TABLE No. 5.—COMPARISON OF HALF-CHAIN LENGTHS.

½ in. Invar Tape No. 03. A end, B edge.

Name of Half-chain.	Difference in Length.	True Value of 100 Links.	True value of each Half-chain.	Difference from 50 Links.
0–50 links	·0	99·9932	49·9947	— ·0053
51–100 „	+ ·0037		49·9985	— ·0015

OBSERVATIONS FOR THE PROBABLE ERROR IN LAYING DOWN A COMPARATOR.

Imperial Standard Steel Reference Tape is standard at   62°
Temperature by thermometer No. 263 = 59°
   „   „   No. 264 = 59

Mean temperature   59

Difference   ..   ..   3°

Coefficient of expansion adopted = 0·00000625, which multiplied by 3 = 0·001875 link ; and the true length of comparator = 100·0000 − 0·0019 = 99·9981 links.

Continued comparisons of same steel reference tape with the above comparator value 99·9981, each comparison being carried out in the same manner as if a new comparator was being established :—

First Set.

J. Langmuir reading scale ; H. M. Kensington making contact, rear end.

NOTE.—Perfect open-air conditions taken as 7 ; then the conditions for observations Nos. 1 to 5 will be 5.

                 Deg. Fahr.

1. (a.) Tape is long = + ·0003 Thermometer 263 at 59·1
                264 „ 59·0
 (b.) „ = + ·0001   „ 263 „ 59·1
                264 „ 59·0

Means   .. + ·0002 Thermometer   at 59·05

2. (a.) Tape is long = + ·0002 Thermometer 263 at 59·1
                264 „ 59
 (b.)   = + ·0002   „ 263 „ 59
                264 „ 59

Means   = + ·0002 Thermometer   at 59·025

3. (a.) Tape is long = + ·0014 Thermometer 263 at 60·1
                264 „ 60·0
 (b.)   = + ·0015   „ 263 „ 60·1
                264 „ 60·1

Means   .. + ·00145 Thermometer   at 60·075

4. (a.) Tape is long = + ·0009 Thermometer 263 at 60
                264 „ 60
 (b.)   = + ·0009   „ 263 „ 59·5
                264 „ 60·1

Means   .. + ·0009 Thermometer   at 59·90

5. (a.) Tape is long = + ·0013 Thermometer 263 at 59·8
                264 „ 60.1
 (b.) „ = + ·0014   „ 263 „ 60·0
                264 „ 60·1

Means   = + ·00135 Thermometer   at 60·0