

been reached for that load and rate of loading, after which the metal would refuse to flow. It is in the rate of loading while the metal is flowing that a considerable difference may be obtained.

Having ascertained the difficulties in the use of the Emery machine for indentation testing, it was decided to use the Wicksteed machine for the indenting of the rolled steel bars which had been prepared especially for this investigation by the Nova Scotia Steel Company. They were  $2.5'' \times .75'' \times 6'$  in size, and were marked as follows:

1154 — .10% C.  
 1154 — .10% C.  
 2150 — .20% C.  
 2150 — .20% C.  
 1 — .30% C.  
 2 — .30% C.  
 1196 — .40% C.  
 1196 — .40% C.  
 2122 — .54% C.  
 2122 — .54% C.  
 1063 — .62% C.  
 3 — .75% C.  
 4 — .75% C.  
 5 — .90% C.  
 5 — .90% C.

The percentage carbon, as above stated, was checked at the College by the method of colour analysis with the following results:

1154 — .11% C.  
 2150 — .19% C.  
 2 — .25% C.  
 1196 — .42% C.  
 2122 — .66% C.  
 1063 — .64% C.  
 3 — .80% C.  
 5 — .96% C.

It may be seen that they agree fairly closely with the percentages marked, with the exception of 2 — .30 C. and 2122 — .54 C., these appearing by subsequent test to agree very closely with the 2150 — .20 C. and 1063 — .62 C. As the method of colour analysis, however, is not as satisfactory as a full chemical analysis, which was out of the question for all the specimens in the time available,