
College Physical Science. *Vaden W. Miles, Everett R. Phelps, G. Ray Sherwood, and Willard H. Parsons.* Harper & Row, Publishers, Inc., New York. 1964. 537+xv p. \$7.95.

This physical science textbook is written primarily for the college student who is not going to major in science. However, the text could be used equally well as a groundwork course for the future science major.

Upon first glance, the book appears extremely difficult, but with further reading it proves to be very well written and easily understood. The text covers the four general areas of physical science, namely: physics, astronomy, chemistry, and geology. Each section is written by one of the four authors and represents his specialty in one of the areas mentioned above. The content is well coordinated and contains pertinent diagrams, tables, and pictures throughout.

The text is well adapted to the semester system and could be used for two quarters on the quarter system, especially if a weekly laboratory period were incorporated. Summaries, problems or questions, and good reference lists are included at the end of each of the 25 chapters. Mathematical principles are used wherever possible and are kept at the high school level. For those students needing help in math, appendix A contains a brief refresher course explaining the mathematical principles used in the text. Appendix B is composed of tables showing all necessary numerical equivalents and conversions.

JAMES F. GREGORY

Exploration of the Universe. *H. C. King.* Signet Science Library, The New American Library, New York. (paperback original edition) 1964. 335 p. \$.75.

From the superstition of the Emperor Tiberius that he must have his hair cut only when the moon was on the wane, to the speculations of today regarding the number of habitable planets in our galaxy, the author surveys the growth of astronomical knowledge and beliefs. For such a compact volume (really of pocket size), the picture is remarkably complete, with nearly every important advance of observation or theory fitted into place.

As Director of the London Planetarium and a former President of the British Astronomical Association, Dr. King knows his subject and tells the story well. The pace of the narrative is helped by relegation of many definitions to an astronomical glossary at the end of the book. With 17 photographs and a number of drawings to add interest, the account is successful in conveying much of the excitement of astronomical discovery. Perhaps the only disappointment to many readers will be the lack of any references to other works from which they could fill in the details about the many events past which the author sweeps with such tantalizing but necessary brevity.

P. C. KEENAN

Orichalcum and Related Ancient Alloys. *Earle R. Caley.* Numismatic Notes and Monographs No. 151. American Numismatic Society, New York. 1964. v+115 p.

The scientific study of ancient coins can shed much light on the metallurgical knowledge of the people who made them. In this volume, Professor Caley continues his investigations, combining chemistry and archaeology, in a most productive way. He traces the use of copper alloys containing zinc to early Bronze-Age objects from central and northern Europe, including the British Isles and the Black Sea area. Next he gives detailed analyses of Roman coins made of orichalcum. The chapter on the manufacture of orichalcum is particularly interesting from the standpoint of history of science. A curious by-product of these analyses is the detection of several modern forgeries on the basis of their chemical composition. These forgeries include a single coin and several statuettes allegedly Egyptian, Etruscan, and Greek. Anomalies of style placed these objects under suspicion; the very thin layers of corrosion and the composition of the metal from which they had been cast confirmed the suspicion.

AURÈLE LA ROCQUE