mercial lecithin, painted thinly on the bottom of a planchette, is an admirable tissue adhesive. It has the advantages of (1) rapid arrival at a constant weight, (2) excellent adhesive properties, (3) resistance to heat treatment, (4) low surface tension, which promotes spreading of fluid samples into thin layers, and (5) permanence for storage.

The method we have used is to swab a thin layer on as many planchettes as are needed, allowing them to dry to equilibrium with room air. In our air-conditioned laboratory, it has been found that the moisture content is so stable that planchettes can be preweighed and stored, with errors of only a few tenths of a mg in subsequent use. We then weigh the wet tissue on the planchette and dry thoroughly on a slow hot plate. In this process, the tissue and lecithin form a tenacious bond that prevents the tissue from curling or flaking and keeps it so adherent to the metal that even accidental dropping to the floor seldom disrupts it. The lecithin film promotes the spreading of drops of blood or of standard solution, thus assuring better and more consistent geometry in the counting chamber. Lecithin remains plastic and sticky even after heating, and long half-life isotopes can be stored safely and counted several days later.

We have not made quantitative measurements of the effects of the lecithin film on back-scattered β-activity from the metal planchette, but it is assumed that, since the film is quite thin and its density low, this effect will not be important, especially if the standard isotope solutions and tissues are handled similarly. Furthermore, the more consistent geometry of tissues bonded to their planchette by lecithin should give a more uniform back-scattering from sample to sample, thus offsetting the slight losses.

Among the other adhesives, it was found that albumen promotes spreading but readily flakes on drying; acacia, although adhering well to tissue, forms a very poor bond to the metal; hydrophobic adhesives, on the other hand, such as Canada balsam, acetate cements, and fish glue, although bonding well to the metal, do not stick to tissue.

HERBERT B. LOCKSLEY
HENRY POWSNER
WILLIAM H. SWEET
Department of Surgery, Harvard Medical School, and Neurosurgical Service, Massachusetts General Hospital, Boston

Book Reviews

The Nature and Properties of Soils: A College Text of Edaphology (Lyon, Buckman, and Brady). 5th ed. revised by Harry O. Buckman and Nyle C. Brady. New York: Macmillan, 1952. 591 pp. $5.75.

This is an extensive revision of the earlier text of the same title. In the revision the authors have not only brought the material up to date to conform to the rapid progress made in the field of soil science in recent years, but they have also extensively revised and rewritten large sections of the book.

The text closely follows the excellent sequence found in previous editions. The initial chapters are devoted to a general discussion of soils, designed not only to provide the student with a degree of orientation in the field of soil science and an appreciation of the importance of soil, but also to acquaint him with some of the problems. The authors begin the detailed treatise with a discussion of the physical and chemical make-up of soils and soil materials. Succeeding sections of the book treat, respectively: soil life and its influence on soil properties, soil water and its control or management, soil air, the genesis of soils and the principles and schemes of soil classification, and organic soils. The concluding chapters cover plant nutrients and their availability in soil, the use of manure and green manure, and the principles of practical management of field soils. In general the book gives a good, balanced discussion of soils, their formation, and use.

The book is intended for beginning students in soil science, but the authors have presumed a general knowledge of elementary chemistry and physics on the part of the reader, courses commonly taken during the freshman year in college. The text, therefore, is best adapted for general courses in soil science taken during the sophomore or junior year.

Numerous subheads and a generous supply of figures make the text easy to follow and enhance the presentation of the technical material. The book is a good text for beginning students in soils, as well as a valuable source of general up-to-date information for all who are interested in soil science.

W. V. BARTHOLOMEW
Department of Agronomy, Iowa State College

Molybdenum Compounds: Their Chemistry and Technology. D. H. Killeffer and Arthur Linz; with a chapter on "The Structural Chemistry of Molybdenum" by Linus Pauling. New York–London: Interscience, 1952. 407 pp. $10.50.

Molybdenum has found its chief technical use in nonferrous alloys and more importantly in alloy steels. The current interest in the use of the unalloyed metal as a material of construction, when the problems of high temperature become critical, promises further metallurgical importance. However, the chemistry of molybdenum has received, by comparison, little attention either in inorganic texts or in the chemical literature. As the authors also say, the comprehensive trea-