

Mr. A. P. HALLOCK, Ph.B., was then nominated as a regular member, by T. O'C. SLOANE, Mr. BENJAMIN and Wm. RUPP.

The fourth paper of the evening, "Upon the Direct Conversion of Aromatic Amides into their Corresponding Azo-compounds," by Dr. A. R. LEEDS, was then read.

After some questions by Mr. STEBBINS, the fifth paper of the evening, "On the Chemical Contents of the Fluid Cavities of Minerals," by Mr. A. A. JULIEN, was then read.

Some remarks by Messrs. ELLIOTT and DOREMUS then followed.

On motion, the Society adjourned.

JAMES H. STEBBINS, JR.,
Recording Secretary.

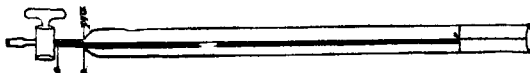
XII.—ON A SLIGHT MODIFICATION OF THE WILKINSON GAS EUDIOMETER.

BY JAMES H. STEBBINS, JR.

At one of our previous meetings, Prof. Doremus read a paper and exhibited to you one of Wilkinson's eudiometers, with which, I think, he said very fair gas analyses might be made.

Now, although I do not wish to contradict Prof. Doremus' statement, still I feel bound to say, that my experience with the above apparatus for the past month has been anything but satisfactory, and I now make bold enough to say that the Wilkinson gas eudiometer, as it is now made, cannot possibly give correct results, and with the greatest care, only approximate answers can be obtained.

The reason of this is obvious and can readily be explained by the following diagram :



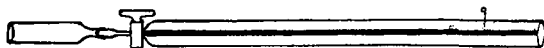
The usual Wilkinson eudiometer has quite a long and thin neck just under the glass cock as may be seen in the diagram, and which I represent as *a* and *b*.

Now, in filling this burette, we have to first fill it with water, which drives all the air out, and then connect it with the rubber tube conveying the gas. As soon as we open the cock, the gas flows in, which we so regulate as to get down to the zero mark, and then turn off the valve. In this way we get just 100 c.c. of gas. Now

the trouble begins, for the moment we let our absorbing fluids flow in, the narrow neck of the eudiometer is immediately filled with the liquid, and naturally drives the gas down below the zero mark, thus causing much trouble and annoyance. Now Prof. Doremus will say that this difficulty can easily be overcome by first letting pure water run into your burette, then marking the expansion caused, and finally making allowance for this expansion after we begin to absorb our different constituents.

But I will here remark that, as soon as our water level has fallen below zero, it is almost impossible to make accurate readings with the naked eye, which can only be done with a telescope having cross hairs, and such a thing as this for quick work is entirely out of the question.

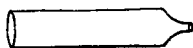
Therefore, to get rid of all this trouble, I have done away with the long neck, and have had a eudiometer made with the glass cock soldered directly on to the top of the burette.



This burette is divided into 100 c.c. and $\frac{1}{10}$ of c.c., thus permitting me to make very close readings.

The *modus operandi* of this instrument is the same as in the previous case, and the analyses obtained are approximately correct.

The modification here mentioned may be better understood by the following diagram :



XIII.—1. NOTE ON THE PRECIPITATION AND PURIFICATION OF BARIUM SULPHATE. 2. QUALITATIVE TEST FOR CARBON DISULPHIDE AND CARBON DIOXIDE IN COAL GAS.

BY T. O'CONNOR SLOANE, A.M. PH.D.

1.

To obtain a precipitate of barium sulphate that will not run through the filter paper, the following rules should be observed : The solution should be barely acid. This end is best secured by the use of cochineal or some equivalent solution. By using the colored matter in the fluid form, a solution can be neutralized in quarter of the time, and with far more exactness than when its reaction is tried