was a man of many interests: his known career begins with his translation of much of Aristotle's work (with the commentaries by Averroes) from Arabic into Latin, and ends with his death about 1235 when he was astrologer and general scientific advisor to the Emperor Frederick II. Within another generation his attainments became legendary. But for this reason it is now difficult to discern the historical figure beneath the legends, certainly difficult to improve on the attempts to do so that were made by Charles Haskins 40 years ago.

Thorndike tacitly accepts this, so that the present work opens not with a critical biographical study but with a brief and largely conjectural survey of Michael's life. This section summarizes the established facts of his career, and discusses the inferences with which earlier writers have tried to fill the gaps; Professor Thorndike includes some of his own. The treatment is too superficial to reveal much of Michael's scientific personality; it does not, for example, consider the content or importance of his contribution to the intellectual life of Frederick's court. Indeed, it is Thorndike's belief that, whatever Michael's contemporary reputation, he was not particularly original or influential as a natural philosopher, and that he was of much greater importance to intellectual history as a transmitter of Aristotelian and Arabic knowledge.

This explains why the bulk of *Michael Scot* is not so much an analysis of his thought as an attempt to mirror in it the "Western Christian view of nature and science in the early thirteenth century." Thorndike has drawn a wide variety of scientific observations and speculations from works attributed to Michael, principally from his astrological *Liber introductorius*, and arranged them under eight arbitrary but serviceable headings (for example, meteorology, medicine, sociology). The effect is of course to make Michael and his contemporaries appear less philosophers than historians of nature; only occasionally are his views treated in enough depth to relate him to the later scientific tradition (as when his theory of the rainbow is shown to be closer to Albert the Great's than to Grosseteste's). Inevitably, too, the scope of the material presented is somewhat restricted by the astrological function its sources were meant to serve. Nevertheless, the book is of real interest as an illustration of the character of Western science in the first years of its acquaintance with its full Aristotelian inheritance.

MICHAEL MCVAUGH
*Department of History,*
*University of North Carolina,*
*Chapel Hill*

## An Atlas of the Laboratory Mouse

This long-awaited atlas is disappointing, especially in view of the work that must have been involved. Without an accompanying text even an excellent atlas has limited usefulness; this one, **The Anatomy of the Laboratory Mouse** (Academic Press, New York, 1965. 149 pp., $6), by Margaret J. Cook, with its superficial coverage, inadequate figure legends, inconsistencies with respect to anatomical terminology, and inaccuracies, will appeal to few who work with mice. There is little of value to researchers who need a model with which to compare observed deviations, and beginners will find the figures confusing. The drawings are amateurish, needlessly repetitive, lacking in detail, and inaccurate. The legends are inconsistent, nondescriptive, and, in cases, misleading.

Because bones lend themselves to line drawings, the section on skeleton is perhaps better than either of the other two. However, Cook's drawings of the bones cannot compare in clarity and attention to detail and proportion with those in papers published by Grüneberg, Bateman, Stein, and others. Magnifications are noted in the legends for bones (but not for viscera and blood vessels); they would be more meaningful if they were uniform. For example, the dorsal aspect of the skull is drawn × 6 and the lateral aspect × 8; the "upper surface of the right manus" × 6 and "of right pes" × 4.5.

In the introduction the author makes this statement: "Reproductive organs are also drawn in some detail." Yet in none of the 13 drawings of parts of the male system is the relation of ductus deferens or of accessory glands to urethra shown. Relationships between parts of other systems—such as the urinary, female reproductive, and digestive systems—are unclear; endocrine glands and lymph nodes are almost totally ignored. Although the "strain" depicted, LAC Grey, may differ "considerably" from others, as the author suggests, such features as three phalanges in the pollex (Fig. 36), one superior cava (Figs. 91 and 96), and sheets of mammary tissue (Figs. 49 and 50) instead of separate glands are so unusual as to have warranted special mention.

This book cannot be recommended to those interested in detail, proportion, and accuracy, nor even to those interested in a general picture of mammalian anatomy.

KATHARINE P. HUMMEL
*Jackson Laboratory,*
*Bar Harbor, Maine*

## New Books

### Mathematics, Physical Sciences, and Engineering

**Advanced Mechanism**. Joseph Stiles Beggs. Macmillan, New York, 1966. 286 pp. Illus. $12.95. Macmillan Series in Mechanical Engineering, edited by Fred Landis.

**Alloys of Niobium**. D. A. Prokoshkin and E. V. Vasil'eva. A. M. Samarin, Ed. Translated from the Russian edition (Moscow, 1964) by N. Kaner. Molly Gleiser, Translation Editor. Israel Program for Scientific Translations, Jerusalem, 1965; Davey, New York, 1966. 350 pp. Illus. $16.50.

**Basic Developments in Fluid Dynamics**. vol. 1. Maurice Holt, Ed. Academic Press, New York, 1965. 459 pp. Illus. $17.50. Five papers: "The numerical solution of problems in gas dynamics" by O. M. Belotserkovskii and P. I. Chushkin; "Bluntness effects in hypersonic small disturbance theory" by J. P. Guiraud, D. Vallée, and R. Zolver; "The stability of parallel flows" by W. H. Reid; "Blast wave theory" by Akira Sakurai; and "Laminar boundary layers on cambered walls" by F. Schultz-Grunow and W. Breuer.

**Chemistry**. Michell J. Sienko and Robert A. Plane. McGraw-Hill, New York, ed. 3, 1966. 668 pp. Illus. $8.95.

**The Chemistry of Open-Chain Organic Nitrogen Compounds**. vol. 2, *Derivatives of Oxidized Nitrogen: Hydrazines to Nitrates*. Peter A. S. Smith. Benjamin, New York, 1966. 543 pp. Illus. $35.

**Engineering Mechanics**. vol. 1, *Statics*. Irving H. Shames. Prentice-Hall, Englewood Cliffs, N.J., ed. 2, 1966. 318 pp. Illus. $7.50. Prentice-Hall Engineering Science Series.

**Explorations in Elementary Mathematics**. Seaton E. Smith, Jr., Prentice-Hall, Englewood, N.J., 1966. 298 pp. Illus. $5.95. Teachers' Mathematics Reference Series, edited by Bruce E. Meserve.

**Handbook of Fluorescence Spectra of Aromatic Molecules**. Isadore B. Berlman. Academic Press, New York, 1965. 268 pp. Illus. $8.50.