

**Natural and political observations mentioned in a following index, and made upon the Bills of mortality / By John Graunt ... With reference to the government, religion, trade, growth, ayre, diseases, and the several changes of the said city [London] [Sometimes ascribed to Sir W. Petty].**

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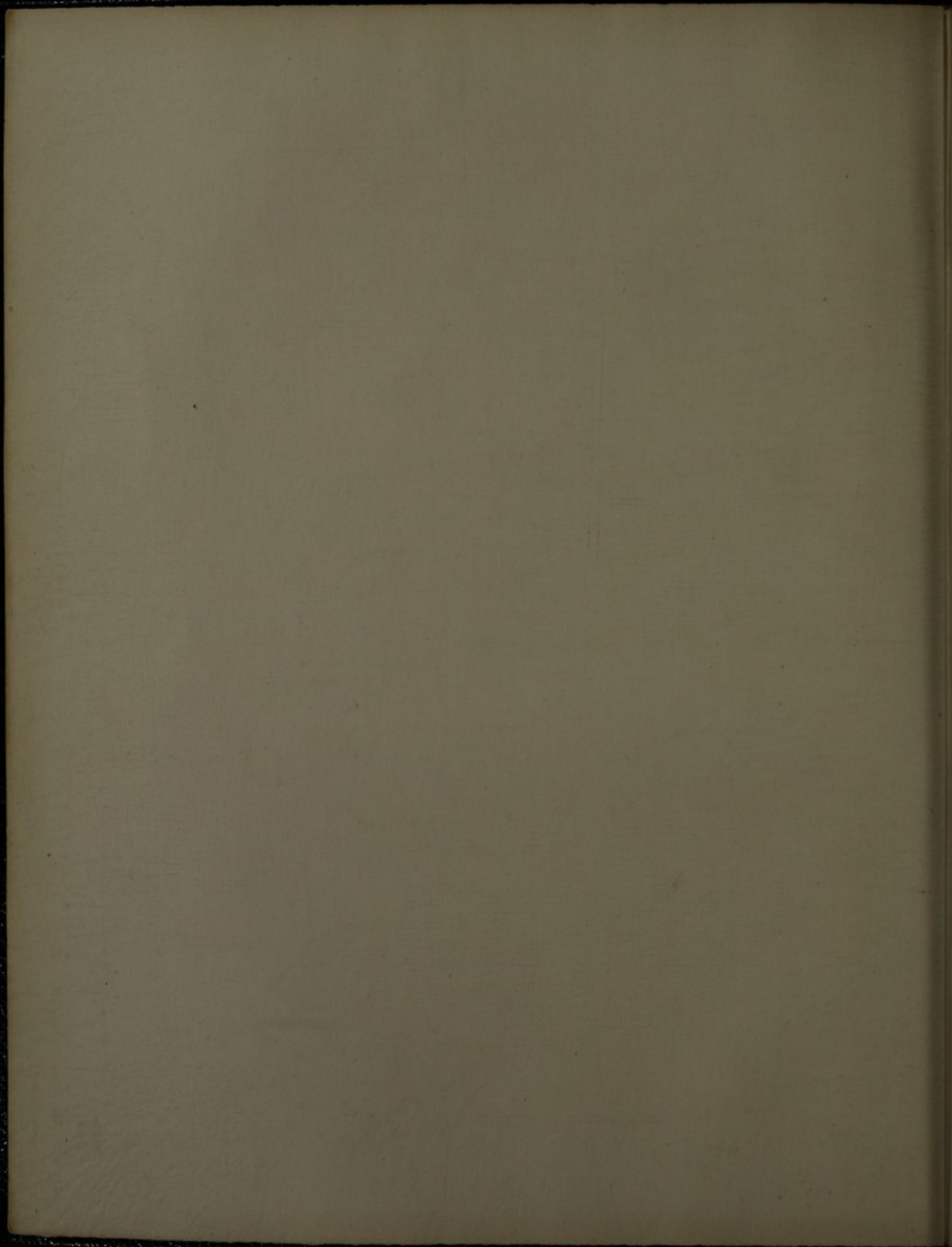
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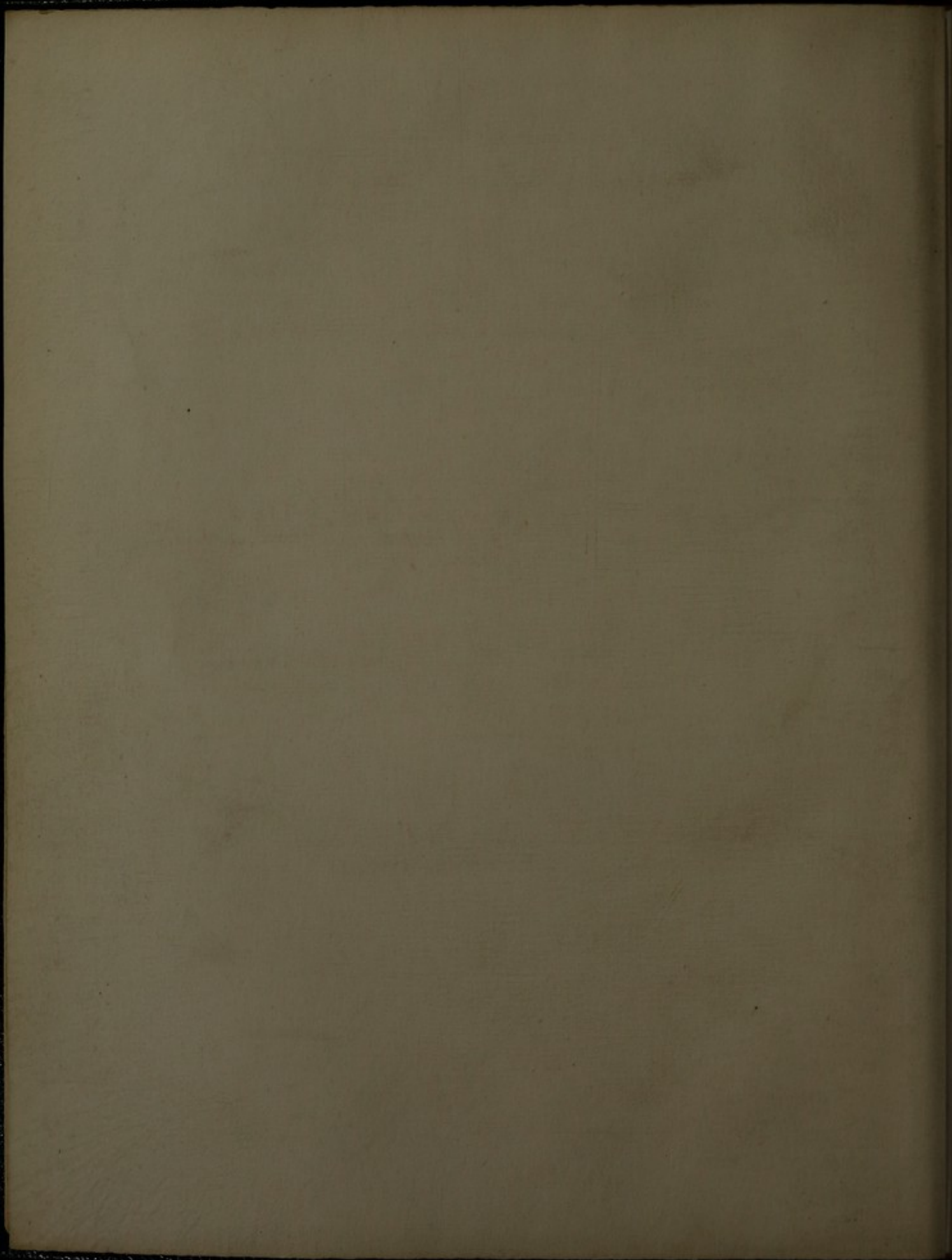












*Natural and Political*

74461

# OBSERVATIONS

Mentioned in a following INDEX,

and made upon the

Bills of Mortality.

---

By *JOHN GRAUNT*,

Citizen of

LONDON.

---

With reference to the *Government, Religion, Trade, Growth, Ayre, Diseases*, and the several Changes of the said CITY.

— *Non, me ut miretur Turba, laboro,  
Contentus paucis Lectoribus* —

---

LONDON,

Printed by *Tho: Roycroft*, for *John Martin, James Allestry*,  
and *Tho: Dicus*, at the Sign of the Bell in St. Paul's  
Church-yard, MDCLXII.



TO THE  
RIGHT HONOURABLE

JOHN Lord ROBERTS, Baron of  
Truro, Lord Privie-Seal, and one of His Majestie's  
most Honourable Privie Council.

*My Lord,*



AS the favours I have received from your Lordship oblige me to present you with some token of my *gratitude*: so the especial Honour I have for your Lordship hath made me *sollicitous* in the choice of the *Present*. For, if I could have given your Lordship any choice *Excerptions* out of the *Greek*, or *Latine* Learning, I should (according to our *English Proverb*) thereby but carry *Coals* to *Newcastle*, and but give your Lorship *Puddle-water*, who, by your own eminent *Knowledge* in those learned *Languages*, can drink out of the very *Fountains* your self.

Moreover, to present your Lordship with tedious *Narrations*, were but to speak my own *Ignorance* of the *Value*, which his Majesty, and the Publick have of your Lordship's Time. And in brief, to offer any thing like what is already in other Books, were but to derogate from your Lordship's learning, which the World knows to be universal, and unacquainted with few usefull things contained in any of them.

Now having (I know not by what accident) engaged my thoughts upon the *Bills of Mortality*, and so far succeeded therein, as to have reduced several great confused *Volumes* into a few perspicuous *Tables*, and abridged

### The Epistle Dedicatory.

such *Observations* as naturally flowed from them, into a few succinct *Paragraphs*, without any long Series of *multiloquious Deductions*, I have presumed to sacrifice these my small, but first publish'd, *Labours* unto your Lordship, as unto whose benigne acceptance of some other of my *Papers*, even the Birth of these is due; hoping (if I may without vanity say it) they may be of as much use to Persons in your Lordship's place, as they are of little or none to me, which is no more then the fairest *Diamonds* are to the *Journey-man Jeweller* that works them, or the poor *Labourer* that first dig'd them from the Earth. For with all humble submission to your Lordship, I conceive, That it doth not ill-become a *Peer of the Parliament*, or *Member of his Majestie's Council*, to consider how few starve of the many that beg: That the irreligious *Proposals* of some, to multiply People by *Polygamy*, is withall irrational, and fruitless: That the troublesome seclusions in the *Plague-time* is not a remedy to be purchased at vast inconveniencies: That the greatest *Plagues* of the City are equally, and quickly repaired from the Country: That the wasting of *Males* by Wars, and Colonies do not prejudice the due proportion between them and *Females*: That the Opinions of *Plagues* accompanying the Entrance of *Kings* is false, and seditious: That *London*, the *Metropolis* of *England*, is perhaps a Head too big for the Body, and possibly too strong: That this Head grows three times as fast as the Body unto which it belongs, that is, It doubles its People in a third part of the time: That our *Parishes* are now grown madly disproportionable: That our *Temples* are not sutable to our *Religion*: That the *Trade*, and very *City of London* removes *Westward*: That the walled City is but a one fifth of the whole Pyle: That

*The Epistle Dedicarory.*

That the old Streets are unfit for the present frequencie of *Coaches*: That the passage of *Ludgate* is a throat too straight for the Body: That the fighting men about *London*, are able to make three as great Armies as can be of use in this *Island*: That the number of Heads is such, as hath certainly much deceived some of our *Senatours* in their appointments of *Polemoney*, &c. Now, although your Lordship's most excellent Discourses have well informed me, That your Lordship is no stranger to all these *Positions*; yet because I knew not that your Lordship had ever deduced them from the *Bills of Mortality*; I hoped it might not be ungratefull to your Lordship, to see unto how much profit that one Talent might be improved, besides the many curiosities concerning the waxing, and waning of Diseases, the relation between *Healthfull*, and *fruitfull Seasons*, the difference between the City and Country *Air*, &c. All which, being new, to the best of my knowledge, and the whole Pamphlet, not two hours reading, I did make bold to trouble your Lordship with a perusal of it, and by this humble Dedication of it, let your Lordship and the world see the Wisdom of our City, in appointing, and keeping these Accompts, and with how much affection and success I am

*My Lord,*

*Your Lordship's most obedient, and  
most faithfull Servant,*

Birchen-Lane,

25 January 166 $\frac{1}{2}$ .

JOHN GRAUNT.

To the Honourable,  
Sir **ROBERT MORAY**, Knight,  
One of His Majestie's Privie-Council for His  
Kingdom of *Scotland*, and *President* of the Royal  
Society of *Philosophers*, meeting at *Gresham-College*,  
and to the rest of that Honourable Society.



*The Observations, which I happened to make (for I designed them not) upon the Bills of Mortality, have fallen out to be both Political, and Natural, some concerning Trade, and Government, others concerning the Air, Countries, Seasons, Fruitfulness, Health, Diseases; Longevity, and the proportions between the Sex, and Ages of Mankind. All which (because Sr. Francis Bacon reckons his Discourses of Life and Death to be Natural History; and because I understand your selves are also appointing means, how to measure the Degrees of Heat, Wetness, and Windiness in the several Parts of His Majestie's Dominions) I am humbly bold to think Natural History also, and consequently, that I am obliged to cast in this small Mite into your great Treasury of that kinde.*

*His Majesty being not onely by antient Right supremely concerned in matters of Government, and Trade, but also by happy accident Prince of Philosophers, and of Physico-Mathematical Learning, not called so by Flatterers, and Parasites, but really so, as well by his own personal Abilities,*

## The Epistle Dedicatory.

*ties, as affection concerning those matters, upon which Account I should have humbly dedicated both sorts of my Observations unto His most Sacred Majesty; but to be short, I knew neither my Work, nor my Person fit to bear His Name, nor to deserve His Patronage. Nevertheless, as I have presumed to present this Pamphlet, so far as it relates to Government, and Trade, to one of His Majesty's Peers, and eminent Ministers of State: so I do desire your leave, to present the same unto You also, as it relates to Natural History, and as it depends upon the Mathematiques of my Skop-Arithmetique. For You are not onely his Majesties Privie Council for Philosophie, but also His Great Council. You are the three Estates, viz. the Mathematical, Mechanical, and Physical. You are his Parliament of Nature, and it is no less disparagement to the meanest of your number, to say there may be Commoners as well as Peers in Philosophie amongst you. For my own part I count it happiness enough to my self, that there is such a Council of Nature, as your Society is, in being; and I do with as much earnestness enquire after your Expeditions against the Impediments of Science, as to know what Armies, and Navies the several Princes of the World are setting forth. I concern my self as much to know who are Curatours of this or the other Experiments, as to know who are Mareschals of France, or Chancellour of Sweden. I am as well pleased to hear you are satisfied in a luciferous Experiment, as that a breach hath been made in the Enemy's works: and your ingenious arguings immediately from sense, and fact, are as pleasant to me as the noise of victorious Guns, and Trumpets.*

*Moreover, as I contend for the Decent Rights, and Ceremonies of the Church, so I also contend against the envious Schismatics of your Society (who think you do nothing, unless*



## The Epistle Dedicatory.

*unless you presently transmute Mettals, make Butter and Cheese without Milk; and (as their own Ballad bath it, make Leather without Hides) by asserting the usefulness of even all your preparatory, and luciferous experiments being not the Ceremonies, but the substance, and principles of usefull Arts. For, I finde in Trade the want of an universal measure, and have heard Musicians wrangle about the just, and uniform keeping of time in their Consorts, and therefore cannot with patience bear, that your Labours about Vibrations, eminently conducing to both, should be slighted, nor your Pendula, called Swing-swangs with scorn. Nor can I better endure that your Exercitations about Air should be termed fit employment onely for Airie Fancies, and not adequate Tasks for the most solid, and piercing heads: This is my Opinion concerning you, and although I am none of your number, nor have the least ambition to be so, otherwise then to become able for your service, and worthy of your Trust: yet I am coveteous to have the right of being represented by you: To which end I desire, that this little Exhibition of mine, may be looked upon as a Free-holder's Vote for the choosing of Knights and Burgesles to sit in the Parliament of Nature, meaning thereby, that as the Parliament owns a Free-holder, though he hath but fourty Shillings a year to be one of them; so in the same manner and degree, I also desire to be owned as one of you, and that no longer, then I continue a faithfull Friend, and Servant of your Designs and Persons,*

J. G.

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T H E  
P R E F A C E.

**H**aving been born, and bred in the City of London, and having always observed, that most of them who constantly took in the weekly Bills of *Mortality*, made little other use of them, then to look at the foot, how the *Burials* increased, or decreased; And, among the *Casualties*, what had happened rare, and extraordinary in the week currant: so as they might take the same as a *Text* to talk upon, in the next Company; and withall, in the *Plague-time*, how the *Sickness* increased, or decreased, that so the *Rich* might judge of the necessity of their removall, and *Trades-men* might conjecture what doings they were like to have in their respective dealings:

2. Now, I thought that the Wisdom of our City had certainly designed the laudable practice of taking, and distributing these *Accompts*, for other, and greater uses then those above-mentioned, or at least, that some other uses might be made of them: And thereupon I casting mine Eye upon so many of the

General *Bills*, as next came to hand, I found encouragement from them, to look out all the *Bills* I could, and (to be short) to furnish my self with as much matter of that kind, even as the Hall of the *Parish-Clerks* could afford me; the which, when I had reduced into Tables (the Copies whereof are here inserted) so as to have a view of the whole together, in order to the more ready comparing of one *Year, Season, Parish,* or other *Division* of the City, with another, in respect of all the *Burials, and Christnings,* and of all the *Diseases, and Casualties* happening in each of them respectively; I did then begin, not onely to examine the Conceits, Opinions, and Conjectures, which upon view of a few scattered *Bills* I had taken up; but did also admit new ones, as I found reason, and occasion from my *Tables*.

3. Moreover, finding some *Truths*, and not commonly-believed Opinions, to arise from my Meditations upon these neglected *Papers*, I proceeded further, to consider what benefit the knowledge of the same would bring to the World; that I might not engage my self in idle, and useles Speculations, but like those Noble *Virtuosi* of *Gresham-Colledge* (who reduce their subtile Disquisitions upon Nature into downright Mechanical uses) present the World with some real fruit from those ayrie Blossoms.

4. How far I have succeeded in the Premisses, I now offer to the World's censure. Who, I hope, will not expect from me, not professing Letters, things demonstrated with the same certainty, wherewith Learned men determine in their *Scholes*; but will take it well, that I should offer at a new thing, and could  
forbear

(3)

forbear presuming to meddle where any of the Learned Pens have ever touched before, and that I have taken the pains, and been at the charge, of setting out those *Tables*, whereby all men may both correct my *Positions*, and raise others of their own: For herein I have, like a silly Schole-boy, coming to say my Lesson to the World (that Peevish, and Tetchie Master) brought a bundle of Rods wherewith to be whipt, for every mistake I have committed.

---

B 2

CHAP.

## CHAP. I.

*Of the Bills of Mortality, their beginning, and progress.*

**T**He first of the continued weekly *Bills of Mortality* extant at the Parish-Clerks *Hall*, begins the 29. of *December*, 1603, being the first year of King *James* his Reign; since when, a weekly Accompt hath been kept there of *Burials* and *Christnings*. It is true, There were *Bills* before, *viz.* for the years 1592, -93, -94. but so interrupted since, that I could not depend upon the sufficiency of them, rather relying upon those Accompts which have been kept since, in order, as to all the uses I shall make of them.

2. I believe, that the rise of keeping these Accompts, was taken from the *Plague*: for the said *Bills* (for ought appears) first began in the said year 1592. being a time of great *Mortality*; And after some disuse, were resumed again in the year 1603, after the great *Plague* then happening likewise.

3. These *Bills* were Printed and published, not onely every week on *Thursdays*, but also a general Accompt of the whole Year was given in, upon the *Thursday* before *Christmas Day*: which said general Accompts have been presented in the several manners following, *viz.* from the Year 1603, to the Year 1624, *inclusive*, according to the Pattern here inserted.

The

1623.

1624.

The generall *Bill* for the whole Year, of all the *Burials* and *Christnings*, as well within the City of *London*, and the *Liberties* thereof, as in the *Nine* out-*Parishes* adjoyning to the City, with the *Pest-house* belonging to the same: From *Thursday* the 18. of *December*. 1623. to *Thursday* the 16. of *December*, 1624. According to the Report made to the King's most Excellent Majesty, by the Company of the *Parish-Clerks* of *London*.

Buried this Year in the fourscore and seventeen <i>Parishes</i> of <i>London</i> within the walls, _____	3386.
Whereof, of the <i>Plague</i> , _____	1.
Buried this Year in the sixteen <i>Parishes</i> of <i>London</i> , and the <i>Pest-house</i> , being within the <i>Liberties</i> , and without the walls, _____	5924.
Whereof, of the <i>Plague</i> , _____	5.
The whole sum of all the <i>Burials</i> in <i>London</i> , and the <i>Liberties</i> thereof, is this Year, _____	9310.
Whereof, of the <i>Plague</i> , _____	6.
Buried of the <i>Plague</i> without the <i>Liberties</i> , in <i>Middlesex</i> , and <i>Surrey</i> this whole Year, _____	0.
Christned in <i>London</i> , and the <i>Liberties</i> thereof, this Year, _____	6368.
Buried this Year in the <i>Nine</i> out- <i>Parishes</i> , adjoyning to <i>London</i> , and out of the <i>Freedom</i> , _____	1900.
Whereof, of the <i>Plague</i> , _____	5.
The Total of all the <i>Burials</i> in the places aforesaid, is _____	12210.
Whereof, of the <i>Plague</i> , _____	11.
Christned in all the aforesaid places this Year _____	8299.
<i>Parishes</i> clear of the <i>Plague</i> , _____	116.
<i>Parishes</i> that have been Infected this Year. _____	6.

4 In the Year 1625, every *Parish* was particularized, as in this following *Bill*: where note, That this next year of *Plague* caused the Augmentation, and Correction of the *Bills*; as the former year of *Plague*, did the very being of them.

1624.

1625.

A general, or great Bill for this Year, of the whole number of Burials, which have been buried of all Diseases, and also of the *Plague* in every Parish within the City of *London*, and the Liberties thereof, as also in the nine out-Parishes adjoining to the said City, with the Pest-house belonging to the same. From *Thursday* the 16. day of *December*, 1624. to *Thursday* the 15. day of *December*, 1625. According to the Report, made to the king's most Excellent Majesty, by the Company of Parish-Clerks of *London*.

LONDON,		Bur.	Plag.	LONDON.		Bur.	Plag.
Albanes in Woodstreet	—	188	78	Gabriel Fen-church	—	71	54
Alhallows Barking	—	397	263	George Botolphs-lane	—	30	19
Alhallows Breadstreet	—	34	14	Gregories by Pauls	—	296	196
Alhallows the Great	—	442	302	Hellens in Bishopsgatest.	136	71	
Alhallows Hony-lane	—	18	8	James by Garlickhithe	—	180	109
Alhallows the less	—	259	205	John Baptist	—	122	79
Alhal. in Lumberdstreet	—	86	44	John Evangelist	—	7	0
Alhallows Stainings	—	183	138	John Zacharies	—	143	97
Alhallows the Wall	—	301	155	James Duks place	—	310	254
Alphage Cripple-gate	—	240	190	Katherine Coleman	—	263	175
Andrew-Hubbard	—	146	101	Ratherine Cree-church	—	886	373
Andrews Undershaft	—	219	149	Lawrence in the Jewrie	—	91	55
Andrews by Wardrobe	—	373	191	Lawrence Pountney	—	206	127
Annes at Aldersgate	—	196	128	Leonards Eastcheap	—	55	26
Annes Black-Friers	—	336	215	Leonards Fosterlane	—	292	209
Antholins Parish	—	62	31	Magnus Parish by Bridge	—	137	85
Austins Parish	—	72	40	Margarets Lothbury	—	114	64
Barthol. at the Exchange	—	52	24	Margarets Moses	—	37	25
Bennets Fink	—	108	57	Margarets new Fishstreet	—	123	82
Bennets Grace-Church	—	48	14	Margarets Pattons	—	77	50
Bennets at Pauls Wharf	—	226	131	Mary Ab-church	—	98	58
Bennets Sherehog	—	24	8	Mary Aldermanbury	—	126	79
Botolps Billings-gate	—	99	66	Mary Alderniary	—	92	54
Christ's Church Parish	—	611	371	Mary le Bow	—	35	19
Christopher's Parish	—	48	28	Mary Bothaw	—	22	14
Clements by Eastcheap	—	87	72	Mary Colechurch	—	26	11
Dyonis Black-Church	—	99	59	Mary at the Hill	—	152	84
Dunstons in the East	—	335	225	Mary Mounthaw	—	76	58
Edmunds Lumberdstreet	—	78	49	Mary Sommerfet	—	270	192
Ethelborow in Bishopsg	—	205	101	Mary Stainings	—	70	44
St. Faiths	—	89	45	Mary Woolchurch	—	58	35
St. Fosters in Foster-lane	—	149	102	Mary Woolnoth	—	82	50

Martins

LONDON.	Bur.	Pla.
Martins Ironmonger-lane	25	18
Martins at Ludgate	254	164
Martins Orgars	88	47
Martins Outwich	60	30
Martins in the Vintry	339	208
Matthew Fridaystreet	24	11
Maudlins in Milkstreet	401	23
Maudlins Oldfish-street	225	142
Michael Bassishaw	199	139
Michael Corn-Hill	159	79
Michael Crooked-lane	144	91
Michael Queenhithe	215	157
Michael in the Quern	53	30
Michael in the Ryal	111	61
Michael in Woodstreet	189	68
Mildreds Breadstreet	60	44
Mildreds Poultry	94	45

LONDON.	Bur.	Pla.
Nicholas Acons	33	13
Nicholas Cole-Abby	87	67
Nicholas Olaves	70	43
Olaves in Hartstreet	266	195
Olaves in the Jewry	43	25
Olaves in Silverstreet	174	103
Pancras by Soperlane	17	8
Peter in Cheap	68	44
Peters in Corn-hill	318	78
Peters at Pauls Wharf	97	68
Peters poor in Broadstreet	52	27
Stevens in Colemanstreet	506	350
Stevens in Walbrook	25	13
Swithins at Londonstone	99	60
Thomas Apostles	141	107
Trinity Parish	148	87

Buried within the 97. Parishes within the Walls of, all Diseases. — 14340.  
 Where of, of the Plague. — 9197.

Andrews in Holborn	2190	1636	Georges Southwark	1608	912
Bartholmew the Great	516	360	Giles Cripplegate	3988	2338
Bartholmew the less	111	65	Olaves in Southwark	3689	2609
Brides Parish	1481	1031	Saviours in Southwark	2746	1671
Botolph Algate	2573	1653	Sepulchres Parish	3425	2420
Bridewel Precinct	213	152	Thomas in Southwark	335	277
Bottolph Bishopgate	2334	714	Trinity in the Minories	131	87
Botolph Aldersgate	578	307	At the Pesthouse	194	189
Dunstanes the West	860	642			

Buried in the 16 Parishes without the Walls, standing part within the Liberties, and part without: in Middlesex, and Surrey, and at the Pesthouse. — 26972  
 Whereof, of the Plague — 17153

Buried in the nine out-Parishes.

Clements Templebar	1284	755	Martins in the Fields	1470	973
Giles in the Fields	1333	947	Mary White-chappel	3305	2272
James at Clarkenwell	1191	903	Magdalens Bermondsey	1127	889
Katherins by the Tower	998	744	Savoy Parish	250	176
Leonards in Shorditch	1995	1407			

Buried in the nine out Parishes, in Middlesex, and Surrey — 12953  
 Whereof, of the Plague — 9067



The Total of all the Burials of all Diseases, within the Walls, without the Walls, in the Liberties, in Middlesex and Surrey: with the nine Out Parishes and the Pest-house.	} 54265.
Whereof Buried of the Plague, this present year, is	35417
Christnings this present year, is	6983
Parishes clear this year, is	1
Parishes infected this year, is	121

5. In the Year 1626. the City of *Westminster* in imitation of *London*, was inserted. The grosse account of the *Burials*, and *Christnings*, with distinction of the *Plague* being only taken notice of therein; the fifth, or last Canton, or Lined-space, of the said Bill, being varied into the form following, *viz.*

In <i>Westminster</i> this Year,	{	Buried	471
		Plague	13
		Christnings	361

6. In the Year 1629. An account of the *Diseases*, and *Casualties* whereof any dyed, together with the distinction of *Males* and *Females*, making the sixth Canton of the Bill, was added in manner following.

The Canton of *Casualties*, and of the Bill for the Year 1639. being of the some forme with that of 1629.

*The Diseases, and Casualties this year being 1632.*

<b>A</b> Bortive, and Stillborn — 445	Jaundies ————— 43
Affrighted ————— 1	Jawfalln ————— 8
Aged ————— 628	Impostume ————— 74
Ague ————— 43	Kil'd by several accidents — 46
Apoplex, and Meagrom — 17	King's Evil ————— 38
Bit with a mad dog ——— 1	Lethargie ————— 2
Bleeding ————— 3	Livergrown ————— 87
Bloody flux, scowring, and flux 348	Lunatique ————— 5
Brused, Issues, fores, and ulcers, 28	Made away themselves ——— 15
Burnt, and Scalded ——— 5	Measles ————— 80
Burst, and Rupture ——— 9	Murthered ————— 7
Cancer, and Wolf ——— 10	Over-laid, and starved at nurse — 7
Canker ————— 1	Palfie ————— 25
Childbed ————— 171	Piles ————— 1
Chrisomes, and Infants ——— 2268	Plague ————— 8
Cold, and Cough ——— 55	Planet ————— 13
Colick, Stone, and Strangury — 56	Pleurisie, and Spleen ——— 36
Consumption ————— 1797	Purples, and spotted Feaver — 38
Convulsion ————— 241	Quinsie ————— 7
Cut of the Stone ——— 5	Rising of the Lights ——— 98
Dead in the street, and starved — 6	Sciatica ————— 1
Dropfie, and Swelling ——— 267	Scurvey, and Itch ——— 9
Drowned ————— 34	Suddenly ————— 62
Executed, and prest to death — 18	Surfet ————— 86
Falling Sicknesse ——— 7	Swine Pox ————— 6
Fever ————— 1108	Teeth ————— 470
Fistula ————— 13	Thrush, and Sore mouth ——— 40
Flocks, and small Pox ——— 531	Tympany ————— 13
French Pox ————— 12	Tiffick ————— 34
Gangrene ————— 5	Vomiting ————— 1
Gout ————— 4	Worms ————— 27
Grief ————— 11	

Christened { Males — 4994 } Buried { Males — 4932 } Whereof,  
 { Females — 4590 } { Females — 4603 } of the  
 { In all — 9584 } { In all — 9535 } Plague 8

Increased in the Burials in the 122 Parishes, and at the Pesthouse this year 993  
 Decreased of the Plague in the 122 Parishes, and at the Pesthouse this year. 266

7. In the year 1636, the Accompt of the *Burials*, and *Christnings* in the Parishes of *Islington*, *Lambeth*, *Stepney*, *Newington*, *Hackney*, and *Redriff*, were added in the manner following, making a seventh Canton, *viz.*

In Margaret Westminster	{ Christned — 440 Buried — 890 Plague — 0	Newington	{ Christned — 99 Buried — 181 Plague — 0
Islington	{ Christned — 36 Buried — 113 Plague — 0	Hackney	{ Christned — 30 Buried — 91 Plague — 0
Lambeth	{ Christned — 132 Buried — 220 Plague — 0	Redriff	{ Christned — 16 Buried — 48 Plague — 0
Stepney	{ Christned — 892 Buried — 1486 Plague — 0		

The total of all the *Burials* in the seven last Parishes this Year — 2958  
Whereof of the *Plague* — 0  
The total of all the *Christnings* — 1645

8. *Covent Garden* being made a Parish, the nine out-Parishes were called the ten out-Parishes, the which in former years were but eight.

9. In the year 1660. the last-mentioned ten Parishes, with *Westminster*, *Islington*, *Lambeth*, *Stepney*, *Newington*, *Hackney*, and *Redriff*, are entered under two Divisions, *viz.* the one containing the twelve Parishes lying in *Middlesex*, and *Surrey*, and the other the five Parishes within the City, and Liberties of *Westminster*, *viz.* *St. Clement-Danes*, *St. Paul's-Covent-Garden*, *St. Martin's in the Fields*, *St. Mary-Savoy*, and *St. Margaret's Westminster*.

10. We have hitherto described the several steps, whereby

whereby the *Bills of Mortality* are come up to their present state; we come next to shew how they are made, and composed, which is in this manner, *viz.* When any one dies, then, either by tolling, or ringing of a Bell, or by bespeaking of a Grave of the *Sexton*, the same is known to the *Searchers*, corresponding with the said *Sexton*.

11. The *Searchers* hereupon (who are antient Matrons, sworn to their Office) repair to the place, where the dead Corps lies, and by view of the same, and by other enquiries, they examine by what *Disease*, or *Casualty* the Corps died. Hereupon they make their Report to the *Parish-Clerk*, and he, every *Tuesday* night, carries in an Accompt of all the *Burials*, and *Christnings*, hapning that Week, to the *Clerk* of the *Hall*. On *Wednesday* the general Accompt is made up, and Printed, and on *Thursdays* published, and dispersed to the several Families, who will pay four shillings *per Annum* for them.

12. *Memorandum*, That although the general yearly *Bills* have been set out in the several varieties aforementioned, yet the Original Entries in the *Hall-books* were as exact in the very first Year as to all particulars, as now; and the specifying of *Casualties* and *Diseases*, was probably more.

## CAP. II.

*General Observations upon the Casualties.*

**I**N my Discourses upon these *Bills* I shall first speak of the *Casualties*, then give my Observations with reference to the *Places*, and *Parishes* comprehended in the *Bills*; and next of the *Years*, and *Seasons*.

1. There seems to be good reason, why the *Magistrate* should himself take notice of the numbers of *Burials*, and *Christnings*, viz. to see, whether the *City* increase or decrease in people; whether it increase proportionably with the rest of the *Nation*; whether it be grown big enough, or too big, &c. But why the same should be made known to the *People*, otherwise then to please them as with a curiosity, I see not.

2. Nor could I ever yet learn (from the many I have asked, and those not of the least *Sagacity*) to what purpose the distinction between *Males* and *Females* is inserted, or at all taken notice of; or why that of *Marriages* was not equally given in? Nor is it obvious to every body, why the Accompt of *Casualties* (whereof we are now speaking) is made? The reason, which seems most obvious for this latter, is, That the state of health in the *City* may at all times appear.

3. Now it may be Objected, That the same depends most upon the Accompts of *Epidemical Diseases*, and upon the chief of them all, the *Plague*; wherefore the mention of the rest seems onely matter of curiosity.

4. But

4. But to this we answer; That the knowledg even of the numbers, which die of the *Plague*, is not sufficiently deduced from the meer Report of the *Searchers*, which onely the Bills afford; but from other Ratiocinations, and comparings of the *Plague* with some other *Casualties*.

5. For we shall make it probable, that in Years of *Plague* a quarter part more dies of that *Disease* then are set down; the same we shall also prove by the other *Casualties*. Wherefore, if it be necessary to impart to the World a good Accompt of some few *Casualties*, which since it cannot well be done without giving an Accompt of them all, then is our common practise of so doing very apt, and rational.

6. Now, to make these Corrections upon the perhaps, ignorant, and careless *Searchers* Reports, I considered first of what Authority they were in themselves, that is, whether any credit at all were to be given to their Distinguishments: and finding that many of the *Casualties* were but matter of sense, as whether a Childe were *Abortive*, or *Stilborn*; whether men were *Aged*, that is to say, above sixty years old, or thereabouts, when they died, without any curious determination, whether such *Aged* persons died purely of *Age*, as for that the *Innate heat* was quite extinct, or the *Radical moisture* quite dried up (for I have heard some Candid *Physicians* complain of the darkness, which themselves were in hereupon) I say, that these Distinguishments being but matter of sense, I concluded the *Searchers* Report might be sufficient in the Case.

7. As for *Consumptions*, if the *Searchers* do but truly Report,

Report (as they may) whether the dead Corps were very lean, and worn away, it matters not to many of our purposes, whether the Disease were exactly the same, as *Physicians* define it in their Books. Moreover, In case a man of seventy five years old died of a *Cough* (of which had he been free, he might have possibly lived to ninety) I esteem it little error (as to many of our purposes) if this Person be, in the Table of *Casualties*, reckoned among the *Aged*, and not placed under the Title of *Coughs*.

8. In the matter of *Infants* I would desire but to know clearly, what the *Searchers* mean by *Infants*, as whether Children that cannot speak, as the word *Infans* seems to signify, or Children under two or three years old, although I should not be satisfied, whether the *Infant* died of *Winds*, or of *Teeth*, or of the *Convulsion*, &c. or were choak'd with *Phlegm*, or else of *Teeth*, *Convulsion*, and *Scouring*, apart, or together, which, they say, do often cause one another: for, I say, it is somewhat, to know how many die usually before they can speak, or how many live past any assigned number of years.

9. I say, it is enough, if we know from the *Searchers* but the most predominant Symptoms; as that one died of the *Head-Ache*, who was sorely tormented with it, though the *Physicians* were of Opinion, that the Disease was in the *Stomach*. Again, if one died *suddenly*, the matter is not great, whether it be reported in the Bills, *Suddenly*, *Apoplexie*, or *Planet-strucken*, &c.

10. To conclude, In many of these cases the *Searchers* are able to report the Opinion of the *Physician*,

*scian*, who was with the Patient, as they receive the same from the Friends of the Defunct, and in very many cases, such as *Drowning, Scalding, Bleeding, Vomiting, making-away them selves, Lunatiques, Sores, Small-Pox, &c.* their own senses are sufficient, and the generality of the World, are able prettily well to distinguish the *Gout, Stone, Dropfie, Falling-Sickness, Palsie, Agues, Plurisy, Rickets, &c.* one from another.

11. But now as for those Casualties, which are aptest to be confounded, and mistaken, I shall in the ensuing Discourse presume to touch upon them so far, as the Learning of these Bills hath enabled me.

12. Having premised these general Advertisements, our first Observation upon the *Casualties* shall be, that in twenty Years there dying of all diseases and *Casualties*, 229250. that 71124. dyed of the *Thrush, Convulsion, Rickets, Teeth, and Worms*; and as *Abortives, Chrysores, Infants, Liver-grown, and Overlaid*; that is to say, that about  $\frac{1}{3}$ . of the whole died of those Diseases, which we guess did all light upon Children under four or five Years old.

13. There died also of the *Small-Pox, Swine-Pox, and Measles*, and of *Worms* without *Convulsions*, 12210. of which number we suppose likewise, that about  $\frac{1}{2}$ . might be Children under six Years old. Now, if we consider that 16. of the said 229 thousand died of that extraordinary and grand *Casualty* the *Plague*, we shall finde that about thirty six *per centum* of all quick conceptions, died before six years old.

14. The second Observation is; That of the said 229250. dying of all Diseases, there died of acute Diseases



Diseases ( the *Plague* excepted ) but about 50000. or  $\frac{2}{9}$  parts. The which proportion doth give a measure of the state, and disposition of this *Climate*, and *Air*, as to health, these *acute*, and *Epidemical* Diseases happening suddenly, and vehemently, upon the like corruptions, and alterations in the *Air*.

15. The third Observation is, that of the said 229. thousand about 70. died of *Chronical* Diseases, which shews (as I conceive) the state, and disposition of the Country (including as well it's *Food*, as *Air*) in reference to health, or rather to *longevity*: for as the proportion of *Acute* and *Epidemical* Diseases shews the aptness of the *Air* to suddain and vehement Impressions, so the *Chronical* Diseases shew the ordinary temper of the Place, so that upon the proportion of *Chronical* Diseases seems to hang the judgment of the fitness of the Country for *long Life*. For, I conceive, that in Countries subject to great *Epidemical* sweeps men may live very long, but where the proportion of the *Chronical* distempers is great, it is not likely to be so; because men being long sick, and always sickly, cannot live to any great age, as we see in several sorts of *Metal-men*, who although they are less subject to acute Diseases then others, yet seldome live to be old, that is, not to reach unto those years, which *David* saies is the age of man.

16. The fourth Observation is; That of the said 229000. not 4000. died of outward Grievs, as of *Cancers*, *Fistulaes*, *Sores*, *Ulcers*, *broken and bruised Limbs*, *Impostumes*, *Itch*, *King's-evil*, *Leprosie*, *Scald-head*, *Swine-Pox*, *Wens*, &c. viz. not one in 60.

17. In the next place, whereas many persons  
live

live in great fear, and apprehension of some of the more formidable, and notorious diseases following; I shall onely set down how many died of each: that the respective numbers, being compared with the Total 229250, those persons may the better understand the hazard they are in.

*Table of notorious Diseases.*

<i>Apoplex</i> —————	1306
<i>Cut of the Stone</i> ———	0038
<i>Falling Sickness</i> ———	0074
<i>Dead in the streets</i> ———	0243
<i>Gowt</i> —————	0134
<i>Head-Ach</i> —————	0051
<i>Jaundice</i> —————	0998
<i>Lethargy</i> —————	0067
<i>Leprosy</i> —————	0006
<i>Lunatique</i> —————	0158
<i>Overlaid, and starved</i> ———	0529
<i>Palsy</i> —————	0423
<i>Rupture</i> —————	0201
<i>Stone and Strangury</i> ———	0863
<i>Sciatica</i> —————	0005
<i>Sodainly</i> —————	0454

*Table of Casualties.*

<i>Bleeding</i> —————	069
<i>Burnt, and Scalded</i> ———	125
<i>Drowned</i> —————	829
<i>Excessive drinking</i> ———	002
<i>Frighted</i> —————	022
<i>Grief</i> —————	279
<i>Hanged themselves</i> ———	222
<i>Kil'd by several accidents</i> } ———	1021
<i>Murthered</i> —————	0086
<i>Poysoned</i> —————	014
<i>Smothered</i> —————	026
<i>Shot</i> —————	007
<i>Starved</i> —————	051
<i>Vomiting</i> —————	136

18. In the foregoing Observations we ventured to make a Standard of the healthfulness of the *Air* from the proportion of *Acute* and *Epidemical* diseases, and of the wholesomeness of the Food from that of the *Chronical*. Yet, forasmuch as neither of them alone do shew the *longevity* of the Inhabitants, we

D

shall

shall in the next place come to the more absolute Standard, and Correction of both, which is the proportion of the aged, *viz.* 15757 to the Total 229250. That is of about 1. to 15. or 7. *per cent* Onely the question is, what number of Years the *Searchers* call *Aged*, which I conceive must be the same, that *David* calls so, *viz.* 70. For no man can be said to die properly of *Age*, who is much less: it follows from hence, that if in any other Country more then seven of the 100 live beyond 70. such Country is to be esteem'd more healthfull then this of our City.

19. Before we speak of particular *Casualties*, we shall observe, that among the several *Casualties* some bear a constant proportion unto the whole number of *Burials*; such are *Chronical* diseases, and the diseases, whereunto the City is most subject; as for Example, *Consumptions*, *Dropsies*, *Faundice*, *Gowt*, *Stone*, *Palsie*, *Scurvy*, *rising of the Lights*, or *Mother*, *Rickets*, *Aged*, *Agnes*, *Feavers*, *Bloody-Flux*, and *Scouring*: nay some Accidents, as *Grief*, *Drowning*, *Men's making away themselves*, and being *Kil'd by several Accidents*, &c. do the like, whereas *Epidemical*, and *Malignant* diseases, as the *Plague*, *Purples*, *Spotted-Feaver*, *Small-Pox*, and *Measles* do not keep that equality, so as in some Years, or Moneths, there died ten times as many as in others.

## CHAP. III.

*Of Particular Casualties.*

1. **M**Y first Observation is, That few are *starved*. This appears, for that of the 229250 which have died, we find not above fifty one to have been *starved*, excepting helpless *Infants* at Nurse, which being caused rather by carelesness, ignorance, and infirmity of the Milch-women, is not properly an effect, or sign of want of food in the Countrey, or of means to get it.

2. The Observation, which I shall add hereunto, is, That the vast numbers of *Beggars*, swarming up and down this City, do all live, and seem to be most of them healthy and strong; whereupon I make this Question, Whether, since they do all live by Begging, that is, without any kind of labour; it were not better for the State to keep them, even although they earned nothing; that so they might live regularly, and not in that Debauchery, as many *Beggars* do; and that they might be cured of their bodily Impotencies, or taught to work, &c. each according to his condition, and capacity; or by being employed in some work (not better undone) might be accustomed, and fitted for labour.

3. To this some may Object; That *Beggars* are now maintained by voluntary Contributions, whereas in the other way the same must be done by a general

neral Tax ; and consequently the Objects of Charity would be removed, and taken away.

4. To which we Answer ; That in *Holland*, although no where fewer Beggars appear to charm up commiseration in the credulous, yet no where is there greater, or more frequent Charity : onely indeed the Magistrate is both the *Beggar*, and the *disposer* of what is gotten by *begging* ; so as all Givers have a Moral certainty, that their Charity shall be well applied.

5. Moreover, I question ; Whether what we give to a Wretch, that shews us lamentable sores, and mutilations, be always out of the purest charity ? that is, purely for God's sake ; for as much as when we see such Objects, we then feel in our selves a kinde of pain, and passion by consent ; of which we ease our selves, when we think we have eased them, with whom we sympathized: or else we bespeak aforehand the like commiseration in others towards our selves, when we shall (as we fear we may) fall into the like distres.

6. We have said, *'Twere better the Publick should keep the Beggars, though they earned nothing, &c.* But most men will laugh to hear us suppose, That any able to work (as indeed most *Beggars* are, in one kind of measure, or another) should be kept without earning any thing. But we Answer, That if there be but a certain proportion of work to be done ; and that the same be already done by the *non-Beggars* ; then to employ the *Beggars* about it, will but transfer the want from one hand to another ; nor can a Learner work so cheap as a skilfull practised Artist can. As for example, A practised *Spinner* shall spin a pound of  
Wool

Wool worth two shillings for six pence; but a learner, undertaking it for three pence, shall make the Wool indeed into Yarn, but not worth twelve pence.

7. This little hint is the model of the greatest work in the World, which is the making *England* as considerable for Trade as *Holland*; for there is but a certain proportion of Trade in the world, and *Holland* is prepossessed of the greater part of it, and is thought to have more skill, and experience to manage it: wherefore, to bring *England* into *Holland's* condition, as to this particular, is the same, as to send all the Beggars about *London* into the *West-Country* to Spin, where they shall onely spoil the *Clothiers* Wool, and beggar the present Spinners at best; but, at worst, put the whole Trade of the Country to a stand, untill the *Hollander*, being more ready for it, have snapt that with the rest.

8. My next Observation is; That but few are *Murthered*, viz. not above 86 of the 22950. which have died of other diseases, and casualties; whereas in *Paris* few nights scape without their *Tragedie*.

9. The Reasons of this we conceive to be *Two*: One is the *Government*, and *Guard* of the City by *Citizens* themselves, and that alternately. No man settling into a Trade for that employment. And the other is, The natural, and customary abhorrence of that inhumane *Crime*, and all *Bloodshed* by most *Englishmen*: for of all that are *Executed* few are for *Murther*. Besides the great and frequent *Revolutions*, and *Changes of Government* since the year 1650, have been with little *bloodshed*; the *Usurpers* themselves having *Executed* few in comparison, upon the  
Accompt

Accompt of disturbing their Innovations.

10. In brief, when any dead Body is found in *England*, no *Algebraist*, or *Uncipherer* of Letters, can use more subtile suppositions, and varietie of conjectures to finde out the Demonstration, or Cipher; then every common unconcerned Person doth to finde out the Murtherers, and that for ever, untill it be done.

11. The *Lunaticks* are also but few, *viz.* 158 in 229250. though I fear many more then are set down in our *Bills*, few being entred for such, but those who die at *Bedlam*; and there all seem to die of their *Lunacie*, who died *Lunaticks*; for there is much difference in computing the number of *Lunaticks*, that die (though of *Fevers*, and all other Diseases, unto which *Lunacie* is no *superfediās*) and those that die by reason of their *Madness*.

12. So that, this *Casualty* being so uncertain, I shall not force my self to make any inference from the numbers, and proportions we finde in our *Bills* concerning it: onely I dare ensure any man at this present, well in his *Wits*, for one in the thousand, that he shall not die a *Lunatick* in *Bedlam*, within these seven years, because I finde not above one in about one thousand five hundred have done so.

13. The like use may be made of the Accompts of men, that made away themselves, who are another sort of Mad-men, that think to ease themselves of pain by leaping into *Hell*; or else are yet more Mad, so as to think there is no such place; or that men may go to rest by death, though they die in *self-murther*, the greatest Sin.

14. We shall say nothing of the numbers of those, that have been *Drowned, Killed by falls from Scaffolds,* or by *Carts running over them, &c.* because the same depends upon the casual Trade, and Employment of men, and upon matters, which are but circumstantial to the Seasons, and Regions we live in; and affords little of that Science and Certainty we aim at.

15. We finde one *Casualty* in our Bills, of which though there be daily talk, there is little effect, much like our abhorrence of *Toads,* and *Snakes,* as most poisonous Creatures, whereas few men dare say upon their own knowledge, they ever found harm by either; and this *Casualty* is the *French-Pox,* gotten, for the most part, not so much by the intemperate use of *Venery* (which rather causeth the *Gowt*) as of many common Women.

16. I say, the Bills of *Mortality* would take off these Bars, which keep some men within bounds, as to these extravagancies: for in the afore-mentioned 229250 we finde not above 392 to have died of the *Pox.* Now, forasmuch as it is not good to let the World be lulled into a security, and belief of Impunity by our Bills, which we intend shall not be onely as *Death's-head,* to put men in minde of their *Mortality,* but also as *Mercurial Statues* to point out the most dangerous ways that lead us into it, and misery. We shall therefore shew, that the *Pox* is not as the *Toads,* and *Snakes* afore-mentioned, but of a quite contrary nature, together with the reason why it appears otherwise.

17. Forasmuch as by the ordinary discourse of the world it seems a great part of men have, at one time,

or



or other, had some *species* of this disease, I wondering why so few died of it, especially because I could not take that to be so harmless, whereof so many complained very fiercely; upon inquiry I found that those who died of it out of the Hospitals (especially that of *King's-Land*, and the *Lock* in *Southwark*) were returned of *Ulcers*, and *sores*. And in brief I found, that all mentioned to die of the *French-Pox* were returned by the *Clerks* of *Saint Giles's*, and *Saint Martin's in the Fields* onely; in which place I understood that most of the vilest, and most miserable houses of uncleanness were: from whence I concluded, that onely *bated* persons, and such, whose very *Noses* were eaten of, were reported by the *Searchers* to have died of this too frequent *Maladie*.

18. In the next place, it shall be examined under what name, or *Casualtie*, such as die of these diseases are brought in: I say, under the *Consumption*: forasmuch, as all dying thereof die so emaciated and lean (their *Ulcers* disappearing upon Death) that the Old-women *Searchers* after the mist of a Cup of *Ale*, and the bribe of a two-groat fee, instead of one, given them, cannot tell whether this emaciation, or leanness were from a *Phthisis*, or from an *Heetick Fever*, *Atrophy*, &c. or from an Infection of the *Spermatick* parts, which in length of time, and in various disguises hath at last vitiated the habit of the Body, and by disabling the parts to digest their nourishment brought them to the condition of Leanness above-mentioned.

19. My next Observation is, that of the *Rickets* we finde no mention among the *Casualties*; untill the  
Year

year 1634. and then but of 14 for that whole year.

20. Now the Question is, whether that Disease did first appear about that time; or whether a Disease, which had been long before, did then first receive its Name?

21. To clear this Difficulty out of the Bills (for I dare venture on no deeper Arguments :) I enquired what other Casualties before the year 1634, named in the Bills, was most like the *Rickets*; and found, not onely by Pretenders to know it, but also from other Bills, that *Liver-grown* was the nearest. For in some years I finde *Liver-grown*, *Spleen*, and *Rickets*, put all together, by reason (as I conceive) of their likenesses to each other. Hereupon I added the *Liver-growns* of the year 1634, viz. 77, to the *Rickets* of the same year, viz. 14. making in all 91. which Total, as also the Number 77. it self, I compared with the *Liver-grown* of the precedent year, 1633, viz. 82. All which shewed me, that the *Rickets* was a new Disease over and above.

22. Now, this being but a faint Argument, I looked both forwards and backwards, and found, that in the year 1629, when no *Rickets* appeared, there was but 94 *Liver-growns*; and in the year 1636. there was 99 *Liver-grown*, although there were also 50 of the *Rickets*: onely this is not to be denied, that when the *Rickets* grew very numerous (as in the year 1660, viz. to be 521.) then there appeared not above 15 of *Liver-grown*.

23. In the year 1659 were 441 *Rickets*, and 8 *Liver-grown*. In the year 1658, were 476 *Rickets*, and 51 *Liver-grown*. Now, though it be granted that

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these Diseases were confounded in the judgment of the Nurses, yet it is most certain, that the *Liver-grown* did never but once, viz. Anno 1630, exceed 100. whereas Anno 1660, *Liver-grown*, and *Rickets* were 536.

24. It is also to be observed, That the *Rickets* were never more numerous then now, and that they are still increasing; for Anno 1649, there was but 190, next year 260, next after that 329. and so forwards, with some little starting backwards in some years, untill the year 1660, which produced the greatest of all.

25. Now, such backstartings seem to be universal in all things; for we do not onely see in the progressive motion of the wheels of *Watches*, and in the rowing of *Boats*, that there is a little starting, or jerking backwards between every step forwards, but also (if I am not much deceived) there appeared the like in the motion of the *Moon*, which in the long *Telescopes* at *Gresham-College* one may sensibly discern.

26. There seems also to be another new Disease, called by our Bills *The stopping of the Stomack*, first mentioned in the year 1636, the which *Malady* from that year to 1647, increased but from 6 to 29; Anno 1655 it came to be 145. In 57, to 277. In 60, to 214. Now these proportions far exceeding the difference of proportion generally arising from the increase of Inhabitants, and from the resort of *Advenæ* to the City, shews there is some new Disease, which appeareth to the Vulgar as *A stopping of the Stomach*.

27. Here-

27. Hereupon I apprehended, that this *Stopping* might be the *Green-sickneſs*, for as much as I finde few, or none, to have been returned upon that Accompt, although many be viſibly ſtained with it. Now whether the ſame be forborn out of ſhame, I know not? For ſince the world believes, that Marriage cures it, it may ſeem indeed a ſhame, that any Maid ſhould die uncured, when there are more *Males* then *Females*, that is, an overplus of Husbands to all that can be *Wives*.

28. In the next place I conjectured, that this *ſtopping of the Stomach* might be the *Mother*, for as much as I have heard of many troubled with *Mother-fits* ( as they call them ) although few returned to have died of them; which conjecture, if it be true, we may then ſafely ſay, That the *Mother-fits* have alſo increaſed.

29. But I was ſomewhat taken off from thinking this *ſtopping of the Stomach* to be the *Mother*, becauſe I gueſſed rather the *Riſing of the Lights* might be it. For I remembred that ſome Women, troubled with the *Mother-fits*, did complain of a *choaking in their Throats*. Now as I underſtand, it is more conceivable, that the *Lights*, or *Lungs* ( which I have heard called *The Bellows of the Body* ) not blowing, that is, neither venting out, nor taking in breath, might rather cauſe ſuch a *Choaking*, then that the *Mother* ſhould riſe up thither, and do it. For me-thinks, when a woman is with childe, there is a greater riſing, and yet no ſuch *Fits* at all.

30. But what I have ſaid of the *Rickets*, and *ſtopping of the Stomach*, I do in ſome meaſure ſay of the

*Rising of the Lights* also, viz. that these *Risings* (be they what they will) have increased much above the general proportion; for in 1629 there was but 44, and in 1660, 249, viz. almost six times as many.

31. Now for as much as *Rickets* appear much in the *Over-growing* of *Childrens Livers*, and *Spleens* (as by the *Bills* may appear) which surely may cause *stopping of the Stomach* by squeezing, and crowding upon that part. And for as much as these *Choakings*, or *Risings of the Lights* may proceed from the same stuffings, as make the *Liver*, and *Spleen* to over-grow their due proportion. And lastly, for as much as the *Rickets*, *stopping of the Stomach*, and *rising of the Lights*, have all increased together, and in some kinde of correspondent proportions; it seems to me, that they depend one upon another. And that what is the *Rickets* in children may be the other in more grown bodies; for surely children, which recover of the *Rickets*, may retain somewhat sufficient to cause what I have imagined; but of this let the learned *Physicians* consider, as I presume they have.

32. I had not medled thus far, but that I have heard, the first hints of the circulation of the Blood were taken from a common Person's wondering what became of all the blood which issued out of the heart, since the heart beats above three thousand times an hour, although but one drop should be pumpt out of it, at every stroke.

33. The *Stone* seemed to decrease: for in 1632, 33, 34, 35, and 36. there died of the *Stone*, and *Strangury*, 254. And in the Years 1655, 56, 57, 58, 59, and 1660, but 250, which numbers although indeed

deed they be almost equal, yet considering the Burials of the first named five Years were but half those of the latter, it seems to be decreased by about one half.

34. Now the *Stone*, and *Strangury*, are diseases, which most men know, that feel them, unless it be in some few cases, where (as I have heard *Physicians* say) a *Stone* is held up by the *Filmes* of the *Bladder*, and so kept from grating, or offending it.

35. The *Gowt* stands much at a stay, that is, it answers the general proportion of Burials; there dies not above one of 1000. of the *Gowt*, although I believe that more die *Gowty*. The reason is, because those that have the *Gowt*, are said to be *Long-livers*, and therefore, when such die, they are returned as *Aged*.

36. The *Scurvy* hath likewise increased, and that gradually from 12. *Anno* 1629. to 95. *Anno* 1660.

37. The *Tyffick* seems to be quite worn away, but that it is probable the same is entred as *Cough*, or *Consumption*.

38. *Agues* and *Fevers* are entred promiscuously, yet in the few Bills, wherein they have been distinguished, it appears, that not above one in 40, of the whole are *Agues*.

39. The *Abortives*, and *Stil-born* are, about the twentieth part of those that are *Christned*, and the numbers seem the same thirty Years ago as now, which shews there were more proportion in those Years then now: or else that in these latter Years due Accompts have not been kept of the *Abortives*, as having been Buried without notice, and perhaps not in *Church-Yards*,

40. For that there hath been a neglect in the Accompts of the *Christnings* is most certain, because untill the year 1642, we finde the *Burials* but equal with the *Christnings*, or near thereabouts, but in 1648, when the differences in *Religion* had changed the Government, the *Christnings* were but two thirds of the *Burials*. And in the year 1659, not half, *viz.* the *Burials* were 14720. (of the *Plague* but 36) and the *Christnings* were but 5670, which great disproportion could be from no other Cause, then that above-mentioned, for as much as the same grew as the Confusions, and Changes grew.

41. Moreover, although the Bills give us in *Anno* 1659 but 5670 *Christnings*, yet they give us 421 *Abortives*, and 226 dying in *Child-bed*, whereas in the year 1631, when the *Abortives* were 410, that is, near the number of the year 1659, the *Christnings* were 8288. Wherefore by the proportion of *Abortives* *Anno* 1659, the *Christnings* should have been about 8500, but if we shall reckon by the women dying in *Child-bed*, of whom a better Accompt is kept then of *Stil-borns*, and *Abortives*, we shall finde *Anno* 1659, there were 226 *Child-beds*; and *Anno* 1631, 112, *viz.* not  $\frac{1}{2}$ . Wherefore I conceive that the true number of the *Christnings* *Anno* 1659 is above double to the 5690 set down in our Bills; that is about 11500, and then the *Christnings* will come near the same proportion to the *Burials*, as hath been observed in former times.

42. In regular Times, when Accompts were well kept, we finde that not above three in 200 died in *Child-bed*, and that the number of *Abortives* was about treble to that of the women dying in *Child-bed*,  
from

from whence we may probably collect, that not one woman of an hundred (I might say of two hundred) dies in her Labour; for as much as there be other Causes of a woman's dying within the Moneth, then the hardness of her Labour.

43. If this be true in these Countries, where women hinder the facility of their *Child-bearing* by affected straightning of their Bodies; then certainly in *America*, where the same is not practised, Nature is little more to be taxed as to women, then in *Brutes*, among whom not one in some thousands do die of their Deliveries: what I have heard of the *Irish-women* confirms me herein.

44. Before we quite leave this matter, we shall insert the Causes, why the Accompt of *Christnings* hath been neglected more then that of *Burials*: one, and the chief whereof was a Religious Opinion against *Baptizing of Infants*, either as unlawfull, or unnecessary. If this were the onely reason, we might by our defects of this kinde, conclude the growth of this Opinion, and pronounce, that not half the People of *England*, between the years 1650, and 1660, were convinced of the need of *Baptizing*.

45. A second Reason was, The scruples, which many Publick *Ministers* would make of the worthiness of Parents to have their Children Baptized, which forced such questioned Parents, who did also not believe the necessity of having their Children Baptized by such scrupulers, to carry their Children unto such other *Ministers*, as having performed the thing, had not the Authority or command of the *Register* to enter the names of the Baptized.



46. A third Reason was, That a little Fee was to be paid for the *Registrie*.

47. Upon the whole matter it is most certain, that the number of *Heterodox* Believers was very great between the said year, 1650, and 1660, and so peevish were they, as not to have the Births of their Children *Registred*, although thereby the time of their coming of Age might be known, in respect of such Inheritances, as might belong unto them; and withall by such *Registring* it would have appeared unto what *Parish* each Childe had belonged, in case any of them should happen to want its relief.

48. Of *Convulsions* there appeared very few, *viz.* but 52 in the year 1629, which 1636 grew to 709, keeping about that stay, till 1659, though sometimes rising to about 1000.

49. It is to be noted, that from 1629 to 1636, when the *Convulsions* were but few, the number of *Chryfoms*, and *Infants* was greater: for in 1629, there was of *Chryfoms*, and *Infants* 2596, and of the *Convulsion* 52, *viz.* of both, 2648. And in 1636 there was of *Infants* 1895, and of the *Convulsions* 709, in both 2604, by which it appears, that this difference is likely to be onely a confusion in the Accompts.

50. Moreover, we finde that for these later years, since 1636, the Total of *Convulsions* and *Chryfoms* added together are much less, *viz.* by about 400 or 500, *per Annum*, then the like Totals from 1626 to 36, which makes me think, that *Teeth* also were thrust in under the Title of *Chryfoms*, and *Infants*, in as much as in the said years, from 1629 to 1639, the number of *Worms*, and *Teeth*, wants by about 400 *per Annum* of what we find in following years.

## CAP. IV.

*Of the Plague.*

I. **B**Efore we leave to discourse of the *Casualties*, we shall add something concerning that greatest *Disease*, or *Casualty* of all, *The Plague*.

There have been in *London*, within this Age, four Times of great *Mortality*, that is to say, the years 1592, and 1593, 1603, 1625, and 1636.

There died *Anno* 1592 from *March* to *December*,

_____	25886
Whereof of the <i>Plague</i> _____	11503

<i>Anno</i> 1593 _____	17844
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Whereof of the <i>Plague</i> _____	10662
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<i>Christned</i> in the said year _____	4021
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<i>Anno</i> 1603 within the same space of time, were	
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Buried _____	37294
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Whereof of the <i>Plague</i> _____	30561
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<i>Anno</i> 1625, within the same space, _____	51758
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Whereof of the <i>Plague</i> _____	35417
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<i>Anno</i> 1636, from <i>April</i> to <i>December</i> _____	23359
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Whereof of the <i>Plague</i> _____	10400
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2. Now it is manifest of it self, in which of these years most died; but in which of them was the greatest *Mortality* of all *Diseases* in general, or of the *Plague* in particular, we discover thus. In the year 1592, and 1636, we finde the proportion of those dying of the *Plague* in the whole to be

near alike, that is about 10 to 23. or 11 to 25. or as about two to five.

3. In the year 1625. we finde the *Plague* to bear unto the whole in proportion as 35 to 51. or 7 to 10. that is almost the triplicate of the former proportion, for the *Cube* of 7. being 343. and the *Cube* of 10. being 1000. the said 343. is not  $\frac{2}{3}$ . of 1000.

4. In *Anno* 1603. the proportion of the *Plague* to the whole was as 30 to 37. *viz.* as 4. to 5. which is yet greater then that last of 7 to 20. For if the Year 1625. had been as great a *Plague-Year* as 1603. there must have died not onely 7 to 10. but 8 to 10. which in those great numbers makes a vast difference.

5. We must therefore conclude the Year 1603. to have been the greatest *Plague-Year* of this age.

6. Now to know in which of these 4. was the greatest Mortality at large, we reason thus,

*Anno* 1592. Buried ——— 26490 } or as { 6  
Christned ——— 4277 } I

*Anno* 1603. There died in the whole } or as { 8  
Year of all ——— 38244 } I  
Christned ——— 4784 }

I. to 8. or *Anno* 1625. Died in the whole } or as { 8  
I.  $\frac{1}{4}$ . to 10. Year ——— 54265 } I  
Christned ——— 6983 }

*Anno* 1636. There died, *ut supra* ——— 23359 } or as { 5  
Christned ——— 9522 } 2

7. From whence it appears, that *Anno* 1636. the Christnings were about  $\frac{2}{3}$ . parts of the Burials. *Anno*  
1592.

1592. but  $\frac{1}{8}$ . but in the Year 1603. and 1625. not above an eighth, so that the said two Years were the Years of greatest *Mortality*. We said that the year 1603. was the greatest *Plague* year. And now we say, that the same was not a greater year of *Mortality* then *Anno 1625*. Now to reconcile these two Positions, we must alledg, that *Anno 1625*. there was error in the Accompts, or Distinctions of the *Casualties*; that is, more died of the *Plague* then were accounted for under that name. Which Allegation we also prove thus, *viz.*

8. In the said year 1625. there are said to have died of the *Plague* 35417. and of all other *Diseases* 18848. whereas in the years, both before and after the same, the ordinary number of Burials was between 7. and 8000. so that if we add about 11000. (which is the difference between 7. and 18) to our 35. the whole will be 46000. which bears to the whole 54000. as about 4. to 5. thereby rendering the said year 1625. to be as great a *Plague*-year as that of 1603. and no greater, which answers to what we proved before, *viz.* that the *Mortality* of the two Years was equal.

9. From whence we may probably suspect that about  $\frac{1}{4}$ . part more died of the *Plague* then are returned for such; which we further prove by noting, that *Anno 1636*. there died 10400. of the *Plague*, the  $\frac{1}{4}$ . whereof is 2600. Now there are said to have died of all diseases that Year 12959. out of which number deducting 2600. there remains 10359. more then which there died not in several years next before and after the said year 1636.

10. The next Observation we shall offer is, that the *Plague* of 1603. lasted eight Years. In some whereof there died above 4000, in others above 2000, and in but one less then 600: whereas in the Year 1624. next preceding, and in the year 1626. next following the said great *Plague*-year 1625. There died in the former but 11, and in the latter but 134. of the *Plague*. Moreover in the said year 1625. the *Plague* decreased from its utmost number 4461 a week, to below 1000 within six weeks.

11. The *Plague* of 1636. lasted twelve Years, in eight whereof there died 2000. *per annum* one with another, and never under 300. The which shews, that the Contagion of the *Plague* depends more upon the Disposition of the *Air*, then upon the *Effluvia* from the Bodies of Men.

12. Which also we prove by the sudden jumps, which the *Plague* hath made, leaping in one Week from 118 to 927: and back again from 993 to 258: and from thence again the very next Week to 852. The which effects must surely be rather attributed to change of the *Air*, then of the Constitution of Mens bodies, otherwise then as this depends upon that.

13. It may be also noted, that many times other *Pestilential* Diseases, as *Purple-Feavers*, *Small-Pox*, &c. do forerun the *Plague* a Year, two, or three, for in 1622; there died but 8000. in 1623; 11000: in 24. about 12000: till in 1625 there died of all Diseases above 54000.

## C H A P. V.

*Other Observations upon the Plague, and Casualties.*

1. **T**HE *Decrease*, and *Increase* of People is to be reckoned chiefly by *Christnings*, because few bear children in *London* but *Inhabitants*, though others die there. The *Accompts* of *Christnings* were well kept, untill differences in *Religion* occasioned some neglect therein, although even these neglects we must confess to have been regular, and proportionable.

2. By the numbers and proportions of *Christnings*, therefore we observe as followeth, *viz.*

First, That (when from *December*, 1602, to *March* following, there was little, or no *Plague*) then the *Christnings* at a *Medium*, were between 110, and 130 *per Week*, few Weeks being above the one, or below the other; but when from thence to *July* the *Plague* increased, that then the *Christnings* decreased to under 90.

Secondly, The *Question* is, Whether *Teeming-women* died, or fled, or miscarried? The later at this time, seems most probable, because even in the said space, between *March*, and *July*, there died not above twenty *per Week* of the *Plague*, which small number could neither cause the death, or flight of so many *Women*, as to alter the proportion  $\frac{1}{4}$  part lower.

3. Moreover, we observe from the 21 of *July* to the  
the

the 21 of *October*, the *Plague* increasing, reduced the *Christnings* to 70 at a *Medium*, diminishing the above proportion, down to  $\frac{2}{3}$ . Now the cause of this must be flying, and death, as well as miscarriages, and Abortions; for there died within that time about 25000, whereof many were certainly *Women with childe*, besides the fright of so many dying within so small a time might drive away so many others, as to cause this effect.

4. From *December* 1624, to the middle of *April* 1625, there died not above 5 a *Week* of the *Plague* one with another. In this time, the *Christnings* were one with another 180. The which decreased gradually by the 22 of *September* to 75, or from the proportion of 12 to 5, which evidently squares with our former Observation.

5. The next Observation we shall offer, is, The time wherein the *City* hath been *Re-peopled* after a great *Plague*; which we affirm to be by the second year. For in 1627, the *Christnings* (which are our Standard in this Case) were 8408, which in 1624 next preceding the *Plague* year 1625 (that had swept away above 54000) were but 8299, and the *Christnings* of 1626 (which were but 6701) mounted in one year to the said 8408.

6. Now the Cause hereof, for as much as it cannot be a supply by Procreations; *Ergo*, it must be by new *Affluxes* to *London* out of the *Countrey*.

7. We might fortifie this Assertion by shewing, that before the *Plague*-year, 1603, the *Christnings* were about 6000, which were in that very year reduced to 4789, but crept up the next year 1604, to 5458, recovering

covering their former ordinary proportion in 1605 of 6504, about which proportion it stood till the year 1610.

8. I say, it followeth, that, let the *Mortality* be what it will, the City repairs its loss of Inhabitants within two years, which Observation lessens the Objection made against the value of houses in *London*, as if they were liable to great prejudice through the loss of Inhabitants by the *Plague*.

#### CHAP. VI.

##### *Of the Sickliness, Healthfulness, and Fruitfulness of Seasons.*

1. **H**AVING spoken of *Casualties*, we come next to compare the sickliness, healthfulness, and fruitfulness of the several Years, and Seasons, one with another. And first, having in the Chapters afore-going mentioned the several years of *Plague*, we shall next present the several other sickly years; we meaning by a *sickly Year*, such wherein the *Burials* exceed those, both of the precedent, and subsequent years, and not above 200 dying of the *Plague*, for such we call *Plague-Years*; and this we do, that the World may see, by what spaces, and intervals we may hereafter expect such times again. Now, we may not call that a more sickly year, wherein more die, because such excess of *Burials* may proceed from increase, and access of People to the City onely.

2. Such



2. Such sickly years were 1618, 20, 23, 24, 1632, 33, 34, 1649, 52, 54, 56, 58, 61, as may be seen by the Tables.

3. In reference to this Observation, we shall present another, namely, That the more sickly the years are, the less fecund, or fruitfull of Children also they be, which will appear, if the number of Children born in the said sickly years be less, then that of the years both next preceding, and next following; all which, upon view of the Tables, will be found true, except in a very few Cases, where sometimes the precedent, and sometimes the subsequent years vary a little, but never both together. Moreover, for the confirmation of this Truth, we present you the year 1660, where the *Burials* were fewer then in either of the two next precedent years by 2000, and fewer then in the subsequent by above 4000. And withall, the number of *Christnings* in the said year 1660 was far greater then in any of the three years next aforegoing.

4. As to this year 1660, although we would not be thought *Superstitious*, yet is it not to be neglected, that in the said year was the *King's Restauration* to his Empire over these three Nations, as if God Almighty had caused the healthfulness and fruitfulness thereof to repair the *Bloodshed*, and *Clamities* suffered in his absence. I say, this conceit doth abundantly counterpoise the Opinion of those who think great *Plagues* come in with *Kings* reigns, because it hapned so twice, *viz.* Anno 1603, and 1625, whereas as well the year 1648, wherein the present *King* commenced his right to reign, as also the year 1650, wherein he commenced  
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the exercise of the same, were both eminently healthfull, which clears both *Monarchie*, and our present *King's Familie* from what seditious men have furnished against them.

5. The Diseases, which beside the *Plague* make years unhealthfull in this City, are *Spotted Feavers*, *Small Pox*, *Dysentery*, called by some *The Plague in the Guts*, and the unhealthfull Season is the *Autumn*.

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CHAP. VII.

*Of the difference between Burials, and Christnings.*

1. **T**HE next Observation is, That in the said Bills there are far more *Burials*, then *Christnings*. This is plain, depending onely upon *Arithmetical* computation; for, in 40 years, from the year 1603, to the year 1644, *exclusive* of both years, there have been set down (as happening within the same ground, space, or Parishes) although differently numbered, and divided, 363935 *Burials*, and but 330747 *Christnings* within the 97, 16, and 10 out-Parishes, those of *Westminster*, *Lambeth*, *Newington*, *Redriff*, *Stepney*, *Hackney*, and *Islington*, not being included.

2. From this single Observation it will follow, That *London* hath decreased in its People, the contrary whereof we see by its daily increase of Buildings upon new Foundations, and by the turning of great Palacious Houses into small Tenements. It is therefore certain, that *London* is supplied with People from

out of the Countrey, whereby not onely to repair the overplus difference of *Burials* above-mentioned, but likewise to increase its *Inhabitants* according to the said increase of housing.

3. This supplying of *London* seems to be the reason, why *Winchester*, *Lincoln*, and several other Cities have decreased in their Buildings, and consequently in their *Inhabitants*. The same may be suspected of many Towns in *Cornwal*, and other places, which probably, when they were first allowed to send *Burgesses* to the *Parliament*, were more populous then now, and bore another proportion to *London*, then now; for several of those *Burroughs* send two *Burgesses*, whereas *London* it self sends but four, although it bears the fifteenth part of the charge of the whole Nation in all *Publick* Taxes, and Levies.

4. But, if we consider what I have upon exact enquiry found true, *viz.* That in the Countrey, within ninetie years, there have been 6339 *Christnings*, and but 5280 *Burials*, the increase of *London* will be salved without inferring the decrease of the People in the Countrey; and withall, in case all *England* have but fourteen times more People then *London*, it will appear, how the said increase of the Countrey may increase the People, both of *London*, and it self; for if there be in the 97, 16, 10, and 7 Parishes, usually comprehended within our Bills, but 460000 souls as hereafter we shall shew, then there are in all *England*, and *Wales*, 6440000 Persons, out of which subtract 460000, for those in, and about *London*, there remains 5980000 in the Countrey, the which increasing about  $\frac{1}{7}$  part in 40 years, as we shall hereafter prove, doth  
happen.

happen in the COUNTRY, the whole increase of the COUNTRY will be about 854000 in the said time, out of which number, if but about 250000 be sent up to *London* in the said 40 years, viz. about 6000 per Annum, the said *Missions* will make good the alterations, which we finde to have been in, and about *London*, between the years 1603 and 1644 above-mentioned. But that 250000 will do the same, I prove thus, viz. in the 8 years, from 1603 to 1612, the *Burials* in all the *Parishes*, and of all *Diseases*, the *Plague* included, were at a *Medium* 9750 per Annum. And between 1635 and 1644 were 18000, the difference whereof is 8250, which is the Total of the increase of the *Burials* in 40 years, that is about 206 per Annum. Now, to make the *Burials* increase 206 per Annum, there must be added to the City thirty times as many (according to the proportion of 3 dying out of 41 Families) viz. 6180 *Advenæ*, the which number multiplied again by the 40 years, makes the *Product* 247200, which is less then the 250000 above propounded; so as there remains above 600000 of increase in the COUNTRY within the said 40 years, either to render it more populous, or send forth into other Colonies, or Wars. But that *England* hath fourteen times more People, is not improbable, for the Reasons following.

1. *London* is observed to bear about the fifteenth proportion of the whole Tax.

2. There is in *England*, and *Wales*, about 39000 square Miles of Land, and we have computed that in one of the greatest *Parishes* in *Hampshire*, being also a *Market-Town*, and containing twelve square Miles, there are 220 souls in every square Mile, out

of which I abate  $\frac{1}{4}$  for the overplus of People more in that Parish, then in other wilde Counties. So as the  $\frac{3}{4}$  parts of the said 220, multiplied by the Total of square Miles, produces 6400000 souls in all *London* included.

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3. There are about 10000 Parishes in *England*, and *Wales*, the which, although they should not contain the  $\frac{1}{3}$  part of the Land, nor the  $\frac{1}{4}$  of the People of that Country-Parish, which we have examined, yet may be supposed to contain about 600 People, one with another, according to which Account there will be six Millions of People in the Nation. I might add, that there are in *England*, and *Wales*, about five and twenty Millions of Acres at  $16\frac{1}{2}$  Foot to the Perch; and if there be six Millions of People, then there is about four Acres for every head, which how well it agrees to the Rules of Plantation, I leave unto others, not onely as a means to examine my Assertion, but as an hint to their enquiry concerning the fundamental Trade, which is Husbandrie, and Plantation.

4. Upon the whole matter we may therefore conclude, That the People of the whole Nation do increase, and consequently the decrease of *Winchester*, *Lincoln*, and other like places, must be attributed to other Reasons, then that of refurbishing *London* onely.

5. We come to shew, why although in the Country the *Christnings* exceed the *Burials*, yet in *London* they do not. The general Reason of this must be, that in *London* the proportion of those subject to die unto those capable of breeding is greater then  
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in the Countrey; That is, let there be an hundred Persons in *London*, and as many in the Countrey; we say, that if there be 60 of them Breeders in *London*, there are more then 60 in the Countrey, or else we must say, that *London* is more unhealthfull, or that it enclines men and women more to Barrenness, then the Countrey, which by comparing the Burials, and Christnings of *Hackney*, *Newington*, and the other Country-Parishes, with the most *Smoaky*, and *Stinking* parts of the City, is scarce discernable in any considerable degree.

6. Now that the Breeders in *London* are proportionally fewer then those in the Countrey arises from these reasons, *viz.*

1. All that have business to the Court of the King, or to the Courts of Justice, and all Country-men coming up to bring Provisions to the City, or to buy Foreign Commodities, Manufactures, and Rarities, do for the most part leave their Wives in the Countrey.

2. Persons coming to live in *London* out of curiosity, and pleasure, as also such as would retire, and live privately, do the same, if they have any.

3. Such, as come up to be cured of Diseases, do scarce use their Wives *pro tempore*.

4. That many Apprentices of *London*, who are bound seven, or nine years from Marriage, do often stay longer voluntarily.

5. That many Sea-men of *London* leave their Wives behind them, who are more subject to die in the absence of their Husbands, then to breed either without men, or with the use of many promiscuously.

6. As for unhealthiness it may well be supposed, that

that although seasoned Bodies may, and do live near as long in *London*, as elsewhere, yet new-comers, and Children do not, for the *Smoaks*, *Stinks*, and close *Air* are less healthfull then that of the Country; otherwise why do sickly Persons remove into the Country *Air*? And why are there more old men in Countries then in *London*, *per rata*? And although the difference in *Hackney*, and *Newington*, above-mentioned, be not very notorious, yet the reason may be their vicinity to *London*, and that the Inhabitants are most such, whose bodies have first been impaired with the *London Air*, before they withdraw thither.

7. As to the causes of Barrenness in *London*, I say, that although there should be none extraordinary in the Native *Air* of the place, yet the intemperance in feeding, and especially the Adulteries and Fornications, supposed more frequent in *London* then elsewhere, do certainly hinder breeding. For a Woman, admitting 10 Men, is so far from having ten times as many Children, that she hath none at all.

8. Add to this, that the minds of men in *London* are more thoughtfull and full of business then in the Country, where their work is *corporal* Labour, and Exercizes. All which promote Breedings, whereas *Anxieties* of the minde hinder it.

## C H H P. VIII.

*Of the difference between the numbers of Males, and Females.*

**T**He next Observation is, That there be more *Males* than *Females*.

There have been Buried from the year 1628, to the year 1662, *exclusive*, 209436 *Males*, and but 190474 *Females*: but it will be objected, that in *London* it may indeed be so, though otherwise elsewhere; because *London* is the great Stage and Shop of business, wherein the *Masculine Sex* bears the greatest part. But we Answer, That there have been also *Christned* within the same time, 139782 *Males*, and but 130866 *Females*, and that the *Country Accompts* are consonant enough to those of *London* upon this matter.

2. What the *Causes* hereof are, we shall not trouble our selves to conjecture, as in other Cases, onely we shall desire, that *Travellers* would enquire whether it be the same in other *Countries*.

3. We should have given an *Accompt*, how in every *Age* these proportions change here, but that we have *Bills of distinction* but for 32 years, so that we shall pass from hence to some inferences from this *Conclusion*; as first,

I. That *Christian Religion*, prohibiting *Polygamy*, is more agreeable to the *Law of Nature*, that is, the *Law of God*, than *Mahumetism*, and others, that allow.



allow it; for one man his having many women, or wives by Law, signifies nothing, unless there were many women to one man in Nature also.

II. The obvious Objection hereunto is, That one *Horse*, *Bull*, or *Ram*, having each of them many *Females*, do promote increase. To which I Answer, That although perhaps there be naturally, even of these *species*, more *Males* than *Females*, yet *artificially*, that is, by making *Geldings*, *Oxen*, and *Weathers*, there are fewer. From whence it will follow, That when by experience it is found how many *Ews* (suppose twenty) one *Ram* will serve, we may know what proportion of *male-Lambs* to castrate, or geld, *viz.* nineteen, or thereabouts: for if you emasculate fewer, *viz.* but ten, you shall by promiscuous copulation of each of those ten with two *Females*, (~~in such as admit the Male after conception~~) hinder the increase so far, as the admittance of two *Males* will do it: but, if you castrate none at all, it is highly probable, that every of the twenty *Males* copulating with every of the twenty *Females*, there will be little, or no conception in any of them all.

III. And this I take to be the truest Reason, why *Foxes*, *Wolves*, and other *Vermin Animals* that are not gelt, increase not faster than *Sheep*, when as so many thousands of these are daily Butchered, and very few of the other die otherwise than of themselves.

4. We have hitherto said there are more *Males*, than *Females*; we say next, That the one exceed the other by about a thirteenth part; so that although more men die violent deaths than women, that is, more are *slain* in Wars, *killed* by mischance, *drowned*  
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at *Sea*, and die by the *Hand of Justice*. Moreover, more men go to *Colonies*, and travel into foreign parts, then women. And lastly, more remain unmarried, then of women, as *Fellows of Colleges*, and *Apprentises*, above eighteen, &c. yet the said thirteenth part difference bringeth the business but to such a pass, that every woman may have an Husband, without the allowance of *Polygamy*.

5. Moreover, although a man be *Prolifique* forty years, and a woman but five and twenty, which makes the *Males* to be as 560 to 325 *Females*, yet the causes above-named, and the later marriage of the men, reduce all to an equality.

6. It appearing, that there were fourteen men to thirteen women, and that they die in the same proportion also, yet I have heard *Physicians* say, that they have two women Patients to one man, which Assertion seems very likely; for that women have either the *Green-sicknes*, or other like Distempers, are sick of *Breedings*, *Abortions*, *Child-bearing*, *Sore-breasts*, *Whites*, *Obstructions*, *Fits of the Mother*, and the like.

7. Now, from this it should follow, that more women should die then men, if the number of *Burials* answered in proportion to that of Sickneses: but this must be salved, either by the alledging, that the *Physicians* cure those Sickneses, so as few more die, then if none were sick; or else that men, being more intemperate then women, die as much by reason of their Vices, as the women do by the Infirmitie of their *Sex*, and consequently, more *Males* being born, then *Females*, more also die.

8. In the year 1642 many *Males* went out of  
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*London* into the Wars then beginning, in so much, as I expected in the succeeding year, 1643, to have found the *Burials* of *Females* to have exceeded those of *Males*, but no alteration appeared; for as much, as I suppose, Trading continuing the same in *London*, all those who lost their *Apprentices* had others out of the Countrey; and if any left their Trades, or Shops, that others forthwith succeeded them: for if employment for hands remain the same, no doubt but the number of them could not long continue in disproportion.

9. Another pregnant Argument to the same purpose (which hath already been touched on) is, That although in the very year of the *Plague*, the *Christnings* decreased, by the dying and flying of *Teeming-women*, yet the very next year after, they increased somewhat, but the second after, to as full a number as in the second year before the said *Plague*: for I say again, if there be encouragement for an hundred in *London*, that is, a Way how an hundred may live better then in the Countrey, and if there be void housing there to receive them, the evacuating of a  $\frac{1}{4}$ th, or  $\frac{1}{3}$  part of that number, must soon be supplied out of the Countrey; so as, the great *Plague* doth not lessen the Inhabitants of the City, but of the Countrey, who in a short time remove themselves from hence thither, so long, untill the City for want of receipt and encouragement, regurgitates and sends them back.

10. From the difference between *Males* and *Females*, we see the reason of making *Eunuchs* in those places where *Polygamy* is allowed, the latter being  
useless

useless as to multiplication, without the former, as was said before in the case of *Sheep* and other *Animals*, usually gelt in these Countries.

11. By consequence, this practise of *Castration* serves as well to promote increase as to meliorate the Flesh of those Beasts that suffer it. For that Operation is equally practised upon *Horses* which are not used for Food, as upon those that are.

12. In *Popish* Countries where *Polygamy* is forbidden, if a greater number of *Males* oblige themselves to *Celibate* then the natural overplus or difference between them and *Females* amounts unto; then multiplication is hindred; for if there be eight Men to ten Women, all of which eight men are married to eight of the ten Women, then the other two bear no Children, as either admitting no Man at all, or else admitting Men as Whores (that is more then one) which commonly procreates no more then if none at all had been used: or else such unlawfull Copulations beget Conceptions but to frustrate them by procured Abortions or secret Murthers, all which returns to the same reckoning. Now, if the same proportion of women oblige themselves to a single life likewise, then such obligation makes no change in this matter of encrease.

13. From what hath been said, appears the reason why the Law is, and ought to be so strict against Fornications and Adulteries, for if there were universal liberty, the Increase of Man-kind would be but like that of *Foxes* at best.

14. Now forasmuch as Princes are not only Powerfull but Rich, according to the number of

their People (Hands being the Father, as Lands are the Mother, and Womb of Wealth) it is no wonder why states by encouraging Marriage, and hindering Licentiousness, advance their own Interest, as well as preserve the Laws of God from contempt, and Violation.

15. It is a Blessing to Man-kind, that by this overplus of *Males* there is this natural Bar to *Polygamy*: for in such a state Women could not live in that parity, and equality of expence with their Husbands, as now, and here they do.

16. The reason whereof is, not, that the Husband cannot maintain as splendidly three, as one; for he might, having three Wives, live himself upon a quarter of his Income, that is in a parity with all three, as well as, having but one, live in the same parity at half with her alone: but rather, because that to keep them all quiet with each other, and himself, he must keep them all in greater awe, and less splendor, which power he having will probably use it to keep them all as low, as he pleases, and at no more cost then makes for his own pleasure; the poorest Subjects (such as this plurality of Wives must be) being most easily governed.

## CHAP. IX.

*Of the growth of the City.*

1. **I**N the year 1593 there died in the ninety seven Parishes within the walls, and the sixteen without the walls (besides 421 of the *Plague*) 3508. And the next year 3478, besides 29 of the *Plague*: in both years 6986. Twenty years after, there died in the same ninety seven, and sixteen Parishes, 12110, *viz.* Anno 1614, 5873; and Anno 1615, 6237: so as the said Parishes are increased, in the said time, from seven to twelve, or very near thereabouts.

2. Moreover, the *Burials* within the like space of the next twenty years, *viz.* Anno 1634, and 1635, were 15625, *viz.* as about twenty four to thirty one: the which last of the three numbers, 15625, is much more then double to the first 6986, *viz.* the said Parishes have in forty years increased from twenty three to fifty two.

3. Where is to be noted, That although we were necessitated to compound the said ninety seven with the sixteen Parishes, yet the sixteen Parishes have increased faster then the ninety seven. For, in the year 1620, there died within the walls 2726, and in 1660 there died but 3098 (both years being clear of the *Plague*) so as in this forty years the said ninety seven Parishes have increased but from nine to ten, or thereabouts, because the housing of the  
said.

ſaid ninety ſeven Pariſhes could be no otherwiſe increaſed, then by turning great Houſes into Tenements, and building upon a few Gardens.

4. In the year 1604, there died in the ninety ſeven Pariſhes 1518, and of the *Plague* 280. And in the year 1660, 3098, and none of the *Plague*, ſo as in fifty ſix years the ſaid Pariſhes have doubled: Where note, that forasmuch as the ſaid year 1604 was the very next year after the great *Plague*, 1603 (when the City was not yet re-peopled) we ſhall rather make the compariſon between 2014, which died *Anno* 1605, and 3431 *Anno* 1659, chooſing rather from hence to aſſert, that the ſaid ninety ſeven, and ſixteen Pariſhes encreaſed from twenty to thirty four, or from ten to ſeventeen in fifty four years, then from one to two in fifty ſix, as in the laſt afore-going *Paragraph* is ſet down.

5. *Anno* 1605, there died in the ſixteen out-Pariſhes 2974, and *Anno* 1659, 6988, ſo as in the fifty four years, the ſaid Pariſhes have encreaſed from three to ſeven.

6. *Anno* 1605 there died in the eight out-pariſhes, 960, *Anno* 1659, there died in the ſame ſcope of Ground, although called now ten Pariſhes (the *Savoy*, and *Covent-Garden* being added) 4301, ſo as the ſaid Pariſhes have encreaſed within the ſaid fifty four years, more then from one to four.

7. Moreover, there was Buried in all, *Anno* 1605, 5948, and *Anno* 1659 14720, *viz.* about two to five.

8. Having ſet down the proportions, wherein we find the ſaid three great Diviſions of the whole Pyle, call'd *London*, to have encreaſed; we come next to ſhew what

what particuler Parishes have had the most remarkable share in these Augmentations, *viz.* of the ninty seven Parishes within the Walls the Increase is not very discernable, but where great houses formerly belonging to Noblemen before they built others neer *White-hall*, have been turned into Tenements, upon which Accompt *Alhallows on the wall* is encreased, by the conversion of the Marques of *Winchesters* house, lately the *Spanish* Ambassadors, into a New street, the like of Alderman *Freeman*, and *La Motte* neer the *Exchange*, the like of the Earl of *Arundells* in *Loathbury*, the like of the Bishop of *London's* Palace, the Dean of *Paul's*, and the Lord *River's* house, now in hand, as also of the *Dukes-Place*, and others heretofore.

9. Of the sixteen Parishes next without the Walls, *Saint Gile's Criplegate* hath been most enlarged, next to that, *Saint Olave's Southwark*, then *Saint Andrews Holborn*, then *White-Chappel*, the difference in the rest not being considerable.

10. Of the out Parishes now called ten, formerly nine, and before that eight, *Saint Gile's*, and *Saint Martins in the fields*, are most encreased, notwithstanding *Saint Pauls Covent-Garden* was taken out of them both.

11. The general observation which arises from hence is, That the City of *London* gradually removes *Westward*, and did not the *Royal Exchange*, and *London-Bridg* stay the Trade, it would remove much faster, for *Leaden-Hall-street*, *Bishops-gate*, and part of *Fan-church-street*, have lost their ancient Trade, *Grace-Church-street* indeed keeping it self yet entire, by reason



reason of its conjunction with, and relation to *London-Bridg.*

12. Again, *Canning-street*, and *Watlin-street* have lost their Trade of *Woollen-Drapery* to *Paul's Church-Yard*, *Ludgate-hill*, and *Fleet-street*; the *Mercery* is gone from out of *Lombard-street*, and *Cheapside*, into *Pater-Noster-Row*, and *Fleet-street*.

13. The reasons whereof are, that the King's Court (in old times frequently kept in the City) is now always at *Westminster*. Secondly, the use of Coaches, whereunto the narrow streets of the old City are unfit, hath caused the building of those broader streets in *Covent-Garden*, &c.

14. Thirdly, where the *Consumption* of Commodity is, *viz.* among the Gentry, the vendors of the same must seat themselves.

15. Fourthly, the cramming up of the voyd spaces, and gardens within the Walls, with houses, to the prejudice of *Light*, and *Air*, have made men Build new ones, where they less fear those inconveniencies.

16. Conformity in Building to other civil Nations hath disposed us to let our old Wooden dark houses fall to decay, and to build new ones, whereby to answer all the ends above-mentioned.

17. Where note, that when *Lud-gate* was the onely *Western Gate* of the City, little Building was *Westward* thereof. But when *Holborn* began to encrease *New-gate* was made. But now both these Gates are not sufficient for the Communication between the Walled City, and its enlarged *Western Suburbs*, as dayly appears by the intolerable stops and embareffes of Coaches near both these Gates, especially *Lud-gate*.

## C H A P. X.

*Of the Inequality of Parishes.*

1. **B**Efore we pass from hence, we shall offer to consideration the inequality of Parishes in, and about *London*, evident in the proportion of their respective *Burials*; for in the same year were Buried in *Cripple-gate-Parish* 1191, that but twelve died in *Trinity-Minories*, *St. Saviour's Southwark*, and *Botolph's Bishop-gate*, being of the middle size, as burying five and 600 *per Annum*; so that *Cripple-gate* is an hundred times as big as the *Minories*, and 200 times as big as *St. John the Evangelist's*, *Mary-Cole-church*, *Bennet's Grace-church*, *Matthew-Friday-street*, and some others within the *City*.

2. Hence may arise this Question, Wherefore should this inequality be continued? If it be Answered, Because that *Pastours* of all sorts, and sizes of Abilities, may have Benefices, each man according to his merit: we Answer, That a two hundredth part of the best *Parson's* learning is scarce enough for a *Sexton*. But besides, there seems no reason of any differences at all, it being as much Science to save one single soul, as one thousand.

3. We encline therefore to think the Parishes should be equal, or near, because, in the *Reformed Religions*, the principal use of *Churches* is to Preach in: now the bigness of such a *Church* ought to be no greater, then that, unto which the voice of a *Preacher*

of middling Lungs will easily extend; I say, easily, because they speak an hour, or more together.

4. The use of such large *Churches*, as *Paul's*, is now wholly lost, we having no need of saying perhaps fifty *Masses* all at one time, nor of making those grand *Processions* frequent in the *Romish Church*; nor is the shape of our *Cathedral* proper at all for our *Preaching Auditories*, but rather the Figure of an *Amphi-Theatre* with *Galleries*, gradually over-looking each other; for unto this Condition the *Parish-Churches* of *London* are driving apace, as appears by the many *Galleries* every day built in them.

5. Moreover, if *Parishes* were brought to the size of *Colman-street*, *Alhallows-Barking*, *Christ-Church*, *Black-Friers*, &c. in each whereof die between 100 and 150, *per Annum*, then an hundred *Parishes* would be a fit, and equal Division of this great charge, and all the *Ministers* (some whereof have now scarce forty pounds *per Annum*) might obtain a subsistence.

6. And lastly, The *Church-Wardens*, and *Over-seers* of the *Poor* might finde it possible to discharge their *Duties*, whereas now in the greater out-*Parishes* many of the poorer *Parishioners* through neglect do perish, and many vicious persons get liberty to live as they please, for want of some heedfull Eye to overlook them.

## CHAP. XI.

*Of the number of Inhabitants.*

1. I Have been several times in company with men of great experience in this City, and have heard them talk seldom under Millions of *People* to be in *London*, all which I was apt enough to believe, untill, on a certain day, one of eminent Reputation was upon occasion asserting, that there was in the year 1661 two Millions of People more then *Anno 1625*, before the great *Plague*; I must confess, that, untill this provocation, I had been frighted with that mis-understood Example of *David*, from attempting any computation of the People of this populous place; but hereupon I both examined the lawfulness of making such enquiries, and, being satisfied thereof, went about the work it self in this manner: *viz.*

2. First, I imagined, That, if the Conjecture of the worthy Person afore-mentioned had any truth in it, there must needs be about six, or seven Millions of People in *London* now; but repairing to my Bills I found, that not above 15000 *per Annum* were buried, and consequently, that not above one in four hundred must die *per Annum*, if the Total were but six Millions.

3. Next considering, That it is esteemed an even Lay, whether any man lives ten years longer, I supposed it was the same, that one of any 10 might die within one year. But when I considered, that of the 15000

afore-mentioned about 5000 were *Abortive*, and *Stilborn*, or died of *Teeth*, *Convulsion*, *Rickets*, or as *Infants*, and *Chryfoms*, and *Aged*. I concluded, that of men, and women, between ten and sixty, there scarce died 10000 *per Annum* in *London*, which number being multiplied by 10, there must be but 100000 in all, that is not the  $\frac{1}{60}$  part of what the *Alderman* imagined. These were but sudden thoughts on both sides, and both far from truth, I thereupon endeavoured to get a little nearer, thus: *viz.*

4. I considered, that the number of *Child-bearing women* might be about double to the *Births*: forasmuch as such women, one with another, have scarce more than one *Childe* in two years. The number of *Births* I found, by those years, wherein the *Registries* were well kept, to have been somewhat less than the *Burials*. The *Burials* in these late years at a *Medium* are about 13000, and consequently the *Christnings* not above 12000. I therefore esteemed the number of *Teeming women* to be 24000: then I imagined, that there might be twice as many *Families*, as of such women; for that there might be twice as many women *Aged* between 16 and 76, as between 16 and 40, or between 20 and 44; and that there were about eight *Persons* in a *Family*, one with another, *viz.* the *Man*, and his *Wife*, three *Children*, and three *Servants*, or *Lodgers*: now 8 times 48000 makes 384000.

5. Secondly, I finde by telling the number of *Families* in some *Parishes* within the walls, that 3 out of 11 *families per an.* have died: wherefore, 13000 having died in the whole, it should follow, there were 48000 *Families* according to the last mentioned *Accompt.*

6. Thirdly,

6. Thirdly, the Accompt, which I made of the *Trayned-Bands*, and *Auxiliary Souldiers*, doth enough justify this Accompt.

7. And lastly I took the Map of *London* set out in the year 1658 by *Richard Newcourt*, drawn by a scale of Yards. Now I guessed that in 100 yards square there might be about 54 Families, supposing every house to be 20 foot in the front: for on two sides of the said square there will be 100 yards of housing in each, and in the two other sides 80 each; in all 360 yards: that is 54 Families in each square, of which there are 220 within the Walls, making in all 11880 Families within the Walls. But forasmuch as there dy within the Walls about 3200 *per Annum*, and in the whole about 13000; it follows, that the housing within the Walls is  $\frac{1}{4}$  part of the whole, and consequently, that there are 47520 Families in, and about *London*, which agrees well enough with all my former computations: the worst whereof doth sufficiently demonstrate, that there are no Millions of People in *London*, which nevertheless most men do believe, as they do, that there be three Women for one Man, whereas there are fourteen Men for thirteen Women, as else where hath been said.

8. We have (though perhaps too much at Random) determined the number of the inhabitants of *London* to be about 384000: the which being granted, we assert, that 199112 are *Males*, and 184886 *Females*.

9. Whereas we have found, that of 100 quick Conceptions about 36 of them die before they be six years old, and that perhaps but one surviveth

76, we, having seven *Decads* between six and 76, we sought six mean proportional numbers between 64, the remainder, living at six years, and the one, which survives 76, and finde, that the numbers following are practically near enough to the truth; for men do not die in exact Proportions, nor in Fractions: from whence arises this Table following.

<i>Viz.</i> of 100 there dies	The fourth	6
within the first six years	The next	4
The next ten years, or	The next	3
<i>Decad</i>	The next	2
The second <i>Decad</i>	The next	1
The third <i>Decad</i>		

10. From whence it follows, that of the said 100 conceived there remains alive at six years end 64.

At Sixteen years end	40	At Fifty six	6
At Twenty six	25	At Sixty six	3
At Tirty six	16	At Seventy six	1
At Fourty six	10	At Eighty	0

11. It follows also, that of all, which have been conceived, there are now alive 40 *per Cent.* above sixteen years old, 25 above twenty six years old, & *sic deinceps*, as in the above Table: there are therefore of Aged between 16, and 56, the number of 40, less by six, *viz.* 34; of between 26, and 66, the number of 25 less by three, *viz.* 22: & *sic deinceps*.

Wherefore, supposing there be 199112 *Males*, and the number between 16, and 56, being 34. It follows, there are 34 *per Cent.* of all those *Males* fighting Men in *London*, that is 67694, *viz.* near 70000: the truth whereof I leave to examination, only the  $\frac{1}{3}$ . of 67694, *viz.* 13539. is to be added for *Westminster, Stepney,*

ney, *Lambeth*, and the other distant Parishes, making in all 81233 fighting Men.

12. The next enquiry shall be, In how long time the City of *London* shall, by the ordinary proportion of Breeding, and Dying, double its breeding People. I answer in about seven years, and (*Plagues* considered) eight. Wherefore since there be 24000 pair of Breeders, that is  $\frac{1}{8}$ . of the whole, it follows, that in eight times eight years the whole People of the City shall double without the access of Foreigners: the which contradicts not our Accompt of its growing from two to five in 56 years with such accesses.

13. According to this proportion, one couple viz. *Adam* and *Eve*, doubling themselves every 64 years of the 5610 years, which is the *age* of the World according to the *Scriptures*, shall produce far more People, then are now in it. Wherefore the World is not above 100 thousand years, old as some vainly Imagine, nor above what the *Scripture* makes it.

## CHAP. XII.

### *Of the Country Bills.*

WE have, for the present, done with our Observations upon the Accompts of *Burials*, and *Christnings*, in, and about *London*; we shall next present the Accompts of both *Burials*, *Christnings*, and also of *Weddings* in the Country, having to that purpose inserted Tables of 90 years for a certain Parish in *Hampshire*, being a place neither famous for *Longevity*,  
and



and *Healthfulness*, nor for the contrary. Upon which Tables we observe,

1. That every *Wedding*, one with another, produces four Children, and consequently, that that is the proportion of Children, which any Marriagable man, or woman may be presumed shall have. For, though a man may be Married more then once, yet, being once Married, he may die without any Issue at all.

2. That in this Parish there were born 15 *Females* for 16 *Males*, whereas in *London* there were 13 for 14, which shews, that *London* is somewhat more apt to produce *Males*, then the country. And it is possible, that in some other places there are more *Females* born, then *Males*, which, upon this variation of proportion, I again recommend to the examination of the curious.

3. That in the said whole 90 years the *Burials* of the *Males* and *Females* were exactly equal, and that in several *Decads* they differed not  $\frac{1}{10}$  part, that in one of the two *Decads*, wherein the difference was very notorious, there were Buried of *Males* 337, and of *Females* but 284, *viz.* 53 difference, and in the other there died contrariwise 338 *Males*, and 386 *Females*, differing 46.

4. There are also *Decads*, where the Birth of *Males* and *Females* differ very much, *viz.* about 60.

5. That in the said 90 years there have been born more, then buried in the said Parish, (the which both 90 years ago, and also now, consisted of about 2700 Souls) but 1059, *viz.* not 12 *per Annum*, one year with another.

6. That these 1059 have in all probability contributed to the increase of *London*; since, as was said even  
now,

now, it neither appears by the *Burials*, *Christnings*, or by the built of new-housing, that the said Parish is more populous now, then 90 years ago, by above two or 300 souls. Now, if all other places send about  $\frac{1}{3}$  of their encrease, *viz.* about one out of 900 of their Inhabitants *Annually* to *London*, and that there be 14 times as many people in *England*, as there be in *London*, (for which we have given some reasons) then *London* encreases by such *Advenæ* every year above 6000: the which will make the *Accompt* of *Burials* to swell about 200 *per Annum*, and will answer the encreases. We observe it is clear, that the said Parish is encreased about 300, and it is probable, that three or four hundred more went to *London*, and it is known, That about 400 went to *New-England*, the *Caribe-Islands*, and *New-found-Land*, within these last forty years.

7. According to the *Medium* of the said whole 90 years, there have been five *Christnings* for four *Burials*, although in some single *Years*, and *Decads*, there have been three to two, although sometimes (though more rarely) the *Burials* have exceeded the *Birtbs*, as in the case of *Epidemical* Diseases.

8. Our former Observation, That healthfull years are also the most fruitfull, is much confirmed by our Country *Accompts*; for, 70 being our Standard for *Births*, and 58 for *Burials*, you shall finde, that where fewer then 58 died, more then 70 were born. Having given you a few instances thereof, I shall remit you to the *Tables* for the general proof of this Assertion. *Viz.* Anno 1633. when 104 were born, there died but 29. Now, in none of the whole 90 years more were born then 103, and but in one, fewer then 29 died, *viz.*

28 *Anno* 1658. Again *Anno* 1568, when 93 were born, but 42 died. *Anno* 1584, when 90 were born, but 41 died. *Anno* 1650, when 86 were born, but 52 died. So that by how much more are born, by so much (as it were) the fewer die. For when 103 were born, but 29 died: but when but 86 were born, then 52 died.

On the other side *Anno* 1638, when 156 died *per Annum*, which was the greatest year of *Mortality*, then less then the meer Standard 70, *viz.* but 66 were born. Again *Anno* 1644, when 137 died, but 59 were born. *Anno* 1597, when 117 died, but 48 were born. And *Anno* 1583, when 87 died, but 59 were born.

A little Irregularity may be found herein, as that *Anno* 1612, when 116 died (*viz.* a number double to our Standard 58 yet) 87 (*viz.* 17 about the Standard 70) were born. And that when 89 died 075 were born: but these differences are not so great, nor so often, as to evert our Rule, which besides the Authority of these Accompts is probable in it self.

9. Of all the said 90 years the year 1638 was the most *Mortal*, I therefore enquired whether the *Plague* was then in that Parish, and having received good satisfaction that it was not (which I the rather believe, because, that the *Plague* was not then considerable at *London*) but that it was a Malignant *Fever* raging so fiercely about *Harvest*, that there appeared scarce hands enough to take in the Corn: which argues, considering there were 2700 Parishioners, that seven might be sick for one that died: whereas of the *Plague* more die then recover. Lastly, these People lay longer

er sick then is usual in the *Plague*, nor was there any mention of *Sores*, *Swellings*, *blew-Tokens*, &c. among them. It follows, that the proportion between the *greatest* and the *least Mortalities* in the Country are far greater then at *London*. Forasmuch as the greatest 156 is above *quintuple* unto 28 the least, whereas in *London* (the *Plague* excepted, as here it hath been) the number of Burials upon other Accompts within no *Decad* of years hath been double, whereas in the Country it hath been *quintuple* not onely within the whole 90 years, but also within the same *Decad*: for *Anno* 1633. there died but 29, and *Anno* 1638 the above-mentioned number of 156. Moreover, as in *London*, in no *Decad*, the Burials of one year are double to those of another: so in the Country they are seldom not more then 10. As by this Table appears,

<i>Decad.</i>	<i>greatest</i>	<i>least</i>
	<i>number of Burials</i>	
1	66	34
2	87	39
3	117	38
4	53	30
5	116	51
6	89	50
7	156	35
8	137	46
9	80	28

Which shews, that the opener, and freer *Airs* are most subject both to the good and bad Impressions, and that the *Fumes, Steams, and Stenches* of *London* do so medicate, and impregnate the *Air* about it, that it becomes capable of little more, as if the said *Fumes* rising out of *London* met with, opposed, and juttled backwards the Influences falling from above, or resisted the Incurfion of the Country-*Airs*.

10. In the last *Paragraph* we said, that the Burials in the Country were sometimes *quintuple* to one another, but of the Christnings we affirm, that within the same *Decad* they are seldome double, as appears by this Table, *viz.*

<i>Decad</i>	greatest	least
	number of	number of
	Burials	Burials
1	70	50
2	90	45
3	71	52
4	93	60
5	87	61
6	85	63
7	103	66
8	87	62
9	86	52

Now, although the disproportions of Births be not so great as that of *Burials*, yet these disproportions are far

far greater then at *London*: for let it be shewn in any of the *London Bills*, that within two years the *Christnings* have decreased  $\frac{1}{2}$ . or increased double, as they did *Anno* 1584, when 90 were born, and *An.* 1586, wherein were but 45 : or to rise from 52, as *Anno* 1593, to 71, as in the next year 1594. Now, these disproportions both in Births, and Burials, confirm what hath been before Asserted, that *Healthfulness*, and *Fruitfulness* go together, as they would not, were there not disproportions in both, although proportional.

11. By the Standard of Burials in this Parish, I thought to have computed the number of Inhabitants in it, *viz.* by multiplying 58 by 4, which made the *Product* 232, the number of Families. Hereupon I wondered, that a Parish containing a large Market-Town, and 12 Miles compass, should have but 232 Houses, I then multiplied 232 by 8, the *Product* whereof was 1856, thereby hoping to have had the number of the Inhabitants, as I had for *London*; but when upon enquiry I found there had been 2100 Communicants in that Parish in the time of a *Minister*, who forced too many into that Ordinance, and that 1500 was the ordinary number of Communicants in all times, I found also, that for as much as there were near as many under 16 years old, as there are above, *viz.* Communicants, I concluded, that there must be about 27, or 2800 Souls in that Parish: from whence it follows, that little more then one of 50 dies in the Country, whereas in *London*, it seems manifest, that about one in 32 dies, over and above what dies of the *Plague*.

12. It follows therefore from hence, what I more faintly

faintly asserted in the former Chapter, that the Country is more *healthfull*, then the City, That is to say, although men die more regularly, and less *per Saltum* in *London*, then in the Country, yet, upon the whole matter, there die fewer *per Ratu*; so as the Fumes, Steams, and Stenches above-mentioned, although they make the Air of *London* more equal, yet not more *Healthfull*.

13. When I consider, That in the Country seventy are Born for fifty eight Buried, and that before the year 1600 the like happened in *London*, I considered, whether a City, as it becomes more populous, doth not, for that very cause, become more *unhealthfull*, I inclined to believe, that *London* now is more *unhealthfull*, then heretofore, partly for that it is more populous, but chiefly, because I have heard, that 60 years ago few *Sea-Coals* were burnt in *London*, which now are universally used. For I have heard, that *Newcastle* is more *unhealthfull* then other places, and that many People cannot at all endure the smoak of *London*, not onely for its unpleasantness, but for the suffocations which it causes.

14. Suppose, that *Anno 1569* there were 2400 souls in that Parish, and that they increased by the *Births* 70, exceeding the *Burials* 58, it will follow, that the said 2400 cannot double under 200. Now, if *London* be less *healthfull* then the Country, as certainly it is, the *Plague* being reckoned in, it follows, that *London* must be doubling it self by generation in much above 200: but if it hath encreased from 2 to 5 in 54, as aforesaid, the same must be by reason of transplantation out of the Country.

The

## The Conclusion.

**I**T may be now asked, to what purpose tends all this laborious buzzing, and groping? To know,

1. The number of the People?
2. How many *Males*, and *Females*?
3. How many Married, and single?
4. How many *Teeming* Women?
5. How many of every *Septenary*, or *Decad* of years in *age*?
6. How many *Fighting* Men?
7. How much *London* is, and by what steps it hath increased?
8. In what time the housing is replenished after a *Plague*?
9. What proportion die of each general and particular *Casualties*?
10. What years are Fruitfull, and Mortal, and in what Spaces, and Intervals, they follow each other?
11. In what proportion Men neglect the Orders of the *Church*, and *Sects* have increased?
12. The disproportion of Parishes?
13. Why the Burials in *London* exceed the Christnings, when the contrary is visible in the Country?

To this I might answer in general by saying, that those, who cannot apprehend the reason of these Enquiries, are unfit to trouble themselves to ask them.



2. I might answer by asking ; Why so many have spent their times, and estates about the Art of making Gold ? which, if it were much known, would onely exalt Silver into the place, which Gold now possesseth ; and if it were known but to some one Person, the same single *Adeptus* could not, nay, durst not enjoy it, but must be either a Prisoner to some Prince, and Slave to some Voluptuary, or else skulk obscurely up and down for his privacie, and concealment.

3. I might Answer ; That there is much pleasure in deducing so many abstruse, and unexpected inferences out of these poor despised Bills of *Mortality* ; and in building upon that ground, which hath lain waste these eighty years. And there is pleasure in doing something new, though never so little, without pestering the World with voluminous Transcriptions.

4. But, I Answer more seriously ; by complaining, That whereas the Art of Governing, and the true *Politiques*, is how to preserve the Subject in *Peace*, and *Plenty*, that men study onely that part of it, which teacheth how to supplant, and over-reach one another, and how, not by fair out-running, but by tripping up each other's heels, to win the Prize.

Now, the Foundation, or Elements of this honest harmless *Policy* is to understand the Land, and the hands of the Territory to be governed, according to all their intrinsic, and accidental differences: as for example ; It were good to know the *Geometrical* Content, Figure, and Scituation of all  
the

the Lands of a Kingdom, especially, according to its most natural, permanent, and conspicuous Bounds. It were good to know, how much Hay an Acre of every sort of Meadow will bear? how many Cattel the same weight of each sort of Hay will feed, and fatten? what quantity of Grain, and other Commodities the same Acre will bear in one, three, or seven years *communibus Annis*? unto what use each soil is most proper? All which particulars I call the intrinsick value: for there is also another value meerly accidental, or extrinsick, consisting of the Causes, why a parcel of Land, lying near a good Market, may be worth double to another parcel, though but of the same intrinsick goodness; which answers the Queries, why Lands in the North of *England* are worth but sixteen years purchase, and those of the West above eight and twenty. It is no less necessary to know how many People there be of each Sex, State, Age, Religion, Trade, Rank, or Degree, &c. by the knowledge whereof Trade, and Government may be made more certain, and Regular; for, if men knew the People as aforesaid, they might know the consumption they would make, so as Trade might not be hoped for where it is impossible. As for instance, I have heard much complaint, that Trade is not set up in some of the *South-western*, and *North-western* Parts of *Ireland*, there being so many excellent Harbours for that purpose, whereas in several of those Places I have also heard, that there are few other Inhabitants, but such as live *ex sponte creatis*, and are unfit Subjects of Trade, as neither

employing others, nor working themselves.

Moreover, if all these things were clearly, and truly known (which I have but guessed at) it would appear, how small a part of the People work upon necessary Labours, and Callings, *viz.* how many Women, and Children do just nothing, onely learning to spend what others get? how many are meer Voluptuaries, and as it were meer Gamesters by Trade? how many live by puzzling poor people with unintelligible Notions in Divinity, and Philosophie? how many by perswading credulous, delicate, and Litigious Persons, that their Bodies, or Estates are out of Tune, and in danger? how many by fighting as Souldiers? how many by Ministeries of Vice, and Sin? how many by Trades of meer Pleasure, or Ornaments? and how many in a way of lazie attendance, &c. upon others? And on the other side, how few are employed in raising, and working necessary food, and covering? and of the speculative men, how few do truly studie *Nature*, and *Things*? The more ingenious not advancing much further then to write, and speak wittily about these matters.

I conclude, That a clear knowledge of all these particulars, and many more, whereat I have shot but at rovers, is necessary in order to good, certain, and easie Government, and even to balance Parties, and factions both in *Church* and *State*. But whether the knowledge thereof be necessary to many, or fit for others, then the Sovereign, and his chief Ministers, I leave to consideration.

The Table of Burials, and Christnings.

Anno Dom.	97 Parishes	16 Parishes	Out-Parishes	Buried in all	Besides of the Plague	Christned
1604	1518	2097	708	4323	896	5458
1605	2014	2974	960	5948	444	6504
1606	1941	2920	935	5795	2124	6614
1607	1879	2772	1019	5670	2352	6582
1608	2391	3218	1149	6758	2262	6845
1609	2494	3610	1441	7545	4240	6388
1610	2326	3791	1369	7486	1803	6785
1611	2152	3398	1166	6716	627	7014
	16715	24780	8747	50242	14752	52190
1612	2473	3843	1462	7778	64	6986
1613	2406	3679	1418	7503	16	6846
1614	2369	3504	1494	7367	22	7208
1615	2446	3791	1613	7850	37	7682
1616	2490	3876	1697	8063	9	7985
1617	2397	4109	1774	8280	6	7747
1618	2815	4715	2066	9596	18	7735
1619	2339	3857	1804	7999	9	8127
	19735	31374	13328	64436	171	60316
1620	2726	4819	2146	9691	21	7845
1621	2438	3759	1915	8112	11	8039
1622	2811	4217	2392	8943	16	7894
1623	3591	4721	2783	11095	17	7945
1624	3385	5919	2895	12199	11	8299
1625	5143	9819	3886	18848	35417	6983
1626	2150	3286	1965	7401	134	6701
1627	2325	3400	1988	7711	4	8408
	24569	39940	19970	84000	35631	62114
1628	2412	3311	2017	7740	3	8564
1629	2536	3992	2243	8771	0	9901
1630	2506	4201	2521	9237	1317	9315
1631	2459	3697	2132	8288	274	8524
1632	2704	4412	2411	9527	8	9384
1633	2378	3936	2078	8392	0	9997
1634	2937	4980	2982	10899	1	9855
1635	2742	4966	2943	16501	0	10034
	20694	33495	19327	73505	1603	75774

## The Table of Burials, and Christnings in London.

Anno Dom.	97 Parishes	16 Parishes	Out-Parishes	Buried in all	Besides of the Plague	Christned
1636	2825	6924	3210	12959	10400	9522
1637	2288	4265	2128	8681	3082	9160
1638	3584	5926	3751	13261	363	10311
1639	2592	4344	2612	9548	314	10150
1640	2919	5156	3246	11321	1450	10850
1641	3248	5092	3427	11767	1375	10670
1642	3176	5245	3578	11999	1274	10370
1643	3395	5552	3269	12216	996	9410
	23987	42544	25221	91752	19244	80443
1644	2593	4274	2574	9441	1492	8104
1645	2524	4639	2445	9608	1871	7966
1646	2746	4872	2797	10415	2365	7163
1647	2672	4749	3041	10462	3597	7332
1648	2480	4288	2515	9283	611	6544
1649	2865	4714	2920	10499	67	5825
1650	2301	4138	2310	8749	15	5612
1651	2845	5002	2597	10804	23	6071
	21026	36676	21199	78896	10041	54617
1652	3293	5719	3546	12553	16	6128
1653	2527	4635	2919	10081	6	6155
1654	3323	6063	3845	13231	16	6620
1655	2761	5148	3439	11348	9	7004
1656	3327	6573	4015	13915	6	7050
1657	3014	5646	3770	12430	4	6685
1658	3613	6923	4443	14979	14	6170
1659	3431	6988	4301	14720	36	5690
	25288	47695	30278	103261	107	51502
1660	3098	5644	3926	12668	13	6971
1661	3804	7309	5532	16645	20	8855

77 *The Table of Males and Females for London.*

An. Dom.	Buried		Christned	
	Males	Females	Males	Females.
1629	4668	4103	5218	4683
1630	5660	4894	4858	4457
1631	4549	4013	4422	4102
1632	4932	4603	4994	4590
1633	4369	4023	5158	4839
1634	5676	5224	5035	4820
1635	5548	5103	5106	4928
1636	12377	10982	4917	4605
	47779	43945	39708	37024
1637	6392	5371	4703	4457
1638	7168	6456	5359	4952
1639	5351	4511	5366	4784
1640	6761	6010	5518	5332
Total	73451	65293	60664	56549
1641	6872	6270	5470	5200
1642	7049	6224	5460	4910
1643	6842	6360	4793	4617
1644	5659	5274	4107	3997
1645	6014	5465	4047	3919
1646	6683	6097	3768	3395
1647	7313	6746	3796	3536
1648	5145	4749	3363	3181
	51577	47185	34804	32755
1649	5454	5112	3079	2746
1650	4548	4216	2890	2722
1651	5680	5147	3231	2840
1652	6543	6026	3220	2908
1653	5416	4671	3196	2959
1654	6972	6275	3441	3179
1655	6027	5330	3655	3349
1656	7365	6556	3668	3382
	44005	41333	26380	24085
1657	6578	5856	3396	3289
1658	7936	7057	3157	3013
1659	7451	7305	9209	2781
1660	7960	7158	3724	3247
	29925	27376	13186	12330
Total	198952	181187	135034	126759

The Table by Decads of years for the  
Country-Parish.

Decads of years	Christened.				Buried.		
	Married	Males	Fem.	Both	Males	Fem.	Both
15 { 69 78	190	312	302	614	214	221	435
15 { 79 88	185	328	309	637	287	302	589
15 { 89 98	175	342	274	616	337	284	621
1 { 599 608	181	366	377	743	249	219	468
16 { 09 18	197	417	358	775	338	386	724
16 { 19 28	168	368	373	741	305	306	611
16 { 29 38	153	418	413	831	317	319	636
16 { 39 48	137	351	357	708	375	383	758
16 { 49 58	182	354	320	674	218	220	438
	1568	3256	3083	6339	2640	2640	5280

*The Table of the Country-Parish.*

Years	Communi- cants	Wed- dings	Christned			Buried		
			M.	F.	Both	M.	F.	Both
1569		14	38	30	68	23	21	44
1570		19	29	32	61	21	25	46
1571		18	28	26	54	23	27	50
1572		23	32	32	54	20	14	34
1573		21	34	36	70	24	13	37
1574		16	21	29	50	28	38	66
1575		24	37	29	66	15	19	34
1576		22	33	37	70	16	18	34
1577		13	29	26	55	19	21	40
1578		20	31	35	66	25	25	50
		190	312	302	614	214	221	435
1579		15	35	36	71	27	27	54
80		21	43	31	74	38	41	79
81		29	29	33	62	34	24	58
82		22	28	29	57	18	21	39
83		22	32	27	59	35	52	87
84		15	46	44	90	22	19	41
85		15	26	21	47	15	27	42
86		18	22	23	45	24	37	61
87		13	34	31	65	43	36	79
1588		15	33	34	67	31	18	49
		185	328	309	637	287	302	589

The



*The Table of Males and Females*

Years	Communi- cants	Wed- dings	Christned			Buried			
			M.	F.	Both	M.	F.	Both	
1589		20	31	27	58	28	16	44	
90		16	40	29	69	36	21	57	
91		12	37	28	65	35	30	65	
92		14	40	25	65	28	19	47	
93		20	32	20	52	33	32	65	
94		24	34	37	71	16	22	38	
95		16	32	28	60	33	28	61	
96		9	36	26	62	42	29	71	
97		23	23	25	48	53	64	117	
98		21	37	29	66	33	23	66	
			175	342	274	616	337	284	631
1599		19	45	31	76	21	22	43	
600		16	26	34	60	20	26	46	
601		16	39	32	71	18	12	30	
602		14	31	32	63	29	18	47	
603		12	31	38	69	32	39	71	
604		21	42	35	77	26	27	53	
605		19	47	34	81	21	12	33	
606		19	29	41	70	28	23	51	
607		27	36	47	83	33	19	52	
608		17	40	53	93	21	21	42	
			181	366	377	743	249	219	468

*The*

*The Table of Males and Females.*

Years	Weddings	Christned			Buryed		
		M.	F.	Both.	M.	F.	Both
1609	23	30	31	61	24	41	65
10	19	46	30	76	33	40	73
11	25	40	41	81	41	32	73
12	20	55	32	87	53	63	116
13	24	41	33	74	47	41	88
14	25	50	35	85	27	36	63
15	22	35	48	83	28	36	64
16	14	38	36	74	27	41	68
17	17	45	31	76	35	28	63
1618	8	37	41	78	23	28	51
197   417   358   775   338   386   724							
1619	21	37	43	80	26	28	54
20	20	34	51	85	18	30	48
21	21	31	37	68	28	36	64
22	23	45	38	83	20	26	46
23	14	40	36	76	56	31	87
24	19	30	33	63	29	35	64
25	7	37	41	78	36	20	56
26	9	30	35	65	21	29	50
27	18	45	23	68	24	29	53
1628	16	39	36	75	47	42	89
168   368   373   741   305   306   611							

*The*

Years	Weddings	Christned			Buried		
		M.	F.	Both.	M.	F.	Both
1629	22	53	38	91	46	28	74
30	8	58	45	103	26	27	53
31	20	42	29	71	26	33	59
32	16	43	50	93	15	21	36
33	12	38	65	103	18	11	29
34	23	30	45	75	18	26	44
35	11	39	32	71	18	17	35
36	15	50	37	87	42	48	90
37	13	35	36	71	25	35	60
1638	13	30	36	66	83	73	156
	153	418	413	831	317	319	636
1639	18	24	31	55	48	66	114
40	11	44	41	85	35	39	74
41	21	34	39	63	34	36	70
42	21	48	39	87	32	29	61
43	8	30	42	72	59	28	87
44	16	33	26	59	65	72	137
45	10	43	41	84	28	29	57
46	11	32	35	67	24	32	56
47	12	28	46	74	25	21	46
48	9	35	27	62	25	31	56
	137	351	357	708	375	383	758
1649	9	22	37	59	46	34	80
50	9	55	31	86	25	27	52
51	7	25	27	52	11	21	32
52	14	34	28	62	20	25	45
53	9	47	24	71	21	14	35
54	15	34	37	71	14	25	39
55	38	35	34	69	28	19	47
56	28	40	30	70	18	15	33
57	37	23	43	66	22	25	47
58	16	39	29	68	13	15	28
	182	354	320	674	218	220	438

*Advertisements*



*Advertisements for the better understanding of the several Tables : videlicet,*

*Concerning the Table of Casualties consisting of thirty Columns.*

**T**He first Column contains all the *Casualties* happening within the 22 single years mentioned in this Bill.

The 14 next Columns contain two of the last *septenaries* of years, which being the latest are first set down.

The 8 next Columns represent the 8 first years, wherein the *Casualties* were taken notice off.

*Memorandum, That the 10 years between 1636 and 1647 are omitted as containing nothing Extraordinary, and as not consistent with the Incapacity of a Sheet.*

The 5 next Columns are the 8 years from 1629 to 1636 brought into 2 Quaternions, and the 12 of the 14 last years brought into three more; that Comparison might be made between each 4 years taken together, as well as each single year apart,

The

The next Column contains 3 years together, taken at 10 years distance from each other; that the distant years, as well as consequent, might be compared with the whole 20, each of the 5 Quaternions, and each of the 22 single years.

The last Column contains the total of the 15 Quaternions, or 25 years.

The Number 229250 is the total of all the Burials in the said 20 years, as 34190 is of the Burials in the said 3 distant years. Where note that the  $\frac{1}{3}$  of the latter total is 11396 and the  $\frac{1}{10}$  of the former is 11462; differing but 66 from each other in so great a sum, *videlicet* scarce  $\frac{1}{100}$  part.

### *The Table of Burials, and Christnings, consisting of 7 Columns.*

IT is to be noted, that in all the several Columns of the *Burials* those dying of the *Plague* are left out, being reckoned all together in the sixth Column. Whereas in the original Bills the *Plague*, and all other diseases are reckoned together, with mention how many of the respective totals are of the *Plague*.

Secondly, From the year 1642 forwards the account of the *Christnings* is not to be trusted, the neglects of the same beginning about that year: for in 1642 there are set down 10370, and about the same Number several years before, after which time the said *Christnings* decreased to between 5000 and 6000 by omission of the greater part.

Thirdly, The several Numbers are cast up into *Octonaries*

*naries*, that Comparison may be made of them as  
as well as of single years.

*The Table of Males, and Females, con-  
taining 5 Columns.*

First, The Numbers are cast up for 12 years; *vide-  
licet* from 1629, when the distinction between *Males*  
and *Females* first began, untill 1640 *inclusivè* when  
the exactness in that Account ceased.

Secondly, From 1640 to 1660 the Numbers are  
cast up into another total, which seems-as good for  
comparing the Number of *Males* with *Females*, the  
neglect being in both Sexes alike, and proportion-  
able.

The Tables concerning the *Country-Parish*, the for-  
mer of *Decads* beginning at 1569, and continuing un-  
till 1658, and the latter being for single years, being  
for the same time, are so plain, that they require no  
further Explanation then the bare reading the Cha-  
pter relating to them, &c.

... that Comparison may be made of them as  
as well as of single years.

The Table of Males and Females, con-  
taining a Column.

... the ...  
... the ...  
... the ...

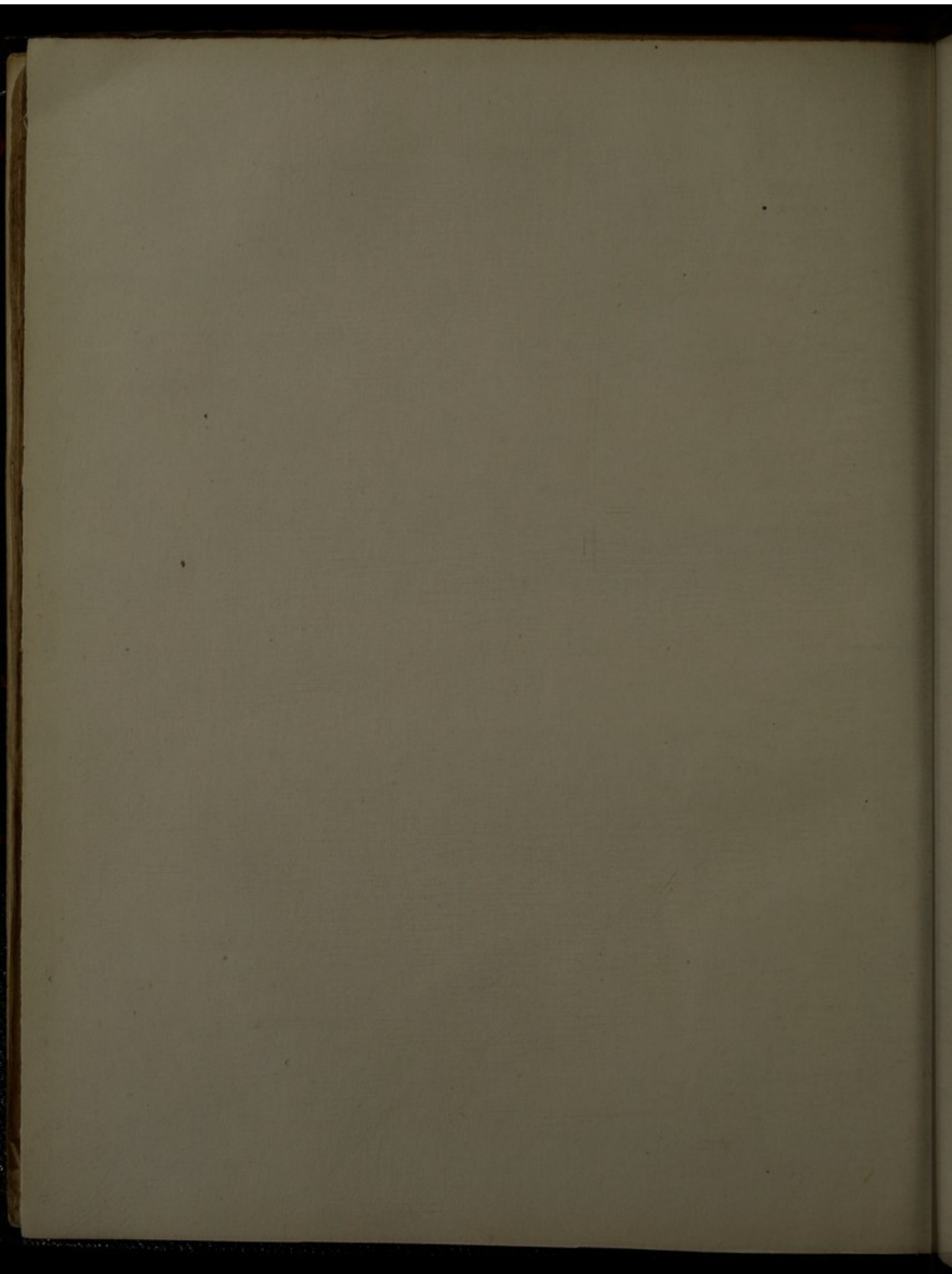
Errata

**P**ag. 1. lin. 22. read 1632. pag. 21. lin. 19. r. 229250. p. 26. lin. 27. r. 214. p. 29. lin. 28. r. seemed.  
lin. 29. in proportion. p. 32. l. 14. r. which in p. 35. l. 29. r. other. p. 40. l. 26. r. calamities. p. 41.  
l. 23. r. should have. p. 44. l. 17. r. II. p. 44. l. 6. r. 10000. p. 48. l. 16, 17. dele all within the Parenthe-  
sis. p. 57. l. 22. r. difference. p. 65. l. 12. r. It. pag. 78, and 79 r. Country. Pariff.

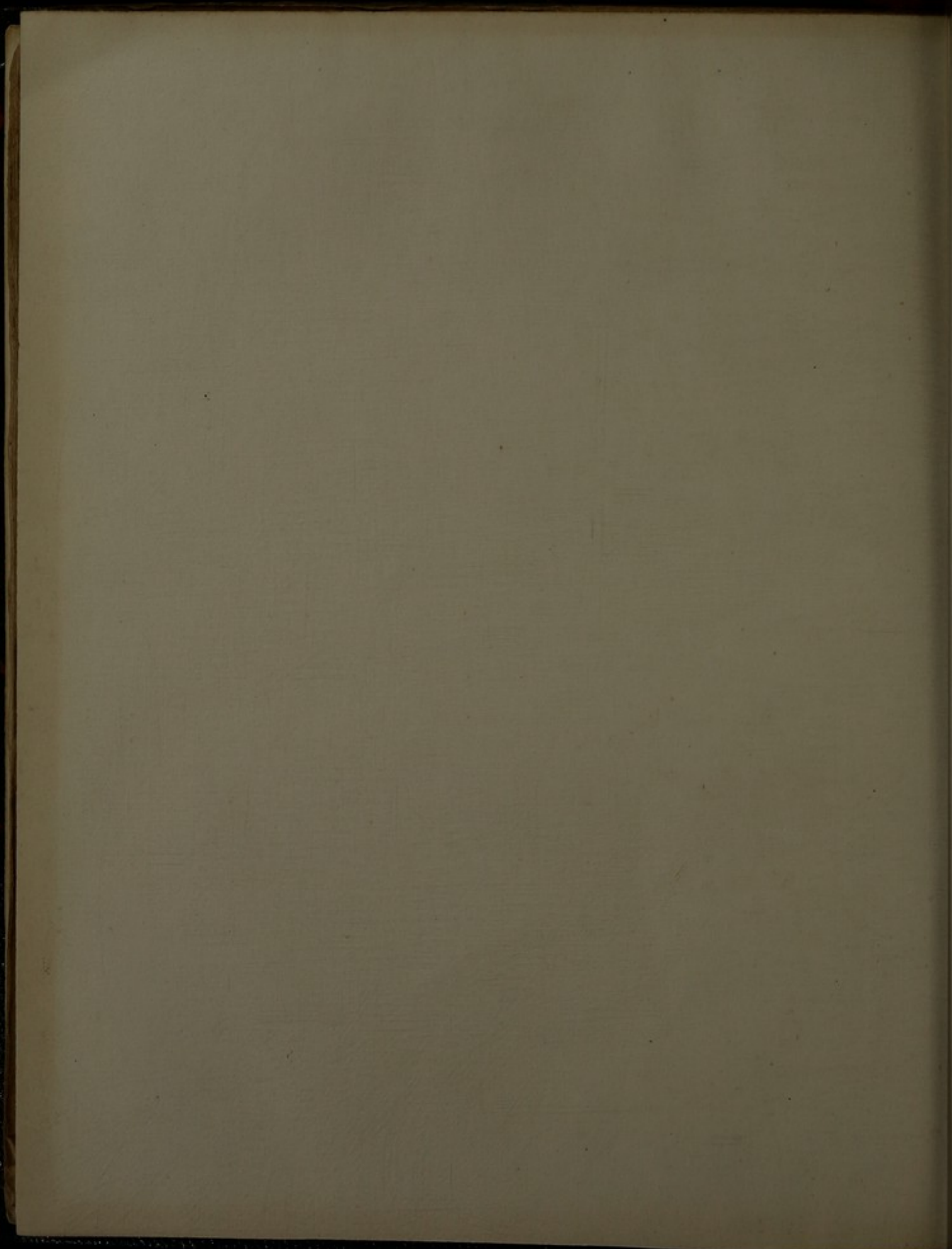
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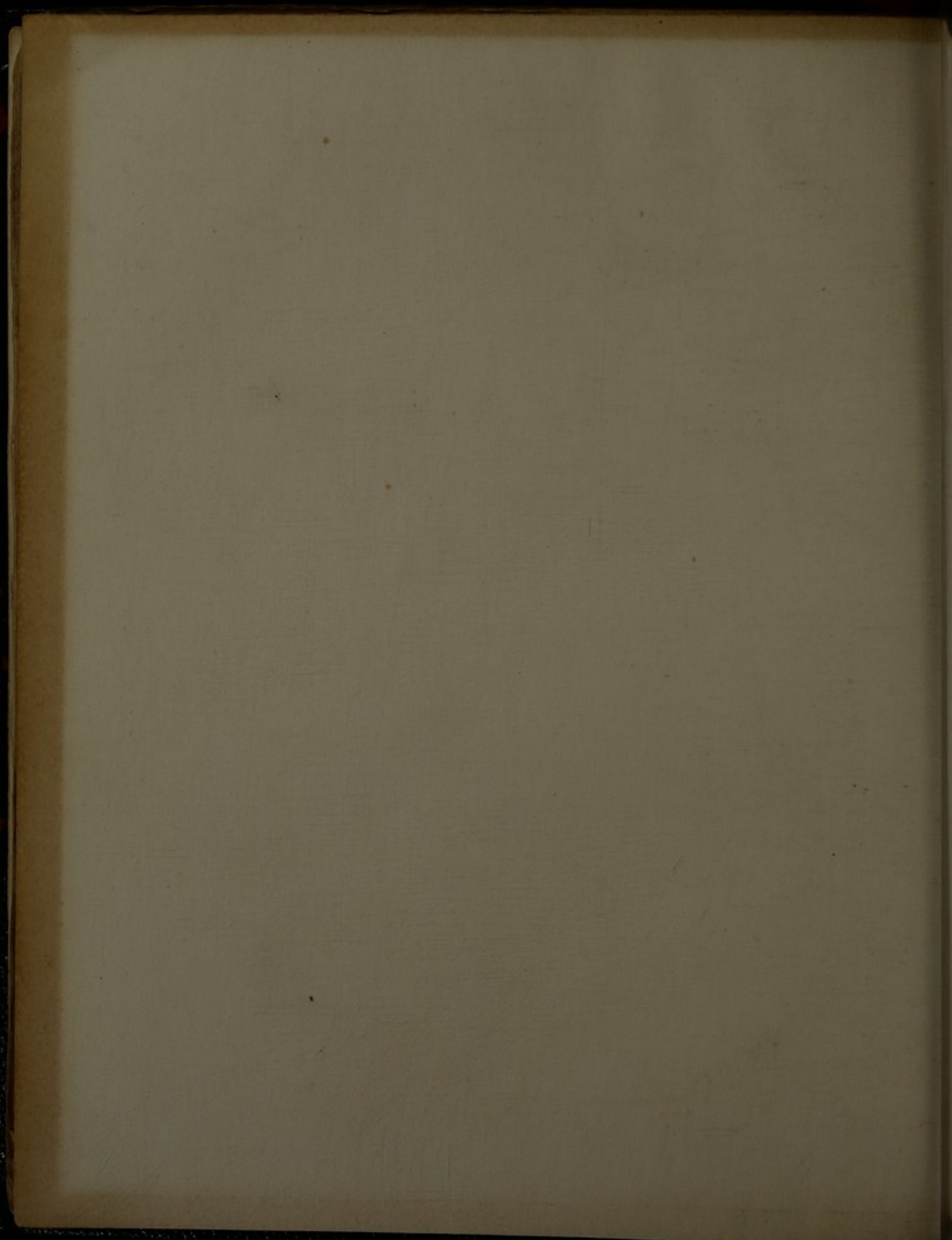
















GRAUNT - BILLS OF MORTALITY

1662







