

our demonstration encourage us to offer this brief account of our methods.

The arterial system of the frog was injected in the usual way and the whole frog was dehydrated, cleared and mounted in oil of wintergreen. A well-injected and adequately cleared frog was dissected for the purpose of studying the course of certain arteries, especially in the tongue, tympanic and nictitating membrane and the fat bodies. These parts of the frog were at first mounted on a microscopic slide and immersed in a Petri dish of oil of wintergreen for careful inspection under a binocular microscope. Later the specimens were mounted on celluloid, which began to soften in the oil of wintergreen and finally dissolved completely without any harm to the tissue. In the course of several weeks some of the oil evaporated, leaving the cleared tissue embedded in a solid medium. Quantitative experiments show that at least 25 grams of celluloid will dissolve in 100 cc of oil of wintergreen and that by adding acetone up to 20 cc a few more grams of celluloid will dissolve in the same amount of oil. However, care must be had in the use of acetone, as it may cloud the cleared specimen and discolor the celluloid-oil mounting medium.

After a sufficient quantity of celluloid has been dissolved in the oil of wintergreen any entrapped air may be removed with the pump. This stock may be kept for months without any noticeable deterioration or marked hardening; it will remain sufficiently labile to be poured into the Petri dishes when the cleared specimens are ready. Air bubbles may again cause some trouble, but they soon come to the surface and explode. When the specimen is properly oriented, the air bubbles have disappeared and the medium has set to the shape of the container, the cover of the Petri dish can be sealed on by forcing the air ahead of the celluloid-oil mounting medium as the two parts are brought slowly together. The medium seems to harden from week to week, does not discolor, does not shrink or crack. The Petri dish may be handled in any way, on edge or upside down; may be put in the hands of students as demonstration material; may be used for other than cleared specimens, such as small jellyfish or sea serpents which are thoroughly dehydrated before being mounted.

Should it be necessary to remove the cover of the Petri dish at any time put a few drops of acetone or oil of wintergreen around the edge where the two dishes are sealed together by the medium and turn the cover slowly until completely loosened. If the specimen is to be taken out of the medium cut around it carefully and lift out the block which can be put in fresh oil of wintergreen and soon the specimen will be freed from the mounting medium and in as perfect a condition as if it had never been used.

Whole animals, dissected parts, delicate tissues and individual injected blood vessels have been mounted during the past six months with perfect satisfaction from this celluloid-oil combination. The celluloid is obtained from any large stationery supply company in 20 × 50 inch sheets; the synthetic oil of wintergreen is quite satisfactory; the 50 and 70 mm Petri dishes are good for small specimens; the quantity of the medium to be made up will depend on the size of the specimen to be mounted.

PAUL L. CARROLL, S.J.  
JAMES R. NEIDHOEFER

MARQUETTE UNIVERSITY  
MILWAUKEE

#### APPLICATION OF THE PRINCIPLE OF THE ROSIWAL PETROGRAPHIC ANALYSIS TO GEOGRAPHIC RECONNAISSANCE

THIS method is based on the principle that the percentages of surface areas of differentiated types correspond to the sum of their intercepts on linear transects across the total area, reduced to percentages. The method proposed is to lay out a number of traverses across an area under consideration such that the total length of the traverse is not less than one hundred times the average length of the intercept of the various types differentiated. The field man paces each of the traverse routes and records the length of intercept of each type of land character. The fractional system of notation, now in common use by field geographers,<sup>1</sup> may be used in juxtaposition to the traverse line platted either in the notebook or on a suitable base map. Supplementary information should be kept in the note record. The amount of detail recorded on these traverses will vary with the aims and purposes of the reconnaissance. The results obtained are quantitative as well as qualitative. The method has the advantage of covering areas away from road frontage and thus gives a more accurate picture of the areal content of the region as a whole. It requires a minimum of equipment and but one worker. It is estimated that at least 50 square miles can be covered in a week. Furthermore, office analysis of land use maps is facilitated by this method, as it eliminates tedious planimeter measurements.

JOSEPH M. TREFETHEN

UNIVERSITY OF WISCONSIN

<sup>1</sup> See V. C. Finch, *Geog. Soc. of Chicago, Bull.* 9, Pt. II, 1933.

#### BOOKS RECEIVED

- DOCKERAY, FLOYD C. *General Psychology*. Revised edition. Pp. xxix + 576. 94 figures. Prentice-Hall. \$3.50.  
LANGDON-BROWN, SIR WALTER. *The Integration of the Endocrine System*. Fifth Horsley Memorial Lecture. Pp. 54. Macmillan, The Cambridge University Press. \$0.75.  
SPAULDING, EDWARD G. *A World of Chance: Whence, Whither, and Why?* Pp. xxxiii + 293. Macmillan. \$3.00.