THE GREAT PYRAMID.

RUDE STONE MONUMENTS v. THE GREAT PYRAMID.

BY PIAZZI SMYTH.

Astronomer Royal for Scotland

Erroneous Numerical Deductions form Rude Stone Monuments.

Not that he would presume to say that the Great Pyramid is built of rude stones. Quite the contrary. There his knowledge as an architect comes in to his immense advantage. But, leaving that safe road for him, and coming to numbers and mathematics, which are not his *forte* at all, he thinks that all the exact science recently ascertained to exist in that building, by the late John Taylor, myself, and others, is based on such total uncertainty, or utter wideness of numerical measures, that anything, however absurd and impossible, might be established in the same manner. Accordingly, he starts the theory that, on just the same principle as I have proceeded upon at the Great Pyramid, he is justified in saying that the rude stone circles were set out by their builders to be either 100 feet, or 100 metres, in diameter.

The intended pungency of the satire here, resides in Mr. Fergusson knowing well that the metre is a new standard of measure in the earth, invented only 80 years ago by the philosophers of Paris; therefore, it could no possibly have been in vogue among these rude circle builders 1300 years ago. But yet, says Mr. Fergusson, Piazzi Smyth's methods at the Pyramid justify me in saying so, though I do not believe it! and accordingly, through all the rest of his book, he frequently alludes to many of the stone circles, in thinly disguised contemptuous phrase, of the Pyramid really, as 100 *metre* circles.

Exactness of Construction and Science implied in the Great Pyramid.

As there is only room here for a very little on this topic, just to give a taste of the whole —I take the plan of the small *ante-chamber* to the central King's Chamber, deep in the interior of the Great Pyramid. It is 41·5 inches broad, and 116·26 inches long. But there is the further peculiarity about the length, that part of it is in granite and part in limestone; and the granite portion which is, further, equal in length to the height of a thick granite wainscot on the East side of the room, is in length 103·03, or to go to greater refinement, very recently attained, 103·033 inches (these inches being of the Pyramid, which are larger than the British inches by one-thousandth part, or half a hair's-breadth.)

So far, the above numbers are merely the measure of the simple fact. But can any reason be assigned for the facts measuring these quantities of inches, down to a particular fraction in tenths, hundredths, and even thousandths, viz., just 116·26 and 103·033, neither less nor more by a hair's-breadth; and certainly not by any large fraction of an inch, not to say anything of Mr. Fergusson's bigger and rougher unit of a foot?

A reason, as asked for, can be assigned. And in the exactness of the answer, even to the thousandths of an inch, all men may see that we have here got hold of something very different from Mr. Fergusson's blundering 100 metre circles, 29, 30, 40 or more feet too large or too small.

It was long after I had published the measures from which the above numbers of 116·26, 103·033 are derived, but without my having the smallest idea what they meant, that Capt. Tracey, R. A., was privileged to discern—

1. That one of the 103·033 measures being vertical, and the other horizontal, and both coming to and enclosing one rectangular corner, they typified the *area* of a square; of which square each side = 103·033 inches in length.

2. That the area of that square was precisely equal to the area of a circle having the length of the whole floor, or 116·26 inches for diameter. And

3. These two things together form an illustration, in the oldest building in the world, long, long before science began to be cultivated by mankind, of that notable problem, which subsequent men puzzled their brains over for full 3000 years before they approached the true answer to, viz., the squaring of the circle; and which is further illustrated in the external figure of the whole of the Great Pyramid, but of no other pyramid, whether in Egypt or anywhere else.

That was surely a very remarkable result to be able to draw out of merely three measures taken in the little ante-chamber of the ancient Great Pyramid; and it was drawn, too, out of their differences from, or proportions to, each other. But since then it has been found that other results as noteworthy for their high science (thousands of years before men had begun to seek for the same results elsewhere) follow