As a test of the method in the hands of inexperienced operators, it was outlined and explained to four junior students, who with the galena ore already mentioned, obtained the following results:

Grams taken.	Per cent. lead found.
R. H = 0.7	81.86
G. E. R. = 0.7	81.78
S. D. { 1 = 0.7	82.00
S. D. { 2 = 0.85	81.89
G. E. S = 0.7	81.95

With another ore containing five per cent. of copper, twenty-six per cent. of iron, quartz and gypsum, one of the students obtained the following results:

Grams taken.	Per cent. lead found.
3.0	15.89
3.5	16.01
4.0	15.97

ESTIMATION OF SULPHIDES IN CALCIUM CARBIDE.

BY FRED. J. POPE.

Received May 21, 1896.

A WEIGHED quantity of calcium carbide was conveyed to a dry Erlenmeyer flask provided with a stop-cock funnel and a delivery tube, which latter led to a ten ounce wash bottle, this in turn being connected with a smaller one. The wash bottles contained 150 cc. lead acetate of known strength (about tenth normal). By means of a stop-cock water was carefully added until there was no further evolution of acetylene. On the reaction ceasing, twenty-five to forty cc. sulphuric acid (1 : 3) was run into the flask and the whole gently boiled, the liberated hydrogen sulphide passing into the wash bottles and precipitating the lead as lead sulphide. When the reaction had ceased the flask and liquid was washed free of hydrogen sulphide by a current of air and the contents of wash bottles filtered. The filtrate containing unconsumed lead acetate was made up to a half liter. To 100 cc. of this solution were added standard potassium bichromate, arsenious acid, etc., (as indicated in preceding article) and total amount of unconsumed lead acetate estimated. The difference between this

amount and the quantity of lead acetate started with gave amount precipitated by the hydrogen sulphide from which the sulphur existing as sulphide was calculated.

Grams calcium carbide taken.	Per cent. sulphur found.
2.4492	3·37
3.1234	3·57

No attempt was made to check the application of the method. It is obvious that the impure calcium carbide may have evolved other products capable of removing lead from the solution. It is the writer's intention to investigate this and other points connected with this method.

NOTE ON THE PRESENCE OF OIL IN BOILER SCALE.[1]

BY CHARLES A. DOREMUS.

Received June 9, 1896.

IT is difficult to remove cylinder oils, whether pure mineral or mixtures of mineral and animal from condensed exhaust steam. The practice of recovering steam either for the preparation of distilled water or for boiler feed water is now so general that opportunities for observing the troubles attending the procedure are not wanting.

This sample of water was obtained by melting the "core" of cakes of artificial ice. The sediment is fine, flocculent and of red color. When removed from the water and dried it is pulverulent. There is very slight evidence of oil in the dry mass, the moist sediment does not appear oily. The large proportion of oil extracted by ether shows how inefficient the filters were in purifying the condensed steam. Yet very great pains were taken at the ice plant to secure pure distilled water, and there was no visible oiliness in the water as it flowed to the freezing cans. Here however the corrosive action of the distilled water on the galvanized iron produced a mass of iron and zinc hydrates which in being pushed to the centre by the gradual formation of ice gathered the oil and carried it to the core.

Another specimen is one obtained from a steamboat trafficing on the Hudson river and using salt or brackish water in the surface condensers. The boilers were said to be foul with masses

[1] Read before the New York Section. June 5th, 1886.