ammonium sulfate was redeposited as an efflorescence on the surface of the protein precipitate.

A method was devised which reduces efflorescence to a minimum, purifies the protein precipitate and shortens drying time. An apparatus was constructed which consisted of a galvanized iron box open on one side. Inside the box, on the bottom, an electric socket is fastened and the wires pass through a hole in one side. In the top, over the lamp and also along the lower edge of each side of the box, holes are bored to allow circulation of air. A drying plate, made of plaster of Paris, about five eighths of an inch thick, fits vertically into the open side, closing the box. This face plate is pushed into the open side of the box until flush with the outer edges. It should fit snugly. In order to be able to remove the plate easily, thumb holes are made by cutting out a small "V" from the middle of each edge against which the plate rests.

Before use the plate should always be oven dried. A 60- or 75-watt lamp is then placed in the socket, the plate adjusted, and the lamp turned on for 5 or 10 minutes to allow the box to warm up. The precipitate is removed from the filter paper, roughly dried on blotting paper and spread in a thin layer on the surface of the plaster plate. The plaster absorbs the mother liquor. As the inside surface is at a higher temperature than the outside, most of the evaporation takes place there, and ammonium sulfate deposits on the inside face. The protein meanwhile dries readily on the outside. When dried to the point of cracking into small pieces it can be scraped off and ground to a powder in a mortar.

The plaster plate is reconditioned for further work by completely scraping off the last traces of any remaining precipitate with a knife or spatula. If the apparatus remains unused for some time the plate should be dried in an oven before use, as it will have become saturated with moisture from the air.

ARNOLD LOWMAN
UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL,
SAN FRANCISCO

TURNTABLE FOR EXERCISING RATS

THE turntable herewith described is very satisfactory for exercising rats. It is permanent, inexpensive and easily removed from the cage for cleaning. This new exerciser has been tested thoroughly in the dormer cage[1] used in the animal colony of The Wistar Institute.

It consists of an aluminum disc[2] (Fig. 1) 12½ inches in diameter of 3S18 gage sheet aluminum of 20-minute alumilite finish, with a ¼ inch outer edge flange for

[1] M. J. Greenman and F. L. Duhring, "Breeding and Care of the Albino Rat for Research Purposes," 2nd ed., The Wistar Institute, Philadelphia, Pa., 1931.

[2] The Aluminum Cooking Utensil Company, New Kensington, Pa.

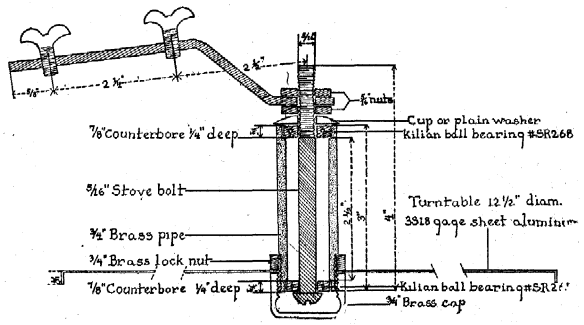

FIG. 1

strength, and a center hole of 1–1/16 inches. This new disc replaces the monel metal and stainless steel discs used formerly, preventing pitting caused by animal excretions and the brittleness in the metal with consequent cracking around the hole.

The housing is made from a piece of standard ¾ inch brass pipe, 3 inches in length, threaded on one outer end, with a ⅞ inch counterbore on each end ¼ inch deep. Inserted in each counterbore is ⅞ inch × ¼ inch Kilian ball bearing[3] SR 268, 5/16 inch bore. A 5/16 round head stove bolt, 4 inches in length, serves as a shaft. The stove bolt is inserted in the thread end of the housing, through the ball bearings, covered with a brass washer and locked with a 5/16 inch standard hexagonal nut. On one end of bolt is placed a 1 inch × ⅛ inch × 6 inch hanger of galvanized steel for fastening to the ceiling of the cage with two ¼ inch thumb screws. On threaded end of housing is placed a ¾ inch lock nut, then the aluminum disc, which is locked in place with a ¾ inch brass cap.

The new brass hub replaces the modified bicycle[1] front wheel hub and axle, to prevent rusting. It costs about two dollars to make one of the new type exercisers.

EDMOND J. FARRIS
GUSTAV ENGVALL

THE WISTAR INSTITUTE OF
ANATOMY AND BIOLOGY

[3] Kilian Manufacturing Corporation, 1640 Fairmont Avenue, Philadelphia, Pa.

BOOKS RECEIVED

BONE, ROBERT G. *Visual Outline of Ancient History.* Pp. iv + 124. Longmans, Green. $0.75.

DE VRIES, LOUIS. *German-English Science Dictionary for Students in the Agricultural, Biological and Physical Sciences.* Pp. x + 473. McGraw-Hill. $3.00.

HEFFRON, RODERICK. *Pneumonia; with Special Reference to Pneumococcus Lobar Pneumonia.* Pp. xvii + 1086. Commonwealth Fund, New York. $4.50.

LEGGET, ROBERT F. *Geology and Engineering.* Pp. xviii + 650. Illustrated. McGraw-Hill. $4.50.

OPPENHEIMER, CARL and KURT G. STERN. *Biological Oxidation.* Pp. ix + 317. 17 figures. Nordemann. $8.25.

REIHLEN, HANS. *Remsen's Einleitung das Studium der Chemie; Neu Bearbeitet und Neu Herausgegeben.* Pp. xv + 324. 59 figures. Steinkopff, Dresden.