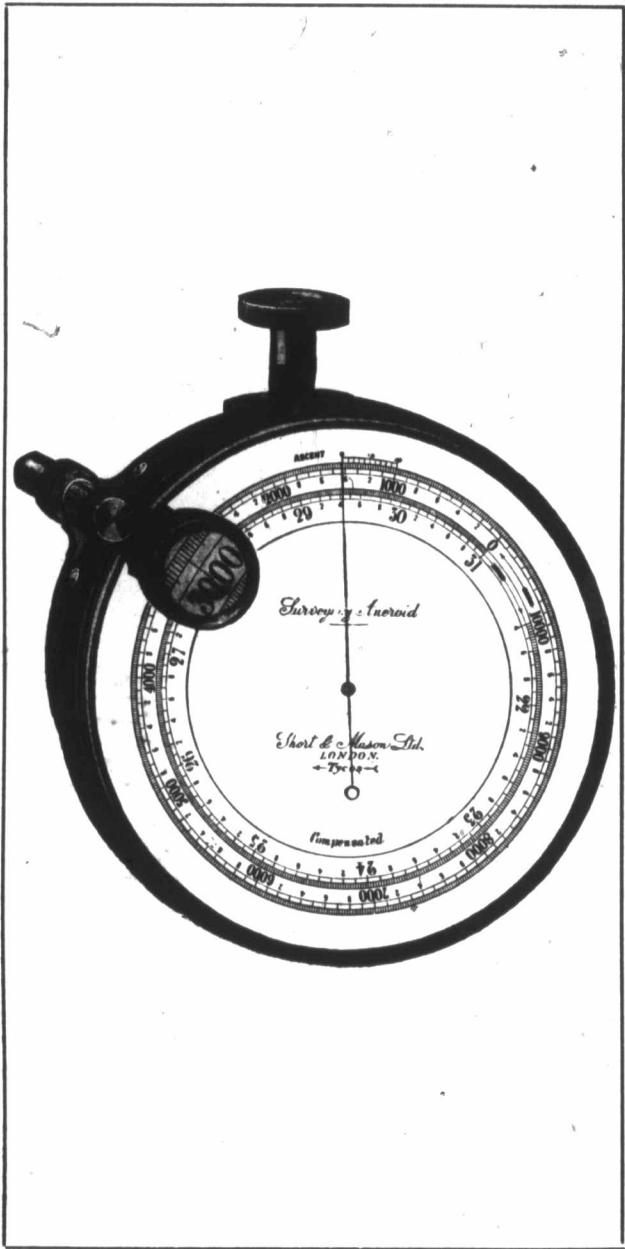


S. & M. "Tycos"

Surveying Aneroid

HARRISON & CO.
Montreal, Can.



S. & M. "Tycos"

SURVEYING AND MINING ANEROIDS

THE *Tycos* SURVEYING ANEROID is the limit of perfection in Barometer making.

Used intelligently it is the very best field instrument for accurate and rapid approximate surveys in ascertaining variations in gradients and levels in road making, railways, canals, water courses and in mining.

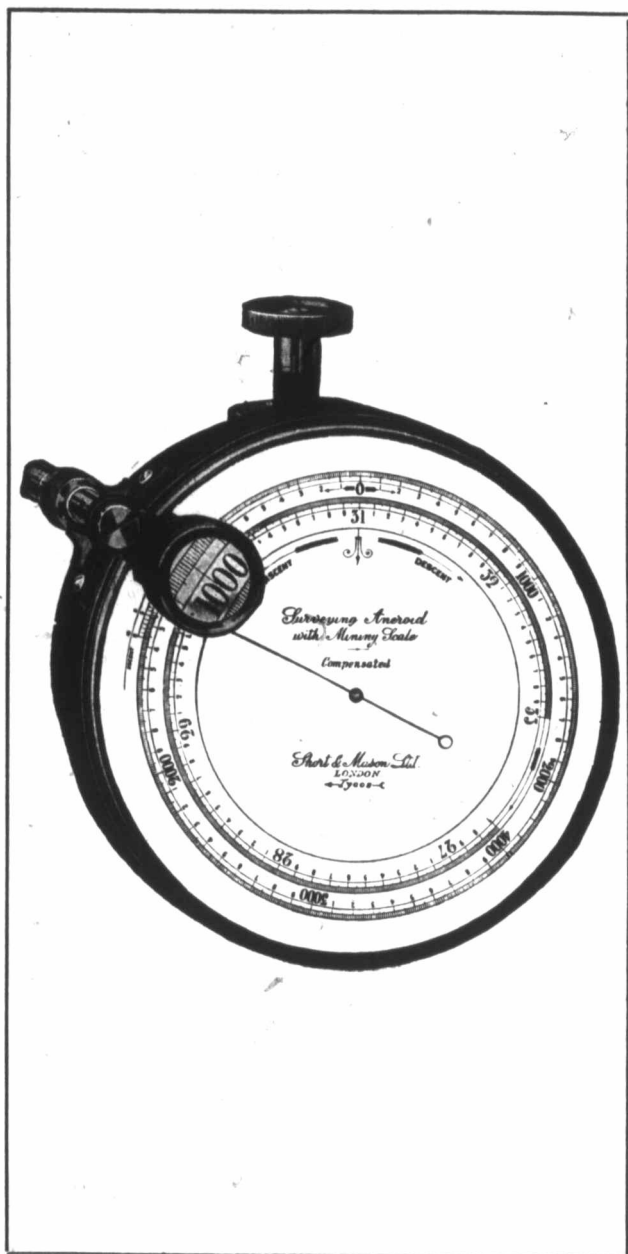
The vernier admits of dividing the altitude scale in tenths—10 feet divisions can be read to single elevation and 20 feet to 2 feet.

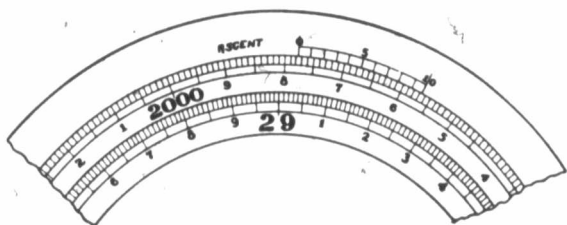
Scaling

On *Tycos* SURVEYING ANEROIDS the divisions of the pressure or inch scale gradually increase in value as the scale ascends, whereas the altitude scale is divided equally—this reverses the order of scaling employed with ordinary Altitude Barometers, and admits the use of a vernier, which could not be applied to a scale unequally divided.

The Vernier

The vernier is scaled in ten equal divisions, covering in its total length exactly twenty-one divisions of the altitude scale, hence no two lines of vernier and altitude scale can be coincident at the same time.





The division lines on vernier are numbered from 0 to 10 if altitude scale be in 10 feet divisions, and 0 to 20 if scaled for 20 feet.

By means of thumb screw operating rack and pinion the vernier is set for reading by bringing the zero line of its scale directly under the end of the Barometer hand.

Observe which line on the vernier is exactly coincident with a line on the altitude scale; the number of the coinciding vernier line is the number of feet to be added.

For example—If a Barometer scaled in 10 feet, indicates an altitude of 1770 feet and the coinciding line on the vernier be 7, the altitude is 1777 feet.

Compensation

The *Tycos* Surveying Aneroid is compensated for errors due to expansion or contraction of its parts through changes in temperature.

Temperature Corrections

Tycas Instruments are scaled for true readings of atmospheric pressure when the temperature of the air is 50° F.

If the temperature be above or below 50° F. allowance must be made for error due to the expansion or contraction of the atmosphere by reason of increase or decrease in temperature.

To find the difference of level between two places, divide the difference in pressure (Barometric inches) by their sum, and multiply by factor 55761. This will give the true elevation in feet **provided** the **mean** temperature of the atmosphere at both places be 50° F.

Pressure at low station 30", Temperature 50°
" " upper " 27", " 44°

Mean Temperature 47°

$$\left. \begin{array}{r} 30-27 \\ \hline 30+27 \end{array} \right\} \times 55410 = 2916 \text{ feet.}$$

In taking altitudes of mountains, hills etc., where close accuracy is necessary, two instruments should be employed.

An observer should be left at the lower station, noting at agreed upon intervals changes both in temperature and pressure, that take place.

The observer making the ascent should note at the summit of the mountain the barometric reading, the temperature and the time. On

returning to lower station compare records and make the necessary correction for difference in temperature between base and summit.

Prices

No. 2120. 3-inch bronzed case.

ALTITUDE—FEET				
3,000	6,000	10,000	12,000	16,000
PRICE				
\$66.20	\$63.00	\$65.70	\$67.50	\$69.40

No. 2121, 5-inch bronzed case:

ALTITUDE—FEET				
3,000	6,000	10,000	12,000	16,000
PRICE				
\$71.20	68.00	\$70.70	\$72.50	\$74.40

Note—The following altitude scales are arranged by vernier to read to single feet of elevation.

3-inch, 3,000 feet.

5-inch, 3,000 feet, 6,000 feet.

All higher altitude scales will read by vernier to 2 feet of elevation.

The *Tycas* Aneroid for mining purposes is scaled in inches from 27 to 33, with altitude scale from 2,000 feet below sea level to 4,000 feet above.

No. 2122, 3-inch Bronzed Case Mining Aneroid,
\$63 00.

No. 2123, 5-inch Bronzed Case Mining Aneroid,
\$68.00.

Extras to Surveying and Mining Aneroids
add to above prices:

Aluminum Case.....	3-inch \$9.00	5-inch \$13.50
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