

XIX. *Remarks upon a Passage in Castillione's Life of Sir ISAAC NEWTON.* By John Winthrop, LL. D. Hollisian Professor of Mathematics, at Cambridge, in New England.

Redde, Jan. 20, 1774. **T**H E R E is a passage in CASTILLIONE'S life of Sir ISAAC NEWTON, prefixed to his edition of the OPUSCULA, in three volumes 4to. published at Lausanne and Geneva in 1744, which appears to me a palpable mistake; and tends to place Sir ISAAC NEWTON in an inferior light to DES CARTES, in the eyes of foreigners. It is this, p. xxxii: "Sæpiùs se reprehendebat [NEUTONUS] quòd res merè geometricas algebraïcis rationibus tractavisset, & quòd libro suo de Algebrâ *Aritmetica Universalis* titulum posuisset, meliùs asserens CARTESIUM suum de re eâdem volumen dixisse *Geometriam*, ut sic ostenderet has computationes subsidia tantùm esse Geometris ad inveniendum." The authority he quotes for this is Dr. PEMBERTON, in the preface to his *View of Sir ISAAC NEWTON'S Philosophy*; but I will venture to say, he has misinterpreted his Author. He represents Dr. PEMBERTON as saying; ist, That Sir ISAAC NEWTON often cen-

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fured *himself* for handling geometrical subjects by algebraic calculations: 2dly, That another thing he often censured *himself* for, was, his having called his book of Algebra by the name of *Universal Arithmetic*: 3dly, That he commended DES CARTES, as having done better, in giving the title of *Geometry* to his treatise on the same subject.—The two last particulars, certainly, and I think the first also, have no foundation in the account Dr. PEMBERTON has given of this matter. His words are: “ I have often heard him [Sir ISAAC] “ censure the handling geometrical subjects by algebraic calculations; and his book of Algebra “ he called by the name of Universal Arithmetic, “ in opposition to the injudicious title of Geome- “ try, which DES CARTES had given to the treatise, wherein he shews, how the geometer may “ assist his invention by such kind of computations.”—Dr. PEMBERTON’S expression does not at all imply, that Sir ISAAC NEWTON censured *himself* for handling geometrical subjects by algebraic calculations: the only idea it suggests, is, that he censured that way in general, and those who practised it, and that he had his eye particularly upon DES CARTES;—and, far from intimating, that he had inconsiderately called his book of Algebra by the name of *Universal Arithmetic*, and afterwards censured himself for doing so, and wished that he had rather called it *Geometry*, as DES CARTES did his; it directly affirms, on the contrary, that by express design and choice, he called it *Arithmetic*, in *opposition* to DES CARTES’S *injudicious* title of *Geometry*.

It

It is true, indeed, that in a following passage, Dr. PEMBERTON says, “of their [the antients] taste and form of demonstration, Sir ISAAC always professed himself a great admirer: *I have heard him even censure himself for not following them yet more closely than he did*; and speak with regret of his mistake, at the beginning of his mathematical studies, in applying himself to the works of DES CARTES, and other algebraic writers, before he had considered the elements of EUCLID with that attention, which so excellent a writer deserves.”—But the mode of expression here used, is so different from the foregoing, that there can be no doubt, but that it was intended to convey a different meaning. And if, in the censure first mentioned, viz. “*for handling geometrical subjects by algebraic calculations*,” Dr. PEMBERTON had understood that Sir ISAAC meant to include *himself*, this last passage would have been a mere tautology. But this last strongly implies, on the contrary, that Sir ISAAC had, in general, endeavoured to *follow closely the antient geometrical* form of demonstration, in preference to that by *algebraic calculation*; which is of modern invention.

There is a remarkable instance of the attention he paid to the distinction between these methods, and of the preference he gave to the former, in his great work of the *Principia*. Having in Lemma XIX. and its Corollaries, given a concise and elegant solution of a noted geometric Problem, he subjoins: “Atque ita problematis veterum de qua-

“ tuor lineis ab EUCLIDE incepti, & ab APOLLO-
 “ NIO continuati, *non calculus, sed compositio geo-*
 “ *metrica*, qualem veteres quærebant, in hoc co-
 “ rollario exhibetur.” That the words, “ *non cal-*
 “ *culus sed compositio geometrica*,” refer to DES
 CARTES’s prolix, algebraic solution of this Pro-
 blem, in his *Geometry*, p. 25—34, will, I believe,
 be readily granted by every one, that is acquainted
 with Sir ISAAC NEWTON’s writings.

Upon the whole, I humbly conceive, that Dr.
 PEMBERTON’s meaning, in the former passage,
 might have been better expressed in Latin, as
 follows: “ Sæpiùs eos reprehendebat, qui res merè
 “ *geometricas algebraicis rationibus tractavissent;*
 “ *et libro suo de Algebrâ Arithmeticæ Universalis*
 “ *titulum ponebat, asserens CARTESIUM suum de*
 “ *re eâdem volumen incitè dixisse Geometriam,*
 “ *in quo ostendit, quomodo hæ computationes sub-*
 “ *fidia esse possunt geometris ad inveniendum.*”

Which of these translations does most justly ex-
 press the sense of the original, may, I suppose,
 be safely left to the judgement of every person
 that understands both the languages.

I would only add, that this mistake of CAS-
 TILLIONE, must have been owing, either to in-
 advertence, or to his not being perfectly acquainted
 with the English language; as he elsewhere ap-
 pears to have had the highest veneration for Sir
 ISAAC NEWTON.

This mistake may, to some, appear trivial; but,
 in my apprehension, every circumstance, relative
 to so illustrious a character as that of Sir ISAAC

NEWTON.

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NEWTON, derives importance from it; and ought to be marked with great exactness.

The foregoing remarks are, with all deference, submitted to the judgement of the ROYAL SOCIETY, by

Their most obedient,

humble Servant,

Cambridge, New England,
March 4, 1773.

JOHN WINTHROP.

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