

Natural and Political OBSERVATIONS Mentioned in a following INDEX, and made upon the Bills of Mortality

Title; epistle dedicatory: to [John Lord Roberts](#), to [Sir Robert Moray](#)

An Index of Positions, Observations, and Questions contained in this Discourse.

The Preface

Of the Bills of Mortality, their beginning, and progress

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Stephan

Dedication

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The Epistle Dedicatory.

TO THE
RIGHT HONOURABLE

JOHN Lord *ROBERTS*, Baron of

Truro, Lord *Privie-Seal*, and one of His Majesty'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 Newsastle*, and but give your lordship *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

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 inconveniences: 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 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 *Pole-money*, &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 1662.

JOHN GRAUNT.

The Epistle Dedicatory.

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.

T*He Observations, which I happend 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 Mankinde. 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 Dominion) 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 Abili

lities, as affection concerning those matters, upon which Accompt 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 Majestie'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 shop-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 Schismaticks of your Society (who think you do nothing,

unless you presently transumte Mettals, make Butter and Cheese without Milk; and (as their own Ballad hath it, make Leather without Hides) by asserting the usefulness

of even all your preparatory, and luciferous experiements 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 univform keeping of time in their Consorts, and therefore cannot with patience hear, that your Labours about Vibrations, eminently conducing to both, should be slight, nor your Pendula, called Sing-swangs with scorn. Nor can I better endure that your Exercitations about Air should be termed fit employment onely for Airie Fancies, and not adquate 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 covetous 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 Burgesses 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.

—	Stephan	Graunt	Next
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John Graunt (1620-1674)

OBSERVATIONS ON THE BILLS OF MORTALITY - 1st edition

Biography - what little I have found

From Aubrey's *Brief Lives* - biography by a friend of Graunt's

Portrait of "John Graunt" - well, very nearly a portrait of him

A Journal of the Plague Year - OnLine novel by Daniel Defoe (536k)

The Living - a play by Anthony Clarvoe

The Black Death - an internet presentation by Ellis L. Knox

Plague Pix - contemporary images from the plague of 1665

Portraits from Graunt's time - people mentioned at this site.

The Great Fire - Plague one year, fire the next

European time-line - events going on in Graunt's world

Hogarth's London - post Graunt, but informative

Stephan



OFFICIAL JOHN GRAUNT SITE OF THE 1996 OLYMPIC GAMES

A Life of John Graunt

by Ed Stephan

John Graunt was born between seven and eight o'clock, the morning of 24 April 1620, apparently the eldest of seven or eight children. He was christened a week later at St. Michael, Cornhill. His father Henry was a draper who had moved to London from Hampshire; his mother was named Mary.

He was educated in English, then apprenticed (1636-41) at age sixteen to his father's profession, haberdasher of small wares (the OED suggests this meant, at that time, he sold women's notions). He taught himself Latin and French by studying mornings before shop-time. He conducted his business at the sign of the Seven Stars in Birchin Lane, London. In February 1641 he married Mary Scott, who apparently bore him one son and three daughters. According to [Aubrey](#) the son grew to manhood and died in Persia, and one of the daughters became a nun.

He did well in business. By the time of the Great Fire (1666) he had become "an opulent merchant of London, of great weight and consideration in the city." He was known as a great peacemaker and was often chosen an arbitrator between disputing merchants. Before reaching his thirtieth birthday, he had sufficient influence to secure for his friend [William Petty](#) the professorship of music at Gresham College. He held several offices in the Drapers' Company: a Freeman ("by Patrimony") at 21, granted the Livery of the Company at 38, and risen to the distinguished position of Renter Warden by age 50. He went through the typical ward offices of the city and was elected to the Common Council, bearing that office for two years. He was Foreman of the Wardmote inquest, 1669-70, and he held the rank of Captain of the [Trained Band](#) in the London militia for several years, holding the rank of major two or three years more. Somewhere near the end of his life he was a Governor in the New River Company; he was a trustee for Sir William Backhouse in that company. At some point he was employed by (James Butler, Duke of) Ormond to recruit Walloon weavers living near Canterbury and to settle them in Ireland.

He had a well developed interest in art. He was a friend of the miniaturist Samuel Cooper and of the portrait painter John Hayls (Hales). He was also an important collector. Samuel Pepys' diary describes his prints as "indeed the best collection of anything almost that ever I saw, there being the prints of most of the greatest houses, churches and antiquitys in Italy and France, and brave cutts". The diarist, who knew him well, considered Graunt's "most excellent discourses well worth hearing". And, though he lacked classical education and had no more mathematics than would any businessman of his day, the famous book-collector Richard Smith esteemed him "an understanding man of quick wit and a pretty schollar". Anthony a-Wood wrote that "his excellent working head ... is very rare in a trader or mechanic".

The preface to his *Observations on the Bills of Mortality* is dated 25 January 1662. He speaks lightly of his original interest in the bills: "having (I know not by what accident) engaged my thoughts", though in the 3rd edition, after his reputation had been established, he speaks of his "long and serious perusal of all the bills." Pepys bought a copy of the *Observations* at Westminster Hall before they had been in print two months. A second London edition was published within the year, and three more followed (London 1665, Oxford 1665, London 1676).

5 February 1662 Graunt presented fifty copies of his *Observations* to Dr. Whistler of the "Society of Philosophers meeting at Gresham Colledg" (the Royal Society). The [epistle dedicatory](#) to their President, Robert Moray, was read, Graunt was voted thanks and proposed as a candidate for admission. Society historian, Bishop Sprat, noted that Graunt's admission was recommended by [King Charles II](#) himself, adding that "in his election it was so far from being a prejudice that he was a shopkeeper of London, that His Majesty gave this particular charge to His Society, that if they found any more such tradesmen, they should be sure to admit them all, without any more ado."

The Society did, however, on 12 February, go through the formality of convening a committee (Sir William Petty, and Drs. Needham, Wilkins, Goddard, Whistler, and Ent) to look into Graunt's book. On 26 February he was elected a fellow. In spite of his having said in the letter to Moray that he had no interest in becoming a member, he immediately accepted, subscribing at the next meeting of the Society. He attended

meetings frequently for five years and served on several of its committees. He was a member of the Council of the Society 30 November 1664 to 11 April 1666.

He converted from Protestantism (Puritan) to antiTrinitarianism (Unitarian)^[1] and was apparently very devout, taking down the sermons in shorthand. His conversion to Roman Catholicism may have predated the Great Fire, or may even have been caused by it. In any case, it forced him to resign his civil and military positions and subjected him to serious legal harassment. The Fire took his house, and his business appears to have suffered greatly from that time onward. Though his house was rebuilt with Petty's help, it passed to Petty and Graunt moved into Bolt Court in the parish of St. Dunstan-in-the-West, Fleet Street. In spite of assistance from Petty, he remained in difficult circumstances until his death in poverty, after which the Drapers' Company allowed his widow a pension of £4 "on account of her low condition."

John Graunt died 18 April 1674 of jaundice. He was buried at St. Dunstan's Church (the exact location, under some pews is given by Aubrey who comments "what pitty 'tis so great an Ornament of the City should be buried so obscurely"; the rebuilding of the church on a different site in 1930 has made it even more obscure). According to Smith's obituary, "A great number of ingeniose persons attended him to his grave. Among others, with teares, was that great ingeniose virtuoso, Sir William Petty." His contemporary [John Aubrey](#), (*Brief Lives*), who found him "a pleasant facetious companion and very hospitable," noted that his death was "lamented by all good men that had the happinesse to knowe him."

There is an interesting afterward, the last paragraph of Aubrey's [biography of Petty](#):

Sir William Petty had a boy that whistled incomparably well. He after waited on a lady, a widow, of good fortune. Every night this boy was to whistle his lady asleep. At last she could hold out no longer, but bids her chamber-maid withdraw: bids him come to bed, sets him to work, and marries him the next day. This is certain true; from himself and Mrs Grant.

Aubrey refers earlier in this same work to Capt. J. Grant

[sic]. Could the widow be?!?!

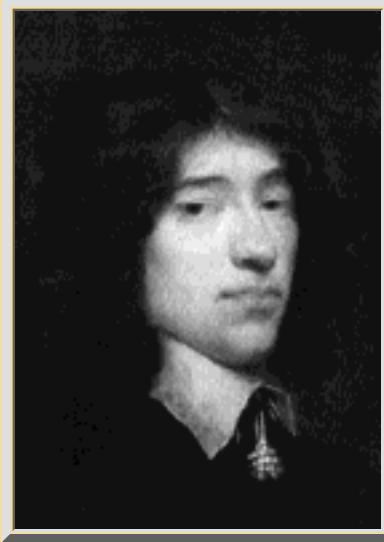
principal sources: Charles Henry Hull, *The Economic Writings of Sir William Petty* (New York:Augustus Kelley), 1963: pp xxxiv-xxxviii; Frank N. Egerton III, "John Graunt", in Charles Gillispie (ed.) *Dictionary of Scientific Biography* (New York:Charles Scribner's), 1972: pp 506-508. If you have other info which should be added, please [contact me](#).

[1] Aubrey says he was Calvinist, then became a Socinian. This was a sect founded by 16h century Italian theologians Lælius and Faustus Socinus; they denied the divinity of Christ.

[Stephan](#)

[Graunt](#)

William Petty



[Stephan](#)

[Portraits](#)

[Graunt](#)

portraits from Graunt's time

- ["John Graunt"](#)
- [Charles I](#)
- [Charles II](#)
- [James I](#)
- [William Petty](#)
- [James Ussher](#)

<u>Stephan</u>		<u>Graunt</u>
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John Graunt

A Brief Life* by John Aubrey (1626-97)

Captaine John Graunt (afterwards, major) was borne 24th *die Aprilis*, 1620 at the seven Starres in Burhcin Lane, London, in the parish of St. Michael's Cornhill. He was the sonne of Henry Graunt.

He wrote *Observations on the Bills of Mortality* very ingeniously (but I beleeve, and partly know, that he had his hint from his intimate and familiar friend Sir William Petty), to which he made some *Additions*, since printed. And he intended, had he lived, to have writt more of the bills of the mortality; and also intended to have written something of religion.

A man generally beloved; a faythfull friend. Often chosen for his prudence and justnes to be an arbitrator; and he was a great peace- maker. He had an excellent working head, and was very facetious and fluent in his conversation. To give him his due prayse, he was a very ingeniose and studious person, and generally beloved, and rose early in the morning to his study before shop-time. He understood Latin and French. He was a pleasant facetious companion, and very hospitable. He was bred-up (as the fashion then was) in the Puritan way; wrote short-hand dextrously; and after many yeares constant hearing and writing sermon-notes, he fell to buying and reading of the best Socinian bookes, and for severall yeares continued of that opinion. At last he turned a Roman Catholique, of which religion he dyed a great zealot.

He was free of the drapers' company, and by profession was a haberdasher of small-wares. He had gone through all the offices of the city so far as common-councill-man. Captain of the trayned-bands severall yeares; major, 2 or 3 yeares. He was a common concell man 2 yeares, and then putt out (as also of his military employment in the trayned band) for his religion. He was admitted a fellowe of the Royall Societie, about 1663.

He broke.^[1] He dyed on Easter eve 1674 buried on the Wednesday in Easter-weeke in St. Dunstan's church in Fleet Strete under the gallery about the middle (or more west) north side, *anno aetatis suae* 54.

He had one son, a man, who dyed in Persia; one daughter, a nunne at I thinke, Gaunt. His widowe yet alive.

Major John Graunt dyed on Easter-eve 1674, and was buried the Wednesday following in St. Dunstan's church in Fleet street in the body of the said church under the piewes toward the gallery on the north side, *i.e.* under the piewes (*alias* hoggsties) of the north side of the middle aisle (what pittie 'tis so great an ornament of the citty should be buried so obscurely!)

He was my honoured and worthy friend -- *cujus animae propitietur Deus, Amen.*

His death is lamented by all good men that had the happinesse to knowe him; and a great number of ingeniose persons attended him to his grave. Among others, with teares, was that ingeniose great *virtuoso*, Sir William Petty, his old and intimate acquaintance, who was sometime a student at Brase-nose College.

* from *Brief Lives and Other Selected Writings* by John Aubrey, edited and with an introduction and notes by Anthony Powell. New York: Charles Scribner's Sons, 1949, p 275-6.

[1] became bankrupt.

Portrait of "John Graunt"

So far as I know, there is no likeness anywhere of John Graunt. If you know of one, please [contact me](#).

Graunt was a good friend of portrait painter John Hales, and there are portraits available of nearly all of Graunt's contemporaries of note, but if he ever had his picture done it must have been lost when his house burned. This photo, by Terry Shapiro, is of Jamie Horton portraying John Graunt in the Denver Center Theatre Company's world premiere production of Anthony Clarvoe's *The Living*, 3 May 1993.



[Stephan](#)

[Portraits](#)

[Graunt](#)

The Living

Anthony Clarvoe

This *outstanding* play was first presented 3 May 1993 by the Denver Center Theatre Company, directed by Nagle Jackson. The playscript was published in *American Theatre*, December 1993, pages 25-42.

[**local note:** *American Theatre* is housed in WWU's library, basement west, bound periodicals. I know of no electronic version to point to, and the small print on the playscript's first page makes it a capital crime for me to save you the trip to the library by putting this excellent play here on this site. I trust it isn't a crime to tempt you to read the whole thing by quoting a little from it.]

The play is set in London, 1665, during the Great Plague. It opens with Mr. John Graunt standing to one side of the stage, holding a large sheet of paper, densely printed. He looks out.

GRAUNT: Ague and Fever, 5,257. Chrisomes and Infants, 1,258. Consumption and Tissick, 4,808.

He turns upstage where, on an upper level, Dr. Edward Harman, dressed in a protective suit which completely covers him, hovers near a cot with a corpse in it. Graunt turns back.

GRAUNT: This is a publication that comes out every week. Has for sixty years now. Each parish reports how many christened, how many died, what they died of. It's called the Bills of Mortality. People subscribe, glance through. At year's end, they publish a summary. Convulsion, 2,036. Dropsie and Timpany, 1,478.

Harman pulls a sheet over the body

GRAUNT: Frighted, 23. Grief, 46. Overlaid and Starved, 45. Plague, 110,596.

Harman exits

GRAUNT: We did not know where it came from. We did not know what caused it. We had no way to stop it. For all we knew, it would never end. For all we knew, the world would

end, in 1665. Bear that in mind. Judge what we did. For in this account it does not matter what becomes of me, or any of us. All that matters is what becomes of you. And what we did may be of use to you, if this ever should happen again. (*He exits*)

This is a powerful play from start to finish. Throughout the performance no one comes within arm's length of anyone else, except the doctor. No object is ever handed directly from one person to another.

It is also extremely well researched. Material which can seem dull in reading Graunt's book comes to life, as in this exchange between Graunt and Lawrence, Lord Mayor of London. The reference is in [Chap. VI of the *Observations*](#). Graunt refers to the popular belief among enemies of His Majesty Charles II that coronations (James I in 1603, Charles I in 1625) bring on major outbreaks of the plague:

LAWRENCE: And you proved his enemies wrong.

GRAUNT: I proved everybody wrong. If you really look at the Bills, you see there've been plague years after some coronations but not others, you see there is no twenty-year cycle--

LAWRENCE: You see there's no predicting it.

GRAUNT: You see there is. I predicted this one.

LAWRENCE: You did?

GRAUNT: Three years ago. The plague doesn't come from nowhere, you can see it coming months away. Before the plague years, there is always a sickly year: increase of fevers, increase of stillbirths, increase of infant deaths. Same this time.

This point is made in [Chap. IV of the *Observations*](#).

Amid the tragic and touching events which transpire in this play, Clarvoe still manages to

work in a humorous jab at Graunt's dogged pursuit of statistical fact. Here Graunt tells of having gone to visit a parish clerk whom he suspects of terrible under-reporting. He found the office locked and, after breaking in, found the clerk at his desk, with his head lying on the register, dead from the plague in the middle of making an entry.

GRAUNT: I could see on the open page, almost the last thing he'd written. I was peering around his head. There was ink on his cheek. The entry for plague read five hundred and four.

LAWRENCE: My God. For one parish? For one week?

GRAUNT: I stood there thinking, five hundred and four. Yes, terrible. But. Did he count himself?

Get a copy of this play and read it. Or better yet, see it if you can. You'll learn what holds the world together in a plague.

Stephan

Graunt

pictures of the plague

- [Scenes During the Great Plague](#)
- [Sermon During the Plague](#)
- [Carrying Corpses Away From Town](#)
- [Killing Dogs to Lessen the Spread of Plague](#)
- [Pepys's Reaction to the Plague and its Stench](#)
- [Pepys's List of Recent Victims](#)
- [The Doctor's Robe](#)
- [Runaways Fleeing from the Plague](#)
- [A Londoner in the Country](#)
- [London Welcomes Home her Runaways](#)

[Stephan](#)

[Graunt](#)

William Hogarth (1697-1764)

note: none of this works anymore (it's all now fee-only). Till I find something to substitute, go to the San Francisco Museums' [Imagebase](#) and search "Hogarth."

<u>Beer Street</u>	<u>Gin Lane</u>
<u>1</u> <u>2</u> <u>3</u>	<u>1</u> <u>2</u> <u>3</u> <u>4</u>
Harlot's Progress	
<u>Arrival in London</u>	<u>Beating Hemp in Prison</u>
<u>Mistress to a Wealthy Jew</u>	<u>Death while Doctors Argue</u>
<u>Poverty and Arrest</u>	<u>Peace at Last</u>
Rake's Progress	
<u>The Miser's Heir</u>	<u>Marries an Old Maid</u>
<u>Artists and Professors</u>	<u>A Gaming House</u>
<u>Tavern Scene</u>	<u>Prison Scene</u>
<u>Arrested for Debt</u>	<u>In a Madhouse</u>
Marriage a la Mode (color engravings)	
<u>The Marriage Contract</u>	<u>Morning Levee</u>
<u>After the Marriage</u>	<u>Killing of the Earl</u>
<u>Visit to the Quack Doctor</u>	<u>Suicide of the Countess</u>
<u>Stephan</u>	<u>Graunt</u>

Charles I
1600-1649
King of England
1625-1649



Stephan

Portraits

Graunt

Charles II

1630-1685

King of England

1660-1685



[Stephan](#)

[Portraits](#)

[Graunt](#)

James I
1566-1625
King of England
1603-1625
James VI of Scotland
(1567-1625).



Stephan

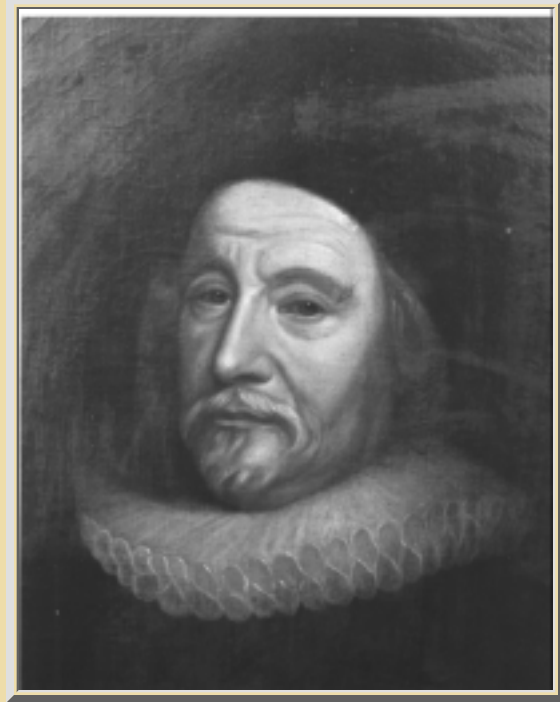
Portraits

Graunt

James Ussher

1581-1656

Theologian and scholar;
archbishop of Amrmagh (1625);
defeated attempt to make
doctrinal standards of the Irish
church conform exactly with
those of the English (1634);
propounded a scheme of Biblical
chronology long inserted in
margin of editions of the
Authorized Version, according to
which the creation took place
4004 B.C.



[Stephan](#)

[Portraits](#)

[Graunt](#)

The Doctor's Robe



Early in the 1600s, doctors began wearing a robe of *toile-cirée*, linen coated with a wax paste. The idea was that the plague came from "venemous atoms" which infected salubrious air making it "miasmatic". These atoms were "sticky", clinging to things the way smoke or perfume clings to things. The waxed robe presumably provided no surface to cling to. The breathing tube beak was filled with materials imbued with perfume. A priest in Italy complained that the robe was useless against plague, saying it "is good only to protect one from the fleas which cannot nest in it". The friar (who came close to guessing the cause of the plague without knowing it) complained of being "devoured by fleas, armies of which nest in my gown."

source: C.M. Cipolla, *Fighting the Plague in Seventeenth Century Italy* (Wisconsin, 1981), p 10

[Home page](#) [Pictures](#) [Graunt page](#)

CHAP. 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 *Christenings* 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 1/4 part lower.

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

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the 21 of *October*, the *Plague* increasing, reduced the *Christnings* to 70 at a *Medium*, diminishing the above proportion, down to 2/5. 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 Country.

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, re

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 foregoing 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 the 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 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 the 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 could 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 *Calamities* 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 1660, 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 surmised 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*.

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

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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 Countrey; and withall, in case all *England* have but fourteen times more People then *London*, it will appear, how the said increase of the Country 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, for those in, and about *London*, there remains 5980000 in the Countrie, the which increasing about 1/7 part in 40 years, as we shall hereafter prove, doth

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happen in the Countrie, the whole increase of the Countrie 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 Countrie 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

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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.

3. There are about 100000 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 Accompt 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 refurnishing *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 than

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in the Country; That is, let there be an hundred Persons in *London*, and as many in the Country; we say, that if there be 60 of them Breeders in *London*, there are more then 60 in the Country, or else we must say, that *London* is more unhealthfull, or that it enclines men and women more to Barrenness, then the Country, which by comparing the Burials, and Christnings of *Hackney*, *Newington*, and 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 Country 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 Country.

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,

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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 than 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.

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CAP. IV.

Of the Plague.

1. **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 <i>Anno</i> 1592 from <i>March</i> to <i>December</i> ,	25886
Whereof of the <i>Plague</i>	11503
<i>Anno</i> 1593	17844
Whereof of the <i>Plague</i>	10662
<i>Christned</i> in the said year	4021
<i>Anno</i> 1603 within the same space of time	
were Buried	37294
Whereof of the <i>Plague</i>	30561
<i>Anno</i> 1625 within the same space,	51758
Whereof of the <i>Plague</i>	35417
<i>Anno</i> 1636 from <i>April</i> to <i>December</i>	23359
Whereof of the <i>Plague</i>	10400

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 $\frac{2}{5}$ 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,

<i>Anno</i>	Buried	26490	} or as {	6
1592.	Christned	4277		

<i>Anno</i>	There died in the whole	} or as {	8
1603.	Year of all Christned		

1. to 8. or 1 1/4. to 10.	<i>Anno</i>	Died in the whole	} or as {	8
	1625.	Year Christned.		

<i>Anno</i>	There died, <i>ut supra</i>	23359	} or as {	5
1636.	Christned	9522		

7. From whence it appears, that *Anno* 1636. the Christnings were about $\frac{2}{5}$. parts of the Burials. *Anno*

1592. but $1/6$. 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* than *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* than were accompted 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 $1/4$. 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 $1/4$. 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.

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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.

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CHH(sic)P. VIII.

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

THe next Observation is, That there be more *Males* then *Females*.

There have been Buried from the year 1628, to the year 1662, *exclusivè*, 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*, then *Mahumetism*, and others, that

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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* then *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 truest Reason, why *Foxes, Wolves*, and other *Vermin Animals* that are not gelt, increase not faster then *Sheep*, when as so many thousands of these are daily Butchered, and very few of the other die otherwise then of themselves.

4. We have hitherto said there are more *Males*, then *Females*; we say next, That the one exceed the other by about a thirteenth part; so that although more men die violent deaths then women, that is, more are *slain* in Wars, *killed* by mischance, *drowned*

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 *Proflique* 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-sickness*, 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 *Sicknesses*: but this must be salved, either by the alledging, that the *Physicians* cure those *Sicknesses*, 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 *Infirmities* of their *Sex*, and consequently, more *Males* being born, then *Females*, more also die.

8. In the year 1642 many *Males* went out of

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 1/4th, or 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

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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 *Castracon* 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 *Cælibate* 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 the 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

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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 great aw, 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 the most easily governed.

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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 carelessness, 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 ge-

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 distress.

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 anything. 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 *not-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 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 the 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 [sic], 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 of the disturbing their Innovations.

10. In brief, when any dead Body is found in *England*, no *Algebraist*, or *Uncipherer* of Letters, can use more subtle 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 *Supersedeas*) 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 Madmen, 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.

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14. We shall say nothing of the numbers of those, that have been *Crowned*, *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-heads* 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. Foreasmuch as by the ordinary discourse of the world it seems a great part of men have, at one time

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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 inquery 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 *hated* 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 *Casualties*, 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 *Hectick 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

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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 reson (as I conceive) of their likeness to each other. Hereupon I added the *Liver- grows* 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-grows*; 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*.

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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 remembered that some Women, troubled with the *Mother-fits*, did complain of *achoaking 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

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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 in

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 answer the general proportion of the 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 *Tyssick* 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 those 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* 1650, there were 226 *Child-beds*; and *Anno* 1631, 112, *viz.* not 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*,

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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.

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46. A third Reason was, That a little Fee was to be paid for *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 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 *Chrysoms*, and *Infants* was greater: for in 1629, there was of *Chrysoms*, 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.

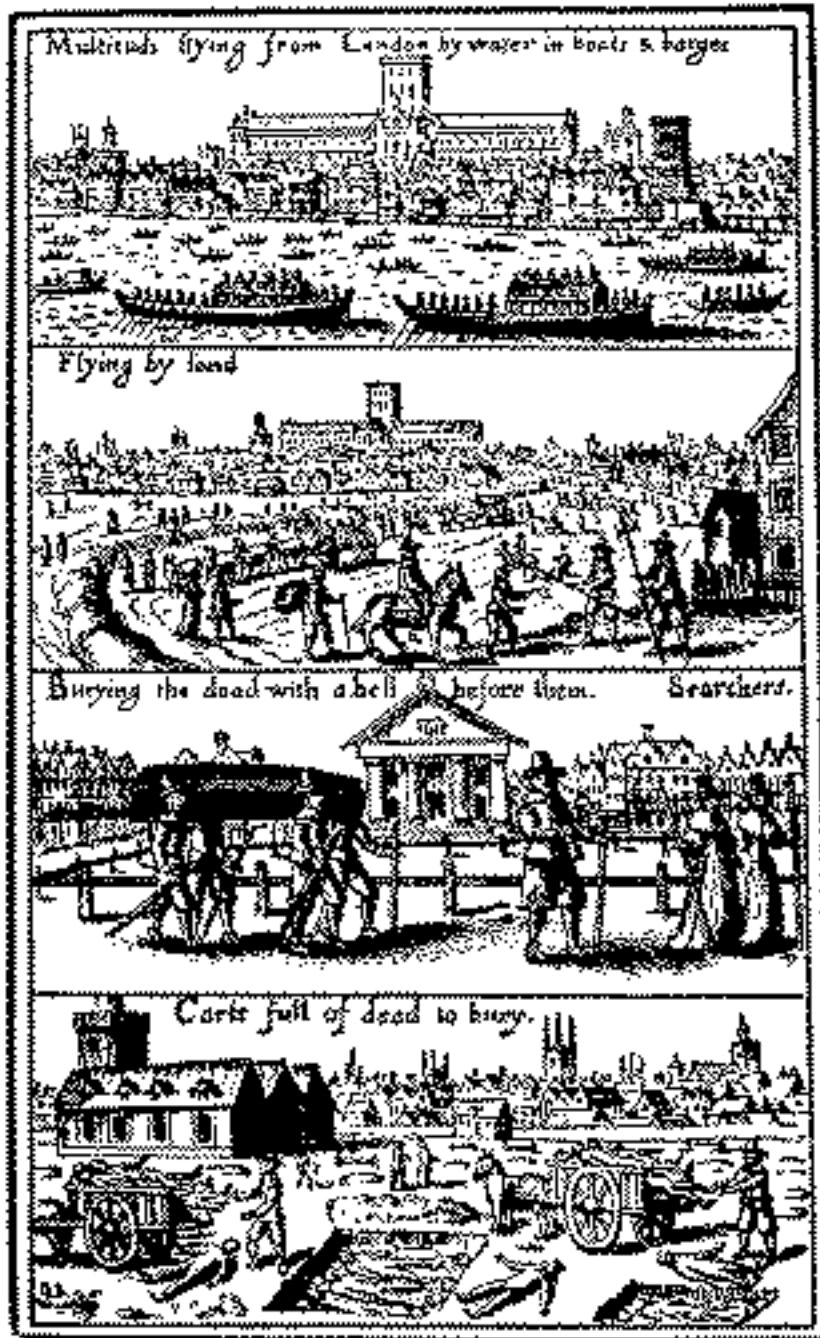
50. Moreover, we finde that for these later years, since 1636, the Total of *Convulsions* and *Chrysoms* added together are much less, *viz.* by about 400 or 500, *per Annum*, then the like Totals from 1626

to 36, which makes me think, that *Teeth* also were thrust in under the Title of *Chrysoms*, 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.

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Scenes During the Great Plague



From a contemporary print in the Pepysian Collection

Multitudes flying from London in water by boats & barges

Flying by land

Burying the dead with a bell before them. Searchers

Carts full of dead to bury.

source: E. P. Wilson, *The Plague in Shakespeare's London*, (Oxford, 1927), p 149

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Sermon During the Plague



"Lord, have mercy on us. Weepe, Fast, and Pray."

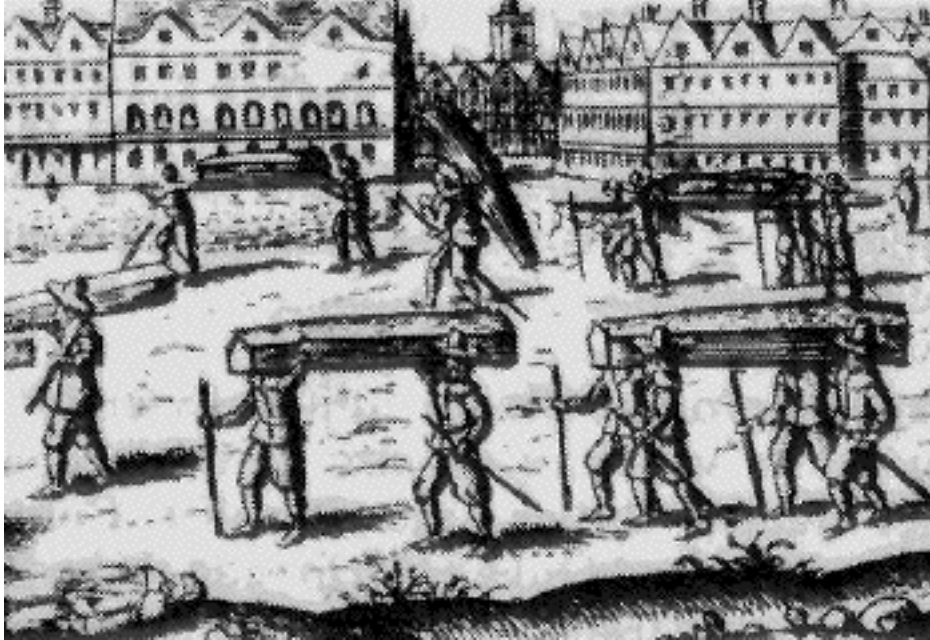
source: E. P. Wilson, *The Plague in Shakespeare's London*, (Oxford, 1927), p 171

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Carrying Corpses Away From Town



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Killing of Dogs to Lessen the Spread of the Plague



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Pepys's Reaction to the Plague and its Stench



[Samuel Pepys's Diary: June 7, 1665] This day, much against my will, I did in Drury Lane see two or three houses marked with a red cross upon the doors, and 'Lord have mercy upon us' writ there; which was a sad sight to me, being the first of the kind that, to my remembrance, I ever saw. It put me into an ill conception of myself and my smell, so that I was forced to buy some roll-tobacco to smell to and chew, which took away the apprehension. [source](#)

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Pepys's List of Recent Victims



[Samuel Pepys's Diary: September 14, 1665] To see a person sick of the sores, carried close by me by Grace-church in a hackney coach. My finding the Angell tavern at the lower end of Tower-hill, shut up, and more than that, the person was then dying of the plague when I was last there, a little while ago, at night, to write a short letter there, and I overheard the mistresse of the house sadly saying to her husband somebody was very ill, but did not think it was the plague. To hear that poor Payne, my waiter, hath buried a child, and is dying himself. To hear that a labourer I sent but the other day to Dagenham's, to know how they did there, is dead of the plague; and that one of my own watermen, that carried me daily, fell sick as soon as he had landed me on Friday moring last, when I had been all night upon the water

(and I believe he did get his infection that day at brainford), and is now dead of the plague. To hear that Captain Lambert and Cuttle are killed in the taking these ships; and that Mr. Sidney Montague is sick of a desperate fever at my Lady Carteret's, at Scott's-hall. To hear that Mr. Lewes hath another daughter sick. And, lastly, that both my servants, W. Hewer and Tom Edwards, have lost their fathers, both in St. Sepulchre's parish, of the plague this week, do put me into great apprehensions of melancholy, and with good reason. But I put off the thoughts of sadness as much as I can, and the rather to keep my wife in good heart and family also.

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Runaways Fleeing From the Plague



note skeletons left, right and center (this one holding an hour glass)

source: E. P. Wilson, *The Plague in Shakespeare's London*, (Oxford, 1927), p 158

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A Londoner in the country



The man on the right is covering his nose against plague

source: E. P. Wilson, *The Plague in Shakespeare's London*, (Oxford, 1927), p 161

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London welcomes home her runaways



"Except you have made your peace with God my father in the Country, enter not my Gates."
Gates: Ludgate, Newgate, Aldrichgate, Criplegate, Moregate, Bishopsgate, Allgate

source: E. P. Wilson, *The Plague in Shakespeare's London*, (Oxford, 1927), p 163

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 27. *Three reasons why the Registering of Children hath been neglected, p. 31*
 28. *There was a confusion in the Accompts of Chrysons, Infants, and Convulsions; but rectified in this Discourse, p. 32*
 29. *There hath been in London within this Age four times of great Mortality, viz. Anno 1592, 1603, 1625, and 1636, whereof that of 1603 was the greatest, p. 33,34*
 30. *Annis 1603, and 1625, about a fifth part of the whole died, and eight times more then were born, p. 34*
 31. *That a fourth part more die of the Plague then are set down, p. 35*
 32. *The Plague Anno 1603 lasted eight years, that in 1636 twelve years, but that in 1625 continued but one single year, p. 36*

33. *That Alterations in the Air do incomparably more operate as to the Plague, then the Contagion of converse, p. 36*
 34. *That Purples, small-Pox, and other malignant Diseases fore-run the Plague, p. 36*
 35. *A disposition in the Air towards the Plague doth also dispose women to Abortions, p. 37*
 36. *That as about 1/5. part of the whole people died in the great Plague-years, so two other fifth parts fled which shews the large relation, and interest, which the Londoners have in the country. pag. 37,38*
 37. *That (be the Plague great, or small) the City is fully re-peopled within two years, p. 38*
 38. *The years, 1618, 20, 23, 24, 32, 33, 34, 1649, 52, 54, 56, 58, and 61, were sickly years, p. 40*
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39. *The more sickly the year is, the less fertile of Births, p. 40*
 40. *That Plagues always come in with King's Reigns is most false, p. 40*
 42. *The Autumn, or the Fall is the most unhealthfull season, p. 41*
 41. *That in London there have been twelve burials for eleven Christnings, p. 41*
 43. *That in the Country there have been, contrary-wise, sixty three Christnings for fifty two Burials, p. 42*
 44. *A supposition, that the people in, and about London, are a fifteenth part of the people of all England, and Wales, p. 42*
 45. *That there are about six Millions, and an half of people in England, and Wales, p.42*
 46. *That the people in the Country double by Procreation but in two hundred and eighty years, and in London in about seventy, as hereafter will be shewn; the reason whereof is, that many of the breeders leave the Country, and that the breeders of London come from all parts of the Country, such persons breeding in the Country almost onely, as were born there, but in London multitudes of others, p. 42*
 47. *That about 6000 per Annum come up to London out of the Country, p. 43*
 48. *That in London about three die yearly out of eleven Families, p. 43*

49. *There are about twenty five Millions of acres of Land in England, and Wales, p. 45*
 50. *Why the proportion of breeders in London to the rest of the people is less then in the Country, p. 45*
 51. *That in London are more impediments of breeding, then in the Country, p. 46*
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52. *That there are fourteen Males for thirteen Females in London, and in the Country but fifteen Males for fourteen Females, p. 47*
 53. *Polygamy useless to the multiplication of Man-kinde, without Castrations, p. 48*
 54. *Why Sheep, and Oxen out-breed Foxes, and other Vermin-Animals, p. 48*
 55. *There being fourteen Males to thirteen Females, and Males being proflique forty years, and Females but twenty five, it follows, that in effect there be 560 Males to 325 Females, P.49*
 56. *The said inequality is reduced by the latter marriage of the Males, and their imployment in Wars, Sea-voiage, and Colonies, p. 49*
 57. *Physicians have two Women Patients to one Man, and yet more Men die then Women, p. 49*
 58. *The great emission of Males into the Wars out of London Anno 1642 was instantly supplied, p. 50*
 59. *Castration is not used onely to meliorate the flesh of Eatable Animals, but to promote their increase also, p. 51*
 60. *The true ratio formalis of the evil of Adulteries, and Fornications, p. 51*
 61. *Where Polygamy is allowed, Wives can be no other then Servants, p. 52*
 62. *That ninety seven, and sixteen Parishes of London are in twenty years encreased from seven to twelve, and in forty years from twenty three to fifty two, p. 53*
 63. *The sixteen Parishes have encreased farther then the ninety seven, the one having encreased but from nine to ten in the said forty years, p. 53*
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64. *The ten Out-Parishes have in fifty four years encreased from one to four, p. 54*
 65. *The ninety seven, sixteen, and ten Parishes have in fifty four years encreased from two to five, p. 54*

66. *What great Houses within the Walls have been turned into Tenements*, p. 55
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 70. *That there be some Parishes in London two hundred times as big as others*, p. 56,57
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 62. *The City of London, and Suburbs, being equally divided, would make 100 Parishes, about the largeness of Christ-church, Blackfriars, or Colmanstreet*, p. 58
 73. *There are about 24000 Teeming women in the ninety seven, sixteen, and ten Parishes in, and about London*, p. 60
 74. *That about three die yearly out of eleven Families containing each eight persons*, p. 60
 75. *There are about 12000 Families within the walls of London*, p. 61
 76. *The housing of the sixteen and ten Suburb-Parishes is thrice as big as that of the ninety seven Parishes within the walls*, p. 61
 77. *The number of souls in the ninety seven, sixteen, and two out-Parishes is about 384000*, p. 61
 78. *Whereof 199000 are Males, and 185000 Females*, p. 61
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79. *A Table shewing of 100 quick conceptions how many die within six years, how many the next Decad, and so for every Decad till 76*, p. 62
 80. *Tables, whereby may be collected how many there be in London of every Age assigned*, p. 62
 81. *That there be in the 97, 16, and ten Parishes near 70000 Fighting Men, that is Men between the Ages of 16, and 56*, p. 62
 82. *That Westminster, Lambeth, Islington, Hackney, Redriff, Stepney, Newington, contain as many people as the 97 Parishes within the Walls, and are consequently 1/5 of the whole Pile*, p. 62

83. *So that in, and about London are about 81000 Fighting Men, and 460000 in all, p. 63*
 84. *Adam and Eve in 5610 years might have, by the ordinary proportion of Procreation, begotten more people, then are now probably upon the face of the earth, p. 63*
 85. *Wherefore the World cannot be older then the Scriptures represent it, p. 63*
 86. *That every Wedding one with another produces four Children, p. 64*
 87. *That in several places the proportion between the Males and Females differ, p. 64*
 88. *That in ninety years there were just as many Males as Females Buried within a certain great Parish in the Country, p. 64*
 89. *That a Parish, consisting of about 2700 Inhabitants, had in 90 years but 1059 more Christnings, then Burials, p. 64*
 90. *There come yearly to dwell at London about 6000 strangers out of the Country, which swells the Burials about 200 per Annum, p. 65*
 91. *In the Country there have been five Christnings for four Burials, p. 65*
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92. *A Confirmation, that the most healthful years are also the most fruitfull, p. 65*
 93. *The proportion between the greatest, & least mortalities in the Country are greater then the same in the City, p. 67*
 94. *The Country Air more capable of good, and bad impressions, then that of the City, p. 68*
 95. *The differences also of Births are greater in the Country, then at London, p. 69*
 96. *In the Country but about one of fifty dies yearly, but at London one of thirty, over and above the Plague, p. 69*
 97. *London not so healthfull now as heretofore, p. 70*
 98. *It is doubted whether encrease of People, or the burning of Sea-coal were the cause, or both, p. 70*
 99. *the Art of making of Gold would be neither benefit to the World, or the Artist, p. 72*
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101. *Upon what considerations the intrinsick value of Lands doth depend*, p. 73
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 103. *Some of the few benefits of having a true Accompt of the people*, p. 73
 104. *That but a small part of the whole people are employed upon necessary affairs*, p. 74
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THE PREFACE.

HAVING 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* increase, or decrease; 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 takeing, 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 farther, to consider what benefit the knowledge of the same would bring to the World; that I might not engage my self in idle, and useless *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

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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 Scholeboy, 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.

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CHAP. I.

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

THE 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 sufficiencie 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 *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.

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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 adjoining 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 Parishes of <i>London</i> within the walls	} 3386.
Whereof, of the Plague,	1.
Buried this Year in the sixteen Parishes of <i>London</i> , and the <i>Pest-house</i> , being within the Liberties, and without the walls,	} 5924.
Whereof, of the Plague,	5.
The whole summ of all the Burials in <i>London</i> , and the Liberties thereof, is this Year,	} 9310.
Whereof, of the Plague,	6.
Buried of the Plague without the Liberties, in <i>Middlesex</i> , and <i>Surrey</i> this whole Year,	} 0.
Christned in <i>London</i> , and the Liberties thereof, this Year,	} 6368.
Buried this Year in the Nine out-Parishes, adjoining to <i>London</i> , and out of the freedom,	} 2900.
Whereof, of the Plague,	5.
The Total of all the Burials in the places aforesaid, is	12210.
Whereof, of the Plague	11.
Christned in all the aforesaid places this Year	8299.
Parishes clear of the Plague,	116.
Parishes 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*.

<i>LONDON</i>	<i>Bur.</i>	<i>Plag.</i>	<i>LONDON</i>	<i>Bur.</i>	<i>Plag.</i>
Albanes in Woodstreet	188	78	Katherine Coleman	263	175
Alhallows Barking	397	263	Katherine Cree-church	886	373
Alhallows Breadstreet	34	14	Lawrence in the Jewrie	91	55
Alhallows the Great	442	302	Lawrence Pountney	206	127
Alhallows Hony-lane	18	8	Leonards Eastcheap	55	26
Alhallows the less	259	205	Leonards Fosterlane	292	209
Alhal. in Lumberdstreet	86	44	Magnus Parish by Bridge	137	85
Alhallows Stainings	183	138	Margarets Lothbury	114	64
Alhallows the Wall	301	155	Margarets Moses	37	25
Alphage Cripple-Gate	240	190	Margarets new Fishstreet	123	82
Andrew-Hubbard	146	101	Margarets Pattons	77	50
Andrews Undershaft	219	149	Mary Ab-church	98	58
Andrews by Wardrobe	373	191	Mary Aldermanbury	126	79
Annes at Aldersgate	196	128	Mary Aldermary	92	54
Annes Black-Friers	336	215	Mary le Bow	35	19
Antholins Parish	62	31	Mary Bothaw	22	14
Austins Parish	72	40	Mary Colechurch	26	11
Barthol. at the Exchange	52	24	Mary at the Hill	152	84
Bennets Fink	108	57	Mary Mounthaw	76	58
Bennets Grace-Church	48	14	Mary Sommerset	270	192
Bennets at Pauls Wharf	226	131	Mary Stainings	70	44
Bennets Sherehog	24	8	Mary Woolchurch	58	25
Botolps Billings-gate	99	66	Mary Woolnoth	82	50

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Christ's-Church Parish	611371	Martins	25	18
		Ironmonger-lane	254	164
Christopher's Parish	48	28	Martins at Ludgate	254
Clements by	87	72	Martins Orgars	88
Eastcheap				47
Dyonis Black-Church	99	59	Martins Outwich	60
Dunstans in the East	335	225	Martins in the Vintry	339
Edmunds				208
Lumberdstreet	78	49	Matthew Fridaystreet	24
Ethelborow in				11
Bishopag	205	101	Maudlins in Milkstreet	401
St. Faiths	89	45	Maudlins Oldfish-street	225
St. Fosters in				142
Foster-lane	149	102	Michael Bassishaw	199
Gabriel Fen church	71	54	Michael Corn-Hill	159
George Butlophs-lane	30	19	Michael Crooked-lane	144
Gregories by Pauls	296	196	Michael Queenhithe	215
Hellens in				157
Bishopsgate st.	136	71	Michael in the Quern	53
James by Garlickhithe	180	109	Michael in the Ryal	111
John Baptist	122	79	Michael in Woodstreet	189
John Evangelist	7	0	Mildreds Breadstreet	60
John Zacharies	143	97	Mildreds Poultry	94
James Duke place	310	254	Nicholas Aeons	33
Nicholas Cole-Abby	87	67	Peters at Pauls Wharf	97
Nicholas Olaves	70	43	Peters poor in	52
			Broadstreet	27
Olaves in Hartstreet	266	195	Stevens in	506
			Colemanstreet	350
Olaves in the Jewry	43	25	Stevens in Walbrook	25
Olaves in Silverstreet	174	103	Swithins at	99
			Londonstone	60
Pancras by Soperlane	17	8	Thomas Apostles	141
Peter in Cheap	68	44	Trinity Parish	148
Peters in Corn-hill	318	78		87
<i>Buried within the 97. Parishes within the Walls of, all</i>				14340.
<i>Diseases</i>				
<i>Whereof, of the Plague</i>				9197.

Andrews in Holborn	2190	1636	Georges Southwark	1608
Bartholmew the				912
Great	516	360	Giles Cripplegate	3988
				2338
Bartholmew the less	111	65	Olaves in	3689
			Southwark	2609
Brides Parish	1481	1031	Saviours in	2746
			Southwark	1671

Botolph Algate	25731653	Sepulchres Parish	34252420
Bridewel Precinct	213 152	Thomas in Southwark	335 277
Bottolph Bishopgate	2334 714	Trinity in the Minories	131 87
Botolph Aldergate	578 307	At the Pesthouse	194 189
Dunstanes the West	860 642		
<i>Buried in the 16 Parishes without the Walls, standing part within the Liberties, and part without: in Middlesex, and Surrey, and at the Pesthouse</i>			26972
<i>Whereof, of the Plague</i>			17153

Buried in the nine out-Parishes.

Clements	1284 755	Martins in the Fields	1470 973
Templebar		Mary White-chappel	33052272
Giles in the Fields	1333 947	Magdalens	1127 889
James at Clarkenwell	1191 903	Bermondsey	
Katherins by the Tower	998 744	Savoy Parish	250 176
Leonards in Shorditch	19951407		
<i>Buried in the nine out Parishes, in Middlesex, and Surrey</i>			12953
<i>Whereof, of the Plague</i>			9067

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<i>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.</i>		54265
<i>Whereof, Buried of the Plague, this present year, is</i>		35417
<i>Christnings this present year, is</i>		6983
<i>Parishes clear this year, is</i>		1
<i>Parishes infected this year, is</i>		121

5. In the Year 1626. the City of *Westminster* in imitation of *London*, was inserted. The grosse accompt 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 Westminster this Year, {	<i>Buried</i>	471
	<i>Plague</i>	13
	<i>Christenings</i>	361

6. In the Year 1626. An accompt 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 same forme with that of 1629.

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The Diseases, and Casualties this year being 1632.

A Bortive, and Stillborn	445	Grief	11
Affrighted	1	Jaundies	43
Aged	628	Jawfaln	8
Ague	43	Impostume	74
Apoplex, and Meagrom	17	Kil'd by several accidents	46
Bit with a mad dog	1	King's Evil	38
Bleeding	3	Lethargie	2
Bloody flux, scowring, and flux	348	Livergrown	87
Brused, Issues, sores, and ulcers,	28	Lunatique	5
Burnt, and Scalded	5	Made away themselves	15
Burst, and Rupture	9	Measles	80
Cancer, and Wolf	10	Murthered	7
Canker	1	Over-laid, and starved at nurse	7
Childbed	171	Palsie	25
Chrisomes, and Infants	2268	Piles	1
Cold, and Cough	55	Plague	8
Colick, Stone, and Strangury	56	Planet	13
Consumption	1797	Pleurisie, and Spleen	36
Convulsion	241	Purples, and spotted Feaver	38
Cut of the Stone	5	Quinsie	7
Dead in the street, and starved	6	Rising of the Lights	98
Dropsie, and Swelling	267	Sciatica	1
Drowned	34	Scurvey, and Itch	9
Executed, and prest to death	18	Suddenly	62
		Surfet	86
		Swine Pox	6

Falling Sickness	7	Teeth	470
Fever	1108	Thrush, and Sore mouth	40
Fistula	13	Tympany	13
Flocks, and small Pox	531	Tissick	34
French Pox	12	Vomiting	1
Gangrene	5	Worms	27
Gout	4		

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 Pest-house this year 993

Decreased of the Plague in the 122 Parishes, and at the Pest-house this year 266

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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	}	Newington	{	Christned	99	
		Buried	890					Buried	181
		Plague	0					Plague	0
Islington	{	Christned	36	}	Hackney	{	Christned	30	
		Buried	131					Buried	91
		Plague	0					Plague	0
Lambeth	{	Christned	132	}	Redriff	{	Christned	16	
		Buried	220					Buried	48
		Plague	0					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,

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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 particular, as now; and the specifying of *Casualties* and *Diseases*, was probably more.

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CAP. II.

General Observations upon the Casualties.

IN my Discourses upon the *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 know 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 everybody, why the accompt of the *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 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 Rationcinations, 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* than 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 practice of doing so 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 far 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 (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 signifie, or Children under two or three years old, although I should not be satisfied, whether the *Infant* died of *Winde*, or of *Teeth*, of the *Convulsion*, &c. or were choak'd with *Phlegm*, or else of *Teeth*, *Convulsion*, and *Scowring*, 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 *Phy-*

sician, 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 prettie well to distinguish the *Gowt, Stone, Dropsie, 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.

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, Chrysomes, Infants, Liver-grown, and Over- laid*; 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 *Convulsion*, 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 (the *Plague* excepted) but about 50000, or 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 *longævity*: for as the proportion of the *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 alwayes 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 229250. not 4000. died of outward Griefs, 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

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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.

<i>Table of notorious Diseases.</i>		<i>Table of Casualties.</i>	
<i>Apoplex</i>	1306	<i>Bleeding</i>	069
<i>Cut of the Stone</i>	0038	<i>Burnt, and Scalded</i>	125
<i>Falling Sickness</i>	0074	<i>Drowned</i>	829
<i>Dead in the Streets</i>	0243	<i>Excessive drinking</i>	002
<i>Gowt</i>	0134	<i>Frighted</i>	022
<i>Head-Ach</i>	0051	<i>Grief</i>	279
<i>Jaundice</i>	0998	<i>Hanged themselves</i>	222
<i>Lethargy</i>	0067	<i>Kil'd by several</i>	}
<i>Leprosy</i>	0006	<i>accidents</i>	
			1021
<i>Lunatique</i>	0158	<i>Murthered</i>	0086
<i>Overlaid, and Starved</i>	0529	<i>Poysoned</i>	014
<i>Palsy</i>	0423	<i>Smothered</i>	026
<i>Rupture</i>	0201	<i>Shot</i>	007
<i>Stone and Strangury</i>	0863	<i>Starved</i>	051
<i>Sciatica</i>	0005	<i>Vomiting</i>	136
<i>Sodainly</i>	0454		

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 *longævity* of the *Inhabitants*, we

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 esteemed 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*, *Jaundice*, *Gowt*, *Stone*, *Palsie*, *Scurvy*, *rising of the Lights*, or *Mother*, *Rickets*, *Aged*, *Agues*, *Feavers*, *Bloody-Flux*, and *Scowring*: 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.

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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 than 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

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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* 260. 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
aforegoing *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
increased 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 increased 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 increased;
we come next to shew

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what particular 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 increased, by the conversion of the
Marquess 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
increased, 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

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

12. Again, *Canning-street*, and *Watlin-street* have lost their Trade of *Woolen-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 inconveniences.

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 embaresses of Coaches near both these Gates, especially *Lud-gate*.

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CHAP. 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 Euangelist'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 fourty pounds *per Annum*) might obtain a subsistance.

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.

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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 misunderstood Example of *David*, from attempting any computation of the *People* of this populace place; but hereupon I both examined the lawfulness of making such enquiries, and, being satisfied thereof, went about the work itself 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 Million 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 *Stil-born*, or died of *Teeth*, *Convulsion*, *Rickets*, or as *Infants*, and *Chrysoms*, 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 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 then 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 then 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, 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 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. Where as 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

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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 when arises this Table following.

Viz. of 100 there dies		The fourth	6
within the first six years	36	The next	4
The next ten years, or		The next	3
<i>Decad</i>	24	The next	2

The second <i>Decad</i>	15	The next	1
The third <i>Decad</i>	09		

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 Eight	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 deniceps.*

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 1/5. of 67694, *viz.* 13539. is to be added for *Westminster, Step*

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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 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 the 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, than 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*,

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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 1/100 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

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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 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 *Advenae* 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 *Births*, 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 103 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.*

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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 as 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 long

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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 so. As by this Table appears,

<i>Decad</i>	greatest <i>number of Burials</i>	least
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

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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 justled backwards the Influences falling from above, or resisted the Incursion 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 <i>number of Burials</i>	least
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

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far greater then at *London*; for let it be shewn in any of the *London Bills*, that within two years the *Christnings* have decreased 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, those 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 at 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

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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 Rata*; 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

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The Conclusion.

IT 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 perticular *Casualties*?
10. What years are Fruitfull, and Mortal, and in what Space, 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.

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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 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 eight 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 intrinsick, and accidental differences: as for example; It were good to know the *Geometrical* Content, Figure, and Scituation of all

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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 answer 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 knowledg 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

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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.

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The Table of Burials, and Christnings.

Anno Dom.	97 Parishes	16 Parishes	Out-Pa- rishes	Buried in all	Besides of the <i>Plague</i>	of Christned
1604	1518	2097	708	4323	896	5458
1605	2014	2974	960	5948	444	6504
1606	1941	2920	935	5796	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	9584
1633	2378	3936	2078	8392	0	9997

1634	2937	4980	2982	10899	1	9855
1635	2742	4966	2943	10651	0	10034

	20694	33495	19327	73505	1603	75774

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The Table of Burials, and Christnings in London.

Anno Dom.	97 Parishes	16 Parishes	Out-Pa- rishes	Buried in all	Besides of the <i>Plague</i>	of 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

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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
<hr/>				
	44005	41333	26380	24085
<hr/>				
1657	6578	5856	3396	3289
1658	7936	7057	3157	3013
1659	7451	7305	9209	2781
1660	7960	7158	3724	3247
<hr/>				
	29925	27376	13186	12330
Total	198952	181187	135034	126759

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

Decads of years	<i>Christened.</i>				<i>Buried.</i>			
	Married	Males	Fem.	Both	Males	Fem.	Both	
15 {	69	190	312	302	614	214	221	435
15 {	78	185	328	309	637	287	302	589
15 {	88	175	342	274	616	337	284	621
15 {	89	191	366	377	743	249	219	468
1 {	599	197	417	358	775	338	386	724
16 {	608	168	368	373	741	305	306	611
16 {	9	153	418	413	831	317	319	636
16 {	18	137	351	357	708	375	383	758
16 {	19	182	354	320	674	218	220	438
16 {	28	1568	3256	3083	6339	2640	2640	5280
16 {	29							
16 {	38							
16 {	39							
16 {	48							
16 {	49							
16 {	58							

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The Table of the Country-Parish.

Years	Commu- nicants	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
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The Table of Males and Females

Years	Commu- nicants	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

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The Table of Males and Females.

Years	Commu- nicants	Wed- dings	Christned			Buried		
			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

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The Table of the Country-Parish.

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	29	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

<u>Prev</u>	<u>Stephan</u>	<u>Graunt</u>	
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TABLE OF CASUALTIES

1629	1633	1647	1651	1655	1629	in 20						
1630	1634	1648	1652	1656	1649							
1631	1635	1649	1653	1657	1659	Years						
The Years of our Lord				1647	1648	1649	1650	1651	1652	1653	1654	
1655	1656	1657	1658	1659	1660	1629	1630	1631	1632	1633	1634	
1635	1636	1632	1636	1650	1654	1658						
Abortive, and Stillborn				335	329	327	351	389	381	384	433	
483	419	463	467	421	544	499	439	410	445	500	475	
507	523	1793	2005	1342	1587	1832	1247	8559				
Aged				916	835	889	696	780	834	864	974	
743	892	869	1176	909	1095	579	712	661	671	704	623	
794	714	2475	2814	3336	3452	3680	2377	15757				
Ague, and Fever				1260	884	751	970	1038	1212	1282	1371	
689	875	999	1800	2303	2148	956	1091	1115	1108	953	1279	
1622	2360	4418	6235	3865	4903	4363	4010	23784				
Apoplex, and sodainly				68	74	64	74	106	111	118	86	
92	102	113	138	91	67	22	36	17	24	35		
26		75	85	280	421	445	177	1306				
Bleach						1	3	7	2			
1												
4	9	1	1	15								
Blasted				4	1				6	6		
4		5	5	3	8	13	8	10	13	6	4	
4	54	14	5	12	14	16	99					
Bleeding				3	2	5	1	3	4	3	2	
7	3	5	4	7	2	5	2	5	4	4	3	
16	7	11	12	19	17	65						
Bloody Flux, Scouring, and Flux				155	176	802	289	833	762	200	386	
168	368	362	233	346	251	449	438	352	348	278	512	
346	330	1587	1466	1422	2181	1161	1597	7858				
Burnt, and Scalded				3	6	10	5	11	8	5	7	
10	5	7	4	6	6	3	10	7	5	1	3	
12	3	25	19	24	31	26	19	125				
Calenture				1				1	2	1	1	
3												
4	2	4	3				13					
Cancer, Gangrene, and Fistula				26	29	31	19	31	53	36	37	
73	31	24	35	63	52	20	14	23	28	27	30	
24	30	85	112	105	157	150	114	609				
Wolf							8					
8												
Canker, Sore-mouth, and Thrush				66	28	54	42	68	51	53	72	
44	81	19	27	73	68	6	4	4	1			
5	74	15	79	190	244	161	133	689				
Childbed				161	106	114	117	206	213	158	192	
177	201	236	225	226	194	150	157	112	171	132	143	
163	230	590	668	498	769	839	490	3364				
Chrisomes, and Infants				1369	1254	1065	990	1237	1280	1050	1343	
1089	1393	1162	1144	858	1123	2596	2378	2035	2268	2130	2315	
2113	1895	9277	8453	4678	4910	4788	4519	32106				

Chart of Casualties

Colick, and Wind					103	71	85	82	76	102	80	101
85	120	113	179	116	167	48	57					
37	50	105	87	341	359	497	247	1389				
Cold, and Cough											41	36
21	58	30	31	33	24	10	58	51	55	45	54	
50	57	174	207	0	77	140	43	598				
Consumption, and Cough					2423	2200	2388	1988	2350	2410	2286	2868
2606	3184	2757	3610	2982	3414	1827	1910	1713	1797	1754	1955	
2080	2477	5157	8266	8999	9914	12157	7197	44487				
Convulsion					684	491	530	493	569	653	606	828
702	1027	807	841	742	1031	52	87	18	241	221	386	
418	709	498	1734	2198	2656	3377	1324	9073				
Cramp							1					
1	0	0	0	0	0	1	0	1	0	0	1	2
Cut of the Stone						2	1	3		1	1	2
4	1	3	5	46	48				5	1	5	2
2	5	10	6	4	13	47	38					
Dropsy, and Tympany					185	434	421	508	444	556	617	704
660	706	631	931	646	872	235	252	279	280	266	250	
329	389	1048	1734	1538	2321	2982	1302	9623				
Drowned					47	40	30	27	49	50	53	30
43	49	63	60	57	48	43	33	29	34	37	32	
32	45	139	147	144	182	215	130	827				
Excessive Drinking							2					
2			2	2								
Executed					8	17	29	43	24	12	19	21
19	22	20	18	7	18	19	13	12	18	13	13	
13	13	62	52	97	76	79	55	384				
Fainted in Bath									1			
1			1									
Falling-Sickness					3	2	2	3		3	4	1
4	3	1		4	5	3	10	7	7	2	5	6
8	27	21	10	8	8	9	74					
Flox, and small Pox					139	400	1190	184	525	1279	139	812
1294	823	835	409	1523	354	72	40	58	531	72	1354	
293	127	701	1846	1913	2755	3361	2785	10576				
Found dead in the Streets					6	6	9	8	7	9	14	4
3	4	9	11	2	6	18	33	26	6	13	8	24
24	83	69	29	34	27	29	243					
French-Pox					18	29	15	18	21	20	20	20
29	23	25	53	51	31	17	12	12	12	7	17	
12	22	53	48	80	81	130	83	392				
Frighted					4	4	1		3		2	
1	1				9	1			1			
3	2	3	9	5	2	2	21					
Gout					9	5	12	9	7	7	5	6
8	7	8	13	14	2	2	5	3	4	4	5	7
8	14	24	35	25	36	28	134					
Grief					12	13	16	7	17	14	11	17
10	13	10	12	13	4	18	20	22	11	14	17	
5	20	71	56	48	59	45	47	279				
Hanged, and made-away themselves					11	10	13	14	9	14	15	9
14	16	24	18	11	36	8	8	6	15		3	
8	7	37	18	48	47	72	32	222				
Head-Ache						1	11	2		2	6	6

Chart of Casualties

5	3	4	5	35	26							4
2	0	6	14	14	17	46	51					
Jaundice					57	35	39	49	41	43	57	71
61	41	46	77	102	76	47	59	35	43	35	45	
54	63	184	197	180	212	225	188	998				
Jaw-faln					1	1			3			2
2		3	1			10	16	13	8	10	10	4
11	47	35	2	5	6	10	95					
Impostume					75	61	65	59	80	105	79	90
92	122	80	134	105	96	58	76	73	74	50	62	
73	130	282	315	260	354	428	228	1639				
Itch						1						
10				0	10	1				11		
Killed by several Accidents					27	57	39	94	47	45	57	58
52	43	52	47	55	47	54	55	47	46	49	41	
51	60	202	201	217	207	194	148	1021				
King's Evil					27	26	22	19	22	20	26	26
27	24	23	28	28	54	16	25	18	38	35	20	
26	69	97	150	94	94	102	66	537				
Lehargy					3	4	2	4	4	4	3	10
9	4	6	2	6	4	1		2	2	3		2
2	5	7	13	21	21	9	67					
Leprosy							1					
1		2	2						2		2	2
1		1	3	6								
Livergrown, Spleen, and Rickets					53	46	56	59	65	72	67	65
52	50	38	51	8	15	94	112	99	87	82	77	
98	99	392	356	213	269	191	158	1421				
Lunatique					12	18	6	11	7	11	9	12
6	7	13	5	14	14	6	11	6	5	4	2	2
5	28	13	47	39	31	26	158					
Meagrom					12	13		5	8	6	6	14
3	6	7	6	5	4			24				
22	24	22	30	34	22	5	132					
Measles					5	92	3	33	33	62	8	52
11	153	15	80	6	74	42	2	3	80	21	33	
27	12	127	83	133	155	259	51	757				
Mother					2					1	1	2
2	3		3	1	8	1						
3	1	3	2	4	8	2	18					
Murdered					3	2	7	5	4	3	3	3
9	6	5	7	70	20			3	7		6	5
8	10	19	17	13	27	77	86					
Overlayd, and starved at Nurse					25	22	36	28	28	29	30	36
58	53	44	50	46	43	4	10	13	7	8	14	
10	14	34	46	111	123	215	86	529				
Palsy					27	21	19	20	23	20	29	18
22	23	20	22	17	21	17	23	17	25	14	21	
25	17	82	77	87	90	87	53	423				
Plague					3597	611	67	15	23	16	6	16
9	6	4	14	36	14		1317	274	8		1	
10400	1599	10401	4290	61	33	103	16384					
Plague in the Guts								1		110	32	
87	315	446		253	402							
0	0	61	142	844	253	991						

Chart of Casualties

Pleurisy					30	26	13	20	23	19	17	23
10	9	17	16	12	10	26	24	26	36	21		
45	24	112	90	89	72	52	51	415				
Poysoned						3		7				
2			2	0	4	10	0	0	0	14		
Purples, and spotted Fever					145	47	43	65	54	60	75	89
56	52	56	126	368	146	32	58	58	38	24	125	
245	397	186	791	300	278	290	243	1845				
Quinsy, and Sore-throat					14	11	12	17	24	20	18	9
15	13	7	10	21	14	1	8	6	7	24	4	
5	22	22	55	54	71	45	34	247				
Rickets					150	224	216	190	260	329	229	372
347	458	317	476	441	521						14	
49	50	0	113	780	1190	1598	657	3681				
Mother, Rising of the Lights					150	92	115	120	134	138	135	178
166	212	203	228	210	249	44	72	99	98	60	84	
72	104	309	220	777	585	809	369	2700				
Rupture					16	7	7	6	7	16	7	15
11	20	19	18	12	28	2	6	4	9	4	3	
10	13	21	30	36	45	68	2	201				
Scal'd-head					2				1			
2												
2	1	2		5								
Scurvy					32	20	21	21	29	43	41	44
103	71	82	82	95	12	5	7	9		9		
0	25	33	34	94	132	300	115	593				
Smothered, and stifled							2					
24							24		2			
2	26											
Sores, Ulcers, broken and bruised					15	17	17	16	26	32	25	32
23	34	40	47	61	48	23		20	48	19	19	
22	29	91	89	65	115	144	141	504				
Shot (limbs												
7	20											
7	27											
Spleen					12	17					13	13
6	2	5	7	7								
29	26	13	7	68								
Shingles												
1						1					1	
1	2											
Starved						4	8	7	1	2	1	1
3	1	3	6	7	14							
14		19	5	13	29	51						
Stitch								1				
1				1								
Stone, and Strangury					45	42	29	28	50	41	44	38
49	57	72	69	22	30			58	56	58	49	
33	45	114	185	144	175	247	51	863				
Sciatica												
2				1	3		1	6	1	4		
15												
Stopping of the Stomach					29	29	30	33	55	67	66	107
94	145	129	277	186	214							
6		6	121	295	247	216	669					

Chart of Casualties

Surfet					217	137	136	123	104	177	178	212
128	161	137	218	202	192	63	157	149	86	104	114	
132	371	445	721	613	671	644	401	3094				
Swine-Pox					4	4	3				1	4
2	1	1	1	2		5	8	4	6	3		10
23	13	1	5	5	10	57						
Teeth, and Worms					767	597	540	598	709	905	691	1131
803	1198	878	1036	839	1008	440	506	335	470	432	454	
539	1207	1751	2632	2502	3436	3915	1819	14236				
Tissick					62	47						
8	12	14	34	23	15	27		68	65	109		
8	242											
Thrush												
57	66			15	23	17	40	28	31	34		
95	93			123	15	211						
Vomiting					1	6	3	7	4	6	3	14
7	27	16	19	8	10	1	4	1	1	2	5	6
3	7	16	17	27	69	12	136					
Worms					147	107	105	65	85	86	53	
19	31	28	27	19	28	27		105	74	424	224	
124	830											
Wen					1		1		2	2		
1		1	2	1	1			1		4		
1	4	2	4	4	2	15						
Sodainly												
63	59	37	62	58	62	78	34	221	233			
63	454											
34190	229250											



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

Concerning the Table of Casualties consisting of thirty Columns.

THe 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 *Quarternions*, 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.

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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 *Quarternions*, and each of the 22 single years.

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

The Number 229250 is the total of the Burials in the said 20 years, as 34190 is of the Burials in the said 3 distant years. Where note that the 1/3 of the latter total is 11396 and the 1/20 of the former is 11462; differing but 66 from each other in so great a sum, *videlicet* scarce 1/200 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 accompt 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 *Octo-*

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naries, that Comparison may be made of them 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; *videlicet* from 1629, when the distinction between *Males* and *Females* first began, untill 1640 *Inclusivè* when the exactness in that Accompt 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 proportionable.

The Tables concerning the *Country-Parish*, the former of *Decads* beginning at 1569, and continuing untill 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 Chapter relating to them, &c.

FINIS.

Errata.

Pag. 8. *lin.* 22. read 1632. *pag.* 21. *lin.* 19. r. 229250. *p.* 26. *lin.* 27. r. 314. *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.* 43. *l.* 17. r. 11. *p.* 44. *l.* 6. r. 10000. *p.* 48. *l.* 16, 17. r. *dele* all within Parenthesis. *p.* 57. *l.* 22. r. difference. *p.* 65. *l.* 12. r. It, *pag.* 78, and 79 r. Country-Parish.

Dedication

A thematic session at the 1996 annual meeting of the Population Association of America (New Orleans 8-12 May) will be entitled **Western Washington University's Contribution to Demography**.

To celebrate this honor being bestowed on our program, I have translated John Graunt's **Observations on the Bills of Mortality** (1662 edition) into HyperText Markup Language for display on the World Wide Web, that students everywhere might have easy access to this seminal work.

My reference was the *European Sociology* Reprint Edition of 1975, produced by the Arno Press Inc., New York, under the general editorship of Lewis A. Coser, reprinted from a copy in the University of Illinois Library.

I am pleased to dedicate this effort to the outstanding students it has been my extraordinary pleasure to know and work with. It is they who are making Western's contribution to the field.

Ed Stephan