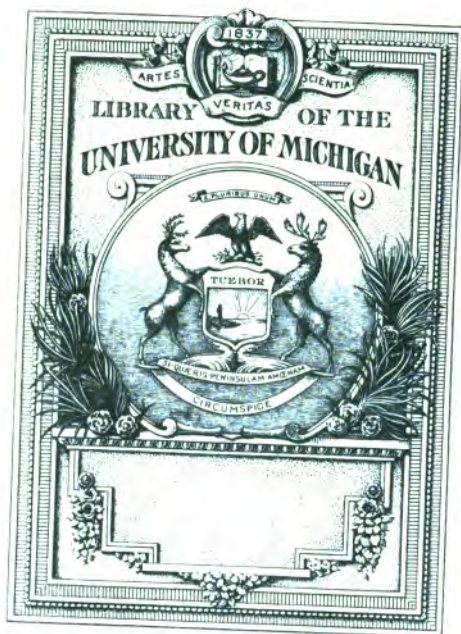


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W
Literæ de Re Nummaria;

IN OPPOSITION to

The Common Opinion,

THAT THE

Denarii Romani

Were never larger than Seven in an Ounce:

WITH SOME

REMARKS

ON

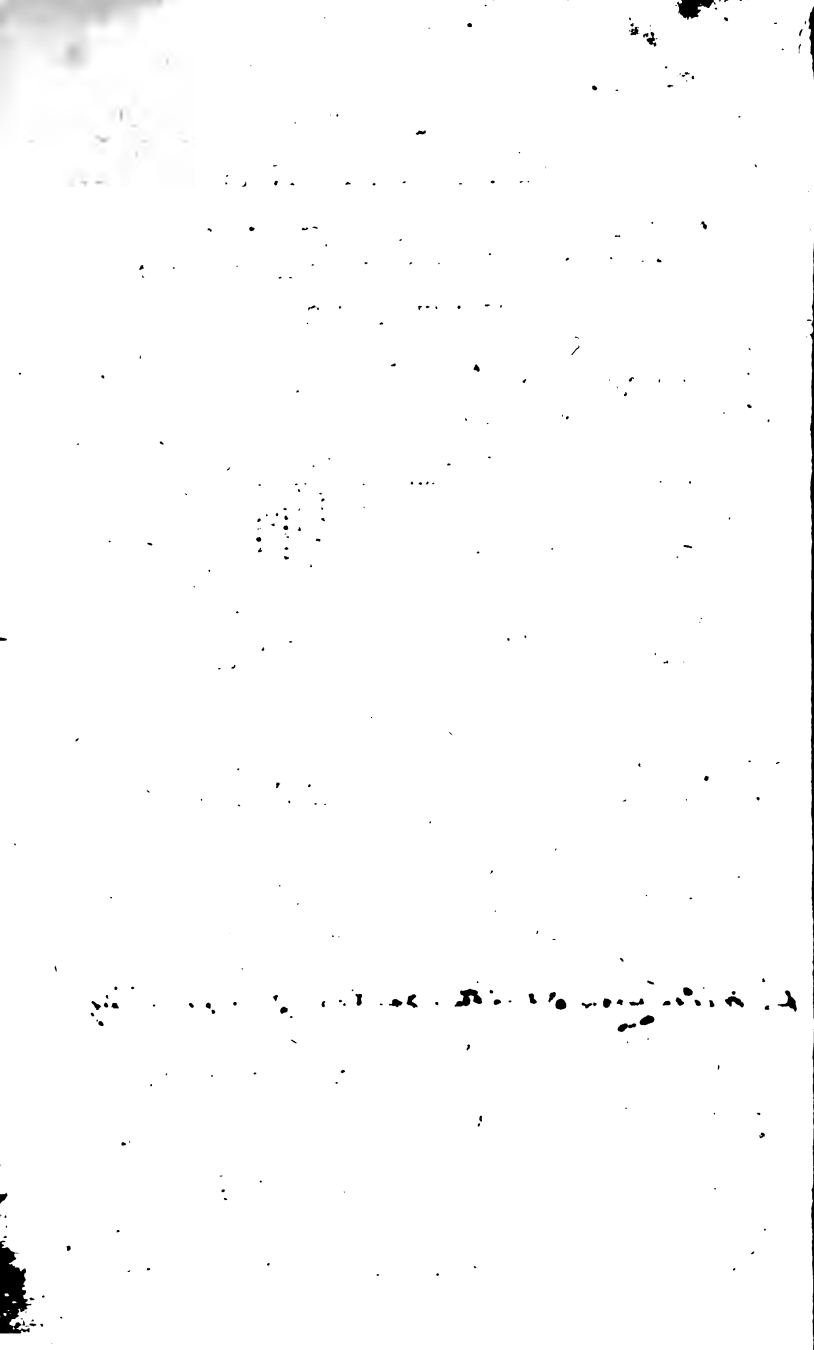
Dr. ARBUTHNOT'S Book,
and Tables.

And some other MISCELLANIES relating
to the same Subject.

by William Smith, sector of Melcombe
By the AUTHOR of the
ANNALS of UNIVERSITY COLLEGE.

NEWCASTLE upon TYNE:

Printed by JOHN WHITE; and Sold by the Book-
sellers of London and Westminster. M.DCC.XXIX.





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THE

PREFACE

TO THE

READER.



HO' some may pardon me for breaking Silence in the Seventy seventh Year of my Age; in defence of a real Truth, against Fables and Fictions not invented till 300, or more Years after the Decease of him to whom they are ascribed: Yet it is possible that the very same Persons that excused me then, may condemn me now, for opposing an Opinion that has passed currant for Truth these 200 Years together; and all this in Favour of an Hypothesis that is but new, and when first proposed, made

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none,

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none, or very few Converts to it; nay rather has been, with Contempt, exploded and ridiculed by Men of great Eminency, Worth and Learning, in most of the European Nations round about us.

And yet for all this, I cannot be so far discouraged from Countenancing what I conceive a Truth, as to suffer it to be overthrown for want of Assistance, or a charitable Hand, or Mouth, to appear as an Advocate in its Defence; for the contrary Opinion, I believe, has been taken up upon Trust, and has a great deal more of Falshood than Probability contained in it. It happened to be first broached by a Person of famous Memory and vast Learning, and who had worthily deserved the Thanks of all Men, for bringing to Light, what had lain in Darkness for many Ages; that neither POETS nor HISTORIANS could be understood in what they spake of Money-Matters; but were wholly unintelligible in that barbarous Age, in which Learning seem'd to be confined to the SCHOOL-MEN; till Erasmus, Budæus, and some other bright Wits, who became the Restorers of Literature, attempted to relieve Mens Ignorance, and lead them, as with a Clew, thro' the Mazes and Labyrinths, where they were entangled and benighted, till the last named Person, and universally learned Budæus, famed for his great Skill both in Civil Law and Languages; so that few or none durst attempt to question, whether it was Truth or not, whatever he had published concerning the Greek or Roman Money;

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Moneys; without endangering their Credit and Reputation by so doing.

For without Question Budæus's Learning was celebrated both at Home and Abroad, and it is evident he endeavoured to out-vy not only the Latins but the Greeks also; who being banished Constantinople by the Turks, many of them, for some Years settled in Italy; and tho' Budæus's Parts were very great, yet possibly his Passions were no less; for Erasmus in a Letter to Agricola, dated the 4th of the Calends of Septemb. A^o 1531. p. 469. encourages George Agricola to go on with his Book of Weights and Measures; but withal informs him, "That he need not to fear any Sharpness from Portius, or Alciate, (who had writ on the same Subject) because they were Men of great Candour." Budæus ut est stomachi liberioris, ita vir melior est quam ut indignetur tantum argumentis agentis. I am not certain how long Budæus lived, but the Epistles of Erasmus were not printed till the Year 1545, and before that Time Budæus must needs be in his Grave; because I find him not amongst the Elogia, which Thuanus has given of all the Learned Men of Note that died after the Year 1546; neither do I think he lived to see the first Edition of Agricola, which I suppose was not published till the Year 1533, or 1532 at soonest.

I have made this Recital out of Erasmus's Epistles, to Evidence that there was some Reason why many
Per-

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Persons rather chose to subscribe to Budæus's Opinion, than to contend with him; but this is no Excuse why Gronovius should tread in his Steps, and swallow all he said as true, above 100 Years after that dead Lion could not bite.

But I pass on from the Defence of my Hypothesis to another Matter, which follows after it, and which I could have wished I had never had occasion for; and that is, my entring into the List against a known Friend and old Acquaintance, as Dr. Arbuthnot was: But Necessity, as I have shewn in the Beginning of my Remarks upon his Book, drew me into it; and as the Proverb says, Necessity has no Law; nor can be governed by Rules of Civility and good Breeding; and yet I have endeavoured to keep within these Bounds, as far as defending Right, and opposing Wrong, would permit and allow me.

The Epistle to my Reader might have been longer, had Time and Health permitted; but being in the 78th Year of my Age, I was taken with an Ague; and tho' all along I followed the Prescriptions of my Physician, yet from April till September, I could not after three or four Relapses get quit of it, and that by taking the Bark of Peru, am much darkened in my Parts, and my Memory almost quite destroyed. And yet I must not give over, without alledging some Reasons why I did not leave off sooner; but have enlarged these Miscellanyes,

The PREFACE. vij

cellanies, with some Transcripts out of Gronovius, De Milliarenfibus & Follibus, with some Additions to him, Mr. Greaves, and Bishop Hooper; for I thought it a Piece of Justice, & ingenui pudoris publice profiteri per quos profecerim. I have also made some Emendations to that excellent Book of the late Bishop of Ely, stiled Chronicon Pretiosum, &c. Which was done by me upon a Principle I shall willingly own; esteeming it a Benefit, both to the Authors and Readers of any Treatise, to have the Over-sights corrected and amended. And if any one will be so civil as to inform me of some of those many Errors which have escaped me, or the Corrector, I shall take it as a great Kindness, and willingly acknowledge the Obligation, and mention them if they come to Hand before the Edition be quite sold off. But for such scurrilous Letters as I have received, from the Pens of some, I disregard them; and one from the Press, dated February the 1st, 1728-9, subscribed Jo. Brooks, Chapter-Clerk of Christ-Church, and directed to me, is of a Nature that can besit none but such an one as he who is said to have writ it, who endeavours to lay his own Fault at my Door; tho' I published nothing in my ANNALS, p. 334, 335, &c. but what came from his intimate Friend, whom I took to be a wise and discreet Man, and would not write any Thing but what he was able to maintain and defend; and if he can do this, I shall be glad to be informed of it; but Mr. Brooks pretends that it is not in all Circumstances true: But since Mr. Brooks
will

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will be writing and defending that which he was not charged with, I would desire him for once to make an Apology for what is charged Home upon him, in the same Book, pag. 337, and upon one of the Fellows of the COLLEGE joined with him; which I think is a Fact so flagrant and notorious, that it can admit of no Excuse: And certainly then, that must needs be a bad Cause, which both wanted and forced Men to use such fraudulent and base Proceedings to support and maintain it.

William Smith,

March 15th, 1727.

Rector of Melfonby.



A

ADDITIONS to, and EMBELLISHMENTS of, some
 Passages in the following VOLUME.

THE chief Objection which I think can be made to my Hypothesis that the *Roman Denarii* were at first coined at a greater Weight than seven or eight in an Ounce, and has not being answered in the following LETTERS, seems to me to be this; that there never were coined any Money in so large a Proportion, as I have given in at Pag. 18 of this Volume.

To which I answer; That what is said there, was only as a Proposal, to hear what Objections might be made against it, and not as my settled Opinion, by which I was resolved to abide; but would alter and lessen as I should see Occasion for it.

BUT more directly I say there have been sometimes far greater Coins than double, triple, or quadruple of what are mentioned, or said to be now extant among the *Roman Money*: for in that * excellent DISSERTATION concerning the *SICILIAN Money* published by the learned Dr. Bently, I find *Pollux* quoting *Aristotle* out of a Discourse concerning the *Sicilian Coin* (but now not extant) where he speaks of a Πεντηκοντάλιτρον, otherwise *Quincentarius*, coined by *Denareta*, Wife of *Gela*, in Memory of a Victory gained over the *Carthaginians*, with Money that at his Wife's Intercession had been furnished her Husband, by the Ladies or Women, that were worth fifty *Lira* or Pounds of Brass, of which 50 Pound, a *Quincentarius*, or ten of those 50 *l. Aristotle* says were worth 12 *Aeginean Oboli*; now 12 such *Oboli* make two *Aeginean Drachmae*; but if an *Aeginean Drachma* had the Proportion as ten to six of the *Attick Drachma*, then if a *Drachma* of *Athens* was worth 8 *d.* and better of our Money, a *Drachma* of *Aegina* must be worth 13 $\frac{1}{2}$ of our Money; and a Πεντηκοντάλιτρον ten times as much, which amounts at least to 13 *s.* and some-what over. But if we should dispute whether or no this was not an over-value? I will mention another given by *Diodorus Siculus*, who values the Πεντηκοντάλιτρον here spoken of, at ten *Attick Drachms*, which makes as I have accounted them below their true Value, 6 *s.* 8 *d.*

I pass by what *Aristotle* says, that 12 *Aeginean Oboli* were more than two *Attick Drachms*, for in Truth 3 *Attick Drachms* will not equal 2 *Aeginean*.

I expect that those of the opposite Party following *Gronovius*, will say this was an extraordinary Medal, and no true Coin; I will by Concession grant that it might be so; but however, it shews that the *Romans* being so near Neighbours

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to

* Pag. 458, 469. Bently of the *Sicilian Money*.

to the *Sicilians* must have Known what was usually the Proportion Between Silver and Brass, and I may hence gather, that since the *Romans* borrowed their Coin from the *Sicilians*, and that their *Decalitrion* was worth 2 s. 2 d. ob. the *Romans* coin'd their least *Dénarii* at that Value, which is wholly irreconcilable with *Budæus* and *Gronovius's* Opinion.

But I proceed to another Argument, not borrowed from an extraordinary but a common Coin or Silver *Stater* or *Tetradrachm*, containing four *Drachmæ*, which tho' they were of greater Weight and Value than 8 d. English, yet in Compliance with some others I have reckoned but at 8 d. four of which make 2 s. 8 d. of our Money; of which Sort Mr. *Graevæ* tells us he had seen and weighed very many, and since *Ægina* and *Corinth* had a different *Drachma* called the heavy *Drachma*; no doubt but they had *Staters* of the like Kind also, which *Stater* would at least have the same Proportion that the *Drachma* had, that 10 has to 6, therefore altogether would amount within 3 d. of a Roman Ounce, and therefore each of them be about 4 s. 5 d. And because *Syracuse* was a Colony of *Corinth*, it is like the *Sicilian Staters* were about the like Value; and by Consequence the first Roman *Dénarii* were coined at, or near the very same Weight; which is a sufficient Argument to overthrow their Opinion, against whom I have been hitherto arguing, who Value the first *Dénarii* no higher than 7 d. ob. or 7 d. at most. Neither do I think it an Objection of any Weight, that there are few or none remaining of the full Weight I have been speaking of; for where Money is lessened, the heavier will be all, or most, new coin'd; And far more, follow the Example of *Dionysius* the elder, who reduced his Money to half the Weight it was before; but kept it at the same Value: Then *Alex. Severus* who encreased not the Value of his *Aurei* or heavy Money; but took lesser Money into his Treasury or Taxes, in lieu of the greater.

I find *Al. Lampridius* in the Life of *Heliogabalus*, Ch. xxii. (80 Years before *Constantine* was Emperor) dispersing his Donatives to the People to be scrambled for, which entituled those that found them, some to an hundred *Aurei*, others to a thousand *Argentei* (or *Milliarense*) a third Sort to a hundred *Folles*; which shews that *Gronovius*, as well as others, is sometimes mistaken, especially in many Things he has said concerning *Constantine*.

As for Corrections or Emendations they cannot be taken Notice of at present, till the *Errata* be collected; only I shall mention some few. The first of which shall be this, that I have in two or three Places quoted *Dionysius Halicarnassus*, as agreeing with *Pliny* in stating the highest *Census Ro-*

MANUS,

manus, whereas he rather agrees with *Livy*, who gives it in at the lowest. *Pag.* 29, 57.

2dly, I have in *Pag.* 201 made the *Cotyla* and *Hemina* as if one had been double to the other, which was wholly owing to my mistaking in Haste the Number of the *Hemina* in an *Amphora*, for the Number that was in a *Medimnus*.

Pag. 168. l. 6. & 9. In both Places for *Pound* r. *Ounce*.

Pag. 169. l. 6. add *Codex Theod. lib. ix. tit. 6. l. 2. Ne præter crimen majestatis servus Dominum nec patronum libertus accusor*.

Pag. 164. & 165. most of these two Pages are the Words of Mr. *Greaves* and should have been Comma'd, or distinguish'd in another Character.

Pag. 180. l. 2. add *dashed out or*.

GREEK and LATIN Errata.

PAGE 32. l. 5. r. *Gronovius*. p. 6. l. 3. r. *vocant*. p. 9. l. 14. r. *Remus*. l. 20. r. *dupondio* & *semisse*. l. 29. r. *quinarium*. l. 32. r. *Nota*. p. 10. l. 29. r. *Triens*. p. 161. 5. [*& ubiq;*] r. *Pancirollus*. l. 11. r. *Grævius*. p. 19. l. 25. r. *vice*. p. 20. l. 4. r. *Alciatus*. l. 5. r. *Sextantarii*. p. 23. l. 33. r. *Fabius*. p. 24. l. 14. r. *Sosipater*. p. 26. l. 18. r. *Priscian's*. l. 19. r. *Justinian*. p. 29. in the Postscript. l. 14. r. *Dionysius*. p. 21. l. 5. & 14. r. *teruncius*. p. 50. l. 8. r. *librales*. p. 52. l. 10. r. *Fillalpandus*. l. 18. r. *libralis*. l. 26. r. *Gillo*. p. 56. l. 11. r. *uncia*. p. 64. l. 12. r. *pecunia*. l. 15. r. *militieque*. l. 16. Comma post *Salutariter*, non post *omnia*. p. 67. l. 20. r. *de usu* &. p. 68. l. 7. r. *Gronovius*. p. 70. l. 20. r. *Sextantarii*. p. 73. &c. r. *Sestertii*, *Sestertiorum*, *Sestertius*, [atque ita passim] p. 84. l. 3. r. *Siculus*. p. 88. l. 22. r. *Scholarum* & *Museis* *Ashmoleanis*. p. 93. l. 9. r. *Drachma*. p. 108. l. penult. r. *transmiseramus*. p. 116. l. 9. r. *diminuti*. l. 19. r. *sunt* — *duas*. p. 117. l. 31. r. *valet*. p. 118. l. 1. r. *difficilis*. l. 5. r. *non*. l. 26. r. *valore*. l. 27. r. *efficiunt*. l. 28. r. *excedebar*. l. 32. r. *identidem*. p. 119. l. penult. r. *Milliarenfis*. p. 121. l. 22. r. *teruncius*. [atq; ita passim.] p. 123. l. 23. r. *fiet*. l. 24. r. *conficere*. p. 124. l. 10. r. *notatu*. l. 17. r. *quindécupla*. l. 23. r. *preponi*. p. 125. l. 31. r. *nunquam*. p. 126. l. 3. r. *exaequal*. p. 128. l. 12. r. *externis*. p. 137. l. 23. r. *mirari*. p. 138. l. 14. r. *Hispánico*. l. 28. r. *Semuncia*. l. 29. r. *uncias*. l. 31. r. *hodiernum*. l. 33. r. *existimet*. p. 140. l. 24. r. *duodecimo*. p. 143. l. 33. r. *Hypotheses*. p. 148. l. 8. r. *Thomas Thomasius*. l. 26. r. *censet*. p. 152. l. 33. r. *viginti*. p. 153. l. 7. r. *Grævius*. p. 158. l. 8. r. *duos denarios*. l. 27. r. *Atticis*. l. 31. r. *distribuas*. p. 156. l. 28. r. *disertis*. p. 159. l. 2. r. *afficerentur*. l. 14. r. *Justinian*. l. 24. r. *Pompeius*. l. 28. r. *manavit*. p. 160. l. 6. r. *septuario*. l. 9. r. *Varro*. l. 34. r. *maxime*. p. 161. l. 1. r. *propius*. l. 11. r. *in sexdecim*. p. 162. l. 15. r. *exemplaribus*. l. 19. r. *litera* — *Millenarium*. p. 164. post lin. 16. addas, *D. N. Justinian* — *Gran. 69. ib. l. 17. r. Phocas* p. 166. l. 2. r. *Gassendus*. p. 170. l. 11. r. *Vitruvius*. p. 175. l. 2. r. *separata*. p. 178. l. 35. r. *copiam*. p. 179. l. 1. r. *faceret*. — *poposcit*. l. 8. r. *Drachma*. p. 181. l. 31. r. *sunt*. *Anl. l. 32. r. dicebantur*. p. 182. l. 2. r. *Quadringentos*. p. 202. l. 3. r. *Cisophorus*. p. 207. l. 1. r. *Heminas nonaginta sex*. l. 3. r. *Nota*. l. 7. [*& alibi*] r. *Merianus*. l. 18. 22, 24. r. *Medimnus*. l. 18. r. *mod. i. r. d. q. Modus*. l. 26. r. *Cotyla*. l. 27. r. *Hemina*. l. 33. r. *Sextarii*. p. 209. l. ult. r. *missis*.

missis. p. 232. l. 27. r. *Quandoque bonus*. p. 237. l. 3. r. *Wallas*.
p. 238. l. 31. r. *unciarium & Semiunciarium*. p. 240. l. 22. r. *creberrima*.
p. 251. l. 15. r. *Milliarenfes*. p. 254. l. penult. r. *voluerit*. p. 255. l.
25. r. *Balanston*. l. 29. r. *argenteis*. l. 30. r. *unumquodque*. l. ult. r. *num-*
mos. p. 256. l. 1. *Milliarenfes*. p. 257. l. 23. r. *Siliquæ*. l. 28. r. *semancia*.
l. 29. r. *Swagier*. p. 266. l. 15. r. *premebantur*. l. 21. r. *fundos singulos*.

ENGLISH Errata.

PAGE iii. [in the Preface] l. 5. r. Fictions, l. 7. r. after the decease.
l. 10. r. currant p. iv. l. 2. r. ridiculed. p. v. l. 9. r. possibly his
Passions were no less. p. vii. l. 5. r. profecerim. l. 7. r. Chronicon.
26. r. off. [In the Book] Page. 2. l. 36. r. bear. p. 3. l. 34. r. render.
p. 4. l. 9. r. inform. l. 30. r. than. p. 9. l. 27. r. Senators. p. 6. l. 19.
r. were. l. 23. r. which (till. p. 10. l. 16. r. one Pound. l. 17. r. Car-
thaginian. p. 11. l. 20. r. were. p. 18. l. 11. r. bear. p. 22. l. 3. r.
Inference. l. 18. r. diminished. p. 24. l. 30. r. Volume. l. 31. r.
have. p. 26. l. 26. r. Pound. p. 30. l. 1. r. Capitol. p. 35. l. 20. r.
well. p. 41. l. 9. r. throng'd. p. 42. l. 12. r. Monogramme. p. 46. l.
4. r. of. l. 20. r. skill'd. p. 47. l. 29. r. Ducar. p. 48. l. 22. add thirty,
before seven. p. 49. l. 29. dele makes. p. 55. l. 7. r. give. p. 56. l. 18.
r. than. p. 59. l. 5. dele that. p. 61. l. 45. r. say. p. 62. l. ult. r. who.
p. 69. l. 1. r. are p. 74. l. 20. r. Quotient. p. 75. l. 2. r. Pounds. l. 7.
r. furnish. p. 91. l. 29. r. consulted. p. 92. l. 28. r. seem. p. 95. l. 16.
r. acuteness. p. 101. l. 28. r. Livy. p. 102. l. 2. r. Gronovius. l. 22.
r. will. l. 23. r. contemptible. p. 104. l. 15. r. Observation. p. 105.
l. 10. r. ridiculous. p. 110. l. 2. r. Nicephus. l. 12. r. possibly. p. 120.
l. 28. r. Calculation. p. 127. l. 11. r. Arithmetick. p. 135. l. 28. r. p.
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l. 4. r. have acknowledged. p. 142. l. 14. r. discerned. l. 17. r. Hypo-
thesis. l. 20. r. Hardwin. l. 31. r. who. p. 145. l. 9. r. Usage. p. 147.
l. 24. r. yet. p. 151. l. ult. r. despaired. p. 153. l. 27. pretty. p. 155.
l. 3. r. Description. p. 157. l. 20. r. promiscuously. p. 160. l. 1. r.
Hardwin's. p. 164. l. 34. r. Ninety. p. 166. l. 22. r. than. p. 167. l.
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r. happily discovered and amended by. p. 176. l. 20. r. than. p.
183. l. 35. r. extant. p. 189. l. 12. r. Dimensions. p. 190. l. 29. r. Jos.
p. 192. l. 4. r. consists. l. 28. r. Decuple. p. 204. l. 13. r. fifty seven.
p. 206. l. 26. r. divided. p. 207. l. 3. r. Types. l. 12. r. filled. p. 211.
l. 9. r. are. l. 20. r. Cause. p. 215. l. 18. r. depends. p. 222. l. 6. r.
monstrous. p. 232. l. 7. r. Quotation. p. 249. after line 11, vide p. p.
252, 253, 254. p. 259. l. 21. r. Valentinian. p. 252. l. 10. r. from Time
to Time. p. 256. l. 31. r. Salmasius. p. 257. l. 5, 6. r. one Pound
l. 13. r. of the Glossary. p. 258. l. 1. r. Follow. p. 250. dele line 11,
12, 13, 14, and read, where one Pound of Silver was to pass for
five Solids; which brings, as I conceive, one of Silver to 125 of Brass.
p. 267. l. 9. r. Obloquy. p. 271. l. 1. r. gives. l. 35. add, at. l. 10. r.
positive. l. 11. r. gather it. l. 16. dele that. p. 272. l. 13. add, and
may alter and correct them more agreeably to the Latin Tongue.

Errata in the FIGURES.

PAGE 109. l. 9. r. 530000. p. 160. l. 31. r. p. 128. p. 187. l. 31.
r. 1,000,000 Talents. p. 203. l. 2. r. 8195 l. 13 s. 4 d. p. 231.
l. 30. r. 1636 l. 9 s. 10 d. p. 235. l. 7. r. 353,333,333 l. 6 s. 8 d. p.
236. l. 9. r. 1,200,000 l. p. 271. l. uk. r. 1200000.



A

LETTER

*Writ to Dr. John Bateman,
Fellow of the College of Physicians
in London. Dated Sept. 11. 1714.*

DEAR D^r.



BEING informed by my Sister, (your old Patient, who is now in *London*,) of your good Health, and your Niece's being now married to a Baronet, and all living together at *Whitehall*, I could not but congratulate with you upon that welcome News; and serve my self so far therein, as to take the Liberty, now I know where you are, to beg your Assistance, and Advice, in a Matter I have now for some Years busied my Head about. I came engaged in it upon this Occasion: Mr. *Obadiab Walker*, had

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in his later Time new model'd our Treasury, &c. [as is already lately Published in my PREFACE to the *ANNALS* of *University College*, and therefore needs not to be here again repeated.] And lest I should make my Porch bigger than my Mansion, I shall briefly tell you, that having gone through all our COLLEGE Writings, I procured Liberty to peruse the Archives of the UNIVERSITY in *Turre Scholarum, Oxon*; and out of both these collected such Passages, as might lead me to understand the true Value of Fifty Shillings *per Annum*, the primitive Stipend of our Fellowships, and what Proportion of Money answers to that Sum in this Present Age. I was augmenting these Collections at *Oxford*; but before I was removed and settled at *Melfonby*, the ingenious Book stiled, *Chronicon Pretiosum*, was Published by that learned Author; which prevented my further Thoughts on that Subject for some Time: but being informed about a Year after, that there had been Proposals made afresh in Parliament, for lessening the Coin of the Nation, which would have proved a very pernicious Overture, had it been entertained; I began to think again on that Subject; and because I would not *Actum agere*, resolved to enlarge my View, and take in the *Hebrew, Greek, and Roman* Prices of Things, as far as there are any Memorials left of them, either in the Bible, or Greek, or Latin Classic-Authors; The greatest Part of which, I have perused, some very few excepted. I have likewise read the best Authors that have writ about Ancient Money, if Mr. *Walker's* Judgment may be relied on, *viz. Budeus, Agricola, Hotomanus*, and Mr. *Greaves*; to which, besides some others, I have added the Elder *Gronovius de pecunia vetere*, of all which *Budeus* and *Greaves* bears away the Bell in my

my Opinion, the one having first learnedly begun, and the other with great Exactness finished their several Works; in which last I can find no other Oversight, but this, that in his Discourse of the Roman *Denarius* (which is now almost sold for it's Weight in Silver, but is worth it's Weight in Gold) he supposes a Troy Ounce of Silver to have been coined here in *England* at five Shillings, whereas it was rather coined at 5 s. 2 d. which I think was his Mistake. For formerly, when an old English Penny weighed three Pence of our present Coin, and twenty went to the Ounce, the Allowance for Coinage was nine pence *per* Pound, or of our present Money, Two and three Pence; all our Coin being in Pence, or Half-pence; afterwards when bigger Money was coined, the Allowance was only two Shillings; but now by Act of Parliament, as I take it, 'tis coined *Gratis*: And upon the former Supposition Mr. *Greaves* allows eight Grains to a Modern English Penny, which is a Grain too much in every four Pence of our present Coin; which being allow'd, and he granting (as he does) that the old Roman and English *Avoirdupois* Ounces, are of equal Weight with the Roman, every Roman Ounce will contain, or equal, fifty six modern English Pence, with a Fraction; and a Roman Pound of twelve Ounces, fifty six Shillings, six Pence three Farthings, or thereabouts, which Fraction omitted, brings a Roman *Denarius*, or Penny, to our eight Pence, a *Sesterce* to two Pence, and an Attick Talent to two hundred Pounds modern English Money, all round Sums; Whereas other Assignments labour under Fractions, which renders Computations uneasy, and therefore *Agricola's* Care in this Matter is rejected, or rather ridiculed by *Gronovius*, who in his last, (or *Quarto*

Edition I make use of) appears to me a far better Critick, and Mathematician, than a Political Statesman, or good Christian. You must likewise Note, that most Foreigners, as well as English Men in this, following *Budeus*, as *Gronovius* also has done, have computed by the *Troy Ounce* instead of the *Roman*; and divided that Ounce into eight *Denarii*; which the learned Physicians, *Celsus*, and *Scribanius Largus*, and also *Pliny* himself informs us, was divided into seven *Denarii* only; and not into eight, as is vulgarly computed.

HAVING thus told you how I compute, (Mr. *Greaves* being my Guide;) I must tell you where I Fault; and beg your, or any of your learned Friend's Assistance, who are Mathematicians, to help me forward.

My greatest Difficulty is to understand a Place in *Livy's* History, and others in *Pliny's* also: For first, *Livy*, *Lib. 1. Cap. 43.* tells us, "That the *Census* or Valuation of the first or highest Class of Citizens in *Rome*, was an Hundred Thousand Roman *Asses*, or plainier 100000 Pound of Brass Money; which being reckoned as *Budeus*, *Gronovius*, and others compute by the Roman *Denarii*, which at first contained each of them ten *Asses*; the Wealth of a Roman Senator was rated no higher than ten thousand *Denarii*: And again, these *Denarii* by the same Authors, being reckoned eight to the Ounce, the whole Sum falls rather short then over 333 *l. 6 s. 8 d.* present English Money." But I can never be persuaded that the Roman Brass Money should be so often lessened in Weight, and raised in Value, and that their Silver Money, or *Deniers* that Answer it, was always the same, and never weighed heavier than the eighth Part of an Ounce Silver. Let

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us therefore, without regarding their Silver Money, consider what Quantity of Brass was computed at last by the *Romans*, as equal to the eighth Part of an Ounce Silver; and then we shall find, as these Authors would persuade us, that the eighth Part of an Ounce Silver, at it's first Coining, was worth ten Pound, or an hundred and twenty Ounces of Brass or Copper Money: And that yet the same *Denarii*, before the End of the second *Punick* War, should be only worth eight Ounces of Copper, and no more: The Consequence of which, if these Authors be not mistaken, is, that the Necessity of the Roman Common-Wealth forced them to raise the Value of their Copper, their Silver Money neither rising nor falling during their two *Punick* Wars; both which lasted not much longer, from the Beginning to the Ending, than sixty Years; and there was no change, that we read of, in either Copper or Silver Coin afterwards.

Livy, in the forecited 43 Chapter says, "The Horsemen were allowed ten thousand *Asses* for the Price of an Horse, and two thousand for his Keeping": Which, according to the Account of *Budeus*, comes to about 33*l.* 12*s.* 8*d.* *English* for a Horse, and 8*l.* 13*s.* 4*d.* yearly for his Keeping. According to which Computation, a Senator *Census*, or Value of his Estate, would amount to the Price of ten Horses only; but I conceive this is a Mistake in *Livy*, and rather agrees to the Time he wrote in, than to the Time in which the *Census* was first made by *Servius Tullius*, who began to reign about *Anno Urbis* 176. But *Calpine*, in his Dictionary, reckons *Livy* an eloquent Historian, but not very exact, or rather negligent in Matters of Fact related by him. Now if we farther consult the Value of Oxen by the *Asterian*

Law, made *Anno Urbis* 289, as explained by *Pomp. Festus*, the Price of ten Oxen was a hundred *Asses*; which according to the former Account was about 6 s. 8 d. of our Money for an Ox, and a Senator's Estate according to the Valuation of *Budeus* and others, at 333 l. 6 s. 8 d. will when divided by 6 s. 8 d. (the Price of an Ox) shew that a Senator, at the making the *Aterian* Law, must have been worth a thousand Oxen, at least; which I compute on this Manner, 333 l. 6 s. 8 d. divided by 6 s. 8 d. give 999 l. and when the odd 6 s. 8 d. is added, make a compleat Thousand.

BUT if on the contrary to this we reckon what a Senator's Estate would amount to at the End of the 2d *Punick* War, when if we multiply 100000 Pounds Copper by 12 Ounces, the Product will be 1200000 Ounces; which divided by eight, which was the Value of a *Denarius* before the End of the 2d *Punick* War, (when 16 half Ounces was equal to their supposed *Denarius*,) equal to eight Pence of our present English Money, the total Sum will arise to 5000 l. which is a great deal nearer the *Census* (which 'till *Augustus Cæsar* augmented it,) was never higher then 800000 *Sesterces*, which at two Pence a Piece, amount to 6666 l. present English Money.

AMONGST the Places in *Pliny* which I cannot fathom, the first is to be * met with in his 14th Book, Chap. the 4th, *De vino Opiano*; where he thus speaks: *Anno fuit omnium generum bonitas L. Opimio Consule — cum ea Cæli temperies fulsit, quam cocturam vocantur solis opere, natali urbis DCXXXIII.*

Du-

* The Author having followed an Opinion he met with in Monsieur Hardwin's Notes upon *Pliny*, upon reading his Letter now going to the Press, he has been forced to alter the Expressions in some Places, from the Form it was sent in to Dr. Bateman.

Durantque adhuc vina ducentis fere annis, jam in speciem redacta mellis asperi: Etenim hæc natura vinis in vetustate est; nec potari per se queunt, si non pervincat aqua, usque in amaritudinem carie indomita: Sed cæteris vinis commendandis nimia aliqua mistura medicamenta sunt; quo fit ut ejus temporis æstimationem in singulas Amphoras centeni nummi statuuntur. Ex his tamen usura multiplicata semissibus, quæ civilis ac modica est, in C. Cæsaris Germanici filii principatu annis CLX. singulas uncias vini constituisse nobili exemplo docuimus referentes vitam Pomponii secundi vatis, cenamq; quam principi illi dedit. Tantum pecuniarum detinent vini Apothecæ.

THE Note that Monsieur Hardwin makes upon this difficult Passage is this.

Si in Opimii consulatu licitatum vinum putemus in singulas amphoras nummis sive Sestertiis centenis (Gal. monetæ libris decem) tamen ex his Amphoris singulas uncias Caio principe constituisse vidimus tot nummis sive H. S. quot usura centenum nummum illorum continet per annos CLX. multiplicata semissibus, quæ usura civilis & modica est. Usura semissis est cum de centenis nummis semis in mense reddit — Galli dicunt six pour Cent. — Itaq; si Amphora sive vini octoginta libræ Opimio consule centum nummis venit faciunt autem LXXX libræ uncias DCCCCLX, nummos 960 inferunt, atq; ita singule vini uncie 960 nummis, sive H. S. constitere quæ monetæ Gallicæ libræ sunt nonaginta sex. Thus Monsieur Hardwin.

ACCORDING to which Words, as I understand them; he seems to me to say, that an Ounce of Wine cost 96 Pounds French Money, or eight Pounds English, as I writ in the first Draught of this Letter to Dr. Bateman, and I thought it might have been true, that there was some Defect in *Pliny*, in not plainly expressing what an Ounce of Wine

came to; but upon further Consideration, I think the Monsieur mistaken, and *Pliny* to be far otherwise interpreted.

Now the plain Meaning of *Pliny*, I take to be this. He first informs us; that in *Opimius's* Consulship, the Heat of the Summer had that Year caused the Wine to be Excellent, and that an *Amphora*, or Vessel of Wine, containing eighty Pounds at the Time of it's Growth, might be bought for an hundred Sesterces, which in our modern English Money, come to about 16*s.* 8*d.* and that in one hundred and sixty Years, after the moderate Use of Six *per Cent.* † the Interest of those C. *Sesterces* would amount to 960 *Sesterces*; now there being just 960 Ounces in 80 Roman Pounds, every Ounce would amount to one *Sesterce*, which in our Money is barely two Pence, or an unexpressible Fraction more: And that with this Wine, after 160 Years, the Poet *Pomponius secundus*, whose Life *Pliny* had written, entertained *Caius Cæsar Caligula* about the Year of Rome 784.

WHAT a vast Difference therefore is there, between my Reckoning and the Monsieur's, he rates the whole *Amphora* at 7680*l.* English, which I think should be 8*l.* only; he an Ounce at 8*l.* I
at

† The Reader must observe, that what in the Latin is called *usura semis* or *semistis*, and thought to be moderate Interest, will not be easy to him, without he be acquainted, that the Fashion of Rome was to let out Money by the Kalendar Months, at one in the Hundred a Month, or 12 *per Cent.* but *Pliny* computes at half this Price, and therefore in 12 Months, that half Use would in the Year, if they were H. S. [*Sesterces*]; (H. S. being the Note or Mark for a *Sesterce*) make but 6 *per Cent.* which 6 H. S. multiplied by one Hundred and sixty Years, would come to 960 H. S. equal to the Number of the Ounces contained in 80 Roman Pounds; for every Roman Pound containing 12 Ounces, the Number of Years it was kept, multiplied by 6 H. S. each Year, in 160 Years exactly equals 960 Ounces.

at no more than barely two Pence; I leave it to the Reader to determine who comes nearest the Truth, after he has consulted *Budens de Aſſe* upon the Point; Who, tho' he has made the Caſe more intricate than he needed, yet Page 666 he concludes, *uncias vini ſingulas tot nummis conſtitiffe*: So that tho' I followed *Hardwin* in writing to Dr. *Bateman*, yet I find in my reading *Budens* I had long ſince thus noted in the Margent, *Singule uncie Singulis H. S. conſtitentur*.

2dly, *Pliny* in his xxxiii Book, Chap. the 3d, gives us this Account of the Roman Money; *Servius Rex primus ſignavit as. Antea rudi uſos Romæ Remius tradit. Signatum eſt nota pecudum; unde & pecunia appellata. Maximus Cenfus CX millia Aſſium fuit illo rege; & ideo hæc prima claffis. Argentum ſignatum eſt anno urbis 485. Q. Fabio Conſule quinq; annis ante primum bellum Punicum. Et placuit Denarius pro decem libris æris, Quinarius pro quinque, ſeſtertium pro Dupendio & ſemiſſe. Libræ autem pondus æris imminutum bello Punico primo, cum impenſis reſpublica non ſufficeret, conſtitutumq; ut aſſes ſextantario pondere ferirentur: Ita quinque partes factæ lacri, diſſolutumq; æs alienum. Nota æris fuit ex altera parte Janus Geminus, ex altera roſtrum navis; in Triente vero & Quadrante Ratis. Quadrans antea triuncis a tribus uncis. Poſtea Annibale urgente, Q. Fabio maximo Dictatore aſſes unciales facti; placuitque Denarium XVI aſſibus permutari Quinarum octonis, ſeſtertium quaternis; ita reſpublica dimidiam lucrata eſt. In militari tamen Stipendio ſemper denarius pro decem aſſibus datus. Nota argenti fuere bigæ atque quadrigæ; & inde quadrigatiq; diēdi, mox lege Papyria ſeminunciales aſſes facti. Livius Druſus in Tribunatu plebis octavam partem æris argento miſcavit. Qui nunc victorizatus appellatur, lege Clodia percuffus eſt; antea enim*

enim hic nummus ex Illyrico advectus mercis loco habebatur. Est autem signatus VICTORIA, inde nomen.

THE Sense of which in short is this, " That
 " 'till the Time of *Servius Tullius* the sixth King
 " of the *Romans*, they used plain or rude Copper
 " Money, and he first coin'd it with Figures up-
 " on it: And having also distributed the Citizens
 " into six Ranks, or Orders, the highest Rank, or a
 " *Patrician Senator*, was at least to be worth 110000
 " Pounds of Copper or Brass; and the first Silver
 " the *Romans* ever coined, was in the Year '485
 " from the Building of *Rome*: And at that Time
 " a *Denarius* or *Denier* [which is the *French* Name
 " *Ten*, or a *Denarius*,] of Silver was to go, or be
 " exchanged, for ten Brass *Asses*, each weighing
 " ten Pounds. Not long after this, in the first *Car-*
 " *thaginian* or *Punick* War, which lasted from the
 " Year of the City 488, to the Year 502, the
 " *Denarius* that answered ten Pound *Asses*, was
 " now to answer or pass only for ten two Ounce
 " *Asses*: But afterwards in the second *Punick* War,
 " when *Hannibal* made War in *Italy*, the *Romans*
 " coined their *Asses* into Ounce *Asses*, and appoint-
 " ed that sixteen such *Asses* should pass, or be ex-
 " changed for one *Denarius* or Roman Penny, and
 " the *Quinarius* for eight *Asses*, and the *Sestertius*
 " for four *Asses*, and so the Republick gained half.

I have passed by what *Pleny* tells us of their *Tri-*
ents and *Quadrans*, as not material to my Inquiry;
 but shall take Notice of several Difficulties I ob-
 serve in the foregoing Narrative: As first, that
Pliny says, the highest Rank or *Census* of a Citi-
 zen, was to be one hundred and ten thousand
 Pounds of Brass or Copper; whereas *Livy*, as I
 have afore observed, states the highest *Census* but
 at 100000 *Asses*; And 2dly, that *Pliny* makes but
 one

one Change in the 15 Years of the first *Punic* War from ten Pound *Asses*, or 120 Ounces, answering a *Denarius* in that War to two Ounce *Asses*, which seems to be a monstrous fall to be all made at once; whereas in the second *Punic* War which lasted but two Years longer than the first, there are three Changes; first from two Ounces to one; secondly in the Number of the *Asses*, from ten *Asses* in a *Denarius* to sixteen *Asses*; and thirdly, from Ounce *Asses* to half Ounce *Asses*. Further, there seems to be a great mis-reckoning in *Pliny*, when he tell us, that the Common Wealth gained half when the *Asses* were changed from two Ounce *Asses* to one Ounce; which would have been true, if there had not been also another Change in the Number of *Asses* that were to answer the *Denarii*; for when the Ounces were two Ounce *Asses*, then twenty Ounces answered to a *Denier*; but when the same *Denier* was to contain sixteen of the Ounce *Asses*, there was only four gained in twenty, which was a fifth Part, and not half, as *Pliny* here falsely computes in his reckoning.

I do not remember that I have met, in all my Reading, with this obvious Remark, or any who seem to answer it, save the afore-mentioned Monsieur *Hardwin*; and he in his Notes upon *Pliny*, gives such an Explication of it, as if the Historian made no Mistake at all; but the Defence he makes, is beyond my Understanding, and I think is further observed in some of the following Letters.

I need not take Notice of what *Pliny* further informs us, "That the Silver Coin that was at first called a *Quinarius*, because it contained five *Asses*, when the *Denarius* contained ten, and afterwards eight *Asses*, when the *Denarius* contained sixteen, was in after Ages called a *Victoriat*,"

“ *riatus*, from a Coin that came out of *Illyricum*,
 “ rather as a Sort of Merchandize than as cur-
 “ rant Coin at *Rome*; but at length, by the
 “ *Clodian* Law, it was made a Sort of free *De-*
 “ *nison*, being coined at the Weight of a *Qui-*
 “ *narius*, and with the Image of *VICTORY* upon
 “ it, from whence the Name of *Quinarius* was
 “ changed into the Name of *VICTORIATUS*.”

My further third Quere is, what is the meaning of these Words in the Place afore-cited. *In militari tamen stipendio semper Denarius pro decem assibus datus*; that is, “ In Soldiers pay a *Denier* was “ alway given for ten *Asses*”. For the meaning may be, that the Soldiers in their Pay received a *Denier*, or sixteen *Asses* instead of ten; or ten *Asses* instead of a *Denier*: If the First, it was for the Soldiers Benefit, as Interpreters take it; if the Second, for their Loss. In which of these Senses it is to be understood I cannot well determine; but by a Mutiny of the *Pannonian* Soldiers in *Tiberius*’s Time, complaining that they had but ten *Asses* a Day, and desired a *Denier* a Day; the *Prætorian* Cohort, being allowed two *Deniers*; this Passage seems to be taken in the worser Sense, and that it was to the Soldiers Loss. I find it not clearly explained by others, but Mr. *Hardwin* seems to explain this Place, but I must confess I do not well understand his meaning: And as for *Budeus*, he is so far from pretending to explain what *Pliny* designed by it, (*Libro quinto de Asses*, p. 696.) that he dismisses the Enquiry in these Words: *Hoc igitur Lectores viderint, ac Statuerint pro suo quisque captu aut arbitrato, quando id summam rei a nobis compertæ & explicatæ labefactare non potest, ut alibi diximus.*

SIR, I will trouble you with no more of these
 Que-

Queries at once, but if you will promise, as Traders do, that you will use me kindly another Time, you shall be sure of more of my Custom: In the Interim, begging your Pardon, and returning my Thanks for all former Favours, I remain

Dear SIR,

Sept. 11. 1714.

Melsonby, near
Darlington, in
the County of
Durham.

your most obliged

and Affectionate Servant

William Smith.

The Answer which the Doctor gave to my Sister, was, that the Questions were too hard for him, and several of his Acquaintance he had Discoursed with upon it; but at last he had met with Dr. Arburthnot, who had promised to send me an Answer to them: But whether or no he made such an Answer, I know not; but if he writ any, it never came to my Hands to this Hour.

[*I hear that Dr. Bateman died the same Month that this went to the Press, and I believe could not be less than 86 Years of Age.*]



A L E T.



A

L E T T E R

To Mr. Ralph Thoresby, *the Author of
the Ducatus Leodiensis.*

March 26th, Anno 1722.

Worthy SIR,



Hope this Letter will find you in good Health, which in this sickly Season I shall be glad to see confirm'd under your own Hand. The cause of my Writing to you at this Time, is to beg a Favour of you; which before I mention, 'twill not be improper to acquaint you with the Reasons of my asking it.

I have always thought, (ever since I had the least insight into these Matters) that it was not only an incredible, but an absurd Opinion (tho' entertained by most of those that have writ *De Re Nummaria*) that Silver when it was first coin'd, by the Republick of *Rome*, bore the Proportion of Silver to Copper or Brass, that 1 does to 840: And that again within the Compass of LX Years, it should be gradually reduced by 4 or 5 Alterations, as low, or it may be lower than as one to sixty; or in other Words, That the *Denarius*, that was once valued at ten *Asses librales*, or 120 Ounces, continuing

tinuing at the same Weight, most Authors give it, of 7 or 8 *Denarii* to the Ounce, should fall to the low Value of 8 Ounces only. I say such a disproportionate Value at first, and such an equal Value at last, seems to me to be highly irreconcilable, if not altogether impossible.

For if this had happened in the Nonage of the World, when Mines were newly discover'd, and the Worth of Metals unknown, the Wonder would not be surprizing: But to suppose that such unaccountable Changes should be made by a Wise and Politick Common-wealth, after the City had stood 485 Years, and after 700 Years had lapsed, after *Solomon* had made Silver as Stones in *Jerusalem*; and all the Wealth and Treasures of the *East* had by *Alexander* the Great, and his Successors, been transferred into *Europe*; and Colonies of those Greeks a long Time settled in their Neighbourhood, both in *Italy* and *Sicily*; for any to suppose the Romans at that Time to be so ignorant in Coin, or so indigent in Silver, as not to know how to estimate either Copper or Silver; is what I admire that it ever came into the Mind of a considerate Man to believe, or of learned and judicious Men afterwards to propagate and defend; as that great Scholar, and eminent Critick, *Jo. Fred. Gronovius* has endeavoured with much Pains to do, in his four Books, *de Pecuniâ Vetere*, first printed in the Year 1656, and afterwards re-published by his learned Son *Jacobus Gronovius*, under the Title of his Father's *Opus Triumphale*, as he styles it, in his Epistle to the Reader, in 4to, at *Leyden*, A^o 1691, and which I was obliged to the Rt. Rev. Bishop of *London* for the procuring it me, when he was then one of *Q. ANNE's* Plenipotentiaries at *Utrecht*; But my reading it has not in the least made me his

his Convert, tho' he undertakes to answer all those that have formerly countenanced the Opinion I am now of.

Pa. 2. AND those, as far as I can find, have been only these four, to wit, *Pancerollus*, and *Nicolaus Abramus*, in some Discourses of theirs, (as *Gronovius* by the by quotes them) and *Gassendus* and *Savotus*, whose Discourses on that Subject are transmitted, into some of those Volumes of the Roman Antiquities, collected and published by the learned *Grevius*; *Gassendus* does but intimate his Opinion, as it were *en passant*, but *Savotus* has dilated upon it fully, and at large.

IN concurrence with these Authors I shall endeavour to defend this *New Opinion* as well as I can; and take for my Ground-work that very Passage of *Pliny*, from whence others have drawn the contrary Conclusion; that the Roman *Denarius* was but of the Weight of a *Drachma*, or little more from first to last.

THE Passage we all refer to, and which is the fullest, if not the only Place can give any Material Evidence in this Matter, is found in *Pliny's* 33d Book, and 3d Chap. of his *Natural History*, in these Words following :

Argentum signatum est Anno Urbis DLXXXV (thro' mistake for 485) *Q. Fabio Consule, quinque annis ante primum bellum Punicum. Et placuit Denarius pro decem libris æris, Quinarius pro quinque; Sestertium pro dupondio & semisse. Libræ autem pondus æris imminutum bello Punico primo, cum impensis Respublica non sufficeret; constitutumque ut assès sextantatio pondere ferirentur. Ita quinque partes factæ lucri, dissolutumq; æs alienum.* And a little after he goes
on

on and says,—*Postea Annibale urgente, Q. Fabio maximo Dictatore, asses unciales facti, placuitq; Denarium XVI assibus permutari, Quinarium octonis, sestertium quaternis. Ita Respublica dimidium lucrata est.*—*Mox lege Papyria semunciales asses facti.*—*Aureus nummus post annum LXII percussus est quam argenteus: Ita ut scrupulum valeret sestertiis vicenis; quod efficit in libras, ratione sestertiorum qui tunc erant sestertios DCCOC:*—*Post hæc placuit XL. M. signari ex auri libris, paulatimq; principes imminuere pondus; minutissimus vero ad XLV. M.*

[Here M: is supposed to be mistaken, either for X *Denarius*, or N *Nummus*.]

In transcribing these Passages, I now first observ'd, what I never took Notice of before, That *Pliny* uses (if the Print be right) *Sestertium* as a Neuter in the singular Number, and *Sestertii* as a Masculine in the Plural; contrary to the Rules given by *Budæus* and others, who make it a Masculine in the singular Number, and Neuter in the

Plural; when they write *bina, trina, quaterna, P. 3. Sestertia*, and so on to *Nongenta*, signified 2000, 3000; 'till they came to the last 900000; and then at 1000000 they returned to the Masculine again, styling the same *decies*, or if 2000000 *vicies*, and so forth to *millies, bis millies*; but this by the by: To proceed therefore in my former Discourse.

We find here *Pliny* giving an Account of four Changes * in the Weight of Brass Money, as opposed to the Silver *Denarii*; in which he gives us

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not

* Tho' there seem to me to have been many more, as will be und following in the Letters.

18 Several LETTERS

not the least hint of what Weight the *Denarius* itself was; but leaving us to compute, by the greater or lesser Weight of Copper it was exchanged for, what Alterations were made in it's own Weight also; which being at last brought to seven in the Ounce, it's first Coinage must be at about fifteen Times that Weight or Value.

AND to render this somewhat more intelligible, and follow my Author's Foot-steps; I shall first consider what Proportion eight Ounces of Copper (to which the *Denarius* was reduced at last) bears to ten Pound *Affes*, or which is the same Thing 120 Ounces; for which, as *Pliny* tells us, "The *Denarii*, at their first Coining were commuted" or exchanged.

When the ten Pound <i>Affes</i> or 120 Ounces of Copper answer'd to a <i>Denarius</i> , they must each weigh two Ounces of our English Money, viz. about	}	l. s. d. 00 10 00
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2dly, When half Pound <i>Affes</i> , for which we have only your * <i>Stips uncialis</i> Authority, the <i>Denarius</i> would be about an Ounce, or of our Money —	}	00 05 00
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3dly, When the <i>Affes</i> were reduced to two Ounces each, the <i>Denarius</i> would be the 3d Part of an Ounce Silver, or _____	}	00 01 08
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4thly,

* See the *Ducat* Leodienfis Page 280. Number the 5th.

4thly, When there was a Change made, not only in the Weight, but Number of the *Asses*, the Number being raised from ten to sixteen, and the Weight fallen from two Ounces to one, the *Denarius* would be but one of our Pence, above the fourth Part of an Ounce, and be valued at —

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5thly, When the *Papyrian* Law settled the *Asses* at half an Ounce weight, and supposing seven of them in an Ounce of Silver, they would still retain the Value of eight Pence in our Money, with some small Fraction over; But for many Reasons I endeavour to avoid Fractions, they amounting to no more, than to about the 112th Part in a Pound Roman, and to the like Proportion in the *Denarius* also.

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I am not so foolish as to imagine, that these were the precise Proportions that the *Romans* kept to, in the Changes of their Money; for it might happen, that they might find occasion to raise at one Time their Brass half, when they raised their Silver but a third Part, or *vice versa* the Silver might be raised more, and the Brass less; for of this we can make no certain *Æstimate*, except some of the older *Denarii* were now extant; but undoubtedly there was like Change in the one as well as the other; as I hope will sufficiently appear before I dismiss this Point.

FROM what *Pliny* tells, we may observe, Pa. 4. that Copper or Brass was raised to that height, (were it done at once or twice) that the Commonwealth gained five Parts in six, (which is the very

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same with gaining first one half, and afterwards two 3ds of the other half) in this therefore he has computed right: However, this Fall from six to one seem'd so prodigious to *Altiare*, and others, that by the Words *Asses sextarii*, or of two Ounces, they would have interpreted it, that 2 Ounces were default'd from the Pound *Asses*, and ten Ounces left still remaining; but this Fancy of latter Years has been rejected by all learned Men of all Opinions; But in *Pliny's* second Remark either he, or the Author he transcribed from, is highly mistaken; for if you compute aright, there was only the Gain of a 5th Part, and not of the half, as I have above observed, for all the *Asses* put together will amount to 16 Ounces, when under the former, there were no more left than 20 Ounces. I never yet met with any Author that has observed this Mistake, which yet is so obvious, that I cannot but admire how they overlook'd it. Thus much concerning *Pliny* himself, who writing out of other Authors, (whose Names he gives us in a very large Catalogue in the Front of his Book) is as often mistaken as they themselves were; and this last might be rather another Man's Fault than his own; for he was undoubtedly a faithful Transcriber, and tho' heretofore took for a great Lye; yet the many late Discoveries in the *East*, has now vindicated him from that Imputation.

I proceed therefore in the next Place to mention or take Notice of an Expression he used in his Account of Gold Coin, but it relates to Silver also, whose Words are these. ————— *Aureus nummus post annum LXII percussus est quam argenteus, ita ut scrupulum valeret Sestertiis vicenis, quod efficit in libras, ratione Sestertiorum qui tunc erant Sestertios DCCCC.* If this be the true Reading (which most have

have thought false and unrestorable; but *Savotus* affirms right and genuine) the *Sesterces* must be vastly bigger than they are now thought, and therefore must be coined when there was half Pound *Asses* at least, otherwise 900 would never amount to the lowest Reckoning of Gold, when but ten times the worth of Silver; but be this as it will, and the Number mistaken; yet it follows unavoidably, that there was a Mutation or Change in the *Sesterces*; and because there were always four *Sesterces*, neither more nor less in the *Denarius*; that Change must be either for the greater or the less; and because no Man pretends they were ever less, it may be supposed they were sometimes greater; which unavoidably overthrows their Opinion; who think the *Denarii* always at a stand, and (as *Budeus* and *Gronovius* would have it) neither more or less than eight in the Ounce only.

AND now from this Passage of *Pliny*, I shall
 Pa. 5. beg the Freedom to make some farther Observations upon those truly valuable Monuments of Antiquity, which your great Treasury of Coins furnish us with, and some of those Remarks you have made upon them; for tho' you are pleased to say you have only writ *Hints for young Beginners*; yet they are such as contain in them the Quintessence of what other Authors have delivered on this Subject; only there is a Passage or two, in which I cannot altogether come to a Concord with you. And the first relates to N. 5. Page 280. where I cannot but approve your Collection from the *Stips uncialis*, which by the Point, or Period under it, should be the 12th Part of a single *Ass* at that Time it was coin'd, otherwise had it had the Figure 1. I should have took it for one of the *Papyrian Asses*; but from the former Supposition it evidently follows, that there

must have been a fall between the *Asses Librales*, and the *Asses Sextantarii*. But I cannot assent to your other Inference, that then it was coined before the first *Punick* War, but rather under it, when the first Mutation was made, let it be from the half Pound *Asses*, or the whole Pound; and therefore it could not be so early as that War was, nor older than the Year of the City 490. I have not, that I remember, read the Name you give it of *Stips Uncialis*, tho' I do not doubt but you have good Authority for your doing so. Under the next N. 6, you have fallen into the like, though not the same Mistake with *Pliny*; for supposing the *Denarius*, as you and others do, to have been the same it was before, here was no Room for that rise of the *Denier*; but rather a plain Account of it's fall; for tho' the Number of *Asses* was raised, yet the Weight of them was deminished, and the former *Denarius* changeable for twenty Ounces, was now brought to equal sixteen Ounces only.

HENCE I go on to your 7 and 8 Numbers, which are both of them very remarkable, and for whose Sake I chiefly write this Letter to you: The *Quinarius*, by it's Weight, sufficiently proves it self to be coined after the passing of the *Papyrian* Law; it's Figure V, and Inscription *ROMA*, shews it to be a Roman Coin. And here to tell you my own Mistake, (for Mistakes I am very liable to) I did not at first Prize it, as I did afterwards; for you describing it's Weight by the Penny Weight, and the seven Grains over: I computed them only at 27 Grains together; mistaking the Number of the Penny Weights in an Ounce, for the Number of Grains in a Penny Weight; which after I had adverted to, I found it must weigh compleatly 31 Grains; which is within the 4th of

a Grain all that an Ounce Roman can possibly allow; 438 Grains, of which that Ounce consists, being divided by 7, gives to each *Denarius* $62 \frac{1}{7}$.

Pa. 6. This *Quinarius* fully proves that the Roman Ounce was not divided into 8 but 7 Parts; for if the Ounce had been divided into eight Parts, the *Denarius* would have contained no more than $54 \frac{1}{2}$ and $\frac{3}{4}$ of a Grain; and the *Quinarius* by that Means must have fallen to 27 Grains, and little more than the 4th Part of Grain over. I remark another Thing also in this *Quinarius*, in answer to an Evafion of *Gronovius*, when he is pressed with any *Denarius* weighing more than the 8th Part of an Ounce; he then denies it to have been an ordinary Coin, but a Medal formed or made on an extraordinary Occasion; which cannot be applied to this *Quinarius*; for few, upon any eminent Occasion, would design to continue the Memory of it in so small a Piece, both for Size and Value: Or 2dly, If any should have struck Medals of so small a Bulk, yet they would have took Care to have had them regularly stamp'd, which this is not on the Reverse; and had their Name, or some other Mark, to denote the Person by, or for whom it was coined and made.

To the next N. 8. you give the Title of a double *Denarius*: This Name does not occur in any Author that I have ever read, but there may have been such for ought I know; but in conformity to my Opinion, that believe that the *Denarii* changed as the *Asses* did, I should rather stile it a *Denarius*, answerable to the Change made when *Q. Fabrius Maximus* was Dictator, and the *Asses* were 16 Ounces, and not 16 half Ounces, under the last Mutation: This would make it a choice Coin, if it be answerable in it's Weight; which should,

were it perfect, be 125 Grains. But you have expressed it's Weight so dubiously, that I cannot exactly state it's Weight; the 4 Penny Weight brings it to 96 Grains, and whether the Overplus will supply the Rest, I know not; but if they fall much short of that Number, it cannot be of that Sort formed under *Servius Tullius*, for those would amount to about 126 Grains, or rather better: 128 as I have cast it up, but not exactly; so that the Weights being so near, if it answer the one, it may answer the other also; and tho' it fall short of either, it may be owing to the Rust, or to the Detriment in cleansing it. But I cannot here pass by a small Oversight of yours out of *Socipater Clarissus* from *Varro*, for leaving it with an *Ec. Quatuor scrupulis majorem*, &c. In your Text, the Quotation signifies, or proves no more, than that there were Silver Coins of 4 Scruples Weight: And therefore I was forced to seek the Quotation elsewhere, to prove it 7 Scruples; when yet afterward I found your Margent made out what was wanting in the Text, which expressly says thus, *Quatuor scrupulis major fuit. quam nunc est.* I hope you will as readily forgive me these Strictures, as

Pa. 7. I can pardon you the Escapes that occasion'd them: Neither should I have mentioned them now, but as a Means to prevent the like hereafter, and that your Book now in Hand, may come out as correct as possible, which I desire to know how far you have proceeded in, and in what Volumn you intend to print it, and when we may have hope to see it published.

BEING come thus far, you may possibly ask what made *Budeus*, and the many Authors that has followed him therein, first strive to confirm their own Opinion of 8 *Denarii* to the Ounce; and

and then to reject the Arguments offered to prove the *Denarii* were sometimes far bigger, and fell in Proportion as the *Asses* did. I have here mixed two Questions together, which had been better separated, had I had Time and Room in this Paper to have treated of them singly.

AND first, I conceive that the main Design in lessening the *Denarii* in Weight, was to increase and enlarge their Number; that as there were one Hundred *Drachmæ* in the *Mina*, so there might be an hundred, or near it of *Deniers* in the Roman Pound; and to complete their Design, when they could stretch the *Denarii* no further than 96, they were forced to superadd 4 *Denarii*, or half an Ounce more, to compleat the full Number of one hundred; but this Attempt of theirs did really prove unsuccessful, and instead of making the *Denarii*, or *Drachmæ*, to answer each other (as the Greek Historians esteemed them, and therefore translate so many *Denarii* by so many *Drachmæ*) they became more diverse, and at a greater Distance; for the *Attick Drachmæ* were a Coin that carried the Weight of 66 Grains, as Mr. Greaves and Bishop Cumberland have stated them, (See *Comb. Weights and Measures*, Page 112.) these multiplied by 100, which were in the *Mina*, make 6600; whereas the Roman Pound of 5256 Grains fell short of it, even when the half Ounce was added, to make it in all 5475, by no less than 1125 Grains, which divided by 8 Grains to the Penny, gives us a Difference of 125. (odd Pence) English; whereas all this might have been, and was better provided for, by equaling 100 of the Consular Pence of 7 to the Ounce, to the 100 *Drachmæ*, the Difference would not be so great, and that fell on the Roman Side, who gained about an 18th Part in the Exchange; the

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Attick Coin, as all pther Coins do, losing something of their Rate in a Foreign Country; whereas the Roman Coins, after their great Conquests abroad, were no where Foreigners, thro' the extent of their whole Empire.

THAT which countenanced this Conceit of eight *Denarii* to the Ounce, was those ingenious Verses (for I take or esteem them as such, being writ on so difficult a Subject,) which go under the Name of *Rhemnius Fannius*, and was mistaken for *Fannius Palemon*, who lived long before him; this latter Poet living after the Emperors became Christians; in *Constantine* the Great's Time, before whom, or under him, the Roman *Denarii* were changed, and a different Way of Account by *Solidi*, *Milliarenfes*, and *Folles* introduced; and what is said against *Rhemnius Fannius*'s Authority, holds more forcibly against *Prescian*'s, who lived under the Emperor *Ju-*
 pa. 8. *stitian*, when the Name of *Denarii* and *Sesterces* were almost lost to the World; so that *Gronovius* gives up this Author, as being either a spurious Piece, or *Priscian* himself much mistaken in his Valuations: But on the other Side *Celsus*, and *Scribonius Largus*, both eminent Physicians, and *Pliny* after them says, there were only seven *Denarii* in the Ounce, and 84 only in the Pounds.

THE Objections they make, and the Reasons alledged by *Gronovius* for abiding in the old Opinion, are in short such as these that follow. 1st, That the *Denarius* would be of a monstrous Bulk. 2dly, That there remains no mention of greater *Denarii* than those equall'd to a *Drachme*. 3dly, That no such Coins can now be met with; ——— with some others which I shall not mention, because already refuted by what has been said above.

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AND in Answer to these little better than frivolous Allegations we may say, that the Ponderosity of the *Denarii* ought not to be called monstrous, when the *Asses* are acknowledged to have been six times their Weight, when supposed the largest, or otherwise that two Ounces of Silver were equal to ten Pounds, or 120 Ounces of Brass. 2dly, That there was no mention, of any different from eight in an Ounce, is refuted by the forementioned Quotations from *Varro* and *Pliny*, &c. and 3dly, That there are none such remaining might be occasioned by the *Romans* new Minting their Money upon every such lessening of it: And yet if we may give Credit to *Savotus*, who surely durst not falsifie when he quotes the Noblemen in *France* who have them, and where he weighed them, and says "there are several *Quinarii* mark'd with the Letter " *V.* and with *ROMA* inscribed upon them, that "are so heavy, that five only would make an "Ounce, and 60 the Pound:" Not to mention again what is afore observed, concerning your own admirable Pieces, the *Quinarius*, and double *Denarius*, as you stile it.

I have a long time intermitted my Study of these Matters, and had not now for some Hours returned to it; but that I expected about a Fortnight ago to have seen my elder Nephew from *Rowden*; but some Accidents interviened that hindred his intended Journey into these Parts for some Days; and having upon [this Occasion viewed some Abstracts out of *Savotus*, I found I had writ them so badly and hastily, that I could scarce read them my self, and much less could promise or hope, that any would perfect my Collections, or methodize them hereafter; and therefore I purpose to employ one of my Nephews to do it, whilst G O D spares my
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Life to supervise the Undertaking, and to perfect that Design.

And I beg the Favour of you, when you can spare Time, to send me the precise Weight of your 8th Number, and likewise as many of the *Pa. 9.* Greek *Staters* and *Drachmae*, and the Family, or Consular *Denarii*, and also the *Aureus* and *Denarius* of *Tiberius* N. 98, 99. if they hold out their full Weight. As to the later Gold Coins after *Constantine the Great*, I am not so curious to enquire after them, *Mr. Greaves* having collected a great many of them to my Hand, and given us the best he could meet with in *Italy*, and their several Weights in Grains; And as to their *Solidi Aurei*, as they were usually stiled, and fix'd by *Constantine* to 72 in the Pound, of all that he could meet with from his Reign, down to the Emperor *Heraclius's* Time inclusively, (that is for 300 Years and upwards) there is not any (save one) that either exceeds 70 Grains, or falls lower than 68; this Exactness proceeding, as I suppose, from these *Solidi* being the Standard by which all Payments, both in Silver and Brass were to be regulated and valued.

I intended, when I begun this Letter, to have added some Thing more concerning the Silver *Milliarense*s and Brass *Folles*, that came in the Room of the former *Denarii* and *Asses Romani*; for which I am wholly obliged to the accurate Description and Discoveries of the learned *Gronovius*, who has corrected all his Predecessors Mistakes about them; as also their Computations in many other Matters: So that, except where his beloved *Helena*, of eight *Denarii* in the Ounce, does not mislead him, he is a most exact and diligent Computant. But I conceive I have sufficiently cloyed your Stomack already, and in both Senses the Pro-

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verb may be extended, to think it Time to cry out, *Manus a tabulâ*: And therefore shall conclude all, with my best Wishes for your Health and Prosperity, and also a perfect Assurance that I shall ever remain,

Dear SIR,

Melfonby, March
24th, 1721.

your most affectionate Friend

It would be tiresome to me (now turn'd of 70) with a wearied Hand, and worn out Pen, to Transcribe this tedious Letter, and therefore hope you will excuse the many Blunders in it.

and humble Servant

William Smith.

P O S T S C R I P T.

PURPOSING to confine my Letter to a Sheet (tho' you see I have exceeded it) and end it with the old Ecclesiastical Year: I find upon a Review, that I have omitted several Things that might have illustrated some of my Arguments, and fortified others: Of the first Sort is one, that relates to what I have said, Page the First, where I might have observed some Passages that are inconsistent with the supposed Ignorance or Poverty of the Roman State, when their Silver Money was coined; for long before their Opulency appears, by the rating the *Census* of the highest Senators, in *Servius Tullius* his Time, at 100000 *l. Asses* as *Livy*, or 110000 as *Dionysius Halicarnassus*, and *Pliny* states their Number, which we never find was alter'd in after Times, 'till the Emperor *Augustus* advanced it a third Part higher. And that *Anno Urbis* 365, when their City was burnt, they

they that remained in the Capital were able to raise a thousand Pounds of Gold to remove the Siege of the *Gauls* from it, and this without touching a Dram of their Gold consecrated to their Gods, as *Livy* Notes in his 5th Book, 48 and following Chapters. Tho' Gold was a Mettal they did not desire to Multiply so much as their Silver; and therefore would not suffer it in their Leagues to be reckon'd to them above ten for one; when it was computed as twelve and thirteen to one in other Places. As also I might have took Notice, that seventy nine Years before that Coinage, they were not only got acquainted with the *Carthaginians*, those great Merchants and Money Changers, but in League with them also; from whom the *Romans* might have learn'd the Worth of Brass, had they never so much abounded with it, by their Exchange and Traffick with them, *Livy, Lib. 7. Chap. 27.* Besides their Neighbours nearer Home would have drain'd away all their Brass for Silver, had Silver and Brass bore that great Disproportion which some Mens extravagant Fancy has attributed to them.

BUT I have made some more material Omissions in Page the 8th, where partly for haste, and partly for lack of Room, I have waved a common, but most cogent Argument against the light and trivial Weight assign'd to the old *Denarii*: For admitting them to be but of about a Dram Weight, this unanswerable Absurdity would follow, that their lesser Silver Coins would be too small to pass from Hand to Hand, without an unimaginable Care and Trouble, which will appear by this short Scheme following: The *Denarius*, according to their own Valuation, fell short of eight Pence of our Money; the 4th Part of it, a *Sesterce*, could there-

therefore scarce reach two Pence; the *Libella*, or 10th Part of a *Denarius*, would but be three Farthings, and $\frac{1}{4}$ th of a Farthing, was therefore under our Penny; the *Singula*, or 20th Part of a *Denarius*, under a Half-penny; the *Teruntius*, the 40th Part of a *Denarius*, short of our Farthing.

Or to put the Argument in Grains, it will run thus; Supposing the *Denarius* to have weighed 60 Grains, which is as much as a *Troy* Ounce of 480 Grains, by which most Authors have gone to make their eight *Denarii*, out of an Ounce, as large as they could: Then stating the *Denarius* at 60 Grains, the *Sestercius* at 15 Grains, the *Libella* 6 Grains, the *Singula* 3 Grains, the *Teruntius* $1\frac{1}{2}$, which brings this Coin almost to beaten Silver: And therefore tho' *Varro* speaks of these small Pieces, and calls them Silver Coins; yet they were gone out of use in his Time, when (by the many supposed Changes) the *Denarii* were brought as low as to have the Ounce coined into seven of them. Possibly upon reading this Passage, which will bring a *Sesterce* to the Weight of 15 Grains only, you will Wonder how I can, as I think I have done formerly, at least I do so now, assign eight Pence for the Value of a Roman *Denarius*, and two Pence in our Coin to the *Sesterce*: My

Reason is this, that I have been told, and
 Pa. 11. always believed, that a *Troy* Pound of Silver was coined into 62 Shillings, and consequently an Ounce into 62 Pence; and then you must either Augment the Number of Grains in that Ounce to 496 Grains, or it will not allow 8 Grains to each English Penny; or if you will keep to 480 Grains only, that Number divided by 62, will not give 8 Grains to each, but $7\frac{1}{2}$, or $\frac{1}{2}$ only: But I go not by the *Troy* Ounce, but the Roman of 438 Grains, which divided by 7, gives compleatly $62\frac{1}{7}$, which
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gives to each Penny 7 Grains $\frac{6}{7} \frac{1}{2}$; which is an inconsiderable Difference, and to a void Fractions not worth taking Notice of: Besides that, when I framed the Notion, long ago, of a *Denarius* being worth eight Pence of our Money, and somewhat better, I built upon some comparative Estimates I made between the *Troy Ounce* and the *Roman*; and then taking a *Troy Ounce* to give 62 Pence, the *Roman* would give 56 Pence and a Half, and somewhat better; and then if you divide 56 Pence by seven, you will have a Quotient of eight Pence exactly. I never observed the Miscalculation of 8 Grains to the English Penny, 'till I came to the 10th Page of this Letter, and have not now Time to consider whether it be worth while to rectifie my Mistake or no.

THERE is still one Thing more left; and that makes the main Objection with *Gronovius*, viz. "That if the Opinion I contend for should take Place, not only all the *Greek* Translators of Roman Affairs, but many of the *Latin* Authors themselves, and the greatest Part of the Restorers of Learning in *Europe*, have been grossly Mistaken". In Answer to which, I shall reply, as the famous *Chillingworth* (my Wife's great Uncle by the Mother's Side) does to one of his own Arguments for turning Romanist, at his being reconciled back again to the *English Church*: His Argument for Popery was, "That the Protestants misrepresented the Papists." His only Answer to this, was a Verse borrowed from the Poet *Horace*, (*Lib. Ep. 1. Ep. 2. v. 16.*) *Iliacos intra muros peccatur & extra*. With which I once more take my leave this *Easter Munday*.

March 26th, 1722.

I have

I have left this Letter open for my Nephew to read, and ordered him, if he can with Convenience, deliver it himself; otherwise to Seal it up, under a Cover, and send it to you by a sure Conveyance. Having no perfect Copy of this my self, I have desired him to transcribe it fair over, and mark the Pages as he goes along in his Transcript, that if you make any Observations upon it, I may better know to what Passages they relate: And when he has done so, to give you the Choice of the blurred Original, or fairer Copy, which you like best; and bring me the other back when he comes hither, which I hope will be very shortly.



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L E T T E R

From Mr. Ralph Thoresby, Author of
the Book stiled *Ducatus Leodiensis*,

Dated the 5th of April, 1722.

Reverend S I R,



YOU have obliged me exceedingly by your Learned and very Instructive Letter, which consisted of eleven close writ Pages, and found me in a Hurry, yet I have read it over and over again, in order to have given you more Satisfaction than I fear I shall be able, as to your Queries about the *Roman* Coins.

AND first I consulted *Pliny* for various Lectures, having an ancient Edition, Anno 1511, mine has the same Mistake with yours, *Quingentesimo octogesimo quinto* for 485; the next Page has the Aspiration *Han.* for *Annibale* and the Numbers in Words at length *Sestercios Nongentos* for your *DCCCC*.

I cannot but admire your Judgment and Dexterity in Computation, and the good Use you have made of some rare Treatises, *De Re Nummari* that I have not had the Opportunity so much as to see; particularly that which the Bishop of *London* bought for you in *Holland*; and earnestly desire

fire you to proceed, perfect, and publish your judicious Remarks. I wish I was capable of Assisting you; But notwithstanding your Compliment, my Inclination, rather than Abilities, may be conjectured by the enclosed Specimen of the Weights of the Roman *Consular Denarii*; tho' I have been nice even to half a Grain, in every Piece that would bear it.

I have enclosed not only the Weights of the Silver and Gold you desired, but have added four-score, which is my whole Stock before the Imperial: And cannot but observe, that the fairest and most perfect come nearest that No. 74. inscribed *ARG. PUB.* (for *Argentum Publicum*) viz. two Penny Weight, ten Grains. Those which fall most short are such as have laid many Centuries in a corroding Earth, as those found in the Skirts of the Moors, betwixt *Yorkshire* and *Lancashire*. Only it will be necessary to acquaint you, that one (viz. No. 21.) appears by the small Size, as well as Weight, to be of a different Sort, I take it (tho' it wants the *V.*) to be a *Quinarius* of later Age than the preceeding.

As to what is called a *double Denarius*, I had the Sentiments of some Grandees, when at *London*, who generally run the Way that almost all Authors have done, as you have observed: But I acquiesce in your judicious Opinion, that it is a single *Denarius* of the more early Ages, tho' it fall short of the Weight of the very first. I had the Term of *Stips uncialis* from the no less courteous, than truly Noble, Earl of *Pembroke*; but own that I have misapplied it to No. 5. because it weighs but half an Ounce; the *Semissis* that follows in No. 6. is a most valuable one, as appears by the learned Mr. Gale's reading of it, which you will find p. 335 of the said *Ducatus*.

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The Consular Denarii in the Ducatus Leodienfis.

Page	Nº	Grains.	Page	Nº	Grains.
282	9	58		50	51 $\frac{1}{2}$
	10	51		51	54
	11	58		52	58
	12	53		53	27
	13	51		54	40
	14	51		55	46
	15	50		56	58 $\frac{1}{2}$
	16	50		57	40
	17	36		58	50
	18	48		59	49
	19	53 $\frac{1}{2}$		60	33
	20	54		61	56
	21	26 $\frac{1}{2}$		62	50
	22	51	285	63	39
	23	42		64	58 $\frac{1}{2}$
	24	46		65	42 $\frac{1}{2}$
	25	54		66	53 $\frac{1}{2}$
283	26	44		67	57
	27	58		68	49
	28	56 $\frac{1}{2}$		69	58
	29	52		70	47
	30	32		71	58
	31	52		72	49
	32	56		73	38
	33	57		74	58
	34	53		75	54
	35	60		76	49 $\frac{1}{2}$
	36	52		77	45 $\frac{1}{2}$
	37	57		78	43
	38	48		79	52 $\frac{1}{2}$
	39	40	598	80	49
	40	50	287	An <i>Aureus</i> of <i>Tiberius</i> .	
	41	53		98	116 [ri
	42	52 $\frac{1}{2}$		99	45 2 Denari
	43	49		52	
	44	54	296	An <i>Aureus</i> of <i>Trajan</i> .	
	45	49 $\frac{1}{2}$		271	108
	46	49 $\frac{1}{2}$		Two <i>Denarii</i> of <i>His</i> .	
284	47	62		272	45 $\frac{1}{2}$
	48	40		273	47 $\frac{1}{2}$
	49	51			HER.

HERE is fresh Work for your excellent comprizing Talent; I do again repeat my Request, that you would compleat your judicious Observations, get your Nephew to transcribe them, and send them to the Press for the Instruction of the present and Future Ages.

MY Manuscript that you are so kind as to enquire after, was once designed to be published with the Title of *VICARIA LEODIENSIS*: or, a * * * * * But (if ever) 'twill possibly be in *Octavo* with that of a Specimen of the *Scriptores Eboracenses*; or, *Memoirs of such learned Authors and Dignitaries, as have been Vicars of that Church*; containing also the Lives of several Archbishops, Bishops, and such eminent Persons as have been Benefactors thereto: To this will be added Archbishop *Thoresby's* famous Manuscript, (recommended in Bishop *Godwin*) from the Original in the Register-Office at *York*, and a brief Glossary of the Obsolete Words therein: And an Account of the New Church that is to be begun this Year, by the Encouragement of the Lady *Betty Hastings*, and the voluntary Subscriptions of several Gentlemen, and Inhabitants, and is already endowed with 120*l. per Annum*, by Parson *Robinson*: But I forget my self, and am tedious; and an aged Gentleman, (Rector of *Higb Hoyland*) calls me off, and has brought me an acceptable Present of a Transcript of *Domesday Book*, as far as relates to *Ilbert de Lacy's* Estate in *Yorkshire*, containing four Sheets.

AND yet I can hardly conclude without begging some of the Antient Habits at *Rawden*; your Uncle gave me a Pair of fine old Gloves; But there are several other very Antique Things, fitter for a

38 Several LETTERS

Repository of Curiosities, than any real Use. Have you any Manuscript of the famous Mr. *Chillingworth*, great Uncle to your Lady (to whom pray my humble Service) I have a memorable Letter of his presented by Chancellor *Wilkingson*, to

S I R,

Leeds, 5th
April, 1722.

Your most humble Servant,

Ralph Thoresby.

In transcribing this Letter for the Press, I have observed, which I know not whether in the following Letter I have took Notice of or no, that the Quinarius above-mentioned by Mr. Thoresby, but the Page or Number not noted, is to be found in his Book, p. 281. No. 7. and is a very rare Piece, and weighs, as he has set it down, in all 31 Grains, and of our Money within one Grain of 4 Pence, which confutes Budæus and Gronovius's Opinion, that there are 8 Denarii contained in a Roman Ounce, and if we double the Number of Grains of the Quinarius, to make it advance to the Weight of a Denarius, the Product will be 62 Grains, which wants but one Farthing of our 8d. and scarce so much as a Farthing; and every modern Penny of ours wants something, as I have formerly computed, of entirely weighing eight Grains: Now apply this to a Roman Ounce, which weighs but 438 Grains, and then see how this will agree with the currant Opinion of the Authors above-mentioned; that is, divide that Number into eight Parts, and the Quotient will be but $54\frac{6}{8}$ Grains, which divided again by 8 Grains into Pence, falls short of 7d. whereas those that follow Budæus, do usually give the Roman Penny at 7d. ob. at least:

least: This has happened from two Fallacies they were guilty of; the 1st, reckoning against the express Words of Pliny, &c. that there were 8 Denarii in the Ounce; and then, to cover their Mistake, computing by Troy Ounces in the Room of Roman Ounces.

As to the double or antient Denarius, p. 281. No. 8. this Author gives it at 4 Penny Weights, 1 Grain, which makes 97 Grains, or of our currant Coin, at what makes 12 d. now there could never have been coin'd such a Weighty Denarius, if the Denarii had been always at one stay, and not sometimes bigger and sometimes less, contrary to what is supposed by the two foregoing Authors; and if it should be answer'd that this Weight agrees with none of them; I answer, tho' it should be a 4th Part more, when the Asses went for Ounces, and not half Ounces; yet that fourth Part might be lost by Clipping, Rust, or the ill Management of unartificial Endeavourers to cleanse, or make it bright and handsome.

I know not why these Family Coins, as they are sometimes called, are of so different a Weight as they are given in at, few of them having the Note of a Denarius impressed upon them; the seven that have are of the Following Weight, or Value.

No	Grains.		d. q.
47	62	Has its true Weight and Value, of our Money, viz.	8 0
9		} Have lost a 16th Part of their Weight, therefore are worth	} 7 0
27			
52			
67	57	A Grain short of	7 0
79	53 $\frac{1}{2}$	Value near	6 0 $\frac{1}{2}$
77	43 $\frac{1}{2}$	and therefore wants Grains 18 $\frac{1}{2}$, and must have wasted by Rust or otherwise more than 2 d. $\frac{1}{2}$, or so much short of 8 d, which is no Wonder, since possibly 'twas coined upwards of 2000 Years ago, and not less than 17 or 1800 at least.	None

None of these. Consular Denarii can be less than 1730 Years old, and some of them near 2000 Years ago; for about that Time the Papyrian Law had reduced their Denarii to 16 half Ounce Asses.



A Se-



A Second

A N S W E R

Of Mr. Thoresby, Apr. 18, 1722. which has Relation to my foregoing Letter, dated March 26. 1722. and to one of mine, of which I have no Copy.

Reverend SIR,



YOURS by the last Post found me more than commonly throng, having to Answer Letters to both my Sons, about Business, at the Bishop of *Lincoln's*, and at *Cambridge*; yet rather than let your ingenious Nephew come without a Letter, I stole so much

Time as to weigh the *Greek* Coins, which I thought would not have been of Use to you because *Staters*; However, here I transmit some of all the *Greek* Coins, and likewise, as you desire, of all the *Brass* *Consular* Monies; and request your learned and curious Computations thereupon; I mean not as to the *Inscriptions*, but Value and Times of *Mintage*.



Dr.

Ducatus Leodiensis,

Page	No	Dw ^s .	Grains.	
276	4	9	29	This seems to have been clip'd.
	5	10	10 $\frac{1}{2}$	This <i>Stater</i> is entire.
	8	4	11	This I presume is a <i>Drachma</i> .
	9	1	13 $\frac{1}{2}$	<i>Vide infra.</i>
	10	4	11	

IN No. 9. the Printer has miss'd a whole Line, viz. this by A N on each Side X, and E Y below, I mistook for *ANCIATUM*, (*Albanorum Colonia*) 'till a learned Gentleman inform'd me, that this is the *Monogramme* for AXAION, &c. as in Page 276. No. 9. See the Place.

**Roman Monies, p. 279, 280, and 335.
(No. 1090.)**

	No	Pen. weig.	Grains.	
The entire <i>AS</i>	1	4	7 $\frac{1}{2}$	More than an
<i>Semis</i>	2	8	21 $\frac{1}{2}$	Ounce (read
<i>Triens</i>	3	7	5	one Ounce,
<i>Quadrans</i>	4	2	18 $\frac{1}{2}$	four Dw ^s , 7
The <i>Stips</i>	5	7	17	Grains, $\frac{1}{2}$.
The later <i>Semis</i>	6	3	16	

THE vastly different Weights of the last two, manifest a great Distance of Time in their Mintage and Currancy: I beg your Opinion by your learned Nephew upon his Return. As to what you write relating to the Index, 'tis very just, but I had much ado to get it printed, even as it is they could not print a Sheet more.

I am glad my *Pliny* gave you any Satisfaction; not so much as seen *Greaves De Denario Ro-*

mano

mano. One Volume of the new *Monasticon* is upon the Road towards me; Capt. *Stephens* seems an ingenious Gentleman, but is a zealous *Romanist* (I follow your Letter Page by Page) his Correspondence with me was under the Name of *Smith*, one of the Undertakers, at Mr. *Boulter's* Request, I furnished them with abundance of Original Characters, and am told he has been very just in acknowledging the Favour.

Neither did, or design'd to express the Page 335, for Mr. *Roger Gale's* Exposition of No. 6. but suppose it omitted, else you might have found it presently: I have not seen, or indeed heard yet of any in *England*, who have got any of the *Aurei*, found in the Questor's Chest at *Modina*. Since Sir *Hans Sloane* resigned his Secretary's Office, I have not so much Correspondence, as I used to have, with the *Royal Society*; Dr. *Hally* having less Inclination to Antiquities, and Astronomical Observations are out of my Way. I have from Mr. *Tor's* Manuscript, the Particulars of Archbishop *Thoresby's* Benefactions. I have now got to the End of your Letter, as well as my Paper; only renew my Request that you would instruct the Curious with your Thoughts of the most ancient *Roman Monies*, which would be very acceptable to

Dear SIR,

Leeds, 18 Apr. 1722.

Your humble Servant,

In the Weights I follow the Common Computation of 24 Grains to the Dwt. and 20 Dwts. to the Ounce.

Ralph Thoresby.

I need make no Observations upon this Letter, being that which follows gives a particular Answer to the greatest Part of it.

Mel-



Meltonby, May 4th, A^o. 1722.

Worthy SIR,



Have received the Favour of yours of the 18th of *April*, very lately by the Hands of my Nephew, whose Journey hither was retarded for some Time by intervening Accidents: And am much obliged to you, that in such a hurry of your other Business, you would borrow so much Time from it, as to send me the Weight of Five of your Silver Coins, and Half a Dozen of your Brass ones: You desire my Thoughts upon them, which I shall give you in these following Observations, all or most relating barely to the Gravity or Weight of each of them.

AND first of the Silver Coins. Page of your Book 276. No. 4. This being a Silver *Stater*, as you rightly Style it, ought to answer four *Athenian Drachme*, (for if it were a Golden *Stater*, only two) having thrown your Penny Weights all into Grains, that the whole Weight might be of one Denomination, I find they amount in all to 245 Grains. And to find whether it bore its true Weight, I computed what an *Attick Ounce*, if there were any such proper Weight, answering to eight *Drachme* in an Ounce, would be; the *Drachme* being stated by that excellent Mathematician Mr. *Greaves*, by several he met with, both in *Italy* and *Greece*, in his Travels, and exactly weighed them at 67 Grains; by that Proportion, the same
sup-

supposed *Athenian* Ounce, or eight *Drachmae*, would arise to 536 Grains (no less than 98 Grains heavier than the true *Roman* Ounce of 438 Grains); which shews the Absurdity of those would frame eight *Denarius's* out of that Ounce, and yet contend that such *Denarii*, and the *Drachmae*, were of equal Weight, and equal Value, as *Budeus* and his Followers endeavour to do. According to the foregoing Computation, this *Stater* ought to weigh 268 Grains; and therefore falls short of its true Value 23 Grains, which is not very considerable, being it amounts to no greater Loss than less than three Pence, in three Shillings of our *English* Money.

THE next *Stater* No. 5. weighing $250 \frac{1}{2}$ Grains, wants of its Weight $16 \frac{1}{2}$ Grains, which amounts not to above 2 d. $\frac{1}{4}$ in 3 s. of our Coin.

No. 8. which you suppose in your Letter to me to be a *Drachma*, does not at all agree with the *Drachma's* Weight, that being only 67 Grains; or as Bishop *Cumberland* states it at 66, in his Book of Weights and Measures, Pa. 112. Whereas this Piece of yours weighing no less than 107 Grains, exceeds the highest Estimate of the *Drachma* by 40 Grains: Therefore I take it to have been coined for half a *Stater*, and has now by Time and Wasting, or Coinage, lost 17 Grains of its just Gravity.

pag. 2. Number the 10th, being exactly of the same Weight and Ponderosity with Number the 8th; what has been said of the Former, is altogether applicable to the Latter also.

No. 9th. This Piece weighing only 37 Grains, if it were an *Attick* Coin, somewhat exceeds an half *Drachma*, viz. by about 4 Grains, or might be four of their *Oboli*, six of which were contained in an

an *Attick Drackma*; or if it were an *Italic Coin*, it does not much exceed their *Quinarius*, to which Country you first intituled it, as supposing it coined at the Colony or *Antium*, or *Alba*; but your learned Gentleman afterwards informed you, that the AN upon it was the *Monogram* for AXAIQN—AN, may be the *Monogramm* for AXAIQN, for any Thing I know to the Contrary, not being at all versed in the Inscriptions; but methinks it is strange, that this Interpretation should agree with the Description you gave of it, and the Printer omitted, viz. this by AN on each Side X, and EY below, I mistook, for all these Letters AN X AN, can be no *Monogram* at all; for a *Monogram*, as I take it, contracts many Letters into a less Compass, but this rather extends them; besides, if AN be the *Monogram* of AXAIQN, to what purpose is the X interposed, and the AN again repeated: I am no Judge of these Matters, and therefore must wholly refer you to those that are skiled in them; besides, the Piece it self ought to be more nicely examined, whether the Graving exactly answers the Original, or if not graved, the Description given of it be perfectly agreeable with the Coin it self.

HAVING thus communicated my Observations upon your Silver Coins sent me, I proceed next to make some Remarks upon your Copper ones.

Pag. 279. *Ducat. Leod.* No. 1. * This first Number stiled by you an *AS* (*Romanus*) does not come up to the full Weight, nor near it; that the least of the *Asses*, that we ever read of, does require; for the *Asses*, even after the *Papyrian* lowering of them to the Weight of Half an Ounce, ought to contain 219 Grains compleat: Whereas you give the

* See this Paragraph corrected in Page the 3d,

the Weight of this at 4 Penny Weights $7 \frac{1}{2}$ Grains, which amounts but in all to $103 \frac{1}{2}$ Grains, short of its due Ponderosity by more than Half, or by 115 Grains : Therefore it is improbable that it was ever coined for a *Roman AS*, but rather for

some Subdivision under it, even less than a *Sem*. 3. *Semis*, or was a *Triens*, with some over Weight casually added to it. I say it might be either of these, with some Failure of Weight by Rust, or Waste; but then the want of the four Points, if a *Triens*, and of the S, if a *Semis*, will not admit of this conjecture; and therefore it must either be the Counterfeit of some ignorant Artist, or the Figure I is unduely added; or if a true one, and rightly engraved, it will give Ground for raising some new *Hypothesis*, such as has been never set on Foot by any hitherto.

No. 7. Is much more to be relied on, and argued from; being, I think, unquestionably a true *Semis* of the Ounce *AS*, when reduced to that Weight under the second *Punic* War, and in the Time of *Q. Fabius Maximus*'s Dictatorship A^o. *Ur*-*bis* 536, and upon this Supposition ought to weigh no more than barely 219 Grains, of which this weighing $213 \frac{1}{2}$ Grains, has lost no more by Rust and Time, than barely $5 \frac{1}{2}$ Grains in 1937 Years since its Coinage.

No. 1. In making my Observations upon this *Roman AS*, I had not your *Ducad. Leod.* by me, but computed from the Weight given me, as I thought in your Letter, where you write thus;

THE entire *AS*, No. 1. weighs 4 Penny Weights, $7 \frac{1}{2}$ Grains more than an Ounce, which being writ rather below the Line than even with it, I did not take any Notice of it, but as a Remark of the Weight, which for any Thing I then took Notice

tice of, the Numbers preceeding might amount to; and tho' this was my own great Error, yet the Ocoasion of my falling into it, was your putting the lesser Weight before the Greater, which I think should rather have been thus expressed

THE entire *AS*, No. 1. weighs 1 Ounce, 4 Penny Weights, $7 \frac{1}{2}$ Grains.

BUT I return now to examine not only what it weighed, but what you have observed upon it, for I did not discover my Mistake, till I had done with No. the 2d; and now, since I writ the last Line above, I find I have nothing to do more, than wholly agree to what you have already said of it in your Book; only I could have wished that you had said, why you thought it wanted of its full Weight of 2 Ounces, whether by Rust, or the Edges being diminished, or any other Impairment in the Coin if before the Alteration, under the Dictatorship of *Q. Fabius Maximus*, it must be certainly elder than A^o. *Urbis* 536, and consequently coined in, or before the Date above given, No. 2. viz. nineteen hundred and seven Years ago.

WHILST I rested my Pen to let the
 Pag. 4. Page dry, I found I had once again in this No. 1. made more Haste than good Speed, not adverting that what you reckon near an Ounce and and half does not amount, according to your Computation of an Ounce, four Penny Weights, seven Grains and a half, to a full Ounce and a Quarter, for it lacks something of it, viz. $12 \frac{1}{2}$ Grains; But then again, on the other Side, I consider that by computing by the *Troy* Ounce, and *Troy* Penny Weight, you lessen its due Weight and Proportion, for tho' I did not reflect on this before, that yours was *Troy* Weight, or *Troy* Ounce; and mine a *Roman*, or *Avotrdupois* Ounce, one of which
 Ounces

Ounces amounts to 480 Grains, and the other to 438 only. Though I casually avoided that Errour, by casting all the Penny Weights into Grains, and those Grains into *Roman* Ounces, and divided them by the *Roman* Ounce of 438 Grains, and not by the *Troy* of 480: Yet now I will compute what this *AS* comes to, when rightly divided by 438 to the whole Ounce, and 219 to the half Ounce, and 109 $\frac{1}{2}$ Grains to the Quarter Ounce *Roman*, the whole weight you give me in, when put together, amounts to 583 $\frac{1}{2}$ Grains, which again subdivided, gives one Ounce, and one Quarter of an Ounce *Roman*, and 58 Grains, which is more than half a Quarter; so that it may be truly said to contain a *Roman* Ounce and half, wanting only 41 Grains, near which you give it in at, yet still wanting 292 $\frac{1}{2}$ Grains of it's full Complement, if it were coined for a 2 Ounce *AS*, brought down to that Weight in the first *Punick* War.

BUT if it should prove to have lost little or no Weight from it's first Coinage, then it will produce a new Argument, that there is another Change of *Asses*, more than *Pliny* makes mention of, viz.

FROM 12 Ounce <i>Asses</i> , to <i>Asses</i> of half a Pound, collected from No. 5, or <i>Stips Uncialis</i> , or _____	} Ounces.
3dly, To <i>Asses</i> of 2 Ounces Weight, mentioned by <i>Pliny</i> _____	} 6
4thly, This of yours of an Ounce and half (if it were a full <i>AS</i>) _____	} 2
5thly, The <i>Asses</i> made in <i>Q. Fabius Maximus's</i> Dictatorship, of _____	} 1 $\frac{1}{2}$
6thly, Those made after the <i>Lex Papyriana</i> of half an Ounce _____	} 1
	} 0 $\frac{1}{2}$

E

BUT

BUT for these Six Variations of the Weight of the *Asses*, the 2d and 4th Division wholly depend upon the Truth of your *Stips Uncialis* No. 5. and upon the Weight of the *AS*, now under Consideration. I proceed now to consider your 3d Brass Coin, which you stile a *Triens*; and give your Reasons for it's having four Points; because when the *Asses* were *Liberales*, the *Triens* contained four Ounces; but you do not express what Weight you conceive that *AS* bore, of which this was the

Pag. 5. *Triens*: Now I find by the Weight you give of it, that it weighed 7 *Dws*. Grains 7; these Penny Weights are according to the Troy Standard, but when reduced to Grains, it makes 173 Grains, which is more than it ought to do by 27 Grains, if it were a *Triens* of the Ounce *Asses*; now because Coins often fall short of, but seldom or never exceed the true Weight; I rather fancy it has been a *Triens* of the two Ounce *AS*, which makes it a more rare and valuable Coin, because the older, and then must have been coined between the Beginning of the first *Punic* War, and the 4th Year of the Second; because in that Year of *Q. Fabius Maximus's* Dictatorship, the *Asses* were reduced from two Ounce to one Ounce Weight; but if we fix upon it, as a *Triens* of a two Ounce *AS*, it will want a vast Deal of it's true Weight, and fall short of 292 Grains, which is the 3d Part of two Roman Ounces by 119 Grains, which is above a 3d Part of it's proper Weight; which it can scarce be supposed to have lost, and yet retain it's Figure and Stamp so fair as you have printed it.

Pag. 280. N. 3. To answer therefore this Objection, and change my Opinion of it's being a *Triens* of a two Ounce *AS*, which I now find, whilest

whilest I am examining the Number of Grains, I fell into by a false Computation of what the *Triens* should weigh. I must again remind you of what I have already said concerning the Weight of Number the First, which is likewise deficient of above a 4th Part of it's due Weight, and therefore queried by me whether there was not a Time when the *Asses* were Ounce and half *Asses*, and would weigh, if entire 657 Grains; and then supposing this Number 3 to be a *Triens* of such an *AS*, then would it still want 45 Grains of it's proper Weight, which it may be well supposed to have lost in near 2000 Years since the making of it. But this being all of it conjecture; nothing can be drawn from it, 'till examined by other antient Concurrence with; or difference from this yet unheard of Hypothesis, of more Variations than those *Pliny* speaks of.

N. 4. A *Quadrans*, as you stile it, (testified to be such by the three Points impressed upon it) weighing $66\frac{1}{2}$ Grains. If it be a *Quadrans* for an Ounce *AS*, it has lost 43 Grains; if of a half Ounce *AS*, it exceeds it's proper Weight by 10 or 11 Grains; whether Supposition you will follow the Matter is not very material, and must be decided by the Fairness, or Waste of the Piece it self; for 10 Grains of Brass was of so little Value, that Coiners, if it so happened to fall above Weight, would not take the Pains to lessen it; both these Suppositions are almost equally probable.

No. 5. the *Stips uncialis*, as you stile it, Pa. 6. or *Uncia* of an *AS*, (or 12th Part of an *AS*,) which must always be called *Uncia*, be it great, or be it little; for it got this Name when the *Asses* were of a Pound Weight, and retained it when the *Asses* were but of an half Ounce weight, and by Consequence the *Uncia* but 18 $\frac{1}{2}$ Grains, or

to omit Fractions, no more than about the 26th Part of *Uncia ponderalis*. I know not whether I have so much of the Arithmetician, as to make this easily intelligible to you; for it seems to me very difficult to explain the *Roman Manner of Computation*; for they had two Sorts of *Asses*, the first called *As ponderalis*; and the second, *As dividens*: the *As ponderalis* amongst them always consisted of 438 Grains, neither more nor less, and continues so at *Rome* to this very Day, as *Villalpoundus*, and others inform us: But the *As dividens* was made use of when any whole Thing, were it greater or less, was to be divided into Parts; so that if a Man's Estate or Inheritance, or any Thing else was to be divided, the whole was called an *AS*, and its Parts, when divided, were called by the very same Names, that the Parts of the Primitive *As libralis* was, descending from *Deunx* to *Dextrans*, *Dodrans*, *Bes*, *Septunx*, *Semis*, *Quincunx*, *Triens*, *Quadrans*, *Sextans*, and *Uncia*. Thus an old *Roman Lady* dividing amongst her *Paramours* her whole Estate, which might possibly consist not only of many Pounds but Talents, to borrow that Greek Expression to signify a great Sum; is thus exposed by the Satyrist, *Juvenal*, Sat. i. v. 40. *Uncialam Proculius habet, sed Gallo douncem*; that is, *The one was made Heir of eleven Parts, the other only of a twelfth*: And as they did thus apply the *AS*, and its Parts to a great Estate, as when a Man gave all he had to another Person by his Will, that Legatee was said to be *Heres ex Assē*, or of the Whole, when of a third, or fourth Part, that Legatee was but *Heres ex triente*, or *ex quadrante*: So likewise did they apply the same Names, or Parts, to their Coins, were they greater, or were they less: Thus the *As dividens* of an *As libralis*, was *Uncia*

pon-

ponderalis, of a Six Ounce *AS*, the *Uncia* in Name was but half an Ounce in Weight; when the *Asses* were *Sextantales*, or of 2 Ounce Weight, the *Uncia dividens* was but the 6th part of an Ounce in Weight, and when the *AS* was *Uncialis*, the *Uncia dividens* was the twelfth Part of *Uncia ponderalis*; And lastly, when the *Asses* were at the lowest Ebb, the *Uncia nominalis* or *dividens* was only to weigh the 24th Part of an Ounce *Ponderalis*.

AND whereas I have, thro' Mistake, in the Beginning of this Page, computed what the twelfth Part of an half Ounce *AS* was to be, (Fractions omitted) *viz.* about 18 Grains or more, that Computation, tho' in it self very near the Truth, supposing the Coin were an *Uncia*, of an half Ounce *AS*, yet now upon further consulting your Book, the *Uncia* under Consideration is a *Stips uncialis*, or *Uncia* of an *AS* of 6 Ounces Weight, as you suppose it; then, as I in some Haste compute it, the whole *AS* was to weigh 2616 Grains, and the *Uncia* of such an *AS*, or the twelfth Part of it ought to be exactly (if my Gross Sum be right) 218 Grains, neither more nor less; tho' it is like I have some where mis-reckoned, for most certainly the twelfth Part of 6 Ounces must be 219 Grains, the precise half of 438 Grains, but it is not very material in this Matter which is Right, which Wrong; for the Weight of this *Uncia* is only 185 Grains, and therefore falls short 33 or 34 of what, upon your Supposition, it was coined for; but if there was a fall of the *Asses* betwixt the 12 Ounce *Asses* and the 2 Ounce *Asses*; in all Probability this is one of them, and suppose it coined, and the *Asses* lessened before the first *Punick* War, for *Pliny* says they were brought to 2 Ounce *Asses* under it; it must at the lowest Computation been coined

1984 Years ago, and therefore it is no Wonder if Rust, and Time and Cleansing may have occasioned so small a Loss, as those 30 odd Grains come to

You must excuse me if I seem tedious, when have not Time to consider, contract, and rectify Mistakes: However, I must not forget to acquaint you, that you are not to retract, as you seem to do the Title of *Uncialis*, because it weighs but half an Ounce, but if there be any Emendation to be made in that Expression, it must be instead of calling it *Stips uncialis*, only *Uncia Assis semilibralis*; for I suppose when there were not only *Asses* but *Decussēs*, and it may be *Centusses*, called *Æs grave*, which might be four Square, or oblong, and therefore capable to be joined in Heaps together, from which some think the Words *Stipendia*, or *Stips*, derived; yet because these lesser Pieces, and coined Copper or Brass were not in a fit Figure, *ut eas in cellis stiparent*; as they did those greater Weights, which we may rather call Sums than Coins. I think the Word *Stips* when applied to a small Sum denoting as it were an Alms, or small Relief given to a Beggar; the *Stips uncialis* was the 12th Part of the small *Asses* only; for an *Uncia* of an *AS libralis* was a full Ounce, and not likely to borrow it's Name from being usually given in Alms, for every such *Uncia*, according to the Value of Brass, or Copper, at last would be the 8th Part of a *Denarius*, and therefore equal to one of our Pence; and I cannot think that the *Romans* were so charitable, when Money was so scarce with them, and the Rich almost cruel and oppressive to the Poor, as to have no less Portion of Brass to give, than a whole Ounce, when a Sheep was valued but at 10 *Asses*, and an Ox at 100; I know not whether this Remark will bear the Touchstone; I only offer it to

Con-

Consideration, and tho' I think the Word *Stips* not so properly applyed to the *Uncia* of the greatest *Asses*, yet certainly none would ordinarily give less than the *Stips Uncialis* coined any Time since Q. *Fabius Maximus's* Dictatorship.

N. 6. (*Ducat. Leod. Pag. 280.*) This Coin you stile a later *Semis*, and gives in the Weight at 88 Grains. If this be a *Roman* Piece, and half their *AS*, it must be coined after the *AS* was reduced to it's smallest Size by the *Papyrian* Law, and should weigh $109 \frac{1}{2}$ Grains, of which Number it falls short by 41 Grains and a Half: But in Dissent to that learned Gentleman, whose Opinion you quote, I cannot but Note these two or three Things: 1st. That, as you have observed to my Hand, it wants the Inscription of *Roma* upon it. 2dly, That if you read the Inscription as that ingenious Person does, and to whom upon many Accounts I am greatly obliged, and particularly for the Loan of several Books, out of which I have made Collections, borrowed out of his Study by the Intervention of his Brother, the Rector of *Scruton*, who has lately lost his Lady, and was not at the Visitation this Spring. — You own that in the Words or Letters *ÆDNAAI ARG*, interpreted thus, *Ædificatio navium a Romanâ gente*: The V in *Navis* is inverted, or turned upside down; which tho' such Mistakes are commonly found in the Coins of Barbarous Nations, yet I know not whether the like be usually met with in the Monies of the *Greeks* or *Romans*. 3dly, I somewhat question whether that you read an S, or *Semis* be truly so, and not rather a Curle of Hair, much resembling an S. 4thly, And principally, and what is of most Moment with me, if it were a *Semis* coined in the first *Punic* War (and there was no such *Ædifica-*

tio Navium mentioned by *Livy* in the 2d *Punic War*). If it were in the Beginning of that War, it must have weighed either half twelve Ounces, or as you (elsewhere) suppose half six Ounces; nay, if towards the Middle or End of it, when the *Asses* were *Sextantales*, it must have weighed, or was coined for 438 Grains; whereas this Piece weighing but 88, has but two Grains more than a fifth Part of that Weight, and falls short more than three Quarters in four of what it should be; and therefore comes nearer to an *Uncia* than *Semis* of such an *AS*, as this Interpretation supposes it to be.

I have made all these Remarks upon your
Pag. 9. Brass Coins, rather for your Satisfaction, that you may be informed what the Pieces are in themselves, and in what Age they were stamp'd, then for any Knowledge I can gain by them: As to the main Design, which I am pursuing, concerning the Weight of the *Roman Denarii*, when Silver was first coined at *Rome*, for upon this Depends the Value of the first *Roman Census*, under *Servius Tullius* his Reign; which allowing that low Value of Brass, which the Stream of Modern Writers give it, of one *Drachma* of Silver being worth 840 Drams of Brass, a Senator's Estate would only be worth a very small Matter, and the Price of a Sheep but 8 *d.* of our Money, and an Ox but 6 *s.* 8 *d.* Whereas upon my Hypothesis of the *Denarii* being greater or less in Proportion, as the *Asses* were heavier or lighter, the Value of Sheep and Oxen, and the several Mulets put upon Offenders, and the *Roman Senator's* Estates will be better reconcileable to after Times than now they are: And a Senator's Estate, of the Alteration of which we read nothing, as far as I remember, 'till
Augustus

Augustus his Time, will not fall above one sixth Part short of what it was before the Commonwealth was turned into a Monarchy: I have not Time to state this Matter aright, but as far as I remember, *Budæus* and others reckon the *Census* of a Senator to be about 333 *l.* English, they reckoning a *Denarius* something short of what I do, who allow 8 *d.* to it, when at the lowest, before the Time of the Emperors, when possibly they were lighter; but as I compute the said *Census* being reduced from 100000 *Asses* to 10000 *Denarii*; the Sum they would make of our Money would be 333 *l.* 6 *s.* 8 *d.* This Computation is made upon their Hypothesis, that the *Denarius* was always one and the same from first to last: But upon my Hypothesis, which supposes the old *Denarii* to be diminished gradually, as the *Asses* themselves were from a *Quindecuple* Proportion, or from fifteen to one, I make a Senator's *Census* to have been fifteen Times as much as they make it; which amounts, if my Calculation be right, to 5000 *l.* English, according to *Livy*, who gives in the *Census* at a 100000 *Asses* only; but if we follow *Pliny*, or *Dionysius Halicarnassæus's* Account, who make the *Asses* 110000, or ten Thousand more, the *Census* then will rise to 5500 *l.* of our Money, which is indeed short of 80000 *H. S.* at which Rate *Suetonius* values it formerly, before *Augustus* raised it to duodecies *H. S.* in *vita Aug. cap. 41.* that is to say *Augustus* raised the *Census* or Estate of a Senator, from 6666 *l.* 13 *s.* 4 *d.* English, to 10000 *l.* exactly. I say, tho' we read of such a raising the *Census* in *Augustus's* Time, there might possibly be some Alteration before, and what was once but 100000 *Asses*, or 5000 *l.* at first, might afterwards be made 110000 *Asses*, or 5500 *l.* and at some inter-

intermediate Time be raised; as suppose when the *Asses* were altered from 10 to 16, to a certain Number of *Asses*, that made the Sum *Suetonius* and *Dio* reckon them at; I add *Dio*, for I find some think there is a Mistake, or an *Erratum*, in the Chap. of *Suetonius*, fore-cited. That such Changes might happen, is very probable from *Livy* and *Plutarch's* Account on the one Side, and *Pliny* and *Dionysius Halicarnassus*, on the other; Otherwise those ancient Writers are some of them guilty of much Carelessness and Oversight. You will understand by all this, that my Enquiries do more particularly relate to the ancient Weight of Silver and Gold, before or at the Beginning of the *Emperors*; for no Doubt the Gold, and as most allow, the Silver Coins also, were much diminished afterwards.

I have in a Letter to Mr. *Anstis*, which I now send to you, with a Liberty either to send or suppress it, as you think most convenient; In that I have inserted a Paragraph (as it were incidentally, and by Chance) concerning a Passage in *Pliny*, (which I must correct before I send it,) relating to the first Coinage of Gold, which I did for this Purpose, that it might give you Occasion to desire the Weight of the *Aurei* found in the *Quæstor's* Chest sometime ago in *Italy*; but might I be so bold either with him or you, to Trespas upon your other Business, I should desire the Weight of all Silver or Gold Coins, that are of a different Weight, coined before *Julius Cæsar's* Time; but especially of the Gold *Stators* or *Aureus's*.

As to the *Aurei*, or *Solidi*, coined since, I am almost satisfied, what they were from a large Number of them, with their exact Weight in Grains published by Mr. *Greaves*, in his Treatise, *De Denario Romano*, Page 103: And here having mentioned

ned Mr. Greaves, I must acquaint you, that upon shewing Mr. Obadiab Walker's Book of Coins and Medals to my Nephew, which I had not look'd in for some Years, because I never troubled my self about Inscriptions; that I find whatever he has about their Weight or Value, is wholly borrowed from Mr. Greaves, tho' not without Mistakes in transcribing it; which, I find, I long Time since corrected in the Margent, upon my first reading that Treatise *De Denario Romano*. I will give Instances of those that are most remarkable: Page the 3d, about the middle he prints *Sextunx* for *Sep-tunx*, Pag. 4. *post Med. Pag.* he writes * of an *AS*, which

* The Author not being able to recollect what he meant by the nine Parts of an *AS*, thought he could not make a better amends for that Error, than by giving the Passage it relates to, in Mr. Obad. Walker's own Words, which are these. ----- *Q. Fabius Maximus* being Dictator, the *Asse*s were again lessened, and the *AS* was made of the Weight of one Ounce, and after a while by the *Papyrian* Law of half an Ounce: And of these they coined not only Ounces, but halves, $\frac{1}{4}$, $\frac{1}{8}$, for the greater Ease of the People, as appears by the Marks, which we see upon the *Consular* Brass Money, (tho' this Money be now found rarely) amongst the which was the *Quadrans ratatus*, paid ordinarily for their Passage by Water from the City to Mount *Aventine*, then separated by a Pond or marshy Lake; upon this was the Stern of a Rates or Ferry-boat, and upon an *AS* was that of a Ship.

I have transcribed this Paragraph at large because of the Usefulness of it, especially to Persons less seen in these Matters, and for the better understanding some Places in the Poets, which have Allusions to the Price, paid for going over (as I should have thought) the River *Tiber*, had not Mr. Walker, who had been several Times at Rome, explain'd it otherwise; to render therefore the Meaning of this Price the Plainer, I will give an Account of the Value of an half Ounce *AS*, and the lesser Parts coined out of it; for such an *AS* weighed 219 of our English Grains, and was of the Value in our Money, exactly one Half-penny, the *Semis*, or half 109½ Grains, one Farthing; the *Triens* 73 Grains better than half a Farthing; the *Quadrans* 54½, half a Farthing exactly; the *Sextans* 36½ Grains, the

which I think he Mistakes for $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, that is for *Semis*, *Triens*, *Quadrans*, for in that Order they should be placed methodically.

Pag. the 5th, He calls the raising of their Brass Money a rise also of the Silver, when upon his Supposition that the *Denarius* remain'd the same, it was a Fall of Silver, for before the *Asses* were changed from 10 to 16, the *Denarius* was valued at 20 Ounces, and afterwards but at 16 Ounces.

Pag. 11. I think a great Part of his 9th Section, Page the 5th, is what I either do not understand, or if I do, I cannot assent to. Pa. 6, He calls a *Drachma* of Gold, an *Aureus Philippicus*, or *Daricus*; whereas both these Coins were of Double that Weight at least, or equal to the *Σιδραχμα*, which he distinguishes from them, and calls two *Drachma's*; and then says a *Stater* was 4 *Drachme*, which is not true of the Gold *Staters*, but of the Silver *Staters* only. Next he says a *Talent* was equal to 10000 *Drachme*, which is a most inexcusable Mistake; for all Authors agree, that the *Attick Talent*, which was the most common of all *Talents*,

the 4th Part of a Farthing; the Ounce, or 12th Part of such an Ounce if any such were ever coined; $16\frac{1}{2}$ the 8th Part of a Farthing, and the half of such a 12th Part, 8 Grains $\frac{1}{4}$. As far as I understand Monsieur Eifenschmid, Pag. 3. he says, their French *Denarii* weighed 24 of the Grains, and yet, as I conceive, were thought too Small to be coined single, and therefore they coined two together, and called them Doubles, Six of those Doubles did within my Memory pass for our Penny; but in the French and Scotch Account for 12 Shillings, I have rectified the Method which Mr. Walker placed them in, for the *Semis*, *Triens*, *Quadrans*, *Sextans*, *Uncia*, and *Semiuncia*, are in the natural Order they should have been placed in. Mr. Walker's Skill lay in reading the Inscriptions; but weighing very few of their Brass Money, else he would never have placed his Ounces first, which were but the 12th Part of an AS, as is related already, and explained in the 6th Page of this Letter.

Talents, consisted but of 6000 *Drachmæ*, and the Learned affirm the same of all *Talents* whatsoever, but with this Difference; that as their *Drachmæ* were greater or less, so severally their *Talents* also were: And I believe that neither he, nor any Man else can find any *Talent* that consisted of more than 6000 such Pieces or Coins, as they reckoned by; except when they reduced one Sort of *Talent*, to a *Talent* of a different Nation. Thus the *Oboli* and *Drachmæ* of *Corinth* and *Ægina*, being unequal to the *Attick*, and bore the Proportion of ten to six, six Thousand of the first made ten Thousand of the second. But when I said all *Talents* were computed to consist of 6000 *Drachmæ*, I meant it of the great *Talents*, which were Sums, and not Coins; for *Festus*, a *Roman* Grammarian, reducing several *Talents* to the *Roman* Money, makes some 6000, others 4500, others 12000 *Denarii Romani*; and at last adds, that the *Romans* call'd that a *Talent*, which was only of the Worth of six *Denarii*, the *Syracusians* of three *Denarii*; and those of *Regium* in *Italy*, was worth no more than a *Victoriatius* or *Quinarius Romanus*.

THIS Book of *Festus* is very imperfect, and more than half of it fill'd up with Chasms in every Page quite through, which makes the Remainder of what we have, corrupt in many Places, that it cannot be relied upon: So that by what I quoted out of Mr. *Walker*, it shows he is not every where to be depended on, and I think did not understand the Difference betwixt the Golden and Silver *Stater* to be met with in most Authors that have writ *De Re Nummaria*. He adds an *Attick* Ounce makes eight *Drachmæ*, I know that our modern Authors says so, and it may be some of the later *Latin* Authors: But I Question whether ever the *Greeks* used

used that Term at all, 'till they were become Subjects to the *Romans*. He also in the same 5th Page, falsely reckons ss. for ss. 2d. to the *Tro* Ounce; and when he compares that with the *Roman*, he is mistaken in the Numbers, and says th contains ss. 246 ; when it's said by other Author and that truly, to contain ss. 256 ; and makes th Difference of the Ounces to be ss. 14 , when it ought to be but ss. 4 .

IN the same 5th Page, at the Bottom, he tells us, that an *Aureus*, or *Denarius Aureus*, for so it was also called, weighed ordinarily two *Denarii* of Silver. *Gronovius* will not allow that Denomination of *Denarius Aureus*, or that it was so styled by the *Romans*; tho' the *Latin Poet* *Plautus*, styles the *Philippick Aureus* so; and this might have help'd to have corrected his Mistake of a *Drachma Aurea*, which I believe he can produce no good Authority for.

Page 7. HE says that 48 *Aurei* were coined out of a *Roman Pound*. If *Pliny* be rightly understood, they coined no more than 42, or at most 45, even in *Nero's Time*: But this is a Point I want Information in, and cannot be decided, without the Examination of the precise Weight of the *Aurei*, before the Time of the *Cæsars*. *Gronovius* is of this Opinion, if my Memory fail me not, (but I have not Time to consult him a fresh) he is much Mistaken, for three *Aurei* of *Julius Cæsar's* amount to such a Weight, viz. 122, 123, 124 Grains, (with Fractions) which are irreconcilable with more than 43 or 44 out of the Pound, as any will find that will take the Pains to divide the *Roman Pound*, containing ss. 256 Grains, by the Number of Grains in the *Aurei* above recited. Thus much concerning Mr. *Walker*, whom I find (by com-

comparing his with your Accounts) did betray you into those Errours I formerly took Notice of.

I am now come almost to the Period, both of my Design and Knowledge together, and that I may not be importun'd to add any more to what I have troubled you with already, and acquaint you with what I had not room to dilate upon in my first Letter. I proceed to speak of the Diminution of the *Aurei*, and as they fell by gradual Steps from *Julius Caesar's* Time to that of *Constantine the Great*, and for vindicating of whose Honour I make this Recital.

The <i>Aurei</i> of <i>Julius Caesar</i> , as I learn	Grains.
from Mr. Greaves, were _____	124
Under <i>Augustus</i> there are three of 119,	
and one of 118 _____	118 $\frac{1}{4}$
In <i>Tiberius's</i> Time there is one of 118	
another of _____	117 $\frac{1}{4}$
Under <i>Nero</i> the greatest is 116 Grains,	
and the least _____	113
<i>Orho</i> 108 $\frac{1}{4}$. ——— <i>Vitellius</i> _____	112 $\frac{1}{4}$
<i>Vespasian</i> , the greatest 114 $\frac{1}{4}$, the least	
111, 110, and _____	109
<i>Titus Vespasian</i> 109 $\frac{1}{4}$, ——— <i>Domitian</i>	
113 and _____	112 $\frac{1}{8}$
<i>Nerva</i> 111 $\frac{1}{2}$, <i>Trajan</i> 110 $\frac{1}{2}$, another	
put last _____	121 $\frac{1}{4}$
<i>Antonius Pius</i> , 119 $\frac{1}{4}$, ——— <i>Aurelius Venes</i> ,	
117, ——— <i>Marcus Comm. Ant.</i> _____	114
<i>Probus Imperator</i> , 106, <i>Gallienus</i> 72 $\frac{1}{2}$,	
——— <i>Maximianus</i> _____	74 $\frac{1}{4}$
<i>Carinus</i> 72 $\frac{1}{2}$, ——— <i>Constantinus Max.</i>	
<i>Aug.</i> _____	70 $\frac{1}{2}$

THE Reason of my giving you this Account
is,

is, as far as I can, to vindicate that first Christian Emperor from the Imputation, which this great and learned Critick's Ignorance, in the Value and

Weight of Golden Coins, has caused him un-
Pag. 13. advisedly to throw upon *Constantine*. The

Apology, or rather Accusation he makes for his changing and limiting the Number of the Golden *Solidi*, in a *Roman* Pound, to 72 *Solidi*; which is to be met with in his 4th Book, *De Pecunia Vetere*, ch. 13. Pa. 345, of his 4th Ed. in these Words, speaking of the Alteration he supposes, and Charges *Constantine* with, *Hæ res novæ in signata pecunia Romana, tantæ sunt, prorsus ut deceant non alium quam Constantinum, qui ut cæremonias & religiones pie probeq; sine controversia; ita cæterorum domi militiaq; institutorum, quædam dubium an salutariter omnia, certe callide & astute commutavit; adeo ut tam cognomini suo parem se credidisse videatur, si nihil reliquisset quale acceperat. Quem impetum viri, Deus arcana vi ad bonum Christiani sacramenti convertit, &c.* Such a Reflection as this, would have rather been expected from the Mouth of an Heathen *Zosimus*, then the Pen of a Christian Author; when all, or most of it, is only grounded upon *Gronovius* his own Mistakes, who knew not, or observed not, that the Fall was made before *Constantine*'s coming to the Empire, and the Law that regulated the Number of *Solidi*, and fix'd them to 72 *Solidi* in the Pound: Nor was it made in the Beginning of his Empire, when there were more *Augusti*, or *Cæsares* then one; nor when *Licinius* was joint Emperor with him: In all which Time, it's like the *Solidi*, or *Aurei*, were at a lower Ebb then he order'd them to be, and less than four Scruples to the *Aureus*; but after the overthrow of *Licinius*, and in the 18th Year of his Reign, when *Anic. Paulinus* & *Caian*,

Gaius. Julianus, were Consuls, as appears by the Law made for this very purpose, *Cod. Theodosianus*, *Lib. 12. Tit. 7. l. 1.* Which, because you may not have that Book by you, and it is not to be found in the *Codex Justinianus*, who, as I think, has omitted it by an Error in the Transcript, or Copy, which renders it impossible to be observed: I will transcribe it at large in the Words following.

Si quis solidos appendere voluerit, auri cocti septem solidos quaternorum scrupulorum nostris vultibus figuratos adpendat pro singulis unciiis; Quatuordecim pro duabus [unciiis]: juxta hanc formam omnem summam debiti inlaturus; eadem ratione servanda, etsi materiam quis inferat ut solidos dedisse videatur. Aurum vero quod infertur æqua lance, & libramentis paribus suscipiatur, scilicet ut duobus digitis summitas lini retineatur tres reliqui liberi ad susceptorem emineant, nec pondera deprimant, nullo examinis libramento servato, nec æquis ac paribus suspensio statore momentis, &c. P. P. XIII. Kal. Aug. Paulino & Juliano Cons.

It is manifest that in this Law for *Septem* shou'd be read *Sex*, and for *quatuordecim*, *duodecim*, for 6 four Scruples make 24, or a full Ounce, as *Gronovius* himself, and all others allow.

Pag. 14. AND then it is likewise a great Mistake, but common to *Gronovius*, with all other Authors I have met with, that it is an Hardship to the Subjects, and gain to the Prince, to lessen the Coin; when, contrary-wise, all lessening the Coin redounds to the Ease of the Subject, and Loss of the Prince, in his Tributes, Taxes, or Quit-Rents; for what the Prince gains in coining light Money the first Year it is made; so much he looses by it every Year after: And it is noted

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by our old Historians, as a great Piece of Policy in the Lord Treasurer Bishop *Edendon*, or *Edminton*, who first made that Mutation in our Coin, raising the Pound from 20 to 22 s. 6 d. and then to 25 s. and *H.* 5th raising it to 30 s. and so on; which raised the Price of all Commodities, and lessened the Rents of the Lordships, and other Lands, and almost reduced the King's Revenues to nothing; and yet I think the Cause of all this was not discover'd 'till after *H.* 8th Reign, who, if he had lived, would have been the greatest loser by his abominable base Money; This was not, I say, foreseen, or began to be remedied 'till the latter End of *Edw.* 6th Reign, and was avoided in Queen *Mary's*; but not absolutely taken away 'till *Q. Elizabeth's*, since whose Time it has been laid open by some, and more particularly by Bishop *Goodwin*, in the Life of Bishop *Edendon*, (as he calls him) Bishop of *Winton*. So that it is a mere Calumny in *Gronovius* to blame and lay so heavy a Load on *Constantine*, for endeavouring to settle the Coinage at a certain Rate; that neither the Prince, nor the People should be deceived, nor the Weight of the Coin varied, as I observed to you in my first Letter: That this continued the Standard of Gold, from *Constantine* the Great, to the Reign of the Emperor *Heraclius*, doth appear from Abundance of *Solidi*, whereof none fell short of 68 Grains, nor exceed the Value of 70 Grains; the odd two *Solidi*, being, as I suppose, allowed for the Charge of Coinage. It is a Question much debated by the *Civilians*, who should bear it, the Prince or the People, some holding one Side, some the other; but, I think, it ought to be bore mutually by both: For both the *Codex Theod. Lib. 13. Tit. 2.* and the *Codex Justinianus, Lib. 10. Tit. 76.* under, or by one singular

lar Law, [for there is but one Law in that Title, *De argenti pretio quod thesauris infertur*] which provides as follows.

Imp. Arcadio & Honorio, Conf. Cæsario orient. & Attico occidentis. [viz. A^o. Christi 339. al's 337] *Jubemus ut pro Argenti summa quam quis thesauris fuerit inlaturus, inferendi auri accipiat facultatem: Ita ut pro singulis libris argenti quinque Solidos inferat. Dat. XI Kalend. Martii Constantinopoli, Cæsario & Attico Conf.* This Law in the *Cod. Justinianus*, is Word for Word the same quite through, as most others are that are borrowed from the *Theodosian*, the Books and Titles only being different; which proves that the Value of Gold and Silver stood at the same Value from A^o. Christi 339, 'till the *Codex Justinianus* was publish'd, which falls upon the Ides of April Decio 5^{to} Consule. But *Helvicus* does not furnish us with this Consul; but says, the *Codex* was published A^o. Christi 531. But Dr. Duck, pag. 15. in his Book, *De & Usu Autoritate Juris Civilis*, pa. 50. says they were twice published, A^o. Regni 2^{do}. in haste, and had a Review, or *Editio repetita*, A^o. regni octavo, which falls in with A^o. Christi 534. From which Time *Cod. Justinianus* continued in Force, 'till the Year of our Lord 870, or thereabouts; 'till *Basilius* and *Leo* the 6th his Son, out of Envy to *Justinian*, published the *Libros Sexaginta Basilicorum*; and then their Authority, viz. of *Justinian's* Laws, was laid aside, 'till they were revived again in Europe, after the Destruction of the *Eastern Empire*; and are of Authority in most of the Kingdoms here in the *West* (the Kingdom of *England* excepted).

I have made this long Excursion, as much for my Nephew's Sake, as yours, whom I purpose

shall transcribe this Letter, as he did my Former as well for his own Use as mine. And by all this it appears of what Use and Continuance this excellent Law for fixing the Value of the *Solidi* was and ought therefore to have been rather prized than depreciated by *Gronovius* in the Manner he has done. Before I go further I must Note, that tho' most Authors, from the Law of *Constantine* afore-quoted out of the *Cod. Theod. Lib. 12. Tit. 7* which appoints, that a Pound of Gold should be coined into 72 *Solidi*; thence State the Value of Gold in respect of Silver should be, as one to 14 $\frac{2}{3}$; yet it was either not observed at all, or interpreted, as it was more clearly expressed and ordered in the Law of *Arcadius* and *Honorius* last afore-cited; (in the End of Pag. 14th foregoing) whereby five *Solidi* are allowed to pass for one Pound of Silver, which reduceth the Value of Gold to Silver exactly to the Proportion of one to 14, without any Fraction; for 14 fives gives not 72 *Solidi*, but 70 only, which will spare any Man a great deal of Trouble, that is to compute the Worth of Gold by a like Worth in Silver, when the Computation is made by Pounds only.

By this Time, I suppose, you will be no less weary with Reading this long Letter, than I am with Writing it; and therefore I shall now conclude, with my humble Thanks for all your Favours, and with a Licence, if you think good, of communicating all my Letters (upon this Subject) to any one that is a Studier, or Favourer of Matters relating to the *Rei Nummarie*, to be either approved, or gain-sayed, as they shall see Reasons for, or Arguments against it; hoping that both you and they will make Allowances for the haste they are writ^t the Age of him that writes them;

them; for my Head and my Memory is not what they were, when these Things were fresh in my Mind, and have been for some Years laid aside, and are now only revived, that either of my Nephews may be better enabled to pursue what I have left unfinished, and understand those Collections I have gathered out of most of the *Greek* and *Latin* Historians and Poets. There is only one Thing I would Caution against, that they may be imparted to none that should publish what

Pag. 16. I have writ, as a Specimen of their own Invention; and so prevent either of my Nephews of that Grace of Novelty, with which their Labours might appear in the World, if not prevented by such as were not so well furnish'd with Collections to compleat the Design, as either of them may be: For when I had almost made ready a Treatise, of the like Nature, with that which is communicated to the World, under the Title of *Chronicon Pretiosum* (for *Pretiorum*) I was forced to suppress it; tho', I think, I may modestly say, there is scarce one Price, or Instance there, which I had not in mine, with a vast many more, out of M. S. S. never seen nor known by that worthy Author, and which will make a Part of my intended Work, if it ever come to Light. You see I have compleated two Sheets, with a *scriptus & in tergo*, and therefore remain,

Dear S I R,

Melfonby, May.
4th, 1722.

your most obliged,

and faithful Friend

and Servant

William Smith.

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Wri-

Writing to Mr. *Anstis* in great Hastē and without any Book, or Notes before me, in casting up the Number of Scruples in a Pound of Gold, when multiplied by 20 instead of 288, I omitted the Unites, * and so for 5760, falsely made the Sum of 5600 only, for which Reason, all the following Calculations are false, and must be rectified in my Cousin's transcribing it, which I desire you to signify to Mr. *Anstis*, as an Excuse why it does not come to him under my own Hand; but is however (except in that Passage) a true Copy of what was so. You will easily perceive that my Estimate of *Pliny's* 900 *Sesterces*, as equal to 5760 of these in After Ages, does confirm, and is confirmed by the Opinion you have first advanced, and deduced from the Weight of an *Uncia* of a *semilibralis AS*, (*Ducat. Leod.* p. 280. No. 5.) for these 900 *Asses* neither will agree with the *Asses librales*, for then their Value would be too great, and ought to be worth half an Ounce of Silver; nor with the *Sextantarios Asses*, for then they would be also too little, and be worth no more than 8*d.* but well enough agree with the 6 Ounce *Asses*, to which I have ascribed them, and rated them at 13*d.* according to their weight, which if it were exact, ought to be 14*d.* or the exact 4th Part of an Ounce *Roman* of Silver, which I Value at 4*s.* 8*d.* neither more nor less; you ought therefore to prize this *Uncia*, or No. 5. at an extraordinary Price, for its extraordinary Rarity, and upon which so great and unexpected a Discovery depends.

To

* This Error could not be easily altered, without changing the Pages, and therefore the Author suffer'd it to pass uncorrected.

Pag. 17. To shew the unreasonableness of Gronovius's Reflections upon Constantine the Great, for lessening the Aurei, or advancing the Value of Gold, I have made the following Suppositions, viz.

1st, SUPPOSING in the Time of the Consuls at Rome, the Gold bore the Proportion of one to ten of Silver, and 36 *Aurei*, under their Government, coined out of one Pound of Gold, each *Aureus* would weigh 8 Scruples, and Gold be, as is said, as 1 *l.* to 10 *l.* of Silver, I mean Roman Pounds of both, weighing of English Money 56 *s.* 6 *d.* and better, but I omit the odd Six-pence to avoid Fractions.

2dly, WHEN there were 42 *Aurei* coined out of a Pound, supposing the *Aurei* to go at the Rate they did, when there was 36 in the Pound, the *Aurei* would be of the Weight of 6 Scruples, and the Proportion of Gold to Silver would be as one to 12 *l.* $\frac{1}{2}$.

3dly, WE are certain that the *Aurei* were lessened in, or before Nero's Time, to 48 in a Pound, and were valued each, as Tacitus and Suetonius informs us, at 100 *H. S.* which brings the Value of Gold, in Respect of Silver, to be as 1, to 14 *l.* $\frac{1}{2}$.

4thly, IF we suppose 54 *Aurei* in the Pound, and the *Aurei* yet to keep their former Value of being reckon'd worth 100 *H. S.* (which is very unlikely). The *Aurei* will contain 5 $\frac{1}{3}$ Scruples, and 1 Pound of Gold will amount to 16 $\frac{2}{3}$ of Silver, this being an Advance above what Constantine raised it to, is

F 4

to

to be rejected. And we are all along to suppose that as the *Aurei* were lessened, their Value likewise lessened, and we are certain of nothing in this Matter, but that the *Aurei*, either when 42 in the Pound, or 48 in the Pound, or at both Times that they were passed and were reputed to be worth 100. *H. S.* which at 2*d.* a Piece, make 16*s.* 8*d.* of our present *English* Money.





Part of A

L E T T E R

Writ to John Anstis, of the — Temple, Esq; which was to go thro' the Hands of Mr. Thoresby. Dated May 4th, 1722.



UN a Passage of *Pliny*, writing upon this, (Subject *De Re Nummaria lib. 33. c. 3.*) he does not only imply, but expressly tells us the Contrary; where speaking of Gold, he has these Words: *Aureus Nummus post annos LXII. percussus est quam Argenteus, ita ut Scrupulum valeret Sesterctis vicens quod efficit ratione Sesterciorum qui tunc erat H. S. DCCCC.* This plainly shews that the *Sestercii*, four of which make a *Denarius*, were vastly larger then they were at the Time when *Pliny* writ his Book: That *Pliny* was a Concise Author, and therefore his Style in many Places difficult to be understood, must be allowed by all that

that read him in his own Language. And therefore I cannot but upon this Passage observe, that something must be understood by the Reader, which is not fully, or plainly expressed by the Author: I mean that *Pliny* must take it for granted, that all the *Romans*, for whose Information he composed his History, knew well enough how many *Scruples* were in a *Roman Pound*, and what Sum they would make, when multiplied by 20, viz. 5760. This being supposed, he makes no mention of that Number, but tells them (that they might take the greater Notice of the Change between the *Sesterces* of former Times, and those of their own) that what was Worth 5760 in his Age, were sometime before, or in the first *Punick War* comprised, or contained within the Number of DCCCC *Sesterces*; which, I suppose, he borrowed from some more ancient Writer. If therefore we divide the first Number 5760 by the Second 900, we shall find the Quotient to be, if I am not mistaken, $6\frac{2}{3}$ of the modern *Sesterces*, when *Pliny* wrote his History, and dedicated it to the Emperor *Titus Vespasian*, about the Year 831: Whereas the *Sesterces* here spoken of, must necessarily be coined between the Year 485 and 502, in which the first *Punick War* was ended; In which War the *Asses* were reduced to two Ounce *Asses*: For according to my Hypothesis, who suppose a change, as well in the *Denarii* as the *Asses*, in a Gradual, tho' possibly not always in the same Proportion: If the *Sestercii* had been of the Value of two Pounds and a half of Brass, and the first *Denarii* of two *Roman* Ounces to answer Ten of the Pound *Asses*; and a *Sesterce*, the 4th Part of a *Denarius*, or half an Ounce of Silver, that would Answer twenty eight Pence of our *English Money*; which Multiply-

plied by 900, makes 105 *English* Pounds; but of *Roman* Pound, consisting of 56 Shillings and better, about $37\frac{1}{2}$; which would infer a far greater Disproportion between Gold and Silver, then can ever be imagined in the *Roman* State. We must therefore seek out for some lesser Sort of *Asses* than the *Librales*, and Mr. *Thoresby*'s Coins furnishes us with one, Pa. 280, N. 5. not indeed *in toto sed in partibus*, for it is a (a *Stips Uncialis*, or) an *Uncia*, or 12th Part of an *AS*, which must needs have an *As Semilibralis*, or of six Ounces; so that there might be 12 half Ounces in the whole *AS*. Therefore let us examine what *Asses* of half a Pound will arise to; and this, according to my former Supposition of being the 4th Part of a *Denarius*, weighing 4s. 8d. a *Roman* Ounce; the *Sesterces* ought to be worth 1s. 2d. Now Multiply as before 900 *Sesterces* by 14d. the Sum will exactly rise to 52l. 10s. *English*; which being again divided by 56 Shillings, (the *Roman* Pound) will give a Quotient of 18l. $\frac{43}{2}$.

S I R,

Meltonby, May
4th, 1722.

I remain

your humble Servant

William Smith.

S I R,

I request you, if you have any of the *Aurei*, lately found in the *Quæstor*'s Chest in *Italy*, you will give me the exact Number of the Grains they contain.

This

This is all I find of the remaining Copy to Mr. Anstis, which I met with when I sought for that of Mr. Thoresby's of the same Date; but being now near seven Years ago, I did not at first Understand it, nor much regard it: But after some Consideration of it, I find that 181. $\frac{4}{7}$ made the Value of Gold and Silver to be as one to 18 $\frac{4}{7}$; whereas, most Authors reckon it no higher, when first coined, then as one to 15. Therefore I have since tried, and find that instead of reckoning 14d. to the Sesterce reckon'd 11d. it falls no higher, the 14 $\frac{4}{7}$; but multiplying 900 by 12d. the Sum amounted to 10800 Pence, which again divided by 240, the Pence contained in an English Pound, the Quotient arises to 45 l. English; which 45 l. reduced to Shillings, made 900; and these 900s. divided by 56, contained in a true Roman Pound, gave 15 l. 5 s. which 'bating the 5 s. is exactly 15 Times more than one Pound of Silver was at that Time when Gold was first coined.

I foresee that the English Reader will be much surprized, that I should speak of any Pounds above 20s. but then he must call to Mind, that I speak not of Nominal, but real Pounds; for a true Pound Troy of our Money, is no less than 62s. and a true Roman Pound equal to 12 Ounces (or three Parts of an Avoirdupois Pound), amounts to 56 Shillings and something better of English Money. And because I would make this difficult Subject as easy as I can to a Novice in these Matters, I shall further acquaint him, that the latter Sum that I now pitch upon, supposes the Asses then in being were four Ounce Asses, and therefore coined at least before the End of the first Punick War. To which Assertion, I foresee, it will be objected, that then it would not agree with the Time when Gold was first coined, said to be 61 after Silver.

To

To which I answer, that there is no Likelihood, that they that had so much Gold before the Gauls took that City, which was long before their Coining of Silver, should defer that of Gold to so long after: Besides several Authors, as Hotoman, Chifflet, and others, endeavour to make this appear, from a Passage in Livy, that Gold was coined before the Year of the City 547; because Livy tells us, in the Year 543. Lib. 26. ch. 36. that in that Year Lævinus, then Consul, gave this Advice, Aurum Argentum æs signatum Senatores Craстина die in publicum conferamus; which the Senate assented to, and was done accordingly: Which agrees with an Account I received after the Writing of this Letter, to be met with in Monsieur Eifenschmid's Preface to his Discourse, De Ponderibus & Mensuris; where he informs us, of Asses of 12 Ounces, 9 Ounces, 8, 7, 6, 4, which are still to be met with in the Cabinets of the Noble Men of France, and not many after either of 2 or 1 Ounce Weight, now remaining to be met with in France.

I have now copied a 3d Letter of Mr. Thoresby's, dated the 30th of May, and also the Letter dated June the 13th, 1722, because it makes Way for a third Letter of my own also, by reason of the particular Account it gives of the several and different Weights of the Asses, found in the Earl of Pembroke's invaluable Collections, in which one is of the Weight of ten Pounds, another of 5 l. another of eight Ounces, of which their Historians are silent; and some Denarii that were of those that weighed 62 Grains, and some other double of them also, as will appear by the following Letter it self here subjoyned, and principally for the Sake of what is here repeated.

Leeds,



Leeds, May 30. 1722.

Reverend SIR,



YOU have very much obliged me by your last instructive and learned Epistle, particularly your *ex-scripta* from *Greaves, de Romano Denario*, which I have entred in the Margent of my *Walker*, with Reference to your Letter of such a Date; Having never seen *Greaves*. But by the Way, I think your Caution, Pag. 16. very necessary, lest some Plagiary should pretend to the Glory of your great Ingenuity and Industry; 'But tho' I question not in the least your Nephew's Care in that Affair, yet may I presume to request, that you would revise and publish it in your own Lifetime. The little, the very little Skill I have in these Matters chiefly relate to the Inscriptions; but as I have given you the Weights of all the *Denarii* you requested in this *Museum*, together with the *Græcian* Silver and the *Roman* Brass Monies before the *Imperial*; so I shall use my Interest with my Friends in the South, especially for the *Aurei*.

I have sent yours to Mr. *Anstis* by a private Hand, not knowing whether it would be frank'd to him at this Juncture. I shall write to Sir *Hans Sloane*, who has a most noble Collection; which I recommended to the View of Bishop *Nicolson*, who in return writes, he was surprized with it; And that it exceeded those of most of the Foreign Princes in *Germany*, tho' so much celebrated by Travellers.

vellers. I only stay for an Account of the terrible Effects of a sad thunder Shower near *Halifax*, which has cast down Part of *Repponden* Chapel, tore up the Corps out of their Graves, and drowned 7 out of 8 in one Family, none saved but a Boy who is distracted at present, upon the Sight of his Father's Brains, dashed out by the Fall of the House. Things of this Nature are generally aggravated. But I have writ to a Gentleman in those Parts for an Account that may be depended upon.

As to my own Coins, the entire *Roman AS*, No. 1st, seems not in the least diminished. No. 8. the Letter V not inverted, but couched betwixt the A and I, in N N I. (I think there is a Mistake in the like foregoing.) This is all as I remember, that you desire further Information in as to my own: Only I would beg the Favour to keep the Copy of yours to Mr. *Anstis*, there being many Passages in it that I knew not, yet are for the Honour of your Relations. I cannot possibly have Leisure at this Juncture to Copy it; But am in all that lies in my Power,

DEAR SIR,

*Leeds, May
the 30th 1722.*

Your obliged humble Servant,

Ralph Thoresby.

P O S T S C R I P T.

Dated June 13. 1722.

YOUR Nephew was so Kind as to call of me, but I had not then had Leisure thoroughly to consider your learned large Letter. I have since wrote

wrote to Sir *Hans Sloane* for the Weight of such *Aurei*, as are in his noble *Museum*; But tho' I have waited a Fortnight, have not received any Reply: this time of the Year they are frequently at their Country Seats; But it has had this good Effect that I have since discovered in my Diary, *Ann.* 1701, what the celebrated Earl of *Pembroke* acquainted me with, when he shewed me his invaluable Collection of Medals, amongst which was a Roman *AS* of a Pound weight, he has since procured one of five Pound Weight, as I remember, (but I am not yet come at that Volume in the Review of my Diary). His Lordship shewed me also one of eight Ounces; which he said their own Historians are silent of. They were afterwards reduced to two Ounces, and in Conclusion to one Ounce, and at last to half an Ounce. The Rest relates chiefly to the Inscriptions upon the Brass Monies; but as to the Silver *Denarii*, his Excellency shewed me not only Variety of the single ones, with the *Quinarius*'s; but some double *Denarii*, and the double of them again, or Silver Mardations, originally of that Worth and Weight of our *Denarius*'s; But now invaluable; and such as I confess I never saw before or since; this being above 20 Years ago, was quite out of my Head, 'till in a Review of my Journals this very Week, I very opportunely met with it, before the Letter was sent to your Nephew. Enquiring Yesterday of the Market People, I was told, your Nephew (who possibly might call in my Absence, and the Servant might neglect to tell me) was now with you at *Meltonby*, so that I send it by the Post.

Leeds, 13 June,
1722.

I can-

I cannot be positive how this Mistake in Mr. Thoresby's Letter happen'd; but this is certain, that what in his Letter is called No. the 8th, which speaks of the V. belongs to Number the 7th and what follows after, concerning the A and I, in N N I, relates to Number the 9th, Page 276, and the V, or Quinari- us to Page 281.





Melfonby, Wednesday Afternoon, July 25th, 1722.

Worthy SIR,



WHEN I writ to you last, it was chiefly to ease you of that Trouble I had before endeavour'd to engage you in, for procuring me the heaviest Weight you could be informed of, from any of your Friends, that the *Attick Drachme*, or *Roman Denarii* had been coined at; resolving now to acquiesce in those several Accounts I have met with, as to this Matter, upon my perusal of *Dr. Bernard's Book De Mensuris & Ponderibus*.

AND because I had formerly given you an Allowance to communicate the Conjectures I had sometime ago sent you, to whom so ever you thought fitting, that would give themselves the Trouble of perusing them: I now desire you to respite that Licence for sometime, 'till I have added some Replies to those Objections I imagine would be made against them at the first Reading; as likewise to strengthen my Arguments with some further Proofs, not newly come to my Hand, but so long ago, that I had almost forgotten them.

THE greatest Objection that I foresaw could be made against my Interpretation of the Passage in *Pliny, Lib. 33. c. 3.* concerning the Value of Gold at its first Coinage at *Rome*, being estimated every Scruple at 20 *Sesterces*, and yet the whole Number of *Sesterces* amounted to no more than
900 *H.*

900 *H. S.* which most former Authors thought was a gross Mistake, and should have been read 5760; and that this could not be reconciled by computing the *Sesterces* at a greater Value and Weight than they were at last coined at, by Vertue of the Expression in *Pliny*, *Ratione Sesterciorum qui tunc erant*: Because that Gold was not coined, as *Pliny* writes, 'till 62 Years after Silver, and Silver not being coin'd till A^o *Urbis* 484, or 485, the Coinage of Gold would fall in with the Year 546, when the *Sesterces*, by my own Account, were fallen to the lowest Ebb, if the *Papyrian* Law followed upon the Heels of the Reduction, under *Fab. Maximus's* Dictatorship; and by which last, *Pliny* makes his estimate, when he assigns 20 *H. S.* to each Scruple; and so makes a Pound of Gold equal to 5760 *H. S.* Now if the *Sesterces* were brought to their lowest Value before Gold was coined, then that Place in *Pliny* must be corrupted, and no stress at all to be laid upon it. I formerly had nothing to oppose to this Objection, but Mr. *Walker's* Authority, "Pag. the 6th, §. XI. where he says, LXII "Years after the Coinage of Silver; that is, A^o. " *Urbis* 546, (tho' *Pliny*, in another Place, saith "it was, and it is more probable it should be on- "ly XII A^o *Urbis* 496.) they began to stamp "Gold." But he neither cites the Place, nor can I upon the nicest Search meet with it.

MR. *Brerewood*, in his Book *De ponderibus & pretiis veterum nummorum*, p. 32, says thus, *Aurum denique signatum Romæ primum fuit. A^o. LXII. (nam sic reponi debet) post percussum argentum*; which implies, at least, there was a various Reading of this Place. But I was long before I could find either such a Reading, or such an Opinion, 'till I met with it in *Hotoman*, who treating upon that Pass-

age of *Pliny*, lib. 33. c. 3. tells us; p. 332. That he conceives the Reading LXII, to be falsly put for XII annum. And because such an Emendation wanted something to confirm it, he proves that the common Reading cannot be true; because some Years before, there is a Passage in *Livy*, that is inconsistent with it, *Livy*, lib. 26. cap. 36. where we meet with these Words, *Aurum Argentum et signatum omne Senatores crastino die in publicum conferamus; et iterum omne aurum, argentum et signatum ad Triumviros mensurios extemplo deferamus nullo ante Senatusconsulto facto*, which was done accordingly. Now though this happen'd but 3 or 4 Years before the *Annum Urbis*, to which *Pliny* fixes it; yet it first proves that Gold had been then coined at *Rome*, and how long before, we know not; but it is very unlikely, that when once they had coined Silver, and in a few Years made so many Variations in the Weight of Brass Money, and brought it to the lowest *Asses* that ever were; that then, and not before, they should begin to coin Gold; or *Pliny* talking of the *H. S. qui tunc temporis erant*, when both the first and last Value of the *Sestercii* were all over, before this *Annum* LXII ever commenced, or came in Play; thus far in answering that Objection: The farther corroborating Proof, that the *Denarii* were coined at first at a greater Weight than either those of the *Consulares*, or *Cæsarienses*, which are now usually met with are found to carry, is borrowed from *Aristotle*, *Diod. Siculus* & *Pollux*; all which so describe the *Sicilian Decalitron*, from whence the *Romans* have borrowed their *Denarius*, that being a Silver Money, it was in Value the same with ten *Librae*, or Pounds of Brass; and that these ten *Librae* in Silver were valued at a *Corinthian*, or *Aegean Obolus*; and that 6 of these ten *Oboli* made,

or

or were equal to ten *Attick Oboli*: This is the lowest Computation, as *Salmafius* has adjusted it, lib. 2. de usuris, pag. 247. So that a *Decalitron Siculum* was of worth, wanting one *Obolus*, and the third Part of another, to three *Attick Drams*, or about twenty one Pence. But Dr. *Bentley* shews, that tho' this Matter is twice spoke of by *Aristotle*, yet it is with some difference in Valuation, and in the largest Computation will make four *Attick Drams*, or half an Ounce *Roman*. I have not Dr. *Bentley* upon *Phalaris's Epistles* by me, and my Collections being made a Dozen Years ago, I cannot well either Read or Understand them, 'till I have a new Inspection of that Author: In the mean Time, and 'till I receive my Books from *London*, I must rest in suspense, and hope you will pardon what I write in haste, and came not to the Knowledge of 'till this Morning; nor 'till the Afternoon of my Cousin's intended Journey Homeward before Night, which therefore leaves me no more Time, than to subscribe my self,

your ever faithful

and obliged Servant

William Smith.

To the different Asses mentioned before in the Earl of Pembroke's Collections, and the three Sorts of Denarii also; I might add what I met with in Mr. Eifenschmid's Book De Ponderibus, printed at Strasbourg, A° 1708, who gives several different Weights of Asses, almost from 12 Ounces to half an Ounce: But I have now lost, or at least cannot find that Book, tho' sought for with all Diligence in my Study; Nor had I perused the ingenious Book wrote by the late Bishop HOOPER, of his Enquiry into the State

Several LETTERS

State of Ancient Measures: It not coming to my Hand 'till some Time after I had sent the foregoing Letters to Mr. Thoresby. And now my Memory so much fails me, that I have much ado to understand what I my self have formerly written or collected.

Feb, 2d, 1727.

William Smith.



A LET-



A

L E T T E R

To (D^r George Hooper) *Bishop of
Bath and Wells.*

December 3, 1723.

My LORD,

THESE Lines, (as I suppose many others will) present themselves to your Lordship to acknowledge the great Favour, Honour, and Benefit your Lordship has done the whole Nation, in Publishing your most learned and sagacious Enquiries into the State of the *ancient Measures* both *Foreign and Domestick*. But perhaps your Lordship may think it a great Presumption in a Person wholly unknown to your Lordship, and the World, to imitate others of more worth and eminency, in venturing upon such a congratulatory Address.

I find it therefore become necessary to me, to acquaint your Lordship with the *Inducements* that led me to it; which were of a Double Nature: The first relating to my *self*, the second relating to your *Lordship's* most excellent Treatise; In the former I shall be as *Brief* as possibly I may; but as to the latter I must crave leave to write something more at large.

Ist,

ist, As to my self, I had my Education, and spent most of my Life at Oxford, as Fellow of UNIVERSITY COLLEGE; in which Place after Mr. *Obadiab Walker's* Removal, I had the Opportunity, by the Favour of his Successors, to inspect all the *Archives* in their *Treasury*; and to learn from thence the *Rise*, or *Original* of that Society (vulgarly, but falsely, attributed to King *Alfred*;) chiefly that I might see what Legacy was bequeathed by *William of Durham* to the UNIVERSITY; what Houses and Lands were purchased therewith; what Orders and Settlements made by them; what Salaries appointed to the Fellows and the like; which introductory Knowledge, and our Dependance on the UNIVERSITY as our *Visitors* (I mean the *Convocation*, who made our Statutes, and not the Doctors of Divinity and Professors, which are only a subordinate Delegacy for some private Purposes, but the last result to *Convocation*, as ultimate Visitors) gained me admittance to the Perusal of all the UNIVERSITY Archives in *Turre Scholarum* & *musæis Astimolianis* & *Wodianis*; besides the Manuscripts in the Publick Library; from whence, and our English Histories, I had before my Nomination to this Rectory (by the COLLEGE) A^o 1705, drawn together a larger Collection of *Rates*, *Prices*, *Salaries*, *Wages*, &c. than was shortly after published by the ingenious Author of the *Chronicon pretiorum*; and from a Hint of whom (in Pag. the 8th of the same Book) how acceptable an Undertaking it would have been, had any done the like out of the *Greek* and *Roman* Classics; which Defect I have, since my Removal to this Place, endeavoured at my Leisure to supply; and have gathered a Collection of *Adversaria* on that Subject, now swelled into several Volumes; which

which my Age (74 Currant), and other Infirmities both of *Body* and *Mind*, will not permit me to transcribe and methodize; But I purpose to devolve that Province upon a *Nephew* of mine, of both my Names, bred at *Westminster*, and translated thence by Bishop *Atterbury*, when Dean there, to *Christ-Church* in *Oxford*; but forfeited his Place shortly after for not taking the Oaths to King *George*, and now at last is reconciled again to the Church and Government; and at present, School-master at *Bedale* (about half a score Miles distant from my present Benefice, but since of *Kirby Ravensworth*, 3 Miles from this Place) and for whose better Instruction I have, in some Measure took upon me to write to your Lordship upon this Occasion.

BUT 2dly, The main Reason of this Address has a nearer Regard to your Lordship's most elaborate and accurate Treatise; which in my Retirement was long before I heard of, and much longer before I could procure it, it not being to be bought at *York*, and very scarce and dear at *London*; occasioned, as I suppose, from the Paucity of Copies; But as soon as I got it, I read it over and over with great Satisfaction and Delight; and no less Admiration of the Evidence of most of the Principles your Lordship proceeds upon, and the large Compass of Thought, and Firmness of Ingenuity, with which your Lordship draws Conclusions from them. Which makes me expect that your Lordship will suddenly be solicited to permit a 2d Impression, which that it may be done with those Advantages that would make it exceed the former; I beg leave to lay the following Observations in your Lordship's View, which possibly may contribute to some Improvement in a new Edition, and that both to the Usefulness and Beauty of it also.

AND

AND 1st, as to the Beauty of it, the want of a *Running Title* seems a Blemish to it, and the same Want has disgraced both the first and 2d Edition of Archbishop *Laud's Conference, &c.* which has no Title, but barely the Number of Pages prefixed on the Top of them.

2dly, To render your Lordship's Book more useful, it ought to have had the *BOOK*, or *PART* the 1st, *Chap.* the 1st, and *Section* the 1st, added to it, and changed as the Treatise went on; the Neglect of which, has caused me, and will create others a great deal of Labour to find out the Quotations your Lordship makes from one Place to another; a Deficiency I have met with (whilst I was writing this Letter) in Dr. *Hakewell's Apology*; which tho' it has the four Books noted at the Top of the Pages, yet wanting the Chapters and Sections, when I would have consulted the Additions, mentioned at the End of his 2d Edition, I was very long before I could find them.

3dly, Tho' I question not but your Lordship's Tables will be very acceptable to all Persons that have any Insight into the noble Study of the Mathematicks; yet to many Gentlemen, and some of the Clergy, I doubt that Ignorance in many Places will render them unintelligible; and which had been easier understood, if the Tables had been carried on to the *Decimal Number*, and that Decimal Number also at the End of them, or some following Page, expressed in *English Pounds, Shillings, and Pence*, which as to *Sesterces, Minas, and Talents* might have been multiplied into Cds. and Mds. without any great Labour or Difficulty to those that knew but vulgar Arithmetick, without any Skill in Fractions and Decimals, which it is not every Man's Happiness to understand.

4thly,

4thly, There seems to be an Omission in quoting Authors, and neglecting to give Notice where those Passages are to be met with in them. Your Lordship quotes *Villalpandus* (I have forgot the Place where) about the Weight of a *Talent*; but tho' I have that Book, and consulted the Index to it, yet I could not find the Place your Lordship referred to; The like I might say concerning the *Attick Stater*, mentioned Pag. 106. in your Lordship's Book, and Page 145 in Mr. *Eisenschmid's*; but your Lordship has not noted the Place, nor can it be found as referred to by the other most excellent and concise Author, he placing it *lib. 10. Controv. Mores, &c.* when as it is not to be met with in the Index of *Gronovius's* Edition of *Seneca*, but yet may be found *Controv. lib. 5. Controv. 304. mibi pag. 313.* And if the Margent will not admit the Quotations at large, such Notes may be conveniently cast into the Bottom of the Pages.

5thly, Altho' your Lordship's Contents may seem design'd to render an Index unnecessary to Persons of great Memories; yet where these are wanting, and one would find out what they seek for speedily; an *Index* is very commodious and useful, as I find both in *Gronovius*, *Dr. Bernard*, and Mr. *Eisenschmid's*, &c. Treatises.

BUT all that I have hitherto mentioned, or most of it, is chiefly to be laid at the *Bookseller's* Door, who should have informed or consulted your Lordship about some of them, before the Copy was sent to the Press; but as to an *Index*, it is usually made after most of the Sheets have been printed off; and cannot be well done before, except in such Books as your Lordship's is, which might be made by *Book*, *Chapter*, and *Section*, before it go to the Press; and which, without Alteration, would serve for

all Editions, Latin, or English, that should be made afterwards.

I come now in the last Place, but with the greatest Deference and Submission to offer to you Lordship two other Considerations.

THE 1st, concerning your Lordship's stating the *Eubean Talent*, as equal to the *Attick*. The 2^d is Relation to that vast and immense Price, which your Lordship seems to allow, to have been in ancient Times, between the Value of Silver, and the Value of Brass, as well before the *Roman Coinage* as afterwards. As a disinterested Person I only doubt of the Truth of the first Supposition; but as one engaged in another Hypothesis, it behoves me altogether to dissent from the latter.

AND 1st, for the *Euboic*, or *Eubean Talent*, upon which your Lordship spends many Pages; tho' indeed I think your Lordship's Position wants not so doubtful an Argument to make it good; your other Proofs against the *Jewish* Traditions being fully sufficient and unanswerable. I further conceive also, that your Lordship, and those other Authors that hold the same Opinion, have wholly borrowed it from a single Passage in *Herodotus*, stating the Difference between the *Babylonish* and *Eubean Talent* to be as 70 to 60, without examining that Author's Calculations any further; which seems not altogether consistent with it; which yet supposing they were, your Lordship, and some Authors, do not seem wholly to rely upon it. Your Lordship having given us three different Proportions borrowed from three noted Historians. *Xenophon* assigning the Difference to be 4, *Aelian* as 5, and *Herodotus* to 6, the greatest of which, I think, comes as near the Truth, as either of the other. Not to mention that I do not well understand your
Lord-

Lordship's Value; nor Mr. *Eisenfchmid*'s of the *Attick Talent*: he as I take it, making it equal to 225 English Pounds; your Lordship sometimes assigning it at 220 *l.* with a Fraction, as in Page 62, and in another Place, that, or the *Roman Talent* at 202 *l.* with a lesser Fraction; But I find Dr. *Bernard* varies from himself, writing thus, pag. 174. No. 88. *talentum Babylonicum & Euboicum 70 mine Euboicæ, 72 mine Atticæ, 7200 drachmæ Atticæ*; But Pag. 185. No. 62. *Talentum Euboicum 7000 denarii, 4500 Christophori Asiæ, Festus Corretceas. 1. pondo 72½*, which Passages I think irreconcilable; for 7000 *Denarii* $\frac{1}{2}$, make 85 *Roman Pounds* and more; if it be meant of any other Pound; *pondo*, instead of *libra*, leads to a Mistake: *Villalpandus* in the *Roman League* with *Antiochus*, p. 371. Vol. 3. States the *Attick Talent* at the usual Rate; but conceives it brought down by the Favour of the Senate to 6720 *Roman Denarii* or 80 *Roman Pounds*; which amounts to about 224 *l.*

THESE Differences directed me, in Reading your Lordship's Book, to look more narrowly into what *Herodotus* has writ about *Darius's Tributes*, related by him; and I there found, though they are not Number'd up by that Historian, that the nineteen Portions of Tribute in Silver, recited by that Author, reckoning the fourth (as I suppose was intended) by 360, and not 500 *Talents Babylonicæ*, the Total amounted to 7600 of those *Talents*: And to find what they amounted to in our Money; (which was one of my principal Designs) I did it by the Sum of 200 *l.* allowed to an *Attick Talent*, which is near 10 *l.* at least more than either Dr. *Hakewell*, or Bishop *Godwin* computes that at; and which likewise, for the greater Ease of reckoning without Fractions, reduces the *Roman Denarii* to 8 *d.* and the *Sesterces* to 2 *d.* of our Money

94 Several LETTERS

ney; and makes my Computation to fall in with *Budeus*, tho' calculated from different Ounces or Pounds, (his from the *Troy* Weight, and mine from the ancient *Roman*) three of his *Aurei* (by which most Foreigners that have writ *Dè Re Nummaria* adjust the Money they mention) fall in exactly and concur with our *Engliff* Pound now current amongst us. According therefore to *Herodotus*'s Proportions, or as I should have rather said, according to *Xenophon*'s, I multiplyed the 7600 *Babylonish* Talents by 250 *l.* and the Quotient came to 1900000 *l.* which divided by *Herodotus*'s first Number of *Euboic* Talents, viz. 9540 gave to each Talent near 200 *l.* viz. 199 *l.* $\frac{11}{12}$: But omitting the Fractions, which I know not well how to manage, I multiplyed the 4680 *Euboic* Talents (that arose from the Gold multiplyed by 13, a certain Sum) by 200 *l.* I found the Quotient to be 936000 *l.* which joined to the fore-going Sum 1900000 *l.* made 2836000 *l.* and dividing this Total by *Herodotus*'s Total of 14560 *Euboic* Talents, I found they rose no higher each than 194 *l.* $\frac{11}{12}$.

BUT computing by a *Babylonish* Talent of a lesser Size, viz. $\frac{2}{3}$, or at 234 *l.* 6 *s.* 8 *d.* I found the Total of 7600 Talents to arise no higher than 1780933, which divided as before, gave only a Quotient of 186 *l.* $\frac{11}{12}$, by which Quotient, omitting the Fractions, multiplying the 4680 *Euboic* Talents; that Multiplication, with the next preceeding, came to 2651413 *l.* which divided by *Herodotus*'s Total 14560, gave but 182 *l.* $\frac{11}{12}$.

FINDING therefore that neither of these Calculations made the Value of the *Euboic* Talents agree, the first Quotient with the second, I cast about to find whence these Differences arose; and at last discovered that the 9540 *Euboic* Talents, joined

ed with the 4680, did not make 14560 *Talents*, but fell short by 340 *Talents*.

I went to work again, and dividing the last Sum 180933 *l.* by the new Sum of 9880 *Euboic Talents*, I found the Quotient arise no higher than 180 *l.*, and then omitting the Fraction, and multiplying the 4680 *Talents* by 180 *l.* the two great Sums put together, amounted to 2623333 *l.* and divided by 14560, the Quotient was as before 180 *l.*, which plainly shewed that there was a Mistake in *Herodotus* himself, and that his Computations could neither agree with the Truth, nor with one another; an Errour, as I think, overlooked by *Budens*, but afterward, as I since find, discovered by *Agricola*, pag. 296. *l.* 18. Which possibly your Lordship's great Accuteness and Capacity may find a Method to rectifie, tho' others before have never yet attempted it with any Success.

I have also now, on the other Hand, consulted how the *Euboic Talent* was stated by former Writers, who reckon it at a lower Rate than your Lordship: And I find *Budens*, after a very dark and operose Method, to have fixed it, as far as I can understand him, by my Notes formerly taken out of him, (for at present I have sent the Book to my Nephew) at 5667, a *Drachma* and two *Obols*, or about 188 *l.* 18 *s.* 2 *d.* $\frac{1}{2}$. *Coverruvias* (as published amongst other Writers,) by *Renerus Budelius*, with his own two Books on this Subject) at *Colen*, in 410 (1591, pag. 622) at an *Attick Talent*, wanting three *Mine* and $\frac{1}{2}$ of a 4th, about 189 *l.* 21. 4 *d.* *Agricola*, p. 296, computes it at 56 *Mine Attica* and $\frac{1}{2}$ of a *Mina*, 188 *l.* 13 *s.* 4 *d.* *Barth Berengerius*, a Professor at *Luca*, printed there in 8vo. 1711, and reprinted at *Leipsic*, A^o. 1714, gives it no higher Value than 40 *Mine*. But I do not think

think this Gentleman well versed in this Study, who has writ in an Alphabetical Method, for the Information of young Students, as *Geo. Hentschius*, a German Professor, had done; and that more knowingly about a Hundred Years before, viz. *Auguste Vindel*: A^o. 1606.

BUT I chiefly relie on the Account borrowed from *Festus*, in the several Words *Euboicum* and *Talentum*; in the last he says, A *Rhodian*, or *Cistophorum* Talent, contained 4500 *Roman* Pence, or three 4th Parts, if I may so call them of a *Roman* Talent; and so consequently of 6000 Six-pences of our Money. And in the former *Euboicum*, he says, That Talent consisted of 7500 *Cistophorum*, which give exactly to such a Talent 187*l*. 10*s*. And here I must Rest 'till further instructed by your Lordship's Information.

I purposed in the next Place to have proceeded to my second Consideration, concerning the ancient Proportion betwixt Silver and Brass: But this Letter has already extended it self beyond it's just Bounds, and therefore I shall leave that Matter to some other Opportunity; begging your Lordship's Pardon for all Blunders in this Letter, and craving your Lordship's Blessing, and Licence to subscribe my self

From *Meltonby*, your LORDSHIP'S
betwixt *Rich-*
mond and *Dar-*
lington, Decem.
3d. 1723.

great admirer,

and infinitely obliged,

and humble Servant,

William Smith.

If your Lordship favours me with an Answer, it comes fastest and speediest, if directed to me at *Meltonby*, near *Darlington*, in the County of *Durham*.

Some

Some Errours, or Omissions not mentioned in his Lordship's Errata. P. 111. l. 14. I think 45 should be 55. p. 124. l. 8. after Lib. 22. add Cap. 23. p. 125. l. 21. after observed, add Lib. 1. Cap. 4. p. 127. l. 15. for Hostilius Tullius, r. Tullius Servius. p. 139. l. 14. Quere if for Parvo it should not be read Patrio. p. 152. l. the last, Quere if for 6 Foot it should not be 6 Inches. 235. l. 10. 2 Part, the Chap. before §. 1 is omitted. p. 151, for 57,5. r. 575. p. 305, says, two Choenixs were worth 30 Oboli; and the next Page says, one Choenix was worth 3 Attick Drams, which if true, it would make 2 Choenixs be worth 36 Oboli. De hoc ideo Quære.





Reverend S-I R,



Y Lord Bishop of *Bath and Wells* commanded me to acquaint you, that he received your Letter; and to return you Thanks for your Curious Examination of his Book; which, he says, you should not have been put to so much Trouble in procuring, had he known you to have been so nice and elaborate an Enquirer into ANTIQUITY. His Lordship's Book was indeed very scarce, and very dear, occasioned by the small Number of Copies he permitted to be Printed, which were not above 200 in the Whole; and no more than half of them for Sale.

THE Observations you have made upon the Defects in it, are almost the very same his Lordship made upon a Perusal of it, since it was published; but his Lordship desires you to consider, that this Edition of it was designed more for Examination, than

than for Use. If ever there is a new Impression he will have these Defects amended, together with the Errata that were caused by the Printer, Transcriber, &c. as far as they are discovered by him and others. His Lordship supposes he may have Occasion to communicate some Papers to you, for which Reason he desires you to inform me, what Correspondent you have in *London*, by whom he may convey them safely to your Hands. I have by his Lordship's Order looked into that Passage of *Herodotus* quoted in his Book, but cannot find any Way to make the Numbers agree, I am

Reverend S I R,

Your most Obedient

*At the Palace at
Wells, Jan. 18.
1723.*

Humble Servant.

T. Westley.





Melfonby, Jan. 27th, 1724.

A Second
LETTER

To the Lord Bishop of Bath and Wells.

May it please your LORDSHIP,



O give me leave, after a long fit of the Gout in my Hand, that disinabled me to write, to continue my former Letter, and so proceed to my second Article : Which was to consider the vast Disproportion your Lordship allows to have some Time been betwixt Gold, Silver, and Brass, in Order to confirm an ingenious Explication of a single Passage in *Homer*, concerning a small Talent of Gold, supposed not to exceed the Weight of three *Aurei*, or six *Drachmæ*. For your Lordship, Page 130, assigns these Proportions following, *viz.* That a Pound of Gold was worth a hundred of Silver, and a Silver Pound a thousand of Brass : Which Supposition admitted, and computing Brass at the Rate it along Time went for at *Rome*, and does now bear in *England*, the thousand Pounds of Gold, which the *Romans* agreed to pay the *Gauls* for the Ransom of the Capitol, will amount

amount to no less than five Millions of our present Coin; too prodigious a Wealth to be found in any City of *Italy* at that Time, either in ready Money, or any other single Commodity whatsoever: much less there, when the City was burnt, and most of it's Inhabitants fled out of it before, and no Mines of Copper, that we read of then wrought, or discovered within their narrow Territories, scarce any where exceeding the Number of 20 Miles from their Metropolis.

AFTER I had made this Calculation, and I thought exactly, happening that I review'd it again, but from another Place treating of the same Talent, I found my self Mistaken, and that so vastly, that I wonder'd how I could possibly be guilty of it; however I alter'd my Numbers, and for 5 Millions, found it to be no more than 500000 *l.* of our Money. This Account was drawn from Page the 44th, and 333 d. which though differently expressed, yet both came to the same Sum, and was to be understood, as I now find, of the Value of Brass in several Countries, which it seems I was not aware of: And then a third Time reviewed the first Calculation, as I now send that to your Lordship, tho' having Yesterday sent your Lordship's Treatise to my Nephew, I cannot at present consult it: But if we compute by either of the Sums fore-going, methinks both of them arise too high to agree with the Expression used by *Levy, lib. 5. c. 48. Jactantibus non obscure Gallis haud magna mercede se adduci posse ut obsidionem relinquant.*

I shall adventure to add a fourth Computation, not indeed agreeable to my own Judgment, yet necessarily to be allowed by the excellent *Budeus*, and his Followers, very excusable in him, who first broke the Ice in the Road, for others to Travel with the

greater Ease and Security; but not so pardonable in the great *Gronovious*; and eminent *Hardwin*, whose human Learning I admire, but not so much their Logick: For, in their Disputes they seem to contend *Palma expansâ*, but not *pugno*, as possibly, I may have Occasion hereafter to evidence by other Arguments than my bare Word. For all these Persons not only take it for granted, but endeavour to expose and ridicule those that Question it; that Brass at *Rome*, when Silver was first coined, bore the Proportion of 840 to one of Silver, and 15 of Silver to one of Gold; in which, if they follow *Pliny*, as Monsieur *Hardwin* thinks, the only Author to be regarded in this Matter, instead of 15, they should say $17\frac{84}{85}$, which in my Gross, and rude way of Reckoning makes, or seems to me to make, above 49 *l. English*. But because I am wholly Ignorant and Defective in this Art, I will keep to the common Road, and only multiply 17 *l. of Silver* by 840 of Brass, and the Product will be 14280 *Roman Pounds* of Brass, which, according to my former Computations of the Value of Brass, 'twill rise no higher than 714 *l. English*, a contemplable Price; and to borrow from *Livy loco citato*, ch. 48. *Pretium populi gentibus mox imperaturi indignum*; i. e. *A Price not worthy the People who were shortly to rule all Nations*.

I have no more to add relating to your Lordship, save that in reckoning the Talents of Brass by 60 *Minae*, it would have been more plain to a vulgar Reader, if it had been noted that Talents in Coin differ'd from the *Roman Talents* of Weight, which was double the Talent of their Money. Some Lines of the fore-going Page were writ before the Gout seized my Hand, which continued with me near two Months, in which Time I read over *Dionysius Halicarnassensis*, and *Livy*, which I had

had perused many Yeats before, and extracted what I thought for my Purpose; but now I more diligently compared them, and find their Accounts not only often different, but opposite to each other. The first Author says, the Spoils of *Pometia* amounted to 4000 Talents, and the tenth Part being took out, the Remainder afforded every Soldier 5 *Mine*, or 16 *l.* 13 *s.* 4 *d.* *English*.

BUT *Livy lib. i. c. 55.* informs us, that *Piso* reckons them at 40000 *Roman* Pounds of Silver, which amounts to about 112000 *l.* *English*; but *Fabius* reckons them no higher than 8000 *l.* but the lowest is sufficient to bring not only the Senate, but every private Soldier acquainted with the Value of Silver, for the Species, as both Authors agree, were in Gold and Silver, and not in Brass Mettal, to make them more liable to Dispute what their true Value was.

THESE two Authors are lost, where they should give us an Account of the first Coinage of Silver at *Rome*, and the next Help we have must be deduced from the *Sicilian* Money, from whence *Varro* tells us, the *Romans* borrowed their Pattern; but concerning that, we have not much remaining, except some few Quotations of *Pollux*, out of *Aristotle*; but these also so disagreeing with themselves, that they are not entirely to be relied on; tho' collected together in a Book, I doubt not your Lordship has by you, writ on this Subject by Dr. *Bentley*, against the honourable Mr. *Boyle*: By some Notes I formerly took out of that Book, I take Notice of these Passages. First, that *Aristotle* says, that a *Decalitron* was equal to a *Corinthian Stater*; now he writing of Silver Money, one would imagine, that he Means a Silver *Stater*, which as I compute it to be, rather exceeds, than falls short of

of an intire *Roman Ounce*, and from hence one would be apt to conclude, that the first *Roman Denarii* were coined full an Ounce Weight; But this agrees not with what the same *Pollux* relates from the same Author, that the *Decalitron* was equal to ten *Æginean Oboli*, and *Diodorus Siculus*, who ought, (one would think) to be most relied on, but that his Age takes off from his Authority, states it at 2 *Attick Drachma's* only. *Hesychius* is also quoted by *Dr. Bentley*, for expounding a *Storg*, to be equal to two Pounds; in this diversity of Opinions I know not well where to fix it, if *Pancerollus*, *Savotus* and *Gassendus* guess right, it were fittest to fix it at an Ounce weight; But if *Mr. Eisen Schmid's* Observations (as I doubt not but it is) be true, in all likelihood, *Pliny* is mistaken, who makes the Fall of the *Asses* to be from a Pound to two Ounces; whereas by the Fall of *Asses* that learned Author has published at the End of his Preface, they fell first from 12 to 10, from 10 to 9, 8, 7, 6 Ounces, at which last Weight we must fix the first Coinage of the *Denarii*.

I know nothing of this will be allowed by *Mr. Hardwin*, who thinks he has settled the whole Matter in his Notes upon the 3d Chapter of *Pliny's* 33d Book in the 13th §. of these Notes, of which Performance he has had so great an Opinion, that in his *Nummi antiqui populorum & urbium illustrati*: He has reprinted it Page 539, under the general Title of *de Re Nummaria*: If his Notes find Approbation in the World; I think it will be in Vain for any Man to write against the old Opinion, which he espouses; But Methinks his Explication of the Change (made by *Q. Fabius Maximus* the Dictator) when the Weight of the *Asses* was reduced to one Ounce, and the Number increased to

16 *Aſſes*, how the Common Wealth gained half, tho' the Notion be borrowed from *Pliny* himſelf, is ſomewhat extraordinary; for in other Words it is to ſay, that four Ounces is the half of twenty: But when he comes to explain what *Pliny* has writ of the Gold, being coined after the Rate of 20 *Seſterces* to each Scruple, computing as the *Seſterces* were currant in his Time. I am ready to ſay *pace tanti viri*, what he commends in *Gronovious* for applying it to *Savotus* appears almoſt ridiculous, forgetting at the ſame Time that his Brother Jeſuit, *Nic. Abramus*, is as ill uſed by *Gronovious*, and ten Times better deſerved it.

I had ſome more Things in Mind when I began to write this Letter; but am afraid I am already become tedious, and therefore having, whiſt I was writing, received a Letter from one of your Lordſhips Officers, I return my humble Acknowledgment for the favourable Acceptance of my laſt Letter which will oblige me for ever [after I have begged your Lordſhip's Bleſſing] to ſubſcribe my ſelf,

Your LORDSHIP'S

moſt Faithful, and

Obedient Servant,

to Command,

William Smith.

Not knowing what Title to give to Mr. *Wefley* I have made bold to encloſe it under your Lordſhip's Cover, which will ſave the 8d. Poſtage; I had

had forgot when I was speaking of the eminent Mr. *Eisenschmid* to acquaint your Lordship, that I was mightily pleased to find him concurring with my own Sentiments; for tho' in a Compliment to the younger *Gronovious*, who stiles his Father's Book on this Subject, his *opus triumphale*, and therefore says, he would not make the Dispute betwixt *Savotus* and him, his own Controversy, pag. 135. yet he spends Pages 137, 8, 9, 140, in Refutation of it, and gives more and better Reasons against, than any to be met with in *Gronovius's* whole Discourse, for it; and instead of *non uno oblato argumento* (except he meant, as the Words will bear) might have writ, *unico oblato argumento*, to wit, *that the Greck Historians understood it so.*



A Copy



A Copy of a

LETTER

To Mr. Westley.

Melfenby, Jan. 28. 172 $\frac{1}{2}$.

SIR,



Was very glad to understand by the Favour of your Letter, that mine to my Lord Bishop was not miscarried, which I feared it had, and rejoyce that what was kindly intended, was kindly accepted, which does not always happen;

The Intimation you give me of his Lordship's Liberality, had he known me any Ways curious in Matters of this Nature, is very acceptable to me; And I should have thought the Honour of such a Favour of a Great deal more Value, than ten times the Price the Book cost me.

I could not discover by your Letter, whether you were in Orders or no; and therefore durst neither use nor omit the Term *Reverend*, least it should be either wanting, or misapplied; and therefore made bold to inclose this, in one to his Lordship, which was but intended as the first Draught, and is full of Blunders, and hardly intelligible; but I
suf-

fer it to come as it is, because I have not Time to transcribe it, and hope the Meaning may be guessed at, tho' the Expressions are not so much as Grammatical; and I would not defer it to another Post, least I should loose three Days Time in having those Papers communicated to me, which you tell me his Lordship designs to Honour me with; and therefore desired to know what Correspondent of mine he may direct them to in *London*. If they be in Sheets, the safest and speediest Way would be under a Cover, or two, by the Post, or successively one Post Day after another; but if of any bulk they may be directed to a Nephew of mine, (the younger Brother to him I formerly mentioned to my Lord) And the Direction may be *To Mr. Thomas Smith, at his Chambers in Gray's Inn, to be left with Mr. Mabbot, Stationer, in Holbourn*. You also inform me, that by my Lord's Order, you examined the Numbers in *Herodotus*, but could not make them agree: I could heartily wish you would take the Pains to examine a Place of like Difficulty in *Livy, lib. x. c. 46*.

I shall transcribe the Words as they are in the printed *Variorum*, because they are short; and *Grovovious's* Comment least you should not have that Edition by you, the Words are (speaking of a Victory against the *Samnites*;) *Æris gravis transvecta vicies centies millies & quingenta triginta millia; id æs redactum ex captivis dicebatur. Argenti quod captum ex urbibus erat P.M. cccxxx omne æs argentumq; in ærarium Conditum.*

The Notes are thus ----- *Dein summa est immanis, & tunc nullo ex triumpho speranda: ut enim decem libras demus denario, qui paulo post percussus est, & transmitamus quod excurrit: vicies centies millies centena millia æris, efficient quadragies centies millies Sestercium,*

cium, decies centies millies centena millia denariorum, &c. I somewhat Question whether this adverbial Computation is ever applied to any Coin (or Weight) but that of *Sesterces*.

As likewise whether the interposed & does not rather incline us to think the Copy is false, and should be read not *conjunctim* but *seperatim*; or if together, whether they be to be thus expressed in Figures 20000000000 (leaving out the 533000) and if so, whether instead of *quadrages*, *Gronovious* should not have writ *ostogies*; these Questions are difficult to me; but my Lord's, or possibly your own Skill in Mathematicks (of which I am ignorant) will resolve the Questions in as little Time almost, as I have writ them; I do add no more for fear I should loose this Day's Post, but only to desire you to excuse my hasty Letter to his Lordship, and pardon this to your self, from

Your Obliged and

Humble Servant,

Jan. 27. 1723.

(or Brother)

William Smith.

I know not whether my Lord has observed in Mr. *Eisenschmid's* Tables, a small Errour; for in Page 188, he gives the Value of four *H. S.* or one *Denarius*, at 8 *Sols*; but in Page 192, he says, 6 *Oboli* makes four *H. S.* and there Rates them at nine *Sols*.

I was

I was loath to Trouble my Lord with too many Nicities in *Aristotle's* Account; but remember that Dr. Bentley has discovered an Errour, but does not correct it: The Errour is in reckoning 12 Chalci for a larger Sum; where instead of 12, should be read $13\frac{1}{2}$, which would be of little Moment, but that that Number is to be multiply'd, which renders that little Mistake the more considerable.

I never received an Answer to this last Letter from Mr. Westly, and find, by sad Experience, that one can scarce meet with one in a Hundred, that will put themselves to the least Trouble, if they can possible avoid it, otherwise Methinks I might have expected a Letter from him; since I received none from his Lord; as may appear from the following Account, by a Letter from my Lord Bishop of Oxford, dated 19th of October, 1722, I had the first News of my Lord Bishop of Bath and Wells's Book; and on the 27th of March following, I had this Information from the same kind Hand, viz. I should be glad my Lord of Bath and Wells might live to go through another Edition of his Book, in order to correct those Mistakes which you have intimated to him, and whereof his Letter to you shews him to be convinced: But I have lately heard that he daily grows more and more infirm; and if this be true, as I fear it is, we must not expect he should give himself any further Trouble about this Matter, &c.





A P P E N D I X

T O T H E

LETTERS *De Re Nummaria*.

UPON Publishing the foregoing LETTERS I thought fit to make some Additions, tho' it is likely in my so doing, I shall sometimes repeat what has been sufficiently explained before; and that which I now subjoin, may seem to many rather superfluous than necessary: But because I purpose to acquaint the World not barely with my own Thoughts and Conjectures; but with what I find has, in Part, been the Sentiments of some few other Authors that lived before me; I will in something further explain my Opinion, and shew how I came by it, and the Reason I have, why I cannot easily recede from it. My Opinion therefore, in short, was thus founded: I could never give my Consent to such Unlikelihoods, as I found were entertained by the greatest Authors that have writ *de Re Nummaria*. I might mention many, but shall pitch upon two of the most celebrated Authors, that have handled this Subject: The first is the admirably learned *Budeus*, who was the first that ever opened the Way, or as I may say, broke the Ice, that others might follow in the same Road, with greater Ease, Pleasure, and Security; and this was done when, I think, there were few in the Age he lived, that either could, or durst, Attempt or venture upon such an Undertaking; or, if they had

had, could have performed it with the like success he brought it to; and I am fully persuaded (as will be easily discerned by any that reads his Book *de Arte*) that he thought his Discoveries, came little short of Perfection, or that what he said could either be questioned, or disputed, by any that should succeed him: And to say the Truth, little or nothing has been since discover'd, that meets with any Universal Acceptance. *Agricola* writ shortly after *Budeus*, and I think, in his Life-time, and is much prized, as a diligent and judicious Writer; But yet there are two Things laid to his Charge, by that learned and celebrated Critick, the elder *Gronovius*: First, that he has obscur'd his Subject, by handling it too nicely, and reducing his Calculations to first and second Minutes, that are of no Worth or Consideration, if at all intelligible by a vulgar Reader; The second, is his grand Mistake, where he makes no Difference (which all others have allow'd, and is frequently met with in Classick Authors) between the Words *Sestercius*, and *Sestercii*, in the Masculine Gender, and *Sestercia* in the Neuter. I think the next famous Author that handled this Subject, is the eminent and candid *French* Civilian, that both in Law and Humanity would imitate his Country-man *Budeus*; who writes perspicuously, and has attempted to make some Difficulties plain; but those have not met with a general Approbation, and are laid aside by our greatest Criticks: I shall mention no more, than the unimitable *Gronovius*, in all Parts of human Learning, abating that *Helena* * of his, which he has embraced and borrow'd, (as that Beauty was, by several Lovers)

* An Expression much used by *Gronovius*, against *Abramus*,

Lovers). I mean, that the Roman *Denarii* were never greater than 7 or 8 in an Ounce, and is so far from believing there were ever any greater, that he has writ a Treatise to expose the Jesuit *Nic. Abramus*, who dissents from him; not by strenuous Reasons against it; but rather by endeavouring to ridicule it.

NOW tho' *Abramus* be a Partizan in the Opinion, which I endeavour to maintain, yet he has done it in such a Manner, as I think not like to produce, or gain, many Followers; And this I am persuaded of, for these three Reasons following.

1st, Because he has taken Liberty to invent several new Names for Money, or Coin, never heard of in any ancient or Classick Author. 2dly, Because he only gives his Opinion at large; but no Ways endeavours to confirm it, by producing Reasons, or alledging Authorities to Countenance it. 3dly, Because he not only embraceth, but as much as he can argues for, the Probability of a foolish Conceit; that after the *Asses* had been changed in their Number, from ten to sixteen for a *Deneir*, and that for very good Reasons, to avoid the Inconvenience which was found in the *Sesterces*, that consisted of the Value of two *Asses* and a half each *Sesterce*; for by being now exchanged from ten to sixteen, they and the *Denarii* were easily divided into several Parts, as half's, Fourth's, Eighth's, and the like: For the Roman Writers commend this Division, and give better Reasons for it, than I on a sudden can call to Mind; but *Abramus*, on the contrary, endeavours to bring them back from 16 to 12, and from 12 to their first 10, to serve some silly Notion he was become fond of.

Ex Nicolai Abrami Lotharingi à Societate JESU, Commentariis in tertium volumen Orationum M. T. Ciceronis in duobus voluminibus, in Folio. Parisiis MDCXXXI.

Ex VOL. 2do, }
Pag. 282. } Tabula Progressionis per Assen.

1	AS.
2 $\frac{1}{2}$	Sestercius sive nummus.
10	Denarius.
25	Denarius nummus.
100	Centussis.
250	Aureus.
1000	Pondo.
2500	Sestercium.
10000	Pondo Auri.
25000	Sestercium Auri.

Tabula Progressionis per Sestercios.

1	Sestercius sive nummus.
4	Denarius.
10	Denarius nummus.
40	Centussis sive Argentens.
100	Aureus.
400	Pondo.
1000	Sestercium.
4000	Pondo Auri.
10000	Sestercium Auri.
40000	* * * * *
100000	* * * * *
400000	Census Equestris.
1000000	Decies.

Hc

He gives the like Table for Talents.

Idem VOL. }
Pag. 289. } TALENTUM.

6 Pondo Auri.
24 Sestercia.
60 Pondo.
240 Aurei.
600 Centuffes.
2400 Denarii nummi.
6000 Denarii.
24000 Sestercii.
60000 Asses.

Talentorum cum H. S. Collatorum Indiculus.

Pag. 290.

1 Talentum.	24 Sestercia.
10 Talenta.	240 H. S.
100 -----	1200 Sive vicies & quater H. S.
1000 -----	24000 Sive ducenties & quadragies H. S.
10000 -----	240000 H. S. five bis millies & quadringenties.

I shall now give you all that he says, concerning the Reasons of his Opinion, which he brings in after this Manner.

HAVING in the Page before given an Account of six Ways, or Manners, how the Value of Money may be raised or lessened; in this he endeavours to discover whether of the

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Pag. 292.
dif-

different Opinions, that of 84, or that of 96 *Denarii*, in a Pound of Silver, is the Truest, and he concludes for the latter, tho' undoubtedly very falsely, and then proceeds; *Quo pacto ex singulis argenti uncias octoni Denarii ferientur, & singuli Denarii Drachmam pendebunt, si justo pondere signentur, id est pondere per legem Papyriam constituto, Qua lege ut supra vidimus Semiunciales Asses facti, id est, ad vigesimam usque partem diminuti, adeo ut unus eorum Denariorum qui ante bellum Punicum primum percussi sunt contineret viginti quatuor Papyria lege percussos. Atq; adeo si Consulares (Denarii) post legem Papyriam percussi unam Drachmam pendebant Denarii quo primum tempore percussi sunt, quatuor & viginti Drachmas Atticas, id est, tres uncias Romanas pependerunt quo tempore placuit Denarius pro decem libris æris. Bello Punico primo constitutum ut Asses sextantario pondere ferirentur; id est, ut duodecim superioris Denarii partibus decem detractæ sunt, ut iste posterior duos tantum prioris duodecimas contineret, sextaque pars esset ad priorem illum comparatus. Ergo nummus Bello Punico primo percussus, quatuor Drachmas pependit. Bello Punico secundo Quinto Fabio Maximo Dictatore ex sextantario factus est uncialis; id est, media parte diminutum est pondus Denarii, atq; adeo duos Drachmas pondere effecit. Mox lege Papyria semiunciales Asses facti, atq; ita Denarius ad drachmæ pondus perductus est, captusq; Drachmæ Atticæ pretio æstimari. Quo in pondere & æstimatione permansit, ut esset justum nonaginta sex à libris signari. Quemadmodum libra Romana sex & nonaginta Drachmas Atticas continebat. Quia tamen mina Attica centum Drachmarum fuit, Romani per modicum a justo Denarii pondere detrahentes, ut facilius monetam Romanam ad Atticam æstimationem revocarent, ceperunt ex Argenti libra centum Denarios signare, ut in singulas libras quatuor Denarios lucro apponerent,*

ponerent, magno emolumento Reipublicæ, nec tanto privatorum detrimento ex ponderis diminutione, quanto commodo ex facilitate Commercii.

NEXT follows an Account of several *Aurei* and *Denarii*, but from none of them can it be gather'd, that the *Denarii* were heavier than the *Papyrian* Law; therefore I shall pass from what this Author has written, to some other Arguments, that may be offer'd to prove the *Denarii* were, at their first Coining, of a far greater Weight, than *Budeus* and others imagine them to have been. And tho' as I have said, (in some of the preceeding Letters,) *Pancerollus* and *Gassendus*, as well as *Abramus*, thinks they were formerly coined, in some Proportion, to the Greatness of the *Asses* they represented; yet I shall, in this Place, produce the Arguments I have met with in *Savotus*, a French Author, and Physician, as he is printed in Latin, in the xi Volume of the *Roman Antiquities*, published by *Grævius*, An. 1699, Pag. 1130.

THIS Author makes no mention of the diverse Weights of the *Denarii*, nor, it may be, had any Thoughts of this Matter, 'till he comes to B. 3. ch. 6. p. 1215, that he had Occasion to explain that difficult Passage of *Pliny*, concerning the first Coinage of Gold, 62 Years after Silver, tho' several Authors think it should rather be read 12, than 62 after Silver.

Savotus recites the Words of *Pliny*, lib. 33. c. 3. *Aureus nummus post annum LXII percussus est quam Argentus, ita ut scrupulum voleret H. S. vicenis quod efficit in libris ratione H. S. qui tunc erant H. S. DCCCC. Post hæc placuit XL. M. signari ex auri libris, paulatimq; principes imminuere pondus, imminuisse Nero, ad XLV.*

ad XLV. M. hic locus adeo difficilis visus est Budæo, Agricolaë, Portio, Hotomano, Pancero, Mariano, Ciacconio, Villalpando, Scaligero, alijsq; ut omnes dixerint vel olim locum esse corruptum vel si sanus & integer se eum not intelligere; illi qui locum hunc corruptum esse putarunt eumque emendare conati sunt insigniter lapsi sunt; non quod eruditione, quam summam habuerunt, destituti essent; sed quod ad locum hunc interpretandum accederent imparati a numismatum & ponderum Antiquorum notitia; qua si quis instructus sit, facili negotio, ut ego quidem puto, locum hunc intelligat, ne unius quidem literæ mutatione facta.

Observandum igitur est ad hujus loci interpretationem Plinium duo Sesterciorum genera distinguere; eumque primo loco de Sesterciis sui temporis quorum viginti valebant scrupulum auri, quod nemo auctorum paulo ante memoratorum observavit; deinde vero de Assibus qui ante ipsius ætatem in usu fuerunt, quod facile colligitur ex verbis istis H. S. QUI TUNC ERANT, quorum DCCCC libram auri valebant; unde sequitur H. S. Plinio Antiquiores multo ponderatiores fuisse, quam eos qui tempore Plinii in usu erant; secundum enim proportionem illorum qua viginti H. S. in scrupulum Auri computantur, in totam libram auri imputandi sunt 5760 H. S. Quod ad pondus illorum H. S. attinet quarum 900 libram Auri valere æquant, quinque unciam, & sexaginta libram efficiunt; Aurum igitur hac proportionem argenti quindecies valore excudebat. Quoniam autem 20 H. S. quindecim tantum scrupulos habet si LX in XV ducantur emerget inde summa DCCCC. Talis igitur Sestercius pondere respondebat milliarisio posteriorum temporum, quorum V. intidem unciam, & LX, libram efficiebant.

THE import of what Monsieur Savot gives us at large, is this, that he intends to explain a difficult

cult Passage in *Pliny*, which has posed and baffled all the great Scholars that have read it, and that he will expound it without altering a Word or Syllable in it. What *Pliny* says is this; that 62 Years after the coining of Silver at *Rome*, they begun to coin Gold; and that at such a Value, that every Scruple of Gold (of which there are 288 in a Pound) was worth twenty of their present *H. S.* curreant, at the Time of his Writing. Now the true Number of Scruples were always 288, which being multiplied by 20, would amount, in *Pliny's* Age, to 5760, but at that first Coinage of Gold, did but answer the Value of DCCCC *Sesterces*, that were at his Time in Use at *Rome*; from whence he infers, that the *H. S.* were far larger and heavier, than they were in *Pliny's* Days; and yet he makes no mention that they would equal 5760 *H. S.* when *Pliny* writ, which was *Anno Urbis* 831, because every one could do this, that would be at the Pains to multiply 288 Scruples by 20, which would amount to the Number 5760. I have added to, and enlarged, what Monsieur *Savot* has said, or would have said in the former Part of his Discourse; and then towards the End of it, he infers, that if what is abovesaid be granted, it evidently follows, that there was a great Alteration in the Weight of the *H. S.* between the first coining of Gold, and those in Use when *Pliny* writ, even to that high Degree, that DCCCC then, were as heavy as 5760 in his Age.

He further collects from what he had said, that there being only five of these *H. S.* in an Ounce, and sixty in a Pound; the Value of a Pound of Gold, must be worth, at that Time, 15 Pounds of Silver, and answers to a *Milearissio*, coined in after Times, there being five Pieces of that Sort of Mo-

ney coined in an Ounce, and fixty in the Pounds. I was at the first posed to understand what he meant by the Word *Mileariso*; but upon a little Consideration, I found he meant a Sort of Money, coined under the Reign of *Constantine the Great*, of which the learned *Gronovious* has given us a fuller Account in his 4th Book, *de pecunia veter.* cap. 15. pag. 359.

I took the Pains, upon reading what is above delivered by *Savotus* to divide the latter 5760 *H. S.* by the older 900 *H. S.* and I find the Quotient of the latter Sum will be found six Times, with a Fraction of $\frac{3}{4}$ in the Former; which evidenceth what I have in the foregoing Letters affirmed, that the latter *H. S.* are worth at least 2 *d.* of our Money, since they were the sixth Part, and better, of such a *H. S.* as contained more than four Parts of an Ounce *Troy*, which are at least four Shillings, and somewhat more than a Penny: Now if according to this Reckoning, a *Sesterce* before the first *Punick* War, was better than 4 *s.* English, a *Denarius* which was always four-times as much, must needs be sixteen Shillings, and as many Ounces as *Abramus* has computed them at, which was 3 Ounces, and more than I have reckoned that first *Denarius* in my first Letter to Mr. *Thoreshy*, pa. 12, by a compleat Ounce.

THE Calculations made hitherto, is upon Supposition, that *Savotus* has rightly explained the former obscure Place in *Pliny*; he now proceeds to confirm his Opinion by the Authority of others; and by alledging some Matters of Fact, that seem to Countenance and confirm his Interpretation: I thus leave him and his Followers to reconcile one Part of his Discourse with another.

THE first Author he quotes, as agreeable to his
Opini-

Opinion, is *Pancerblius* (whom I have not had the Opportunity to consult) *Pa.* 1216. of whom he says, that he adjusting the Proportion of Silver to Brass, reputed it to be as 1 to 120, and thinks, that the *Roman Denarius* had the Weight of an Ounce, when appointed to pass in Payments for ten Pound *Asses* of Brass: Then speaking in his own Person, he says, He shall shew that the Weight of a *Denarius* was afterwards diminished from an whole Ounce, so that it was at last reduced to no greater Weight than that of a *Drachm*, or eight Part of an Ounce. And then proceeds to prove that it once weighed an Ounce, or more, as has been already said by me in my Letter to Mr. *Thoresby*, Page 31; but because I would not rob him of his due Praises, I will add, (as englished) his own Words, And this, says he, may be gathered from the Proportion in ancient Times betwixt Silver and Brass, as also from the Parts a *Denarius* was divided into, to wit, the *Libella*, which was the 10th Part of a *Denarius*, a *Sembella*, which was the 20th, and the *Teruntius* which was the 40th Part of it; but the *Denarius* could not have been divided into the 40th Part, if the whole had not had the entire Weight of an Ounce, and weighed 504 Grains, for so many does an ancient *Roman* Ounce contain (I suppose he speaks of *Parisian* Grains, which are lighter than ours): The *English* reckoning only 480 to a *Troy* Ounce, and to the *Roman* and *Avoirdupois* 437 $\frac{1}{2}$; tho' usually reckoned at 438. Mr. *Greaves* gives our Grains as above; but the *French* Grains are 472, or, as he says, 29 *English* is equal to 36 *French*; and then proceeds to tell us, there is no ancient Coin, but weighs 12 Grains and three fifth Parts of a Grain more; for the Ancients to avoid often recoining their Money, made it thicker and broader,

er, so that there can be found no old Piece lighter than 12 Grains: And *Varro* confirms this Opinion, (who lived to *Julius Caesar's* Time), and only Discourses of the Money of his own Age, and gives this Reason for it; that because a *Roman Penny* was reduced to the 7th Part of an Ounce, so that a *Teruntius*, the 40th Part of a *Denier*, would have been but of the Weight of 2 Grains only; and farther adds, that *Pancerollus* gives this as his Reason, that the *Deniers* at first could not be of a lesser Bigness than that of an whole Ounce; and *Savot* also tells us, that the *Victoriatus* of half an Ounce, proves the same Thing. By which it appears, that the Changes were made gradually, and not all at once; but from the half Ounce to the 3d Part of an Ounce, quoting *Varro* and *Chariscius* the Grammarian in Proof thereof; which I shall pass by at present, and without more than naming *Gassendus*, (who states the Weight of the 1st *Denarii* at an Ounce also) and consider what Matters he produces to confirm his Opinion; and he does it by quoting five several Coins, now in *France*, for the Confirmation of his Opinion, I shall mention them in the Order he relates them; Page 1216.

Dominus Fonteneus, Lord Abbot of St. *Quintins*, out of his well furnished Repository of Medals, allowed me to see and weigh three of his Silver Coins, weighing 3 *Deniers*, and six Grains of *French* Money.

Two of these Pieces had on the one Side a two-faced *Janus*, and on the other a *Victoria*, with the Word *ROMA*, and therefore seems to be a *Semis* of a *R. Denarius*: The 3d Coin of the Lord *Fonteneus* had on one Side the Head of *Rome*, on the other the Head of an *Horse*, and weighed 5 *Deniers*,
and

and six Grains; and the Lord *Montaltus*, a great Collector of rare and eminent Coins, has likewise a Coin of like Weight, which in the room of *Roma*, has the Figure of a bearded *Mars* on one Side, and the Head of a Horse, with a Sickle, and a Roman Inscription on the other; from which two Medals it appears, that the *Romans*, at that Time (these were coined) had a Silver *Denarius* equalling the 4th Part of an Ounce, or that the *Deniers* were fallen from the 3d to the 4th Part, or, as he expresses it, *a Triente ad Quadrantem Uncie tunc devenisse.*

He next mentions some Authors, that endeavour to prove, that there were once *Denarii*, which were each of the 6th Part of an Ounce; but I pass by this Point, as not much any Way material to my present purpose.

He proceeds, and says, *Si igitur tanquam probatum admissionis Denarium Romanorum aliquando quatuor quintas partes Uncie continuisse, & hoc sensu Denarium in supra adducto Plinii loco capiamus, ita ut undecim tales Denarii libram efficiant, ex ratione proportionis manifestum fiat 60 H. S. conficere pondus libræ, bi 60 ducti in XV (quam eo tempore Aurum ad argentum habebat) producunt summam DCCCC.* Pa. 1219.

METHINKS Savotus, in this Place doth seem a little to forget himself, for it was not 4 *Denarii*, or four Parts of 5 in an Ounce, that made a *Denarius*; but a *Sesterce* of 4 s. and a *Denarius* of 16 s. or more than 3 Ounces of Silver; but I shall pass this by, and go on to what he further says of Gold, in the Terms following.

Primo

Primo scrupulum Auri valuisse eo tempore H. S. XX (five XV perinde est utrum ponas) non solum hic locus Plinii, sed etiam numismata quæ hodie reperiuntur probant. Supra laudatus dominus Fontenæus possidet nummum Aureum scrupuli pondus habentem, vel paulo minus (si nimirum scrupulo dentur XXI Grana, quod faciendum esse postea demonstrabo) in quo est numerus vicenarius his notis XX expressis, ab una parte signatus est effigie Martis, ab altera representat Aquilam subiecta inscriptione Roma, qui nummus est natatu dignus. Dupondius (i. e. ni fallor Du Pinne) in tractatu suo de numismatibus fol. 50, nisi memoria fallit, exhibet figuram nummi Aurei qui Drachmæ antiquæ pondus habet; & eodem signatus est charagmate quo scrupulus domini Fontenæi nisi quod loco duorum XX decussim impressos; habet Characteres V & X ad indicandum proportionem Auri ad Argentum quæ erat quinducupla; notis enim his significatur numerus Quindenarius, quamvis litera V precedit literam X. Quoniam veteres in numismatibus literas transposuerunt; nec litera V unquam præposita fuit alteri literæ numerali, ut de valore ejus aliquid detraberet; quamvis literæ I & X aliis notis numeralibus eum in finem preponi soleant.

This Paragraph (from pag. 1218) is only designed to shew, that there were Scruples of Gold, that went for 20 *Sesterces*, or 3 s. 4 d. For a Scruple in Silver is but about 2 d. ob. q. at most, and hardly that, of which there are given two Instances that have the Mark XX set upon them, and of another that has the Mark VX set upon it, to signify that such a Piece of Gold was XV Times it's worth in Silver; with an Answer to what might be objected against this last Interpretation of an V before the X, signifying fifteen; because a lesser Number set
before

before a greater, usually takes so much off from the greater Number; which he says is true of I and X; but is never practised, or applied to the Letter V.

To these Pieces of Gold above-mentioned, I may add two more, which I find in Monsieur *Hardwin's* Notes upon *Pliny*: one of which weighs a Scruple, and is found in the King of *France's* Collection of Medals, and the other three Scruples is in the Convent of *St. Genove*, having one of them the Mark of XX upon it, and the other weighs three Scruples, or 60 *H. S.* and therefore has the Note XV signifying XV *Denarii*, which are of the same Value with 60 *H. S.*

THE first having the Note of XX upon it, signifying so many *H. S.* the other XV signifying so many *Denarii*: and is of the same Worth with LX *H. S.*

IN this Page *Savot* recites the Emendations which several great Men have attempted to make upon this Difficult Place of *Pliny*, viz. *Budeus*, *Mariana*, *Portius*, *Hotomanus*, and others; which he thinks vary so very much from the Copy in *Pliny*, that he does not think them worthy a Refutation. Pa. 1219.

AFTER he has done with the Persons last mentioned, he proceeds thus.

Pancerollus libro 1^o variarum Lectionum Cap. 66. existimat pro H. S. XX scribendum esse XXV, idemq; opinatur Aureos non plures XXIV in libra fuisse, quamvis Plinius eo loco refert Aureos nonquam pauciores ex XL auri libra signatos fuisse. Præterea LXXV H. S. in libra argenti ponit, ut numero hoc ducto in duodecim (quam eo tempore proportionem Auri ad argentum esse vult) summam DCCCC H. S. Pa. 1220 C. 8.

efficere.

officere possit; dum autem hac ratione libram Argenti LXXV H. S. tant continuiffe dicti scrupulum Auri exequantur XXV H. S. & Auream tribus Scrupulis sive LXXV H. S. & quoniam LXXV H. S. secundum ejus sententiam conficiunt libram Argenti, & pretium Auri ad Argentum habet rationem duodecuplum, uncia auri valebit H. S. LXXV, & ob eandem rationem Aureus, qui secundum hunc calculum ibidem H. S. LXXV valet, pondus uncie habere debet. Nihilominus idem Pancerollus ei semuncie tantum pondus tribuit, quoniam XXIV Aureos libra assignat, unde apparet eum non satis sibi constare.

By the Length of this Paragraph, and by his falling presently upon *Villalpandus*, *Joseph Scaliger*, and others, I perceive he has here brought in *Pancerollus*, to confute him; but by his so doing, I am now first informed, that *Savotus's* Interpretation of *Pliny*, was not so much his own Invention, as *Pancerollus's*: I have never yet had the Opportunity to see, or consult, *Pancerollus* himself, which I would have endeavoured to have done, if *Savotus* had quoted him any further, than that he was of Opinion, that the first *Denarii* were of an Ounce weight; And tho' I now perceive otherwise; yet, in the Haste I drew my Collections out of *Savotus*, from a Book borrowed from *Oxford*, I had not Time to examine this Passage, nor so much as to understand it, 'till I came now afresh to transcribe it, and more leisurely consider it; I will explain it as well as I can for the Benefit of my Reader.

It was, it seems, *Pancerollus's* Opinion, that when Silver was first coined at *Rome*, the *Sesterces*, and consequently the *Denarii* were of a very great Weight, so that nine hundred H. S. were equal to

5760 of those that were coined 3 or 4 Years before the End of the 2d Punick War, or *Anno Urb.* 547. Now divide 5760 by 900, the product will be as I have afore observed, $6\frac{1}{2}\%$, now six *H. S.* and a third Part of a *H. S.* as they have all along valued a *H. S.* comes to 12 *d.* Halfpenny, and consequently a *Denarius* to 4 *s.* 2 *d.* short indeed of a *Troy Ounce*, by near 12 *d.* but of a *Roman Ounce* not above 6 *d.*

I may not be ungrateful to those, who like my self, know little of Arithmetick, to expound the Matter, how *Pancerollus* comes to ascribe 75 *Sesterces* to the Pound, rather than any other Number, it being thus; He was to find so many *Sesterces* as would answer to the Rate, or the Proportion of Gold to Silver, or 12 Times the Value of the one to the other; whereas those that reckon the Value of Gold to Silver, as one to fifteen, thought better to pitch on such a less Number of *H. S.* that would better answer to that Proportion, as XX *H. S.* seems to do than XXV.

BUT upon Trial, I find that 900, divided by 60, makes one Pound of Gold, exactly equal to 15 Pound of Silver; and the same 900, divided by 75, makes one Pound of Gold exactly equal to 12 of Silver; But I do not stand so much upon my Computation, but that I wholly leave it to others to correct my Mistakes, if in this Matter I have fallen into any.

I suppose *Pancerollus* thought that Gold could never be esteemed as 1 to 15 of Silver, because it appears, that, not long after, the *Romans* would not receive it of the *Æolians*, at an higher Value than as 1 to 10; but if we will believe *Plato*, Gold in his Time was as 1 to 12, and in *Darius's* as 1 to 13, and in *Constantine the Great's* Time, as 1 to 14 $\frac{1}{2}$.

AND

AND Savotus tells us, Part. III. ch. 7. p. 1229 that in the Acts of Accompt for Money (or in the *Exchequer*, as the *Englisb* stile it,) Gold passed there as 1 to 16.

HAVING been so large in expounding Savotus' Explication of 900 H. S. mentioned by Pliny, think it will be not out of my Way, to acquaint the Reader, with the Explication Mr. Hardwin gives of this Place; because it appears to me to be obscure and intricate; but he asserts it as plain and evident. The Words he undertakes to explain are these;

Quod effecit in libras ratione H. S. qui tunc erant H. S. DCCCC. Hardwin de re monetaria. pa. 556.

Effecit, inquit, hæc major Auri æstimatio ut in libra Auri singulas Respublica lucrifaceret Sesteracios nongentos, eorum scilicet H. S. qui tunc erant, hoc est anno (arbis) DXLVII, quique jam ab anno DXXXVI quaternis Assibus permutabantur, quod si nongentos H. S. ejusmodi qui tunc erant lucrata respublica est, igitur H. S. MCCCCXL lucrata esse necesse est eorum H. S. qui prius erant, hoc est qui duobus Assibus & semisse æstimabantur; continentur enim hi 1440 in nongentis illis ita ut ne unus quidem aut desit aut superet; Quare quoniam nunc vicens H. S. vulgaribus Assium scilicet duorum cum semisse quorum Sesteraciorum haberi ratio solet in quovis pretio indicando ut diximus: Quod inquam vicens illis H. S. permutatum esse dicitur auri scripulum, quindenis antea necesse est fuisse taxatum, ut in singula scripula lucrata respublica sit quinque H. S. in libras quæ scripula 288 continent H. S. 1440, in libras inquam auri infecti, quod in ærario servabatur, quodque interdum distrabebatur ad vasa operaque publica ac privata. Nulli dum enim tunc nummi Aurei nisi fortasse peregrini tum ab externi. Quare apud Livium anno 543 jussere patres deferri ad Triumviro mensarios Aurum Argentum & Æs omne; sed cælatum scilicet.

licet, signatumque apud exteros, nempe ut illud in belli sumptus impenderent.

I have inferted this long Paragraph, not because I understand it, but because I do not, and scarce believe any else can; for Monsieur *Hardwin* seems to suppose *Pliny* designed in this Place to shew how much the *Romans* gained by their Gold at the first Coining of it; which I take to be an Opinion false and groundless. 2dly, If it had been so, I no Way find how this Author has made it intelligible; for he supposes that 900 Ounce *Asses* would make 1440 two Ounce *Asses*. Neither after many Tryals could I meet with this Number of 1440, by any Calculation, 'till by Chance computing how many *Sesterces* of 2 Pounds and $\frac{1}{2}$ would be found in 900, the Quotient prov'd to be 540; which Number being joined to 900, the Sum happen'd to be 1440. I mention this, but not as any way supposing 'twas the Way by which the Expositor came by this Number; but no doubt the Author did look upon this Exposition as little less than infallible, by the Encomium he takes to himself, in the Paragraph next following: where he says, That this Place had so wonderfully tormented the Wits of the greatest Men, that have Writ *De Re Nummaria* in this last Age, and had rendered all their Endeavours in vain to this very Day; we have now given a true and passable Interpretation of this Place: And then goes on to shew how all others had failed in it, and recites the Opinions of *Glarianus*, *Hotomanus*, *Budeus*, *Pancerollus*, *Villalpandus*, *Agricola*, *Snellius*, *Portius*, *Scaliger*, and at length comes to *Savotus*, for whose Sake I have mentioned all the Rest; who explains the *H. S.* that then were, as near seven Times heavier than the common Ones; which Conceit moved, as this Author

K

says

says, the Laughter of *Gronovius* very deservedly, and also of all Learned Men ever since.

I grant indeed that *Gronovius* was a great opposer of *Savotus's* Opinion, but in a civil and obliging Manner, and by no Means in such a Degree of Laughter, as when he wrote against *Abramus*, (*Hardwin's* fellow Jesuit) whom he exposes as much as possible; and little better than puts a Fool's Coat on his Back, and weak Arguments in his Mouth, to make him the Derision and Laughing-Stock to all that shall read his pleasant Discourse against him, not printed I think in *Gronovius's* 8vo Edition, but the 4to Edition, p. 656, where I suppose Monsieur *Hardwin* met with it, and had never seen or heard of *Abramus's* two Folio's, tho' printed at *Paris*, Anno 1631; But as I have said before, tho' *Gronovius* has shewn much Wit in that Discourse, and played upon *Abramus* every where, yet he scarce touches the main Question at all, but leaves his own Opinion as undefended, as he has render'd the other's light and ridiculous.

HAVING already acquainted you with four Persons, who agree with me in the Opinion, that the *Denarii*, at first, were of a far greater Weight than *Budeus* and his Followers ascribe to them. I come now in the fifth Place to quote, out of a late Author of great Fame and Reputation, some Passages that seem to center in the same Opinion, tho' not openly owned, or publicly professed by him. The Book is writ by Monsieur *Gasp. Eifenschmid*, a Gentleman of *Strasburg*, intitled, *De ponderibus & mensuris disquisitio nova*, published at the same Place MDCCVIII; but never heard of by me, 'till I found him highly celebrated by the late Bishop of *Bath and Wells*, in his Treatise upon the same Subject:

ject: I will not pretend to contract him, because he is a very concise Author, and has much Matter in a small Room, and is very well worth the perusal of all our young Gentlemen of Quality. I shall only transcribe two or three Places out of him; the first may be met with in his Preface *ad Lectorem*, in the Form following.

I question not but many People will expect that no Marks, or large Periods, are to be found on the several Coins themselves, only Ciphers, but therein they will be mistaken, for I suppose Mr. *Eisenschmid's* Printer used the latter for lack of the former.

AND I think it convenient to let my Readers know, as well for the sake of Mr. *Eisenschmid's* Volume, as for this of my own, that these Tables which I have transcribed from his Printed Book, where the Author had made Lines only, I have caused the Printer to put Ciphers, (which I think to be more proper) in their room, as for Example, *Vide* Line 4. of the 1st Column of the Table of *Libra seu AS*; instead of 9 -- -- as in his Printed Original, I have caus'd Ciphers to be placed, which is the only Alteration, or Variation that I have made from Mr. *Eisenschmid's* Copy.

UNCIAE cum Grossis 60

Granis sunt Parifinæ.

Libra seu AS cujus nota est

Unc.	I.	Gross.	Gran.
11	—	3	—
11	—	2	—
9	—	2	—
9	—	0	—
8	—	6	—
8	—	6	—
8	—	5	—
8	—	3	—
8	—	1	—
7	—	0	—
6	—	7	—
4	—	1	—
1	—	6	—
1	—	4	—
1	—	2	—
1	—	2	—
1	—	1	—

Triens cujus nota est

3	—	4	—
3	—	2	—
3	—	0	—
2	—	7	—
2	—	7	—
2	—	6	—
2	—	3	—
1	—	5	—
1	—	4	—
0	—	3	—
0	—	3	—
0	—	2	—

Semis cujus nota est

Unc.	S.	Gross.	Gran.
5	—	3	—
5	—	2	—
5	—	1	—
4	—	5	—
4	—	0	—
1	—	1	—
0	—	5	—
0	—	5	—
0	—	4	—
0	—	2	—
0	—	2	—
0	—	1	—

Quadruffis.

45 — 1 — 36

Quadrans cujus nota

2	—	6	—
2	—	4	—
2	—	2	—
2	—	2	—

Alius item.

2	—	1	—
2	—	0	—
1	—	7	—
1	—	3	—
0	—	4	—
0	—	3	—
0	—	3	—
0	—	1	—

Sex.

Sextans cujus nota est ●●

Unc.	Gross.	Gran.
2	3	00
2	0	36
2	9	00
1	7	36
1	6	00
1	3	00
0	7	36

Alius item.

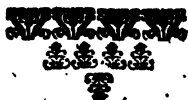
0	7	32
0	7	04
0	7	00

Alius item.

0	6	66
0	6	36
0	6	15
0	6	09
0	5	47
0	1	36
0	1	03
0	0	50

Uncia cujus nota est ●.

Unc.	Gross.	Gran.
0	5	06
0	4	00
0	3	66
0	3	42
0	3	27
0	3	07
0	3	04



I have transcribed these TABLES, not only to shew the Weight of the *Asses* at several Times; but also the Weight, and Notes, or Marks, by which one Piece of Brass Money was known, and distinguished from another: I never met with any such TABLE as this, in all the Books that have yet come to my Hand, and therefore it must needs be very useful to a young Beginner, that first sets upon the like Studies. And from the great Diversity I find in all the *Asses*, which may be of more, but at least of five or six Kinds; and therefore by Consequence of five at least, before they come to one Ounce *Asses*; and after which, *Pliny* gives an Account of two or three other Changes; and yet in this

this TABLE there are none mentioned that weighed under a single Ounce, or an half Ounce *AS* amongst them all; as for the *Quadrussis* here mentioned, containing 45 Ounces, and had the complete Weight of four Pounds of Brass; three Ounces being decayed by Rust, or some other Accident; and it is almost a Wonder, that in above 2000 Years, it was no more wasted than this comes to; So that I think we hardly need any other Argument, than the Sight of this Table, to prove, that the *Asses* did not at one leap, as *Pliny* writes, fall from a Pound Weight to that of two Ounces only; as has been shewed before by the *Stips uncialis* mentioned in several Places in my two LETTERS to Mr. *Thoresby*.

THE following Quotations out of Mr. *Eisenschmid*, were finished by me about the Middle of November last, but by some Accident or other were wholly lost, and not either to be found here or at *Newcastle*, and therefore I am forced to renew them a fresh; and being in haste, the Press staying for them, I have not Time to read that Book over again, but must content my self with viewing the latter Part of it, which possibly may make the Curious more desirous to peruse the whole, which will be very well worth their Pains and Labour.

THE first Place I have yet met with, that is worth more than ordinary Observation, and which I know not whether I ever yet took precise Notice of it before, may be found *Pag. 126*, where he informs us, That where ever any Number, either of *Sesterces*, or *Deniers*, had a Line or Stroke drawn over the Top of them, that Stroke signified, that the Number was to be understood of so many

many thousands of either of those single Coins; but never of so many thousand *Sestercia* in the Plural Number, for there the Number of so many Thousands were understood of themselves, without any Mark, or Line over their Heads. And *Pag.* 134. he says; Now that famous Enquiry ought to be took Notice of, which is this, Whether the first Silver *Denarii*, coined by the *Romans*, were of the same Weight with those that afterwards were produced when they were extremely lessened, and of which, under the Title of Conulary *Deniers*, very many are to be met with. The Affirmative, that at first they were larger than afterwards, seems highly probable, upon the Account of the vast Disproportion, that otherwise would appear to have been; between the Rate and Value of Brass and Silver; for it is scarce credible, that one and the same kind of Silver Money should answer to a certain Proportion of Brass, to which shortly after, the twenty fourth part alone should be esteemed equal.

Savot indeed (tho' he be by many laughed at for it) relates, or states the first *Denarii* to have been of an Ounce Weight, or at least four of them to have been contained in an Ounce, (but this, as I have above observed, was an Errour or Mistake, using the Word *Denarius* when he meant only a *Sesterce*, see *Pag.*) for he had viewed or examined some *Denarii* (or rather *Sesterces*) that weighed 126 *Parisian* Grains; on the one Side of which was a two faced *Janus*, and on the other a Chariot, with four Horses, and a thundering *Jupiter*, with the Inscription *ROMA* upon it; and has much the same Resemblance with that of *Patin's* Table of uncertain Coins, with which *Fulv. Ursinus* has encreased his *Roman* Families, where it obtains the first

Place; and the same is delineated by *Molinet*, out of the Library of St. Genevieve, Pa. 56, which he styles a double *Denarius*: And *Savot*, not only found many such *Deniers* among his Friends, but one also in his own Cabinet, of undoubted Antiquity and elegant Workmanship, made by the Hand of some Greek Artificer, and is still intire, and of the Weight of 124 Paris Grains: Besides the Letters do not stand out, as in other Coins, but are hollow and made by Percussion, and the Figure A, something open at the Top of it, which is a Sign of it's vast Antiquity: The same *Savot* had seen other Moneys of the same Weight, with the Image of a Horse, or the Neck of that Beast, and with the Inscription ROMANO, with the like Pictures as may be found in *Goltzius Græcia magna, Tabula XVIII*. *Gronovius* opposes this Opinion of *Savot*, in his Book of *Sesterces*, lib. 2. cap. 1. and lib. 3. cap. 9. for which he brings not one Argument; *non uno allato argumento* (" I have " render'd the *English* Word for 'Word' with the " *Latin*, tho' no doubt Mr. *Eisenschmid* meant, not " one, but many Arguments, but I think the contra- " ry); " and then concludes with these Words, *an vero conficiat alii viderint, nostram enim non facimus controversiam*; (which may be englished thus) *whether Gronovius has confuted Savot, or not, let others judge, for I intend not to make this my own Controversy*.

THESE last Words of Mr. *Eisenschmid* imply one of these two Things, that he was unwilling to reflect on the elder *Gronovius*, out of Compliment to the younger *Gronovius*, then, it's likely, alive; or, that he fear'd to be dealt with by him, or some other, as *Savot* had been; if not by *Gronovius*, yet by *Hardwin*, who endeavoured to explode his Opinion, and render it ridiculous; but I think there are

are more ridiculous Passages in *Hardwin*; than any Man could expect to have met with in so learned and eminent an Author.

IN Page 136. Mr. *Eisenschmid* compares the Roman Money with the Modern, part of which Page I do not well understand, because it relates to French Money; but plainly states the *Denarii Consulares* at eight French Shillings, and near an eighth part more, which I think in our Money is 8 d. $\frac{2}{3}$; and further tells us, this does nearly agree with Mr. *Hardwin*'s Valuation also, saying, *Prævit nobis in hoc valore statuendo R. P. Harduinus Soc. Jesu in doctissimis ad Plinium notis passim.*

Hanc ipsum veteris pecuniæ Romanæ æstimandæ modum, etiam isti temporis, quo Asses Pa. 137 adhuc librales erant, applicare omnes, quicunque hactenus de hac re scripserunt etiam vetusti; and a little after giving some seeming Countenance to such as were of that Opinion, he goes on and says, Page 138. At vero Sciendum est Romanos tunc temporis ære quidem sic satis abundasse, non item argento, quod non minus ac ipsum aurum, gemmarum loco habebatur. Minime itaque mirare debemus immane argenti pretium supra æs, cum istud ad usum pecuniæ flari primo cæpit; septima enim uncia argenti portio (si quidem e tali pondere Denarius primum fuerit) decem æris libris æquabatur, id est, una argenti pars 840 partibus æris. Unde nemo nisi plane iniquus censor negare poterit, pecuniæ hujusmodi æstimationem ex ære non argento esse instituendam; maximeque hic valere debet de eodem argento quod Aufonius de auro prædicat.

Auro magnus honos auri pretium tamen est æs.

Sane non possunt non ridendos se sistere qui aliter de hac re statuunt.

IN this last Paragraph, Mr. *Eisenschmid* for fear of Mr. *Savot*'s Fate, seems all along to mix Irony and

and Truth together, and complies with a false Opinion of others, to gain a fairer Entrance for his own, for what he seems to allow in one Sentence, he endeavours to overthrow in another, as will be evident from what went before, and now follows after, for there he seems to allow that the 7th Part of an Ounce of Silver was worth 840 Parts of Brass; but with this Proviso, that this was the full Weight of a *Denarius*, at it's first Coinage. Then he says thus, "Brass was to give the Rate to Silver, and he must be laugh'd at that denies it;" then goes on in the following Manner.

Denarium scilicet communiter comparant cum Regali Hispanico, seu Julio Italico, adeoque decimam ejus partem scilicet Assem libralem cum Bajacco. Bonum factum! equiparare Assem libralem veterem cum nummulo novello ejusdem metalli, qui vix decimam sextam alterius partem in pondere habet; quasi vero post tot exhaustos montes, toties rarius hodie Æs existeret, quam olim primis post Romam conditam sæculis fuerat. Certe qui tunc centum millia æris possedit, totidem libras æris possidet, unde haud aliter ipsius divitiæ sunt æstimandæ quam ex æstimatione æris. Sed si vel maxime Æs pro norma pecuniæ ponere velimus, difficultas oboritur in assignando vero ejus precio; comodissima tamen mihi videtur via, si attendamus ad tempora, quibus Romæ Asse semunciales facti sunt; eorumque sedecim uno Denario permutati. Hinc enim discimus, si sedecim Semuntia seu uncia octo æris valent octo solidos Turonicos, duodecim uncia seu libram integram, id est, ipsum Assem æris gravis, duodecim solidos Turonicos valeturam. Ad hodiernam æris pretium proxime hæc accedunt, saltem in nostris regionibus; Ne vero quis existimat, nimium fieri à nobis, adducamus iterum primæ classis censum à Servio Tullio institutum, nempe centum millia Æris, quod efficit 60000 libras Turonicas nostro calculo, sed aliorum 4000 tantum. Hic exclamabunt

buunt nonnulli, tantam summam nulli civium Romanorum tunc temporis quadrare. At secus omnino apparet, cum & multæ familie illustres atque potentes Romæ tunc reperirentur, aliæque subinde ex circumjectis populis, imo & remotis, opibus valentes, illuc migrarent, quod ex historia non grave erit monstrare. Quin potius abjecte nimis de potentia Romana judicare censendi sunt, qui summas privati civis divitias non ultra 4000 libras Turonicas se extendisse asserunt.

IN the fore-going Words, this Author plainly discovers his Opinion fully to agree with my own Hypothesis, pleaded for in the foregoing Letters; yet as if he durst not boldly own, or stand by it, for Fear of being laughed at by the Gronovii, and Hardaini, he draws back a little, and fences himself with the following Words. *Sed de his suum cui-libet judicium liberum esto, nobis proposuisse sufficiat.* The English of this Latin is this, *But of this let every Man's Judgment be free, it is sufficient for me to have proposed it.*

THIS Faint-heartedness, or Timorousness, in Mr. *Eisen Schmid's* owning and avouching his own Opinion, was I suppose the Reason why the late Bishop of Bath and Wells who commends him Pag. 18. as a very learned and curious Author; takes no Notice of it at all in his whole Book.

AND tho' I can never sufficiently admire Mr. *Eisen Schmid's* exact Judgment, and vast Knowledge in the Mathematicks, yet I cannot but think it an Instance of my Kindness to him to observe a Mistake or two, and correct it, for the Benefit of his Readers, or even himself also, when he reprints his Book, or any other Friend for him; for certain it is, an Injury to any Man's Reputation, to have an Error propagated in the World, for want of a perfect Collection of the *Errata*; as I find, by sad Experience, that

that many oversights had passed in my ANNALS, which if I had observed my self, or received information from others, as from some I since have done, I should with all Gratitude acknowledged it, as being much obliged by it. The one of these Oversights, (for they are no more than Oversights) has been observed in my Letters already Printed, Pag. 109; the other I met with at the End of his Book, and which is of very considerable Moment, and not enter'd among the *Sphalmata Corrigenenda*, and may be found in Pag. 145; where speaking of the 1200 Slaves restored to the Romans, which cost the Achæians, the Donors, a hundred Talents, viz. 500 Drachms a Head, &c. It is now printed *Subducto calculo pro centum Talentis 600000 Denarii proveniunt adeoque pro singulis 6000 Denarii*; where the last Sum 6000 ought to have been but 500.

I think in the last Copy I recommended (this small but excellent Book, exceeding all others that ever I read before it) to the Perusal of our young Gentry, in which they will find many Things worth their Notice, which will require little Time to read, and less Price to buy, it being printed in Octavo, and I think, not containing above 200 Pages, taking in the 50 Tables, and Index, altogether.

IN a Copy that has miscarried either here, or going to Newcastle, I had given the different Numbers ascribed by Livy, Pliny, Aulus Gellius, and Pomp. Festus, to the first Classis of the Roman Census; together with a Table, according to my Valuation of Sesterces, from one to as many Millions, as are to be met with in any Roman History: Which shall be placed after some Remarks I am now making upon Dr. Arbutnot's Tables of Weights, Measures, &c. at the end of these Miscellanies.

R E-



REMARKS

ON

DR. *Arbuthnot's* BOOK,

AND

TABLES.

I Had publish'd what I intended *De Re Nummaria* (had not the Operator delayed me) some Time before *Christ-mass* last; and then I should never have seen the so much celebrated Book of Dr. *Arbuthnot*: Nor did I ever hear, in my Privacy, the least Word of it, 'till the last Year I met with it, in the printed Catalogue of Dr. *Finny's* Library; upon which, I immediately sent to *Durham* to buy it, but it was sold before my Letter got thither. But shortly after this, I became engaged in a Business of a different Nature, and thought no more of it, 'till it was

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was recommended to me by a Person of great Honour, who had heard of my Letters *De Re Nummaria*, then in the Press. And being informed that there was a second Edition of it in the Hands of a Relation of mine, then in *London*: I employed my Nephew to borrow it, who by some accident or other, was frustrated of his hopes; and for fear I could not wait longer for it, ventured, without my Order, to purchase it for me, at 30 s. Price, the Value of it daily encreasing; and which came not to my Hands 'till after the Beginning of *Christmas*. Upon hearing the great Vogue it was in all over *England*, and inspecting some few Pages in it, I presently discerned, that all my Letters, and the Opinion I maintained in them, would either not be read at all, or condemned for the new Hypothosis I advanced in them, and this for two Reasons. *First*, Because my Notion had been formerly rejected by those eminent Criticks *Gronovius* and *Hardwin*'s. *Secondly*, Because Dr. *Arbuthnot*, both in his Book and Tables, had given a lesser Account of the Value of the *Roman Denarius*, than I had done in my Letters; which two Considerations would render them despicable and unsaleable; so that I found it absolutely Necessary to suppress them, or else, as well as I could, to endeavour to support and vindicate them. And yet since I could not do this without dissenting from, and entering the Lists with, an old Acquaintance, and familiar Collegiate for some Months, or rather Years in *UNIVERSITY COLLEGE* in *Oxford*: And whom I thought had endeavoured to oblige me, by undertaking to answer some Quæres sent to Dr. *Bateman*, now deceased, as I have given Notice at the End of that Letter, now published.

BUT

BOOK, and TABLES. 143

BUT a little before I sent it to the Press, I order'd my Nephew to wait upon the Doctor, and present him with my ANNALS; but my Nephew taking the Person intended, to be a Doctor of Divinity, could hear of no such Person; but after a considerable Stay, he discovered his Mistake, and going to enquire after the Doctor at his House, he heard he was at the *Bath*, and erroneously, as I suppose, mentioned my Letter as writ to him, which the Doctor said he never received, for it was directed indeed to another Person; which Letter, as appears by it's Date, was writ above sixteen Years ago: Wherefore now finding, that his Book was published near twenty Years ago, I take it for granted, that he had thoughts of it before my Letter was writ to Dr. *Bateman*, and therefore more readily engaged to write an Answer to it, which if he had readily sent to me, I should have acquainted him both with my Hypothesis, and likewise with my Estimate of the *Roman Denarius*; and by that Means, the one or the other of us would have altered our Sentiments, and He his Book and Tables; and, by that Means, sent them out more correct than I conceive them now to be: But because it is now too late to bring Time back again, and that one of us must needs be in the Wrong; I hope He is so great a Lover of Truth, as to be willing to embrace it wherever it may be discovered to him; and to assist him in the Search of it, I will give an Account of what I have met with in any of the Books I have read, in Relation to the Value either of the *Sesterces*, or *Denarii*, which wholly depend on the same Hypothesis's, so as the Knowledge of one, must needs help forward and illustrate the Discovery of the other.

IN

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IN doing this, I can receive no great help from *Budeus, Agricola, Hotamanus, Coverruvias, Villalpandus, &c.*----- and most other foreign Writers; because I do not understand their Meaning in giving the Worth or Weight of *Roman Money*, in Terms proper to their several Nations, whose Language I no way pretend to be knowing of, nor have any Friends or Acquaintance here who are able to explain them to me: And therefore I shall confine my self to our *English* Authors, and in order to this, I first made enquiry after Bishop *Tonstal's* Book, a Man of great Note in *Harry the 8th's* Time, for his Knowledge in Mathematicks, and publishing his *Arithmetick* in Latin; at the End of which he had given an Account of *English Money*, and that, as I was informed, in Relation to the *Roman*; but the Book was grown so scarce, that it could not be had at *London*. Upon this I requested Bishop *Burnet* to borrow it for me of *Dr. More*, then Bishop of *Ely*; but he was at that Time so engaged, as I take it, in visiting or determining some Disputes at *Trinity College* in *Cambridge*, that he could not have Time or Leisure to seek for it: And Bishop *Burnet* sent me Word, that the other Bishop had such an Ocean of Books, that he was not Privy to his own Wealth which he possessed in this Kind: But he added, of himself, that it was a Pity, that any that would use Books should want them: And therefore told me, that what I desired, let me send to Mr. *Churchill*, and as far as Five Pounds went, his Lordship would pay for them. This indeed was a very generous Offer; but I declined it, by acquainting his Lordship, that I was not in so low a Condition, but that there were very many on whom his Charity might be better placed; but that if he would Honour
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my Study with the HISTORY of the *Reformation*, (at that Time just swelled into three Volumes) I would thankfully accept of them; which shortly after I received from the Hands of his Executor.

BUT Having thus owned the Bishop's Generosity, I must next inform my Reader what Occasion I have now to make some Complaints of hard Usage; partly to my self, but infinitely more toward Dr. *Henry Wharton*, and that after his decease also; the Matter of Fact lies in this Order: After *Ant. Harmer* had published his *Specimen of Errours*, to be found in the Bishop's History of the *Reformation*; there was a Person that frequented the Coffee-house, where we met daily, in *Oxon*, and who afterwards became a Prelate in *Ireland*, that was continually running down that HISTORY, for the Sake of the Errours discovered in it; many of which are not very material, and might in so large a Work have been easily pardoned: And in order to obtain such a Pardon, I acquainted his Lordship with some more considerable *Errata's*, to be found in the first Volume of the *ANGLIA SACRA*; out of which I had drawn up as many Mistakes as I could possibly meet with, and had discanted upon them, as far as I was able, in the same Method *A. Harmer* had drawn up his, and without acquainting the Bishop who was the Author, sent them up to his Lordship, with Licence, if he thought fitting, to print them. But when the Collection was made, I had prefix'd, first a Letter to his Lordship, and next an Epistle to the Reader: In the Former it was but fitting to compliment his Lordship; but the Latter was altogether as large in Commendation of Dr. *Wharton's* Skill, Diligence, and Faithfulness in viewing and examining the Records of

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our *English Church History*. The disgust that this last gave his Lordship, obliged him to stifle the whole Tract; but yet he was pleased to shew Part of it to many, by way as I suppose in excuse or answer for his own Mistakes: But as I take it after the Doctor's Decease, he made it an Occasion of foully be-spattering him, as a Man of no Credit, and all he had writ in that SPECIMEN, was fit to go for nothing; which Practice of his Lordship, after I came to read both in the *Preface* and *Introduction* to his Lordship's third Volume, I was amazed at his Injustice both to the Living and the Dead. For I had acquainted his Lordship, that the Faults were none of Dr. *Wharton's* own making, who had never seen the Manuscript it self, but only some Exscript of it writ by some raw and illiterate Person, employed by some of his *Oxford* Friends to send him a Copy of it. There is indeed one Thing the Bishop takes Notice of, as an Insertion of the Doctor's to make the first Line intelligible: I have not my own Manuscript by me, but this I very well remember, that the Errours most insisted on, are all in the Statutes made by Bishop *Hatfield*, Founder of *Durham College*, which being inserted into the middle of a larger Manuscript, had in the Binding, the Top of part of it cut off, and part of the Letters of the first Line took away; And therefore the Bishop says, that tho' the Contraction of *Capitulum* might be mistaken, and read *Ep'lam & Catholice*, for *Cathedralis*, that it was, as one may say *crimen falsi* to add *Conventus*. Now in this his Lordship is mistaken, for I suppose Dr. *Wharton* might possibly take *Cap'lum* for *Conventus*, for according to the true Reading the Statutes, after *omnibus*, &c. is thus to be read, *Nos prior, & Capitulum Ecclesie Cathedralis Dunelm.*

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I once threatned my Lord Bishop's Son, that I had Thoughts of publishing this, and some other Facts the Bishop had used to avoid, the Discovery of some other *Errata* communicated to him by other Hands; but I forbore doing so, least I should seem ungrateful for the Kindnesses, done and offered to me.

AND contenting my self in having thus sufficiently vindicated Dr. *Wharton's* Integrity; I shall now say no more of that Bishop, but permit his Ashes to rest in Peace and Quietness: And return again to my former Subject, and give some Account of those of our Nation that have writ any Thing concerning the Worth of *Roman* Money.

AND the first, as I said before, that have expressly treated of our Coin, I take to be Bishop *Tonstal*, in his Book *De Arithmetica*, which I bought at last out of Dr. *Finney's* Library; but when it came to my Hand, tho' in the Beginning of the *Elenchus Capitum*, of his four Books, he adds an Appendix, *Ex Gulielmi Budæi de Asse excerpta, in qua prisca Latinorum & Græcorum supputatio ad Æstimationem pecuniæ tum Gallicæ, tum Anglicæ revocatur*, Pag. 433. But when I came to consult that Page, at the End of the Book, I found by the remaining Stumps of the Paper, to my surprize and disappointment, (but I believe it came so into the last Owner's Possession) that the Book was imperfect: And now fear that it is become so great a Rarity, that it will hardly be met with at Home, except in some publick Library; which I doubt not, but if it could, would give a great Light, both into the *English* and *French* Coins that were then in Use in either Nation.

NEXT after Bishop *Tonstal*, I examined what Account Bishop *Cooper* gave of the *Roman Denari-*

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as in his Dictionary, (the Name *Sestertius* not being to be met with there) of which no more is said of the *Denarii*, than barely what he had borrowed from *Agricola*; that they were of three Sorts, some of 6, some of 7, and some of 8 in the Ounce, and the last of these of the Value of a Groat, when eight Groats went to the whole Ounce.

AFTER him I must quote *Thomas Thomasius*, his 4th Edition in 8^{vo}. printed 1592, who tho' he speaks of the *Sesterces*, yet descends not to their Value, but gives that of the *Denarius* at eight Pence *English*.

SIR *Henry Savile* here follows in Order, who translated *Tacitus* into *English*, and made some Notes upon him; but I have not that Translation by me, and therefore must borrow the Account of him from *Gronovius*, tho' his *Tacitus* was published in FOLIO, in the Year 1582: That Author, *lib. 3. cap. 2. p. 120.* acknowledges Sir *Henry* to be a celebrated Critick, and gives this Encomium of him, that he was *Vir conditione & animo excellens* and bemoans, that for one Man's bad use of Criticism, he should despise it in general. And afterwards *lib. 3. cap. 6. pa. 157*, he speaks of the Value of *English Sterling Money*, compared with the *Roman*, *Hujusmodi Sterlingorum libros octo censit Savilius fuisse Romanorum mille nummum*; *Thomas Thomasius addit nobilem, five sex Shillings, Penningos octo.* The Former of these two comes not up to my reckoning of a *Sesterce* at 2 *d.* but the latter exactly agrees with it, when the Fraction belonging to it is cast away, as will appear shortly hereafter. But *Gronovius* goes on, and tells us, that a present *English Pound* is but a *Triens*, or third Part of an ancient *English Pound*, or of an ancient or present *Roman Pound*: Tho' this is not agreeable to what I have com-

computed a *Roman Pound* at in some of my foregoing Letters, for I compute by an *Averdupois Ounce* of 438 Grains, but *Gronovius* by a *Troy Ounce* of 480 Grains; for if we reckon as he, and many others do, by a *Troy Pound*, and divide a *Troy Ounce* into seven Parts, each *Denarius* would amount to little less than nine Pence of our Money.

The next, in order of Time, that I have by me, is a Discourse *De Re Nummaria*, writ by *Edward Brerewood*, Astronomy Professor at *Gresham College*, and published by his Nephew in 4^{to} A^o. 1614; but it being a posthumous Book, he seems not, to me, to be every where Consonant to himself: For in his 19 Page he says, a *Drachma* was the eighth Part of an Ounce, and of equal Worth with a *Roman Denarius*, and in the Margent sets 7 d. ob. as it's Value; but says, that a *Stater*, or *Tetradrachmum*, is four *Drachms* of XXX Pence, which I take to be a great Lessening of the Greek Coins: Then Page 34, he quotes all the Authors that say there were 84 *Denarios ex una Argenti libra cufos*, *valuit proinde vetus ille Denarius 8 d. ob. c. cum $\frac{1}{7}$ c.* (I do not well understand what he Means by *cum $\frac{1}{7}$ c.* nor what others by their *qu q.*) But after p. 35. he computes the new *Denarii* under *Claudius* the Emperor, at 7 d. ob. the *Quinarius* at 3 d. ob. *qu*, and the *Sesterces* at 1 d. ob. *qu q.* I have heard this Book much commended for the Account it gives of the *Hebrew Money*, and the Sums given and collected toward the Building of the Temple at *Jerusalem*.

I have not here either *Rider*, or *Goldman's Dictionary*, to consult what they say on this Subject, neither do I think them much to be regarded; but *Holyoke's*, printed A^o. 1677, with *Dr. Barlow*, Bi-

shop of *Lincoln's*, Recommendation before it, is not much to be relied on; for explaining the *Denarius* in *English*, what he says, is chiefly borrowed from *Agricola*: And then afterwards in *Latin* he tells us, that the ancient *Denarius* was worth a *Drachma* and a Half, or twelve Pence *Sterling*, the *Lighter* 7d. and the middle Sort eight Pence. He has likewise a large Account of all Sorts of Weights and Measures mostly, as I think taken from *Agricola*, at the End of his Book, and a long Argument in Approbation that there ought no Difference to be made betwixt *Sestertius* singular, and *Sestercia* plural; but this is so exploded and confuted by others before his Time, that it makes me Think that *Holyoke* is not much to be relied on in any Thing, in which he differs from other Authors. As to what he speaks of *Groats* of eight in an Ounce, the Word *Groat*, I think, is borrowed from the *French*, and signifies no more than something great and bigger than Ordinary. As I take it, the first *Groats*, each of four Penny Weight, were coined by *Edward* the 3d. before he lessened his Coin, and then must answer, or be of the same Weight, with 12d. of our present Money.

WHEN in the 27th *Edward* the third, a Pound was coined into 25s. taking away a 5th from the former *Groat*, there would remain something better than 9d. ob.

9 H. 5. a Pound was coined into 30s. and take away a 6th Part from 9d. ob. there will remain to the *Groat* about 7d. ob. q^u.

5 Ed. 4. a Pound was coined into 37s. 6d. take away therefore almost a 4th Part of 12d. or a 4th Part 7d. ob. there seems to remain near 6d. ob. q^u.

1 H. 8. who coined 45s. out of a Pound, and take away a 4th Part from 6d. ob. q^u. there will remain about 4d. q^u.

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I take it for granted that these Computations are not altogether Right, but be that as it will, it is almost certain, that in *Henry* the eighth's Time, before he enormously corrupted the Silver, with a vast Alloy of Brass, eight *Groats* were coined out of a Pound: Now divide 480 Grains, contained in a *Troy* Pound, or 60 *d.* of our Money, an eight Part of either of these would arise to six Times 60 Grains, which would each make 7 *d.* half Penny of our Money, which our Fore-fathers, about *Henry* the eighth's Time, reckoned equal to a *Roman Denarius*, of which I believe I shall speak some what more hereafter.

AND thus much concerning the Worth of the *English Groat*, at which the *Denarius* was computed; but what is here said, is but a sudden Essay, and must be rectified, otherwise it will make rather against my Hypothesis than for it, because I had it not in my Mind that there are now 15 Modern *Groats* in an Ounce, and something better.

28 *Ed.* 3. an Ounce of Silver was coined into 20 $\frac{1}{4}$ *d.* in the 20 Year of *Ed.* 3. into 22 $\frac{1}{2}$ *d.* in his 27th into 25 *d.* 2 *H.* 5. into 30 *d.* 1 *H.* 6. into 37 $\frac{1}{2}$ *d.* 4 *H.* 6. into 30 *d.* 24 *H.* 6. 30 *d.* 5 *Ed.* 4. into 37 $\frac{1}{2}$ *d.* 49 of *H.* 6. being restored to the Crown 1470, at 37 $\frac{1}{2}$, which continued all the Reigns of *Ed.* 4. *Ric.* 3. and *H.* the 7th. 1 *H.* 8. at 45 *d.* 34 *H.* 8. at 48 *d.* 3 *Ed.* 6. at 72. 6 *Ed.* 6. at 60 *d.* or 5 *s.* and an Ounce so coined 'till the 43d of *Eliz.* at 5 *s.* 2 *d.* or 62 *d.* and so ever since to this Day.

WHAT in *English* is called a *Groat*, is in *French* I believe called a *Gross*, or great Piece. Mr. *Eisen-schmid*, pa. 3d. says, a *French* Ounce contained 8 *Grosses*, a *Gross* 3 *Deniers*, a *Denier* 24 Grains, and consequently the whole Ounce 576 Grains. Had I took Notice of this at first, and not dispair'd, as

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I did, of understanding the *French* reckoning, I might have comprehended more of the Authors I have read, then now I do; or if Mr. *Eisenschmid* had premised this at the End of his Preface, where he gives an Account of the several Sorts of *Asses*, by their Ounces, *Grosses*, and Grains Weight, I should have taken more Notice of what I read; but being at first non-plussed, I took less Notice of what I found in his Book afterwards, and which I did not discover 'till the Time of this my present Writing.

DR. *Littleton*, who published his Dictionary about the same Time that *Holyoke* did, interprets the *Roman Denarius* very doubtfully, and indiscriminately tells us, it was of the Value of 8 *d.* or 7 *d. English*.

I shall here also add what I find in Sir *Henry Spelman's Glossary*, who under the Word *Denarius*, (quoting *Fortiscue*, sometime Chancellor to King *Henry* the 6th, out of his Book *De Laudibus Legum Angliæ*, Cap. 53.) has these Words, *Quatuor solidi redditus (Parisienses) qui de pecunia nostra (Anglicana) octo Denarios non excedunt*. This I think shews that at that Time forty eight of *French* Pence were only Worth eight of ours; but Mr. *Hardwin* seems to me to give the Value of a *Roman Denarius* at 8 *Solids* their Money, and 96 *l.* of theirs make 8 *l.* of ours and so I guess the Accounts are reckoned at this present Time. Sir *Henry* himself adds, *Hodiernus noster Denarius Scotticum solidum æquiparat: Antiquus igitur tribus potior. Nam cum hodie quinque solidi coque supra ex una argenti uncia cudantur, hoc est ultra 60 Denarios Tantundem olim argenti viginti solummodo exhibuit*. I have mentioned this rather to divert my Reader, than to draw any Arguments from it.

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THE next of our Latin Authors, that many will think should have been quoted, is Mr. *Selden*, a Book being printed under his Name, by *Moses Pitt*; but it is a mean and flagrant Forgery, and pretended to be dedicated to Sir *Simon Dewes*: But I after found it in one of the Volumes of Antiquity, published by *Grevius*, but my Memory fails me so, that I have forgot the learned Author's Name, but think he was an *Italian*.

THE last of our Latin Writers, and one much admired and quoted by Foreigners, is *Edwardi Bernardi de mensuris & ponderibus antiquis libri tres*, 8vo. editio altera Oxon. à Theatro, 1688; but the first Edition is in 1685. I here mention'd the Date of the 1st Edition from the Epistle Dedicatory, which Date when wanting, none can know in the following Editions at what Time a Book was first publish'd. This Gentleman in his Account of the *Denarius* is sometimes various; for in Pag. 104, he makes the *Denarius* better than our eight Pence, viz. $8 \frac{1}{4} d$; but in the next Page after it, he says, the *Denarius communior & eximie consularis pollet 7 ± ob. c. pecuniolæ nostræ; sive 2 p. w. & 13 gr. sive grana Anglicana 61, aut 61 $\frac{1}{2}$, aut 62*. It seems to me mighty strange how he will make all these Accounts agree together; I mean of the *Denarius communior & eximie consularis*. For this I am pritty certain of, that 62 Grains do equal, if not exceed, eight Pence of our Money; and this will appear more manifest, for pag. 93. he speaks thus, *Sestertius priorum consulum seu vetus. Sestertius, Dupondius & Semis, inquit Auruntius. Imo eximie nummus, aut nummus Sestertiis. Quadrans enim Denarii argentei valebat in recenti Republica tres Semisses i. e. Aris libras sive Asse 2 $\frac{1}{2}$ --- 3 --- $\frac{1}{2}$ quadrans seu semistertius more Græco. --- $\frac{1}{2}$ victoriati, $\frac{1}{4}$ Denarii veteris, si vetus: aut $\frac{1}{2}$*
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Imperatorii, si Imperatorius fuerit. Valebant enim Sestertii antiqui Pictore Fabio Consule, seu grana nummaria Angliæ 15 aut duo Penningi novi. Communes sequentium Consulium, ut grana 15 $\frac{1}{2}$ aut 1, 9375 d. Tiberiani grana 15, aut 1, 857 d. Et Vespasianici grana 13 $\frac{1}{2}$, aut Penningum 1, 6875 d; qua rem ego Romanorum æstimavi & constitui.

THIS that I have here transcribed will not easily be understood by a vulgar Reader, and therefore I will inform him of, one Mistake I discover since my writing it, and that is this. I took the Expression of *recenti Republica* for the later Age of the Commonwealth; but I think the Author intends it of the earlier Age of the Commonwealth, and produced it to prove that in this Author's Opinion a *H. S.* was worth 2*d.* but he after says, the more common Consular *Denarii* weigh'd fifteen Grains and a half. What is said of *Fabius Pictor*, whose *Sesterces* are valued at 16 Grains, raises the *Denarii* to above our present 8*d.* I had much ado to find this Person's Name after the Year of Rome 484, in *Helvicus*; but at last met with it in another Catalogue of Consuls, published at the End of the *Pandeets*, or rather after *Justinianus Codex*, where the Consuls Names are distinguished into 2 Columns and far easier to be found; and falls in with the *Anno Urbis* 484. The same Dr. *Bernard* says, he had seen some *Denarii* of *Drusus*, that weighed 62 $\frac{4}{7}$ Grains, which according to my Reckoning, amount to about 8*d.* *qu.* and better; but I know not who this *Drusus* was, nor when he lived; but by what I said before concerning *Fabius Pictor's*, I find the Reason is evident, why some Authors ascribe the first coining of Silver at Rome, to the Year 484, and *Pliny* and others to 485.

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HAVING done with our Latin Authors, it is Time now to descend to our English ones, who have given us any Discription of the Roman *Sesterces*, and consequently of their *Denarii* also. And the first that I have took Notice of (or have by me) is *Thomas Godwin*, the once famous School-master of *Abington*, five Miles from *Oxford*, who was the Author both of the *Roman* and *Jewish* Antiquities; the first of which were printed in the Year 1613, who in his 208th Page, of the 14th Edition, rates a *Sesterce* at 1 d. ob. q^u. q. and ten of them at 1 s. 6 ob. q^u. q.; but in both Places there are two gross Faults of the Printer, which must needs mightily distract a young Scholar; the 1 d. being noted with an *l.* over it, and the other thus noted 10 s. 6 d. 1 ob. 3 q. In the same Volume is bound both *Godwin's* Books, and *Rous* and *Bogan's* *Attick* Antiquities; and yet to my Admiration I find not in their Index, neither *Obolus*, *Drachma*, *Mina*, or *Talentum*, nor one Word of their Money, which seems to me a great Omission and Defect in both these Authors.

THE next Person that treats of *Sesterces*, is Dr. *Hakewell* in the latter End of his 2d Edition of his *Apology for the Providence of God*; where he describes a *Sesterce*, as containing two Pound and an half of Brass, as if the *Asses* had never been changed from two and a half to four *Asses*, and also tells us that there are 8 *Denarii* in an Ounce, and that a *Sesterce* was the 4th Part of a *Roman* Penny, and that the Value of a Penny was Seven-Pence Half-penny of our Money, and a *Sesterce*, the 4th Part thereof, was a Penny half-penny farthing half-farthing. All this being said by a very learned Person, will be apt to deceive young Beginners; tho' there is hardly any Thing here said that is agreeable to Exactness

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ness, as I shall shew by and by; And borrow from him another Calculation, communicated to him in a large Table, by *Francis Godwin*, Bishop of *Hereford*, and joyned also at the End of his Book, in Folio, Printed 1630. The Bishop's Calculation begins in these Words, *Unus Sestertius in masculino genere sive unus Nummus valebat nostræ monetæ Anglicanæ fere duo Denarii*. Dr. *Hakewell* assigns the value of ten *Sesterces* at 3 s. 1 d. ob. and the Bishop the like Number at 3 s. 2 d. which shews there was but the tenth Part of our Penny difference in their several Computations; and because this is the last English Author that gives the Account of a *Sesterce* so minutely in Words at length, I shall make some Observations upon what I have here quoted out of Dr. *Hakewell*; and is mainly taken by me out of *Villalpandus*, because his Book is of a great Price, and hardly to be met with but in Libraries. This learned Jesuit, tho' he falls in with the Common Opinion that the *Drachma* and *Denarius* were of equal Weight, yet against *Budeus* and *Alciatus*, he concurs with *Agricola*, and many other Authors, in ascribing 7 and not 8 *Denarii* to the Ounce; for in Vol. 3. lib. 2. cap. ix. p. 345, we meet with these Words, *Si contendat Alciatus lapsum fuisse Agricolam, asserentem septenos Denarios æquales fuisse aliquando octonis Attici Drachmis, lapsus est Alciatus; id enim plane testatur Plinius affirmans, justum Denarii pondus esse cum octoginta quatuor Denarios à libra figmentur, quod si octoginta quatuor Denarios in duas decenas uncias distributas, invenies singulis unciis septenos Denarios exæquari. At quoniam octo Drachmæ, Unciæ, ut dixi æquales sunt, communis Mathematicorum axiomate fit, ut quæ sunt eadem Unciæ, sunt eadem inter se. Deinde si contendat Agricola deceptum fuisse Alciatum existimantem, Denarii & Drachmæ idem*

idem omnino pondus fuisse, decipitur Agricola; namq; id expresse, non obiter, aut aliud agens, testatur idem Plinius; professus primum, quoniam in mensuris quoque, ac ponderibus crebro Græcis nominibus utendum sibi erat, interpretationem eorum se semel eo loco positorum, igitur Drachma inquit Attica Denarii Argentei habet pondus.

BUT this Writer goes on to reconcile these Authors, by saying, and that truly, that the *Denarius* was sometimes the seventh Part, and sometimes the eighth of an Ounce: But then I observe, that in all likelihood there happened a like Change in the *Drachme*; And that whilst *Athens* continued in it's Grandure, they kept their Coin to it's ancient Weight; but after that the *Romans* became their Masters, they lessened the Weight of their *Drachme* to the Weight of the Roman *Denarius*; but it does not follow from this, that when an Historian speaks of Matters done in *Alexander's* Time, and before him, that an Interpreter may promiscuous use the *Denarius* as equal to the *Drachme*, but he ought, as Bishop *Hooper* has observed, to have two Tables accordingly; and before the Time of the Emperors of *Rome*, use one Table and afterwards the other; but if this will not be assented to, it is far better to use the greater Weight than the less; because there are more Sums of Money mentioned, and greater Expences both in War and Peace, before *Rome* became Mistress of the World than afterwards. This is offer'd against computing by more than 7 *Deniers* in the Ounce, 'till after the Reign of *Claudius Cæsar* at the soonest.

TO shew the Mistake of those that think, that tho' under 2. *Fabius Maximus* the Number of *H. S.* were changed from 2 and $\frac{1}{2}$ to four; yet that Number continued not long; but return'd, as the *Denarius*

narii did, back again, from 16 *Asses* to ten; so the *H. S.* from 4 to 2: only.

Now in Answer to this I shall transcribe another Passage out of the same Author, and *ch. p. 346*; where this Passage out of *Vitruvius* is taken, *Nunc Denarius sexdecim, victoriatus & Quinarius octo, Sestertius quatuor Asses valet. Hoc ipsum tenet Mælianus superioribus verbis subjungens; nunc Denarius sexdecim, Victoriatus & Quinarius octo, Sestertius quatuor Asses valet.* Now that the Reader may give the more credit to this Quotation, we ought to consider at what Time, or Age, this *Val. Mælianus* lived; and that was about four hundred Years after the *Denarius* was encreased from 10 to 16 *Asses*, and the *Sestertius* to 4 *Asses* also.

AND *Villalpandus* having quoted that Passage in *Pliny, lib. 33. cap. 3.* which has been so often already repeated in my LETTERS; *Villalpandus* goes on with an *Hactenus Plinius. Tria his Plinii verbis continentur, quæ cum eruditissimis viris disputanda sunt. Primum quod ad sexdecim Denarii Asses spectat, in quo Budæo erit satisfaciendum; secundum quod ad loci correctionem, in quo de Sextantariis Assibus, de quinque partibus prius lucratis, & de dimidio lucro cum Alciato differendum; ac tandem de stipendio militari Lipsii videndus est locus: Of which three Persons and their Opinions he speaks in the Order following.*

Et quod ad primum spectat, quamvis dissertis verbis testatum sit à gravissimis viris, quos attulimus, Denarium sexdecim Assibus permutari solitum; tamen asyllum quoddam invenit Budæus, quo confugeret, tantorum testium fidem abrogare contendens. Is vero sextus Pompeius Festus est, qui sic scribit: Sextantarii Asses in usu esse ceperunt ex eo tempore quo propter bellum Punicum secundum, quod cum Hannibale gestum est, decreverunt patres, ut ex Assibus qui tunc erant librarii fierent Sextantarii, per quos cum solvi ceptum esset, &
populus

populus ere alieno liberaretur, & privati quibus debitum publice solvi oportebat, non magno detrimento officerentur.

To which Words *Villalpandus* gives a long Answer, as *Festus's* ascribing that as done in the 2d *Punick War*, which *Pliny* and others from him, ascribe it as done in the first; ---- and then follows:

Sed quamvis, quo ad Asses attinet septennio tantummodo perdurasse sextantarios, concederemus Budæo, & Festo, tamen non propterea Denarios ad primævam institutionem rediisse concedendum esset; cum vel maxime Justiniani constitutione atque apud alios atque alios probatissimos Scriptores Sestertium Assibus quatuor, Denarium sedecim æstimari legamus. The Margent for the Testimony of *Justinian* quotes *Codicis lib. 8. tit. 54. leg. 37.* where I find these Words, *Verba superflua quæ in donationibus poni solebant scilicet Sestertii, nummi unius, Assium quatuor, penitus Esse rejicienda censemus. Quid enim verbis opus est quæ rerum effectus nullus sequitur.* But I think what is here quoted does no way confirm, but rather weaken the Cause for which it is alledged: But *Villalpandus* goes on (without Naming any of his approved Authors) in this Manner, *Neque his obstant Varro, Apuleius, Aruntius Pompeus quæ scribentes Denarium Asses decem, Quinarium quinque, Sestertium duos & semissem valuisse; quoniam ut bene notat Ant. Augustinus, hi omnes scriptores præteriti temporis æstimationem expresserunt, & id, unde primæva earum vocum institutio monavit.*

BUT tho' what is here produced, may almost seem sufficient to confute the Notion that the *Roman Money* changed from a wise Alteration to an old Error; yet the very Foundation of this Fancy, borrowed from a single Mistake in *Festus*, is wholly overthrown and rooted up, by an happy and unquestionable Emendation of the learned and eminent Critick, the Master of *Trinity College* in *Cam-*

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Cambridge; who by the Alteration of one Letter or two, in a single Word, makes it evident, that *Festus's* Meaning is altogether Mistaken. For tho' *Villalpandus* has not recited all that, on which *Budæus* and others lay the greatest Stress, immediately after *efficerentur*, follows *Septuemia quoque Anno usus est, ut priore numero, sed id non parmanfit in usu, nec amplius processit in majorem.* Now change, but as we ought, *Anno* into *Verro*, and it is plain that what *Festus* speaks of the Word *Sextantarius*, *Budæus* and others refer to the Number of the *Asses* that were altered at that Time; by which is meant no more, than that, as the *Romans* have used the Word *Sextantarius*, so did *Varro* also use the Word *Septuarius*; but even that Word did not long continue in use, nor went on to any higher Number, as *Octonarius*, &c.

I had this Emendation out of Dr. *Bentley's* Book against the honourable Mr. *Boyle*, p. 466. but not having that Book by me, but only the Emendation I enter'd into the Margent of *Festus* himself: I must refer my Reader to the Place I found it in, for a better Explication of it, and go on without taking any Notice of the Answers given to *Alciatus* about his *Asses Dextantarii*, rejected by most Authors that agree with *Pliny* against *Alciatus*; and quote what follows concerning the Gain *Pliny* says the Common-Wealth got, when the *Asses* were changed from *Sextantarii*, or two Ounce *Asses*, to Ounce *Asses*; which I would have mentioned in Page where I gave Mr. *Hardwin* Explication, if I had then remember'd it, and is brought in by *Villalpandus* against *Alciatus*, as follows, *In eo vero maximo alucinatur Alciatus quod subdit Plinius, Rempublicam videlicet dimidium fuisse Lucratam, cum Unciales Asses fecit ex Sextantariis, & Denarios Sexdecim Assi-*

Assibus permutari mandavit. Veritati proprius accessit Budæus, qui scopum penitus attigisset, si de solis assibus locutus fuisset Plinius, cum Rempublicam dixit dimidium Lucratam: Uncia enim dimidium Sextantis est; verum cum pariter enumerasset Asses Unciales & Denarios Sexdecim assium factos, tunc ea verba adjunxit, plane significans utriusque monetæ permutatione, dimidium lucri obtigisse Reipublicæ. Id quod in ære bene Collegit Budæus, in argento vero manifestum fiet, si perpendamus Denarium tunc decem Asses valuisse cumque deinceps sexdecim permutari præciperetur, in singulis Denariis sex Asses lucrabatur Respublica qui excedunt medietatem Denum Assium. At quoniam militum maxime tunc indigebat Respublica, ne eorum subiret indignationem, cavuit pariter ne hujusmodi nummismatum quidquam detrimenti militibus pareret, imo vero lucri tantumdem quantum Reipublicæ.

BEFORE I leave this Book, there seems two Things fit to be taken Notice of, which I rarely meet with in any other, before I met with the like in *Eisenschmid*; for in Page 352, he gives the Notes, by which their Money might be known one from another; for an *AS* of a Pound Weight had the Figure I upon it, two Pounds and a Half with two II and an S, and the other Parts of an *AS* by several Hemispherical Points, how many Ounces were in one of them; if a *Triens* or third Part ●●●● Points; if a *Quadrant* ●●●; if a sixth Part ●●; and if one Ounce one ●. In Page 354, he gives us the other Marks of their Silver Money after the Change, during the War with *Hannibal*, of the Number of the *Asses* in a *Denarius*; the Mark of the *Denarius* was oftentimes XVI, of a *Quinarius* VIII, of which there were many Instances; and thinks he ought not to be moved from this

M

Opi-

Opinion, because there are no *Sesterces* remaining which have the Mark IIII upon them, being now lost; or because the *Triumviri* abstained from that Mark *ac. potissimum ne IIII viros referre putaretur*. From their Brass and Silver Money he passes to those of Gold; and for the better Understanding that difficult Passage in *Pliny*, *Post hæc placuit XL. M signari ex auri libris, paulatimq; Principes imminuere pondus; minutissimus vero vel Nero ad XLV. M.* He tells us that in many of the *Vatican Manuscripts*, the M. was wanting; but in one, *Cum enim easdem numerorum notas præferret quas alii nimirum XL & XLV. insuper litteræ L^a duo puncta super imposuerit scriptor sive mutuo Connexa, quibus in antiquis quampluribus exemploribus litteram a suppleri Observavimus quò facilius intelligi posset illa enumeratio quadraginta & quadraginta quinque. Atque ea puncta facile decipere potuerunt lectorem, ut illa duo puncta pro litteri M acciperet, qua millinarium numerum indicabant antiqui.* I give you here *Villalpandus's* Opinion, but relie the Less upon it, because a little after he makes too many conjectural Alterations in the next Words before them, and is therefore condemned for so doing by Mr. *Greaves*, of whom I now come to speak in Order; and of whom, and my great Opinion of, and reliance on his Judgment, I have spoken at large, in my two first Letters to Mr. *Thoresby*; and the Use I have made of his Book, which long ago I borrowed out of Dr. *Gale's*, the Dean of *York's*, Library, and transcribed a great Part of it, that I might constantly have it by me, one Page of which I have printed in the 63rd pa. of the fore-going Letters; but there is one Part that I either had not transcribed, or at least did not send to Mr. *Thoresby*, which shall now be printed in this Place, out of the iiird p. of Mr. *Greaves*, where

BOOK and TABLES. 163

I found it in a tatter'd Book of my Nephew's, for which he was beholden to a Friend, and paid 5 s. for it.

I had copied this as I found it all in Capital Letters, but perceiving the Printer would hardly get them into one Page, without great Confusion, as I had transcribed them, I resolv'd to print them in the Form I had done of the *Cæsar's*.

THE Weight of some of the fairest *Aurei* of the *Roman* Emperors, from *Nerva* to *Heraclius*: Those above-mentioned are of the 12 *Cæsars*.

Imp. <i>Nerva</i> Tr. pop. 2. Cof. 3. p. p. 12	Grains.
think for <i>Pater Patriæ</i> _____ } 111 $\frac{1}{2}$	
Imp. <i>Trajanus</i> , Aug. Germ. &c. _____ } 110 $\frac{1}{2}$	
Imp. <i>Cæsar Trajanus</i> , <i>Hadrianus</i> , Aug. } 121 $\frac{5}{8}$	
&c. _____ } 119 $\frac{5}{8}$	
<i>Antoninus</i> , Aug. pius p. p. TR. P XII } 118 $\frac{7}{8}$	
Cof. IIII _____ } 117 $\frac{3}{4}$	
<i>Antonius</i> , Aug. Armeniacus Imp. <i>Cæsar</i> , } 113 $\frac{1}{4}$	
Cof. L. <i>Aurelius</i> , <i>Verus</i> Aug. _____ } 114 $\frac{1}{8}$	
Imp. <i>Cæf. L. Aurelius</i> Aug. _____ } 114 $\frac{1}{8}$	
L <i>Verus</i> Aug. Arm. <i>Parthi. Max.</i> _____ } 75 $\frac{3}{4}$	
M <i>Comm. Ant. P. Fel. Aug. p. p.</i> _____ } 74 $\frac{1}{2}$	
Sever. p. Aug. P. M. Tr. P. X. Cof. _____ } 72 $\frac{1}{2}$	
Imp. M. <i>Ant. Gordianus</i> . AFR. Aug. — } 77 $\frac{1}{2}$	
<i>Trebonianus Gallus</i> _____ } 74 $\frac{3}{4}$	
<i>Gallienus</i> _____ } 74 $\frac{1}{2}$	
Imp. C. <i>Carinus</i> , P. F. Aug. _____ } 70	
<i>Dioclesianus</i> , P. F. Aug. _____ } 70 $\frac{1}{4}$	
<i>Maximianus</i> _____ } 68	
<i>Constantinus Max.</i> Aug. _____ } 70	
<i>Constantinus</i> , P. F. _____ } 70 $\frac{1}{4}$	
<i>Constantius</i> _____ } 68 $\frac{1}{4}$	
Imp. <i>Cæf. Magnensius</i> , _____ } 70	
F. L. C. L. <i>Julianus</i> , P. F. Aug. _____ } 68 $\frac{1}{4}$	
M 2	D. N.

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	Grains.
D. N. <i>Jovianus</i> , P. F. Perp. Aug. ———	68
D. N. <i>Valens</i> . P. F. ———	68 $\frac{1}{4}$
D. N. <i>Valentinianus</i> P. F. Aug. ———	69
A Second ———	68 $\frac{1}{2}$
D. N. <i>Gratianus</i> P. F. Aug. ———	69
D. N. <i>Theodosius</i> , P. F. Aug. ———	68 $\frac{1}{4}$
D. N. <i>Arcadius</i> , P. F. Aug. ———	67
A Second ———	68
D. N. <i>Honarius</i> , P. F. Aug. ———	69 $\frac{1}{2}$
A Second ———	69 $\frac{1}{4}$
A Third ———	68 $\frac{1}{4}$
D. N. <i>Theodosius</i> P. F. ———	69 $\frac{1}{2}$
D. N. <i>Pl. Valentinianus</i> ———	68 $\frac{1}{2}$
D. N. <i>Valentinianus</i> , P. F. Aug. ———	69
D. N. <i>Jul. Nepos</i> , P. F. Aug. ———	69 $\frac{5}{8}$
D. N. <i>Anastasius</i> , P. F. Aug. ———	68 $\frac{1}{2}$
D. N. <i>Focas</i> , perp. Aug. ———	68
A Second ———	69 $\frac{5}{8}$
<i>Heraclius</i> , ———	69 $\frac{1}{4}$
A Second ———	69 $\frac{1}{2}$

Page 113, And thus much of the *Aurei* under the former and later Emperors, as they serve to illustrate and prove the Weight of the *Denarii Cæsarei*, which is our next and principal Enquiry. The *Denarii* under the *Cæsars* were almost as various and unconstant as the *Aurei*, sometimes more, and sometimes less; and if they had not been so, they could not have kept that Proportion to the *Aurei* of the former Emperors, which we assigned. From *Augustus* to *Vespasian*, I find, by examining many of them, continually almost decreased, 'till from being the seventh Part of the *Roman Ounce*, they became now to be the eighth Part: And therefore Ninty Six were coined out of the *Roman Libra*, whereas before under the *Consuls* Eighty Four.

Four. From *Vespasian* to *Alex. Severus*, as far as I have observed, the Silver continued in respect of Weight, excepting only such as upon some extraordinary Occasion were stamp't in Honour of the Prince, or of the Empress; and *Augusta Familia*, or else in Memory of some eminent Action: These last most usually were equal to the *Denarii Consulares*, and many of them had these Characters E. X. S. C. or else S. P. Q. R., &c. I can hardly forbear and leave off, when this Treatise is before me, and have inserted these later Coins for the Sake of their Weight only: And for their Inscriptions, they may be many of them found in Mr. *Walker's* Book, titled *The Greek and Roman History, illustrated by Coins and Medals*; for which his Book is likely more perfect than that concerning their *Denarii*, which as I have shewn in the fore-going, is no more than 5 s. or 60 Pence to the *Troy Ounce*; but then we are to take Notice of these Words we after meet with in the 117 Page, "That 60 Pence were coined out of the Ounce *Troy*, in the 2d Year of *Queen Elizabeth*, (he might have said in the last of *Edward* the 6th) "and "during her Reign to sixty two." And so ever since, for in his 120 Page, he further says, "The *Troy* or *English* Ounce (to which Five Shillings Two Pence of our Money, in these Times, are equal) containeth 480 Grains, and the *French* Ounce 472 $\frac{1}{2}$."

Now all this being premised, it will presently appear that Dr. *Arbutnot* follows one Reckoning, but Mr. *Greaves* and I another; the Dr. is still at 60 Pence the Ounce, but Mr. *Greaves*, whom I follow; conform our selves to the present Age, and with it reckon 62 Pence to the Ounce *Troy*; and that we are in the Right in so doing, I gather from

an observable Passage in the Beginning of the great Mathematician *Gassendus's Abacus Sestertiorum monetae Gallicae*, where he prudently expresseth himself in the Words following.

Suppono postremo comparasse me Denarii valorem cum eo valore monetae qui jam Nobis in usu est; tum quia nostris temporibus res agitur nostra, quam nos ignorare cum primis non decet; tum quia ubi in posterum Argenti uncia apud nos, pluribus taxabitur, quam nunc taxatur solidis ----- perfacile semper erit definire quanti Romanus Denarius aestimandus sit. The former Part of this Sentence makes against the Doctor's Practice, and evidently favours ours.

HAVING proceeded thus far, I am next to confirm what I have afore alledged, that our Differences arise from the Doctor's computing by a lesser Roman Ounce than I do. He indeed, to make Way for his reckoning, gives some Reason why he defaultks half a Grain from what Mr. *Greaves* computes to the Roman Ounce; but it would have better agreed with the Value he assigns to the *Denarius*, to have added to Mr. *Greaves's* Number, then detracted from it; as I think will be evident by the following Computation.

FOR I take it for granted that Dr. *Arbuthnot* proceeds upon these Principles, first that a Troy Ounce consists of 480 Grains. 2dly, That he is persuaded that our *Averdupois* and Roman Ounce are equal, and contain in them no more than $437 \frac{1}{2}$ Grains; and this being granted, endeavours to find out or ascertain the Proportion that one of these Ounces bears to the other: This being allowed, he goes on to shew that from thence it follows, that a Roman *Denarius* being the seventh Part of a Roman Ounce, ariseth no higher then $7 \frac{1}{4} d.$ or seven Pence half Penny Farthing of our present English

Engliſh Money. This is ſufficient for any Mathematician to underſtand at the firſt Reading; but to thoſe like my ſelf that do not, it requires to be laid open ſomething more at large, which I know not better how to do, then by making Uſe of the Rule of Three, and therefore ſhall proceed in the following Method; ſaying, That if 480 Grains produce 60 of our Pence, what Number of Pence will $437 \frac{1}{2}$ Grains produce. Now by Multiplying $437 \frac{1}{2}$ by 60, the Product, as I reckon, ariſes to 5448 Pence, which Sum being divided by Seven, the Number of the *Denarii* contained in a *Roman Ounce*, gives to each *Denarius* 7 *d.* $\frac{1}{2}$, which Sum of 7 *d.* $\frac{1}{2}$ falls ſhort, as I take it, by one Grain of 7 *d.* $\frac{1}{2}$; ſo that the Doctor needed rather to have added a Grain, than taken away half a Grain from Mr. Greaves's Computation of 438 Grains to the *Roman Ounce*.

I will now proceed in the ſame Method I have done before, and ſuppoſing what is only really true, and cannot be denied, that a *Troy Ounce* of 480 Grains will give 62 Pence, what will a *Roman Ounce* of 438 Grains give? And Multiplying by 62, the Product will be, if I am not Miſtaken, 27156, which being divided by 480, will give $56 \frac{2}{3} d$; which 56 Pence, with the Fraction $\frac{2}{3}$, being divided by Seven, the Number of *Denarii* contained in a *Roman Ounce*, the Product will be about 8 *d.* and about a *q*, or more to each of them, as I conceive.

I have acquainted the Reader more than once, why I reject the Fraction out of my Account; and muſt further own, that the Doctor, tho' he may ſeem to ſome to have ſet the *Denarius* ſomewhat higher than it will bear, according to his own Account, when truly underſtood, will very

fully bear it self out. For tho' I have often observed, that 31 Grains were contained in our present 4*d.* and therefore reckoned 62 Grains to eight Pence, yet I knew not then what was the Reason of it; but I now conceive, that when 60 Pence are reckoned to be contained in a *Troy* Pound, there will be exactly found 8 Grains in a Queen *Elizabeth's* old Penny; but when 62 Pence are coined out of a *Troy* Pound, then something will fall short of eight Grains in our later *English* present Pence, which will fill up what before seemed wanting in Dr. *Arbuthnot's* Account. I express this as well as I can, but it's likely very improperly, when fully examined by a rigorous Mathematician: But notwithstanding this, such an one will fully discover, that in valuing a *Roman Denarius* at 8*d.* I have not exceeded, but rather fallen short of it's true Value.

AFTER all this, I am apt to believe, I need say no more in defending my own Computation against that of my old Acquaintance Dr. *Arbuthnot*; but having gone so far, I think it but an amicable Procedure, both for his Sake and the Reader's, not to meddle with any Thing he has said concerning his other Tables, which falls not within the Compass of my Understanding; save only what may relate to the *Roman* or *Athenian* Coins, or the History of those two Common Wealths.

AND the first Thing I take Notice of is this, That the Doctor supposes, Pag. the 9th, that a *Roman* Slave might not accuse his own Master: Now tho' it is most true, that this was not allowed in other Cases, yet in such as were notorious, and against, (as it is sometimes called) The Majesty of the Common-Wealth, he was allowed to do it,
as

as I gather from the Words of *Salust*, concerning *Catiline's* Conspiracy: The Reward which the Senate promises was general, *Si quis indicasset. de con-juratione, quæ contra Rempublicam facta erat, præmi-um ferre libertatem & H. S. centum, libero impuni-tatem ejus rei, & H. S. CC.*

THAT which follows next is in Page 9, where the Doctor says, that *As grave* was paid by Weight, and not by Tail; by which one would suppose, that no *Asses* were coined with the usual Marks, by which they and their lesser Parts were known, 'till the Silver Money was coined also; neither does that Quotation out of *Livy* seem to me to prove the Contrary.

Page 9, Ch. 3. "*Aris* in the Genitive Case is "used for an Adjective"; which I fancy is no otherwise true, than as every Genitive Case may be stiled an Adjective.

Page 10, *Quadrans* when applied to Silver, it might be the same with *Teruncius*, and may be the least of Silver Coins; but *Quadrans* is often applied to Brass Money, and the *Sextans* and the *Uncia* are less Coins than *Quadrans*: And also the *Triens* was so common a Coin, that it needed not the Story out of *Pliny* to prove it so.

"The *AS* by Degrees was deminished, and the "Alterations were occasioned by the Necessity of "the Common-Wealth"; but the Doctor adds, "To be sure the Plenty of Silver and Gold would "have done the same, and brought down an e- "normous Brass Coin." But I am of Opinion, and hope my LETTERS have proved it, that there was never such an enormous Disproportion of, one to

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840, as *Budeus* and his Followers have fancifully conceived.

Page 11, "Tho' ἑβδμήν ἡμισιδράχμον might literally be translated a seventh half Talent; yet those that used it, always signified six Talents and a Half, as is often took Notice of by most Authors that write on that Subject, and particularly *Gassendus*; who in his *Abacus*, uses these Words, *Notum Porro est quemadmodum Græci dicebant ἑβδμήν ἡμισιδράχμον ut duas cum semisse Drachmas designarent.*

Page 11, Here *Vetruvius* is quoted, for saying, *Quartam Denarii partem, quod efficiebatur ex duobus assibus & tertio semisse Sestertium vocitaverunt*: "The Sestertius was a Silver Coin, and never of Brass". I know that *Budeus* and some others say so; but there are many others that say the Contrary, as *Hotamanus*, *Marq. Freberus*, &c. And Bishop *Hopper* says, it is not improbable, p. 131. And to me it seems very reasonable to suppose that there might be *Sesterces* in Brass, as was *Denarii* above them, and *Semisses*, *Triens*, and *Quadrans*, &c. below them.

Page 12, "The Greeks Computations proceed upon the same Supposition of the *Denarius* and *Drachma* being reckon'd equal." I know they do, but I believe not 'till the *Romans* had forgot the Notice of their own Coins: And *Livy* makes no Difference in his History between Pound *Asses* and half Ounce *Asses*: And so did *Plutarch* and others, that translated from the later Historians; but I am persuaded that this was an Error in all that did so.

Page 11, "Sestertium signifies two Pounds and

" 2

“ a Half of Brass”; and why might it not do so before any Silver *Sesterces* was coined; but as for *Sestertium*, a Singular, it is very seldom used before they come to the Dual Number, as *duo Sestertia*, and so *tria*, &c.

Page 14, Most of this Page is very useful and instructive, especially to young Beginners, giving a great In-sight into the Manner of the *Roman* Computation, and how to express that in the *Barbarous* or *Arabick* Figures; which is contained in a few Syllables, as *Decies*, *Centies*, *Millies*, *Decies Millies*, *Centies Millies*, &c.

Page 16, *Celsus* is cited for saying, *Antea omnia scire voto*: If it be otherwise in the former Edition, it is the Printer's Fault; but if in both a like, the Author's; for undoubtedly it ought to be read, as all other Writers, I have seen, read it, *Sciri Volo*.

Page 16, “ I have been the more Copious in Quotations upon this Subject, to shew the general Consent of Authors of all Ages and Times in the Equality of Value of the *Attick Dram* and *Roman Denarius*; and it would bring a Confusion to change that Way of Reckoning.” A Falshood is never the Truer for being often repeated; and I think the Confusion does more arise from this false Reckoning, than can be remedied by it.

Page 17, The Doctor doth here, and often before tell us, “ The ancient *Roman Denarius* and *Attick Drachma*, were reckon'd equal, as appears partly from what has been observed before, and farther from the Testimony of *Pliny*, who lived from the Time of *Vespasian* to that of *Trajan*.”

I own that *Pliny* says so of his own Time, but certainly it was not so in ancient Ages before; for in Comparison of some old Authors, he may be accounted a Novelist: But should *Pliny* Senior have said that it was always so, I would no more believe him, than I can do those that informed the Doctor that he lived from the Time or Reign of *Vespasian*, 'till *Trajan* became Emperor; who was so in the Junior *Pliny's* Time, the Nephew to *Pliny* the Historian, and whose Uncle died about 15 Years before his Nephew made that celebrated and famous Oration to *Trajan*. We made read in *Pliny's* Epistles, when and where his Uncle died, in his Account of his Death to *Tacitus*, *Lib. 6. Ep'l. 16.* And *Vossius* tells us, that *Pliny*, the Historian, lived no longer than three Years after dedicating his Book to *Titus Vespasian*, A^o. *Urbis* 831. and *Trajan* was not Emperor 'till A^o. *Urbis* 850.

Page 20, " Mr. *Greaves* is of Opinion, that the
 " Alteration mentioned by *Pliny*, in that fore-cited
 " Passage (*lib. 30*) (read 33.) *cap. 3.* of the *Denarius*
 " being ordered to pass for 16 instead of 10
 " *Asses*, continued from the first Constitution of it
 " in the second *Punick* War, without any Interrup-
 " tion, to *Justinian's* Time; But this Opinion is
 " contrary to the whole Classical Style; in which
 " a *Denarius*, four *nummi Sestertii*, and ten *Asses*,
 " are Terms equivalent, and denote the same Sums,
 " to change that Way of Reckoning would be to
 " introduce nothing but Confusion: It is not cre-
 " dible that the Writers expressed the Valuation
 " of the *Denarius*, according to it's first Instituti-
 " on, without Regard to the first Valuation." I,
 with Mr. *Greaves*, think it not incredible, but I
 believe it certain; for their Opinion is almost evi-
 dently

dently false, and took it's Rise from a false Reading in *Festus*, happily by the famous and learned *Bentley*, as is above fully enlarged upon in the Pages foregoing.

Page 21, "HE (Mr. *Greaves*) is surprized at the " Strange and unadvised Proportion, between the " Brass and Silver Money of the first Times, that " ten Pounds of Brass should be but answerable to " the 84th Part (for so much, or near it, was the " *Denarius*) of a Pound of Silver; or to speak " more clearly, that one Pound of Silver should be " equal in Valuation to 840 Pounds of Brass.

" I am of Opinion, that tho' *Pliny* gives you " the true Matter of Fact, he assigns a false Reason for it: For he seems to attribute the Cause " of the Diminution of the Weight of the *Asses* " to the Necessities of the Common-wealth; where- " as undoubtedly the Change of the Ballance of " the two Metals, of Brass and Silver, was the " Reason the Common-wealth gradually reduced " the Weight of their *Asses*, finding the former " Proportions too high.

I have transcribed these two Paragraphs, that the Reader may better understand what Improbabilities these Authors held, against whose Opinion the greatest Part of the fore-going LETTERS are written; which if looked upon as convicting, there needs no further Reason to be given why their Brass Money decreased, than what is usually given of the Necessity of the States; and so the Scarcity of Money made the *Romans* lessen their own Coins in Weight, and raise their Foreign ones in Value; as we had an Instance when this Nation laboured under clipped Money, not onely our Guineas, but *French Louis* were advanced in their Worth and Value.

And

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And therefore I think there needs no Reason to be given for such a vast Disproportion; for tho' the Proportion was not always the same; yet their Changes were within the Compass of Probability, and not so incredible as some Writers endeavour to give Reason for, but these hardly within the Compass of Possibility, as some Authors have attempted to prove by Arguments, not altogether agreeable to my Hypothesis.

Pag. 23, "THE *Pondo Argenti*, amongst the Romans, is a Sort of Numeral Expression of Sums of Money, and is different from the Common *Libra*, which consisted only of 84 *Denarii* or 96 *Drachms*; for *As*, *Æs*, *Pondo*, and *Mina*, amongst ancient Authors, generally pass for the same.

"*Budeus* reckons this *Pondo* to consist of 100 *Denarii*, and *George Agricola* of 96, supposing the *Denarius* and *Drachma* to be equal: according to *Budeus's* Valuation, the *Pondo* amounts to the Value of an *Attick Mina* or 3*l.* 4*s.* 7*d.* According to *Agricola*, to 3*l.* 2*s.* 0*d.*

UPON looking back to Page the 9th, I find that *Pondo*, or *Libra*, are spoken of by this Author, as Names of the same import; but in this, he says, they are different; yet, as far as I can perceive, no otherwise different, than as one *Libra*, is in some Accounts, different from another; and I find in *Vilalpandus* p. 337, that *libræ vox pondo additur, latine lingue, & usus peritissimis. Nam Livius Coronam Auream libræ pondo Jovi dicatam fuisse; & Columella, calami pondo scribit. Neque libræ tantummodo addebatur pondo; verum etiam cuicunque alii ponderi. Plautus.*

Neque pisciam ullam unciam pondo hodie cepi.

Verum

Verum tamen est nonnunquam pondo, & libram seorsum usurpari, atque idem ipsum quod seperata significare; ut videre est apud Catonem sic scribentem; adipis pondo duo, casei libram. Et Plinius; Quibusdam generibus, inquit, per se pondus, sicut Balearico modio tritici panis pondo triginta reddit, quibusdam in binis mystris ut Cyprio & Alexandrino, viginti prope libras non excedentibus. Hujusmodi libram Assem quoque appellatum fuisse tradit Varro.

I have transcribed this long Passage, to shew, that in the very same Period *Pondo* and *Libra* are promiscuously used for the same, and not different Weights, as here affirmed by the Doctor. And further doubt not, but the same *Pondus* or *Libra* are sometimes described by more, or fewer *Denarii*, as the *Denarii* were greater or less; but the Roman *Pondus* or *Libra* continuing still the same. I observe also that *AS*, *Pondo* and *Mina*, and I think I may add also, *Libra* too may pass for the same; but it is only because the Authors that called them so, esteemed all of the same Weight; tho' undoubtedly those that thought them so, before the *Greeks* fell under the *Roman* Government were mistaken: For so many Men, oftentimes, so many Minds.

It's no Wonder that *Budeus* reckoned the *Attick Mina* at 3*l.* 4*s.* 7*d.* and *Agricola* at 3*l.* 2*s.* 0*d.*; and the Doctor agrees with *Budeus*; but let it be reckoned at the least, as only equal to the Consular *Denarii*, according to my Computation, a *Mina* must at least arise to 3*l.* 6*s.* 8*d.* of our present English Money.

Page 24, "It is certain that sometimes *Libra*
" applied to Sums of Money, denotes only the
" Ro-

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“ *Roman Pound of 96 Roman Drachms.* Here it
 “ must be considered, that when the Tables of
 “ Silver is reckon'd at 5 s. per Ounce, it must be
 “ understood of Silver coined meerly according to
 “ the *English* Standard, which has 18 Penny Weight
 “ of Allay in the Pound *Troy*. Now if to a *Roman*
 “ Pound of pure Silver you add Allay in the
 “ Proportion of the *English* Coinage, it will make
 “ in Value only 2 l. 19 s. 1 $\frac{1}{2}$ d.”

I must confess I do not well understand what the Doctor means by the Words here cited; for it is one Thing, if so much Allay be added to a Pound of pure Silver, then the whole will arise above a *Roman* Pound by all the Allay added; but if he intends to take out as much Silver as the Allay comes to, I must then differ from him in the Sum here assigned to it; for I reckon, no more in a *Roman* Pound of the same Weight; the whole Sum will arise to no more, in our *English* Money, then barely 2 l. 16 s. and about 6 d. Fraction: But I perfectly agree with the Doctor in this, that if,
 “ We are not perfectly sure of the Standard of the
 “ *Romans*, the Weight alone is not sufficient to
 “ determine the Value to great Preciseness. I concur also with the Doctor in what follows, that
 “ *Pondo* is an indeclinable Word, and when it is
 “ joined with Numbers, (of Coin) it signifies *Libra*; when it is joined to other Weights, it
 “ stands for the same Thing as *σαθμῶν*, or *ἐλκῶν* in
 “ the *Greek*, signifying the same with *Pondus*, or
 “ Weight in general.”

Page 25, “ We observed before that the learned Bishop Hooper makes the Value of the *Attick*
 “ *Drachma* different in different Ages, and the
 “ highest

“ highest, according to the Weight of the Standard *Mina* of *Solon* 68, 4 Grains; but he owns that it fell afterwards to about the Value of 62, 57, which is much the same with that in the Tables. And upon this *Drachma*, and the Equality of it to the *Roman Denarius*, almost all the Computations in Classical Authors are founded, which we did not think Worth the while to change or diversify in a few Instances that may be in earlier Times.”

I can consent to no Part of this Paragraph, I am rather of the Bishop's Mind, that either different TABLES should be composed, or the *Roman Denarii* and *Drachmae* should be computed at a higher Value than $7 \frac{1}{4} d.$ for that is a great deal short of what the Bishop Values it at, when he reduces the *Drachma* to the lowest Value, which the Doctor from the Bishop gives us in the next Page.

Page 26, I will not mention the Weight nor Value of the four First in this Page, given by the Doctor, for I am not Artist enough to judge of them; but the last is this Weight 62, 57 Grains, Value $7 d. 3 q^u \frac{2}{7}$. Now as far as my little Knowledge will reach, I think these Grains and Fractions joined together, must far exceed the Doctor's $7 d. \frac{1}{4} q^u \frac{2}{7}$. For as I had occasion several Times before to observe, that 62 Grains alone will amount to full eight Pence of our Money; for if 31 Grains equal $4 d.$ of our present Coin, then 62 without the Fraction (which I believe is at least more than half a Grain) will arise to $8 d.$ of our present Money, at which I have several Times reckoned it in the foregoing LETTERS: For as I have lately granted, that when our Money was

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coined

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coined at 55. the 'Ounce,' a Penny might then weigh 8 Grains; yet after that Ounce was coined at 62, every modern Penny did not come up to that Weight, nor were any more than 31 Grains required in such Pence, or 4 such Pennies as are coined in our Age, nor in the Age fore-going: For as the Number of Pence increased out of the same Number of Grains, the Grains must proportionably Decrease on the one Side, as the Pence were Increased on the other. And this I found by Experience, that a King James and King Charles's Groats, weigh not altogether so heavy as Queen Elizabeth's, in the Middle of her Reign must have done.

Page 26. "THERE is mention likewise made of the *Corinthian Drachm*, but it's Value is uncertain: It is supposed by some Authors equal to the *Attick*."

I cannot but Wonder why the Doctor should quote *Thucydides*, that there was such a Coin as the *Chorinthian Drachm*, and not quote any Author that thought it equal to the *Attick*; for *Thucydides* had never called them *Corinthian Drachms*, if they had been the same with the *Attick*. I do not well remember where the Weight of this *Corinthian Drachm* is spoken of, save that I think it is generally reputed to 13 $\frac{1}{2}$ d. equal to the *Aegean Drachma*, equal to an *Attick Dram* and an Half, or as is above said, equal to 10 *Attick Oboli*. I know it is not mentioned amongst some other Talents by *Festus*, nor by the Doctor, Pag. 34, amongst *Talentum*; but we plainly meet with it, and it's Value also in *Aulus Gellius*, lib. 1. cap. 8, speaking of the *Curtezan Lais*, uses these Words, *Ad banc ille Demosthenes clanculum adit, & ut sibi sui capiam facerit,*

facit, petit, & Laís μνείας δεσχμας ἢ τάλαντον πορροῖσι ; hoc facit nummi nostratis Denarium decem millia. I have here made Mention of this for another Reason, as serviceable to the true estimate of the *Roman Denarius*, when first coined; and which, as I think, *Varro* tells us, was taken from the *Sicilian Money of Syracuse*; which was a Colony deriving it's Original from *Corinth*, whose *Drachma* were heavier than those of *Athens*.

THE Doctor often complains of want of Time and Leisure, but I have greater Reason to complain of a worse Deficiency, which is want of Memory, which was never good; but by my last Year's Sickness it is near quite lost and destroyed, that I can call nothing to Mind, but what I see before me; and it has happened in this Case, that after I had finished what I could meet with, concerning the *Corinthian Drachma*, I accidentally in turning over some Pages, found what the Bishop of *Bath and Wells* had said upon this Subject, pag. 42. "Several *Drachmæ* were of different Weights, the *Egean* and *Corinthian*, for Example, equal to $\frac{1}{2}$ of the *Attick*, and the *Alexandrian* of *Egypt* just double to it.

NOW the Dr. having justly given a very high Character of the Bishop's Book, and made so very large Quotations out of it, 'tis to me a great Wonder that he did not, in this 2d Edition, correct the fore-going Passage, by only dashing out half a Line in it. I know the Bishop and the Dr. are far from agreeing in their Opinions, concerning the Weight and Worth of the *Attick Drachm*; but this could not be altered by the Dr. but by changing his Tables, which would have been very chargeable, but this of the *Corinthian Drachma* is not, I think, mentioned in them, and these Words, *It is supposed by*
N 2 *some*

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Some Authors equal to the Attick: or, at least he might have quoted some Writers for his so saying. I have also, since I Writ this Sheet for the Press, upon Occasion of consulting Mr. *Brerewood*, about the *Jewish Money*, the Book being very short, I 'spyed what he said of the *Drachma Ægina*, pag. 20, and presently after, it of the *Stater Corinthiacus*, of which he says, *Stater Corinthiacus 10 obolos Ægineos continet & proxime valet*, in the one Margent, *Stater Corinthiacus 1 s. 8 d. ob. q^u* and in the other Margent, *Pollux lib. 4. cap. 24. and lib. 9. cap. 24.* This is such a very low Value, that if the latter Marginal Note had not confirmed the former, I must have thought it an Error of the Press, the Book it self being a *Posthumus* Work, and therefore must not think the Author any Way mistaken. For I find him a very exact Writer; save that he has all along followed *Budeus* in giving too low an Estimate of the *Attick Drachm*, and does not reced from it in any of the following Computations, of which I shall give a fuller Account when I come to speak to a Page of Dr. *Arbutnot's* Book, viz. pag. 35.

The *Mina Attica* of Silver.

Page 29. " M N A, *Mina Attica*, contained 100
" *Drachmæ*, or *Denarii*, and the TABLES pro-
" ceed on that Principle in reckoning Sums of
" Money, where a *Mina* is made 3 l. 4 s. 7 d.

I have already observed, that since the Doctor, and I proceed upon several Principles, we are not likely to agree in the same Sums; "*Dionysius Halicarnassæus*, in reckoning up the *Roman Census*, make the *Glasses* stand thus:

I shall

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I shall give the Classes according as the Doctor has stated them, but in an inverted Order from the Doctor, and as *Livy* and *Dionysius Halicarnassensis* ranges them.

Class.

1st, <i>Mina C.</i> —————	Æris C. <i>Millia</i> .
2d, <i>Mina LXXV.</i> —————	Æris LXXV. <i>Millia</i> .
3d, <i>Mina L.</i> —————	Æris L. <i>Millia</i> .
4th, <i>Mina XXV.</i> —————	Æris XXV. <i>Millia</i> .
5th, <i>Mina XII. cum semisse</i> —	Æris XII. <i>Millia cum semisse</i> .

WE shall be little concerned in taking Notice of any, save the first Class; for all the others depend upon that; and if we were once agreed upon what a hundred Thousand *Asses* amounted to in our Money, all the Rest would follow in their due Proportion, for the little Difference between *Livy* and *Dionysius* are not worth taking Notice of. Then in what next follows, before I repeat what the Doctor says of that Point, I must observe, either for his Information, or the Reader's, that we find in those, that may pass for Classick Authors, four far greater Differences than this single one here mentioned; for tho' *Livy* gives in the first Class at 100000 *Asses*, he reckons it at the lowest. *Pliny* states that Class at 110000 *Asses*, *Celsus* yet higher, but it will be something hard where to find it; for it is not to be met with under the Word *Census*, or that of *Classis*, but most unexpectedly under the Word *infra*, *Infra Classsem significatur qui minore summa, quam centum & viginti millia æris, censi sunt & Aulus Gellius*, higher yet, lib. 7. cap. 13. *Classici dicebuntur non omnes qui in classibus erant, sed primæ tantum classis homines, qui centum & viginti quinque millia æris, ampliusque censi erant. Infra Classsem autem appellabantur secundæ clas-*

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*sis ceterarumq; omnium classium, qui minore summa
eris, quam supra dixi, censebantur.*

Pag. 29. " IN the 5th *Census*, *Dionysius* differs
" from *Livy*, who makes it XI *Millia Æris*, which
" is some Mistake, or false Reading; for in the
" Rest they are exactly the same, making the *Mi-*
" *na* equal to 100 *Denarii*, or 1000 *Asses*; for it
" was equal to so much of *Roman Money*, as ap-
" pears by comparing two Passages, one of *Appi-*
" *anus*, and another of *Suetonius*: For speaking of
" a *Congiarium* given by *Cæsar*, the Former calls it
" a *Mina*, and the other *Quadrigenos Sestertios*,
" which is equal to 1000 *Asses*, or 100 *Denarii*."

I might here repeat what I have before obser-
ved, that the *Drachma* and *Denarii* were never of
equal Weight 'till the *Romans* became Conquerors
of all the *Greeks*; but that at long run, possibly
they came equal. As to *Appian* and *Suetonius*, they
were late Writers, and therefore it is no Wonder
that they agree in their Accounts; for it must be
granted, that at that Time, a hundred *Drachma*, and
400 *Sesterces*, were much at one and the same Value.

I pass by that concerning the Pound and Ounce
and half *Asses*, the foreign and barbarous Coins, and
Jewish Money, as knowing nothing of the First,
nor any more of the Latter, than what may be
met with in *Bishop Cumberland*, or in *Bishop Hooper*
on that Subject.

Page 32. BUT by the Way, the Doctor speaks
of *Talentum*, which, as he tells us, " was two-fold,
" signifying either so much Weight, or a Sum of
" Money: The Value of it differ'd according to
" the

"the different Ages and Countries in which it was used."

WE are not here told what a *Talent*, not of Coin, but of Weight, was amongst the *Romans*; but as far as I remember, *Vitruvius* reckons it at Pa. 33. 125, *Roman Pound*. The Doctor in the next Page also speaks of the *Euboic Talent*, "so called from *Eubœa*, an Island near the Coast of *Attica*, mentioned by *Livy*. Some think it the same with the *Attick Talent*, for the *Mina* was *Centenaria*, or consisted of 100 *Drachmæ Atticæ*, as well as the *Attick Mina*. *Herodotus* saith, the *Babylonian Talent* was equal to 70 *Mine Euboicæ*, and *Pollux* affirmeth, that it was equal to 7000 *Drachmæ Atticæ*: Whence Pa. 34. it follows, "That 70 *Mine Euboicæ*, were equal to 7000 *Drachmæ Atticæ*; and consequently one *Mina Euboica*, equal to 100 *Drachmæ Atticæ*; which is exactly the Number of *Drachmæ* in the *Attick Mina*. [in *Margine*, b. *Livy*, lib. 8. Decad. 4. *Herodotus*, lib. 3. and *Pollux*, lib. 9.] It was the *Eubœan Talent*, that *Darius*, King of *Persia*, order'd the Gold in his Dominions to be paid him."

THE Doctor seems here to have discovered and stated the true Worth or Value of the *Euboic Talent*; and if all that he has said were true and indisputable, he has done a very great Work; and if his Book had been published, as I suppose the 1st Edition was, and had been assented to as credible, it would have saved Bishop *Hooper* and me a great deal of Pains in settling that disputable Point, as may be seen at large in my first Letter to that Bishop, in the 92 Page, and those that follow, now extant in these Miscellanies.

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Pag. 34. " There is some Diversity of Opini-
 " ons in Authors, about fixing the Value of those
 " *Talents* [above-mentioned], the Tables are made
 " on the best Information I could get. There is
 " another *Talent* much older, and much less, than
 " any above-mentioned, which we may call the Ho-
 " merical *Talent* of Gold, supposed to be equal to
 " 3 *Attick Aurei*. *Pollux* speaks of such a *Talent*.
 " *Eustatbius* upon *Homer*, reckons it worth 24
 " *Drachmæ*; perhaps it may be of uncertain Value,
 " but that it was of an inconsiderable Sum, is con-
 " jectured from the Passage of *Homer*, where de-
 " scribing the Prizes at the Funeral of *Patroclus*,
 " he put them in the following Order, 1st, the
 " Captive Woman and a *Tripod*; 2d, a *Mare* big
 " with Foal; 3d, a Kettle; 4th, two *Talents* of Gold;
 " 5th, a Brass Vial. Where the two *Talents* of Gold
 " are proposed as the most inconsiderable Prize, but
 " one. Several Authors write, that amongst the
 " old *Greeks* a *Talent* of Gold was very small; and
 " the Conjecture of the learned Bishop of *Bath*
 " and *Wells* seems to be well founded; that this
 " *Talent* of Gold, tho' not equinumerant (*ἰσoαριθμoς*)
 " the Phrase is) nor yet equiponderant (*ἰσοδυναμος*) as
 " to any other, yet was equivalent (*ἰσοδυναμος*) to
 " some correspondent *Talent* in Brass, whatsoever
 " it was, whose under Parts kept the Common
 " Proportion between themselves; a *Talent* we may
 " suppose of the *Phœnicians*, the great Merchants
 " remember'd by *Homer*. For example, if we take
 " the Value of Gold to Silver to have anciently
 " been as ten to one; the Rate it bore for a long
 " Time in *Greece*: And if we suppose the Value
 " of Silver, to Brass of the *Cyprians*, or *Copper*, to
 " have been with their Neighbours the *Phœnicians*,
 " as one to a hundred, (and for a long Time it
 " has

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“ has since generally went not much above that
 “ Value) we then have six *Attick* (or *Tyrian*)
 “ *Drachma*’s weight of Gold, equal in Value to
 “ six thousand *Drachma*’s Weight of Brass.

I have transcribed this Passage, chiefly for the
 Citation out of Bishop *Hooper*, because his Book is
 both scarce and dear, and shall also add the Page
 where it may be found, which is here wanting,
 and would, for lack of an Index, require some Time
 to find it, which is in Page 43.

Pag. 35. “ ACCORDING to this ancient *Ta-*
 “ *lent*, some reckon the Treasure of King *David*,
 “ particularly that mentioned, 1 *Chronicles*, xxii.
 “ Now behold in my Trouble I have prepared in the
 “ House of the L O R D a hundred Thousand Talents
 “ of Gold, and a thousand thousand Talents of Silver:
 “ which, according to the common Reckoning
 “ would amount in Gold Talents to the Value of
 “ 173,500,000 l. and the Silver come to above
 “ 342,000,000 l. or reckoning according to the
 “ Decuple Proportion of Gold to Silver, the two
 “ Sums would be equal.

Pag. 36. “ *Joseph. Lib. 7. Antiq.* mentioning the
 “ same Passage, calls both the Gold and Silver
 “ 100,000 Talents; by which, it seems, he spoke
 “ according to some more modern Calculation.

IN the fore-going Valuation of the Treasure
 which King *David* provided for the Building of
 Temple at *Jerusalem*, the Doctor gives us several
 Accounts both of the Gold and of the Silver; and
 yet methinks a third is still wanting, concerning
 the Sum that would arise from the old *Talent* of
 Gold, found amongst the Greek Writers, and ge-
 nerally

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nerally called the *Homeric Talent*. I shall not here trouble the Reader about the Disputes, what was the Difference betwixt the *Attick Aureus* and the *Roman*; but take the *Aurei* 3 of the lesser kind, concerning which *Pollux* informs us, that the *Homeric Talent* was equal to 3 *Attick Aurei*, which were of the Weight of six *Drachms* of Silver, which I am well assured, tho' the Doctor does not value them so high, did rather out-weigh, than fall short of 4 s. English, now these 4 s. multiplied by ten, the lowest Value of Gold above Silver, they arise to 40 s. or 2 l. which 2 l. when multiplied by 100000 *Talents*, which *David* had provided, if the Scripture speaks of these *Talents*, the Product will be 200000 l. English; but I shall not rest here, but take Notice that *Plato* valued Gold as 12 to Silver, *Darius* King of the *Assyrians* received it at the Rate of 13, and the Emperors, after *Constantine* the Great, at 1 to 14 $\frac{1}{2}$: I am not able exactly to give an Account what the 3 *Aurei* would arise to at this Value, but as far as I conjecture they fall not much short of 300000 l. wanting in each *Talent* about 2 s. 8 d.

BUT this being altogether uncertain, I will next borrow out of Mr. *Brerewood*, what Account he gives of this *Jewish* Treasure, and because the Book is scarce, you shall have it in his own Words, who I think to be a very good Mathematician; and his Accounts to be relied on in all Things but this, that he follows *Budæus's* Account, and reckons the *Denarius* no higher than 7 d. ob. by which I think a 16th Part may be added to all his Sums, where-ever we find them.

HE first begins with the *Hebrew* Sums of Money, cap. 4. p. 12. where he says, *Talentum Hebræorum continet pondere 3000 siclos; --- ergo 3000 sicli ad Talentum pertinuerunt; continet proinde 1200 Drachmas*

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cbmas Atticas ut etiam Epiphanius observat, valet proinde Talentum Hebraeum in argento de nummis nostris 375 l. Auri vero Talentum Hebraicum, servata in precio Auri ad Argentum proportionem duodecupla, quae nunc ubique fere viget valet de nostro (nummo) 4500 l.

BUT in his 5th Chapter he gives an Account of the Principal Sums we meet with in Scripture, Pag. 17; but still it must be observed, that he proceeds with a double *Talent* to that of the *Attick*, which he rates at 187 l. 10 s. too low in my Judgment.

I give this Notice before-hand, that young Beginners may better comprehend what follows, for I shall use three different Reckonings; Mr. *Brerewood* reckons the *Attick Talent* at 187 l. 10 s. Dr. *Arbutnot* at 193 l. 15 s. As to my own Computation I must likewise observe, that in Compliance with many other Authors, and to avoid Confusion, I bring down the *Drachma* below it's due Weight, but do not advance the *Consular Denarii* at all. Having thus informed my Reader in what Sense, and for what Reason I state an *Attick Talent* only at 200 l. I will proceed to give you Mr. *Brerewood*'s Reckoning, as he gives Pa. 17.

1 Chron.	{	<i>David reliquisse dicitur</i>	{	450,000,000 l.
xxii, 14.		<i>Solomoni pro Templi Fabrica de nostro (nummo)</i>		
Ibidem.	{	<i>Præterea argenti pro eodem opere 1000000 Talenta id facit de nostro</i>	{	375,000,000 l.

Dr. *Arbutnot* reckons the Gold at -- 547,500,000 l. And the 1,000,000 l. of Silver at -- 345,000,000 l. and then informs us, " that reckoning according to the Decuple Proportion of Gold to Silver, the two Sums would be equal.

I was

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I was a long Time before I could find out the Meaning of these last Words, or indeed by what *Talent* he computed them; But as for my self, after a great deal of blundering I took a double *Artick Talent* to express the *Jewish Talent*; and by multiplying 400 l. by $14 \frac{2}{3}$ I found them to amount to about 418,000,000 l. But whether right or wrong I must leave to the Determination of the more skilful.

The Silver 1,000,000 comes to -- 400,000,000 l.

But if you take the Golden Talent at 300000 l. both Silver and Gold will make 400,300,000 l. both put together, and yet, as many Think, too great a Sum either to be collected by *David*, or expended by *Solomon*, in order to which, that the Reader may judge the better, and pass his Sentence on it, I shall english the vichap. of Mr. *Brerewood*, Page 16. intituled

Considerations upon the Number of the Gold and Silver left by *David*, to *Solomon* for the Fabrick of the Temple.

I Have diligently considered the ancient Hebrew Sums of Money spoken of in Scripture, and of their Weight and Value, but I am somewhat oppressed with that Passage of History recorded in the 1st of Chronicles, ch. xxii. v 14. concerning the vast Number of Talents of Gold and Silver left by *David*, to *Solomon*, for the Building of the Temple; for they far exceed the Treasures of the greatest Monarch, and the Wealth and Riches of all Princes of whom History has made mention; those immense Heaps of Money and Gold, which *Sardanapalus* consumed in the Flames, together with himself, excepted. Beside there was no Way for *David*, who had received no Treasures from his Predecessors

sors to gather so great Heaps, as none of the most rapacious Princes of the Romans, Greeks, or Persians, from their vast and large Empires ever raised or scraped together; neither truly did that Work require such an immense Quantity of Gold or Silver; nay, not so much if the Walls and Pavements of the whole Temple had been to be made of solid Silver, nor if a whole golden Bed, and the inward Wainscoting of the Walls inlaid with Gold would have required; nor if all the Furniture had been made of Money; these great Heaps for the Work and Workmen would not only have been sufficient, but even to spare also: For I have considered the Dimensions of the Temple as diligently as I could, and compared the solid Bulk and Masse, and all Accounts being taken, and found the Provisions exceeded the Ways he was to employ them; and David says, he consecrated all this to God out of his Poverty, as the Remains of his Affliction and Wars, by which he had been vexed, and exhausted; and yet this Poverty, how much does it exceed the Affluence of the richest Kings? Therefore it seems necessary to say that the Hebrew Word ככר signifies something else than a Talent, or that there might be some other Notion of a Talent, besides that given us, or drawn out of the History of Moses. It is also certain, that ככר signifies some plain and pressed down Bulk or Masse like a Cheese Cake, in which Form or Fashion Gold and Silver used to be kept in the Treasury of Princes; for we may be sure that the Word in the Original is Plainness or Flatness; from which Acceptation nothing certain can be determined concerning this Sum of David's. Besides it may easily be discovered by the Writings of the Ancients, that the Name of a Talent had various Acceptations amongst them, and sometimes only signified a small Sum. For Eupolemus as we find in Eusebius, in numbering up the Charges of the Temple, by a Talent denotes a Hebrew Sicle, that

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that is a Coin of 4 Drachms Weight. And Polux in his Book writ for the explaining of Words, says, that a Talent of Silver was 60 Minæ, but a Talent of Gold 3 Attick Aurei (or 3 Pieces of Gold) that make six Drachma's; and that in Antiquity a Talent of Gold was but very small, Homer not obscurely shews us; who relating the Prizes contended for at the Tomb of Patroclus, were of no great Value; 1st A Captive Woman; 2d a Mare with Foal; 3d a Kettle; 4th two Talents of Gold, and 5th a small Vial or Brass Bottle, were exhibited as the Rewards. Lastly when the Sicilian, Neopolitan, and Talent of Regium denoted a small Weight; the 1st 6 Drachms, the 2d three, and the 3d half a Drachm; the same Name, it may be, amongst the Hebrews might sometimes denote a very small Sum.

If any shall assent to these Arguments of Mr. Brerewood, for the lessening the Weight of the Golden Talent, the following Words of Dr. Arbuthnot will help to confirm him therein.

Pag. 36. "*Josephus lib. 7. Antiquit.* mentioning the same Passage, calls both the Gold and Silver but 100000 Talents; by which it seems he spoke according to some more modern Calculation.

I should have rather thought by some more ancient Calculation, for 100000 Talents of Silver amount but to 10,000,000 *l.* according to my reckoning: *Josb. Scaliger* (as I find him some where quoted) is said to affirm, that *Josephus* was the Faithfullest and most to be relied upon of any Historian that ever writ; but I think there is no great Reason to believe it, but rather several against it; for in many Things he seems to lessen Matters, that he might find readier Belief amongst the *Romans*.

I writ

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I writ this before I consulted *Josephus*, whom the Dr. tho' he quotes the Book, yet as too often he does (as I shall hereafter observe) omits the Chapter or Section where the Passage may be more readily found; for it may be met with *Antiquitat. lib. 7. cap. 11.* and upon searching for it, I find the Dr. must have took it up at 2d Hand, the Words neither agreeing with the Latin nor English Translation; for both are different from the Account the Dr. has given of them; for instead of calling both the Gold and Silver 100000 Talents, he brings in *David* thus speaking to *Solemon*, when he made him King before his own Death: *Know therefore that I have already gathered ten thousand Talents of Gold, and a hundred thousand Talents of Silver, and an incredible Quantity of Brass and Iron, of Stone and of Wood;* This Quotation out of *Josephus* is sufficient to confirm the Judgment I have above given, of the Liberty he has taken in writing the History of his own Nation.

I must now pass over several Pages, partly for want of Time, but more for lack of Skill to examine them, 'till I come to Page the 45.

Page 45. A Passage in the *Code De Argenti precio*, runs thus, "*Jubemus ut pro argenti summa quam quis Thesauris fuerit illaturus inferendi auri accipiat facultatem, ita ut pro singulis auri libris argenti quinos Solidos inferat.*" Supposing the *Solidi* to be four Scruples, 20 Scruples of Gold were changed for 288 Scruples of Silver; this makes the Proportion of Gold to Silver, as $14\frac{2}{3}$ to 1.

I have inserted this Paragraph for two Reasons, 1st, Because there are very few Persons, but those that have studied the Civil or *Roman* Law, that know how to find out the Quotation, without the

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the Place be assigned where it is to be sought for. 2dly, It is of considerable Consequence to be informed of the Time when any Law was first promulged: For the *Codex* of *Justinian* consist of many Books, and a great many more Titles in each, and are not all of the same Date, nor made by the same Emperors; tho' I think none of them rise higher than *Constantine* the Great. It was not very easie to me to find the Quotation, for one must sometimes run over 12 Books, and abundance of Titles, 'till any, but a Civil Lawyer, can meet with the Book, or Title, when quoted in general. I had the *Pandects* and *Codex* printed in Folio at *Antwerp*, in a very fair Letter, which I mention only for this Reason, that the *Consuls* are set down there in Words at large (better then in *Helvicus*) in two Columns; where I found the *Consuls* Names, and the Year in which it was enacted, and that is concurrent with the Year of Grace 396, dated 11 *Kalend. Mart. Cæsario & Attico Consulibus*.

Page 46. " *Pollux* makes a *Stater* worth a *Mina*,
 " which must be understood of one of 8 *Drachms*;
 " according to which Proportion the *Tetradrachm*
 " was worth 50 *Attick Drachms*: This Proportion
 " is observed in the Tables, which I have not
 " changed, being according to the *Roman Way*
 " of Reckoning 25 *Denarii* for the *Aureus*; tho'
 " the *Decuplo* Proportion of Gold to Silver obtain-
 " ed, and was the most common Way of Com-
 " puting.

I am almost in as great an Admiration how a *Stater* came amongst the Coins in this Place, as at the strange Consequence, which the Doctor endeavours to draw from it. For if *Pollux* speaks of a *Stater* as a Coin, it must either be of Gold or of Sil-

Silver: A *Stater* of Gold is reckon'd but the Weight of 2 *Drachms*, if of Silver of 4 *Drachms*; but neither of these could be of the Worth of a *Mina*, which is 100 *Drachmæ*, and as the Doctor and many others account them the same with an hundred *Denarii*, which as I have endeavour'd to shew in the fore-going LETTERS, is of the Worth of 56 Shillings, and better, of our present *English Money*; So that the Doctor following the highest Computation he gives of an *Aureus*, otherwise call'd a *Stater*, pretends not to State it any higher than 25 *Denarii*. I once borrowed *Pollux*, but now have him not by me so as to consult the Place; but am apt to suppose, that *Pollux* might speak of a *Sester*, as it is taken for a Weight; but the Dr. takes it as a Coin, and then considering how many *Drachms* of Gold, viz. 4 *Aurei* would amount to, at 25 *Denarii* to the *Aureus*, he reckons proportionably, that a *Tetradrachm* was worth 50 *Drachms*. I cannot but wonder how the Dr. could fall into so many Mistakes together, for an *Attick Tetradrachm*, otherwise call'd a *Stater*, was a Silver Coin of 4 *Drachms*, and accordingly my Account ariseth no higher than 2 s. 8 d. nor the *Stater* of 8 *Drachms*, had there been such, no higher than 5 s. 4 d. I have mentioned these Oversights, to prevent young Students from being confounded, and distracted by them; and as for Ladies and Gentlewomen, be they true or false, they will still continue as fond of the Doctor's Book as before, from the many surprizing Novelties discours'd of, not long after, pag. 110.

To which Page omitting all the Weights and Measures the Doctor has given us, 'till he returns to speak of *Roman Affairs*; first relating to their Poverty, next to their Wealth, and thirdly to their Luxury: I am next in order to proceed; not pre-
 O tending

tending in the least to examine what I have not any Skill or Knowledge of; But before I go any further, it seems convenient, if not necessary, to forwarn those that shall first cast their Eyes upon these REMARKS, to take a View of the preceeding LETTERS. Where they may find upon what account I was induced to embrace the Hypothesis that is there endeavour'd to be defended. And now I shall beg leave to borrow and transcribe from the Doctor, what I find printed in the Page afore-mentioned, writ as well by the Doctor in his own Defence, as also serviceable to my own Excuse also.

Pag: 110. *A Dissertation of Roman Money
 Affairs.*

“ ALTHO’ Examples proper for the Application
“ of the Tables occur frequently in all ancient Au-
“ thors, yet to comply with the Custom of Pub-
“ lishers of Tables, and to shew the Use of them,
“ to those who are not daily perusing such Authors,
“ it seems necessary to add a Collection of Exam-
“ ples, which might accustom the Reader to such
“ Computations, &c.

I own that it is very useful, if not necessary also, for those that are to read the Clafficks, that such Tables should be provided for them; for otherwise they would be at a great Loss to understand the Sums they read of there; and for this Reason I long since provided my self a Table of *Sesterces*, from one *Sesterce* to many Millions, which I have acquainted the Reader of my LETTERS that it shall be published at the End of these REMARKS, and as to Examples, I am provided of almost

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most an infinite Number, but never likely to be published in my Life-time, whatever they may be afterwards; for I suppose an Ordinary *Folio* would not hold them, and written in that Haste, and in such a Hand, as I cannot possibly at this Age read them.

Pag. III. " I do, most sincerely, and without any Affectation acknowledge my own Incapacity to produce any Thing perfect on the Subject, for Want of Knowledge, as well as Leizure. I only beg those worthy Persons who are better qualified for the Undertaking, not to be angry with me, for having pointed out a new Subject in which they may signalize themselves.

I join with the Dr. in these Words, and acknowledge my own Infirmities, which incapacitate me, both for Age, want of Health, and loss of Memory, to attempt such an Undertaking.

THE Doctor prefaces his following Chapter, that in considering this Subject these Things naturally occur.

" 1st, THE small Quantity of the Treasure of Rome in it's Infancy.

TAKING these Words absolutely, I concur with the Doctor upon this Head.

" 2dly, WHAT Proportion of Treasure Rome in it's Grandure contained, in respect of the richest trading City at this Time in Europe; which one may call it's absolute Riches.

I have not Mathematicks to pretend to any Attempt to do this, and shall pass by the 2 following

O 2

Ob-

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Observables, as in a great Measure contained in the two fore-going ones.

“ I have in some Places marked the Chronology
“ upon the Margin.

THIS is very usefully done, and if I remember aright, it is often to be met with in Monsieur *Hardwin's* Notes upon *Pliny's* Natural History.

“ HE will observe the same precise Sums in different Articles; for Example, some great Estate
“ equal to a Farthing.

I was at first ~~surprised~~ surprized with this Expression, but what follows explains it.

“ FOR it proceeds from 2 Causes; 1st, the *Romans* reckoning as we do in round Sums; such
“ an one is worth a hundred, or two hundred thousand Pounds; and 2dly, my being obliged to
“ compute precisely according to the Tables.

I first observe, that the Tables ought then to be very exact, which I can no Way grant concerning the *Roman* Money, described in the Tables subjoined to this Treatise. 2dly, I conceive there is a great Oversight in not rendering them, in a Manner observed by other Writers, who scarce ever gave any Account of a Sum that is not reducible to a certain Number of *Aurei*, and I have so accounted in my Table of *Sesterces*, that there is never a great Sum, but ends even in our Money; in Pounds, Marks or Nobles.

Pag. 112. “ CALCULATION is the properest
“ Me-

“ Method, either to support Probability, or detect
“ a Lie.

I am here fully assenting to this true Assertion of the Doctor's.

Pag. 112. “ I have been sparing in drawing Pa-
“ rallels, or universal Conclusions, my chief De-
“ sign being only to state Matters of Fact. Be-
“ sides I think it more respectful to the Reader to
“ leave him something to exercise his Fancy, and
“ Reflections upon, rather than pre-occupy his
“ Judgment. And indeed it is a Subject in which
“ Matters of Fact being stated, a Man in Business
“ who is used to Calculation, is a better Judge
“ than the best Classical Scholar in the World,
“ without these Qualifications.

I acknowledge the Truth here delivered, and be-
moan my Want of Skill in Computation, which has
often put me to a great deal of Trouble, and made me
liable, as I fear, to a great many Mistakes; but I
hope all ingenious Mathematicians will easily dis-
cover them, and without any great Trouble correct
them.

Pag. 113. “ THE vast Difference between the
“ Riches of the *Roman* Citizens in the Infancy,
“ and in the Grandure of *Rome*, will appear by
“ comparing the first *Census*, or Valuation of Estates,
“ that were made in the Reign of *Servius Tullius*,
“ with the prodigious Estate that they afterward
“ possessed..

If this be applied to every Senator, I think it
is not true, and according to the Account that *Au-*
lus

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Ius Gellius gives of the first Classis, it was no less than 125,000 Pounds of Copper or Brass; and I question not but that any Gentleman who has as much Land as that Sum will buy at this Day, may be qualified to become a Parliament Man now at *Westminster*; but for this I refer the Reader to what has been said in my LETTERS, and the Additions to them, where the Brass is reckoned to amount to 6666 *l.* 13 *s.* 4 *d.* English.

Pag. 115. " IN the Time of *C. Licinius* the Consul, A. U. 376. the Limitation of Estates was 500 *Jugera*, or 330 English Acres.

THIS Law was proposed then, but not passed 'till after; neither was there any Consul at all at that Time, but a Dictator: *Licinius* was a *Plebeian*, and none of that Order were Consuls, 'till the A. U. 388. *Plutarch's Camillus* is quoted for it, but those that promoted the Law were *Tribuni Plebis*, and both became Consuls sometime after that Law was passed; the Passage is toward the End of that Life, and in the Greek and Latin Edition, Pag. 150; and in *Livy, lib. 6. cap. 35*. If therefore the chief Author of this Law, a *Plebeian*, fell shortly after under the Penalty of it, 'tis an Evidence that the chiefest of the Nobility were not so poor as *Budens* and his Followers would make them.

" THE same gradual Encrease of Riches may be
" inferr'd from some Account we have of Patrimo-
" nies, and Womens Portions; the Patrimony
" of *Tacita*, reckoned very great, was only X. M.
" *Aris*, 32 *l.* 5 *s.* 10 *d.*" (pag. *ibidem*.) " *Val.*
" *Maximus*.

HERE

HERE *Tacita* is read for *Tacia*, and *Valer. Maximus* is quoted at large; but it would be a long Search where to find it, for neither *Tacia* nor her Father *Cæso's* Name are to be found in the *Index Variorum*; the Author is more excusable, because he has printed most of the Words which I meet with in *Val. Max. lib. 4. cap. 4. §. 10.* The Doctor values the *decem millia Æris* at 32*l.* 5*s.* 10*d.*: He and I governing our selves by several Hypotheses are not like to agree in our Sums; you read what Value the Doctor ascribes to *Tacia's* Inheritance, which after the Rate that the *Romans* valued Estates, not by the Year, but what they might be sold for out-right, after the Usual Value of Lands in *England*, would scarce arise to 30*s.* per Year; But as I should reckon it, the *Asses* being then Pound *Asses*, to be worth at least 10000 Shillings, or 500*l.* of our Money; which was no inconsiderable Sum with us, before the *West-Indies* were discovered. Besides instead of round Sums, by which the *Romans*, as the Doctor saith Reckoned, we find the Doctor here, and elsewhere, falling down not only into Shillings, but single Pence also.

Page 115. “ *Megallia* was styled the Fortune, “ because she had C. M. *Æris* 322*l.* 18*s.* 4*d.*

No Author is quoted for this Sum, but it may be found in *Val. Max.* and in the same Book and Chapter with that of *Tacia*, or as we read it here *Tacita*; but I cannot find that her Fortune was C. M. *Æris*, but *Quinquaginta Millia*; but in other Editions, as the Notes say, *Quingenta*; if it be the first of these, the Sum will but be half of what the Doctor gives; if the Latter, five Times as much as the Doctor assigns to it: But which of

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these three is the most likely, without the Time when she lived could be noted, there is no discovery.

Ibid. " IN later Times, a common Fortune for
" a Lady, was *Decies Sestertium* 8072 l. 18 s. 4 d.
" *Juvenal Satyr.* 10, is quoted.

It had been easier found, if the Verse had been added also; or 366 Verses, it may be read to no Purpose. I suppose the Doctor gives the Sum of *Decies H. S.* at 8072 l. 18 s. 4 d. according to his own Table, but in my own, I have given it at 8333 l. 6 s. 8 d. and all this great Difference in our Sums is, by the Doctor's computing one Farthing less than I do, in every four *H. S.* or one *Denarius*.

" *Ibid.* *Terentia*, Cicero's Wife, her Fortune was
" twelve *Myriads* of *Drachms*, 3875 l.; and Cicero's
" own Patrimony, was nine *Myriads* of *Drachms*,
" 2875 l.

IN compliance with the Practice of many other Authors, I have in my Computations reckoned the *Drachma* and *Denarius* as equal, tho' the Former was the Heavier; and yet for all this Diminution in my Table, the first Sum amounts to 4000 l. and the whole Estate of Cicero's Patrimony, exactly to 3000 l. without either odd Shillings or Pence.

Ibid. " Tully's Effects must have been very considerable, as will appear by some Things that
" will be said hereafter: He owns that he had in
" Asia, his 6 vicies 17762 l. 9 s. 4 d. *Epist. ad*
" *Atticum*, lib. 11.

I have not leisure to seek after a Book, I know
not

not which it is; whether 11 or 2, nor then, to read over the whole Book, before I could find the Epistle. In one of my Letters to Bishop Hooper, I complained of this quoting Places at large, without either Book, Chapter, Section, or Page, where to find them: 'Till I see that Epistle, I shall doubt whether it was his own Money he speaks of, or the Publick: And I reckon *his vices* to amount to 18333*l.* 6*s.* 8*d.*

WHEN I was otherwise weary of Writing, I at last sent for Cicero's Epistles, and found that what the Doctor referred to was in Cicero's xi. Book, and Epist. the first; where I find these Words.

Ego in Cistophoro in Asia habeo ad H. S. bis tri vices, hujus pecuniæ permutatione fidem nostram facile tuobere; quam quidem ego nisi expeditam relinquere putassem, credens ei, cui tu sis jam pridem minime credere, commemoratus essem paulisper nec domesticas res impeditas reliquissim; ob eamque causam serius ad te Scribo, quod sero intellexi, quid timendum esset. This being found after I had sent what I had writ to the Press, I sent this after it, to be subjoined to what went before; and I likewise look'd over many other Epistles in that Book; which convinced me that much of Cicero's Wealth was not to be met with there, but rather, as I think, Tokens of his Poverty: But let that be as it will, I think the Doctor has led us something out of the Way, by quoting imperfectly, by leaving out the Word *Cistophoro*, and only saying that he had in *Asia bis vices*, which usually refers to *H. S.* which was Roman Money; but the *Cistophori* were another Sort of Coin, and tho' not so big as the *Roman Denarii*, yet much bigger than the *Roman Sesterces*, and chiefly used by the *Rhodians*, and bore this Proportion to the *Attick*, that 4500 *Drachms* do to 6000, which

which, if I am not mistaken, renders them a 4th Part less than a *Drachma*, and therefore one *Cistophous* should, at least, be equal to three *H. S.* And should not be reckoned less than three Times as much, or more, than the Doctor has given it in at; except this should be *Cicero's* Meaning, that he had so much of the *Rhodian* Money, as would amount to *Bis Centies* in the *Roman* Money. All this is writ for the Exercise of those that are greater Criticks than either the Doctor or I pretend to be.

Page 116. "*Curio* is recorded for contracting a Debt to the Value of *Sexcenties Sestertium* 484375. "*Val. Max. lib. 9.*

THO' the Book be here quoted, yet the Chap. 1. §. 6. are omitted; neither is it expressed that he was a young Man, and under the Government of a severe Father, of which two the Author speaks more judiciously and elegantly, than in some other Places, *lib. 9. cap. 1. §. 6. Consimilis mutatio in Domino Curiorum existit; siquidem Forum nostrum, & patris gravissimum supercilium, & filii sexcenties sestertium aeris alieni aspexit; contractum famosa injuria nobilium juvenum. Itaque eodem tempore, & eisdem penalibus diversa secula habitarunt, frugatissimum alterum, alterum nequissimum.* My Table computes the Sum at 500,000 l.

Page 116. "*Plutarch* saith that *Cæsar*, before he had been in any publick Office at *Rome*, owed 1300 Talents 251875.

I have nothing to observe here, but the Difference of my Computation from the Doctor's, as well in *Talents*. as in *Sesterces*; for I rate this Sum
at

at 260,000 *l.* exactly neither more nor less, the Difference betwixt us is 18125 *l.* which the Doctor falls short of me.

Page 117. " THE Valuation of *Crassus*, his Land Estate, by *Pliny* 1,614,583 *l.* *Bis Millies*, is in my Account 1666666 *l.* 13 *s.* 4 *d.* of which the Doctor falls short by 54,582 *l.* 6 *s.* 8 *d.*

I shall take no further Notice of the Differences of our Computations, except I find some more than ordinary Occasion for it hereafter.

Page 121. " THE Middle, or common Prices of Commodities, which Mankind have the same Use for, in all Ages and Times, seems to be the true Measure for ascertaining the Quantity of circulating Money, in any Time or Place, and there is no other so Proper as Bread-Corn.

I give my full Suffrage to the Opinion in this Point, and therefore in my Collections never omitted it, where it was to be met with, either in *England*, or in any other Country, where I found Mention of it. And because the Word *Modius*, by our *English* Translators, is too often called a Bushel; I think it necessary to explain to the Reader what is properly meant by it, for it was a *Roman* Measure, mostly made use of in Buying or Selling of Corn: And now I will look Back to what the Doctor has observed concerning it, which I find in the 88, and following Pages. And I finding it very exact, and that the Dr. had perused the best Authors, *Cato*, *Cicero*, *Varro*, *Columella*, and *Pliny*, who have spoke the most of that *Modius*, it appeared to be one of the perfectest Sections the Doctor had discoursed of in the whole Book: But I have-
ing

ing made a Mistake in this very Page I am now Writing, and was forced to dash out three or four Lines together; I thought I would give this Subject a second Reading, and by so doing, I discovered it was not altogether so plainly expressed, but that a vulgar Reader might in some Places be posed with it; and therefore began to examine it more nicely, and thought that something might be added to it, for its better Explication: But how to do this, I was for some Time at a stand, and knew not what Method I should take for it; at last I bethought my self, that none could be better than what I had observed almost thirty seven Years ago, when I read under my Tutor the two first Books of *Euclid*, which was then only taught us, to shew how to put our Arguments into Syllogisms, in conformity to that accurate Mathematician, who begins with Definitions and Postulations. I think it Necessary in this Place, to acquaint the vulgar Reader, who it may be will be more desirous to understand what is meant by the *Modius* here spoken of, and be informed what is understood by the Measures here mentioned: And therefore I think it fittest to begin with the Word Pound, which is still capable of being better understood, if we either know any Measures, either above or below it. To make therefore the Matter as short as I can, I must inform those that are ignorant of it, that we have two Sorts of Pounds in *England*, the one consisting of greater Ounces, but fewer of them, which we call the *Troy* Pound, and when put in the Ballance, not so heavy as the other; which has indeed more Ounces, to wit 16, whereas the other has but 12; but then these 12 are equiponderate to about 14 Ounces of the *Averdupois*, which has 16 Ounces. And which is more

WON-

wonderful, the lesser Ounces are said to contain more *Drachms*: The great Ounce, as in other Countries, contain but 8 *Drachms*, and the lesser Ounce to contain, as I think, 16; but then these 16 are but half as big as the greater *Drachms* contained in the *Troy* Ounce. How this comes to pass, I cannot imagine, but I suppose it has been long so, and yet the late Act of Parliament, for regulating the Price of Bread, takes no Notice of this Difference: And therefore at the first publishing that Act, I could not, after a great deal of Pains, make any Thing of it; for I found the Name of Drams often exceeding the Number of Eight, even towards 15. And was forced to send to *London* for the Explication of it, which one would have expected, being an Act for Vulgar Use, that Men of the meanest Capacities might have understood and apprehended it at the first Reading.

BUT from the Ounces, I now return to the Pounds, which in Part are spoken of in the 16 Page of the Doctor's Book, even to a Nicety, that I cannot well understand; and those that will be so curious as to search for it, may find it discoursed of in the Present State of *England*, pag. 15, which most Persons have, that are of Condition in the World, or may borrow it very easily if they want it. Now it so happens, that what is an *Averdupois* Ounce in *England*, proves to be the same that is a *Roman* Ounce in *Italy*; and that three Parts of our common Pound, for Fruit and Spice, is the same with the *Roman* Pound of 12 Ounces. So that Writing now of *Roman* Affairs, we ought to speak chiefly of their Measures, and not mix these promiscuously, or speak scantily of both, without giving warning thereof when ever we do so: For all that I now write, was occasioned by my discovering

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covering that the Weight I had formerly given, in my Mind, only to the *Modius*, did not agree with the same Weights described or given to our Bushel in *England*: I confess this was my Errour or Over-sight, for the Doctor has plainly said he reckons by *Troy* Ounces; but I to understand the better what a Peck of Oats was worth, computed it by the *Roman* Pound and Ounce, but here it is done to my Hand by the *Troy* Ounce; but I that am merely un-skill'd in Arithmetick, cannot reduce one of these Accounts into the other, but must revert back to the *Roman* Pounds and Ounces to do it by.

HAVING thus described what I mean by a *Roman* Pound, viz. 12 Ounces, or three Parts of an ordinary *Averdupois* Pound, *English*, I proceed to explain what is meant by a *Modius*, with the respect it bears to Measures of greater Capacity. We learn from *Val. Maximus*, in the very last Lines of his Treatise, writ for the Information of the *Roman* Censor, Things and Names, then being become so obscure, that even the Chief Magistrate of *Rome*, did scarcely understand them. And tho' I understand the Words and Design of the whole, yet the Distribution of Estates or Things to be divided, are so nice and intricate, that if I seem'd to comprehend them one Month, yet they become hard to me, and almost quite forgotten by the next; but the last Words, to which I refer, are so plain and easie, that they are hardly to be equalled for Clearness and Perspicuity, in any Author whatsoever, his Words are these:

*Mensurarum liquoris atque grani expeditior & forma
& appellatio est; Nam Quadrantal, quod nunc plerique
Amphoram vocant, habet urnas duas, modios tres,
semmodios sex, congios octo, sextarios quadraginta octo,
Hemi-*

Heminas, *Quartarios Centum nonaginta duos*, *Cyathos trecentos septuaginta sex*: The concluding two Lines contain the *Nole Mensurarum*; but we want Types to express them by, but may be found at the End of *Gronovius De Pecunia Vetere*, 4^{to} Edition, Page 400. The first Thing I shall observe from the fore-going Words of *Melianus*, is that the *Modius* was the 3d Part of the *Quadrantal* or *Amphora*, which is agreed on all Hands to contain 80 *Roman Pounds*; and therefore tho' it was a Dry Measure, yet a Vessel made equal to it to hold Water, must contain 26 Pounds and eight Ounces; and whatever a Vessel so fitted with Corn, fell short of that Weight, so much was a like Quantity of Water heavier than the Grain weighed against it.

THERE is another greater Vessel or Measure, to which the *Modius* may be compared, and that is the *Medimus*, which contained *sex medii*, as *Cornelius Nepos* informs us, in the 2d Section of the Life of *Pomp. Atticus*: Speaking of whom he says, *Nam Universos frumento donavit, ita ut singulis sex modis tritici darentur, qui modius mensuræ Medimus appellatur.* But I find that the Measure of the *Medimus* is not so ascertain'd, as to give any great Light to this Matter, because the *Medimus* is rated at fewer Cotyle, than double the Number of *Nomine*, by the Bishop of *Bath and Wells*, p. 66. which, if I be not mistaken, are reckoned at the same Weight and Value: Therefore I return back to the Measure that falls short of the Contents of the *Roman Pound*, and these are the *Congios Octo*, which are made equal to the *Amphora*, and the 48 *Sextories* equal also to the same *Amphora*; for 48 multiplied by 20 Ounces, give exactly 80 Pound, which proves that 12 Ounces were exactly equal to the *Roman Pound*.

So

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So that if we divide the *Roman Ounces*, given us by the Doctor, by 12, they will give us the *Roman Pounds*, by which all the several five *Modii* of Corn are estimated by the Doctor.

I now return to the Doctor's Tables, which at the first reading I was so much taken with, which are in the Forms following.

Page 88.	<i>Modius Gallican</i>	- - -	240	} Roman Ounces.
	<i>Sardum</i>	- - -	246	
	<i>Alexandrian</i>	--	250	
	<i>Bærian</i>	- - -	252	
	<i>African</i>	- - -	261	

Page 89. In *English Measure and Weight* thus.

Peck of Wheat.	Ounces Troy.	Pounds	Ounces.
<i>Gallican</i> - - - -	218 -- 517	- - - -	18 - - - 2 $\frac{1}{2}$
<i>Sardum</i> - - - -	223 -- 979	- - - -	18 - - - 8
<i>Alexandrian</i> - - -	227 -- 621	- - - -	18 - - - 11 $\frac{1}{2}$
<i>Bærian</i> - - - -	229 -- 441	- - - -	19 - - - 1 $\frac{1}{2}$
<i>African</i> - - - -	237 -- 637	- - - -	19 - - - 9 $\frac{1}{2}$

CONCERNING these two Tables, I was at first View surprized with them for their Exactness, but afterwards upon reading *Pliny* himself, the first of them seems more difficult than plain; for to a Beginner it gave him the Trouble of reducing Ounces back into Pounds.

THE 2d Table seems altogether useless, when Bread was no longer to be weighed by *Troy* weight, but by *Averdupois* here in *England*.

I will now give you the Account found in *Pliny* his own Words, *lib. 18. cap. 7.* where having spoken before of several Sorts of Wheat he goes on thus;

Nunc ex his generibus quæ Romanæ invehuntur levis-
simum

finum est Gallicum atque Chersoneso advectum, quippe non excedunt in modium vicens libras si quis ipsum gramum ponderat; adjicit Sardum selibras, Alexandrinum & Trientes, hoc & siculi pondus, Bæoticum totam libram addit, Africum & dodrantes. In Transpadana Italia sc̄to vicens quinas libras farris modios pondere, circa Clusium & senas.

IN ENGLISH thus.

		Pds.	Oun.
	Of the several sorts of Corn brought to Rome, the French or Gallican, and that of the Chersonesus (of Callipolis) if you weigh the Grain of a Modius it will not exceed 20 lb.	20	0
Gallican			
Sardinian	The Sardinian adds to the former Weight half a lb. —	20	6
Alexandrian	The Alexandrian adds to the former Weight a Trient	20	9
Sicilian	The Weight of the Sicilian Wheat the same —	20	9
Bæotian	The Bæotian adds a whole lb. —	21	0
African	That of Africa adds a dodrantem. —	21	9
	Near the Pœ in Italy, a Modius weighs 25 lb. —	25	0
	Near Clusium 26 lb. —	26	0

AFTER this Pliny goes on, *Lex certa nature ut in quocunque genere pani militari tertia portio ad grami pondus accedat; sicut optimum esse quod in subactu congium aque capiat. Quibusdam generibus per se pondus; sicut Bælearico modio tritici panis pondo XXX reddit. Quibusdam in binis missis, ut Cyprio & A-*

P

lex-

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Alexandrino, XX *prope libras non excedentibus*; Cyprium fuscum est panemque nigrum facit, itaque miscetur Alexandrinum candidum redduntque XXV pondo. Thebaicum libras adjicit.

BECAUSE there is a Passage in this last Quotation which I do not well understand, and to shew how diligent an Author *Pliny* was in almost every Thing he gives an Account of in his thirty seven Books of *Natural History*; and to acquaint the Ladies where they may divert themselves almost upon any Subject I will give a Translation out of Dr. *Philemon Holland* of the Words fore-going.

“ Be the Corn whatsoever it will, this is the
 “ Ordinary Proportion by the Rule of Nature,
 “ that being made into down-right Household-
 “ Bread for Soldiers, and to serve in the Camp, it
 “ ought to weigh as much as it did in Corn, and
 “ one 3d Part over and above. This also is a Rule
 “ that the best Wheat is that, which to every
 “ *Modius* will take, and drink up, a Gallon of Water,
 “ e’er it be made Dough; And yet some kinds
 “ of Wheat there be, that will yield the full Weight
 “ aforesaid in Bread, and never count the Water going
 “ thereto; and namely, that which cometh out
 “ of the *Balear* Islands; for a *Modius* of that Wheat
 “ yieldeth in Bread 30 Pound Weight; yet other-
 “ whiles it falleth out in some kinds of Wheat,
 “ (being blended two Sorts together, as namely that
 “ of *Cyprus* and *Alexandria*, whereof neither exceed
 “ little or nothing more than 20 Pound Weight
 “ to the *Modius*) that the Bread made thereof will
 “ arise to the ordinary Proportion; for the *Cyprian*
 “ Wheat is not bright, but brown and duskyish,
 “ and therefore maketh a black kind of Bread, in
 “ which

“ which the *Alexandrian* Wheat which is fair and
 “ white, is mixed with it, and so both together
 “ do yield in Bread 25 Pound Weight, the Wheat
 “ of *Thebes* addeth a Surplusage thereto. of one
 “ Pound.

I suppose *Pliny* here transcribed out of some former Author, for I cannot well understand him, or the Translator; for when two Sorts of Corn of 20 Pounds the *Modius* being mingled together, what wonder is there that it should yield 25 Pound in Bread, when about ten Pound of Water had been added to it: For he had said before, that a 3d Part of the Weight of Corn, when baked, was to be expected more than it was before the Water was added to it; for that would make somewhat better than 26 Pound in all, when put together.

Pag. 121; FOR the better Understanding what the Doctor says in this Page, concerning the Price of Corn, there ought to be considered, both the Time and the Course of this giving or selling: I remember that I once noted some defect in *Livy*, or *Pliny*, in making that a dear Year which was a cheap, or a cheap which was a dear; but it is impossible for me now to call it to Mind again, nor can I, I fear, discover in what order the Doctor's Quotation should be placed; but consulting some Notes I had formerly taken out of Mr. *Hardwin*'s Edition of *Pliny*, that *Manius Martius* is spoken of by him before any other, who gave or sold a *Modius* of Corn for three *Asses*; and *Pbignius* is quoted for saying this was A^o. Ur. 298, in which Year I find *Livy*, lib. 3. cap. 31. that *annonā propter aquarum intemperiem laboratum est*: And in the following Year he says, *ab Æquis præda porta ingens*;
 P 3 Eam

Eam propter inopiam aerarii Consules vendiderunt. Invidiæ tamen res ad exercitum fuit; by which, as I now find, *Pliny* reckons Corn cheap, when *Livy* seems to speak it dear. I can no way assent to the Value the Doctor puts upon the *Asses*, 'till it be settled better than it is, what the Value of Brass was at *Rome* at that Time, which has been the Enquiry of the fore-going Letters.

Ibid. “ *Minutius Augurinus*, the eleventh Tribune of the People, brought the Price of Meal, in three Markets, to an *AS* for every *Roman Modius*.

Mr. Hardwin's Notes places this under the Year 317, *A^o Urb.* but, as I have noted the Year in my own *Livy*, it falls in with the Year before, when *Sp. Mælius* endeavoured to gain the People over to some ill-design of his, to overthrow the Commonwealth, by giving Corn to the Common People. *L. Minutius*, by publick Allowance, did the like to discover *Mælius's* Intentions, and those being found out, he was accused before the Dictator, and refusing to come, and calling out for help to his Party, the Master of the Horse sent to fetch him, slew him: And his Goods being seized as a Rebel, *Minutius* disposed of them to the People. Part of the Story being thus concluded, *Livy*, lib. 4. c. 16. *Lucius Minutius Bove aurato extra portam trigeminam est donatus nec plebe quidem invita, quia frumentum Mælianum assibus in modios æstimatum.* And tho' *Pliny* styles *L. Minutius* the 11th Tribune, yet *Livy* long before him argues thus against it, *Hunc Minutium apud quosdam Authores transisse a patribus ad plebem undecimumque tribunum plebis Cooptatum; seditionem motam ex Mæliana cade sedasse invenio. Ceterum vix credibile est numerum tribunorum patres augeri passos;* *idque*

idque potissimum exemplum a Patrisio homine introducit; nec deinde id plebem concessum semel obtinuisse aut certe tentasse; sed ante omnia fefellit falsum imaginis titulum, paucis ante annis lege cautum, ne tribunis Collegam cooptare liceret.

THIS last Paragraph is added by me, not any way in Relation to the Doctor, but to shew that many Falshoods have passed current at *Rome*, whilst it was in it's Splendour; amongst which I reckon this Opinion, that Brass was reckon'd as 840 to Silver, and that the *Roman Denarii* were never heavier than 7 in an Ounce of Silver.

Page 121, "*Clodius*, when Tribune, made a Law, that Corn should be given to the People gratis, which was before Sold, the *Modius* for *semissis ac trientibus*, at which Rate the Quarter comes to 16 s. 3 d. 2 q. c. *Plinius*.

FOR lack of the Place where *Pliny* relates this, I know not where to seek it: Nor can I conceive how the Doctor should raise the Price of a Quarter to so high a Rate, when a little before, in the Case of *Murtius* and *Minutius*, a *Modius* sold at one *AS*, the Quarter should but amount to about 2 s. when it was but sold for less than an *AS*, only 9 Parts of 12, it should rise to 16 s. 3 d. 2 q. but I may say with the Poet, *Bonus aliquando Dormitat* *Homerus*.

Cicero introduces *Verres* bragging, that Wheat was at two *Sesterces* the *Modius*, which makes the Quarter 10 s. 2 d. 1 $\frac{1}{2}$ q. and this makes the last Thing I observed, altogether irreconcilable with Truth, except four *Asses* should prove something less than 9 Parts of one *AS*.

WHAT I have hitherto writ, has been in great Pain of the Gout, and now on February 10th, it

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is both in my Feet and Knees, and is got into my left Hand, and must be expected by me very shortly in the Right also.

Pag. 124. THE *Opimian* Wine is here spoken of, and the Price assigned, but the Place in *Pliny* is not cited where, and may be found in my first Letter, to be in the 14th Book, and Ch. 4th of *Pliny*. I have not Ability to transcribe the whole Paragraph, nor may assent that it was a *Cyatbus*, but an Ounce that *Pliny* speaks of; and if the Doctor means that, if we reckon by the *Cyatbus*, yet can I not agree to his Price neither; for two *Nummi*, or two *H. S.* are rated by me at 4*d.* and not at 3*d.* 3 $\frac{1}{2}$ *q.* Neither can I allow his Emendation out of *Budeus* in the Margent, *Singulas uncias binis* (*ita Budeus legit*) *constituisse nobili exemplo Docuimus*; for in the 9th Page of the same Letter, I have quoted these Words of *Budeus*, *Singula uncia singulis H. S. constiterunt*; neither yet does the *Cyatbus* contain 2 Ounces, but the 6th Part of 10 Ounces only. This Observation has reminded me of an Errour of my own, reckoning both the *Hemina*, and the *Cotyla*, at 12 Ounces a Piece; but I will now Correct it, before it go to the Press, for such is the infelicity of my Memory, who can scarce remember any Thing, that is not in my Sight and before my Eyes.

Pag. 125. " THERE are likewise recorded Times
 " of prodigious Plenty, which cannot be drawn
 " into any Rule, as that specified by *Pliny*, when
 " ten Pounds of Oil were sold for an *AS*; and
 " likewise at the Triumph of *Metellus*, when near
 " an *Englisb* Gallon of Wine, 30 *Roman* Pounds
 " of Figs, 12 Pounds of Flesh, and a Peck of
 " Meal

Meal were sold each at an *AS* $3 \frac{1}{16} q.$ *Pliny*,
lib. 15 .cap. 3.

I am forced by my ill-state of Health to pass by many Things unexamined, and especially when the *Affes* were Pound *Affes*; but now the Doctor descending to later Times, when we both may better be assured of the Value of the *Affes*, possibly we may come to somewhat a nearer Agreement; I have examined the Place in *Pliny* quoted for 12 Pound of Oil being sold for an *AS*, but I can find no such Thing in that Book and Chapter: And what follows is not quoted by our Author at all, but may be met with in the 18th Book and 3d Chapter, but in what Year this happened, is not noted by the Doctor; and I think it must be *Pliny*, *lib. 8. c. 6.* where he tells us it was in *A^o. Urb. 502*; but still how to value the Things mentioned, depend upon the Weight the *Affes* then bore. We are told by *Pliny*, that the *Affes* in the 1st *Punick* War, when those *Elephants* were taken, were reduced to *Affes Sextarii*, or two Ounce *Affes*; so that they were but the sixth of what they were before. But the Doctor is carried away with *Budeus's* false Opinion, to make no difference between an *AS* at one Time, and an *AS* at another; but if my Hypothesis take Place, and we suppose the *Denarii* to have altered as the *Affes* did, then an *AS* *A^o. Urb. 502*, amounts not to so much as four half Ounce *Affes* afterwards; which shortly after Answers to a *H. S.* only, or *2d. English*, and renders the Prices very Cheap; but not so incredible as otherwise they would appear; and differ not much from what is reported by *Polybius*, and other Authors afterwards.

Pag. 127. To return to the Price of Cattle: "As to
P 4 "Horses

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“Horses. *Livy* tells us, that there were 10000 *Asses* given out of the Publick Money to the *Equites* to buy Horses, and that the Widows were obliged to contribute towards their Keeping, the Sum of 2000 *Asses*. If, as is commonly supposed, there were two Horses, the Price of them was 32*l.* 5*s.* 10*d.* or *per* Horse, 16*l.* 2*s.* 11*d.* Pag. 128. “and their Feeding came yearly to 6*l.* 9*s.* 2*d.* which is *per* Horse, 3*l.* 4*s.* 7*d.*

I did not intend to have any Argument with the Doctor upon this Point; but since there is much that may be thought to depend upon it, I shall observe, that this Passage is not mentioned I think by any other Author; and that the Matter of Fact seems to agree well enough with *Livy's* own Time; but not at all with the Age in which *Servius Tullius* ordained the *Census*, nor with the Price of Sheep and Oxen, appointed by a Law some Years after. I hasten forward, least I should suddenly be surprized, that I could not write at all; and yet I must add what indeed I had forgotten when I writ this, that I have sufficiently treated hereof in the 5th Page of the fore-going LETTER to Dr. *Bateman*; where I have shewn that 10000 *Asses* multiplied by 8*d.* gave 80000*d.* which divided by 240*d.* an English Pound, arises to 33*l.* 6*s.* 8*d.*

Page 149. “THE Outside of *Cicero's* House was valued at *vicies Sestercia* 16145*l.* 16*s.* 8*d.* his Country-House at *Tusculum* was sold for 725 *H. S.* 5852*l.* 17*s.* 3½*d.* both at under Rates.

THE Rates put together in all amount to 22708*l.* *Plutarch* Gr. pag. 881. and in the 5th Vol. *Eng.* p. 361

361 says, that *Terenia* had left him an empty House, and involved him in many and great Debts, and besides *ocidit nulla iuventus* indebted many Millions; so far was *Cicero*, as the Doctor thinks him, from being rich and wealthy.

Pag. 155. " *Pliny* mentions the Purchase of a Vineyard in the *Nomentan* Land, which at a cheap Rate came to 60000 *H. S.* 4843 l. 15 s. *Pliny*, lib. 14. cap. 4.

BECAUSE the Place was mention'd, and so is easier to find, I sent my *Pedee* that fetches and carries my Books down and up, for I am generally *pedibus Captus*, for it, and consulted the Place, but found nothing, that I thought, fit to support the Doctor's Discovery; but speaking of Improvement made by the Labour of *Sthenelus*, who was suspected by his Neighbours to have dealt with the Devil, he thus goes on.

Sed maxima ejusdem Stheneli opera Rhemmio Palæmoni, alias grammatica arte celebri, in hisce XX annis mercato Rus D. C. nummum in eodem Nomentano, decimi lapidis ab urbe diverticulo. Est autem usquequaque nota vilitas mercis per omnia suburbana, ibi tamen maxima, quoniam & neglecta per indiligentiam prædia paraverat, ac ne in pessimis quidem elegantioris soli. Hæc aggressus excolere non virtute animi, sed vanitate primo, quæ nota mire in illo fuit, pastinatis de integro vineis cura Stheneli dum agricolam imitatur, ad vix credibile miraculum perduxit infra octavum annum CCCC nummum emptori addita pendente vindemia, concurratque non nemo ad spectandas uvarum in iis vineis strues, literis ejus altioribus contra id pigra vicinitate sibi patrocinate: Novissime Anneo Seneca principem eruditionis ac potentia quæ postremo nimia fuit super

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per ipsum minime utique miratore inanium tanto prædii ejus amore capto ut non pueret in viso alias & ostenturo. tradere Palmam eam emptis quadruplicata vineis illis intra decimum fere curæ annum; digna opera que in cacubis setinisque agris proficeret: quando & postea sepenumero septenos culeos singula jugera hoc est amphoras centenas quadragenas musti dedere. Ac nequis victam in hoc antiquitatem arbitraretur idem Cato denos culeos redire ex jugeribus scripsit efficacibus exemplis non maria plus temerata conferre mercatori non in rubrum litus Indicumve merces petitas, quam sedulum ruris larem vino antiquissima claritas Maroneo in Thraciæ maritima parte genito ut Author est Homerus. Neque enim fabulosa, &c.

ALL this whole Paragraph I have caused to be transcribed, 1st, to shew that this is no sufficient Argument of the Cheapness of Land in *Italy*. 2dly, To shew what great Encouragement is given to Mens taking Pains, and the great Profit that may arise there-from.

Pag. 155. "*Budeus* reckons it was a *Centuria*; "*the Centuria* consisted at first of 100 *Jugera*; "*afterwards by a Continuation of the same* "*Word, and Impropriety of Speech, it came to* "*be reckoned 200 *Jugera*, tho' according to *Cato** "*a Centuria of a Vineyard consisted of 100 *Jugera*.* "*at this Rate a *Jugerum* of this Vineyard came to* "*48 l. 8 s. 9 d. and an English Acre to 77 l. 10 s.*

I see no Reason why *Budeus* should think it a *Centuria*, or if it had been so, I see as little Cause why it was not reckon'd at the Time *Rhem. Palemon* bought it at 200 rather than 100 *Jugera*; for the Sum, if divided by an 100, seems to me to arise

rise no higher, than 10 l. and if 200, but 5 l. an Acre; so that I think one Way or other there must be some Mistake in this Matter; beside *Palemon* is said to have bought *Rus*, a Country, or Farm, and not a Vineyard, 'till he converted it to that Use; this I think will appear more likely by what next follows.

Pag. 156. " THERE is another Passage in *Columella*, which makes the common, or middle yearly Rent of a *Jugerum* of Pasture, Meadow, or Copsie Land, 16 s. 1 $\frac{1}{4}$ d. in *Italy*, at this Rate the Rent of an Acre (*English*) comes to 1 l. 5 s. 10 d. Land was reckoned commonly at 25 Year's purchase, for the Lands of the Government were so lett, paying according to the Rate of 4 per Cent. (d) *Columella lib. 3. prata pascua & silvæ si Centenos H. S. singula Jugera efficiant optime Domino consulere videntur.*

WHICH in English is this, *Meadows, Pastures and Woods* seem very well to answer their Owner's Expectation, if every (*Roman*) Acre yield him an hundred H. S. that is 16 s. 8 d. of our Money; and therefore this seems rather the highest than middle rate of such Lands.

(e) " Hygen. *de limitibus vectigal ad rationem usuræ trientes.*

THIS Quotation seems to relate to Lands abroad and out of *Italy*, that they were so Lett, that the Tenant paid no greater Rent for them, than if he had put out his Money at 4 per Cent. This, I think, is the Sense of this Place.

" A

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“ A Purchase of 500,000 *nummi* paid 20000 *nummi* a Year; at this Rate, according to the fore-mentioned Rent, the Purchase of an *English* Acre of such Land was worth 34 *l.* 5 *s.* 10 *d.* (f)
“ *Pliny lib. 7. Ep'larum.*

I can find nothing in that 7th Book of *Pliny's* Epistles that seems to look this Way, except the XIth and XIVth, but neither of them appear to me to come home to the Author's Purpose. The Contention arising about his selling 1/5th Part of an Estate to a Lady, when those Publicans that were to have the 20th Part upon Sale of Lands, valued them higher than *Pliny* had sold them for; but how can it be gathered from this, at what Number of Years Lands were then sold at, there is a Place in *Gronovius*, Book 4. cap. 5. p. 290. concerning these Epistles of *Pliny* here quoted, well deserving to be viewed by all Criticks whatsoever; which shews *Gronovius* to have been a very great Master in Arithmetick and Computations.

It is plain enough that if 500000 yielded but the Rent of 20000 *nummi* a Year, it must be bought at 25 Years purchase, for the lesser Sum is contained in the greater twenty five Times.

Pag. 156. “ *Tully* mentions in his Epistles to *Atticus*, a very cheap Purchase, as an Instance of “ the Badness of the Times, it comes *per* Acre only “ to 1 *l.* 9 *s.* 8 *d.*

HERE are several Things wanting in this Paragraph to make it plain; first whether he here speaks of a *Roman* Acre, and if that be supposed as the annual Rent, it does not prove it's Cheapness, but Dearness, and if it was the Purchase Money, and is to be divided by 25, it would come to about 14 *d.*

annual Rent; but what is worst of all, we must look over all the Epistles before we are sure to find it; and when found, it may still be disputed whether the Doctor has given us the true Meaning of it.

Ibidem. "THE Price of Land was considerably. "entreated, by the great Treasure that was brought "to Rome in Augustus's Reign.

THIS is most certainly true; But the very next Instance following of the vast Price *Jul. Cæsar* gave for the *Forum* might be objected as a Proof against it, for it cost *H. S. Millies* which are 833333 *l. 6s. 8d.*

I casually met with these Words Page 160.

"*Malobathrum* had risen from one *Denarius* to "300, that is to 8 *l. 13s. 9d.* the Oil of it only "60 *Denarii* 1 *l. 18s. 9d.*

MANY Things seemed to me very surprizing in this Passage, 'till I look'd for the same in the Place quoted in *Dr. Holland's* Translation, where I find these Words; *It is strange and monstrous which is observed in the Price, for it has risen from one Denier to 300 a Pound whereas the Oil it self does cost 60.* I had not known what Weight *Pliny* had been speaking of, whether Pounds, Ounces, or Drams; but that in the *Latin* it is plain, as the Doctor has quoted it; but the Quotation differs from *Dalecampius's* Edition, for the Dr. here more truly reads, *oleum autem ipsum in libras X. LX.* which I was at first ready to think the X after *libras* had signified ten Pounds; but the Sum that followed would by no Means agree to it.

IN this Place the Doctor's Quotation shewed, that *Pliny* spoke of Pounds, and the Doctor supposed

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fed he had sufficiently provided against it, having given Notice in the Title of this ix Chapter; but for the avoiding Mistakes, the Word Pound might have been added to every Particular Drug, the vast Rise of the Plant it self from 1 *Drachma* to 300 or 10 *l.* English, is, as *Pliny* Remarks, monstrous; but that any Pound of Oil should be cheaper by the Pound, than the Herb out of which it was drawn, or subtracted from, and at the same Time, for there is no Difference of Time mentioned, is altogether impossible, and therefore this might have deserved the Doctor's Explication, or at least Observation. In this Place the Price of the Oil, as I reckon, should be 2 *l.* exactly; from whence likewise it may be noted, that my Valuations run naturally into Pounds, Marks, and Nobles, and the Doctor's are very seldom found to do so.

Pag. 161. “ *Opobalsamum* 300 *Denarii*, the *Sextarius* per English Pint 8 *l.* 2 *s.* 1 $\frac{1}{4}$ *d.* is the Price
“ as sold by the Publick; but as it was adultera-
“ ted, it brought the Owner per Pint 27 *l.* 0 *s.* 4 *d.* $\frac{1}{2}$.

THE Doctor cites for the 1st Part, *Pliny lib. 5. c. 25.* where there is not one Word to this Purpose to be found, and for the latter Part, *Pliny lib. 12. cap. 25.* both are mentioned. I know not certainly that a *Sextarius* and English Pint are equal; but if they be, I should render the Price of one 10 *l.* I must also note that *Delacampius* reads the Words thus, *Quippe millibus Denarium sextarii empti, vendente fisco trecentis Denariis veniunt; in tantum expedit augere liquorem;* and if *millibus* be right, the Sum ariseth to 33 *l.* 6 *s.* 8 *d.*

Ibidem. “ THE Oil of an Indian Grain, and
“ used

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“ used for Sauce *per* Pint 5 s. 6 d. and *Quint. Cur-*
 “ *tii, lib. 5. CCXL Denarii Amphora.*

THE Doctor is here too hard for me, because I do not understand what Proportion there is between that and a *Roman* Pound; for I think according to the Quotation, this Pint would be of equal Price to eight *Roman* Pounds and better, but how to reconcile our Notions in this Case I know not.

Pag. 162. ch. x. I must in Haste, and for lack of Health and Time, pass by the Chap. of the Prices of Slaves, and the next of Pictures, with few or no Observations.

Pag. 163. “ The Price of Slaves was regulated afterwards by *Justinian* at much lower Rates, “ the lowest at 10 Solids, and the highest at 80, “ the Solids were the *Aurei* of that Time, and 100 “ Solids made *Dena* or 10 *Sestertia*.

THO’ I have not Time to consider this Passage with Care, yet it seems to me at first view to compute Sums by *Sestertia* when they were quite out of Use; and I dare not examine whether his Sum be right or no; but this I am pretty sure of, that 10 *Solidi* were then reckoned as of equal worth with 5 l. 12 s. of our Money; and consequently 100 ten Times as much, viz. 56 l. only. It follows also, that if 5 *Solidi* makes 56 s. the 5th Part, or one Solid, will be 11 s. 3 d. 9. or thereabouts, reckoning Gold to Silver at 1 to 14 $\frac{2}{3}$; but of this, for lack of the Knowledge of Fractions, I cannot be certain; But upon reviewing what the Dr. says, that 10 *Sestertia* made 80 l. 14 s. 7 d. I discovered that he reckon’d by *H. S.* 100 of which made
 4 *Aurei*

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4 *Aurei Romani*, his 10000 *H. S.* was by me cast into 2500 *Denarii*, which give according to my reckoning, 30 *Denarii* to a Pound English, the whole Sum amounted to 83 *l.* 6 *s.* 8 *d.* something more than the Doctor's, because he reckons by 7 $\frac{1}{2}$ *d.* to the *Denarius*, and I give each 8 *d.*

Pag. 168. " *Pliny* saith, that his Uncle told him " he could have sold his Commentaries, being 160 " in Number, to *Latgius Licinus*, for 400000 *num-* " *mi*, 3220 *l.* 3 *s.* 4 *d.* He tells you in the same E- " pistle, that they were wrote on both Sides, and " in a small Hand (a) *Pliny*, *Ep. ad Marcum*.

HERE the Doctor quotes *Pliny's* Epistles at large, save that he says the Epistle was writ to *Marcum*; but where shall we find this *Marcus*, for in the *Index*, or *Nomenclator* of those *Pliny* writ Epistles to, there is no such Name as *Marcus* occurs; but with some Difficulty and Labour I found the Passage in *lib. 3. Ep. 5.* written to *Macro* and not *Marco*: If the Doctor had read this Epistle, it is like he would have found the Difference between the Senior *Pliny* and the Junior his Nephew, because this refers to Manuscripts never published by their Authors; I will give the Price according to my reckoning, which always exceeds that of the Doctor's, and is 3333 *l.* 6 *s.* 8 *d.*

Pag. 169. " THIS is a greater Sum than *Ari-* " *stotle* paid for a few Books of *Lucippus* the Phi- " losopher, viz. 3 *Attick Talents*, which *Gellius* saith " made 72000 *nummi* of *Roman Money*; both ways " of reckoning, according to the Tables bring it " to 581 *l.* 5 *s.* which is a Proof of the right a- " nalogy and correctness of the Tables.

I had

I had not here taken Notice of this Passage, but that the Doctor alledges it as a Proof of his Tables; but as they came to one and the same, according to his Value of a *Denarius*, so that came to the Sum according to mine; he rates both at 581 *l.* 5 *s.* and I at 600 *l.* 6 *s.* 8 *d.*

Pag. 169. “ *Diogenes Laertius* in the Life of *Plato* says, that a few Books of *Philolaus* were purchased for 100 *Mine*, which *Gellius* interprets “ 10000 *Denarii*, both Ways of Reckoning bring “ it to 322 *l.* 18 *s.* 4 *d.*

So do they both come to the same Money by my Reckoning, viz. 333 *l.* 6 *s.* 8 *d.* but then it is to be took Notice of that the *Athenians* were brought under the *Roman* Yoke before *Aulus Gellius* his Time.

Ibidem. “ THE Prices of Magical Books mentioned to be burnt in the ACTS of the APOSTLES, is 5 *Myriads* of Pieces of Silver, or “ *Drachms*, that is 1614 *l.* 11 *s.* 8 *d.*

BECAUSE this relates to the BIBLE I will give the true Sum, 1666 *l.* 13 *s.* 4 *d.*

“ THE Customary Salary which Princes gave “ to their Physicians was 250 *Sestertia*, 2018 *l.* 4 *s.* “ 7 *d.*

BUT I reckon them to 2083 *l.* 6 *s.* 8 *d.* being unwilling that the Salaries should pass under their true Value.

Stertinius complained that he had only a Salary
Q
of

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“ of 500 *Sestertia*, 4036 *l.* 9 *s.* 2 *d.* when he had
 “ by his private Practice 600 *Sestertia*, 4843 *l.* 15 *s.*

BUT according to my Table, the 1st Sum is
 4666 *l.* 13 *s.* 4 *d.*; the 2d, 50000 *l.*

“ ONE *Vettius Valens* left *Centies* H. S. 80729 *l.*
 “ 3 *s.* 4 *d.* for publick Buildings in his own Coun-
 “ try, having spent as much more in the same Man-
 “ ner.

My Table says 83333 *l.* 6 *s.* 8 *d.*

Pag. 170. “ A Brother of *Stertinius*, after hav-
 “ ing spent a great Estate on publick Works, left
 “ (as *Budeus* has restored *Pliny*) *Sestertium triscentis*
 “ 242187 *l.* 10 *s.*” But my Table says 250000 *l.*

Ibid. “ WE have an Instance of the Fees of one
 “ Country Gentleman to a Physician, amounting
 “ to above 1600 *l.*

THE Words are *ducentis* H. S. and are exactly
 by my Table 1666 *l.* 13 *s.* 4 *d.* but it's likely in the
 Doctor's Tables it might not much exceed 1600 *l.*
 otherwise he would not have left it uncertain what
 the Sum was.

Pag. 170. It is said in that Page, “ That when
 “ Lawyers Fees came to be stated, *Ulpian* says they
 “ were limited to an hundred *Aurei*; but *Tacitus*
 “ says in the Emperor *Claudius's* Time, the limit
 “ was *dena Sestertia* or 10000 H. S.” Which in my
 Table arises to 83 *l.* 6 *d.* 8 *d.* but how the Doctor
 makes 100 *Aurei* pass for 80 *l.* or more, in *Ulpian's*
 Time, I know not; for by Mr. *Greaves's Aurei*, pag.
 111.

111. they must be mightily fallen before the Time that *Ulpian* writ in.

Ibid. “ *Vespasian*, who was a penurious Prince,
“ gave yearly Pensions to *Greek* and *Latin* Orators
“ 100 *Sestertia*, 807*l.* 5*s.* 10*d.* which was double
“ of that given to decay’d Senators, being only
“ 403*l.* 12*s.* 11*d.* a Generosity much exceeded in
“ our own Nation.

I can scarce guess how *Vespasian*’s Generosity is so much exceeded in our Nation; but if it be true, those Orators must have 833*l.* 6*s.* 8*d.* and the other 416*l.* 13*s.* 4*d.*

Pag. 170. “ WE have in another Place taken
“ Notice of *Virgil*’s Estate amounting to 80729*l.*
“ 3*s.* 4*d.* he was rewarded for the 21 Lines that
“ are extant on *Marcellus*, in his 6th *Æneid*, ten
“ *Sestertia* a Line, 80*l.* 14*s.* 7*d.* the whole Sum
“ amounting to 1695*l.* 6*s.* 3*d.*

I have passed several Pages without any more than casting my Eye over them, because I was hastened, and therefore could not regulate any Thing of an Estate, that I know not the Words by which it was valued, but the ten *Sestertia* in my Table are 83*l.* 6*s.* 8*d.* and the whole Sum, if in haste I have not mis-reckoned it, 1750*l.* All the Plate and Jewels I shall pass by.

Pag. 177. “ *Nero* staked, instead of *Denarii*, 3229*l.*
“ 3*s.* 4*d.* upon every Cast. Where did he find
“ Play-fellows!

Suetonius is quoted, but not the Chap. or Section;
Q 2 but

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but it is to be found Chap. 30, where it is said, *quadrigenis in punctum H. S. aleam lufit*; which Sum the Translator of *Suetonius* calls 400 *Sefterces* upon a Point; but in that I think he is mistaken, for that is but 33 *l.* 6 *s.* 8 *d.* but it being here spoken of as a great Extravagance; it must mean as the Dr. has I think taken it for 400000 H. S. which in my Table does but a little exceed the Doctor's Sum of 3229, being only 3333 *l.* 6 *s.* 8 *d.* But I must hasten, least, as it often does, the Gout seize one Hand after the other.

Pag. 181. Chap. xvi. This Chapter recites the Donatives given to the Soldiers; amongst which, as far as I can see on a sudden, this seems the greatest.

Pag. 182. "*Appianus* makes another Donative of *Julius Cæsar's* amount *per Man* to 5000 *Attick Drachms*, or 161 *l.* 9 *s.* 2 *d.* double to the Leader of a Company, or 322 *l.* 18 *s.* 4 *d.* to the *Tribuni Militum*, and the *Equites* double of this last Sum 645 *l.* 16 *s.* 8 *d.*

IN this, as in most other Places, the Doctor makes not his Sum, or that of the *Romans*, fall into round Sums, at least in our Money; though I think he might, as most others have done, brought the *Roman* round Sums, into round Sums of other Nations, as *Budeus* and others have done, by computing by the *Aurei* only; as they also fall in my Tables, for the first makes 166 *l.* and a Mark; the 2d, 333 *l.* and a Noble; the 3d, 666 *l.* 13 *s.* 4 *d.*

Pag. 185. *Augustus* left by his Testament to the Common People *per Man* 2 *l.* 8 *s.* 5 *d.* $\frac{1}{4}$.

Sue-

“ *Suetonius* says he left to the People of *Rome*
 “ 322916 *l.* 13 *s.* 4 *d.* and to the Tribes 28255 *l.* 4 *s.*
 “ 2 *d.* for which he quotes in *Augusto*, c. 41. *Legavit*
 “ *populo Romano quadringenties, Tribubus tricies quinquies*
 “ H. S.” I find in my Table that the 1st gives 333333 *l.*
 6 *s.* 8 *d.* and the next 26516 *l.* 13 *s.* 4 *d.* but I can-
 not yet find the Place as here quoted, either in the
 Latin or English *Suetonius*; but I have since met
 with it, chap. 101. Now such Mistakes as these,
 both in Book and Chapter, are very inconvenient to
 the Reader, and I might have done it oftner than
 once: And tho’ my Table was contrived as well as
 I could, without I had troubled my self or others
 with minute Fractions; yet even the least Fraction
 when it is multiplied by vast Sums, becomes very
 considerable; for in a *Roman* great Sum, a small
 Fraction in the *Denarius* amounts when it comes to
 Thousands and Millions to a vast Sum, as shall be
 hereafter taken Notice of, for my Memory will
 not serve to give an Instance of the sudden.

Pag. 187. “ *Julian* promised to the Soldiers per
 “ Man 201 *l.* 16 *s.* 5 *d.* $\frac{1}{2}$ to chuse him Emperor.

I can only note that I have not *Dio* by me.

Pag. 188 “ *Gabinius* was accused of taking a
 “ round Sum of 1,937,500 *l.*

It was 10000 *Talents*, as I remember, which a-
 mounts to 200000 *l.* and if the Fraction had been
 added, to a great deal more.

I must now pass on to xviii Chap. concerning
 the Revenues of the *Roman* Empire.

Pag. 189. “ THE Tax upon Tillage may be
 Q 3 “ rec-

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“ reckoned at two Shillings the Pound in arable
 “ Ground, and four Shillings in Plantations. *Ap-
 “ pian de Bel. civili.*

I mention this only as remarkable.

Pag. 191. “ *Paulus Æmilius* after he had over-
 “ come *Perseus*, King of *Macedonia*, brought into
 “ the Treasury H. S. MMCCC 1,856,770 l. 16 s.
 “ 8 d.

AFTER my Table 1,916,666 l. 13 s. 4 d.

Ibid. “ *Scipio* having conquer'd *Antiochus*, brought
 “ to it *bis millies* 1,614,583 l. 16 s. 8 d.

IN my Table 1,666,666 l. 13 s. 4 d.

Ibid. “ BEFORE the third *Punick War*, when
 “ *Sextus Julius* and *Lucius Aurelius* were Consuls,
 “ there was in the Treasury of Gold 16810 Pondo,
 “ which reckoned, in the Decuple Proportion,
 “ is 455,971 l. 5 s.: Of Silver 22070 Pondo,
 “ 59864 l. 17 s. 6 d.: Money *Sexagies bis* £ 85400
 “ H. S. 50741 l. 10 s. 2 d. which in all come to
 “ 566577 l. 12 s. 8 d.

THIS Paragraph is something out of my Sphere,
 but for Example sake I will endeavour to make
 Trial.

IN my Tables to avoid Fractions, in every Pound
 I have cast off 6 $\frac{1}{2}$ d. and might I think have made it
 7 d. ob. but I omitted the Penny-half-penny, and rec-
 kon but the Pound at 56 s. 6 d. it seems to me to
 make at first 50109 l. and then multiplied by a De-
 cuple Proportion to Silver makes 501090 l. out of
 which

which take the Doctor's Sum 455971 *l.* there remains 45119 *l.* the Doctor's *s.* being omitted in this Reckoning, and yet I am short by at least 1 *d.* ob. thro' the whole Account, which will be very easily corrected by those that are better skilled in Calculation, for it amounts to about 107 *l.* 6 *s.* 5 *d.*; but I no way rely upon it, I being now in haste, and my Head and Hands out of Order.

THE Silver, rejecting the Fraction, amounts to 61796 *l.* and to a great deal which I have not Time to calculate; but think with the Fraction included it comes in all to 62580 *l.* and better. I have not been nice at all in these Calculations, that Learners may have Opportunity to try their Skill; for I have found by Experience, that the finding out of a Fault does hold such Persons long in their Discovery of the Errour, and does them more good than the passing over exact Calculations, which they take upon Trust only.

I come next to consider what the *Sexagies Bis Et* 85400 *H. S.* put together will amount to; but I am something at a Stand what to make of the Word *Bis*, coming after *Sexagies*, and not before it. I guess therefore that it may signifie 2 Parts added to 60, be they hundreds or thousands, or any Thing that is then number'd, and so taken, adding them together, *Sexagies Bis* 85400 *H. S.* according to my Table amount to 52378 *l.* exactly, which exceeds the Doctor's Sum, (as it should of Course do) 1637 *l.* 10 *s.* 2 $\frac{1}{2}$ *d.*

Pag. 191. " WHEN *Sextus Julius*, and *L. Marcus* were Consuls, there was in the Treasury
" 1,920,829 *Pondo* of Gold, 52,102,486 *l.* 12 *s.*
" 6 *d.*

Q. 4

THIS

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“ THIS is according to *Hardwin's* Explication of
 “ *Pliny's* Numbers; but the Sum seems too extrava-
 “ gant, and perhaps the Numbers are not correct.

I must confess I do no way understand the Do-
 ctor's meaning in this Place, nor his Figures, nor
 whence he borrowed them, nor those in the Quo-
 tion XVI. XX. DCCCXXIX. The Number
 given by *Pliny*, both in my Latin and English
 Translation, agree in DCCCXLVI *Auri Pondo*:
 But tho' I can make nothing of the Doctor's Num-
 bers, yet by some Notes I took out of *Hardwin's*,
 he reckon'd the Number of Pounds to have been
 1620839*l.* which would make in *French* Money
 933,597,504, and in ours 77,799,792*l.* But 846*l.*
 multiplied by 2*l.* 16*s.* 7*d.* ob. I think riseth no high-
 er in a Duplicate Proportion of Gold, then to
 47640*l.* English Money; but this Computation if
 true, as I doubt it is not, is too inconsiderable a
 Sum to have any coherence with what is aimed at
 by the Historian.

Pag. 191. “ *Cæsar* brought at once to the Trea-
 “ sury 65000 Talents, 12,593,750*l.*

IF *Cæsar* had ever brought 65000 Talents, they
 would amount at least to 13,000,000*l.* But I can
 find no such Sum in *Plutarch's* Life of *Julius Cæsar*.
 And since it is not to be found there, it is a great
 injustice to put the Reader, to go in search after a
 Sum that can no where be found; except I should
 be so blind as to over-see it my self, which I think
 I did not.

Pag. 192. “ *Tiberius* left in the Treasury *quies*
 “ *septies millies.* *Suetonius* in *Caligula*.

I some-

I somewhat doubt that this Passage is not to be found in *Suetonius*, at least I cannot readily meet with it: But *vicies septies millies*, in my Tables, amount to 22,500,000 *l.* which exceeds the Doctor's Sum by a Million of our Money. I have since found it. *Calig. cap. 37.*

“ *Appian* speaking of *Aegypt*, says, that in the
“ Reign of the second King after *Alexander*, there
“ was in the *Aegyptian* Treasury, 74 *Myriads* of
“ *Talents*, or 191,166,666 *l.*

THO' I have Collections out of *Appian*, and most *Greek* and *Latin* Authors in Manuscript, I am not in any Condition to consult them; but take it for granted, the Dr. here exceeds my Table, where they do not amount to above 148,000,000 *l.* So that one of us must here be mistaken.

“ *Strabo* quotes *Cicero*, mentioning the Revenue
“ of *Egypt*, to have been in the Time of *Auletes*,
“ Father to *Cleopatra*, 12500 *Talents*, 2,421,875 *l.*

I know not well by what *Talent* the Dr. computes by, but if by *Attick*, it makes the Sum far short of what it should be, if the *Alexandrian Talent*, were the same with the *Judaic*.

Pag. 193,-4. “ THE Dr. computes the yearly Revenue of *Asia* from *Herodotus*, at 2,807,437 *l.* 10 *s.*

How happy had it been for the Bp. of *Bath* and *Wells* and me, had we met with this Calculation, and given credit to it; for then we had not remained altogether uncertain, what was the true Interpretation of *Herodotus*, so as to make one Part reconcilable

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cilable with many. See my LETTER to the Bishop, on this Subject, p. 87.

Pag. 194. " IN *Sylla's* Time, the yearly Tribute of *Asia* was 5000 Talents, 968750 l.

THESE Sums relating to the publick Income, are of more Consequence, than the private Wealth of any Person, and therefore ought to be more carefully adjusted: In my Tables 5000 Talents, arise to an ihtire Million of our Money, 1,000,000.

Ibid. " *Plutarch* saith, that *Antony* made *Asia* pay, at once, 20 Myriads of Talents, 38,750,000 l.

TWENTY Myriads of Talents are 200,000,000, which multiplied by 200 l. comes to such an immense Sum, that there is no believing it: And therefore, I suppose, Talents are here mentioned in the Place of *Drachma's*, and 200,000,000 amounts to 66,666,666 l. 6 s. 8 d. But upon further Consideration, I fancy there is a Figure wanting in the Doctor's Sum, and that it ought to have been 388,000,000, or thereabouts, by his own Tables.

Ibid. " BUT *Appian* writes, that this was the Tribute of ten Years; so that in *Antony's* Time, the yearly Tribute of *Asia*, was two Myriads of Talents, 3,875,000 l.

THOSE two Myriads, by my Tables, amount to 3,000,000 l. I have not Time to compute any of the following Sums, 'till I come to *Vespasian*.

Pag. 195. " *Vespasian*, at his Accession to the Empire, said, that to support the Commonwealth,

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“ wealth, there was need of no less than *Quadrin-*
 “ *genties Millies*, 322,916,666 *l.* 13 *s.* 4 *d.* which
 “ is a Sum so great, that it seems impossible to be
 “ raised in many Years out of the Taxes of the
 “ whole Empire.

Quadringenties Millies, in my Tables, arises to
 333,333,321 *l.* 6 *s.* 8 *d.* in which two Sums the
 Dr. falls short of mine by ten Millions and 416654 *l.*
English Pounds: Such a Difference has 1 Farthing
 in 32 made in our Reckonings.

Page 200. “ Nothing ever came up to the Ex-
 “ travagances of the Expences of the Funeral of
 “ *Hephestion by Alexander*, being no less than 12000
 “ *Talents*, or 2,225,000 *l.*

WHICH amounts in my Tables to 2,400,000 *l.*
 I intended to have concluded with the great Sum
 of *Vespasian*, in the Dr. p. 195. But that I thought
 it would be objected, that tho’ we differ’d ten
 Millions of *English Money*, yet the Dr. might be
 nearer the Right than I; because both the *Drach-*
me and the *Denarii* were then fallen to about the
 Rate that the Dr. has valued them at; but in the
 fore-going Accounts, I am certainly within Compass
 of the truth, and the Dr. far below it, as will ap-
 pear also in the Sums next following.

Ibid. “ *Q. Curtius* affirms, that at *Susa* and *Per-*
 “ *sepolis*, *Alexander* got no less than 150000 *Ta-*
 “ *lents*, or 29,062,500 *l.*

BUT according to my Account 30,000,000 *l.*

Pag. 201. “ AFTER all *Alexander* left, in his Trea-
 “ fury,

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“ fury, at his Death, 100000 *Talents*, 19,375,000 *l.*
 “ No wonder since his yearly Tribute, as *Justin*
 “ hath delivered, was 300000 *Talents*, 58,125,000 *l.*

AFTER my Computation, the first ariseth to 20,000,000 *l.* and the latter to 60,000,000 *l.*

Pag. 202. “ *Thucydides* affirms, that there were
 “ in the Castle (at *Athens*) at one Time, 6000
 “ *Talents*, 1,162,500 *l.*

IN my Tables 12,000,000 *l.*

Pag. 203. “ I shall conclude this Chapter with
 “ one Instance of the *Asiatick* Riches, the Credit
 “ of which Story, I leave the Authors to answer
 “ for: It is the Value of the Treasure of *Sardana-*
 “ *palus*, with which he made a Funeral-Pile, for
 “ himself and Family, when he was besieged by
 “ *Arbaces*, King of the *Medes*. *Athenæus* makes
 “ the Value of the Treasure of this Pile, to a-
 “ mount 100,000,000 *Talents*; which reckoned in
 “ *Babylonick Talents*, amounts to 16953,125,000 *l.*
 “ this was only the Value of the Silver: There
 “ was besides, a tenth Part of that Number of
 “ *Talents* of Gold; which, if Gold was reckoned
 “ in a Decuple Proportion, will just double the Sum.

I reckoning 200 *l.* to answer 6000 *Drachmæ*, but much too low, and within compass; to which add a sixth, to make it a *Babylonish Talent*, or $233\frac{1}{3}$. The whole Sum, omitting the Fraction, comes to 23300 Millions, or 23300,000,000 *l.* of which Sum the Dr. falls short, if I mistake not, 6346,875,000 *l.* But this is such a vast Difference, that either one, or both of us must needs be mistaken.

Pag.

Pag. 207. IN this Page the Doctor tells us, that
 “ *David* laid up of his own Money, for Building
 “ the Temple, 3000 *Talents* of Gold, 18,600,000 *l.*
 “ And 7000 *Talents* of Silver. The Princes of the
 “ Tribes gave towards it 5000 and 10000 *Drachms*
 “ of Gold; 31,000,516 *l.* 13 *s.* 4 *d.* 10000 *Talents*
 “ of Silver, 3,875,000 *l.* and 18000 *Talents* of Brass,
 “ and 100000 *Talents* of Iron. 1 *Chron.* xxix.

Pag. 208. “ *David* prepared in all for the Tem-
 “ ple 100000 *Talents* of Gold, 620,000,000 *l.* and
 “ 1,000,000 *Talents* of Silver. 1 *Chron.* xxii. 14.
 “ IN these Computations the *Shekel* is supposed
 “ quadruple of the *Drachma*, according to *Josepbus* ;
 “ And the Proportion of Gold to Silver is sixteen
 “ to one ; the *Talents* in Passages of the Old Testa-
 “ ment are stated double the *Attick*, but in Passa-
 “ ges of the *Apocrypha*, that *Attick Talent* is used.

THE Dr. has here told us that the *Jewish Talent*
 is double the *Attick*, this is what we have met with
 before ; as likewise the same Account of the Value of
 Gold to Silver, as 1 to 12, and others as 1 to 14 $\frac{2}{3}$;
 but of the Proportion of Gold to Silver, as 1 to 16
 we hardly read any where else, and it would have
 been convenient if the Dr. had quoted the Author
 from whom he had it.

IN counting up the Sums of Gold, I shall first
 reckon as if they were Silver, by 400 *l.* to the *Ta-*
lent, and then again multiply that Sum of Silver by
 16, to turn it into Gold. 3000 *Talents* of Gold be-
 ing multiplied by 400, gives a Quotient of 1200000 *l.*
 which Sum multiplied by 16 gives 19,200,000 *l.*
 wherein I exceed the Dr. by 600,000 *l.*

THE Princes gave 5000 *Talents* and 10000 *Drachms*
 of Gold, which give first 2,000,000, and multiplied
 by

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by 16, give 32,000,000 *l.* and 10,000 *Drachms* to 5308, both 5308 makes 32, to 5308, which exceeds the Doctor's Sum by 993,692 *l.*

10000 *Talents* of Silver multiplied by Silver, arise to 4,000,000 *l.* which exceeds the Doctor by 125,000 *l.*

David prepared for the Temple 100,000 *Talents* of Gold, which multiplied by 400, give 400,000,000, and afterwards by 16, gives 640,000,000 *l.* which exceeds the Doctor's Sum 20 Millions of our Money.

1,000,000 *Talents* of Silver multiplied by 400 *l.* give 400,000,000 *l.* which exceeds the Doctor's Sum by 206,950,000 *l.* But this is so great and vast a Difference, that I think it must be ascribed to some Oversight, either in the Doctor's or my Computation; but my two Sums of Gold and Silver joined together make 1040,000,000 *l.* But this being too immense a Sum to have ever met together at *Jerusalem*, let us try what it will amount to, if the Gold be reckoned by the *Homerical Talent*, viz. 3 *Aurei*, weighing 6 *Drachms*, which 6 being multiplied by ten, the Value of Gold above Silver, will make then 60 *Drachms*; which in my Tables make 2 *l.* English. Now one Million of 2 *l.* makes the Gold rise no higher than barely 2 Millions English, and both Gold and Silver put together will in all amount to 402,000,000 *l.* which is still more than any Man, otherwise than miraculously, can almost suppose or imagine.

Pag. 209. " *Livy* and *Tacitus* mentions the *funus unciarum* and *Semiunciarum* as high, which according to the Proportion of the *AS*, being but $\frac{1}{12}$ or $\frac{1}{14}$ in the Month, must only make 1; or $\frac{1}{2}$ per Cent. per Annum; And the Law of the XII Tables forbids *ne quis unciario fœnore amplius exercito*; so " it

“ it is expressed by *Tacitus*. These Expressions
 “ cannot be interpreted according to the Analogy
 “ of the Tables, but differ from all the others, and
 “ they certainly denote the *centesima usura*: But
 “ how this Way of Expression in these two Au-
 “ thors has happened, I can give no certain Ac-
 “ count; it seems they put the *Uncia* for the *AS*,
 “ or *Integer*.

“ THE *Centesima usura* was the greatest Inte-
 “ rest, which it was not lawful to exceed; and
 “ what was paid over it was reckoned as a Re-pay-
 “ ment of Part of the Principal: But what-ever
 “ Laws were made to regulate the In-
 “ terest, it was in *Rome* as in all other Pag. 210.
 “ Places, the Value of Money rose above, or fell
 “ below the legal Interest, according to the Scar-
 “ city or Plenty of the Commodity.

Gronovius has writ three several Books, one after
 another, bound up with his 4^{to} Edition *De Pecun.*
Vet. intituled *de centesimis usuris, & fœnere unciario*,
 in which he positively and warmly defends the O-
 pinion, which the Doctor and I suppose most Men
 reject as an Errour; thinking it improbable that
 the *Romans* should think themselves so oppressed
 and ruined, by paying one *per Cent.* at first, and after-
 wards but half of that neither, 'till Usury was wholly
 forbidden. Now it is my Opinion, and it seems to
 be the Doctor's also, that this *fœnus unciarium* was
 the same with Centesimal Usury; which in about
 eight Years, or little more, became double to the
 Principal Money, and therefore not to be endured,
 and for this Cause first reduced to half, and at last
 was forbidden by the *Roman* Laws, though never
 wholly observed by them. But I could never as-
 sent to *Gronovius*'s Opinion, tho' as a Critick he
main-

maintains it against all Opposition with great Vehemency: And I think, tho' he may defend it against all Gainfayers, as a Critick, yet as a Politician, 'tis impossible he should ever prevail with his Countrymen to believe him: And I also think he takes that up for granted, which he has no plain Authority to back him in; for I have consulted *Livy*, lib. 7. cap. 16, 27 and 28, but I can find no where that it is by that Author called Annual Usury, nor does *Tacitus* call it so; and tho' quoted by the Dr. he tells us not where *Tacitus* speaks of *Fœnus unciarium*. And because many will not trouble themselves to seek after what they are not like to find easily, I will transcribe that Place in *Tacitus*, where he speaks of this Matter: *Annal*, lib. 6. cap. 16. in these Words following.

XVI. *Interea magna vis accusatorum in eos intrupit qui pecunias fœnore aufertabant, adversus legem Dictatoris Cæsaris, qua de modo credendi possidendique intra Italiam cavetur; omissam olim, quia privato usui banum publicum postponitur. Sane vetus urbi fœnebre malum, & seditionis discordiarumque creberima causa; eoque cohibebatur antiquis quoque & minus corruptis moribus. Nam primo duodecim Tabulis sanctum nequis unciario fœnore amplius exerceret, cum artea ex libidine locupletium agitaretur: Dein rogatione Tribunitia ad semuncias redacta, postremo vetita versura. Multisque plebis scitis obviam itum fraudibus, que toties repressæ, miras per artes rursus oriebantur. Sed cum Gracchus prætor cui ea questio evenerat, multitudine periclitantium subactus, retulit ad senatum; trepidique patres (neque enim quisquam tali Culpa vacuus) veniam a principe petivere; & concedente, annus in posterum, sexque menses dati quibus secundum justâ legis, rationes familiares quisque componerent.*

In

TACITUS'S *ANNALS* lib. VI. cap. xvii in
ENGLISH, viz.

“ HENCE then was the want of Money, and
 “ all incumber’d with Debt, and many condemn’d
 “ to have their Lands and Goods Sold; whereby
 “ all coined Money was drawn into the Emperor’s
 “ private, or the Common-wealth’s publick Treas-
 “ ury: The Senate pass’d a Law, that two Parts
 “ of every Creditor’s Debt should be laid out in
 “ purchasing Land in *Italy*; But the Creditors de-
 “ manded the whole Debt, and the Borrowers,
 “ thinking it discreditab[e] not to make good their
 “ Promises, they first ran about with Intreaties,
 “ and the *Prætor’s* Court and Tribunals were fil-
 “ led with Complaints; and Buying and selling pro-
 “ posed for a Remedy: For the Usurers had con-
 “ cealed, or spent their Money in buying Lands, and
 “ the Plenty of Sellers brought it to a low Price;
 “ so by how much any was more deep in Debts,
 “ the more eagerly his Debts were call’d for, to
 “ the overthrow of his Estate, and ruin of his Dig-
 “ nity and good Name; ’till the Emperor relieved
 “ their Distress by his Assistance, for he dispos’d
 “ on *Tables* (or at *Exchange*) where Money us’d to
 “ to be borrowed, *millies Sestertium* (or 833,333 l.
 “ 6 s. 8 d. English) with Liberty to those that had
 “ need of them to borrow for three Years, with-
 “ out paying any Interest: Provided the Borrower
 “ gave double Security in Land to pay back
 “ the Money to the Common-wealth (or People).
 “ So Credit being revived, there were found private
 “ Persons that became Lenders also; and the De-
 “ crees made by the Senate for Men’s Selling their
 “ Lands were sharply pursu’d at first, and carried
 R “ on

“ on with Vigour, as happens in like Cases for the
 “ present, but at last decayed, and died away into
 “ Nothing. .

THIS Emperor was *Tiberius Cæsar*, of whom so many Evils are remembred; that this single good ought not to be forgotten.

I gather from these two Chapters, that human Affairs can hardly be carried on, without borrowing and lending; and that few will lend and undergo the Hazard of losing, without some hope and prospect that the Lender may possibly gain, as well as loose by his lending, which can hardly be brought about, without paying some Interest for the Use of Money borrowed: For if a Man has occasion to make a Purchase, or carry on a Trade, and wants Money for either; is it reasonable that one should have all the Gains, and the other Person run all the Danger of the Loss, and loose the Benefit which the Lender himself might gain by Trading with his own Money himself, or having it by him ready to make an advantageous Purchase of any Thing that came in his Way, when he had Opportunity for it? But as to the Matter in Question, concerning *Fœnus Unciarium*, it seems most probable to me, that the Laws of the 12 Tables, being chiefly borrowed from the *Græcian Commonwealths*: What the *Roman Decemviri* found there, they brought Home with them, and *Centesimal Interest* being used there, they established the like at Home, and paid an Ounce, or 12th Part every Month of the *Centesimal Interest*, and so arose to 12 *per Cent.* in the whole Year: The Ounce here having respect to the 12th Part of the Interest, and not to the 12th Part of the Principal.

AND

AND by this Time I conceive the Reader no less tired than my self, and the Remarks that have been made already, are sufficient to inform Dr. *Arbuthnot*, that his Tables, as far as relate to Money Matters need Emendations; and when that is provided for, a little more Pains would be useful in fixing his Quotations, so as they may be more readily met with and found; which two Alterations will mightily advance the Credit of his Book, amongst those that are the properest Judges of his Performance, and make it live in Reputation, as long as the World it self shall continue. This being the first Collection of Foreign Prices, and of the *Roman* Wealth and Luxury, that has appeared so largely in the *English* Dialect to this Hour.

Feb. 26th. 172 $\frac{2}{3}$.

*The End of the Remarks on Dr. Arbuthnot's BOOK
and TABLES.*





De Milliarenfis & Follibus ex Gronovio de Pecunia Vetere.



IN the first of my LETTERS to Mr. Thoresby, Pag. 28. I acquainted him when I began that Letter, that I purposed to say something of the Silver *Milliarenfis* and the Brass *Follis*, which succeeded in the room of the former *Denarii*, and the *Asses Romani*, and now having, at this Time, got a little before my Printer, I thought fit to add something in Relation to that Subject; tho' I am now in a far worse Condition, both of Health and Memory, than I was when I composed that Letter, seven Years at least, before I now begin this Abstract out of Gronovious; as I am fully convinced by the Notes I had then entered in the Margin of his Book, which I am now scarce able to make use of: Therefore I intended barely to transcribe what I thought most convenient out of that Book, in the proper Style the Author had publish'd it in; and when I had done so in Part, I was too much tired to go any farther thro' with it; and therefore I imagined it would be more agreeable, not only to the Vulgar, but even Latin Readers, to give them a short Abstract of it in English; for Gronovius has writ so many Chapters and Pages about those two new Coins, that I scarce knew where to begin, or where to make

make an End: And therefore I am forced to relate this Matter as far as my decayed Memory will allow, rather out of my own Head, than out of that Author's copious Enlargements: And first I shall begin with the Word *Milliarenfis*, what it signifies, and whence it was derived; tho' it is by him sometimes attributed to *Constantine*, as his Invention; yet in other Places he seems to allow it to have been of a far ancients Date; and that the old *Roman Denarius*, was so called, or so reputed, as if it was in Value the 1000 Part of a Pound of Gold; which he thus endeavours to Evidence. A *Roman Pound* as *Budeus* and *Gronovius* often tells us (tho' we can scarce believe them, *Pliny* having told us to the contrary) was coined, even from the beginning, into eight *Denarii* in the Ounce; and consequently into 96 *Denarii*, or as they would make it into a full hundred; and then a Pound of Gold being worth ten of Silver, the hundred Part of such a Silver Pound did exactly answer the thousand Part of a Pound of Gold; and hence sprang the Word *Milliarenfis*, and continued so, 'till *Constantine* framed a new Coin, under the old Name, into it's room.

He lays it also as a Charge upon *Constantine*, that he was the first Diminisher of the *Aurei Romani*, and from 40 such *Aurei* in a *Roman Pound*, advanced them compleatly to the Number of LXXII. But this is a gross Mistake, and *Gronovius* was led into it by his own Fancy, and some slight Arguments, without examining, as Mr. *Greaves* has done, that the *Aurei* were lessened in Weight, and consequently encreased in Number, some Years before *Constantine* had any being in the World; as may be discovered by the various Weights which Mr. *Greaves* has given us of them, and I from him have printed in the 163 Pag. of these Miscellanies: But

to go on, *Gronovius* informs us, that an *Aureus* was at first worth 100 *Sesterces*, or in other Words 25 *Denarii*, which amounts according to my Reckoning, to 16 Shillings and 8 Pence in our English Money, and he supposes the *Aurei* continued for about 300 Years of the same Weight, and same Value; which I think no way probable, tho' *Gronovius* seems to build his Argument upon that Principle.

Thus much concerning the *Roman Aureus*; which whether changed or no in it's Weights, yet got a new Name given it by *Alex. Severus*, who began his Empire about the Year of Christ 222; and he being desirous to ease his *Roman* Subjects in their Tribute or Taxes, * divided the *Aureus* into two Parts, and being so divided, stiled them *Semisses*, or half *Aureus*'s; tho' they went in the Payment to the Emperor's Treasury for whole *Aureus*'s; and not content with this Abatement, he subdivided the *Aurei* into three Parts, and then they were stiled *Tremisses*, and would have lower'd them lower; but his Revenue and Payments out of it would not permit it. Now this dividing the *Aureus*, obliged him to alter it's Name, and give the old *Aureus* the new Title of *Solidus*, or a complete *Aureus*, to distinguish it from the *Semisses* and *Tremisses*; which whether any other of his Successors coined in lesser Pieces, than a complete *Solidus*, I cannot now well call to Mind; but at last *Solidus* was the common Name for a Piece of current Gold, before *Constantine* came to the Empire; and that for the future they might be always of a certain Weight and Value, he order'd LXXII to be coined out of a Pound, and 4 *Solidi* out of every Ounce of Gold, and so they continued for about

* Vide *Lampridium in vita Alex. Sever. cap. 38.*

about 300 Years after *Constantine's* Deceafe, as appears by Mr. *Greaves's* Tables afore-mentioned, to the Age of at leaft *Heraclius*, the Emperor, A^o. 610, in whose Reign *Mahomet* forged his new Religion, A^o. *Christi* 622, or thereabouts; in all which Time Mr. *Greaves* met with none heavier than 70 Grains, nor lighter than 67, 68, 69.

I have almoft now done, both with the *Aurei*, and *Solidi*, and old *Roman Denarii*, which before *Constantine's* Time, *Gronovius* thinks, were the only Silver Coins called *Milliarenfes*; but afterwards *Constantine* found a Neceffity of altering them: For as Gold, as well as Silver, encreafed in Value, and became of more worth, in refpect of Brafs, than formerly; inftead of feven *Denarii* out of an Ounce of Silver, he caufed a new Coin to be made, of which fixty were coined out of the Pound, and five out of every Ounce of Silver; which therefore changed the *Denarii* from 8 *d.* each, to five new *Milliarenfes* each, as far as I can reckon them to about XI *d. qu.* of our prefent Coin: 12 of which later *Milliarenfes* answered to, or were computed at, the Value of one *Solidus*; which reduced thefe *Solidi*, or later *Aurei* to the Worth of about XI Shillings and three Pence of our Money. And though I fhall not now take my laft leave of thefe *Milliarenfes*, yet it feems but very fit to give the Reader notice of how much Brafs answered to thefe *Milliarenfes*: And this *Gronovius* tells us, was 24 *Folles*, or two Pounds of Brafs, made into thefe 24 *Folles*, each being of the Weight of one Ounce; according to which Account five *Milliarenfes*, or an Ounce of Silver, was worth ten Pounds of Brafs, or in other Words CXX Ounces of Brafs, were worth no more than one Ounce of Silver; fo that the Difference between the Worth

of Silver and Brass, was as 1 to 120. There are some Variations in the Increase or Decrease of these *Folles*, so as to make the Difference between Silver and Brass, sometimes greater and sometimes less; but for this I refer my Reader to *Gronovius* himself, if at least he can comprehend them, for at the Age I am now in, I must confess I have neither Appetite or Ability to be nice about them. After all that I have now said or gathered out of *Gronovius*, and his refuting several Opinions or Mistakes, as he goes along of *Ant. Augustinus*, *Salmasius*, *Lippsus*, *Potavius*, *Savotus*, and others; he sums up what he has said in this dis-obliging Character of *Constantine* the Great, which I have printed already in *Latin*, pag. 64. of this Volume: And now after his Censure of *Constantine* for changing all the Coins, both in Gold, Silver, and Brass, he adds what I am going to translate into *English* out of *Gronovius*, pag. 343. *These new Alterations in coining all Sorts of Money, are so very great, that they altogether become no other Person than Constantine himself; who without Controversy proceeded very well and piously about Ceremonies and Religion; so about other Things instituted by him, both in civil and military Affairs, it is doubtful whether profitably or no; but it is certain he changed them subtilly and craftily; as if he seemed to believe nothing was agreeable to his Surname of GREAT, if he had left any Thing behind him in the same Condition or State in which he first found it: Which Violence of this Man's Spirit, God Almighty, by his secret Power, converted to the good of the Christian Sacraments.*

I have censured this Passage sufficiently in my 64th Page fore-going, and shall say no more of it here; because I find *Gronovius* himself in a great Measure retracting it, *lib. 4. cap. 16. p. 372*, where he

he gives *Constantine* a far better and kinder Character than what he has been pleased to allow him in this Place.

OUR Author, both before and after what is last cited, has had occasion several Times to quote several Laws, both out of the *Theodosian* and *Justinian Codex*, in Confirmation of what he is treating of in several very long Chapters; which I could not conveniently Mention in my fore-going Discourse, but shall now take notice of them in the following Order.

THE next Law, but before it in Age, is in *Cod. Theod. lib. 7. tit. 20. l. 3.* it falls in with the Year of our Lord 320, made by *Constantine* to this Effect: Let the *Veteran* Soldiers, according to our Precept, receive the vacant Lands, and have them always free; and to buy Things necessary for their Country Affairs, let them receive in Money 25000 *Folles*, a Pair of *Oxen*, and 100 *Modii* of Corn. Dated at *Constantinople*, *Constantine VI. & Constantine* Consuls.

Gronovius having quoted this Law, pag. 371. adds that 25 *millia Follium* make 50 *l.* of Silver, and 2083 Pounds of Brass; the same in ancient Money was 20000 *H. S.* or 5000 *Deniers*, this is the very Sum which *Augustus Cæsar* allotted to the *Prætorians*, after 16 Years Service, as *Dio* Witnesses; when to the *Legionaries* he appointed, after 20 Year's Stipend 3000 *Deniers*, or 12000 *Sesterces*; but *Constantine* took away this Difference. And there are some Foot-Steps of these *Folles* (says *Gronovius*) in the *Theod. Cod. lib. 6. tit. 4. l. 5.* in these Words; To the first *Prætorian*, denoted by the Name of *Flavian*, we have prescribed the Gifts or Charge of 50 Pounds of Silver; to the second styled *Constantinian*, 20000 *Folles*, and 40 Pounds of Silver are appointed

ted by us; to the third, called the *Triumphal*, 15000 *Folles* and 30 Pounds of Silver: the Publisher may expend without any Loss to him. These several Sums joined are equal both in Brass and Silver, and must be understood according to the narrowest Proportion that they were at *Rome*, *ib.* pag. 372. For after the *Solidi* were reduced to 4 Scruples, and the Proportion of Brass, Silver, and Gold, were changed, there arose an immense and vast Difference. I cannot but wonder why our Author cited the Law last mentioned, that there were some Foot-steps of the *Folles* remaining when it was made; for it is of no older Date, than near the Time of *Constantine* the Great's Death, being dated at *Antioch*, v. *Id. Sept. post Consulatum Constantii II. & Constantis*, which falls in with the Year 339.

BUT our Author goes on, and in the same Page, says that 20000 *Folles*, which made 40 *Roman* Pound of Silver; and 1666 Pounds, and 8 *Folles* of Brass, were (as I understand him) 16 *Sestertia*, or 4000 *Denarii*; and accordingly 15000 *Folles* 30 l. of Silver; and 1250 Pounds of Brass were 12000 old *H. S.* or 3000 *Denarii*.

THIS Law last cited is the only Place, says *Gronovius*, which has hindred many excellent Men from ascribing the whole Mutation of the *Roman* Money to *Constantine* the Great; for when they can ascribe these great Changes to no other Author, they go about to say some happened after *Constantine*, some after *Constantius*, some under *Julian*, and some under *Valentinean*, and some as low as *Justinian*. For solving of which Objection *Gronovius* answers, that he cannot but own there is something of Difficulty, that the *Folles* long since introduced by *Constantine* should be brought back to the former *Folles* that were before *Constantine* made his Change; But for all this he is of that

that Opinion, that whoever changed the old *Aurei* into the new *Solidi*, found all Things ſo hard and untractable, that they could not be ſubdued without bringing in a new Sort of Silver Money; beſides the Proportion between Gold and Silver, required a Change, and it would mightily have diſturbed all Commerce, if the *Aureus* on a ſudden had paſſ'd from 10 *Denarii* to 14. But now the Change of both Sorts of Money made the Alteration ſo ſoft and eaſy, that it was ſcarce taken Notice of: Beſides what exceeds the Proportion of Gold above 14 to Silver, could be no Way explained or accounted for in the former *Denarii*; neither did a leſs Difficulty ariſe from the former *Folles* themſelves, in applying 24 *Folles* to the former *Millianenſes*, or 12 *Milliarenſes* to one *Solidus*; on the contrary how well do the later *Milliarenſes* answer to the *Solidi*, and the *Folles* to both the one and the other: All which does declare and demonſtrate, that it muſt be ſome, and the ſame great Wits or Counſellors, whoever they were; neither did any Thing pleaſe thoſe good Inventors, 'till all Things appear'd fit and agreeable. So that it ſeems moſt likely, that they went on at the ſame Time, and with the ſame Paces. And methinks it is here evident, that *Gronovius* has made ſome amends for what he ſaid before, and given *Conſtantine* as much Honour and Praise as he formerly took from him, or endeavour'd to deprive him of.

I muſt here fore-warn and inform my younger Readers, that what-ever is ſaid of Pounds, is not to be taken for our *Engliſh* Pounds, as they are now computed by nominal Pounds, but as real Pounds, which were formerly in uſe many Years after the Conqueſt, when a *Troy* Pound went for no more than 20 Shilling; and a *Roman* Pound which was ſome-what leſs,

252 *ex Gronovio de Pecunia vetere.*

less, and is always intended when we speak *De Re Nummaria*, was of the Weight of 5256 *English Grains*, and every Ounce 438 Grains; a Pound of which was some thing better than 56 s. 6d. to the Pound, and 56 d. to the Ounce or Pound of *English Money*.

I shall next proceed to some other Laws quoted by *Gronovius* for our better Understanding the mutable Value of Brass, Silver and Gold, as they from Time were altered in the Common-wealth of *Rome*, from it's lowest Estate to it's greatest Wealth and largest Dominions it was at last advanced to.

Cod. Theod. lib. xv. tit. 9. l. 1. De expensis Ludorum.

THE next Law quoted by *Gronovius*, was made by the Emperors *Valentinian*, *Theodosius*, and *Arcadius*, who forbid that any Persons, except the Consuls, should bestow any *Vesture*, or *Sportula*, or *Diptychs* of *Ivory*, nor any *Sportula's* of *Silver*, greater than those of which LX were coined out of a Roman Pound; and it is not only licensed that they might give less, if they pleased; but also, that it should be honest, or honourable so to do. This Law is directed *ad Senatam*, and falls in with the Year of Christ 384.

Cod. Theod. lib. xi. tit. 21. l. 2. De Collatione Aëris.

THIS Law was made by *Arcadius* 4. *Honorius* 3. Consuls, Who enjoin that the Price of Brass required of the Provincials, shall be thus stated; that for 25 Pounds of Brass, one *Solidus* might be received. This Law falls in with A^o Christi 396.

Cod.

Cod. Theod. lib. xiii. tit. 2. l. 1. De Argenti precio.

THIS Law was made by the same Emperors, who command, *That for every Sum of Silver which any shall bring into the Treasury, the Debtors may bring in Gold for it; so that for every Pound of Silver, five Solidi may be brought in, Casarius and Atticus Consuls.* This falls under the Year of Christ 397.

By these Laws and other Places, it appears that the Value of Gold, in respect of Brass, was as one to 1800: And the Price of Gold, as to Silver, was as one to 14 $\frac{2}{3}$: And the Price of Silver to Brass was ordinarily as one to 120. Tho' if we believe *Budeus* and his Followers, one *Drachm* of Silver was worth 840 *Drachms* of Brass, and a Pound of Silver no less than 840 of Brass: But when Brass was shortly after, in the 1st *Punic* War, lessened from *Affes Librales*, or Pound *Affes*, to *Affes Sextentarii*, or two Ounce *Affes*; the Value of Brass, in respect of the same *Drachm* of Silver, fell from 840 to 168 only: When the *Affes* fell from 2 Ounce *Affes* to Ounce *Affes*, and the Number of *Affes* in a *Denier* being raised from ten to sixteen, the Brass fell from one to 168, to one to about 135. But lastly, when the 16 *Affes* that answered a *Denier* to 16 half *Affes*, or which is the same to 8 whole Ounces, then Silver became to Brass as one to 67, or thereabouts: All this is according to *Budeus* and *Gronovius's* Account; but those that Favour my Hypothesis, and that agree with it, will reckon it at it's lowest ebb at *Rome*, as one of Silver to a little better than 56 of Brass. Tho' there is a Place in *Gronovius*, which brings the Difference of those two Mettals, as one to 40, or 41.

WHAT

WHAT is aforesaid concerning the Value of Brass, does all of it relate to Brass Money, before *Constantine's* Time; but in his Age, that the *Mil-liarenfes* of LX to the Pound, became the common Computation, one of Silver, answered to CXX of Brass. I have in this or some other Place lost a Page or two which I had written, in which I had discoursed something concerning the Opinion of the Learned *Francis Gotbfred*, in his six Tomes published upon the *Theodosian Codex*, wherein he endeavours, in several Places, to maintain that the *Roman* Pound in *Constantine's* Time contained 84 *Solidi*, as formerly a Pound *Roman* was coined to 84 *Denarii* each of 3 Scruples; so that as the *Cod. Theod. lib. xii. tit. 7. l. 1.* there were 7 *Solidi* in the Ounce. I shall mention only the first Place where this Commentator discourses most largely on this Subject, which is in his 2d Tome, pag. 450. and worth the perusal of any Critick that would examine this Matter to the Bottom; which is opposed first by *Pancerollus*, *Savotus*, and many others after them, who think the Reading is a Mistake, and not genuine, and that infinite Absurdities would follow the admitting it to be true. And I think this is a cogent Argument against it, that there are few or rather no Authors that speak of this larger Pound as a Matter of Fact, or that the elder *Valentinian* revoked it by a Law made by him about 40 Years after; But besides that Law of *Valentinian's*, *Justinian* in his *Codex, lib. x. tit. 71. l. 1.* has contracted it into the Words following; *De ponderibus & Auri illatione. Imperator A. ad Ufraxium rationalem trium provinciarum. Aurum quod infertur a Collatoribus si quis vel solidus valuerit vel materiam appendere aequa lance & libramenis paribus suscipiatur P. P. 14 Kal. Aug. Paulino*

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& Juliano *conſulibus*: This Law falls in with A^o. Chriſti 325.

In Cod. Juſtinio *lib. x. tit. 70. l. 5.* Valentinianus & Valens *Quotieſcunque certa ſumma ſolidorum pro tituli qualitate debetur, aut auri maſſa tranſmittitur, in ſeptuaginta duos ſolidos libra ſeratur accepta.* Lupitio & Jovino *Conſ. A^o. Chriſti 369.*

Gothofred finds great fault with Tribonianus, and calls his curtailing this Law *facinus*, a great Wickedneſs: But Gronovius on the contrary commends him as much for his Diſcretion in omitting Words altogether irreconcilable with Truth, and in ſeveral Places endeavours to prove that the Roman Pound was invariable and always the ſame.

Gronovius towards the End of his 4th Book, ch. the 13, 14, 15, and 16, *de pecunia vetere*, p. 374. comes to ſpeak of another Sort of Folles, than thoſe afore-mentioned, taken out of ſome Greek Lawyers Gloſſaries upon the Civil or Roman Laws, he giveth it both in Greek and Latin, and for fear of Miſtakes, I not underſtanding the Numbers given only in Greek Letters, I ſhall tranſcribe it firſt in Latin, and then, as well as I can, tranſlate it into Engliſh: For after the Greek he ſays, *Quorum hæc eſt ſententia. Follis quod & Balanton dicitur Pondus eſt Argenti Denariorum CCL, hoc eſt æris CCCXII libræ ſex uncie. Nam Denarius, libra æris & tres uncie. Eſt & alius Follis Conſtans ex minutis agenteis militi ſolitis dari, eoque milliarenſibus vocatis. Valet horum unum quidque auri ſiliquam dodrantem. Hujusmodi minuta argentea Follis habet CXXV. quæ faciunt Auri ſiliquas CCXVIII, & nummas novem. Sunt autem quales nunc obtinent,*
mil-

256 ex Gronovio de Pecunia vetere.

milliarenfis CIX & nummi novem. In auro signato novem solidi & milliarenfis unus & novem nummi. Iſti igitur CXXV argentei colligebantur in fasciculum vel ſummam unam; & hic Follis.

THERE is ſome Difficulty in underſtanding what is here meant by *nummus*, I took it for what the Romans call a *Sesterce*; but I find by Gronovius, that it rather ſignifies *Follis*, and ſhall therefore ſo tranſlate it.

A *Follis*, which is alſo called *Balanſium*, is of the Weight of 250 *Denarii*; that is (of the Value of) CCCXII Pound; and VI Ounces of Braſs; for a *Denarius* is (in Value) a Pound, and three Ounces of Braſs. There is alſo another *Follis*, conſiſting of leſſer Silver, (Money) uſually given (or paid) to Soldiers, and thence called *Milliarenſes*; every one of theſe is worth of Gold a *Siliqua Dodrant*: Of theſe leſſer Silver Pieces a *Follis* hath CXXV, which make of Gold *Siliqua* CCXVIII, and nine *Folles*; in coined Gold IX *Solidi* one *milliarenſis*, and IX *Folles*. Therefore theſe CXXV, Silver Pieces, were collected into a Purſe, or one Sum, and this was called a *Follis*.

OUR Author upon reading theſe Words, asks this Queſtion, who would believe that ſo much Knowledge ſhould be delivered in ſo few Words, for the Explication of the *Sesterces*, *Denarii*, *Solidi*, *Milliarenſes*, and *Folles*, whoſe Expoſition has coſt ſo many Authors ſo much Pains? Some are to be praiſed for the very attempting the Explication of them, as *Alciatus* and *Petavius*. *Solmaſtus* happily enough, and *Savotus* moſt happily have explained the Matter, if both of them had not mixed ſome unneceſſary Matter, and are before reprehended by me. And then proceeds to tell us, that the firſt

Sort

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Sort of *Folles* was the same with the ancient *Seffertia*, and signified one Thousand of them: And the ancient *Denarius*, (I suppose, he means coined after the *Asses* were brought to 16 half Ounce *Asses* in the *Denarins*) that was compared to three Pounds and three Ounces of Brass, according to the Proportion that at last obtained at *Rome* between Gold and Silver: Therefore this Price is not to be expected in the Brass of former Ages, for then the *Denarius* was not reckoned at 16 *Asses*, or 8 Ounces; and then 250 *Denarii* did not make above 166 Pounds of Brass, and 8 Ounces. But with the Author of *Glossary* agrees *Epiphanius*, *Hero*, *Maximus*, and the *Buda Fragment*, which tells us, that 60 *Asses* made the *Denarius*, which were half of a *Sicle*, or a *Sicilicus*, or the 8th Part of an Ounce of Silver; that *AS* of which the *Denarius* contained 60 were of the Weight of a *Sicilicus*, 4 of which were in the *Follis*, and made an Ounce. A Pound of 12 Ounces made 48 *Sicilici*; add a *Quadrant*, or 3 Ounces, which are 12 *Sicilici*, and you have 60. Therefore a *Denarius*, or Piece of Silver of 3 Scruples, 18 *Silique*, if it were valued in Brass at the Proportion that was between Brass and Silver, at the Age of those Writers, to wit, as one to 120, then it was worth as much as a Pound and *Quadrant* of Brass, as much as 60 *Asses*, as much as 15 *Folles*, as much as a *Septunx Semunia*, of the later *Milliarenfis*, *hic Follis Epiphanio x^{ti} Suetonii*. I have here transcribed as much or more then I understand; but our Author's Exposition compleatly fills four large 4^{to} Pages, 375, &c. to which I must refer the curious Reader, for I have not Time now so much as to cast my Eyes over them. I suppose the explaining the first Sort of the *Folles*, will make way for the easier understanding the

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Sorts

Sorts that follows after it: I must therefore proceed, and insert the Passage into what was written before, and is now ready to go to the Press.

I am in haste, and therefore can scarce look back to what I have already written, only I shall take Notice, that what is said by *Gronovius*, *lib. 4. cap. 16. p. 372*, is, I suppose, a great Part of it of his own Invention, for he alledges no Proof of what he says, in comparing the old Account with the New; and amongst other Things, that 20000 *Folles* answered 40 *l.* of Silver: Which, according to my Computation, should rather be said to answer 41 *l.* and 8 Ounces over; for the former Sum of *Folles* arise to 1666 and 8 Ounces, which divided by 40, arise to 41 *l.* $\frac{36}{40}$. A like Mistake I observe in what *Gothofred* says, in his *Tome*, cited *p. 450*, that in an old *Roman* Ounce, there were 7 *Denarii*, and that *nummus argenteus* contained four Scruples, and proves it from a Passage in 3^o. *Annalium Varronis*, found in *Charisius*: But *Gronovius*, in another Place, and for another Purpose, quotes the Words referred to, which I shall repeat upon a double Account: First, As a Proof against *Gronovius*, that the *Denarius* was never heavier than 3 Scruples; and secondly, against *Gothofred*, to shew that they make not at all to his Purpose neither: The Words are these, *Nummum Argenteum Constatum a Servio Tullio dicunt; is quatuor scrupulis major fuit quam nunc est.* Which in plainer Words is this, *Servius Tullius* coined Pieces of Silver heavier than those in *Julius Cæsar's* Time by 4 Scruples: Now in *Cæsar's* Time they were full 3 Scruples, and therefore in *Servius Tullius*, his Time, must weigh 7 Scruples, which is more than Double that *Budeus* and *Gronovius* will ever allow a *Denarius* to have been: And tho' *Scaliger*, *Salmasius*, and Sa-

Savotus calls them *Dēnarii*; yet, he ſays, they were extraordinary, and rather Monuments of ſome Action than Money, and the *Dēnarii* came not in Uſe 'till about two Ages after. Now ſuppoſe we ſhould for once grant this Opinion to be true, yet it will be no leſs oppoſite to what theſe Authors would perſuade us, that the *Romans* at firſt had no Silver amongſt them, and therefore knew nothing of the Worth or Value of it. *Credat Judeus Apella.*

THE other Thing I intended to take further Notice of, was wholly the vaſt Diſproportion theſe two great Authors, whom I have moſt of all (in defending my Hypotheſis) to deal with, cannot, I ſuppoſe, ever agree how to ſettle the various Proportions of the Decrease of the Value of Braſs, and the Increase of the Value of Silver. I will not retort upon *Gronovius*, for telling us how many Thouſands and Hundreds Braſs was leſs valued than Silver, as you have juſt read before; but I will ſtate Braſs, as almoſt all have done, (ſave four or five Perſons) at 840 to one of Silver. Now if the *Denarius* was but about a *Drachm*, which is all they will allow it, how did the Silver riſe, and the Braſs fall? When as they alſo hold that the Pound *Aſſes* were reduced to *Sextantarii*, or two Ounce *Aſſes*; here muſt be a fall of their Braſs to a ſix Part of what it was before, and therefore the Silver muſt be to Braſs, as one to 140. When the *Aſſes* were Ounce *Aſſes*, and but 16 to the *Denarius*, then Silver was to Braſs as one to 116; but when theſe 16 whole Ounces were brought to 16 half Ounces, Silver then would be as one to 56. I think our Opponents will ſay I have brought down Braſs lower

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than

than I should; to whom I answer, that *Gronovius*, against whose Followers I write this, gives us an Instance, but I cannot believe it true, that Silver was to Brass as one to 40, or 41: Tho' I conceive it is much Different from this Proportion in many Places in *Europe* at this Time; but under the Name of Brass, I mean pure Copper, for *Abramus* thinks, the Name of Brass, signified a Sort of mixt Mettle, which *Gronovius* gives in as 120 to one of Silver; and in *Cod. Theod. lib. 13. tit. 2. l. 1.* Some of the *Code. A^o. Christ. 397*, as one of Gold to 150 of Brass; which brings it, as I conceive, to one of Silver, to 17 of Brass, which is a lower Rate than I any where else met with it; but I am in too much hast to consider it fully, and therefore may have mistaken it; but this will give an Opportunity for others to examine it more nicely.

AND here I take leave of my Author, to pass forward, or rather back again to Mr. *Greaves*, and from him to correct an Errour I have made some Pages before, in saying that I knew not whether any *Semisses* and *Tremisses* were coined after *Alexander Severus* his decease; for I find this careful and judicious Man, speaking in these Words, p. 109. *The Semisses & Tremisses of other Emperors at some Distance after Severus, came to be less in the same Proportion as the Aurei were lessened, for the Aurei of Severus were double the Denarii Cæsarii, and therefore but 48 in the Pound, and not 50, as Heliogabalus made, whose Errour Severus corrected: But when the later Emperors made seventy two Aurei out of the Roman Pound, the Semisses came also to be diminished, and were half of their new Aurei, and not of the former, and the Tremisses the third Part. And here the Aurei lost their Proportion, which they kept before, of being double to the Denarii: Of these Tremisses is*
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Justinian to be understood; ex Cod. Justin. lib. xii. tit. 40. 1. 3. De militari veste. Fortissimis militibus nostris per Illyricum non binos Tremisses pro singulis Chlamydis, sed singulos solidos dari precipimus. Arcad. 4. Honario 3 A. A. Consulibus. A^o. Christi 396.

And this may be further proved by a fair Tremissis of Gold of my own, of Justinian, with the Inscription D. N. Justinianus, weighing 21 Grains English, and wanting therefore only 3 Grains and a half, which it may have lost by Time, it otherwise would be exactly the 216th Part of a Roman Pound, that is the third Part of the Aureus or Solidus of those Times; whereas if it had been coined to the Proportion of the Aureus when there were 48 in the Pound, it would have weighed 36 Grains and a half, so that it must have lost $15\frac{1}{2}$; a Difference so great in a Piece of Gold so fair, and with all of so small a Quantity, altogether improbable; and therefore this Coin alone, if no more were extant, would confute their Opinion, who maintain that the Tremissis of Justinian differed not from the Tremissis of Severus, and consequently the Aurei of them both, better than the Reason produced by Covarruvius to the contrary would have done.

IN the Margent. I have since perused another in Gold, a very fair one, with this Inscription D. N. Justinus P. F. AUG. weighing 22 Grains and better; a 3d of Majorianus with CONOB. weighing 22 Grains; and a 4th of Justinian weighing 23.

ALL that Mr. Greaves writes is so excellent and instructive, that when I once begin, I can hardly give over. And tho' what is here said by Mr. Greaves is sufficient to all Intents and Purposes he designs it for, yet the Law here quoted was not made by Justinian, but many Years before, when Arcad. and Ho-

rius were Consuls, and falls in with the Year of Christ 396; when *Justinian* came not to the Empire 'till 527.

THIS retracting of what I have said before, shews both the Weakness of my Memory, as many others, will my proneness to Errours, almost innumerable; so that I can never too often fore-warn my Readers, to give no farther Credit to me any where, but what he finds upon Examination he has ground for; and as I cannot too often accuse myself, so I can never sufficiently recommend Mr. *Greaves* to my Reader; not only for writing very plainly and intelligibly, and being a great Master in Mathematicks, but that he always uses his greatest Care to Benefit his Reader, and communicate his Knowledge; whilst others rather endeavour to shew themselves great Scholars, than in any measure to make their Reader's Master of what they read; but this is none of Mr. *Greaves's* Practice, and his Character is of a quite different Stamp, and was always as highly prized for his Honesty and Probity by Divines; as for his great Judgment and Mathematical Head, by the Masters of that admirable Science. But I expect not that what I say concerning this Great Man should be believed, without having my Words confirmed by Persons of far greater Authority: And the first shall be the Character given him by the most excellent, and learned, and well deserving Dr. *Pocock*, in the *Elogium* he gives to Mr. *Greaves*, in his Book *De Moribus Academicis*, p. 158. *The most learned, and my most loving Friend, John Greaves, than whom, none ever devoted himself, and his Studies, and his Expences, with a more sincere Affection to the Publick Advantage of Learning.* The next that follows are Words of Dr.

Dr. Hooper, Biſhop of Bath and Wells, and are to be found in the 216th Page of his *late Enquiry into the State of ancient Meaſures*, in the Words following, concerning the ſame Perſon; *This Elogy of him I could not forbear producing, in Gratitude for the Information I have receiv'd from him; and with a Wiſh that theſe Conjectures from them I am now offering, had been prevented by his ſolid Concluſions.* To add any more to theſe Praises of Mr. Greaves, would neceſſarily fall ſhort of them; and I cannot but wonder, that the Perſons who have the Right of Publishing that Book, have not benefited the World, long e're this, with a 2d Edition thereof; which muſt needs be a great Profit to him that ſells it; and no leſſer Benefit and Advantage to him that buys it.

As to the Book of the Biſhop laſt named, I need not to commend it to the Peruſal of thoſe Mathematicians that are able to underſtand it; to do which requires a Wit like his that writ it; and my Thoughts of it are expreſſed in the firſt Letter I writ to that moſt eminent Prelate, near 8 Years ago, before what now comes from me.

HAVING thus collected what I thought fit, out of *Gronovius*, Mr. *Greaves*, and Biſhop *Hooper*, it is time for me to draw towards a Concluſion. And yet I ſhould be much to blame to paſs by the learned and eloquent Mr. *Fleetwood*, late Biſhop of *Ely*, who, as I am well inform'd, by a ſpecial Hand, was the Author of the *CHRONICON PRETIOSUM*; without owning how much the *Britiſh* World is obliged to him for his Collections on that Subject, and the advantageous Uſe he has made of them, in anſwering the Queſtion propoſed to him, by one of the Fellows of *All-Soul's College* in *Oxford*, and ſome Remarks he has given us concerning the Sax-

on Money; but more especially concerning the Difference between the Saxon Shillings, and our Modern ones, since the Conquest; five Pence making a Shilling with the Saxons, and 12 Pence making a Shilling with the English. I do not know whether this ingenious Book has been printed more than once; but if it has not, I am sure it well deserves a 2d Edition, far better than some others, that have been more kindly entertain'd. And since I have declared my Opinion of the Worth of it; and repute it the Part of a true Friend in all Books whatsoever, to inform the Author first, and where that cannot be done, the Reader, of any Mistake that might mis-guide him, or be an Errour in him that writ it; which makes very few Books come forth without Amendments and Errata's joined to them. Tho' this *Chronicon* had no more than two only, and those very slight ones; but in the Preface writ afterwards, the Author acknowledges two more; but they are such as his Modesty charged him with; tho' there was not any just Reason for his doing so; the first being the Mistake of Sir *Henry Spelman*, the famous Author of the *Glossary*, and the other the Errour of Mr. *Speed*; the 1st that this learned Author takes Notice of, as a Mistake, is in the Preface, p. 3d, in ascribing that to *Henry I.* instead of *Henry II.* out of *Gervase of Tilbury*. *Gervase* indeed lived in *Henry II.*'s Time, but the Fact he relates belongs to *Henry the 1st*'s; tho' that most diligent Knight under the Word *Firma*, p. 230. has these Expressions within a Parenthesis (*donec Henricus 2dus ex justa occasione morem mutavit*) and it is a Wonder how it escaped his Observation, and was not amended in the 2d Edition, Anno 1664; for it is wholly inconsistent with what comes next in the following Page, taken out of,

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of, (as I think it is called) the *Black Book of the Exchequer*; writ by Gervace of Tilbury, whoſe Words are theſe.

Toto igitur Regis Willielmi tempore, perſeveraverit hæc Inſtitutio, uſque ad Tempora Regis Henrici filii ejus; adeo ut viderim ego ipſe quosdam qui viſtualia ſtatutis temporibus de fundis Regiis ad curiam deferri viderint. Certumque habebant officiales domus Regiæ, a quibus Comitatibus triticum, a quibus diverſas ſpecies carniſum, vel equorum pabula, vel quæque neceſſaria debebantur; hiis vero ſolutis ſecundum conſtitutum modum cujuſque rei, Regii officiales computabant vicecomiti redigentes in ſummam Denariorum.

Now as one Errour generally begets another; ſo has it happened to Sir *Henry*, and Mr. *Fleetwood* in this; For the next Words that follow in the GLOSSARY, p. 231. and in the *Chronicon*, p. 69. have both, I think ſwallowed a Miſtake in the Price of Goods, which they both give as follows.

Pro menſura tritici ad panem centum hominum ſolidum unum.

Pro corpore Bovis paſcualis unum ſolidum.

Pro Ariete vel ove quatuor Denarios.

Pro præbenda XX equorum quatuor Denarios.

Now in the 2d Price I think they are both miſtaken, for in my Collection out of *Rich. James*, a famous Antiquary, in his MSS in the Bodleian Library, Vol. x. p. 78. for the Carcaſs of an Ox, inſtead of one Shilling, he writes iii Solidos, 3 Shillings; what next follows theſe Prices is to be met with in Sir *Henry's* GLOSSARY; but becauſe every one is not poſſeſſed of that Book, and that I may

may shew what a diligent Transcriber the afore-said *Rich. James* was, I will print the Rest of that Exscript out of *Ger. Tilbury*, in this Place, which still more plainly discovers the Errours above-mentioned.

Succedente vero tempore cum idem Rex (H. I.) in transmarinis & remotis partibus; sedandis tumultibus bellicis operam daret; ut fieret sibi summa necessaria ad hæc explenda (but the GLOSSARY falsly reads exempla, which shews that Sir Henry had his Copy at 2d Hand) numerata pecunia. Confluebat interea ad Regis curiam querula multitudo colonorum, vel quod gravius sibi videbatur, præteriunt frequenter occurſabat, oblati vomeribus in signum deficientis Agriculturæ. Innumeris enim molestiis præmibantur occasione victualium quæ per plurimas regni partes a sedibus propriis deferebant. Horum igitur queremoniis (apud Gloss. querelis) inclinatus Rex diffinito (Gloss. definito) magnorum consilio destinavit per Regnum quos ad id prudentiores & discretiores cognoverat qui Circumeuntes (Gloss. Circueuntes) & oculata fide fundas singulas perlustrantes, habita æstimatione victualium quæ de hiis (Gloss. aliis) redigerunt in summam Denariorum. De summa vero summarum quæ ex omnibus summis surgebat in uno comitatu, constituerunt vicecomitem comitatus illius ad Scaccarium teneri, addentes ut ad scalam solveret, hoc est propter (alias præter) quamlibet numeratam libram sex Denar' rati sunt enim tractu temporis, de facile posse fieri, ut moneta tunc fortis a suo statu decideret. Nec eos fefellit opinio, unde coacti sunt constituere, ut firma maneriorum non solum ad scalam sed ad pensum solveretur, quod perfieri non potuit nisi longe plumb' appositis, &c.

I remember not any more Errours in the *Choni-*
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con, ſave in his correcting in the 53 Page, the 49 (into 39) *H. 6th*; for it was true as it was, and to be underſtood of *H. 6th*, when reſtored to the Crown, *Oct. 13th*, *A^o. 1470*, and gave, it's likely, one of his laſt Commiſſions, *14th April, 1471*. I have thought fit to take the greater Notice of this, for a ſpecial Reaſon, that I might endeavour fully to clear the Memory of that Pious, tho' unhappy Prince, from an Obliquy, accidentally, as I ſuppoſe, caſt upon him, by that every way great and learned Politician *Sir Robert Cotton*, who had not the Opportunity to ſee the exact Accounts, that are now extant, concerning the Alteration of the Standard for Coins in *England*: For in an excellent Speech that eminent Stateſman made in Parliament, *1 Car. I. at Oxford*, againſt the leſſening the Weight of the Coin, then attempted by ſome, (that ought to have been either wiſer or honeſter) to be found in his Remains, *p. 286*. Where after he had highly commended *Edward the Firſt*, for fixing the Standard, both for Purity and Weight, and that it would be a Blemiſh to all Princes that ſhould do the Contrary: He unhappily fixes on King *Hen. the 6th*, for an Example. Thus we ſee it was with *Henry the Sixth*, who after he begun with abating the Measure, he after fell to abating the Matter, and granted Commiſſions to *Miſſenden* and others, to practice Alchemy to ſerve his Mint: The Extremity of the State felt this Aggrievance; beſides the Diſhonour it laid upon the Perſon of the King, was not the leaſt Advantage his diſloyal Kinsman took to ingrace himſelf into the Peoples Favour, to his Sovereign's Ruin, *pag. 217*. *Queen Elizabeth*, was adviſed by the Lord *Treaſurer Burleigh* and *Sir Thomas Smith*, that it was the Honour of her Crown, and true Wealth of her ſelf and People, to reduce the Standard to the ancient

cient Purity and Ponderosity of her great Grandfather King Edward the 4th.

I have here transcribed so much of this wise and politick Knight's Speech, published both against raising the Value, or lessening the Weight of the *English* Coin, and could have wished he had chose some other Person to reflect upon; for the altering the Standard, that was the Effect of *Edward* the 4th, or his great Counsellor; and as Mr. *Lounds* styles him, *William Lord Hastings*, his Mint Master and Worker, 4 *Edward* 4th. So that it was *Edward* the 4th, and not *Henry* the 6th, that led his Kinsman the Way to raise a *Troy* Pound of Silver, from 30 s. in the Pound, to 37 s. and 6 d. except you would charge an Infant of two or three Years old at most, with what his Counsellors had done. 1 *H.* 6th, and saw the ill effect of it, and altered it, 4 *H.* 6th, and only kept after, as it were, 'till 49 *H.* 6th, when he found it raised by *Edw.* 4th. I suppose Mr. *Lounds* never saw Sir *Robert Cotton's* Speech, otherwise he would not have advised King *William* the 3d, to a Fact that had redounded so much to the Dishonour and Loss of the Crown, which that Prince professed should never be the worse for his wearing it, and so detrimental to all the several Subjects that should ever Live after him.

THE next Passage that Mr. or Dr. *Fleetwood* seems to accuse himself for (*ib. p.* 10th) was his censuring Mr. *Speed*, for a Fact that deserved Censure, if any ever did; and for placing so many two Pences and three Pences upon the Coins of the *Saxon* Kings, and others since the Conquest. For certainly it was a very indiscreet Act, for what

what elſe could they ſignify: And tho' in the ſame Preface, the Author ſays, He is now ſenſible *Speed* intended it for another Purpoſe, yet he does not tell us what that Purpoſe was: And tho' I writ a Letter to Dr. *Hudſon*, then chief Keeper of the *Bodleian Library*, yet he gave me ſuch an Answer, as I was no wiſer for it; but at laſt I met with it at the End of *Speed's* Hiſtory, p. 1237, which had been much better placed at the Beginning of it, or rather left out for good and all; for it will be unintelligible to a vulgar Reader, when ever he finds it thus expreſſed. *The Circumferences of theſe ancient Monies being diverſe and different, we have in this Sculptore obſerved, by ſhewing THREE Diameters, whoſe Circles import the Bigneſs of the Mintage, and their Figures compared with theſe, direct the Proportions to be of the ſame which thou ſeeſt.* I think few ever read a ſingle period ſo unintelligibly expreſſed as this, nor ſaw a Figure worſe contrived than that which is fix'd under it, which is drawn from ſix ſeveral Centers; but had been eaſier both drawn and underſtood, if they had been all from one common Center. 2dly, There are no Diameters at all drawn on them. 3dly. If they had, they had ſtill been needleſs, for will not every Eye diſcover the Bigneſs of any, by barely looking upon it, and as to the Figures, they are not only needleſs, but neceſſarily lead the Viewer of them into ſome Errour; and if they did not ſo, yet being not of the ſame Bigneſs with the Coins themſelves, they are Fallacious, and no way help the Secr of them to read the Letters of the Inſcription, being of too large a Shape, and by that Means of ſomething a different Form: This I ſay were ſufficient to deny them any Approbation, which in the Preface, Mr. *Fleetwood* ſeems to allow them. Now I would

would have no Man think that I have writ this to disparage Mr. *Speed's* History, which is (considering the Author's Education) a very Praise worthy Work, and deservedly continues still in great Repute.

BUT I conceive it a Benefit to the Publick, to discover an Errour that may do Mischief, but can do no Man good, and may Caution others from making (as far as they can help it) any Mistakes at all: Neither am ashamed to own, that the like blame may be laid to my Charge, and I ought to be doubly blamed if it be found in any Case where I could prevent it. But I have acquainted the World before with my Infirmities, and under what bad Circumstances I write, and have none near me skilled in the Subject I write about, or to lend me an helping Hand: And therefore Faults must be expected, both of me who am decayed by Age and Diseases; and by my Printer's mistaking the Copy I writ, and sometimes the Corrections I made; but so many Errours, I believe had not escap'd, if his Original had been good, whereas I acknowledge mine to have been very defective.

IN the 140th Page of these Letters, I promised that at the End of this Volume, I would give an Account of the different Valuations of the *Census Romanus*, given us by the *Roman* Historians; and settled by *Servius Tullius*, made I suppose about the Year of *Rome* 180, for he being King neither by Succession nor proper Election; but by the Artifice of the Widow of his Predecessor *Tarquinius Priscus*, could not in any likelihood effect it, 'till he had been for several Years in quiet Possession.

Now

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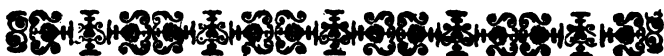
Now Livy, lib. 1. cap. 41. gave in	100000	} Of Brass;
the first Class at ————	110000	
Pliny, lib. 33. cap. 3. ————	120000	
Pomp. Fest. verbo infra Classsem, at-	125000	
Aulus Gellius, lib. 7. c. 13. ————		

THIS Valuation of the 1st Class must have continued 'till A^o. Urb. 484, when most Authors think that Silver was first coined at Rome; but what Weight the *Denarii* were then coined there is no positive or direct Proof given us by any Writer; but we are left to gather from what is said concerning the *Romans* lowering their Brass Money; But we are certain of this by several remaining *Denarii* as well as *Asses*, that before the End of the 2d *Punic* or *Hannibal's* War, which ended A^o. Urb. 549. that the 7th Part of a *Roman* Ounce of Silver was worth neither more nor less than 8 Ounces of Brass; and by Consequence if eight Ounces of Brass was worth 8*d*. of our present *English* Money, as is sufficiently proved in several Places in these *Miscellanies*, a whole Pound of Brass, or 12 Ounces must be worth one Shilling *English*, according to which Value, Brass and Silver continued at the same Rates, 'till the *Census* was first altered by *Augustus Caesar*. Now accordingly for above 200 Years together the *Census Romanus* will stand as follows.

l.		l. s. d		
100000	} Of Brass	100000	} amounts to	5000 00 0
200000		20 s.		
300000		110000	} amounts to	5500 00 0
400000		20		
500000	} Of Brass	120000	} amounts to	6000 00 0
600000		20		
700000		125000	} amounts to	6250 00 0
800000		20		

Suetonius in *Aug. c.* 41. 800000 H. S. which make 6666 13 4
Suetonius *ibidem*, the highest *Census* raised by
Augustus Caesar, to 120000 H. S. which make 10000 exactly.
 AC

ACCORDING to the last two Valuations, the *Census Romanus* continued 'till *Justinian's* Time, when the Name and Office ceased in the Empire of the East; but long before that time the Value of Brass and Silver were altered, and sometimes reckoned but one to 120.



In the following TABLE, besides the Latin Names, or the Number of the the Sestertii, I have partly for the Sake of the English Readers, and partly for the Sake of the Criticks, added the Arabick Figures, that if they find any improper Latin Names, they may still perceive what Number I intended them for, and those that are Critically skilled in the Latin Tongue may alter them more agreeably to the Propriety of it.

ATA-



TABLE of SESTERCES reduced to our present English COIN.

Num' Sester' in Lat'	in Figur'	Pretium eorum.		
		l.	s.	d.
Unus Sesterthus - -	1 —	6	00	02
Sesterthii duo - - -	2 —	6	00	04
Sesterthii tres - - -	3 —	6	00	06
Sesterthii quatuor - -	4 —	6	00	08
Sesterthii quinque - -	5 —	6	00	10
Decem Sesterthii - -	10 —	6	01	08
Centum Sesterthii - -	100 —	6	16	08
Mille Sesterthii - - -	1000 —	6	06	08
Duo Sesterthia - - -	2000 —	16	13	04
Tria Sesterthia - - -	3000 —	25	00	00
Quatuor Sesterthia - -	4000 —	33	06	08
Quinque Sesterthia - -	5000 —	41	13	04
Sex Sesterthia - - -	6000 —	50	00	00
Septem Sesterthia - -	7000 —	58	06	08
Octo Sesterthia - - -	8000 —	66	13	04
Novem Sesterthia - -	9000 —	75	00	00
Decem Sesterthia - -	10000 —	83	06	08
Viginta - - H. S.	20000 —	166	13	04
Triginta - - - -	30000 —	250	00	00
Quadraginta - - -	40000 —	333	06	08
Quinquaginta - - -	50000 —	416	13	04
Sexaginta - - - -	60000 —	500	00	00
Septuaginta - - -	70000 —	583	06	08
Octoginta - - - -	80000 —	666	13	04
Nonaginta - - - -	90000 —	750	00	00
Centum - - - - -	100000 —	833	06	08
Ducenta - - H. S.	200000 —	1666	13	04
Trecenta - - - -	300000 —	2500	00	00
Quadringenta - - -	400000 —	3333	06	08
Quingenta - - - -	500000 —	4166	13	04
Sexcenta - - - -	600000 —	5000	00	00
Septingenta - - -	700000 —	5833	06	08
Octingenta - - - -	800000 —	6666	13	04
Nongenta - - - -	900000 —	7500	00	00
Decies - - - - -	1000000 —	8333	06	08

T

Num'

Num' Sester' in Lat'	in Figur'	Pretium Eorum.		
		l.	s.	d.
Vicies - - - - H. S.	2000000	16666	13	4
Tricies - - - - -	3000000	25000	00	0
Quadrages - - - -	4000000	33333	06	8
Quingenties - - - -	5000000	41666	13	4
Sexages - - - - -	6000000	50000	00	0
Septuagies - - - -	7000000	58333	06	8
Octogies - - - - -	8000000	66666	13	4
Nonagies - - - - -	9000000	75000	00	0
Centios - - - - -	10000000	83333	06	8
Ducentios - - - H. S.	20000000	166666	13	4
Trecentios - - - -	30000000	250000	00	0
Quadringenties - -	40000000	333333	06	8
Quingenties - - - -	50000000	416666	13	4
Sexcentios - - - -	60000000	500000	00	0
Septingenties - - -	70000000	583333	06	8
Octingenties - - - -	80000000	666666	13	4
Nongenties - - - -	90000000	750000	00	0
Millies - - - - -	100000000	833333	06	8
Bis Millies - - - H. S.	200000000	1666666	13	4
Ter Mil' - - - - -	300000000	2500000	00	0
Quater Mil' - - - -	400000000	3333333	06	8
Quinquies Mil' - -	500000000	4166666	13	4
Sexies Mil' - - - -	600000000	5000000	00	0
Septies Mil' - - - -	700000000	5833333	06	8
Octies Mil' - - - -	800000000	6666666	13	4
Nonies. Mil' - - - -	900000000	7500000	00	0
Decies Mil' - - - -	1000000000	8333333	06	8
Undec' Mil' - - - H.S.	1100000000	9166666	13	4
Duodecies Mil' - - -	1200000000	10000000	00	0
Terdecies Mil' - - -	1300000000	18333333	06	8
Quadrages Mil' - -	1400000000	11666666	13	4
Quinquagies Mil' -	1500000000	12500000	00	0
Sexages Mil' - - - -	1600000000	13333333	06	8
Septuagies Mil' - -	1700000000	14666666	13	4
Octogies Mil' - - - -	1800000000	15000000	00	0
Nonagies Mil' - - - -	1900000000	15833333	06	8
Vicies Mil' - - - -	2000000000	16666666	13	4
Vicies un' Mil' - H.S.	2100000000	17500000	00	0
Vicies bis Mil' - - -	2200000000	18333333	06	8
Vicies ter Mil' - - -	2300000000	19166666	13	4
Vicies quater Mil' -	2400000000	20000000	00	0
Vicies quinquies Mil'	2500000000	20833333	06	8
Vicies sexies Mil' - -	2600000000	21666666	13	4
Vicies septies Mil' -	2700000000	22500000	00	0
Vicies octies Mil' - -	2800000000	23333333	06	8
Vicies nonies Mil. - -	2900000000	24666666	13	4
Tricies Millies - - -	3000000000	25000000	00	0

The TABLE of Sesterces. 275

Num' Sester' in Lat'	in Figur'		Pretium Eorum.		
			l.	s.	d.
<i>Tric' bis Mil' - H.S.</i>	3200000000	—	25083333	06	8
<i>Tricies ter Mil' - -</i>	3300000000	—	27500000	00	0
<i>Tricies quater Mil' -</i>	3 00000000	—	20833333	06	8
<i>Tricies quinquies Mil'</i>	3500000000	—	29166666	13	4
<i>Tricies sexties Mil' -</i>	3600000000	—	30000000	00	0
<i>Tricies septies Mil' -</i>	3700000000	—	30833333	06	8
<i>Tricies octies Mil' - -</i>	3800000000	—	31666666	13	4
<i>Tricies nonies Mil' -</i>	3900000000	—	32500000	00	0
<i>Quadrages Mil' H. S.</i>	4000000000	—	33333333	06	8
<i>Quinquages Mil' -</i>	5000000000	—	41666666	13	4
<i>Sexages Mil' - - -</i>	6000000000	—	50000000	00	0
<i>Septuages Mil' - - -</i>	7000000000	—	58333333	06	8
<i>Octogies Mil' - - -</i>	8000000000	—	66666666	13	4
<i>Nonagies Mil' - - -</i>	9000000000	—	75000000	00	0
<i>Centies Mil' - - -</i>	10000000000	—	83333333	06	8
<i>Ducenties Mil' - - -</i>	20000000000	—	16666666	13	4
<i>Trecenties Mil' - - -</i>	30000000000	—	25000000	00	0
<i>Quadringenties Mil'</i>	40000000000	—	33333333	06	8

THIS was the Sum that *Vespasian* thought necessary to redeem the Debts the *Roman* Emperors before him had contracted; and the greatest that any *Roman* Sum is computed by in *Sesterces*.

THERE is no need of a Table for the *Denarii*, for divide any Number of *Sesterces* By four, and the Quotient will be the Number that so many *Denarii* will amount to.

WHERE the Sum consist of *Drachma's*, I have some where before given Notice that being divided by 30, they give so many *English* Pounds, and 20 of them 13 s. 4 d. and ten 6 s. 8 d.

AND for Pounds of *Roman* Money, each of them amount to 2 l. 16 s. 6 d. at least in our Money. And a Pound of Gold, whilst the Emperors lived at *Rome*, was about ten Times as much, viz. 28 l. 5 s. But after *Constantine* the Great came to the Empire, and even in these Days, a *Roman* Pound of

of Gold will amount to about 38 l. 7 s. 6 d. *English*; but what is said of this last Mettal, ought to have further Enquiry made about.

ALL the *Talents* mentioned before, each of them valued according to my Computation, if they be *Attick* or common *Talents*, will be 200 l. if *Jewish* *Talents*, each 400 l. if *Babylonish* 233 l. 6 s. 8 d. *English* Money.

I have hitherto spoken of *Talents* not according to their proper and true Value; but as I have computed them in compliance with former Authors who generally reckon by the later *Aurei*, 3 of which make our present english Pound; but that I may not misguide others by my Compliance with the common fashion, I will now give another Value; to shew that it was not out of Mistake, but for the Reason afore alledged, that I set so low a Value on the *Attick Talent*, as if the *Romani Denarii* had been equal to the *Attick Drachma*; now to rate the *Attick Drachma* aright, I shall not compute as Mr. *Greaves* has done at the utmost, viz. 67 Grains but at 66 only, which makes the *Drachma* worth 8 d. $\frac{1}{4}$ and brings the *Attick Talent* to 112 l. 10 s. and consequently the *Judaic* which is double to it to 425 l. and the *Babylonish* which was a 7th Part bigger than the *Attick* arises to 235 l. 8 s. 4 d.

Bishop *Hooper* and *Pomp. Festus* reckons the *Judaic* and *Alexandrian Talent* double the *Attick*, but there is another *Alexandrian Talent* reckon'd 7 Parts bigger than the *Attick*, which arises to 270 l. 16 s. 7 d. $\frac{1}{4}$.

I never read any Thing (as I remember) concerning the *Talentum Antiochicum* and *Talentum Antiochie*, save in Dr. *Arbutnot's* Tables; who rates the one at 86 lb. 8 Ounces, 16 Dwts, 8 Grains, and the latter at 390 lb. 3 Ounces, 13 Dwts, 11 Grains; but neither of these are to be met with in the celebrated Book of Dr. *Bernard's*.

F I N I S.

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