Literea 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, rector of Melnaby

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.
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 ascrib'd: Yet it is possible that the very same Persons that excused me then, may condemn me now, for opposing an Opinion that has passed current for Truth these 200 Years together, and all this in Favour of an Hypothesis that is but new, and when first proposed, made 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 Truth, and has a great deal more of Falsity 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, Budaus, and some other bright Wits, who became the Restorers of Literature, attempted to relieve Men's Ignorance, and lead them, as with a Clew, thro' the Mazes and Labyrinths, where they were entangled and be-nighted, till the last named Person, and universally learned Budaus, 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 bad published concerning the Greek or Roman Moneys.
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 be 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 Erafmus in a Letter to Agricola, dated the 4th of the Calends of September. Al 1531. p. 469. encourages George Agricola to go on with his Book of Weights and Measures; but uithal 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 fromachi liberioris, ita vir melior est quam ut indignetur tan-rum argumentis agenti. I am not certain how long Budæus lived, but the Epistles of Erafmus 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 Erafmus’s Epistles, to Evidence that there was some Reason why many

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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 be 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 entering 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 alleging some Reasons why I did not leave off sooner; but have enlarged these Miscellaneies,
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ellanies, with some Transcripts out of Gronovius, Do Milliarescitbus & Follibus, with some Additions to him, Mr. Greaves, and Bishop Hooper; for I thought it a Piece of Justice, & ingenui pudoris publice pro-
siteri per quos profecerim. I have also made some E-
mendations to that excellent Book of the late Bishop of Ely, tiied Chronicon Pretiosum, &c. Which was.
done by me upon a Principle I shall willingly own; e-
seeming it a Benefit, both to the Authors and Readers
of any Trea trie, to have the Over-fights 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 re-
ceived, from the Pens of some, I disregard them; and one
from the Press, dated February the 1st, 1728, sub-
scribed Jo. Brooks, Chapter-Clerk of Christ-Church,
and directed to me, is of a Nature that can befit 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, 1725,

Rector of Meltonby.
ADDITIONS to, and EMENDATIONS of, some Passages in the following VOLUME.

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

To which I answer, That what is faid there, was only as a Proposal, to hear what Objections might be made against it, and nor as my settled Opinion, by which I was resolwed to abide; but would alter and leffen as I should see Occaſion for it.

But more directly I fay, there have been sometimes far greater Coins than double, trible, 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. Bentley, I find Polyaenus quoting Aristophylus out of a Discourse concerning the Sicilian Coin (but now not extant) where he speaks of a NONRONIAE, otherwise GLAMONIAE, coined by Doraeta, Wife of Gelas, in Memory of a Victory gained over the Carthaginians, with Money that at his Wife's Intercifion had been furnished her Husband, by the Ladies or Women, that were worth fifty. Litra, or Pounds of Brass, of which 50 Pound, a AUGARTEN, or ten of those 50fs, Aristophylus fays were worth 12 Eginean Oboli; now 12 such Oboli make two Eginean Drachmes, but if an Eginean Drachme had the Proportion as ten to six of the Attick Drachmes, then it a Drachme of Athens was worth 8d, and better of our Money, a Drachme of Egina must be worth 13 or of our Money; and a PHRYGIAN, ten times as much, which amounts at leaft to 13s, and some-what over. But if we should dispute whether or no this was not an over-value? I will mention another given by Diodesus Siculus, who values the PHRYGIAN here spoken of, at ten Attick Drachmes, which makes as I have accounted them below their true Value, 6s. 8d.

I pass by what Aristophylus fays, that 12 Eginean Oboli were more than two Attick Drachmes, for in Truth 3 Attick Drachmes will not equal 2 Eginean.

I expect that thole of the opposite Party following Gronovius, will fay this was an extraordinary Medal, and no true Coin; I will by Conceffion grant that it might be fo; but however, it shows that the Romans being fo near Neighbours to...
to the Sicilians must have known what was usually the proportion between Silver and Brasses, and I may hence gather, that since the Romans borrowed their Coin from the Sicilians, and that their Decalizton was worth 2 s. 2 d. oh. the Romans coined their least Denarii at that value, which is wholly irreconcileable with Budæus and Gronovius's Opinion.

But I proceed to another Argument, not borrowed from an extraordinary but a common Coin of Silver Stater or Terra-drachm, containing four Drachma, 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 Surt Mr. Greaves tells us he had seen and weighed very many; and since Aegina 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, so that altogether would amount within 5 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 Denarii were coined at, or near the very same Weight, which is a sufficient Argument to overthrow their Opinion, again whom I have been hitherto arguing, who value the first Denarii no higher than 7 d. oh. or 7 d. at most. Neither do I think it an Object to 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 enriched not the Value of his Aurei or heavy Money; but took lesser Money into his Treasury or Taxes, in liet of the greater.

I find Al. Lampridius in the Life of Heligabalus; Ch. xxii. (20 Years before Constances 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 Argenti (or Milliarenzes) 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 Constance.

As for Corrections or Emendations they cannot be all 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-Halicarnass, as agreeing with Pliny in stating the highest Census of
mens, whereas he rather agrees with Livy, who gives it in
at the lowest. Pag. 29, 57.

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

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

Pag. 169. l. 6. add Codex Theod. lib. ix. tit. 6. l. 2. No pra-
ter crimine majestatis servus Dominum nec patronum libertas accipere.

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

Pag. 180. l. 2. add deftect out or.

GREEK and LATIN Errata.

Page 32. l. 7. r. Gromvius. p. 6, l. 3. r. vacant. p. 9. l. 14. r. Remus
l. 20. r. dupondio & sestete. l. 29. r. quinaria. l. 32. r. Nota. p
x. l. 29. r. Batis, p. 101. l. 9. [sic ubi.] r. Panorollus. l. 11. r. Grevius,
p. 19. l. 25. r. vice. p. 20. l. 4. r. Alciate. l. 5. r. Sextantarii. p. 23. l.
14. r. teruncius. p. 30. l. 8. r. libralis. p. 52. l. 10. r. Villapandus,
l. 18. r. libralis. l. 26. r. Gillo. p. 66. l. 11. r. activa. p. 64. l. 12. r.
pecunia. l. 15. r. militesque. l. 16. Comma poft Salutaris, non poft omi-
ta. p. 67. l. 20. r. de uti &. p. 68. l. 7. r. Gromvius. p. 70. l. 20.
. Sextantarii. p. 73. &c. r. S accelerating, Sacceltarium, Sebastiani, [arque in
pastim.] p. 84. l. 3. r. Siculus. p. 88. l. 22. r. Scholarum & Musei Atheni-
. 93. l. 9. r. Drachme. p. 108. l. penult. r. transmisionum. p. 115. r.
. diminuir. l. 19. r. fitru—duas. p. 117. l. 31. r. val-
ere. p. 118. l. 1. r. difficilis. l. 5. r. non. l. 126. r. valeure. l. 27. r.
efficu-
. 128. r. excedere. l. 32. r. identidem. p. 119. r. penult. r. Milia-
rensis. p. 121. l. 22. r. teruncius. [atq; ita pastim.] p. 123. l. 23. r.
fiet. 1. l. 24. r. confcrve. p. 124. l. 10. r. noviti. l. 17. r. quindecima,
. 123. r. proponi. p. 125. l. 31. r. munquam. p. 126. l. 3. r. exequat,
p. 128. l. 13. r. externis. p. 137. l. 23. r. mirari. p. 139. l. 14. r. His-
panico. l. 140. r. Sempert. l. 129. r. cunctus. l. 11. r. biderum. l. 33. r.
p. 148. l. 8. r. Thomas Thomasius. l. 26. r. cebes. p. 152. l. 33. r. viginti,
p. 153. l. 7. r. Grevius. p. 158. l. 8. dous denarios. l. 27. r. Atticus
. 31. r. distribus. p. 156. l. 28. r. disertus. p. 159. l. 2. r. affercerunt
septemario. l. 9. r. Varro. l. 54. r. maxime. p. 161. l. 1. r. propius. l. 11.
. in se dentem. p. 152. l. 15. r. exemplaribus. l. 19. r. littera—Milena
p. 177. l. 2. r. separas. p. 198. l. 35. r. copiam. p. 199. l. r. recet
. popescit. r. Drachme. p. 281. l. 31. r. sunt. And l. 32. r. 6cere
banus. p. 182. l. 2. r. Quadrimgemos. p. 207. l. 2. r. Ephorius.
p. 207. l. r. Hemia nonaginta sex. l. 3. r. Note. l. 7. [sic libri.]
. Marianus. l. 18. 22, 24. r. Medimnus. l. 18. r. mod i. r. d. q. Modus
. 26. r. Coryle. l. 27. r. Hemia. l. 33. r. Sextarius. p. 209. l. ult. r

**ENGLISH ERRATA.**


**Errata in the Figures.**

PAGE 109. l. 9. r. 730000. p. 160. l. 31. r. p. 128. p. 187. l. 31. r. 1,000,000 Talesms. p. 203. l. 2. r. 8165 l. 13. s. 4. d. p. 231. l. 30. r. 1656 l. 5. r. rod. p. 235 l. 7. r. 3333333333 l. 65. s. 8. d. p. 236. l. 9. r. 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 Dr.,

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. Obadiah 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 left 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 Scholaram, 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 Melsonby, 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 aflreath 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 Clas-

sick-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 Over sight, but this, that in his Discourse of the Roman Denarius (which is now almost told 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 5s. 2d. 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 Gratias: 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 Avoir-d'ouc 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 Sextese 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 B 2 Edi-
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Edition I make use of) appears to me a far better Critick, and Mathematician, than a Political Staleman, or good Christian. You must likewise Note, that most foreigners, as well as English Men in this, following Budens, 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 Scribonius 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 Failer; 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 plain 100000 Pound of Brass Money, which being reckoned as Budens, 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 than 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 us
us therefore, without regarding their Silver Money, consider what Quantity of Bras 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 its first Coining, was worth ten Pound, or an hundred and twenty Ounces of Bras or Copper Money: And that yet the fame Denarii, before the End of the second Punic 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 Punic 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 Horsemens were allowed ten thousand Ases for the Price of an Horse, and two thousand for his Keeping": Which, according to the Account of Budæus, 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 Calpurn, 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 Aelian Law,
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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 6s. 8d. of our Money for an Ox, and a Senator's Estate according to the Valuation of Budaus and others, at 333 l. 6s. 8d. will when divided by 6s. 8d. (the Price of an Ox) shew that a Senator, at the making the Ancient Law, must have been worth a thousand Oxen, at least; which I compute on this Manner, 333 l. 6s. 8d. divided by 6s. 8d. give 999 l. and when the odd 6s. 8d. 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 Caesar 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 Caeli temperies fulsit, quam colturam vocantur solis opere, natali urbis DCXXXIII.

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* The Author having followed an Opinion be 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.
De Re Nummaria.

Dura ante aedue vina ducentis fere amnis, jam in specm redacta mellis asperi: Etenim haec natura vinis in vetustate est; nec potari per se queunt, si non pervincat aqua, usque in amaritudinem carie indomita: Sed ceteris vinis commendandis nimia aliqua mistura medicamenta sunt, quo fit ut ejus temporis estimationem in sanguis Amphorbas centenii nummi statuantur. Ex his tamem usura multiplicata semissibus, que civilis ac modica est, in C. Caesaris Germanici filii principatu amnis CLX. sanguis uncias vini constituisses nobili exemplo docuimus referentes vitam Pomponii secundi vatis, ca-namq; quam principi illi dedit. Tantum pecuniaram detinat vini Apotheca.

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

Si in Opimio conculatu licitatum vinum putemus in sanguis amphoras nummis fave Sestertiis centenis (Gal. monetae libris decem) tamen ex his Amphoribus sanguis uncias Caio principe constituisses vidimus tot nummis fave H. S. quot usura centenum numnum illorum continet per annos CLX. multiplicata semissibus, que usura civi-lis & modica est. Usura semissis est cum de centenis nummis semen in mensa redit — Galli dicunt sex pour Cent. — Ita, si Amphora fave vini octoginta libre O- pimio consule centum nummis versus faciunt autem LXXX libre uncias DCCCCCLX, nummos 960 inferunt, atq; ita sanguis vini unciae 960 nummis, fave H. S. constitutere que monete Gallice libre sunt nona-ginta 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 write 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
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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 16s. 8d. 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 Caesar 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 semana, 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 Businus de Assis upon the Point; Who, tho' he has made the Case more intricate than he needed, yet Page 666 he concludes, Κuncias vini singulas tot nummusis constitisse. So that tho' I followed Hardwicke in writing to Dr. Bateman, yet I find in my reading Businus I had long since thus noted in the Margent, Singulae uniae Singulis H. S. constiuen: enunt.

2dly, Pliny in his xxxiii Book, Chap. the 3d, gives us this Account of the Roman Money; Servius Rex primus signavit as. Antea rudi usus Rome Remius tradit. Signatum est notae pecudum; unde & pecunia appellata. Maximus Census CX millia Aesum fuit illo regno; & ideae haec prima classis. Argentum signatum est anno urbis 437. Q. Fabio Conulsique quisque annis ante primum bellum Punicum. Et plauuit Denarius pro decem libris aris, Quinarius pro quinquaginta, Sesterium pro Dupondio & semissae. Librum autem pondus aris immunitum bello Punico primo, cum impensus respublica non sufficeret, constitutionem, ut affes sextantario pondere ferirentur: Ita quinque partes factae luci, dissolutum, as alienum. Nota aris fuit ex altera parte Jamus Geminius, ex altera rostrum navis; in Triente vero & Quadrante Ratis. Quadrans antea triuncis a tribus unecis. Postea Annibale urgete, Q. Fabio maximo Dictatore affes unciales facti; placutque Denarius XVI affibus permutari Quinarum oitonicis; Sesterium quaternis, ita respublica dimidium lucrata est. In militari tamen Stipendio temper denarius pro decem affibus datus. Nota argentis diversis atque quadrige; & inde quadrigatiq; diëbi, mox lege Papyria semunciales affes faciti. Livius Drusus in Tribunatu plebis ostavo partem aris argento miscuit. Qui nun victorius appellatur, lege Clodia percussus est, ante annum
Several LETTERS

 enim hic nummus ex Illyrico advehitus mercis loco baborur. 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 upon it: And having also distributed the Citizens into six Ranks, or Orders, the highest Rank, or a Patrician Senator, was at last to be worth 110000 Pounds of Copper or Bras; 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 Bras Asses, each weighing ten Pounds. Not long after this, in the first Carthaginian or Punick War, which lasted from the Year of the City 438, 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 appointed that sixteen such Asses should pass, or be exchanged for one Denarius or Roman Penny, and the Quinarius for eight Asses, and the Sextertius for four Asses, and to the Republick gained half.

I have passed by what Pliny tells us of their Twents and Quadrans, as not material to my Inquiry; but shall take Notice of several Difficulties I observe in the foregoing Narrative: As first, that Pliny says, the highest Rank or Census of a Citizen, was to be one hundred and ten thousand Pounds of Bras or Copper; whereas Livy, as I have afore observed, states the highest Census but at 100000 Asses; And 2dly, that Pliny makes but one
De Re Nummaria.

one Change in the 15 Years of the first Punick 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 Punick 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 misreckoning in Pliny, when he tells 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 con-"tained sixteen, was in after Ages called a Victor-"riatus,"
Several LETTERS

"riatus, from a Coin that came out of Ilyricum, rather as a Sort of Merchandize than as current Coin at Rome; but at length, by the "Cicilian Law, it was made a Sort of free Denison, being coined at the Weight of a Quinarius, 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 aedibus datu; that is, "In Soldiers pay a Denier was always 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 Praetorian 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 capti aut arbitratu, quando id summam rei a nobis comperta & explicate labefactare non potest, ut alibi diximus.

Sir, I will trouble you with no more of these
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.

your most obliged

and Affectionate Servant

Melsonby, near Darlington, in the County of Durham.

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. Arbuthnot, 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 LETTER

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 stiles it, in his Epistle to the Reader, in 4to, at Leyden, A. D. 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
Several LETTERS

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

And those, as far as I can find, have been only these four, to wit, Panerolius, 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 Gronovius; 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 (tho' mistake for 485') Q. Fabio Consule, quinque annis ante primum bellum Punicum. Et placuit Denarius pro decem libros ebris, Quinarius pro quinque, Sextarius pro dupondio & semisse. Librae autem pondus ebris iniminitum bello Punico primo, cum impensis Republica non sufficeret; constitutumque ut asex fexitantio ponderes ferirentur. Ibi quinque partes fadit luci, dissolutumq; as alienum. And a little after he goes on
De Re Nummaria.

on and says,—Postea Annibale urgente, Q. Fabio maxi-
mo Dictatore, affes unciaces fatti, placuitq, Denarium
XVI affibus permutari, Quinarium octonis, sefertium
maternis. Ita Respublica dimidium lucrata est.—
Max lege Papyria semunciales affes fatti.—Aureus
nummus post annum LXII percussus est quam argenteus:
Hic ut scrupulum valeret sefertiiis vicenis; quod efficit
in libras, ratione sefertiorum qui tunc erant sefertios
DCCOG.—Post hae placuit XL. M. signari ex
aurilibris, paulatimq; principes imminuere pondus; mi-
nutissimus vero ad XLV. M.

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

I n transcribing these Passages, I now first ob-
serv'd, what I never took Notice of before, That
Pliny uxes (if the Print be right) Sefertium as a
Neuter in the singular Number, and Sefertii as a
Masculine in the Plural; contrary to the Rules
given by Budæus and others, who make it a Mas-
culine in the singular Number, and Neuter in the
Plural; when they write bina, trina, quaterna,
Sefertia, and so on to Nongenta, signified 2000,
3000; 'till they came to the laft 900000; and then
at 1000000 they returned to the Masculine again,
filling the fame decies, or if 2000000 vices, 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 op-
posed to the Silver Denarii; in which he gives us

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* Tho' there seem to me to have been many more, as will be
    found following in the Letters.
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 its 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) bear to ten Pound Asses, or which is the same Thing 120 Ounces; for which, as Pliny tells us, “The Denarius, at their first Coining were commuted or exchanged.

When the ten Pound Asses or 120 Ounces of Copper answer’d to a Denarius, they must each weigh two Ounces of our English Money, viz. about

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2dly. When half Pound Asses, for which we have only your * Stips uncialis Authority, the Denarius would be about an Ounce, or of our Money—

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3dly. When the Asses were reduced to two Ounces each, the Denarius would be the 3d Part of an Ounce Silver, or

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4thly,

* See the Ducat Leodienlis Page 280. Number the 5th.
De Re Nummaria.

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 ——

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.

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 Brons half, when they raised their Silver but a third Part, or vice versa the Silver might be raised more, and the Brons less; for of this we can make no certain Estimate, 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, that Copper or Brons was raised to that height, (were it done at once or twice) that the Commonwealth gained five Parts in fix, (which is the very same
same with gaining first one half, and afterwards two thirds of the other half) in this therefore he has computed right: However, this fall from six to one seem'd so prodigious to Acietate, and others, that by the Words Asses sextarii, or of two Ounces, they would have interpreted it, that 2 Ounces were defaulked 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 Lyer; 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 percursorus 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 must have
have thought false and unrefrangible; but Savotus affirms right and genuine) the Sexterces must be vastly bigger than they are now thought, and therefore must be coined when there was half Pound Ases 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 Sexterces; and because there were always four Sexterces, neither more nor less in the Denarius; that Change must be either for the greater or the les; and because no Man pretends they were ever les, 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 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 As at that Time it was coin'd, otherwise had it had the Figure 1. I should have took it for one of the Papyrian Ases; but from the former Supposition it evidently follows, that there must
Several LETTERS

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 Punic 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, thq' 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 diminished, 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 Incription 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 ¼.

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 and ⅛ 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 Evasion 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 file 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 its Weight; which should,
Several LETTERS

were it perfect, be 128 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 th'o' 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 Sociator Clarifius from Varro, for leaving it with an &c. 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

p. 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 Volume 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 Pa-
per 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 unsuc-
 cessful, and instead of making the Denarii, or Dra-
chmæ, to answer each other (as the Greek Histori-
ans 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
12s. (odd Pence) English; whereas all this might
have been, and was better provided for, by equal-
ing 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
Attick
Attick Coin, as all other Coins do, losing something of their Rate in a Foreign Country; whereas the Roman Coins, after their great Conquests abroad, were nowhere 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 Paemon, 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, Milliarenses, and Follis introduced; and what is said against Rhemnius Fannius's Authority, holds more forcibly against Priscian's, who lived under the Emperor Justinian, 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 8 1/2 only in the Pounds.

The Objections they make, and the Reasons alleged 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 equal'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.
A n d 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 Ases 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 Savorus, 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 returnd to it; but that I expected about a Fortnight ago to have seen my elder Nephew from Rawden; but some Accidents intervened that hindred his intended Journey into these Parts for some Days; and having upon this Occasion viewed some Abstracts out of Savorus, 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 Life.
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 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 filed, 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 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 Senfes the Proverb
De Re Nummvaria.

verb may be extended, to think it Time to cry out, Manus a tabula: 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

and humble Servant

William Smith.

POSTSCRIPT.

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 Opulence appears, by the rating the Census of the highest Senators, in Servius Sullius his Time, at 100000 l. A. ses as Livy, or 110000 as Dionyfus Halicarnassa, 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 reckoned 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 learnt the Worth of Bras, 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 Bras 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 assigned to the old Denarius: 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 Seaster, could there-
therefore scarce reach two Pence; the Libella, or 10th Part of a Denarius, would but be three Farthings, and ¼th 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 Sesterce at 1½ Grains, the Libella 6 Grains, the Singula 3 Grains, the Teruntius 1¼, 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 Denarius 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 1½ 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 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 7½, or ½ only: But I go not by the Troy Ounce, but the Roman of 438 Grains, which divided by 7, gives compleatly 62½, which gives
Several LETTERS

gives to each Penny 7 Grains $\frac{1}{2}$, 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. i. 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.
A LETTER

From Mr. Ralph Thoresby, Author of the Book Stiled Ducatus Leodienis,

Dated the 5th of April, 1722.

Reverend Sir,

O U have obliged me exceeding

ly by your Learned and very In

structive Letter, which consi

of eleven close writ Pages, an

found me in a Hurry, yet I hav

read it over and over again, i

order to have given you most

Satisfaction than I fear I shall b

able, as to your Queries about the Roman Coins.

And first I consulted Pliny for various Lecti

ons, having an ancient Edition, Anno 1511, with

the same Mistake with yours, Quingentesim

octogesimo quinto for 485; the next Page has th

Aspiration Han. for Annibale and the Numbers i

Words at length Sestercios Nongentes for your DCCCI

I cannot but admire your Judgment and Dexte

rity in Computation, and the good Use you hav

made of some rare Treatises, De Re Nummari

that I have not had the Opportunity so much a

to see; particularly that which the Bishop of Lon

don bought for you in Holland; and earnestly de

Sir
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 A R G. P U B. (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 $\mathregular{V}$.) to be a Quinarius of later Age than the preceding.

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 uncials 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 Ducasus.
The Consular Denarii in the Ducatus Leodiumis.

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An Aureus of Trajan.

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Two Denarii of His.
HERE is fresh Work for your excellent com-
prizing Talent; I do again repeat my Request,
that you would compleat your judicious Obser-
vations, 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 en-
quire 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 Vicares 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 *Thuresby's* famous Manuscript,
(recommended in *Bishop Godwin*), from the Original
in the *Register-Office at York*, and a brief Glof-
tery 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 Haftings*,
and the voluntary Subscriptions of several Gentle-
men, 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 *High Hoyland*) calls me off, and has
brought me an acceptable Present of a Transcript
of *Domesday Book*, as far as relates to *Ibert de Lacy's
Estate in Yorkshire*, containing four Sheets.

AND yet I can hardly conclude without beg-
ging 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

*Re-
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 Wilkinson, 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 bow 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 ½ 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:
De Re Nummaria.

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 size, and not sometimes bigger and sometimes less, contrary to what is suppos'd 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, Ruft, or the ill Management of unartificial Endeavourers to cleanse, or make it bright and band-

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.

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<td>27 }</td>
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<td>67 37</td>
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<td>79 53 1/2</td>
<td>6 0 1/2</td>
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<tr>
<td>73 43 1/2 and therefore wants Grains 18 1/2, and much want by Ruft or otherwise more than 2 d. 1/2, or so much short of 8 d. which is no Wonder, since possibly it was coined upwards of 2000 Years ago, and not leas than 17 or 1800 at least.</td>
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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 Second

ANSWER

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,

OURS 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.
Several LETTERS

Ducatus Leodiensis,

Page  No  Dw.  Grains.
276  4   9   29  This seems to have been clip'd.
5    10  10  ½ This Stater is entire.
8    4   11  This I presume is a Drachma.
9    7   13  ½ Vide infra.
10   4   11

In No. 9. the Printer has missed a whole Line, viz. this by AN on each Side X, and E Y below, I mistook for ANCLATUM, (Albanorum Colonia) 'till a learned Gentleman informed me, that this is the Monogramme for AXALON, &c. as in Page 276. No. 9. See the Place.

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Pen. weig.</th>
<th>Grains</th>
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<tr>
<td>1</td>
<td>4</td>
<td>7 ½ More than an ounce.</td>
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<tr>
<td>2</td>
<td>3</td>
<td>21 ½ Ounce (read one ounce).</td>
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<tr>
<td>3</td>
<td>7</td>
<td>5 ½ four Dw's. 7</td>
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<tr>
<td>4</td>
<td>2</td>
<td>18 ½ Grains, ½.</td>
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<tr>
<td>5</td>
<td>7</td>
<td>17</td>
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<td>6</td>
<td>3</td>
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</table>

The vastly different Weights of the last two, manifest a great Distance of Time in their Mintage and Currency: 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 Romano.
De Re Nummariarum.

A 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 Charters, and am told he has been very just in acknowledging the Favour.

I either 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 left 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,

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.
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 2.45 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
supposed Athenian Ounce, or eight Drachmæ, 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 Drachmæ, 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 ¼ Grains, wants of its Weight 16 ¼ Grains, which amounts not to above 2 d. ¼ 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.

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 Oboi, six of which were contained in an
Several LETTERS

an Attick Drachma; or if it were an Italic Coin, it does not much exceed their Quinarius, to which Country you first intitled 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 AXAION—

AN, may be the Monogram for AXAION, 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 E Y below, I mistook, for all these Letters AN X A N, 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 AXAION, 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 conimunicated 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 Ases, that we ever read of, does require, for the Ases, even after the Papyrus 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 ½ Grains, which amounts but in all to 103 ½ 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 Parr 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 Wastage; 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 undesignedly 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 Panick War, and in the Time of Q. Fabius Maximus’s Dictatorship A. U. R. 536, and upon this Supposition ought to weigh no more than barely 219 Grains, of which this weighing 213 ½ Grains, has lost no more by Rust and Time, than barely 5 ½ Grains in 1937 Years since its Coinage.

No. 1. In making my Observations upon this Roman AS, I had not your Ducat. Lead. 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 ½ 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 No-
tice of, the Numbers preceding might amount to; and tho' this was my own great Error, yet the Occasion 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 A$5, No. 1. weighs 1 Ounce, 4 Penny Weights, 7 ½ 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 Ruff, 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. 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 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 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 ½ 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, oravoirdupois Ounce, one of which Ounces
Ounces amounts to 480 Grains, and the other to 438 only. Though I casually avoided that Error, 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 ½ Grains to the Quarter Ounce Roman, the whole weight you give me in, when put together, amounts to 583 ½ 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 ½ Grains of it's full Complement, if it were coined for a 2 Ounce AS, brought down to that Weight in the first Punic 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 makes mention of, viz.

From 12 Ounce Asses, to Asses of half a Pound, collected from No. 5, or Stips Uncialis, or

3dly, To Asses of 2 Ounces Weight, mentioned by Pliny.

4thly, This of yours of an Ounce and half (if it were a full AS)

5thly, The Asses made in Q. Fabius Maximus's Dictatorship, of

6thly, Those made after the Lex Papyriana of half an Ounce

Ounces.

6

2

1 ½

1

0 ½

But
Several LETTERS

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

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, while
while 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 47 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 66¼ 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 uncials, as you stile it, 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 18½ 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 Ass ponderalis; and the second, Ass dividens, the Ass ponderalis amongst them always consisted of 438 Grains, neither more nor less, and continues to at Rome to this very Day, as Villapondus, and others inform us: But the Ass 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 Ass, and its Parts, when divided, were called by the very same Names, that the Parts of the Primitive Ass librales was, descending from Deunx to Dextrans, Dodrans, Bes, Septunx, Semis, Quincunx, Triens, Quadrans, Sextans, and Uncia. Thus an old Roman Lady dividing amongst her Paramounts 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 expos'd by the Satyrist, Juvenal, Sat. i & 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 the they did thus apply the Ass, 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 Asse, or of the Whole, when of a third, or fourth Part, that Legatee was but Heres ex triente, or ex quadrante: So like wise did they apply the same Names, or Parts, to their Coins, were they greater, or were they less: Thus the Ass dividens of an Ass librales, was Uncia pon-
De Re Nummaria.

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 Ruff, and Time and Cleansing may have occasion ed 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 at 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 Decus s, and it may be Centusses, called Æis 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 Bras were not in a fit Figure, ut eas in cellis sparent; 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 Bras, 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 pa. 8 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 applied to the Uncia of the great-
est Aes, 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 smallesft Size by the Papyrian Law, and should weigh 109 ½ 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 Perfon 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 left his Lady, and was not at the Vifita-
tion this Spring.—You own that in the Words or Letters AE D N A A I A R G, interpreted thus, AEificatio navium a Romanà gente: The V in Navi 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 whe-
ther 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 Mo-
ment with me, if it were a Semis coined in the first Punic War (and there was no such AEifica-
tio
Several LETTERS

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; may, 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 Ass, as this Interpretation supposes it to be.

Pax. 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 Hypothetis 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 Mulcts 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 Common-Wealth was turned into a Monarchy: I have not Time to state this Matter aright, but as far as I remember, Budens 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 10000 Asses only; but if we follow Pliny, or Dionysius Halicarnassius'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 vitâ 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 10000 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 Num-
ber of Asses, that made the Sum Suetonius and Di-
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 Careless-
ness 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 al-
so, 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 sup-
press 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 Pur-
pose, that it might give you Occasion to desire
the Weight of the Aurei found in the Questor's
Chest, sometime ago in Italy; but might I be to
bold either with him or you, to Trespass upon your
other Business, I should desire the Weight of all
Silver or Gold Coins, that are of a different Weight,
coined before Julius Caesar's Time; but especially
of the Gold Staters or Aureus's.

As to the Aurei, or Solidi, coined since, I am
almost satisfied, what they were from a large Num-
ber of them, with their exact Weight in Grains
published by Mr. Greaves, in his Treatise, De Do-
nario Romano, Page 103: And here having men-
ned Mr. Greaves, I must acquaint you, that upon shewing Mr. Obadiah 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 Sestunx, Pag. 4. post Med. Pag. he writes * of an AS, which

* The Author not being able to recollect what he means by the nine Parts of an AS, thought he could not make a better amend 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 Asses were again lessened, and the AS was made of the Weight of one Ounce, and after a while by the Papirian Law of half an Ounce: And of these they coined not only Ounces, but halves, $\frac{1}{2}$, for the greater Ease of the People, as appears by the Marks, which we see upon the Consular Bras Money, (tho' this Money be now found rarely) amongst which was the Quadrans radix, 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 left behind 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 109$\frac{1}{2}$ Grains, one Farthing; the Triens 73 Grains better than half a Farthing; the Quadrans 54$\frac{1}{4}$, half a Farthing exactly; the Sextans 36$\frac{1}{2}$ Grains,
which I think he Mistakes for \( \frac{1}{2} \), \( \frac{1}{4} \), 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.

I think a great Part of his 9th Section, Pag. 11. 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 a least, or equal to the Hexasma, which he distinguishes from them, and calls two Drachma's; and then says a Stater was 4 Drachmae, which is not true of the Gold Staters, but of the Silver Staters only. Next he says a Talent was equal to 10000 Drachmae, which is a most inexcusable Mistake; for all Authors agree, that the Attick Talent, which was the most common of all Talents,

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the 4th Part of a Farthing; the Ounce, or 12th Part of such an Ounce if any such were ever coined; 16 1\(\frac{1}{2}\) the 8th Part of a Farthing, and the half of such a 12th Part, 8 Grains \(\frac{1}{2}\). As far as I understand Monsieur Eisenschmid, 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 these Doubles did within my Memory pass for our Penny; but in the French and Scotch Accounts for 12 Shillings, I have rectified the Method which Mr. Walker placed them in, for the Semis, Triens, Quadrans, Sextans, Uncia, and Semuncia, 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.
De Re Nummaria.

Talents, consisted but of 6000 Drachma, and the Learned affirm the same of all Talents whatsoever, but with this Difference; that as their Drachma 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 Drachmae of Corinth and Aegina, being unequal to the Attic, 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 Drachma, I meant it of the great Talents, which were Sums, and not Coins; for Festus, a Roman Grammarians, 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 Victoriatus or Quinarius Romanus.

This Book of Festus is very imperfect, and more than half of it fill'd up with Chalms 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 Drachma, 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
Several LETTERS

used that Term at all, 'till they were become Subjects to the Romans. He also in the same 5th Page, falsely reckons 5 s. for 5 s. 2 d. to the Iron Ounce; and when he compares that with the Roman, he is mistaken in the Numbers, and says that contains 5246; when it's laid by other Author and that truly, to contain 5256; and makes the Difference of the Ounces to be 514, when it ought to be but 504.

In the same 5th Page, at the Bottom, he tells us, that an Aureus, or Denarius Aureus, for so was also called, weighed ordinarily two Denarii of Silver. Gronovius will not allow that Denominati

on of Denarius Aureus, or that it was styed by the Romans; tho' the Latin Poet Plantus, stiles the Philippick Aureus fo; 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 Caesars. 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 Caesar'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 5256 Grains, by the Number of Grains in the Aurei above recited. Thus much concerning Mr. Walker, whom I find (by com-
The Aurei of Julius Cæsar, as I learn from Mr. Greaves, were
Under Augustus there are three of 119,
and one of 118
In Tiberius's Time there is one of 118
another of
Under Nero the greatest is 116 Grains, and the least
Otto 108 ½ — Vitellius
Vespasian, the greatest 114 ½, the least
III, IIII, and
Titus Vespasian 109 ½ — Domitian
112 and
Nerva 111 ½, Trajan 110 ½, another
put left
Antonius Pius, 119 ½ — Aurelius Vener
117 — Marcus Comm. Ant.
Probus Imperator, 106, Gallienus 72 ½
Maximianus
Carinus 72 ½, Constantinus Max.
Aug.

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 unadvisedly 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 Vetrica, ch. 13. Pa. 345; of his 4to Ed. in these Words, speaking of the Alteration he supposes, and Charges Constantine with, He res novae in signata pecunia Romana, tunc sunt, prorsus ut decent non alium quam Constantinum, qui ut ceremonia & religiones pie probeq, sine controversia, ita aetemorum demmi militia, institutum, quaedam dubium an salutariter omnia, certe collide & abrupte commutavit; adeo ut tam cognomi suo parem se credidisse videatur, si nihil reliquisset quale acceperat. Quem impetum vix, Deus aspirat 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 Caesares 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 Ant. Paulinus & Caian,
Caian. 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 coiti septem solidos quaternorum scrupulorum nostris vultibus figura-
tos adpendat pro singulis uncis; Quatuordecim pro dua-
bus [uncis]: juxta hanc formam omnem summam de-
biti inlaturus; eadem ratione servanda, et si materiam
quis inferat ut solidos dedisse videatur. Aurum vero quod
inferius aequa lance, & libramentis paribus suscipiat,
silicet ut duobus digitis summitas lini retineatur tres
reliqui liberi ad susceptorem emineant, nec pondera de-
primant, nullo examinis libramento servato, nec aequis ac
paribus suspensfo statore momentis, &c. P. P. XIII. Kal.
Aug. Paulino & Juliano Cons'.

It is manifest that in this Law for _Sequenti_ thou'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 Mi-
ustake, but common to _Gronovius_, with all
other Authors I have met with, that it is an Hard-
ship to the Subjects, and gain to the Prince, to
leffen 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 losses by it every Year after: And it is noted

by
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 loofer 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 endeavoring 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 inferitur] which provides as follows.

Imp. Arcadio & Honorio, Conf. Caesario orient. & Attico occidentis. [viz. A. Chrsi 339. al's 337] Jubemus ut pro Argenti summa quam quis thesauris fuerit talaturus, inferendi auri accipiat facultatem: Ita ut pra singulis libris argenti quinque Solidos inferat. Dat. XI Kalend. Marii Constantinopoli, Caesario & 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. Chrsi 339, 'till the Codex Justinianus was publish'd, which falls upon the Ides of April Decio 5to Consul. But Helvius does not furnish us with this Consul; but says, the Codex was published A. Chrsi 531. But Dr. Duck, in his Book, De & Usu Authoritate Juris Civilis, pag. 15. says they were twice publish'd, A. Regni 2do. in haste, and had a Review, or Editio repetita, A. regni sexto, which falls in with A. Chrsi 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 Basilii, 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
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 priz'd than depreciated by Gronovius in the Manner he has done. Before I go further I must Note, that the 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 ?; 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 Nummariae, 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. 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 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 Sir,

your most obliged,

and faithful Friend

and Servant

William Smith.

F 3

Wri-
Writing to Mr. Anstis in great haste 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. 3.) 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. 7, at an extraordinary Price, for its extraordinary Rarity, and upon which so great and unexpected a Discovery depends.

To

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* This Error could not be easily altered, without changing the Page, and therefore the Author suffer’d it to pass uncorrected.
Pag. 17. To shew the unreasonable-ness of Gronovius's Reflections upon Constantine the Great, for lessening the Aurei, or advancing the Value of Gold, I have made the following Supposi-
tions, 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. ¼.

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. ¼.

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 ½ Scruples, and 1 Pound of Gold will amount to 16 ½ of Silver, this being an Advance above what Constantine raised it to, is

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Several LETTERS

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

LETTER

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

In 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 Sesterii vicenis quod efficit ratione Sesteriorum qui tunc erat H. S. DCCCC. This plainly shews that the Sesterii, four of which make a Denarius, were vastly larger than 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
Several LETTERS

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 Punic War comprised, or contained within the Number of DCCC 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, \(6\frac{1}{4}\) 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 Punic 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 Sesterces 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-
De Re Nummaria.

75

...phd by 900, makes 105 English Pounds; but of the Roman Pound, consisting of 56 Shillings and better, about 37 1/2; which would infer a far greater disproportion between Gold and Silver, than 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 Strips Uncialis, or) an Uncia, of 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 4 s. 8 d. a Roman Ounce, the Sesterces ought to be worth 1 s. 2 d. Now Multiply as before 900 Sesterces by 14 d. the Sum will exactly rise to 52 l. 10 s. English; which being again divided by 56 Shillings, (the Roman Pound) will give Quotient of 18 l. 12 s.

SIR,

I remain your humble Servant

William Smith.

SIR,

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 £9 11s. 6d. made the Value of Gold and Silver to be as one to 18 ½s. whereas, most Authors reckon it no higher, when first coined, than as one to 15. Therefore I have since tried, and find that instead of reckoning 14d. to the Sesterce reckon’d 11d. it fails no higher, the 14 ½d. but multiplying 900 by 12d. the Sum amounted to 10,800 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. 5s. which hating 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 20 s. 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 62 s. 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 which I answer, that there is no Likelihood, that they that bad 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, Chifleet, 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 æ signatum Senatores Cratina 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 Eifchenchmidt’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 7 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 subjoined, and principally for the Sake of what is here repeated.

Leeds,

Reverend Sir,

OU have very much obliged me by your last instructive and learned Epistle, particularly your extract 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 necessfay, least 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 revive 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 Gracian Silver and the Roman Brass Monies before the Imperial; so I shall use my Interest with my Friends in the South, especialy 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 Reppondon 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 couch'd betwixt the A and I, in N N I. (I think there is a Mistake in the like aforesaid.) 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.

Postscript.

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, Anna
1701, what the celebrated Earl of Pembroke ac-
quainted me with, when he shewed me his invalu-
able Collection of Medals, amongst which was a
Roman AS of a Pound weight, he has since pro-
cured one of five Pound Weight, as I remember,
(but I am not yet come at that Volume in the Re-
view of my Diary). His Lordship shewed me al-
so one of eight Ounces, which he said their own
Historians are silent of. They were afterwards re-
duced to two Ounces, and in Conclusion to one
Ounce, and at last to half an Ounce. The Ref
relates chiefly to the Inscriptions upon the Bra-
Monies; but as to the Silver Denarii, his Excel-
ency shewed me not only Variety of the single
ones, with the Quinarius's; but some double De-
narii, and the double of them again, or Silver Ma-
dations, 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 a-
bove 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 cannot be positive how this Mistake in Mr. Tho-nsby'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.
Meltonby, Wednesday Afternoon, July 25th, 1722.

Worthy Sir,

When I writ to you last, it was chiefly to case 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 Drachmae, 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 repose 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.
De Re Nummaria.

900. H. S. which most former Authors thought was a gross Mistake, and should have been read $760; 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 Virtue of the Expression in Pliny, Ratione Sesteriorum qui tunc erant: Because that Gold was not coined, as Pliny writes, till 62 Years after Silver, and Silver not being coined till A. 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 $760 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. "Urbis 546, (tho' Pliny, in another Place, saith "it was, and it is more probable it should be on- "ly XII A. Urbis 496.) they began to stamp "Gold." But he neither cites the Place, nor can I upon the nicest Search meet with it.

Mr. Brevewood, in his Book De ponderibus & pretios veterum nummorum, p. 32, says thus, Aurum, demique signatum Roma primum fuit. A. LXII. (nam "sic repens debet) post percussum argentiunum; which im-
plies, 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 hotomen, who treating upon that Pass-
Several LETTERS

age of Pliny, lib. 33. c. 3. tells us, p. 338. That he conceives the Reading LXII, to be falsely 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 at. Signatum omne Senatores castrinio die in publicum conferamus, et terum omne aurum, argentum at. Signatum ad Trionofios menfiorios extemplo deferamus nullo ante Senatus consulto facto, which was done accordingly. Now, though this happen'd but 3 or 4 Years before, the Annun Livis, 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 Bras Money, and brought it to the lowest Asses that ever were; that then, and not before, they should begin to coin Gold; or Pliny taking of the H. S. qui tunc temporis exstant, when both the first and last Value of the Sexti were all over, before this annum LXII ever commenced, or came in Pliny 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 Caesarionis, which are now usually met with are found to carry, is borrowed from Aristotele, Diod. Siculas & Pollus, 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 Libra, or Pounds of Bras; and that these ten Libra in Silver were valued at a Corinthian, or Egean Obolus, and that 6 of these ten Oboli made
or were equal to ten Attick Oboli: This is the lowest Computation, as Salmasus has adjusted it, lib. 2. de usuuris, pag. 247. So that a Decalitron Silium 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 hast, 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. Eilenfchmid's Book De Ponderibus, printed at Strasbourg, Aº 1708, who gives several Different Weights of Asses, almost from 12 Ounces to half an Ounce: But I have now left, 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 is 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 myself have formerly written or collected.


A LET-
A LETTER
To (Dr. George Hooper) Bishop of Bath and Wells.

December 3, 1729.

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.
Severall LETTERS

1st, 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. Obadiah 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 (vulgarily, 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 resort to Convocation, as ultimate Visitors) gained me admittance to the Perusal of all the University Archives in Turre Scolarum & museis Aslinolanis & Wodiani, 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. 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 Classicks, which Defect I have, since my Removal to this Place, endeavoured at my Leisure to supply; and have gathered a Collection of Adversariorum 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 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 Archibishop 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 C's, and M's, 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,
De Re Nummaria.

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 Villapandus (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. Eisenfchmid'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 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 of 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. Eisenfchmid'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 mad afterwards.

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

The first, concerning your Lordship's stating the Eubean Talent, as equal to the Attic: The second 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 Hypothetical, it behove me altogether to dissent from the latter.

And first, 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 relieve upon it. Your Lordship having given us three different Proportions borrowed from three noted Historians: Xenophon assigning the Difference to be 1, Herodotus to 1, and Herodotus to 1, 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. Eisenstädt's of the Attick Talent: he as I take it, making it equal to 225 English Pounds; which Lordship sometimes assigning it at 220. with a Fraction, as in Page 62, and in another Place, that, or the Roman Talent at 202. with a lesser Fraction, But I find Dr. Bernard varies from himself, writing thus, pag. 174. No. 88. talenter Babylonicum & Euboicum 70 mine Euboicae, 72 mine Atticae: 7200 drachmae Atticae; But Pag. 185. No. 62. Talenter Euboicum 7000 denarii, 4500 Christophori Asis, Festus Corrector. 1. pondo 72 1/2; which Passages I think irreconcilable; for 7000 Denarii 1/2, make 8 Roman Pounds and more; if it be meant of any other Pounds, 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 224.7.

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 Babylonitis, 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. allowed to an Attick Talent, which is near 10. at least more than either Dr. Hakewell, or Bishop Godwin computes that at; and which likewise, for the greater Eas of reckoning without Fractions, reduces the Roman Denarii to 8 d. and the Septerces to 2 d. of our Mon-
ney, and makes my Computation to fall in with
Budens, tho' calculated from different Ounces of
Pounds, (his from the Troy Weight, and mine from
the ancient Roman) three of his Aurei, (by which
most Foreigners that have writ De Re Nummaria
adjust the Money they mention) fall in exactly
and concur with our English Pound now current
amongst us. According therefore to Herodotus's
Proportions, or as I should have rather said, accord-
ing to Xenophon's, I multiplied the 7600 Babylon-
ian Talents by 250l. and the Quotient came to
1900000 l. which divided by Herodotus's first Num-
ber of Euboic Talents, viz. 9540 gave to each Tal-
ent near 200 l. viz. 199 l. 14s. 4d.; But omitting the
Fractions, which I know not well how to manage, I
multiplied the 4680 Euboic Talents (that arose
from the Gold multiplied by 13, a certain Sum)
by 200 l. I found the Quotient to be 936000 l.
which joined to the foregoing Sum 1900000 l.
made 2836000 l. and dividing this Total by Her-
odotus's Total of 14560 Euboic Talents, I found they
rose no higher each than 194 l. 14s. 4d.

But computing by a Babylonian Talent of a lef-
ter Size, viz. 3, or at 234 l. 6s. 8d. I found the
Total of 7600 Talents to arise no higher than
1780933, which divided as before, gave only a
Quotient of 186 l. 14s. 4d., by which Quotient, omit-
ting the Fractions, multiplying the 4680 Euboic
Talents, that Multiplication; with the next pre-
ceeding, came to 2651413 l. which divided by He-
rodotus's Total 14560, gave but 182 l. 14s. 4d.
FINDING therefore that neither of these Cal-
culations made the Value of the Euboic Talents a-
gree, the first Quotient with the second, I cast a-
bout to find whence these Differences arose; and
at last discovered that the 9540 Euboic Talents, join-
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 98033 3 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 multipling 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 Error, as I think, overlooked by Budens, but afterward, as I since find, discovered by Agricola, pag. 296. 1. 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. ½. Coverruvias (as published amongst other Writers, by Renerus Budelins, with his own two Books on this Subject) at 410 (1591, pag. 622) at an Attick Talent, wanting three Mine and ½ of a 4th, about 189 l. 13 s. 4 d. Agricola, p. 296, computes it at 56 Mine Attica and ½ of a Mine, 188 l. 13 s. 4 d. Barth Be- sorinus, a Professor at Lucà, printed there in 8vo. 1711, and reprinted at Leipzig, Aö. 1714, gives it to 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. Hermelius, a German Professor, had done; and that more knowingly about a Hundred Years before, viz. Auguste Vindel: An. 1606.

But I chiefly relieve on the Account borrowed from Festus, in the several Words Euboicum and Talentum; in the last he says, A Rhodian, or Cisiphorum 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 Cisiphorum, which give exactly to such a Talent 1871. 10s. 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 between 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 Melsonby, your Lordship's great admirer, and infinitely obliged,

Richmond and Darlington, Decem. 3d. 1723.

If your Lordship favours me with an Answer, it comes safest and speedyest, if directed to me at Melsonby, near Darlington, in the County of Durham.

William Smith.
Some Errors, or Omissions not mentioned in his Lordship's Errata. P. 111. l. 14. I think 45 should be 55. p. 124. l. 6. after Lib. 22. add Cap. 23. p. 125. l. 21. after observed, add Lib. 1. Cap. 4. p. 127. l. 15. for Hostilius Tullius, T. 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: 23. l. 10. a Part, the Chap. before §. 1 is omitted. p. 151, for 575. r. 575. p. 305, says, two Chœnixs were worth 30 Oboli; and the next Page says, one Chœnix was worth 3 Attick Drams, which if true, it would make 2 Chœnixs be worth 36 Oboli. De hoc ideo Quere.
Reverend Sir,

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 same he 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
De Re Nummaria.

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 SIR,

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

Your most Obedient

Humble Servant.

T. Westley.

H 2
Melsonby, 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 disintabled 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 been twixt 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 Drachmae. 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 then 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 myself mistaken, and that so vauntly, 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 50000 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. |jectantibus non obscure Gallis bau magnà mercede se adduci posse ut obfadionem 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 Gronovius; and eminent Hardwin, whose human Learning I admire, but not so much their Logick: For, in their Disputes they seem to contend Palma expansa, but not pagno, 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 Bræs 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 lay 17½4, 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 Bræs, and the Product will be 14280 Roman Pounds of Bræs, which, according to my former Computations of the Value of Bræs, 'twill rise no higher than 714 l. English, a contemplable Price; and to borrow from Livy loco citato, ch. 48. Pretium populi gentibus mov 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 Bræs by 60 Mine, 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 foregoing 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 Years 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 Pome- 
tia 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. 1. 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 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 word, to be equal to two Pounds; in this diversity of Opinions I know not well where to fix it, if Panzerollus, Savotus and Gassendus guess right, it were fitter to fix it at an Ounce weight; But if Mr. Eisenschmid's Observations (as I doubt not but it is) be true, in all likelihood, Pliny is mistaken, who makes the Fall of the Añes to be from a Pound to two Ounces; whereas by the Fall of Añes 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. Harduin, 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 & urbiun illustrati: He has reprinted it Page 539, under the general Title of de Re Nummaria: If his Notes and 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 Añes was reduced to one Ounce, and the Number increased to
16 Asses, how the Common Wealth gained half, 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 Se-
terces to each Scruple, computing as the Sesterces were current 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, whilst 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 myself

Your Lordship's

most Faithful, and

Obedient Servant,

to Command,

William Smith.

Not knowing what Title to give to Mr. West-
ley I have made bold to enclose it under your Lord-
ship's Cover, which will save the 8d. Postage; I had
had forgot when I was speaking of the eminent Mr. Eisenstombid 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 styles 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 oblatio argumento (except he meant, as the Words will bear) might have writ, unico oblatio argumento, to wit, that the Greek Historians understood it so.
A Copy of a

LETTER

To Mr. Westley.

Melfonby, Jan. 28. 1725.

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 rejoice 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-
Several LETTERS

fer it to come as it is, because I have not Time to
transcribe it, and hope the Meaning may be gueß-
fed at, tho' the Expressions are not so much as Gram-
matical; 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. Tho-
mas 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 ex-
amined 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 Difficul-
ty in Livy, lib. x. c. 46.

I shall transcribe the Words as they are in the
printed Variorum, because they are short, and Gro-
nownous's Comment least you should not have that
Edition by you, the Words are (speaking of a Vi-
tory against the Samnites,) Aesis gravis. transuerat
vicies centes millies & quingenta triginta millia; id æ
redactum ex captivis dicebatur. Argenti quod captum
ex urbis erat P. M. cccxxx omne æ argentumq; in
aerarium Conditum.

The Notes are thus ——— Dein summa est immansis,
& tunc nullo ex triumpho speranda: ut enim decem li-
bras demus denario, qui paulo post percussus est, &
transmitamus quod excurrit: vicies centes millies cente-
na millia æris, efficient quadragies centes millies Setser-
cium,
De Re Nummaria.

ium, decies centes 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 separatum; or if together, whether they be to be thus expressed in Figures 200000000 (leaving out the 33000) and if so, whether instead of quadrages, Gronovius should not have writ octogies; 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, 1728

(or Brother)

William Smith.

I know not whether my Lord has observed in Mr. Eisenschmid's Tables, a small Errouer; 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 Necessities in Aristotle's Account; but remember that Dr. Bentley has discovered an Error, but does not correct it: The Error is in reckoning 12 Chalci for a larger Sum; where instead of 12, should be read 13 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. Welfly, 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 possibly 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 25th 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 dayly 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.
APPENDIX
TO THE
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 Afe) 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 Gronovious: 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 Clasick Authors) between the Words Sesserius, and Sessercii, in the Masculine Gender, and Sessercia 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 Critics: I shall mention no more, than the unimitable Gronovious, in all Parts of human Learning, abating that Helena * of his, which he has embraced and borrow'd, (as that Beauty was, by severa Lovers)

* An Expression much used by Gronovious, against Abramus.
Lovers). I mean, that the Roman Denarii were never greater than 7 of 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. Abramsus, who differs from him; not by strenuous Reasons against it; but rather by endeavouring to ridicule it.

Now tho' Abramsus 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 persuade 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 alluding 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 Inconveniency 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 Abramsus, 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. Parisibus MDCXXXI.

Ex Vol. 2do, §
Pag. 282. § Tabula Progressionis per Asicm.

1 A.S.
2½ Sesterceius seve nummus.
10 Denarius.
25 Denarius nummus.
100 Centussis.
250 Aureus.
1000 Pondo.
2500 Sesterceium.
10000 Pondo Aurei.
25000 Sesterceium Aurei.

Tabula Progressionis per Sesterceos.

1 Sesterceius seve nummus.
4 Denarius.
10 Denarius nummus.
40 Centussis seve Argenteus.
100 Aureus.
400 Pondo.
1000 Sesterceium.
4000 Pondo Aurei.
10000 Sesterceium Aurei.
40000 Censuus Equestris.
100000 Decies.

Hc
He gives the like Table for Talents.

<table>
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<th>TALENTUM</th>
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<tr>
<td>6 Pondo Auri.</td>
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<tr>
<td>24 Sestercia.</td>
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<td>60 Pondo.</td>
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<tr>
<td>240 Aurei.</td>
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<tr>
<td>600 Centusses.</td>
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<tr>
<td>2400 Denarii nummi</td>
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<tr>
<td>6000 Denarii.</td>
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<tr>
<td>24000 Sestercii.</td>
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<td>60000 Asses.</td>
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Talentorum cum H. S. Collatorum Indiculus.

<table>
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<th>Pag. 290.</th>
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<tbody>
<tr>
<td>1 Talentum</td>
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<td>10 Talenta</td>
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<td>10000 ------</td>
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<td>24 Sestercia</td>
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<td>240 H. S.</td>
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<tr>
<td>1200 Sive vices &amp; quater H. S.</td>
</tr>
<tr>
<td>24000 Sive ducenties &amp; quadra-gies H. S.</td>
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<tr>
<td>240000 H. S. five his millies &amp; quadringenties.</td>
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</table>

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 Pag. 292. 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
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 paço ex singulis argenti uncis octoni Denarii, ferentur, & singuli Denarii Drachmam pendebunt, si justo pondere signentur, id est pondere per legem Papyriam constituto, Qua lege ut supra vidimus Semiclascia Asses facti, id est, ad vigesimam usque partem diminuti, adeo ut unusorum Denarioorum 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, Denariis quo primum tempore percussi sunt, quatuor & viginti Drachmas Atticas, id est, tres uncias Romanas, & invenirent quo tempore placuit Denarius pro decem libros aéris. Bello Punicico primo constitutum ut Asses sestantio pondere ferirentur, id est, ut duodecim superioris Denarii partibus decem decentis sunt, ut sse posterior duos tantum prioris duodecimas contineret, sextaque pars effet ad priorem illum comparatur. Ergo numnum Bello Punicico primo percussus, quatuor Drachmas peperdit. Bello Punicico secundo Quinto Fabio Maximo Dictatore ex sestantio factus est uncialis, id est, media parte diminutum est pondus Denarii, atq, adeo duo Drachmas pondere effecit. Mox lege Papyria seminuncia Asses facti, atq, ita Denarius ad drachmae pondus perduxitus est, captus, Drachmae Atticas pretio aësimari. Quo in pondere & aestimatione permanit, ut esset justum, nonaginta sex in libris signari. Quemadmodum libra Romana sex & nonaginta Drachmas Atticas continebat. Quia tamen mina Attica centum Drachmarum fuit, Romanis per modicum a justo Denarii pondere detraben tes, ut facillis monetam Romanam ad Atticam aestimationem revocarent, ex perunt ex Argenti libra centum Denarios signare, ut in singulas libras quatuor Denarios lucrò apponenter.
De Re Nummaria.

ponerent, magno emolumento Reipublicae, 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 Budaus and others imagine them to have been. And tho' as I have said, (in some of the preceding 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 Gravius, 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. cb. 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 Argenteus, ita ut scripulum voleret H. S. vicenis quod efficit in libris ratione H. S. qui tunc erant H. S. DCCCC. Post haec placuit XL. M. signari ex autri libris, paulatimq; principes imminuere pondus, imminuiffe Nero, I 3 ad XLV.
Several LETTERS

ad XLV. M. hic locus adeo difficiles visus est Budio, Atricola, Portio, Hotomano, Pancerollo, Mariana, Ciacconio, Villalpando, Scaligero, alisq; ut omnes dixerint vel olim locum esse corruptum vel si Janus & integer se cum not intelligere, illi qui locum hunc corruptum esse putarunt eumque emendare conatis sunt insignium lapsi sunt; non quod eruditione, quam summam librorum, desitutis essent; sed quod ad locum hunc interpretdandum accederent impares a numismatum & ponderum Antiquorum notis, qua si quis instructus sit, facilior sit, ut ego quidem puto, locum hunc intelligat, ne visus quidem litera mutatione facta.

Observandum igitur est ad hujus loci interpretationem Plinium duo Septuorium genera distinguere; eumque primo loco de Septuorium sui temporis quorum viginti valebant scripulum auri, quod nemo autem paulo ante memoratorum observavit; deinde vero de Assibus qui ante ipsius aestem in usu fuerunt, quod facile colligius ex verbis istis H. S. QU I TUNC ERANT, quorum DCCCC librum auri valebant; unde sequimur H. S. Plinio Antiquiores multo ponderatores fuisse, quam eos qui tempore Plinii in usu erant; secundum eum proportionem illorum quae viginti H. S. in scripulum Aurei computabant, in totam libram auri imputandii sunt 5760 H. S. Quod ad pondus illorum H. S. attinet, quorum 900 libram Aurei valere aquant, quinque unciam & sexaginta libram officinat; Aureum igitur bac proportione argenti quindecies valere excudebat. Quoniam autem 20 H. S. quindecim tantum scripulos habet 5 I X in XV ducantur emerget inde summa DCCCC. Tali igitur Septuorium pondere respondebat milliariis posteriorum temporum, quorum V. intidem unciam, & LX, libram officient.
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. current, 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 above said 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 Mileario, coined in after Times, there being five Pieces of that Sort of Money.
ney coined in an Ounce, and sixty in the Pounds. I was at the first posed to understand what he meant by the Word Miliaris; 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 Gronovius has given us a fuller Account in his 4th Book, de pecunia vetere. cap. 17. pag. 379.

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 $\frac{1}{10}$ 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. Thoresby, 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 alleging 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 Pancerolus (whom I have not had the Opportunity to consult) 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 englisht) 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 Terunitus 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 1/3 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 receiving their Money, made it thicker and broader,
Several LETTERS

er, so that there can be found no old Piece lighter than 12 Grains: And Varro confirms this Opinion, (who lived to Julius Cæsar's Time), and only Difficulties 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 Panzerollus 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 Charifcius the Grammariian in Proof thereof; which I shall pass by at present, and without more than naming Gaius, (who states the Weight of the 1st Denarius 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.

Dominius Fontenius, 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, Fontenius 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 Trime ad Quadrantem Unciae sum 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, Siquidem tamquam probatum admissionem Denarium Romanum aliquid quattuor quintas partes Unciae continua esse hic vocetur Denarium in supra adducto Plini loco capianum, ita ut indecima tales Denarii librum efficient, ex ratione proportionis manifestum sit 60 H. S. conficere pondus libra, bi 60 duetti in XV (quam eo tempore Argento ad argentum habebat) producunt summam CCC.

Mr thinks Savinus, in this Place doth seem a little to forget himself, for it was not 4 Denarii, or four Parts of 1 in an Ounce, that made a Denarius; but a Severe 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 (vele XV perinde est utrum ponas) non solum hic locus Plinii, sed etiam numismata que bodie reperiantur pro-
stant. Supra laudatus dominus Fontenæus possidet num-
num Aureum scrupuli pondus babentem, vel paulo mi-
minus (si nimimum scrupulo dentur XXI Grama, quod fa-
ciendum esse posse demonstrabo) in quo est numerus vi-
cenarius bis notis XX expressis, ab una parte signatus
est effigie Martis, ab altera representat Aquilam subje-
ta inscriptione Roma, qui nummus est natatis dignus.
Dupondius (i. e. ni fallor Du Pinne) in tractatu suo
de numismatibus fol. 50, nix memormia fallit, exhibet fi-
guram nummii Aurei qui Dracmæ antiquae pondus ba-
bet; & eodem signatus est charagmate quo scrupulus do-
mini Fontenæi nix quod loco duorum XX decussim im-
pressos; babet Characters V & X ad indicandum pro-
portionem Aurei ad Argentum que erat quinducupla; no-
tis enim bis significatur numerus Quindenarius, quamvis
litera V precedit literam X. Quoniam veteres in nu-
immatibus literas transposuerunt; nec litera V unquam
praestita fuit alteri literæ numerali, ut de valore ejus
aliquid detraberet; quamvis literæ I & X aliis notis
numeralibus eum in fines preponi soleant.

This Paragraph (from pag. 1218) is only design-
ed to shew, that there were Scruples of Gold, that
went for 20 Señores, or 3 s. 4 d. For a Scruple in
Silver is but about 2 d. ob. g. 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 Harduin'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, Hotomanaus, and others; which he thinks vary so very much from the Copy in Pliny, that he does not think them worthy a Refutation.

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

Pancerollius libro 1° variarum Latinorum Cap. 66 exigitmas prov H. S. XX scribendum esse XXV, idemque opinatur Aureos non plures XXIV in libra suisse, quam vis Plinius eo loco reperit Aureos nonquam pauiores ex XL auri libra signatos suisse. Praterea LXXV H. S. in libra argenti ponit, ut numero hoc ducito in duodecim (quam eo tempore proportionem Auri ad argentum esse vult) summam DCCCC H. S.
Several Letters

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 after 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 Sesterties, 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 Punic War, or Anno 149.

Now divide 5760 by 900, the product will be as I have afore observed, 6 2/3. 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.

It 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 1/2.

AND
AND Savotus tells us, Part. III. ch. 7. p. 1225 that in the Acts of Accompt for Money (or in the Exchequer, as the English style it,) Gold passed ther 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 acuain the Reader, with the Explication Mr. Hardwi gives of this Place; because it appears to me to be obscure and intricate; but he affords it as plain an evident. The Words he undertakes to explain are these;

Quod effectit in libras ratione H. S. qui tum erat H. S. DCCC. Hardwin de re monetaria. pa. 556.

Effectit, inquit, hoc major Auri aestimatione in libra Auri singulas. Republica luci sacret Septercios non gentos, eorum scilicet H. S. qui tum erant, hoc est anno (arbis) DXLVI, quia jam ab anno DXXXVI quaternis Assibus permutabantur, quod si nongentos H. S ejusmodi qui tum erant lucrata republca est; itiur H. S MCCCCXL lucratam esse necesse est eorum H. S. quis erant, hoc est qui duobus Assibus & semissem æsii maebantur; continentur enim hi 1440 in nongentis illis ita ut ne unus quidem aut deus aut superet. Quare quod nunc vicinis H. S. vulgaribus Assum scilicet duorum cum semissem quorum Septerciorum haberri ratio sola in quo vis pretio indicando ut diximus: Quod inquam vicini illis H. S. permutatum esse dicitur auri scribulum, quin denis antea necesse est fuisse taxatum, ut in singula scripula lucrata republica sit quinque H. S. in libras que scripula 288 continent H. S. 1440, in libras inquam auri infeci, quod in erario servabatur, quod quis interdum distrabebat ad vasa operaque publica ac privata. Nulli dunt enim tum nummi Aurei nisi fortasse peregrini tum ab externi. Quarel Livium anno 543 juuere patres deferri ad Triumviro mensarios Aurum Argentum & Æs omne; sed calatum sci.
licet, signatumque apud exteròs, nempe ut illud in belli sumptus impenderent.

I have inserted this long Paragraph, not because I understand it, but because I do not, and scarce believe any else can; for Monsieur Hardwicke 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 Seserces of 2 Pounds and ½ 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 up on this Exposition as little less than infallible, by the Encornium 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 Glarius, Hotomus, Budeus, Pancerollus, Villalpandus, Agricola, Snellius, Portius, Scaliger, and at length comes to Savonius, 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 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 Abra-
mus, (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 Abrams'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 Abrams 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 Pers-
sons, who agree with me in the Opinion, that the
Denarii, at first, were of a far greater Weight than Budaus and his Followers ascribe to them. I come now in the fifth Place to quote, out of a late Au-
thor of great Fame and Reputation, some Passages that seem to center in the same Opinion, tho' not openly owned, or publickly professed by him. The
Book is writ by Monsieur Gasp. Eisenblmus, a
Gentleman of Strasburg, intitled, De ponderibus &
menjuris 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 Sub-
ject:
I will not pretend to contradict 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 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. Eisenschmidt'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. Eisenschmidt'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 A$, 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. Eisenschmidt's Copy.
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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 Quadrans here mentioned, containing as 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 unciales mentioned in several Places in my two Letters to Mr. Thoresby.

The following Quotations out of Mr. Eisenbach, 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 Se fores, 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 Sesteria 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 Consular 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 Bras and Silver; for it is scarce credible, that one and the same kind of Silver Money should answer to a certain Proportion of Bras, to which shortly after, the twenty fourth part alone should be esteemed equal.

Sapor 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 Error 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 Pain's Table of uncertain Coins, with which Fulv. Ursinus has encreased his Roman Families, where it obtains the first Place,
Several LETTERS

Place; and the same is delineated by Molinet, out of the Library of St. Genevieve, Pa. 56, which he styles a double Demarius: 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 Gracia magna, Tabula XVIII. Gronovius opposes this Opinion of Savot, in his Book of Sestercies, 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 contrary"); 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 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. Eifenschmid 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 Consularis at eight French Shillings, and near an eighth part more, which I think in our Money is 8d. ½; and further tells us, this does nearly agree with Mr. Hardwin's Valuation also, saying, Praevit nobis in hoc valore statuendo R. P. Harduinus Soc. Jesu in dotisijinis ad Plinium notis passim.

Hanc ipsum veteris pecuniam Romanam estimandam modum, etiam si temporis, quo Asses adhuc liberales erant, applicare omnes, quicunque hactenus de bacre scripsissent etiam veste; and a little after giving some seeming Counatenance to such as were of that Opinion, he goes on and says, Page 138. At vero Scienium est Romanos tunc temporis ere quidem sic satis abundasse, non item argento, quod non minus ac ipsum aurum, gemmarum loco babebatur. Minime itaque mirare debemus immane argenti pretium supra æs, cum iisdem ad ipsum pecuniae flari primo cepit; septima enim unciae argenti portio (si quidem o tali pondere Denarii primum fuerit) decem æris libris equabatur, id est, una argenti pars 840 partibus æris. Unde nemo nisi plane iniquus censor negare poterit, pecuniae bujurmodi estimationem ex æro non argento esse instituendum; maximeque hic valere debet de eodem argento quod Ausoniis de auro prædicat.

Auro magnus honos auri pretium tamen est æs.

Sane non possunt non ridendos se fuisse qui aliter de bac re statuunt.

In this last Paragraph, Mr. Eifenschmid for fear of Mr. Savot's Fate, seems all along to mix Irony and
Several LETTERS

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 Bras; but with this Provifio, that this was the full Weight of a Denarius, at it's firft Coinage. Then he fays thus, "Bras was to give the Rate to Sil-
ver, and he must be laugh'd at that denies it;" then goes on in the following Manner.

Denarium scilicet communiter comparant cum Regali Hispanio, seu Julio Italicò, adeoque decimam ejus partem scilicet Assem libraèm cum Bajaco. Bonum factum! æquiparare Assem libraèm veteranum cum nummulo novello ejusdem metalli, qui vis decimam sextam alterius partem in ponderem habet, quas vero post tot exhaebitos mon tes, toties varius bodie Æs exiferet, quam olim primis post Romam conditam æculis fuerat. Cerò qui tunc centum millia æris possedit, totidem libras æris possidet, unde baud aliter ipsius divitiae sunt aestimandae quam ex æstimatione æris. Sed si vel maxime Æs pro norma pecuniae ponere velimus, difficultas obitorit in assignando vero ejus precio, comodissima tamen mibi videtur via, fi attendamus ad tempora, quibus Rome Æs semunciales facti sunt, eorumque sedecim uno Denario permutati. Hinc enim discimus, si sedecim Semuntie seu unciae octo æris valent octo solidos Turonicos, duodecim unciae seu libram integrum, id est, ipsum Assem æris gravis, duodecim solidos Turonicos valeturum. Ad bodiernam æris pretium proxime bæc accedunt, saltem in nosris regionibus; Ne vero quis exifit mat, nimum fieri à nobis, adducamus iterum prime clasfis consum à Servio Tullio institutum, nempe centum millia Æris, quod efficit 60000 libras Turonicas nostro calculo, sed aliorum 4000 tantum. Hic exclama-bunt
De Re Nummaria.

haut nonnulli, tantam summam nulli civium Romanorum tum temporis quadrare. At focus omnino apparat, cum male famillae illustres atque potentes Rome tunc reperientur, aliqua subinde ex circumjacetis populis, immo remoto, opibus valentes, illuc migrarent, quod ex historia non grave erit monstrare. Quin potius abjice nimis de potestia Romana judicare sensendi sunt, quipsummas privati civis divitias non ultra 4000 libras Turoni cas se extendisse afferrent.

In the foregoing 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 Hardain, he draws back a little, and fences himself with the following Words. Sed de his sum cui libert judiciun liberum esto, nobis propius fuisse sufficit. 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. Eischenhmid'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 this I can never sufficiently admire Mr. Eischenhmid'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 entered among the Sphalmata Corrigenda, and may be found in Pag. 145; where speaking of the 1200 Slaves restored to the Romans, which cost the Achians, the Donors, a hundred Talents, viz. 500 Drachms a Head.— It is now printed Subduetio calculo pro centum Talentis 600000 Denarii provenient 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 acribed by Livy, Pliny, Aulus Gallius, and Pomp. Festus, to the first Classis of the Roman Census; together with a Table, according to my Valuation of Sesflices, 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. Arbuthnot’s Tables of Weights, Measures, &c. at the end of these Miscellanies.

R E-
Had publish'd what I intended *De Re Nummaria* (had not the Operator delayed me) some time before Christmastide 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
Remarks on Dr. Arbuthnot's

was recommended to me by a Person of great Honour, who had heard of my Letters De Re Nummario, then in the Press. And being informed that there was a second Edition of it in the Atlantid 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 30s. Price, the Value of it daily encreasing; and which came not to my Hands till after the Beginning of Christmasts. Upon hearing the great Vogue it was in all over England, and inspecting some few Pages in it, I presently decreed, that all my Letters, and the Opinion I maintained in them, would either not be read at all, or condemned for the new Hypothesis I advanced in them, and this for two Reasons. First, Because my Notion had been formerly rejected by those eminent Criticks Gronovius and Harduin's. Secondly, Because Dr. Arbuthnot, both in his Book and Tables, had given a better Account of the Value of the Roman Denarius, than I had done in my Letters; which two Considerations would render them despicable and unfaileable; 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 Quaeres sent to Dr. Bate- man, now deceased, as I have given Notice at the End of that Letter, now published.
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 ANNAALS; 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, Hotamonus, Covernuvias, 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 myself to our English Authors, and in order to this, I first made enquiry after Bishop Tonshal'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 my
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 Errors, 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 Errors 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
Remarks on Dr. Arbuthnot's 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 fouly 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 Excerpt 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 Errors 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 Capitolium might be mistaken, and read Ep'lam & Catholica, for Cathedrales, 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 Capitol for Conventus, for according to the true Reading the Statutes, after omnibus, &c. is thus to be read, Nos prior, & Capitolium Ecclesiae Cathedrales Dunelm. I once
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I once threatened 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 Tonsy, 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 Galilmi Budaei de Ase excerpta, in qua priscar Latinorum & Graecorum supputatio ad Aetimationem pecuniae tum Gallica, tum Anglica 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 Tonsy, I examined what Account Bishop Cooper gave of the Roman Denarii.
Remarks on Dr. Arbuthnot's

as in his Dictionary, (the Name Septerius not being to be met with there) of which no more is said of the Denarius, 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 8vo. printed 1592, who 'tho' he speaks of the Sefterces, 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 conditions & 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, Otto censit Savilius fusisse Romanorum mille numnum; Thomas Thomasius addit nobilem, five sex Shillingos, Penningos sixty. The Former of these two comes not up to my reckoning of a Sefterce 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 Trens, 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 Nummariæ, writ by Edward Brevewood, Astronomy Professor at Gresham College, and published by his Nephew in 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 libras cunum, valuit proutque vetus ille Denarius 8 d. ob. c. cunum 

\[ \frac{1}{2} c. \] (I do not well understand what he Means by cunum 

\[ \frac{1}{2} c. \] 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. q, 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. 1677, with Dr. Barlow, Bishop...
Remarks on Dr. Arbuthnot's

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 Approval that there ought no Difference to be made betwixt *Sextertius* singular, and *Septercia* 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 *Groat* 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 *Groat*, each of four Penny Weight, were coined by Edward the 3d. before he lesenned his Coin, and then must answer, or be of the same Weight, with 12 d. of our present Money.

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

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

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

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

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 Allay of Bras, 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 1/2 d. in the 20 Year of Ed. 3. into 22 1/4 d. in his 27th into 25 d. 9 H. 5. into 30 d. 1 H. 6. into 37 1/4 d. 4 H. 6. into 30 d. 24 H. 6. 30 d. 5 Ed. 4. into 37 1/2 d. 49 of H. 6. being restored to the Crown 1470, at 37 1/4, 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 Gros, or great Piece. Mr. Eisenstheid, pa. 3d. says, a French Ounce contained 8 Groses, a Gros 3 Demiers, a Demier 24 Grains, and consequently the whole Ounce 576 Grains. Had I took Notice of this at first, and not despair'd, as

L 4

I did
Remarks on Dr. Arbuthnot's

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. Eisenheim had premised this at the End of his Preface, where he gives an Account of the several Sorts of Adults, 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 Angliae, Cap. 53.) has these Words, Quatuor solidi redditus (Parisienès) qui de pecunia nostra (Anglicana) osto 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 Solidi 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 nofer Denarius Scoticum solidum equiparat: Antiquus igitur tribus potior. Nam cum hodie quing solidæ caque supra ex una argenti uncia cuidantur, hoc est ultra 60 Denarios Tantundem olim argenti vigenti soliummodo exhibuit. I have mentioned this rather to divert my Reader, than to draw any Arguments from it.
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 Mofes 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. edidit altera Oxon. e Theatro, 1688; but the first Edition is in 1683. 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. $\frac{8}{4}$ d.; but in the next Page after it, he says, the Denarius communior & eximie consularis pellit $7 \frac{1}{4} cecuniola vonstae; fove 2 p. w. & 13 gr. five 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, Septertius priorum consulum seu vetus. Septertius, Dupondius & Semig, inquit Auruntius. Imo eximie nummus, aut nummus Septertiis. Quadrans enim Denarii argenti valebat in recenti Republica tres Semisses i.e. æris libras five Asses $2 \frac{1}{2} -- 3 -- \frac{1}{2}$ Æs Ærum seu semisæciius more Graco.

$\frac{1}{4}$ vittoriati, $\frac{1}{2}$ Denarii veteranis, $\frac{1}{2}$ vetus: aut $\frac{1}{2}$
Remarks on Dr. Arbuthnot's

Imperatorii, si Imperatorius fuerit. Valebant enim Sexertii antiqui Pictore Fabio Consule, seu grana nummaria Angliae 15 aut duo Penningi novi. Communes sequentium Consulum, ut grana 15½ aut 1, 937½ d. Liberian grana 15, aut 1, 837½ d. Et Vespasianici grana 13½, aut Penningum 1, 687½ d; qua rem ego Romanorum estimavi & constituui.

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 2d, but he after says, the more common Consular Denarii weigh'd fifteen Grains and a half. What is said of Fabius Pictor, whose Sexertes are valued at 16 Grains, raises the Denarii to above our present 8d. I had much ado to find this Person's Name after the Year of Rome 484, in Helvicius; but at last met with it in another Catalogue of Consuls, published at the End of the Pandects, 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 Drujas, that weighed 62½ Grains, which according to my Reckoning, amount to about 8d. qm. and better; but I know not who this Drujas 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 Description 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 Schoolmaster of Abington, five Miles from Oxford, who was the Author both of the Roman and Jewis Antiquities; the first of which were printed in the Year 1613, who in his 20th Page, of the 14th Edition, rates a Sesterce at 1 d. ob. q. q. and ten of them at 1 s. 6 ob. qnu. 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. 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 Brals, 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 laid by a very learned Person, will be apt to deceive young Beginners; tho' there is hardly any Thing here laid that is agreeable to Exact-
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nefs, 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 joyed also at the End of his Book, in Folio, Printed 1630. The Bishop's Calculation begins in these Words, *Unus Sestertius in masculino genere five unus Nummus valebat nostra moneta Anglicane 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 *Budæus* and *Alciato*, 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 lapsium sua Classe Agricolam, afferentem septenos Denarios aequales sua Clae aliqua quando octonis Aitici Drachmis, lapsus est Alciatus; id enim plane testimur Plinius affirmans, justum Denarii pondus esse cum octoginta quatuor Denarios in libra fregintur, quod si octoginta quatuor Denarios in duo denas uncias distributas, inveniuntur singulis uncis septenos Denarios exequari. At quomiam octo Drachme, Unciae, ut dixi aequales sunt, communi Mathematicorum axiomate fit, ut quae sunt eadem Unciae, sunt eadem inter se. Deinde si contendat Agricola deceptum sua Clae Alciatum exemptam, Denarii & Drachme idem*.
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idem omnino pondus fuisse, decipitur Agricola; namque id expresse, non obieter, aut aliud agens, testatur idem Plinius; professus primum, quoniam in mensuris quoque, ac ponderibus crebris Graecis nominibus usendum fuisse erat, interpretationem eorum se femel ex loco postorum,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 its Grandure, they kept their Coin to its ancient Weight; but after that the Romans became their Masters, they lefseased 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 Caesar at the soonest.

To shew the Mistake of those that think, that tho’ under Q. Fabius Maximus the Number of H. S. were changed from 2 and ½ to four; yet that Number continued not long; but return’d, as the Denarii
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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 anoth-
er Passage out of the same Author, and ch. p. 346;
where this Passage out of Vitruvius is taken, Nunc
Denarius sexdecim, victorius & Quinarius octo, Sé-
fertius quatuor Asses valet. Hoc ipsum tenet Mælianus
superioribus verbis subjiungens; nunc Denarius sexdecim,
Victorius & Quinarius octo, Septertius quatuor Asses
valet. Now that the Reader may give the more cre-
dit to this Quotation, we ought to consider at
what Time, or Age, this Vēl. Mælianus lived; and
that was about four hundred Years after the Den-
arius was encreased from 10 to 16 Asses, and the Se-
ptertius to 4 Asses also.

And Villalpandus having quoted that Passage in
Pliny, lib. 33. cap. 3. which has been so often al-
ready repeated in my Letters; Villalpandus
goes on with an Hæstenus Plinius. Tria bis Plinii
verbis continentur, quae cum erudissimis 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 paribus 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 differtis verbis
testamini sit, a gravissimis viris, quos attulimus, Den-
arium sexdecim Assibus permutari solitum; tamen asylum
quoddam invenit Budæus, quo confugeret, tantum
testium fidem abrogare contendens. Is vero sextus Pom-
peius Festus est, qui sic scribit: Sextantarii Asses in
yfu esse cæperunt ex eo tempore quo propter bellum Punicum secundum,
quod cum Hannibale gestum est, de-
creverunt patres, ut ex Assibus qui tunc erant librarri
ferrent Sextantarii, per quos cum solvi cæptum esset, &
populus
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populus eare 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, quod ad Asses attinet septennio tantummodo perdurasse sextantarios concederemus, Budæo, & Festo, iamen non propterea Denarios ad præevaam institutionem redisse concedendum effet; cum vel maxime Justiniani constitutione atque apud alios atque alios probatiissimos Scriptores Sestertium Assibus quatuor, Denarium sese cum æstimari legamus. The Margent for the Testimony of Justinian quotes Codicis liv. 8. tit. 14. leg. 37. where I find these Words, Verba superflua quæ in donationibus ponunt solabant seiliciet Sestertii, nummi unius, Assum quatuor, penitus Æsse reisienda 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 allledged: But Villalpandus goes on (without Naming any of his approved Authors) in this Manner, Neque bis obstanti Varro, Apuleius, Aruntius Pompeus qua scribentes Denarium Asses decem, Quinaria quinque, Sestertium duos & semissum valuisse; quoniam ut bene notat Ant. Augustinus, bi omnes scriptores præteriti temporis æstimationem expresserunt, & id, unde præeva eorum 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 Fantasy, 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 Fessus's Meaning is altogether Mistaken. For tho' Villalpandus has not recited all that, on which Budeus and others lay the greatest Stress, immediately after essicerentur, follows Septuennium quoque Annus est, ut priore numero, sed id non parmanifi in usu, nec amplius processit in majorem. Now change, but as we ought, Annus into Verro, and it is plain that what Fessus speaks of the Word Sextantarius, Budeus 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 Ostonarius, &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 Fessus 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 Alciate about his Asses Sextantarii, rejected by most Authors that agree with Pliny against Alciate; 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. Harwin Explication, if I had then remember'd it, and is brought in by Villalpandus against Alciate, as follows. In eo vero maximo alucentur Alciatus qui fudidt Plinius, Rempublicam videlicet dimidium suisse Lucretam, cum Unciales Asses fecit ex Sextantariis, & Denarios Sexdecim Ass—
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Affbus permutari mandavit. Veritati proprius accessit Budeæus, qui scopum penitus attigisset, fi de folis affibus locutus suisset Plinius, cum Rempublicam dixit dimidium Lucratam: Uncia enim dimidium Sextantis est; verum cum pariter numerasset Asses Unciales & Denarios Sexdecim assium factos, tunc ea verba adjunxit, plane significans utriusque monete permutatione, dimidium lucri obtigisse Republicae. Id quod in aere bene Collegit Budæus, in argento vero manifestum fiet, fi perpendamus Denarium tunc decem Asses valuisse cumque deinceps sexdecim permutari præcipueretur, in singulis Denariis sex Asses lucrabantur Reipublica qui excedunt mediatem Denum Assum. At quoniam militum maxime tunc indigebat Reipublica, ne eorum subiret indignationem, cavit pariter ne buxusmodi numeralatum quidquam detrimenti militibus pararet, imo vero lucri tantundem quantum Reipublicae.

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 Eisenischmid; 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 000 Points; if a Quadrant 00; if a sixth Part 00; and if one Ounce one 0. 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.
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Opinion, because there are no Sextores remaining which have the Mark III upon them, being now lost; or because the Triumviri abstained from that Mark ac potissimum ne III 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 hoc placuit XL. M signari ex auri libris, paulatim, Principes immenso were 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 preferret quas alii nimirum XL & XLV. in superf litterae L duo puncta super imposuerit scriptor five mutuo Connexa, quibus in antiquis quampluribus exemploribus litteram a Jusqleri Observavimus quo facilius intelligi posset illa enumeratio quadranginta & quadranginta quinque. Atque ea puncta facile decipere potuerunt lectorum, ut illa duo puncto pro litteri M acciperet, qua millarium numerum indicabant antiqii. I give you here Villalpandus's Opinion, but relie the Les 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 63 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 iii p. of Mr. Greaves, where
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 resolved 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.

<table>
<thead>
<tr>
<th>Emperor</th>
<th>Weight (Grains)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nerva</td>
<td>111 1/2</td>
</tr>
<tr>
<td>Trajanus, Germ.</td>
<td>110 1/2</td>
</tr>
<tr>
<td>Trajanus, Hadrianus, Aug.</td>
<td>121 1/2</td>
</tr>
<tr>
<td>Antoninus, Aug. pius p. TR. P XII</td>
<td>119 1/2</td>
</tr>
<tr>
<td>Aurelius, Verus Aug.</td>
<td>118 1/2</td>
</tr>
<tr>
<td>Cæs. L. Aurelius Aug.</td>
<td>117 1/2</td>
</tr>
<tr>
<td>Verus Aug. Arm. Parthi. Max.</td>
<td>113 1/2</td>
</tr>
<tr>
<td>M. Ant. Gordianus AFR. Aug.</td>
<td>114</td>
</tr>
<tr>
<td>Trebonianus Gallus</td>
<td>75 1/2</td>
</tr>
<tr>
<td>Gallienus</td>
<td>74 1/2</td>
</tr>
<tr>
<td>Carinus, P. F. Aug.</td>
<td>72 1/2</td>
</tr>
<tr>
<td>Diocletianus, P. F. Aug.</td>
<td>77 1/2</td>
</tr>
<tr>
<td>Maximianus</td>
<td>74 1/2</td>
</tr>
<tr>
<td>Constantinus Max. Aug.</td>
<td>74 1/2</td>
</tr>
<tr>
<td>Constantinus, P. F.</td>
<td>68</td>
</tr>
<tr>
<td>Constantius</td>
<td>70</td>
</tr>
<tr>
<td>Cæs. Magnensius</td>
<td>70 1/2</td>
</tr>
<tr>
<td>F. L. C. L. Julianus, P. F. Aug.</td>
<td>68 1/2</td>
</tr>
</tbody>
</table>
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D. N. Jovianus, P. F. Perp. Aug. ——— 68
D. N. Valens. P. F. ——— 68
D. N. Valentinianus P. F. Aug. ——— 69
  A Second ——— 68
D. N. Gratianus P. F. Aug. ——— 69
D. N. Theodosius, P. F. Aug. ——— 68
D. N. Arcadius, P. F. Aug. ——— 67
  A Second ——— 68
D. N. Honarius, P. F. Aug. ——— 69
  A Second ——— 69
  A Third ——— 68
D. N. Theodosius P. F. ——— 69
D. N. Pla. Valentinianus ——— 68
D. N. Valentinianus, P. F. Aug. ——— 69
D. N. Ful. Nepos; P. F. Aug. ——— 69
D. N. Anastasius, P. F. Aug. ——— 68
D. N. Focas, perp. Aug. ——— 68
  A Second ——— 69
  Heraclius, ——— 69
  A Second ——— 69

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 Caesarei, which is our next and principal Enquiry. The Denarii under the Caesars 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.
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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 stamped 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, Stiled 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 foregoing, is no more than 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 ¼.

Now all this being premised, it will presently appear that Dr. Arbuthnot 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
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an observable Passage in the Beginning of the great Mathematitian Gassnerius's Abacus Sexterrionum monetae Gallice, where he prudently expresseth himself in the Words following.

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

Having proceeded thus far, I am next to confirm what I have afore allledged, 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 defaulks 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. and, That he is persuaded that our AverDupois and Roman Ounce are equal, and contain in them no more than 437 ½ 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 ½ 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 myself that do not, it requires to be laid open something more at large, which I know not better how to do, than 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 ½ Grains produce. Now by Multiplying 437 ½ 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. ½, which Sum of 7 d. ½ falls short, as I take it, by one Grain of 7 d. ½, 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 2¼ d.; which 56 Pence, with the Fraction 2¼, being divided by Seven, the Number of Denarii contained in a Roman Ounce, the Product will be about 8 d. and about a g, 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 M 4 fully
Remarks on Dr. Arbuthnot's

fully bear it self out. For tho' I have often ob-
served, that 31 Grains were contained in our pre-
sent 4d. 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 pre-
cent 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 improper-
ly, when fully examined by a rigorous Mathemati-
tian: But notwithstanding this, such an one will
fully discover, that in valuing a Roman Denarius at
8d. 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 a-
gainst 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 con-
cerning 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 Weights.

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 allow-
ed 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 I gather from the Words of Sallust, concerning Catheline's Conspiracy: The Reward which the Senate promises was general, *Si quis indicasset de con-
juratiune, qua contra Rempublicam facta erat, premi-
um servo libertatem & H. S. cenum, libero impuni-
tatem ejus rei, & H. S. CC.*

THAT which follows next is in Page 9, where the Doctor lays, that *Aes 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 *Ferrucius*, 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 *A's* by Degrees was diminished, 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
Remarks on Dr. Arbuthnot's

840, as Budeus and his Followers have fancifully conceived.

Page 11, "Tho' Σεσόρτιον 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 Gessendus; who in his Abacus, uses these Words, Notum Porro est quemadmodum Græci dicebant τζας. ut duas cum semisse Drachmas designarent.

Page 11, Hære Vetravius is quoted, for saying, Quartam Denarii partem, quod efficiebatur ex duobus alibus & 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 Hooper says, it is not improbable, p. 131. And to me it seems very reasonable to suppose that there might be Sestertes in Brass, as was Denarius above them, and semisses, Triens, and Quadrans, &c. below them.

Page 12, "The Greeks Computations proceed upon the same Supposition of the Denarius and Drachme 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 a
BOOK and TABLES.

"a Half of Brass"; and why might it not do so before any Silver Sestertes 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-fight 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 Falsity 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. 16. And Vossius tells us, that Pliny, the Historian, lived no longer than three Years after dedicating his Book to Titus Vespasian, A. U. 831. and Trajan was not Emperor 'till A. U. 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 Punic War, without any Interruption, to Justinian's Time; But this Opinion is contrary to the whole Classical Style, in which a Denarius, four nummi Septern, 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 credible that the Writers expressed the Valuation of the Denarius, according to it's first Institution, 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 evidently
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dently false, and took it's Rise from a false Reading in Fussus; 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 Demarius) 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-aas 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 convincing, 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 Livres 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 Pondus 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, £s, 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. 4s. 7d. According to Agricola, to 3 l. 2s. 0d.

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 Villalpandus p. 337, that libre vox pondo addiur, latina linguae, & usus perissimus. Nam Livius Coronam Auream libre pondo Jovi dicatam fuisse; & Columella, calami pondo scribit. Neque libre tantummodo addebatur pondo; verum etiam cuicunque alii ponderi. Plautus.

Neque pilcium ullam unciam pondo hodie cepi.
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Verum tamen est nonnullquam pondo, & libram seorsum usurpari, atque idem ipsum quod separata significare; ut videre est apud Catonem sic scribentem; adipis pondo duo, casi libram. Et Plinius; quibusdam generibus, inquit, per se pondus, sicut Balearico modo tritsici 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 obse- ferve 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' undoubted- edly 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 " Re-
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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 5s. 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. 19s. 1 ½ 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 Precifeness. I concur also with the Doctor in what follows, that Pondus 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 σαβῶς, or saud 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
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"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 Drachma should be computed at a higher Value than 7 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 Artift enough to judge of them; but the last is this Weight 62, 57 Grains; Value 7d. 3 3/4. Now as far as my little Knowledge will reach, I think these Grains and Fractions joined together, must far exceed the Doctor's 7d. 4 3/4. 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 4d. of our present Coin, then 62 without the Fraction (which I believe is at least more than half a Grain) will arise to 8d. of our present Money, at which I have several Times reckoned it in the foregoing L E T T E R S. For as I have lately granted, that when our Money was coined
coined at 5 s., 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 then 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 Thucydid, that there was such a Coin as the Corinthian Drachm, and not quote any Author that thought it equal to the Attick, for Thucydid 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 d. equal to the Egean Drachma, equal to an Attick Dram and a Half, or as is above said, equal to 10 Attick Obols. I know it is not mentioned amongst some other Talents by Feustus, nor by the Doctor, Pag. 344 amongst Talentum; but we plainly meet with it, and it's Value also in Aulus Gellius, lib. 1, cap. 8. I speaking of the Curzean Lais, uses these Words, Ad banc aere Demosthenes clanculum adit, et ut sibi fugi, captam facerit,
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facit, petit, & Lais μείνα δεξαμέ & μακανον poposif ;
hoc facit nummi nostratis Denarius decem millia. I
have here made Mention of this for another Rea-
son, as serviceable to the true estimate of the Ro-
man 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
its Original from Corinth, whose Drachma were
heavier than thole of Athens.

The Doctor often complains of want of Time
and Leisure, but I have greater Reason to com-
plain of a worse Deficiency, which is want of Me-
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 Drachmae were of different Weights, the
"Æginean and Corinthian, for Example, equal to
"⅓ 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 Won-
der 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 Ta-
bles, which would have been very chargeable, but
this of the Corinthian Drachma is not, I think, men-
tioned in them, and these Words, It is supposed by

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Some Authors equal to the Attick: or, at least he might have quoted some Writers for his Saying. I have also, since I Writ this Sheet for the Press, upon Occasion of consulting Mr. Brewood, about the Jewish Money, the Book being very short, I spied what he said of the Dracbna Aeigma, pag. 20, and presently after, it of the Stater Corinthiacus, of which he says, Stater Corinthiacus 10 obolae Aeigmaeae continet & proxime valuit, in the one Margin, Stater Corinthiacus 1 s. 8 d. ob. & and in the other Margin, 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 Dracbna, and does not recede 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. Arbuthnot's Book, viz. pag. 35.

The Mina Attica of Silver.

Page 29. "MNA, Mina Attica, contained 100 "Dracbna, or Denarii, and the Tables proceed 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 Halicarnassensis, in reckoning up the Roman "Census, make the Classes stand thus:
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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 Halicarnassius ranges them.

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<th>Class</th>
<th>Notes</th>
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<td>2d, Minæ LXXV.</td>
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<td>3d, Minæ L.</td>
<td>Aëris L. Millia.</td>
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<td>4th, Minæ XXV.</td>
<td>Aëris XXV. Millia.</td>
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<tr>
<td>5th, Minæ XII. cum semissæ</td>
<td>Aëris XII. Millia cum semissæ.</td>
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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 Assæ 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 Assæ, he reckons it at the lowest. Pliny states that Class at 110000 Assæ, Celsius 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 Classem signification qui minore summa, quam centum & viginti millia æris, censì sunt & Aulus Gellius, higher yet, lib. 7. cap. 13. Classici dicebatur non omnes qui in classibus erant, sed primæ tantum classis homines, qui centum & viginti quinque millia æris, ampliusque censi erant. Infra Classem autem appellabantur secundae clas-

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Page 29. "In the 5th Census, Dionysius differs from Livy, who makes it XI Millia Aëris, which is some mistake, or false reading; for in the Rest they are exactly the same, making the Mina equal to 100 Denarii, or 1000 Asses; for it was equal to so much of Roman Money, as appears by comparing two Passages, one of Appianus, and another of Suetonius: For speaking of a Conjurium given by Caesar, the Former calls it a Mina, and the other Quadringenos Sesterios, which is equal to 1000 Asses, or 100 Denarii."

I might here repeat what I have before observed, 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 Drachmae 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 differed 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 125 Roman Pound. The Doctor in the next Page also speaks of the Euboic Talent, so called from Eubea, 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 Drachme Attica, as well as the Attick Mina. Herodotus faith, the Babylonian Talent was equal to 75 Mine Euboica, and Pollux affirmeth, that it was equal to 7000 Drachme Attica: Whence it follows, "That 70 Mine Euboica, were equal to 7000 Drachme Attica; and consequently one Mina Euboica, equal to 100 Drachme Attica; which is exactly the Number of Drachme in the Attick Mina. [in Margin, b. Livy, lib. 8. Decad. 4. Herodotus, lib. 3. and Pollux, lib. 9."

It was the Eubean 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 extent in these Miscellanies.

N 4 Pag.
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P: 34. "There is some Diversity of Opinions 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 Hy-
merical Talent of Gold, supposed to be equal to 
3 Attick Arreti. Pollux speaks of such a Talent. 
Eustathius upon Homer, reckons it worth 24 
Drachmae, 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 Mace 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 equivalent (I mean 
the Phrase is) nor yet equiponderant (I mean) as 
to any other, yet was equivalent (I mean) to 
some correspondent Talent in Brass, whatsoever 
it was, whose under Parts kept the Common 
Proportion between theselves; a Talent we may 
suppose of the Phoenicians, 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 Cypriots, or Copper, to 
have been with their Neighbours the Phoenicians, 
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-
len, 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 LORD 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. Antig. 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 foregoing 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
Remarks on Dr. Arbutnott's

nerally called the Homerical 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 Homerical 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 ¼: 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. Bunerwood, 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 Budeus'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, wherever we find them.

He first begins with the Hebrew Sums of Money, cap. 4. p. 12. where he says, Talentum Hebræorum continet popdcre 3000 sicolos; ergo 3000 sicolis ad Talentum pertinuerunt, continet proinde 1200 Dra-
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chmas Atticas ut etiam Epiphanius observat, valet praeinde Talentum Hebraicum in argento de nummis nostriis 375. Auri vero Talentum Hebraicum servata in præcio Auri ad Argentum proportione duodecimpa, que num
ubique fere viges valet de nostro (in numero) 4500 l.

But in his 5th chapter he gives an account of the principal sums we meet with in scripture, Pag. 173, but still it must be observed, that he pro-
cceeds with a double talent to that of the Attick, which he rates at 187 l. 10 s. too low in my judg-
ment.

I give this notice beforehand, that young Be-
ginners may better comprehend what follows, for I shall use three different reckonings. Mr. Brer-
ewood reckons the Attick talent at 187 l. 10 s. Dr. Arbuthnot at 193 l. 15 s. As to my own Compu-
tation 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 Denarius at all... Having thus informed my reader in what sense, and for what reason I rate an Attick talent only at 200 l. I will proceed to give you Mr. Brerewood's reckoning, as he gives Pa. 17,

1 Chron. 25: David reliquissque dicitur
xxii, 14. [Solomoni pro Templi Fab-

brick denostrò (nummò)] 450,000,000 l.

Ibidem. [Preterea argenti pro eo-

dem operè 1,000,000 Talen-
ta id facit de nostro]

375,000,000 l.

Dr. Arbuthnot reckons the Gold at --47,500,000 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
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 Attick Talent to express the Jewish Talent, and by multiplying 400 l. by 14 ½ 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 1,080,000 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 enligh the vi chap. of Mr. Browwood, Page 16. intituled

Considerations upon the Number of the Gold and Silver left by David, to Solomon for the Fabricck 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 receiv'd no Treasures from his Predeces-
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, nor 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 Wainscotting 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 רכב 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 רכב signifies some plain and pressed down Bulk or Masse like a Cheefe Cake, in which Forms 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 Acceptance 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 among 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
that is a Coin of 4 Drachms Weight. And Pol-
lux 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 Anti-
quity a Talent of Gold was but very small, Homer
not obscurely shews us, who relating the Prizes conten-
ded for at the Tomb of Patroclus, were of no great Va-
ule; 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 Gold-
en Talent, the following Words of Dr. Arbuth-
not will help to confirm him therein.

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

I should have rather thought by some more an-
cient Calculation, for 100000 Talents of Silver a-
mount but to 10,000,000 l. according to my rec-
kening: Joseph Scaliger (as I find him some where
quoted) is said to affirm, that Josephus was the Faith-
fullest and most to be relied upon of any Historian
that ever writ; but I think there is no great Rea-
son to believe it, but rather several against it; for
in many Things he seems to lessen Matters, that he
might find reader 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 *Solomon*, 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 " Theauris fuerit illaturas inferendi auri accipiat fac-
"cultatem, ita ut pro singulis auri libris argenti quuos " 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 3/4* to 1.*

I have inferred 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
the Place be assignd where it is to be sought for. 2dly, It is of considerable Consequence to be informed of the Time when any Law was first promulgated: 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 easy 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 Helvius) 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 obtained, 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 reckoned 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 Drachms, and as the Doctor and many others account them the same with an hundred Denarii, which as I have endeavoured to shew in the foregoing 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 called a Stater, pretends not to State it any higher than 2½ 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 proportionally, that a Tetradrachm was worth 50 Drachms. I cannot but wonder how the Dr. could fall into so many Mistakes together, for an Attic Tetradrachm, otherwise called a Stater, was a Silver Coin of 4 Drachms, and accordingly my Account ariseth no higher than 2s. 8d. nor the Stater of 8 Drachms, had there been such, no higher than 5s. 4d. 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 discoursed 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-
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 preceding 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 Authors, yet to comply with the Custom of Publishers 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 Examples, 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 Classicks, 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 SeSteres, from one Sterces 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
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. 111. "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 Leasure. 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 Infirmitie, 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.

"If, the small Quantity of the Treasure of Rome in its Infancy.

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

"2dly, What Proportion of Treasure Rome in its 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...
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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 Harduin’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 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 Successes, that there is never a great Sum, but ends even in our Money; in Pounds, Marks or Nobles.

Pag. 112. "Calculation is the properst..."
"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 Parallels, or universal Conclusions, my chief Design being only to state Matters of Fact. Besides 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 bewail 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 discover 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 Aug.
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Lus Gellius gives of the first Classis, it was no less than 125,000 Pounds of Copper or Bras; 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 Bras 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. 170; 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 inferred from some Account we have of Patri monies, and Women's Portions; the Patrimony of Tacitus, reckoned very great, was only X. M. "Æris, 32 l. 5 s. 10 d." (pag. ibidem.) "Val. M. Maxinus."
HERE Tacitus is read for Tacit, and Valer. Maximus is quoted at large; but it would be a long Search where to find it, for neither Tacit nor her Father Casio'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 £ris at 32 l. 5 s. 10 d. He and I governing ourselves by several Hypotheses are not like to agree in our Sums; you read what Value the Doctor ascribes to Tacitus'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. £ris 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 Tacitus, or as we read it here Tacita; but I cannot find that her Fortune was C. M. £ris, 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 these
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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 Sebertium 8072 l. 18 s. 4d. "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. 4d. 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, bis & vicies 17762 l. 9 s. 4d. Epift. 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 1833d. 6s. 8d.

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 & vices, bujus pecuniae permutacione sidem nostrum facile tuebere; quam quidem ego nisi expediam reliquere putassent, credens ei, cui tu sit pridem minime credere, commoratus esses paulisper nec domesticas res impeditas reliquias; ob namque causam serius ad te Scribo, quod serva intellexi, quid timedum 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,
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which, if I am not mistaken, renders them a 4th Part less than a Drachma, and therefore one Cistophorus 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 Centes 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.


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. Confimilis mutatio in Domo Curiorum exsit; quidem Forum nostrum, & patris gravissimum supercilium, & filii sexcentes septertium æris alieni aspexit, contractum famosa injustia nobilium Juvenem. Itaque eodem tempore, & eisdem po- nalibus diversa secura habitatorum, frugatißimum alterum, alterum nequissimum. My Table computes the Sum at 500,000 l.

Page 116. "Plutarch faith that Caesar, before he had been in any publick Office at Rome, ow-" ed 1300 Talents 25 1875.

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
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at 160,000l. exactly neither more nor less, the Difference betwixt us is 18125l. which the Doctor falls short of me.

Page 117. "The Valuation of Cassius, his Land Estate, by Pliny 1,614583l. Bis Millies, is in my Account 1666666l. 13s. 4d. of which the Doctor falls short by 54582l. 63. 8d.

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 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 equi ponderate to about 14 Ounces of the Aver dupois, 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 Error 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. Melianus, 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 easy, that they are hardly to be equalled for Clearness and Perspicuity, in any Author whatsoever, his Words are thefe:

Mensurarum liquoris atque grani expeditior & forma & appellatio est; Nam Quadrantal, quod nunc plerique Amphoram vocant, habet urnas duas, modios tres, semodios sex, congios octo, sextarios quadraginta octo, Hemi-
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Heminas, Quartarios Centum nonaginta duos, Cyathos reingentios septuaginta sex: The concluding two Lines contain the Nole Mensurarum; but we want Tips to express them by, but may be found at the End of Gronovius De Pecunia Vetere, 4to Edition, Page 400. The first Thing I shall observe from the foregoing 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 mensurae Medimus appellatur. But I find that the Measure of the Medimus is not so ascertained, 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
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.

(Tables follow)

Page 89. Modius Gallicae = 240
  Sardina = 246
  Alexandrinus = 250
  Basiana = 252
  Aficana = 261

Pag. 89. In English Measure and Weight thus.

<table>
<thead>
<tr>
<th></th>
<th>Ounces Troy</th>
<th>Pounds Ounces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallican</td>
<td>218 = 517</td>
<td>18 = 2 ½</td>
</tr>
<tr>
<td>Sardina</td>
<td>223 = 229</td>
<td>18 = 8</td>
</tr>
<tr>
<td>Alexandran</td>
<td>227 = 621</td>
<td>18 = 11 ¼</td>
</tr>
<tr>
<td>Basiana</td>
<td>229 = 441</td>
<td>19 = 1 ½</td>
</tr>
<tr>
<td>Aficana</td>
<td>237 = 637</td>
<td>19 = 9 ½</td>
</tr>
</tbody>
</table>

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 que Romam invehitis levifsimum
BOOK and TABLES.

femum est Gallicum atque Chersonese adductum, quippe non excessit in medium vicenas libras si quis ipsum gravi-um ponderat; adjicit Sardum felibras, Alexandrinum et Trientes, hoc et siculi pondus, Baoticum toutum libram addit, Africum et dodantes. In Tranpadana Italia sico vicenas quinás libras farris modios pondere, circa Clusium et senas.

In English thus.

Of the several sorts of Corn brought to Rome, the French
or Gallican, and that of the
Chersonese (of Callipolis) if
you weigh the Grain of a Mo-
dius it will not exceed 20 lb.

Gallican

Sardinian

The Sardinian adds to the
former Weight half a lb.—

The Alexandrian adds to
the former Weight a Trient

Sicilian

The Weight of the Sici-
lian Wheat the same

Baotian

The Baotian adds a whole
lb.

African

That of Africa adds a do-
drantem.

Near the Poe in Babylon, a
Modius weighs 25 lb.—
Near Clusium 26 lb.—

AFTER this Pliny goes on, Lex certa nature ut in quocunque genere pani militari tertia portio ad gra-
vi pondus accedat; ficut optimum esse quod in subætu congium aque capiat. Quibusdam generibus per se pon-
dus, ficut Bælearico modo tritici panis pondo XXX
reddit. Quibusdam in binis missis, ut Cyprio & Aș

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lexandrinum, XX prope libras non excedentibus; Cyprium fuscum est panemque nigrum facit, itaque mise tur 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 foregoing.

"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 duskish, and therefore maketh a black kind of Bread, in which
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which the Alexandrian Wheat which is fair and white, is mixed with it, and so both together do yield in Bread 2½ 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 2½ 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 2½ 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. Harwin'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 Phigius is quoted for saying this was A. D. Ur. 298, in which Year I find Livy, lib. 3. cap. 31. that annona propter aquarum intemperiem laboratum est: And in the following Year he says, ab Aequis praeda porta ingens;
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Eam propter inopiam aerarii Consueltus vendiderunt. Invidie 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 Brasses 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.D. Urb. but, as I have noted the Year in my own Livy, it falls in with the Year before, when Sp. Melius 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 Melius'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, flew 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 trigeminarum est donatus nec plebe quidem invita, quia frumentum Melianum affitus in modios estimatum. And tho' Pliny styles L. Minutius the 11th Tribune, yet Livy long before him argues thus against it, Hunc Minutium apud quosdem Authores transfisse a patribus ad plearem undecimumque tribunum plebis Coaptatum, seditionem motam ex Meliana cede sedasse invensit. Ceterum vit credible est numerum tribunorum patres augeri passos; sedque
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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 its 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, "CADIUS, when Tribune, made a Law, that Corn should be given to the People gratis, which was before Sold, the Modius for femen axis ac triumtibus, 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 so high a Rate, when a little before, in the Case of Martius 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 Dormitatis Homerus.

Cicero introduces Verres bragging, that Wheat was at two Services the Modius, which makes the Quarter 10 s. 2 d. 1 ½ 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 P 3 is
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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 short-ly 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 Para-graph, nor may assent that it was a Cyathus, but an Ounce that Pliny speaks of; and if the Doctor means that, if we reckon by the Cyathus, 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 ½ q. Neither can I allow his Emendation out of Budeus in the Margent, Singulas unicas binis (ita Budæus legit) constituisse nobili exemplo Docuimus; for in the 9th Page of the same Letter, I have quoted these Words of Budeus, Singule uniea singulis H. S. consiterunt; neither yet does the Cyathus contain 2 Ounces, but the 6th Part of 10 Ounces only. This Observation has reminded me of an Error 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 inselicity 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 English 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 ½ g. Pliny, lib. 15. cap. 3.

I am forced by my ill-state of Health to pass by many Things unexamined, and especially when the Asses were Pound Asses; but now the Doctor descending to later Times, when we both may better be assured of the Value of the Asses, 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. Urb. 502; but still how to value the Things mentioned, depend upon the Weight the Asses then bore. We are told by Pliny, that the Asses in the 1st Punic War, when those Elephants were taken, were reduced to Asses Sextarii, or two Ounce Asses; so that they were but the sixth of what they were before. But the Doctor is carried away with Budæus'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 Asses did, then an AS A. Urb. 502, amounts not to so much as four half Ounce Asses afterwards; which shortly after Answers to a H. S. only, or 2 d. 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

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Horse. Livy tells us, that there were 10000 Asses given out of the Publick Money to the Eque
tes to buy Horses, and that the Widows were obliged to contribute towards their Keeping, the Sum of 2000 Asses. If, as is commonly sup
posed, there were two Horses, the Price of them was 32l. 5s. 10d. or per Horse, 16l. 2s. 11d.

Pag. 128. And their Feeding came yearly to

3l. 4s. 7d.

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 ob
serve, 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, lest 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 8d. 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 vices Sesercia 16145 l. 16 s. 8 d. his Country-House at Tusculum was sold for 725 H. 8

5852 l. 17 s. 3 1/2 d. both at under Rates.

The Rates put together in all amount to 22708 l.
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361 says, that Terentia had left him an empty House, and involved him in many and great Debts; and besides, opined Tullus Ennius; 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 Numantian Land, which at a cheap Rate came to 50000 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 bisce XX annis mercato Rus D. C. nummum in eodem Numantiano, decimi lapidis ab urbe diverticulo. Bif autem usquequaque nota-vilitas merces per omnia suburbana, ibi tamen maxima, quoniam & nesia per indigentiam predia paravertat, ac ne in pestinis quidem elegantioris soli. Hec agressus escolere non virtute animi, sed vanitate primo, quod nota mire in illo fuit, pastrinatis de integro vineis cura Stheneli dum agricolam imitatur, ad vix credibile miraculum perduxit infra octavum annum CCCC nummum emptoris additio pendente vindemia, consecutisque non nemo ad spectandas uvarum in is vineis fruges, literis ejus altioribus contra id pigra vicinitate fide patrocinante: Novissime Anneo Seneca princeps tum eruditionis ac potentia que postremo nimsa fuit fud
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 therefrom.

Pag. 155. "Budeus reckons it was a Centuria; the Centuria consisted at first of 100 Jugera; afterwards by a Continuation of the fame Word, and Impropiety 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 Jugurum 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 a-
rise no higher, than 10l. and if 200, but 5l. 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. 176. "There is another Passage in * Columella*, which makes the common, or middle yearly Rent of a *jugerum* of Pasture, Meadow, or Copsa Land, 16 s. 1/4 d. in Italy, at this Rate the Rent of an Acre (English) comes to 1l. 5s. 10d. Land was reckoned commonly at 25 Year's purchase, for the Lands of the Government were so let, paying according to the Rate of 4 per Cent. (d) Columella lib. 3. prata pascua & silva s Centenos H. S. singula Jugera efficiunt optime Domo mino consulere videatur.

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 16s. 8d. of our Money; and therefore this seems rather the highest than middle rate of such Lands.

(e) "Hygen. de limitibus veltigal ad rationem usura 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.

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"A Purchase of 500,000 nummi paid 20,000 nummi a Year; at this Rate, according to the former mentioned Rent, the Purchase of an English Acre of such Land was worth 33 l. 15 s. 10 d. (f)

Pliny lib. 7. Epilarum.

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 a 7th 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. 7. p. 290. concerning these Epistles of Pliny here quoted, well deserving to be viewed by all Critics. whatsoever; which shews Gronovius to have been a very great Master in Arithmetick and Computations.

It is plain enough that if 500,000 yielded but the Rent of 20,000 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 Cheapsness, but Dearness, and if it was the Purchase Money, and is to be divided by 25, it would come to about 14 d. an-
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 whe-
ther the Doctor has given us the true Meaning of it.

Ibidem. "The Price of Land was considerably
increased, 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 a-
gainst it, for it cost H. S. Millies which are 833333 l.
6s. 8d.

I casually met with these Words Page 160.
"Malobatrum had risen from one Denarius to
309, that is to 8 l. 13 s. 9 d. the Oil of it only
60 Denarii 1 l. 18 s. 9 d.

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 itself 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 Dalecampion's Edition;
for the Dr. here more truly reads, olim autem ip-
sum 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 suppo-
led
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... had sufficiently provided against it, having given Notice in the Title of this 11... for the avoiding Mistakes, the Word Pound might have been added to every Particular Drug, the vast... Drachma to 300 or 101... 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 21. 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 ½ d. is the Price as told by the Publick; but as it was adulterated, it brought the Owner per Pint 27 l. 0 s. 4 d. ½.

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 empi; vende... tium expediat 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
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used for Saunce per Pint 5 s. 6 d. and Quint. Cur-
"iii, 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 Denar or 10 Sestertia.

The 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 there abouts, reckoning Gold to Silver at 1 to 14 ½; 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 7½ d. to the Denarius, and I give each 8 d.

Pag. 168. "P阴y faith, that his Uncle told him he could have sold his Commentaries, being 160 in Number, to largius Licinus, for 400000 numb. mi, 3229 l. 3 s. 4 d. He tells you in the same Epistle, that they were wrote on both Sides, and in a small Hand (a) P阴y, Ep. ad Marcum.

Here the Doctor quotes P阴y's Epistles at large, sas that he says the Epistle was writ to Marcus; but where shall we find this Marcus, for in the Index, or Nomenclator of those P阴y, write 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 Marco and not Marco: If the Doctor had read this Epistle, it is like he would have found the Difference between the Senior P阴y 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 Aristotle paid for a few Books of Lucippus the Philosopher, viz. 3 Attick Talents, which Gellius faith a 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 analogy and correctness of the Tables.

I had
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I had not here taken Notice of this Passage, but that the Doctor allidges it as a Proof of his Table; 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. 5s. and I at 600 l. 6s. 8d.

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

So do they both come to the same Money by my Reckoning, viz. 333 l. 6s. 8d. 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. 11s. 8d.

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

"The Customary Salary which Princes gave to their Physicians was 250 Sestertia, 2018 l. 4s. 7d.

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

Sertinious complained that he had only a Salary of
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"of 500 Sesteria, 4036 l. 9s. 2d. when he had "by his private Practice 600 Sesteria, 4843 l. 15s."

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

"One Vetius Valens left Centies H. S. 80726 l. "3 s. 4d. for publick Buildings in his own Coun-"try, having spent as much more in the same Man-"ner.

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

Pag. 170. "A Brother of Stertinius, after hav-"ing spent a great Estate on publick Works, left "(as Budens has restored Pliny) Sesterium tricentes "242187 l. 10s." 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. 13s. 4d. 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 Sesteria or 10000 H. S." Which in my Table arises to 83 l. 6d. 8d. but how the Doctor makes 100 Aurei pas for 80 l. or more, in Ulpian's Time, I know not; for by Mr. Grooves's Aurei, pag.
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 hast I have not misreckoned 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
but it is to be found Chap. 30, where it is said, *quadringenis in punctum H. S. aleam luist*, which Sum the Translator of *Suetonius* calls *400 Servicers* 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 Caesar'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 *Budaens* 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. *
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"Suetonius says he left to the People of Rome
322916 l. 13 s. 4 d. and to the Tribes 28251 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 first gives 3333331.
6 s. 8 d. and the next 26516 l. 13 s. 4 d. but I cannot
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 oftener 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. ½ 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 100000 Talents, as I remember, which amounts 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-
plan de Bel. civili.

I mention this only as remarkable.

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

A F T E R m y T a b l e 1,916,666 l. 13 s. 4 d.

Ibid. "Scipio having conquer'd Antiochus, brought
to it his miliies 1,614,583 l. 16 s. 8 d.

I n m y T a b l e 1,666,666 l. 13 s. 4 d.

Ibid. "B E F O R E 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 22,070 Pondo,
59864 l. 17 s. 6 d. : Money Sexagies bis & 85400
H. S. 5074 l. 10 s. 2 d. which in all come to
566577 l. 12 s. 8 d.

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

I n m y T a b l e s to avoid Fractions, in every Pound
I have cut off 6 d. and might I think have made it
7 d. ob. but I omitted the Penny-half-penny, and rec-
kron 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 504090 l. out of
which
which take the Doctor’s Sum 45597l. there remains 45119l. the Doctor’s 5s. being omitted in this Reckoning, and yet I am short by at least 1d. ob’ the whole Account, which will be very easily corrected by those that are better skilled in Calculation, for it amounts to about 107l. 6s. 5d.; but I no way rely upon it, I being now in hast, and my Head and Hands out of Order.

The Silver, rejecting the Fraction, amounts to 61796l. and to a great deal which I have not Time to calculate; but think with the Fraction included it comes in all to 62580l. 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 Error, 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 68 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 2378l. exactly, which exceeds the Doctor’s Sum, (as it should of Course do) 1637l. 10s. 2½ d.

Pag. 191. “ When Sextus Julius, and L. Mar- rius were Consuls, there was in the treasury 1,920,829 Pondo of Gold, 52,102,486 l. 12 s. 5d.

Q. 4 This
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"This is according to Hardwin's Explication of Pliny's Numbers; but the Sum seems too extravagant, and perhaps the Numbers are not correct.

I must confess I do no way understand the Doctor's meaning in this Place, nor his Figures, nor whence he borrowed them, nor those in the Quotation XVI. XX. DCCCXXXIX. 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 Numbers, 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 933,797,504, and in ours 77,799,792 l. But 844 l. multiplied by 2 l. 16 s. 7 d. ob. I think nothing higher in a Duplicate Proporion of Gold, than 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. "Caesar brought at once to the Treasury 65000 Talents, 12,593,750 l.

If Caesar 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 Caesar. 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 myself, which I think I did not.

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I somewhat doubt that this Passage is not to be found in Suetonius, at least I cannot readily meet with it: But vices 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 Egypt, says, that in the "Reign of the second King after Alexander, there "was in the Egyptian 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 Attalos, "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 Herodatus, at 2,807,437 l. 10 s.

How happy had it been for the Bp. of Baib 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 Herodatus, 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 Sulla's Time, the yearly Tribute of Asia was 5000 talents, 168750 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 entire Million of our Money, 1,000,000.

Ibid. "Plutarch faith, 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 Common-
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Wealth, there was need of no less than Quadrin-
genities Millies, 122,916,666l. 13s. 4d. which
is a Sum so great, that it seems impossible to be
raised in many Years out of the Taxes of the
whole Empire.

Quadrinogeneties Millies, in my Tables, arises to
333,333,333l. 6s. 8d. in which two Sums the
Dr. falls short of mine by ten Millions and 416654l.
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 Expenses of the Funeral of
Hephaestion by Alexander, being no less than 12000
Talents, or 2,225,000l.

Which amounts in my Tables to 2,400,000l.
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-
"epolis, Alexander got no less than 190000 Ta-
"lents, or 29,062,500l.

But according to my Account 30,000,000l.

Pag. 201. "After all Alexander left, in his Treas-
"ury,
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"fury, at his Death, 100000 Talents, 19,375,000 l.
"No wonder since his yearly Tribute, as Julius
"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 Asiatic 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. Arbaceus makes
"the Value of the Treasure of this Pile, to a-
"mount 100,000,000 Talents; which reckoned in
"Babylonick Talents, amounts to 1695,125,000 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 Drachme, but
much too low, and within compass; to which add
a sixtieth, to make it a Babylonish Talent, or 233 i
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. 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 Temple
1000000 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 Josephus;
"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; but of the Proportion of Gold to Silver, as 1 to 16
we hardly read anywhere 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-
latent, 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, a-
rise to 40,000,000 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 Com-
putation; but my two Sums of Gold and Silver
joined together make 1040,000,000 l. But this be-
ing 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 mul-
tiplied 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 forms
"uncia and Semuncia as high, which accor-
ding to the Proportion of the A S, being but
"\(\frac{1}{4}\) or \(\frac{1}{5}\) in the Month, must only make 1 or \(\frac{1}{4}\) per
"Cent. per Annum; And the Law of the XII Tables
"forbids ne quis unciairo funere amplius exercito; so
"it
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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 Authors has happened, I can give no certain Account; it seems they put the Uncia for the AS, or Integer.

The Centesima usura was the greatest Interest, which it was not lawful to exceed; and what was paid over it was reckoned as Repayment of Part of the Principal: But whatever Laws were made to regulate the Interest, it was in Rome as in all other Places, the Value of Money rose above, or fell below the legal Interest, according to the Scarcity or Plenty of the Commodity.

Gronovius has writ three several Books, one after another, bound up with his 4to Edition De Pecun. Vet. intituled de centesimis usuris, & funere unciario, in which he positively and warmly defends the Opinion, which the Doctor and I suppose most Men reject as an Error; thinking it improbable that the Romans should think themselves so oppressed and ruined, by paying one per Cent. at first, and afterwards 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 funus 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 assent to Gronovius's Opinion, tho' as a Critick he main-
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maintains it against all Opposition with great Vehemency: And I think, tho’ he may defend it against all Gain-sayers, as a Critick, yet as a Politician, ’tis impossible he should ever prevail with his Country-men 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 Fenus 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 ausitabant, adversus legem Dictatoris Cælæris, qua de modo credendi possidendi intra Italiam cavetur, omiissam olim, quia privato usu bonum publicum postponitur. Sane vetus urbi fœnebre malum, & seditionis discordiarumque creberima causa, eoque cohibebatur antiquis quoque & minus corruptis moribus. Nam primo duodecim Tabulis sanétum nequis unciario fœnore amplius exerceret, cum artea ex libidine locupletium agitaretur: Dein regatione Tribunitia ad semencias redacta, postremo vetita versus. Multisque plebis scitis obviam itum fraudibus, quæ toties repressæ, miras per artes rursum oriebantur. Sed cum Gracchus prætor cui ea quæstio evenerat, multitudine periclitantium subætus, retulit ad senatum; trepidique patres (neque enim quisquam tali Culpa vacuus) veniam a principe petivere; & concedente, annus in posuerum, sexque mensæs dati quæ securum justa legis, rationes familiaris quisque componerent.
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 Treasury: The Senate passed a Law, that two Parts of every Creditor's Debt should be laid out in purchasing Land in Italy; But the Creditors demanded the whole Debt, and the Borrowers, thinking it discreditable not to make good their Promises, they first ran about with Intreaties, and the Prator's Court and Tribunals were filled with Complaints; and Buying and selling proposed for a Remedy: For the Usurers had concealed, 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 Dignity and good Name; 'till the Emperor relieved their Distresses by his Assistance, for he disposed on Tables (or at Exchange) where Money used to be borrowed, millies Seesertium (or 5533,333 l. 6 s. 8 d. English) with Liberty to those that had need of them to borrow for three Years, without 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 Decrees made by the Senate for Men's Selling their Lands were sharply pursued at first, and carried on.
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"on with Vigour, as happens in like Cases for the present, but at last decayed, and died away into Nothing.

This Emperor was Tiberius Caesar, of whom so many Evils are remembered; 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 lose 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 Fanum Unciarum, it seems most probable to me, that the Laws of the 12 Tables, being chiefly borrowed from the Grecian Common-wealths: What the Roman Decemviri found there, they brought Home with them, and Centesmal Interest being used there, they established the like at Home, and paid an Ounce, or 12th Part every Month of the Centesmal 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 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 itself 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. 1725.

The End of the Remarks on Dr. Arbuthnot's BOOK and TABLES.
De Milliarenfibus & 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 Milliarenfibus and the Brass Follibus, which succeeded in the room of the former Demarii, and the Asses Romanii, 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 Gronovius; 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 ancieniter 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 Budæus 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 flight Arguments, without examining, as Mr. Greaves has done, that the Aurei were lefthened in Weight, and consequently increased 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 Semisces, 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 Naine, 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 compleat 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 Decease, as appears by Mr. Greaves's Tables afore-mentioned, to the Age of at least Heraclius, the Emperor, A.D. 610, in whose Reign Mahomet forged his new Religion, A.D. Christi 622, or there-about's; in all which Time Mr. Greaves met with none heavier than 70 Grains, nor lighter than 67, 68, 69.

I have almost 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 Necessity of altering them: For as Gold, as well as Silver, encreased in Value, and became of more worth, in respect of Brass, than formerly; instead of seven Denarii out of an Ounce of Silver, he caused a new Coin to be made, of which sixty 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. of our present Coin: 12 of which later Milliarenfes answer'd to, or were computed at, the Value of one Solidus; which reduced these Solidi, or later Aurei, to the Worth of about XI Shillings and three Pence of our Money. And though I shall not now take my last leave of those Milliarenfes, yet it seems but very fit to give the Reader notice of how much Brass answer'd to these Milliarenfes: And this Gronovius tells us, was 24 Folles, or two Pounds of Brass, made into those 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 Brass, or in other Words CXX Ounces of Brass, were worth no more than one Ounce of Silver; so that the Difference between the Worth...
of Silver and Bras, 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 Bras, sometimes greater and sometimes less;
but for this I refer my Reader to Gronovius him-
self, if at least he can comprehend them, for at
the Age I am now in, I must confess I have nei-
ther 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 Mi-
stakes, as he goes along of Ant. Augustinus, Salma-
sus, Lipsius, Poterius, Savius, and others; he sums up
what he has said in this dis-obliging Character of
Constantine The Great, which I have printed al-
ready in Latin, pag. 64. of this Volume: And now
after his Censure of Constantine for changing all the
Coins, both in Gold, Silver, and Bras, 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 alto-
gather become no other Person than Constantine him-
self; 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 Sur-
name 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 foregoing, 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 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 2.5 millia Follii 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 Caesar allotted to the Praetorians, after 16 Years Service, as Dio Witnesseth; when to the Legionaries he appointed, after 20 Year's Stipend 3000 Deniers, or 12000 Septerces; 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 Praetorian, denoted by the Name of Flavian, we have prescribed the Gifts or Charge of 50 Pounds of Silver; to the second filed Constanian, 20000 Folles, and 40 Pounds of Silver are appointed
ex Gronovio de Pecunia vetere

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 Bras, 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 372 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 Sesterces, 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 hitherto 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 Valentinian, 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 Milliarenfes, or 12 Milliarenfes to one Solidus; on the contrary how well do the later Milliarenfes 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 Faces. And methinks it is here evident, that Gronovius has made some amends for what he said before, and given Constantine as much Honour and Praife as he formerly took from him, or endeavour'd to deprive him of.

I must here forewarn 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 les,
ex Gronovio de Pecunia vetere.

les, and is always intended when we speak De R. 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 Bras, Silver and Gold, as they from Time were altered in the Common-wealth of Rome, from its lowest Estate to it's greatest Wealth and largest Dominions it was at last advanced to.


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 Senatum, and falls in with the Year of Christ 384.


This Law was made by Arcadius 4. Honorius; Consuls, Who enjoin that the Price of Bras required of the Provincials, shall be thus stated; that for 25 Pounds of Bras, one Solidus might be received. This Law falls in with A. Christi 396.
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, Caesaris 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 Braes, was as one to 1800: And the Price of Gold, as to Silver, was as one to 14 ½: And the Price of Silver to Braes was ordinarily as one to 120. Tho' if we believe Budeus and his Followers, one Drachm of Silver was worth 840 Drachms of Braes, and a Pound of Silver no less than 840 of Braes: But when Braes was shortly after, in the 1st Parthian War, lessened from Asses Librales, or Pound Asses, to Asses Semin- tarii, or two Ounce Asses; the Value of Braes, in respect of the same Drachm of Silver, fell from 840 to 168 only: When the Asses fell from 2 Ounce Asses to Ounce Asses, and the Number of Asses in a Denier being raised from ten to sixteen, the Braes fell from one to 168, to one to about 135. But lastly, when the 16 Asses that answered a Denier to 16 half Asses, or which is the same to 8 while Ounces, then Silver became to Braes as one to 67, or there-abouts: All this is according to Budeus and Gronovius's Account; but this that Favoured my Hypothesis, and that agree with it, will reckon it at its lowest ebb at Rome, as one of Silver to a little better than 56 of Braes. Tho' there is a Place in Gronovius, which brings the Difference of those two Metals, as one to 40, or 41.
WHAT is aforesaid concerning the Value of Bras, does all of it relate to Bras Money, before Constantine’s Time; but in his Age, that the Milliarese of LX to the Pound, became the common Computation, one of Silver, answered to CXX of Bras. 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 Gobbesred, in his six Tomes published upon the Theodorian 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 Demarii 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 Pancorollus, 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 ad Ufraxium rationalem trium provinciarum. Aurum quod infertur a Collatoribus fi quis vel solidus valuerit vel materiam appendere aequa lance & librum mentis paribus suscipiatur P. P. 14 Kal. Aug. Paulino
De Milliarenfbus & Follibus 255
& Juliano consulibus: This Law falls in with A. Chribsi 325.


Gothofred finds great fault with Tribonianus, and calls his curtailing this Law faetus, 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 veteres, 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 habet est sententia. Folli quod & Balanton dicitur Pondus est Argenti Denariusum CCL, hoc est: ariis CCCXII libra sex unciae. Nam Denarius, libra ariis & tres unciae. Est & alius Folli Consians ex minutis agentis militis solitis dari, eoque milliarenfbus vocatis. Valet borem unum quidque auri filiquam de drantem. Hujusmodi minuta argentea Follis habet CXXV. que faciant Auri filiugus CXXVIII, & nummas novem. Sunt autem quales nunc obtinent, mil-
There is some difficulty in understanding what is here meant by *nummum*. 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 *denarius*, that is, of the value of 232. 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 *milliarensis*; every one of these is worth of Gold a *siliqua decenta*. Of these lesser Silver Pieces a *follis* hath CXXV, which make of Gold *siliqua* CCXVIII, and nine *follas*; in coined Gold IX *solidi* one *milliarensis*, and IX *follas*. 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 Explanation of the *sesterces*, *denarius*, *solidi*, *milliarensis*, and *follas*, whose Exposition has cost so many Authors so much Pains? Some are to be praised for the very attempting the Explanation of them, as *Arius* and *Petrarius*. *Solinus* happily enough, and *Sestinus* 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 of Folles was the same with the ancient Sesteria, 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 Brasses, according to the Proportion that at last obtained at Rome between Gold and Silver: Therefore this Price is not to be expected in the Bras 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 Brasses, 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 48 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 Brasses 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 Brasses, as much as 60 Asses, as much as 15 Folles, as much as a Septimy Semuncia, of the later Milliarenfis, hic Follis Epiphanius sibi enunciat. I have here transcribed as much or more then I understand; but our Author's Exposition compleatly fills four large 4o 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 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 answer'd 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 arose to 1666 and 8 Ounces, which divided by 40, arise to 41 l. 4s. A like Mistake I observe in what Gotbofred 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 30. Annalium Varronis, found in Charifius: But Gronovius, in another Place, and for another Purposè, 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 Gotbofred, to shew that they make not at all to his Purpose neither: The Words are these, Nummum Argenteum Consstatum a Servio Tullio dicit; is quattuor scrupulis major fuit quàm 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,
Savotus calls them Denarii; yet, he says, they were extraordinary, and rather Monuments of some Action than Money, and the Denarii 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 Judæus 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 Bras, and the Increase of the Value of Silver. I will not retort upon Gronovius, for telling us how many Thousands and Hundreds Bras was less valued than Silver, as you have just read before; but I will state Bras, 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 Bras 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 Bras to a six Part of what it was before, and therefore the Silver must be to Bras, as one to 140. When the Asses were Ounce Asses, and but 16 to the Denarius, then Silver was to Bras 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 Bras lower 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, signifies 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. Chrift. 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 haste 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 Error 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 Caesarii, and therefore but 48 in the Pound, and not 50, as Helio-gabalus made, whose Error 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

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; whence-as 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 ½; 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 Covarruius, to the contrary would have done.

In the Margin. 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 Hol-
rvis were Consuls, and falls in with the Year of 
Christ 396; when Justinian came not to the Em-
pire 'till 527.

This retracting of what I have said before, 
shews both the Weakness of my Memory, as ma-
ny others, will my proneness to Errors, almost in-
umerable; 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 my 
self, so I can never sufficiently recommend Mr. Gre-
ves to my Reader; not only for writing very plainly 
and intelligibly, and being a great Master in Mathe-
matics, but that he always uses his greatest Care 
to Benefit his Reader, and communicate his Know-
ledge; whilst others rather endeavour to shew them-

selves 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 Charac-
ter is of a quite different Stamp, and was always as 
highly prized for his Honesty and Probit by Di-
vines; as for his great Judgment and Mathe-

matical Head, by the Masters of that admirable Sci-
ence. But I expect not that what I say concern-
ing this Great Man should be believed, without 
having my Words confirmed by Persons of far 
greater Authority: And the first shall be the Char-
acter 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 
Annius, p. 158. The most learned, and my most lov-
ing Friend, John Greaves, than whom, none ever de-
oted him, his Studies, and his Expenses, with 
more labor Attentive 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 Praifes 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 PRETORIUM, 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-Souls 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 Error 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 Error 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 Ist'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.
De Milliarenibus & Follibus 265

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 nec Institutio, usque ad Tempora Regis Henrici filii ejus; adeo ut viderim ego ipse quoisdam qui virtualia statuti temporius de fundis Regis ad curiam deferri viderint. Curtumque babebant officiales domus Regiae, a quibus Comitatibus triticum, a quibus diversas species carnium, vel equorum pabula, vel quaeque necessaria debantur, bis vero solutis secundum constitutum modum cujusque rei, Regii officiales computabant vicecomiti re- digentes in summam Denariozon.

Now as one Error 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 Chronicen, 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 bominum solidum unum.
Pro corpore Bovis pastuallis unum solidum.
Pro Ariete vel ove quatuor Denarios.
Pro prebenda 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 possesed of that Book, and that I may
may shew what a diligent Transcriber the aforesaid Rich. James was, I will print the Rest of that Exscript out of Ger. Tilbury, in this Place, which still more plainly discovers the Errores above-mentioned.

Succedente vero tempore cum idem Rex (H. I.) in transmarinis & remotis partibus; sedandis tumulis bellicis operam daret, ut fieret sibi summa necessaria ad bac explenda (but the Glossary fallly 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, prateriusi frequenter occurserat, oblatis vomeribus in signum deficientis Agriculture. Innumeris enim molefiis præmibantur occassione virtualium quae 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 prudenteres & discretiores cognoverat qui Circumeuntes (Gloss. Circumventes) & oculata fide fundas singulas perluostrantes, habita asimulatione virtualium quae de biis (Gloss. aiiis) redigerunt in summam Denariorum. De summa vero summum quae ex omnibus summis surget in uno comitatu, constituerunt vicecomitem comitatus illius ad Scaccarium teneri, addentes ut ad scalam solveret, hoc est propter (alias præter) quambilbet numeratam libram sex Denar rati sunt enim tracitu temporis, de facile posse fieri, ut moneta tunc foris a suo statu decideret. Ne eos felicit optimo, unde coæci sunt constituerre, ut firma manerorum non solum ad scalam sed ad pensum solveretur, quod persieri non potuit nisi longe plumb' appositis, &c.

I remember not any more Errores in the Chronicon,
De Milliarenibus & Follibus 267

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, Off. 13th, Ao. 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, be after fell to abating the Matter, and granted Commissions to Mislenden 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
268 ex Gronovio de pecunia vetere

cient Purity and Ponderosity of her great Grandfather
King Edward the 4th.

I have here transcribed so much of this wise and
politic 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 alter-
ing the Standard, that was the Effect of Edward
the 4th, or his great Counsellor; and as Mr. Lounds
stiles him, William Lord Hastings, his Mint Ma-
ter and Worker, Edward 4th. So that it was
Edward the 4th, and not Henry the 6th, that led
his Kinfinian 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 Dihonour and Loss
of the Crown, which that Prince professed should
never be the worse for his wearing it, and so detri-
tmental to all the several Subjects that should ev-
er 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 Cen-
sure, if any ever did; and for placing so many
two Pence and three Pence upon the Coins of
the Saxon Kings, and others since the Conquest.
For certainly it was a very indiscreet Act, for
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 Sculpture 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 fix 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 Error; 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 Seer 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 Error 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 Insirmities, 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 Errors, I believe had not escap'd, if his Original had been good, where as 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 Livy, lib. 1. cap. 41. gave in the first Class at \[100000\] of Bras.

Pliny, lib. 33. cap. 3. \[110000\] Of Bras.
Pomp. Fost. verbo infra Classem, at Aulus Gelius, lib. 7. 6. 13. \[120000\] \[125000\] Of Bras.

This Valuation of the 1st Class must have continued 'till A. 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 Asseus, that before the End of the 2d Punic or Hannibal's War, which ended A. 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 Miscollaneae, 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 according for above 200 Years together the Census Romanus will stand as follows:

| 120000 \[\text{Of Brass}\] | 100000 \[\text{amounts to 5000 0 0}\] |
| 120000 | 5500 0 0 |
| 120000 | 6000 0 0 |
| 125000 \[20\] | 6250 0 0 |

Suetonius in Aug. c. 41. 800000 H. S. which make 6666 13 4

Cassiodorus Ibidem, the highest Census raised by Augustus Caesar, to 120000 H. S. which make 10000 exactly.

Aca-
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 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.
<table>
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<tr>
<th>Num 'Sester' in Lat'</th>
<th>in Figur'</th>
<th>Pretium eorum, l.</th>
<th>s.</th>
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<tr>
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<tr>
<td>Sesterii duo</td>
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<td>166</td>
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<td>04</td>
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<tr>
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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. 7 s. But after Constantine the Great came to the Empire, and even in these Days, a Roman Pound
De TALENTIS, &c.

Of Gold will amount to about 38 l. 7 s. 6 d. English; but what is said of this last Metal, 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 latter 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 alleged, that I let so low a Value on the Attick Talent, as if the Roman Denarii had been equal to the Attick Drachma; now to rate the Attick Drachma right, I shall not compute as Mr. Gravus has done at the utmost, viz. 67 Grains but at 66 only, which makes the Drachma worth 8 d. ½ 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. 9½.

I never read any Thing (as I remember) concerning the Talentum Antiochiae and Talentum Antiochiae, save in Dr. Arbutnott'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.