

render the bread safe from living germs by singeing the surface with a flame. As the interior of a loaf of bread is raised to nearly  $100^{\circ}$  C. in the baking, besides steam being generated, the conditions are such that yeast can not live, and most bacteria can not resist this prolonged steam heat. The danger in bread is not the introduction of living germs into the system, but the introduction of ptomaines formed by bacteria during the rising of the dough. As the rising is done inside of six or seven hours, the danger from this source is very slight, as it would take considerably longer than that time for sufficient ptomaine to be generated to be injurious; moreover, the yeast is there in sufficiently large quantities to check the growth of any foreign organism, that must of necessity be there in small quantities.

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SIMPLE APPARATUS FOR PHOTO-MICROGRAPHY. By M. J. GOLDEN.

This device enables one to secure a photograph of a section with little loss of time, and with little disturbance of the section.

The device consists of a piece of board, about an inch thick, forty inches long and about twelve inches wide, to which are attached a shelf to hold the microscope, and a sliding piece with a pair of brackets to carry the box of an ordinary hand camera. Under the shelf another piece of board is fastened to the first, at right angles, and this assists in supporting the shelf, and serves as a leg to help keep the apparatus in an upright position.

The back, leg, shelf and sliding piece may be constructed from a piece of smooth pine board; and the bolts and nut used with the sliding piece are ordinary machine ones, that may be gotten at a hardware store. One of the bolts must have the same pitch as the hole in the camera box, by which it is fastened to the tripod. One may easily make this stand for himself, or have it made by a carpenter at little cost.

The lens of the camera is removed, and a funnel made of heavy, black cloth, or some corresponding material having flexibility, put in place of it, so that light-tight connection may be made between the camera box and the eye-piece of the microscope. If this cloth funnel be terminated in a small cone, made of tin or paste-board, to fit over the eye-piece, the adjustment to the microscope can be more rapidly made.

By using a camera box, one can also use the ordinary plate holders for his negatives, and he can get his focus on the ground glass. Of course, the plates may be developed at one's leisure.

The advantage of the apparatus is that one can, with slight cost, have at hand in the laboratory, means for making a permanent record of any peculiarity in a section that he may find, with the expenditure of very little time.

It will be found that greater uniformity in the negatives from the sections can be gotten by using an artificial light rather than natural light; a Wellsbach incandescent gas lamp gives good results.

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SANITARY SCIENCE IN THE MODERN COLLEGE. BY SEVERANCE BURRAGE.

The modern college should reflect in its curriculum the best, the most advanced thought of the time on the physical as well as the mental and moral life of the people. Many old habits and customs which have been generally adopted into family life have been curtailed, leaving room for more modern ideas and discoveries.

One of the most profound changes in the latter part of this Nineteenth Century has been in our attitude toward the physical welfare of mankind, especially in regard to the causes and prevention of disease. This is no longer a matter of importance to the medical profession alone; in fact the physician deals mainly with the cure of disease, not its prevention; therefore, in order that the coming generation shall be prepared to meet and grapple with these vital problems, to apply the new ideas intelligently they must become familiar with the fundamental principles of sanitary science. This is particularly true in view of the extended growth of community life. The decline of individual responsibility, and the increase in one form or another of socialism, makes the necessity for public supervision doubly important. Public supplies are public dangers, and, therefore the supervision of them must be expert. The expert must be intelligent, and perhaps more important still, he must be backed by an intelligent public opinion. Here, then, are the two great vacancies to be filled—the expert sanitarian and the well informed citizen. No college should send out its students without some insight into this new science of the public health. Whether the course be compulsory or elective may be a matter of opinion, but the important bearing of such a training must be evident. This training should include a certain knowledge of sanitary chemistry, as applied to the analysis of air, water, milk, butter, cheese and other foods, as well as the principles of bacteriology, showing the importance of cleanliness in the home, in the public places of the community, and in the general habits of living. If the student is made to see, by actual laboratory experiment, that the air is full of dust, much of which is living matter in the form of mold and bacteria spores; if he examines a sample of milk and finds a million or more bacteria, and if he understands that wherever there is decaying animal or vegetable matter, there are myriads upon myriads of living microbes, then there is