

Manufacture of Carbon Disulphide in the Electric Furnace.—

George A. Richter of the Research Department of Brown and Company, Berlin, N. H., contributed to the forty-second general meeting of the American Electrochemical Society a paper embodying the results of experiments on the production of carbon disulphide by the Taylor process, although differing somewhat from the original form of that process. Large-scale production of the substance is based upon the direct action of the two elements at a temperature ranging from 600 to 1000° C., at which temperature the sulphur is, of course, in the form of vapor and the carbon an incandescent solid. Not all forms of carbon are admissible; anthracite, gas coke and other dense forms cannot be used. Good grades of willow or birch charcoal are among the best, especially those with a low ash content. The materials should be as dry as practicable. Water vapor will form hydrogen sulphide and other sulphur compounds. The charcoal should be well burned. The mechanical arrangements are described in the article, and the thermal data are presented in much detail. The conclusions are that a comparatively recent process for the manufacture of carbon disulphide has been devised and actual plant data indicate that the unit operates with reasonably fair thermal efficiency.

H. L.

Magnetostriction with Small Magnetizing Fields. J. R. HOBBIE, JR. (*Phys. Rev.*, May, 1922).—Joule as long ago as 1847 studied the change in length of a piece of iron upon the application of magnetic forces. Later Bidwell found that iron grew longer until a certain magnetizing force was attained. After this point it shortened. Nickel, on the other hand, contracted from the first application of force and no magnetizing field caused it to do anything but contract.

This investigation is limited to a study of magnetostriction with small fields. No new results came to light that are of a striking character. The importance of the work lies in this. Previous investigators in this field have been able to detect a change of length of one part in one hundred million while here three parts in a billion billion can be noticed. The sensitiveness has been made three thousand fold as great.

The piezo-electric properties of quartz and of Rochelle salt were made use of. The wire under examination hung from the crystal and was magnetized by a coil carrying an alternating current. The alternating magnetic field set up periodic changes in the length of the wire and the crystal was subjected to corresponding changes of tension, which, in turn, produced an alternating electromotive force between its tinfoil coatings. From a study of this it was possible to infer the extent of the changes of length of the wire. The method has the weakness that it does not discriminate between an elongation and a contraction due to the field.

A careful search was made for electrostriction in bismuth, but no trace of it was found.

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