time, but while the trap is attached to the generator and ready for work this valve must be left open, as the water supply to the trap must be free to feed the trap when it is in use. A check valve may be placed between the hand-operated valve and the trap to guard against loss of water from the generator if the water pressure should become lower than that of the autoclave.

Precautions must be mentioned in connection with the use of an appliance of this kind. The trap selected should have a steam trap pressure rating of from 20 to 25 pounds more than the regular pressure on the water system. Also, this system, in order to function successfully, must be supplied from a water supply in which the minimum pressure is at all times from 10 to 15 pounds greater than the maximum pressure at which the autoclave is to be operated, and all the fittings and pipe used in connecting the trap to the generator should be of brass.

The application of this equipment on an autoclave in these laboratories was found to be relatively inexpensive, as the total cost, including all materials and labor, came to $22. Since the cost of repairing a burned generator has, in the past, amounted to half of the above figure, the installation of this water-level regulator to prevent such an accident seemed advisable. The work was easily done by an ordinary maintenance mechanic without interfering with the regular laboratory schedule. This water-level regulator has worked in a very satisfactory way for a period of four months; it has eliminated the constant watching of the autoclave when it is in use, and has enabled the operator to attend to other duties in normal routine work without increasing the danger of burning out the apparatus. Knowing the difficulties experienced in our own laboratories previous to the installing of this device, it is hoped that this information will prove of value to other institutions faced with similar difficulties in operating this type of autoclave.

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THE SUPPRESSION OF SULFURIC ACID MIST IN KJELDAHL DIGESTIONS

As is well known, Kjeldahl digestions, as usually conducted, are always associated with the escape of very irritating and corrosive mist of sulfuric acid, continuing throughout the digestion.

Attempts to abate this nuisance have usually been in the direction of disposing of the mist after its issuance from the digestion flask, by placing the mouth of the flask through a hole in a leaden pipe, which in turn has an exit leading outdoors.

We have adopted the idea of preventing the escape of the mist of sulfuric acid from the flask, while permitting the steam, sulfur dioxide and carbon dioxide formed in the process of digestion to escape freely. This mode of procedure permits the digestion to be performed on the laboratory table, doing away with the special fume closet or special digestion rooms, which, as we well know, are places to be shunned.

We have found that the object stated above, *viz.*, the prevention of the escape of the mist of sulfuric acid and the simultaneous free exit of steam, sulfur dioxide and carbon dioxide was accomplished when we inserted in the neck of the digestion flask a snugly fitting tube of alundum, closed at the bottom and flanged at the top so that it might be supported on the flange of the flask.

If desired, though it is scarcely necessary, a stopper and delivery tube may be inserted in the mouth of the alundum tube, thus providing a means for leading the sulfur dioxide, etc., into soda lime or any other convenient absorbent.

At the end of the digestion the alundum tube may be withdrawn and filled with water, thus washing it out and permitting the recovery of any traces of spray containing ammonium sulfate, and their return to the digested fluid in the flask.

The device will be found simple, cleanly, convenient, inexpensive and efficient.

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SPECIAL ARTICLES

THE ATOMIC WEIGHT OF LEAD FROM CYRTOLITE

LEAD contained in the thorium-free mineral cyrtolite occurring in Bedford, New York, was extracted with hydrofluoric acid and purified by crystallization as nitrate and chloride and by sublimation in hydrogen chloride. Weighed quantities of fused salt were then precipitated with weighed, nearly equivalent amounts of pure silver and the exact endpoint of the reaction determined nephelometrically by the equal-opalescence method. Comparison experiments were carried out with common lead (atomic weight 207.22) and lead from Swedish kolm (atomic weight 206.01).

The result of the experiments with cyrtolite lead