of this rock has not been definitely determined. Submerged Cretaceous volcanoes may exist nearer the Atlantic Coast than the Bermudas. An opposing argument to an eastern source would be the prevailing-wind direction, which at present is toward the east.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

A TECHNIQUE FOR THE SLIDE CULTURE OF FUNGI

IN an attempt to obtain uncontaminated slide cultures of various fungi in the biological laboratories of the University of Pittsburgh, where a sterile chamber is not available and where conditions are as yet particularly unfavorable because of unplastered walls and many cross-draughts, a technique was employed which permitted all stages of typical growth on one slide and also made available a slide culture particularly satisfactory for permanent mounting.

Microscope slides were sterilized in 30×140 mm test-tubes, which were ordered from a local supply house to fit the regulation size slides. Sterile agar medium, tubed in quantities of 3 to 5 cc, was melted and cooled to the point of gelation. The agar was shaken to break up any lumps which were forming; the plug was removed, the mouth of the tube flamed, and the agar poured over the sterile slide in a similarly flamed tube. As the agar flowed down the slide it hardened and formed an uneven layer on which several light inoculations were made. A very dilute suspension of spores in the agar to be poured was sometimes substituted for the latter step.

After about forty-eight hours of incubation at room temperature, the agar film was usually dry enough to permit the elimination of drying before mounting. The unevenness of the film allowed for all stages of growth from spore germination to spore formation. Plasmolysis was exhibited only at the center of old colonies, or where the agar layer was insufficiently thick. No difference was observed between slides incubated without the addition of sterile water to the tube and those incubated with several cubic centimeters.

A simple technique, recommended by Henrici,[1] was used for permanent mounting. After fixation for several minutes in a solution of 100 cc 50 per cent. alcohol, 6.5 cc formalin, and 2.5 cc glacial acetic acid, a change was made to 35 per cent. alcohol and then to distilled water. Staining five minutes in an acid dye was followed by washing in distilled water until all the stain was removed from the agar. The slide was then dried in air overnight and mounted in balsam.

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[1] Henrici, "Molds, Yeasts, and Actinomyces," John Wiley and Sons.

SIMPLIFIED PREPARATION OF MICROSCOPE CROSS HAIRS

FOR some time I have been using spider silk for the cross hairs in the oculars of my microscope. This was a rather tedious procedure because the spiders that are usable are not always at hand and even when they are, it is a long and delicate procedure to draw out the compound thread from the spinnerets, separate a single component and then without breaking or tangling to lay it accurately upon the glue previously applied to the diaphragm.

Recently I found a much quicker and more convenient method of producing "hairs" equal or even surpassing in fineness those produced from spider silk.

This I accomplished with a commercial waterproof adhesive. By taking a small globule of this transparent substance on the end of a probe and touching it to the surface of the diaphragm in the ocular, the removal of one lens of the ocular is all that is necessary, then pulling the probe away some nine or twelve inches there remains a single extremely fine and elastic, though not very adhesive, thread connecting the side of the diaphragm and the probe. Then moistening the opposite side of the diaphragm opening with the same adhesive, being careful to dispose of the resulting thread without entangling it with the first one, catch the first thread a little short of the length necessary to cross to the other side and stretch the necessary amount and touch to the adhesive on the opposite side. This method has several advantages over the spider silk method previously used: the diaphragm does not have to be removed from the ocular tube with consequent necessity for adjustment when replaced in the tube to bring the thread into sharp focus; it is so easily applied, the placing of a single hair requiring no more than two minutes from the time the ocular is removed from the microscope until it can be replaced ready for use, that these threads can be removed or replaced as needed without losing much time. The thread is single, which gives a fine sharp image and in addition is elastic, automatically taking up any slack in the line. One precaution must be used. When preparing the thread it is necessary to pull evenly. If it is drawn out in jerks there will be irregularities in thickness of the resulting thread. When using this method, the same substance acts both as the adhesive and the thread.

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