something more than the technical picture credits would certainly have been in order.

Its determined up-to-dateness will probably lead potential readers to regard the book as being out-of-date next year. This is a pity, for the first part, at least, deserves a longer life. When all is said and done, however, one can hardly expect to learn much more of the history of science from such a book than one could learn of physics from a picture history of that subject.

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Animal Behavior. John Paul Scott. University of Chicago Press, 1958. xi + 281 pp. Illus. $5.

No part in biology is more beset with the pitfalls of scientific methodology than is the study of animal behavior. The subject is intrinsically difficult—dealing, as it does, with the integrated totality of organisms—but because of its familiarity, it seems deceptively simple. Everyone has observed animals at one time or another and formed opinions about what they were doing. Putting these thoughts to paper, however, should quickly reveal that comparative psychology is no place for an amateur. John Paul Scott is a long-time professional in the field, and his book shows the wide range of his experience and knowledge. He has, however, attempted the perhaps impossible task of writing a book meant to serve both as a text and as an introductory account for the nonspecialized reader. Although he has produced the best general introduction to the subject we have ever had—one that can be read with profit by student and layman alike—his treatment lacks the emphasis on aspects of logic necessary to make it a satisfactory text. I should add that, in my opinion, there is *no* satisfactory up-to-date textbook on comparative psychology or animal behavior in existence today.

The study of animal behavior is in a protean condition; the serious student should be informed of this challenging state of affairs. The present volume, however, has little to say about the different points of view on fundamental questions currently under debate. In addition, making such topics as agonistic and allelomimetic behavior, learning, intelligence, and language the primary points of reference, rather than the various phylogenetic groups of animals, tends to encourage looseness of thought. As Scott himself puts it (although in a different context), "What words can we use to say that two animals as unlike as elephants and spiders are doing similar things?" The problem of finding criteria for meaningful similarities among divergent animal forms is one of the knottiest in comparative psychology.

Attention should be called to the fine illustrations, both drawings and photographs, that enliven and enhance this book.

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The Beginnings of Embryonic Development. A Symposium organized by the Section on Zoological Sciences of the American Association for the Advancement of Science, cosponsored by the American Society of Zoologists and the Association of Southeastern Biologists, and presented at the Atlanta meeting, December 27, 1955. Publication No. 48. Albert Tyler, R. C. von Borstel, Charles B. Metz, Eds. American Association for the Advancement of Science, Washington, D.C., 1957. 400 pp. Illus. $7.50, members; $8.75, others.

This volume includes the papers presented at a symposium organized by the Section on Zoological Sciences of the American Association for the Advancement of Science at the Atlanta meeting, 27 December 1955, as well as several chapters, contributed by other embryologists, which are intended to expand the coverage of this general field.

The book begins with an important chapter by W. S. Vincent on a relatively neglected area to which new techniques have been applied in recent years—namely, the differentiation and development of the oocyte, with particular emphasis on the role of the nucleus. The author comes to the conclusion that the nuclear ribonucleic acid molecules are carriers of structural specificity imparted by genetic loci and transferred to the cytoplasm. C. B. Metz discusses the role played by the interaction of specific egg and sperm substances in the fertilization and activation of the egg. While substances such as egg membrane lysin, fertilizin, and antifertilizin are apparently