Texas Land Office; A. Judson, M.D., Houston, Texas; F. W. Simonds, professor of geology, University of Texas, and R. A. Thompson, highway engineer, Dallas. In presenting these certificates, President Strecker gave a history of each recipient, and stated that of the fourteen men who on January 9, 1892, founded the academy, six were dead, the whereabouts of one unknown and the remaining seven were present. The responses to the president's presentation speech were much appreciated by those present. Dr. H. Y. Benedict expressed the hope that, as one half of the original founders were present at the fortieth anniversary, one half of those who reorganized the academy would be present at the eightieth anniversary.

The secretary, H. B. Parks, San Antonio, gave a short résumé of the accomplishments of the past three years and the plans for the work of the immediate future.

The lecture of the evening consisted of a talk by Dr. J. M. Kuehne on colored photography, which was illustrated by some two hundred slides. The colored photographs told the story of the wild flowers of Texas through a single season, beginning with winter and spring flowers and ending with the composites of the autumn. Of special interest were the photographs of species that are common in Texas in early spring, which were blooming along the edge of the snow-cap of Mt. Rainier in August.

A meeting of the executive committee at the close of the program selected Dr. F. McAllister to represent the academy at the Pasadena meeting of the American Association for the Advancement of Science.

H. B. PARKS,
Secretary

THE NEW HAMPSHIRE ACADEMY OF SCIENCE

THE annual meeting of the New Hampshire Academy of Science was held May 29 and 30, 1931, at Littleton, New Hampshire.

On Friday night, May 29, the academy was addressed by Mr. Arthur H. Norton, curator of the Portland Society of Natural History, on "Shore Mammals of Northern New England." Slides showing specimens and illustrations collected by Mr. Norton in his many years of work with the shore fauna of northern New England were shown.

On Saturday morning, May 30, Mr. Henry Helm Clayton, formerly of the Argentine Weather Bureau and the Smithsonian Institution, now consulting meteorologist, gave an address on "Long Range Weather Forecasting from Variations in Solar Heat," illustrated by graphs and charts. Papers by members of the academy were read and discussed at the remainder of the morning session.

The afternoon was given over to an excursion to the new power plant and dam of the Grafton Power Company at the Fifteen Mile Falls on the Connecticut River, about twelve miles from Littleton. This hydro-electric project, developing 250,000 horse power, is the second largest in New England, and has just gone into operation.

After the business meeting on Saturday night, the retiring president, Dr. C. H. Dolloff, delivered the presidential address, "The Present Status of Psychiatry," after which the papers by the members remaining on the program were read and discussed.

At the business meeting, among other matters, the academy voted to have the executive council consider the project of a junior academy of science.

Officers for 1931–1932 elected were:

President, Professor James W. Goldthwait, geology department, Dartmouth College.

Vice-president, Professor Norman M. Gilbert, physics department, Dartmouth College.

Secretary-Treasurer, Professor George W. White, geology department, University of New Hampshire.

Member of the Executive Council, Dr. Charles H. Dolloff, Superintendent, New Hampshire State Hospital.

GEO. W. WHITE,
Secretary-Treasurer

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A SIMPLE GRINDER FOR SOFT TISSUES

THE tissue grinders now available are subject to one or more of the following disadvantages: (1) they are so expensive that most laboratories can not stock them in quantity; (2) they must be sterilized immediately before using, so that much time is lost between the removal of the tissue and its grinding; (3) there is danger of contaminating the tissue from the air or from the hands of the worker, and (4) danger to the worker from contact with infected tissue. In the commonly used mortar and pestle the last two disadvantages are especially marked. For some years we have been using a type of grinder, not subject to these disadvantages, which may be useful to other laboratory workers.

The suggestion for the grinder came from Hagan,[1] who used two test-tubes that fitted one into another.

[1] W. A. Hagan, *J. Exp. Med.*, 36: 722, 1922.

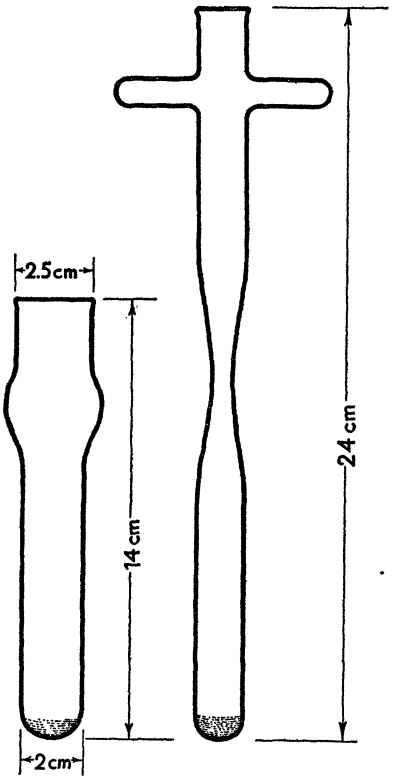

FIG. 1

We have modified it as shown in the sketch (Fig. 1) and have had it made of Pyrex glass to decrease the danger of breakage. A bulb holds the ground tissue and the salt solution used for suspending it. The plunger, which has been lengthened to prevent contamination of the top of the tube, has also been constricted to make the introduction of fluids easier. The projections on the top of the plunger make handles that can be easily grasped. The plunger must fit the inner side of the tube snugly but not so tightly as in a syringe. The bottom of the plunger is ground to fit the tube accurately, and the two should be numbered so that they can always be matched. The dimensions given are those we have found useful, but they may be modified according to the amount of tissue usually ground.

Since these grinders, when made in small quantities, cost about three dollars, a number can be kept on hand ready for use. The outer tube and plunger are sterilized separately; the former is plugged and capped, while the latter is inserted up to the cross pieces in a large plugged test-tube. The outer tube is then ready to receive tissue from an autopsy, and when convenient the sterile plunger can be inserted and the tissue ground. Salt solution or other diluent may be introduced with a pipette. The danger of contaminating the tissue or the hands of the worker is slight.

Since this grinder operates largely by pressure, organs containing much connective tissue can not be readily emulsified in it. Soft tissues, such as rabbit or guinea-pig spleen, liver, or brain, can, however, be rapidly ground to such a fine state that when diluted with an equal amount of salt solution they will pass through a No. 20 needle. It is sometimes necessary to remove coarse particles, which would plug the needle, by slow centrifugation. Cultures for bacterial counts or to secure isolated colonies from infected material can be made from the emulsions.

Recently we have found these grinders very useful for preparing chick embryo emulsions to be used in the Li-Rivers' method[2] of cultivating filtrable viruses, and for the preparation of uniform emulsions of dried tissues containing viruses.

CARL TENBROECK
DEPARTMENT OF ANIMAL PATHOLOGY,
THE ROCKEFELLER INSTITUTE FOR
MEDICAL RESEARCH,
PRINCETON, NEW JERSEY

A SIMPLE APPARATUS FOR WASHING PROTOZOA

A SIMPLE method of washing Protozoa and other small objects in running water has proved so satisfactory in my own work that I believe other investigators may also find it useful. Its chief virtue lies in its simplicity.

The apparatus described below is a modification of that used by Caullery and Chapellier as given by Langeron.[1] All that is needed is a section of glass tubing of convenient size, a scrap of bolting cloth, a rubber band and a bottle. The accompanying diagram will illustrate the set-up. A section of glass tubing (t) about 8 cm long and 5 or 6 mm inside diameter is heated at one or both ends and spread slightly after the manner of the bulb end of an ordinary pipette. A piece of bolting cloth (c) is tightly fastened over an enlarged end of the tube by means of a rubber band (r). No. 20 silk bolting cloth has proved quite satisfactory for average size Protozoa, while No. 25 serves for the smaller forms. This procedure is probably not suitable for the very smallest organisms.

The tube is placed, covered-end down, in a small bottle (b) of a size and shape that will allow the tube to extend well above the mouth, and provide a reasonably steady base. The organisms to be washed are placed in the tube by means of a pipette. As soon as the fluid has drained from the tube into the

[2] C. P. Li and T. M. Rivers, *J. Med. Exp.*, 52: 465, 1930.

[1] M. Langeron, "Précis de Microscopie," Maison et Cie., Paris, 1925.