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Laboratory Upkeep

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EDITORIALLY SPEAKING

We greatly appreciate the friendly comments on the first issue of the SCIENCE BULLETIN from our readers; and we have tried to answer your questions. In these first issues we are of necessity "feeling our way in the dark". You only, friendly reader, can give us light. This Bulletin can become increasingly efficient if you will write NOW and tell us: what kind of articles you need; what part of the contents you consider nonessential and what especially helpful; what ideas or methods of your own have proved valuable; what problems we can help you to solve; in short, wherein we are failing or succeeding in helping you personally. Address all correspondence to the editor.

Our staff is cooperating wonderfully. A wealth of material is being contributed. Your helpful letters reach us daily. We wish for you a well-filled stocking and a glorious Holiday vacation. Merry Christmas!

LABORATORY UPKEEP

Chemistry

Proper care of the laboratory is the phase of the high school chemistry teacher's task most apt to be neglected. This and later articles will point out some of the "little things that make perfection".

Bottles of sodium and ammonium hydroxide and of hydrochloric, sulfuric and nitric acids—the acids, both dilute and concentrated—should be placed on the desk shelves, at least one set for every two individual desks. Their labels should be in the glass. Bottles for other solutions and solids can be placed on wall shelves. Their labels should be uniform, with Denison No. 205 for small bottles and No. 201 for large bottles. Use No. 223 for number labels. Print labels neatly in India ink and protect them by painting with melted paraffin or colorless shellac, preferably the latter. To assist the pupil in learning formulas, the writer prefers to print formulas only on bottle labels and hang near the shelves a framed bottle directory, carrying in alphabetical order the entire name and shelf number. File solids and solutions separately. Use bottles uniform in shape and of two sizes, the smaller for the more expensive and the little used chemicals. The bottles should be wiped when they become clouded from fumes. Never place stock bottles in the labaratory because they spoil the uniform appearance of the shelves and their contents are liable to contamination. Do not allow pupils either to remove liquids by introducing a tube into a bottle or to return "left over" chemicals to bottles. Pollution is sure to result. Accustom pupils to holding stoppers between the fingers while using bottles. Rubber, not glass, stoppers are best for alkalies. If a glass stopper sticks, try first gently tapping upward on the projecting under edge. Failing in this, gently heat the neck on all sides with a small Bunsen flame and loosen the stopper before it also becomes heated and expands. A sealed stopper sometimes yields to the same treatment that sealed it, viz., inverting it (in a beaker, for safety) and allowing its contents to penetrate between the sealed surfaces.

R. W. GETCHELL.

HYDROSTATICS

Physics

The teacher may introduce this subject to the class by reference to the meaning of "pressure" as used in mechanics. Explain to them that the gauge pressure in a steam boiler or auto tire refers to the number of pounds pressure on each square inch of inner surface. Sometimes a problem will make it clear. Suppose that an automobile weighs 2400 pounds and that this weight is equally distributed to the four wheels. If the tires were inflated to sixty pounds, how much of the tire surface would continually be in contact with the road? Dividing six hundred pounds or one-fourth of the total weight by 60 gives 10 square inches as the answer.

In most texts on High School Physics, the discussion of the mechanics of liquids is largely limited to the

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