from the immediately surrounding rock or was it derived from a remote source after the dike had solidified, contracted and formed the openings perpendicular to the cooling surface into which the quartz was introduced?

A granite quarry in Northampton likewise provoked considerable discussion. The basic igneous rock originally present had been intruded by later pink granite dikelets bringing with them allanite and epidote. The occurrence was quite similar to the Salem gabbro-diorite at Blueberry Hill, Woburn, Massachusetts.

The two parties were united at the luncheon served in the Tavern, Northampton. After lunch we returned to Amherst and followed the state road southward through the Notch near Mount Norwottock. At the Notch a stop was made to collect datolite and prehnite from a trap quarry and to study the faulting which formed the Notch.

Continuing our way toward South Hadley we stopped at the second trap sheet separated from the first or main sheet by southward-dipping sandstones. Here fragments of basalt occurred mingled with the conglomerate, and it was suggested that an explosive vent was present with outward-dipping slopes of agglomerate.

The excursion ended at this locality about four o'clock Saturday afternoon after two days of perfect weather and of most interesting field study. There were twenty-six colleges and institutions represented by more than seventy persons.

The excursion in October, 1931, will be held in the vicinity of Westerly and Newport, Rhode Island. The leaders will be Professors C. W. Brown and R. M. Brown, of Providence.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

A SIMPLE APPARATUS FOR MEASURING CATALASE ACTIVITY IN PLANT AND ANIMAL TISSUES

THE apparatus here described was designed primarily for the study of "ropiness" of bread. We find it useful also for catalase determinations in tissues. The apparatus is shown in Figs. 1 and 2. It is used as follows.

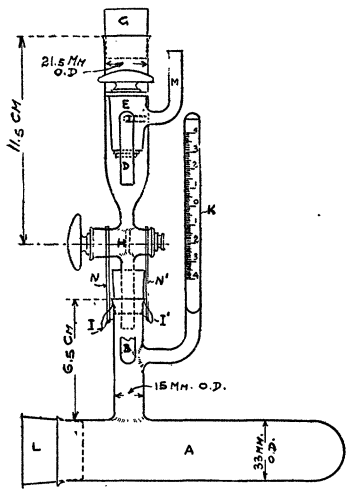

FIG. 1.

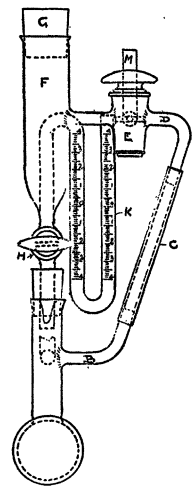

FIG. 2.

Twenty-five grams of the tissue are ground with 50 cc of tap water and made up to 75 cc with tap water. By holding the apparatus at a slant with opening of compartment A tilted upward, the fluid mass is poured with constant stirring into compartment A. The remaining particles of pulp are flushed into the apparatus with 10 cc of tap water additionally added. Stopper L is now inserted tightly. A large glass jar such as a battery jar is filled with water within half an inch from the top. The water should be nearly room temperature (within 1° F.), so that its temperature will not change appreciably during a period of fifteen to twenty minutes. Glass stopcock E is so set as to let air escape or enter through upward bent vent tube M. To hold funnel more securely in place, stopcock H is attached to glass hooks I and I^1 by means of two rubber bands, N and N^1. The apparatus is now suspended in the water-bath by running a glass rod under the upper bend of the manometer tube K and the horizontal tube connecting F with stopcock E. This glass rod will neatly support, therefore, the apparatus at two points and will itself rest on two points on the rim of the glass jar. To establish uniform temperature conditions the apparatus remains in the water-bath for a period of ten minutes. (It is best to take the tap water for making up the tissue pulp out of the jar containing the water at adjusted temperature.) During the interval of waiting there is introduced into the funnel F 10 cc of 3 per cent. hydrogen peroxide which has been adjusted to the temperature of water-bath. The hydrogen peroxide fills funnel F almost to the side tube leading to stopcock E. There is also introduced into manometer K mercury to fill both graduated arms up to the points O. Rubber stopper G is inserted tightly into funnel F.

When the ten minutes required for equalization of temperature have elapsed, stopcock E is turned through an angle of 180°, thereby closing all communication of main body of apparatus with the out-

side but maintaining communication of main body of apparatus with funnel F through rubber tube C. Now stopcock H (immersed under water) is opened, allowing solution of hydrogen peroxide to flow from funnel F into compartment A. This compartment has the capacity of 100 cc; with 95 cc of liquid introduced there remains a 5 cc "air bubble" facilitating agitation. The whole apparatus is given a gentle shake or two and the time noted. Readings are made in millimeters on manometer K at intervals of one minute for five minutes.

If activity of the tissue is so great as to bring about a maximum reading in less than five minutes, amount of material is reduced to 10 grams or even to 1 gram. We have worked in this laboratory with materials which in amounts of .2 gram bring about a maximum excursion in less than five minutes.

To express the activity in terms of units generally acceptable we adopted the following definition: A unit of catalase activity will cause liberation in five minutes of 1 microgram (.000001 g) of oxygen per gram of tissue. We have prepared a table which enables the experimenter to quickly convert manometric readings into catalase units. This tabulation requires too much space to be given in this note. Copies of the table will be mailed by the author on request. The apparatus and accessories can be secured from The Emil Greiner Company, 55 VanDam Street, New York City.

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MEASURING SLIDE FOR CLASS USE

THE ruled millimeter slide intended for use in low power dissecting microscopes, while indispensable for serious accurate work, is somewhat costly when considered for class use involving a quantity of slides. This, coupled with the liability of breakage in inexperienced hands, makes the use of the white celluloid metric rule the common measuring instrument in most elementary classes of taxonomy. The author has found an efficient substitute that can be made with ordinary photographic materials.

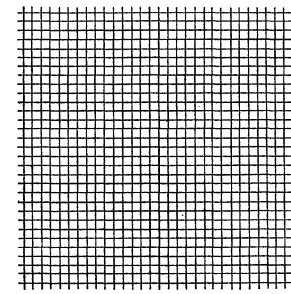

FIG. 1. Scale as it appears on finished slide.

A piece of paper is ruled with cross lines at 3-mm intervals to form a cross-ruled block 9 cm square. This is photographed on a process plate to produce an image of exactly one third the size of the original. This can be readily gauged on the ground glass with a pair of dividers set at an opening of 3 cm. The negative should be developed in a suitable contrast developer having sufficient potassium bromide to keep the lines absolutely clear while allowing the rest of the plate to become as dense as possible.

This negative printed on a slow lantern slide plate will produce a scale sufficiently accurate for any class work involving the measurement of small floral parts, seeds and fruits. A thin cover-glass bound on the slide will protect the surface from scratches. Students find scale drawings of floral parts easily made by lightly ruling with pencil their paper into squares of 5, 10, 20 millimeters or more in size and making their figures by direct comparison.

With the ordinary low magnifications used in classes of taxonomy, the essentially granular nature of the emulsion on the plate is of no serious consequence. The chief point in favor of this process is the cheapness of the slides thus produced, which in supplying a class of 20 or 30 students becomes of considerable importance.

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SPECIAL ARTICLES

THE RELATIONSHIP IN THE HEN BETWEEN THE DEVELOPMENT OF OVA, BLOOD CALCIUM AND THE ANTIRACHITIC FACTOR

OBSERVATIONS were made of the number of ova larger than 1 cm in diameter and of the blood calcium level of 30 pullets in June, 1929, which was toward the close of their first year of laying. They had been maintained for 8 months on a ration deficient in the antirachitic factor but which was supplemented, in the case of some individuals, with this factor in the form of cod-liver oil, irradiated ergosterol or sunlight through an ultraviolet-transmitting material, Cel-O-Glass.

Regardless of whether or not the antirachitic factor had been supplied, the presence of ova greater than 1 cm in diameter was accompanied by a blood calcium level between 13.0 mg and 26.7 mg per 100 cc of serum. The diameter of 1 cm was selected arbitrarily as the dividing line between developing or mature ova