

bined carbon dissolves in nitric acid with a brown color, the depth of which is proportionate to the quantity of carbon present. The color produced is then compared with that of standard tint equivalent to a known quantity of carbon.

It is generally allowed that Si., S. and P. are injurious to steel, but it is undecided as to the proportions of each that may be present without serious deterioration. There appears to be little question that steel containing five parts of Si. in 1,000 does not admit of being forged. S. confers red shortness upon steel as it does upon bar iron, but the former appears to suffer less injury than the latter from the presence of a given proportion of sulphur. Steel containing more than two parts of sulphur in 1,000 is decidedly brittle at a red heat so that it is useless for forging and can only be employed for castings, for which purpose it is adapted by its increased fluidity when melted. Red short steel like iron, having the same defect, appears tougher than other qualities of steel except at an elevated temperature. Mn. is believed to counteract to a great extent the red shortness caused by the presence of sulphur in steel. How much phosphorus can be tolerated in steel has been made the subject of much discussion. It is said that steel manufacturers object to bar iron as a material for converting into steel when it contains one part of phosphorus in 1,000. A ready test for distinguish-

ing between steel and wrought iron consists in placing a drop of diluted nitric acid upon a clean surface of metal, when a greenish-grey stain appears upon the iron, whilst the steel exhibits a black spot due to the separation of carbon.

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(Continued from third page of Cover.)

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Canada Southern Railway Company.

THE Annual General Meeting of the Canada Southern Railway Company, for the election of Directors and other general purposes, will be held on Wednesday, the 4th day of June, 1902, at the hour of eleven o'clock in the forenoon, at the Company's Head Office, in the City of St. Thomas.

NICOL KINGSMILL,
May 1st, 1902. Secretary C.S. Ry. Co.