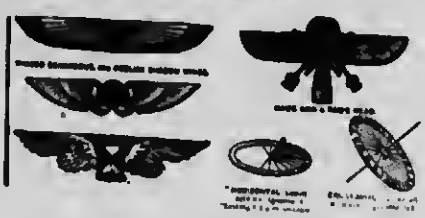
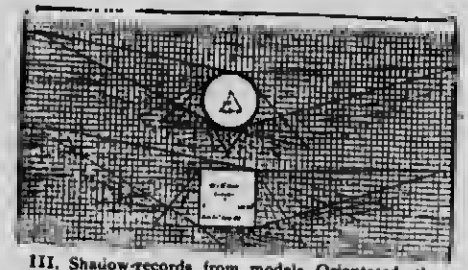
(Plate "O") RECORDS of SHADOWS from PYRAMIDS and CONES

As Pyramids were used in Egypt, Assyria, Mexico, etc., but Cones in Peru, Siam and Central Africa, the writer experimented during several years with models of both, carefully orientated upon diagram-squared-paper, and outlined thereon their shadows every hour (as reproduced below), during the Equinoxes and Midsummer. These demonstrated that Pyramids and Cones of *equal* height gave identical records of the Seasons, but Pyramids were easier to build higher. Both records resembled



I. The **SHADOW-WINGS** on **EGYPTIAN TEMPLES** and the Daily Shadows on Sun-dials, indicating the "Flight of Time."

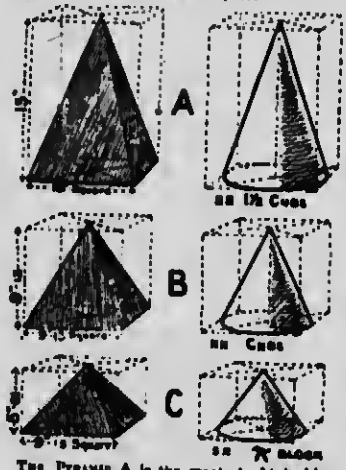
II. M. B. Cotsworth's models, as Series A B C, casting the 7.0 p.m. Mid-summer Shadow, recorded on the corresponding diagrams below:



III. Shadow-records from models Orientated, then casting shadows true North up the Meridian-line.

V. The study of these led me to think that the designers or builders in choosing between Positions towards Perfection the Sun-structure Pyramid for tracing the Sun's course, would be guided by the increasing tendency of the Sun-shadows to cast their Northern-sides in a continuous straight line the nearer the pyramid approached the true 30° N. Lat. position—provided its slope was directed to the Equinoctial meridian point when viewed from the North.

To test this idea, *and determine what was the best possible shape of pyramid*, models of pyramids and cones were made graded to the sizes A B C, to thereby prove the shadow effect of [illegible] fixed standard heights and slopes, as illustrated in the dark blocks below, where the dotted outline shows the full size of the blocks out of which the models were cut:—



The Pyramid A is the greatest obtainable from a cube-and-a-half whose base is ten inches square and height fifteen inches.

The Pyramid B is the largest obtainable from a cube whose side is ninth of the Great Pyramid's base.

The Pyramid C is an exact model of the Great Pyramid, on the scale of ninth of its dimensions, as cut from a cube block.

The Cones are the same height and diameter of base as the pyramid with which they are respectively paired for comparison.

All the above, with others of smaller size representing obelisks and trilithons or cross-banks, were placed on the duly orientated and levelled diagram papers before noting.

IV. Shadow-grams from Models wrongly Orientated, showing Noon-shadows deflected from the Meridian-line.

These Fans show the 46° 54" year-range, and how Latitude was derived by subtracting the Sun's Elevation at the Equinox from the 90° of Zenith.