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discussion as possible at earliest date.

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### AN INVESTIGATION ON THE VALUE OF THE INDENTATION TEST FOR STEEL RAILS.

BY H. K. DUTCHER, M. Sc., S. Can. Soc. C. E.

(Read before the General Section, December 13th, 1906.)

This paper is the result of some experiments conducted during the year 1905-06 in the Civil Engineering Testing Laboratory of McGill University, with a view to determining the value of the indentation test for steel rails in regard to the essential qualities desired in service. These qualities are usually determined by subjecting the specimen to a series of separate tests, including transverse tension, and impact, in addition to the chemical analysis made from time to time to ascertain the proportion of carbon, silicon, manganese, sulphur, phosphorus, and any other elements which might affect the rail one way or another.

A study of this particular method of testing steel rails was suggested to the Author by watching indentations made on a large number of steel rail sections in the Testing Laboratory of the University, under the direction of the Chief Engineer of the Canadian Pacific Railway Company. These tests were made with a spherical