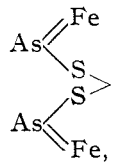
content, the constitution of arsenopyrite might be graphically written



and all the conditions of experiment fully satisfied. We cannot expect much from such speculative formulas, until we have better and satisfactory evidence in regard to the size of the molecule. Until methods have been devised for the determination of the molecular magnitude of minerals, it will be wiser to merely state the facts, leaving it to future workers to collate them. It may not perhaps be out of place to observe that we endeavored to discover some suitable means of determining mineral molecular magnitudes, but we are still destitute of anything approaching even an approximate method. We sought to learn what influence a weighed quantity of arsenopyrite would exert upon the solidification point of low fusing alloys, *e. g.*, Rose's metal, Wood's metal, without arriving at anything definite. And in the case of certain related minerals (marcasite and pyrite) specific heat and electric conductivity experiments were carried out in the hope of detecting differences connected with varying constitution, but such proved not to be the case.

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ESTIMATION OF MINERAL MATTER IN RUBBER GOODS.

BY L. DE KONINGH.

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IT is a well known fact that the amount of mineral matter in rubber goods cannot be determined by means of a simple ignition, as the ash does not represent the original mineral matter. For instance, white lead becomes lead oxide, chalk is largely reduced to calcium oxide, some oxides volatilize, etc. By using the following process the writer believes he has effected a decided improvement. Five grams of the very finely divided sample are treated in a covered beaker with fifty cc. of fuming hydrochloric acid, and after soaking for an hour, the

whole is heated up to 70° for another hour. Fifty cc. of water are then added, and the insoluble matter is collected on a filter. The washing with boiling water takes some time, as the acid causes the rubber to swell out to an enormous extent; however, after a liter of water has been used the washings are generally free from acidity. The residue is now carefully transferred from the filter into a weighed porcelain dish; no practical difficulty will be experienced in this operation. After drying on the open water-bath until no more water-vapor is visible, the dish is placed inside an air-bath and heated for three hours up to 105°. After cooling it is weighed, and the result is the rubber minus the greater part of its soluble ash. The remainder of the ash is then found by an ignition. Some samples examined by the writer, which gave on simple ignition about fifty per cent. of ash, gave only ten per cent. after the acid treatment, and the ash was then found to consist chiefly of barium sulphate. If it be desired to distinguish between heavy spar and silicates, the writer still uses a process described by him some years ago, based on the fact that barium sulphate is soluble in hot sulphuric acid, and may be completely reprecipitated on adding water.

The acid filtrate may, if desired, be subjected to further analysis.

Before recommending the process it was necessary to ascertain if the strong acid dissolves any organic matter. If the filtrate is evaporated nearly to dryness after having added a few cc. of sulphuric acid, there is obvious darkening, and an unpleasant albuminous odor is noticed. But, as will be seen, the loss is not very great, and may even to some extent be allowed for. Five grams of a block-rubber containing forty per cent. of ash were treated with fifty cc. of fuming hydrochloric acid at 70°; fifty cc. of water were then added, and after standing for several hours, fifty cc. of the filtrate were diluted with 450 cc. of water and thirty grams of crystals of magnesium sulphate were added on account of the presence of hydrochloric acid. Standard solution of potassium permanganate (0.001 gram oxygen per cc.) was added until the liquid turned pink, and more was added during the next half hour; each time the color began to fade. Three cc. of permanganate were thus consumed. To ascertain how

much organic matter this represents, 0.03 gram of a dry albuminoid (peptone) was dissolved in twenty-five cc. of fuming hydrochloric acid and then titrated with permanganate in exactly the same way; the result was also three cc.

By an easy calculation it follows that five grams of the block-rubber had yielded to the acid about 0.06 gram of organic matter, or about one per cent.

LONDON, ENGLAND, OCTOBER, 1897.

OBITUARY.[1]

DR. MEINHARD ALSBERG.—The colleagues and many friends of Dr. Meinhard Alsberg were startled by the news of his sudden and unexpected death in the Adirondacks, while on a visit to his family on September 7th, for though somewhat delicate in appearance, he had impressed all who knew him as one endowed with a good constitution.

Dr. Alsberg was born in 1842, a native of the small German State of Waldeck. Until his fifteenth year he went to the Gymnasium at Korbach, but then was put by his father to a commercial business. This, however, was so much against his inclinations, that he was sent to the Polytechnic at Braunschweig, where on graduating he was awarded a special prize, which induced his uncle to furnish the funds for his university education. He studied at first at Göttingen, and later in Jena, where he graduated in 1864, and became assistant at the University laboratory. In 1865 he came to New York. The friendship of his celebrated teacher, Prof. Wöhler, earned him his first position here soon after his arrival. But he looked upon these positions merely as stepping stones for what he considered his real calling—a manufacturing chemist. His first venture in this direction, the manufacture of lactin, he was soon compelled to give up on account of lack of capital.

He then in 1868 commenced the manufacture of vermillion. He was the pioneer of the successful manufacture of vermillion in this country, and his achievements soon brought him the necessary capital to make the business a paying one. For six

[1] Read before the New York Section, October 15, 1897.