

oxygen itself as the main topic of inquiry, I was more intent upon establishing the thesis that whensoever atomic oxygen is produced in the presence of air and water, ozone, hydrogen peroxide and ammonium nitrite are necessarily and simultaneously formed as secondary products. This hypothesis led me to anticipate, in entire ignorance of Hoppe-Seyler's labors, the formation of  $H_2O_2$  when palladium-hydrogen is agitated in contact with water and air, to establish the fact of its formation by experimental proof, and to determine quantitatively its amount. I think it not invidious, nor an undue detraction from the merits of Hoppe-Seyler's discoveries, to claim for myself priority in the two latter points.

STEVENS INSTITUTE OF TECHNOLOGY,

December 15, 1883.

---

## ON A NEW OVERFLOW PIPETTE.

GEO. S. EYSTER, PH.D.

The well known Overflow Pipettes of Gay-Lussac and Stas, whilst adapted for the accurate measurement and delicacy of a given volume of a solution, are not so fit for the use of corrosive fluids, and are not easily extemporized from materials commonly found in a laboratory.

The following pipette is especially adapted for use in alkalimetry, and for the employment of such corrosive solutions as are used in the "copper" method of estimating sugar (Fehling's, &c.)

An ordinary pipette, graduated to deliver a definite volume, is clamped in a *reverse* position; that is with the mark *down*, and the jet *up*. A short piece of rubber tube connects the end that is now the lowest end with one arm of a glass T tube, the other arm of which is provided with the usual Mohr burette tip; or with a glass bead cock.

This glass bead cock is simply a short piece of glass rod, somewhat larger than the bore of the rubber tube, fused into a bead. This bead inserted into the rubber tube effectually stops the flow. When it is desired to open the cock, a slight pinch of the tube over the place where the bead is concealed, will open a channel for the passage of the solution. The flow can be regulated with the greatest nicety. This piece of apparatus is *old*, but does not seem to be as generally known as it should be.

To the lateral arm is attached the rubber tube and pinch cock which supplies the pipette with the solution from the reservoir. The reservoir is either a common bottle, provided with a syphon, or an aspirator bottle. The higher the level of the reservoir above the tip of the pipette, the quicker the pipette will be filled.

In place of the glass cups used in the Stas pipette, I make use of the following arrangement to catch the overflow from the open end.

A large test tube is fitted with a cork with two holes. Through one the jet of the pipette is passed. One arm of a rather wide bent glass tube is inserted in the other hole. This is the drip tube, and is provided with a rubber tube to carry away the excess of solution.

It is easy to see the mode of action. When the pinch cock leading to the reservoir is opened, the solution enters and fills the pipette; the air escapes through the drip tube. When the solution is to be delivered, the lower cock is opened, and the fluid run out until the mark is reached; the air meanwhile enters by the drip tube, and for this reason care must be taken to have the drip tube as wide as possible, and not to allow the rubber drainage tube to dip beneath the fluid in the vessel it connects with.

The error due to reading the meniscus in a reverse position is easily corrected, and in many cases will be eliminated in standardizing the solutions.

I give the simplest form, and one readily made from easily available materials.

If one is somewhat expert in glass blowing, the end of the large test tube (or the wide tube used instead) can be drawn out and bent, so that its extremity can be left open for the admission of air. There is some advantage in this in case the volume of the pipette is large, but it is not necessary in every case.

---

## ON THE ACTION OF COLD, CONCENTRATED SULPHURIC ACID, ON LEAD AND ITS ALLOYS.

BY LUCIUS PITKIN.

Until quite recently it has been regarded as almost indisputable that the purer the lead, the less action would sulphuric acid have upon it. In opposition to this idea, a very interesting paper was