bushings the addition of aquadag to the cutting-compound enabled them to bore a hole the full size of the reamer, with a considerable reduction in the horsepower consumed.

The Rationale of Dried Blast. JOS. W. RICHARDS. (*Iron Age*, lxxxvi, 3.)—This paper treats of the benefits derived from drying the air-blast, which are, briefly: increased temperature for smelting; improvement in the ratio of CO_2 to CO through diminution of the carbon consumption in the smelting zone; increase of regularity of running, and quantity and uniformity of out-put; and general economy. This paper will well repay careful perusal and consideration.

Adulteration of Turpentine Oil with Copal Oil. W. VAUBEL. (*Zeit. Angew. Chemie*, xxiii, 1165.)—Turpentine oil to which copal oil has been added, does not dry satisfactorily, but leaves an acid, oily residue which renders it unfit for use in paint or varnish. It is dangerous to handle since copal oil may cause strong inflammation of the hands and eyes. Its presence in turpentine oil may be detected by the smell, the acid reaction and the bromine value of the residue left on evaporation.

Theory of the Cold Vulcanization of Rubber. F. W. HINRICHSSEN and E. KINDSCHER. (*Z. Chem. Ind. Kolloide*, 1910, 4.)—Definite quantities of a solution of Para rubber in benzene were treated for three weeks with measured quantities of a benzene solution of sulphur chloride, and then in an aliquot volume of the clear liquid, the residual sulphur chloride was determined. From the difference of the quantity of sulphur chloride taken and that remaining at the end of the experiment, the vulcanization coefficient was calculated. Results show that for a given quantity of rubber, the amount of sulphur chloride absorbed is approximately constant, and independent of the excess of sulphur chloride used. Hence vulcanized rubber is regarded as a definite chemical compound of the formula $(\text{C}_{10}\text{H}_{16})_2\text{S}_2\text{Cl}_2$.

Action of Pure Air and Water on Iron and Steel. J. A. N. FRIEND. (*Chem. Soc. Proc.*, xxvi, 179.)—A hollow cylinder of iron or steel closed at one end is supported in a flask, containing potassium hydroxide solution to absorb the carbon dioxide in the air, in such a way that cold water can circulate through the cylinder and connecting tubes. The flask is placed in a water-bath at 100°C ., and a current of cold water passed through the cylinder. Water vapor condenses on the outside of the cylinder and drips off, slowly washing it free from alkali. If the iron is pure it remains quite bright, thus proving that pure water and pure air combined have no action on pure iron.