(3.) *By the tablets, i.e.*, multiplication table, now used and extended even to 99×99, and carefully learned.

(4.) *Cross-Multiplication.*—acknowledged to be difficult, but *therefore* good and valuable, and to be acquired by the scholar on the ground that "the good and wise are few, while the wicked and foolish are many" (*sic*).

(5.) *The square.*—elegant and easy.

(6.) *The latticed*—this was the Hindoo method.

(7.) *By unfolding, i.e.*, taking component factors.

(8.) *By cutting up, i.e.*, separating the multiplier, or both multiplier and multiplicand, into parts, taking care that here, as indeed always, this principle is attended to, that *every* part of the multiplicand be multiplied by *every* part of the multiplier.

All these different arrangements of the work *i.e.*, of the partial products, are obligatory, owing to the simple, but essential, principle that only like can be added to like.

Just as we know that 4 is contained in 28 seven times, because 7×4=28, and not that we see 28 separated into sets of four each, and that there are 7 of them, though of course this is the *ultimate* explanation, we use the multiplication table for division. The Italians with their extensive table were able to do heavier work than we can do as short division. They called this *By the Rule*, as the example, when worked out, resembled a carpenter's foot-rule.

For long division they had,

1st, The method by *resolution, i.e.*, of the divisor into its factors.

2nd, "*A Danda*" (which is our common long division). Cataneo says "it is most necessary to every person who wishes to become an expert reckoner." It is, however, much less "pleasant" than the following.

3rd, *The galley*, so called from the form of the completed work. The simplest form of it is given by writing the dividend in a long line; this makes the longest beam of the vessel. The divisor is written beneath, and, when the successive products of this by the different figures of the quotient have been subtracted, mentally or aside, the remainders are written above, and finished figures are all cancelled. The divisor is rewritten beneath (the first being cancelled) and so the work goes on to the end. The uncancelled figures are the quotient, and remainder, if there be any. More complicated forms were preferred as proofs of the