Further holograph drafts of MINT00619 (/catalogue/record/MINT00619) (Mint 19/2/322).

Author: Isaac Newton

Source: MINT 19/2/340, 353, National Archives, Kew, Richmond, Surrey, UK

<340r>

And indeed to say that M^{r} Newton then understood not second fluxions is all one as to say that he understood not how to consider motion or as a quantity increasing & decreasing.

11. In the last coinage of Copper money an hundred per añ for six year together made a great [clamour aming the people & a] complaint in Parliament whereby the coynage was stopt for a year by reason of too great a quantity of copper money & after the coynage of another hundred Tunns the nation was fully stockt for the next five or six years. So that six or seven hundred Tunns is abundantly sufficient to stock the nation & a coynage of 1500 Tunns in five years time is not practicable by reason of the clamours it would make among the people. At present there wants not above a 100 Tuns in all

32. Copper of 10^{d} per £w^{t} is too coarse. And there is no assay proposed by which the goodnes of the Copper may be known. A specimen is not sufficient.

43. The casting drawing cutting flatting Scouring nealing blanching & dying cannot be performed for 25$^{£}$ per Tonn. And there is nothing set down for the Graver & Smith.

54. Eleven pounds per Tonn for putting away is too much

65. There is nothing set down for providing coyning Tools

76. If the copper should be so coarse & the coynage so cheap & 1500 Tonns be coined as in the proposal a pound weight should not be cut into 20^{d}. But the money Should be coyned as neare as can be conveniently to the intrinsic value.

27. If a pound weight be cut into 20^{d}, a Tonn in coyn will amount only to 186$^{£}$. 13. 4. It must be cut into 21^{d} that a Tonn may make 205. 6. 8. But the copper money should be coyned to the intrinsic as near as can be conveniently

88.He that assayes sizes & coyns the Copper money should not be impowered to make any profit by coyning it too light or too coarse & therefore should have nothing to do with buying the copper or distributing it to the

people but should only receive it by weight & assay & deliver it back in money by weight & assay & have it in his power to refuse bad copper. The proper assay for Copper is by hammering it when red hot & bending it when cold & observing the grain in breaking as is done at the Copper Mills.

99. My Lord Treasurer is desirous to have the money of fine copper, & if be of the same fineness with the Copper money of Sweden, the Copper must be made into filleths at the Battering Mills. For Copper of that degree of fineness will not be manufactured by casting.

$139^{s}.\ 4^{d}.\ 1^{s}.\ 4^{£} = 5^{s}.\ 16^{ll} = 1^{£}.$ 93. 6. 8 6. 19. 4 46. 139. 6. 8

is Analysis & in his book of Quadratures & still uses it in the same manner as formerly & as it is the oldest notation so it is the best, the method there**{illeg}** being more Geometrical & more elegant then the Differential & as universal. T**{illeg}**

And whereas the great Mathematician represents that M^{r} Newton uses the letter o in the vulgar manner which destroys the advantages of the Differential method: he uses it & has used it ever since the writing of his Analysis in such a manner as makes his method more beautiful more geometrical & more advantageous then the differential & (by joyning the methods of Series & fluxions together) much more universal. The Differential Method is nothing else then the method of Tangents published by M^{r} in the year 1668 & by D.^{r} Barrow in the year 1670, disguised by changing D^{r} Barrows symbols a & e into dy & dx, improved by the instructions which M^{r} Leibnitz received by the Letters of M^{r} Newton, & taken from them by pretending that M^{r} L. found it long before he did . For in his Letter dated 21 Jul 1677 he pretended to have found it jam a multo tempore & yet he had not found it the year before. For in his Letter dated 27. Aug. 1676 he wrote that there were many Problems which could not be reduced to Equations or Quadratures such as were those of the inverse method of Tangents & may others. This method without the use of the letter o is not demonstrative, without the method of Series is not universal nor had any advantages which are not to be found in M^{r} Newtons. And thus much in answer to the great Mathematician

<353r>

Observations upon the Estimate of the neat profit of coyning 1500 Tunns of Copper into half pence & farthings.

Obs. 1. In the last coynage of copper money an hundred tunns per aⁿ in six years made a great complaint in Parliament whereby the coynage was stopt all the seventh year by reason of too great a quantity of copper money & after the coynage of another hundred Tunns the nation was fully stockt during the next five or six years. Therefore six or seven hundred Tunns is abundantly sufficient to stock the nation & a coynage of 1500 Tunns in five years is not practicable by reason of the clamours it would make amongst the people. At present there want not above an 100 Tonns in all.

Obs. 2. If a pound weigh of copper be cut into 20^{d}, a Tonn in coyn will amount unto only $186^{£}\ 13^{s}.\ 4^{d}$. It must be cut into 22^{d} that a Tonn may make $205^{£}.\ 6^{s}.\ 8^{d}$. [If the copper be worth only 10^{d} per £w^{t} & the melting & whole coynage can be done for $35^{£}$ per Tonn & the copper money exchanged for $11^{£}$ per Tonn: apound weight ought to be cut into no more then 15^{d} or $15\frac{1}{2}\,^{d}$, the half penny being allowe**{d}** for hous-rent Clerks charges of setting up a Mint. & incidents. For the money should be coyned to the intrinsic value as neare as can be conveniently. Or if a profit be made it should go to her Majesty]

Obs. 3. Casting drawing cutting flatting scouring nealing blanching dying & coyning cannot be done for $35^{£}$ per Tonn [There is nothing set down for the Graver & Smith, nor for providing coyning tools.] And $11^{£}$ per Tonn for changing the copper money is something too much. [And there is no assay mentioned by which the goodness of the Copper may be ascertained. To compare it with a speciment is a slipery way of judging]‡

< insertion from the bottom of the page >

‡ In the last coynage of copper money, 5^{d} p^{r} lw^{t} was allowed by the Patentees for casting drawing cutting flatting scouring nealing blanching dryin & coyning including the work of the graver & Smith. There was alo 40^{s} per Tonn allowed to a Comptroller. And if $7^{£}$ 6 8 per Tonn be allowed for putting off, the whole charge including the price of the copper at 10^{d} per Lw^{t} will amount to 16^{d} per lw^{t} which deducted from 22^{d} per lw^{t} leaves a profit of 6^{d} per lw^{t}. And this profit in coyning 1500 TOnns amounts to $84000^{£}$ out of which something may be abated for housrent clerks coyning tools & incidents < text from f 353r resumes >

Obs. 4. He that assays sizes & coyns the copper money should not be impowered to make any profit by coyning it too light or too coarse, & therefore should have nothing to do with buying or providing the copper or distributing it to the people by tale, but should only receive it by weight & assay & deliver it back in money by weight & assay, & have it in his power to refuse bad copper.

Obs. 5. My Lord Treasurer is desirous to have the money made of fine Copper & if it shall be of the same fineness with the Copper money of Sweden, the Copper must be made into Fillets at the Battering Mills or Drawing Mills.. For Copper of that degree of fineness will not easily be manufactored by casting. [The best assay of such fine Copper is by hammering it when red hot & bending it when cold & observing the grain in breaking as is done by the refiners of copper.]

Obs. 6. There should be a method of assay

<353v>

To give the reader a tast of their plainness I beg the favour of you to translate print & print in your journal the letter of M^{r} James Gregory dated 15 Feb 1671 to the words secundum vulgaris Algebræ præceptor & those of M^{r} Leibnitz dated 15 July & 26 Octob. 1674 of M^{r} Oldenburg dated 15 Apr 1675, & of M^{r} Leibnitz dated 20 May 1675 28 Decem 1675, & 12 May 1676, & that paragraph of his Letter dated 27 Aug 1676 which begins with the words Sit QA1F Sector duabus rectis &c & ends with the words maxime afficiens mentem: And leave it to the Reader to make his own remarks upon them. // Then let him read the Analysis per æquationes Numero terminorum infinitas & M^{r} Newtons Letters of 10 Decemb. 1672, & 13 June & 24 Octob. 1676 & see if he cannot find the method of fluxions in them together with the 5^{th} Proposition of the Book of Quadratures deduced from that Method. And then let him compare the differential method of Tangents of D^{r} Barrow published 1670 & that of M^{r} Leibnits set down in his Letter of 21 June. 1677 & see if they be not the same, & if M^{r} Leibnitz hath added any thing more to the differential of D^{r} Barrow then what M^{r} Newton in his Letters above mentioned gave him notice of. Let every man consult the Records themselves & form his judgment from thence

If M^{r} Leibnitz has any evidence to prove that he had the differential method before the year 1677 or the series of Gregory before he received it from M^{r} Oldenburg, or any of his other pretended inventions before he received them from other men, he may deserve to be heard. But if he goes on to question the candor of other men without proving his accusations against them & at the same time to insist upon his own candor as if it were injustice to question it; If he will bot acknowledge when & by what means he found his differential method; If he goes on to put his correspondents in Germany upon publishing defamatory papers without a name & by sucg indirect means endeavours to set aside records which make against him & bring the matter to a wrangle: this sort of carriage will make it needles to mind him any further.

But M^{r} Leibnitz calls it injustice to question his candor & complains of everybody that questions it without hearing his reasons which he will not produce. If he has any evidence to prove that he had the Differential method before the year 1677 or the series of Gregory before he received it from Oldenburg, or any of his other pretended inventions before he received them from other men, he may produce them But if he will not acknowledge when & by what means he found his differenntial method, nor if he goes on to question the candor of every body that's against him without proving his accusations & to insist upon his own candor as if it were injustice to question it & pretend to reasons which he will not suffer to be examined. If he goes on to put his correspondents in Germany upon publishing defamatory papers without a name & thereby endeavours to set aside records

But because he M^{r} Leibn. began these disputes & questions the candeor of every body that's against him & insists upon his own candor as if it were injustice to question it & has referred the matter to a nameless Mathematician of his own chusing which is the same thing as to refer it to himself, I desire you to publish a translation of M^{r} Gregories Letter of 15 Febr. 1671, to the words in locis imparibus. & all M^{r} Oldenburghs Letter of 15 Apr. 1675 & M^{r} Leibnitz's answer of 20th May 1675. Then add the two Letters of M^{r} Leibnitz dated 15 July & 26 Octob 1674 concerning the series which in the first of those two Letters he calls a Theoreme for finding the area of the circle or of a given Sector thereof, in the second a method for finding the circumference or any arc of a circle whose sine is given [which series can be no other then that of M^{r} Newton for finding the Arc by this sine]. And then publish M^{r} Leibnitz's two letters of 28 Decem. 1675 & 12 May 1676 in both which he pretends that the series which he had wrote of before was that for finding the Arc by the Tangent & in the latter desires M^{r} Oldenburg to procure from M^{r} Collins the Demonstration of the series for finding the Arc by the since, [& in reconpence for this method promises his trifling Theorem for transmuting of figures into one another by means of which he had found a Demonstration of the Theoreme sent him by M^{r} Oldenburg.]. You need only publish a translation of the Letters without any remarks upon them.