

APPENDIX.

I.—FRANCE. 1. Tableau, par Départemens, du Mouvement de la Population de la

Table with columns: DÉPARTEMENS, ENFANS MORTS-NÉS (G, F, Tot.), NAISSANCES (Enfans Légitimes, Total Général), and Total Général. Rows list various French departments and their corresponding population statistics.

France, pendant l'année 1844, communiqué par M. Moreau de Jonnés.

Table with columns: DÉCÈS (Appartenant à la Population du Département, De Français Étrangers au Département, Total Général), DÉCÈS d'Individus non Français, and DÉPARTEMENS. Rows list various French departments and their corresponding population statistics, including a MARIAGES column on the left.

When the new English Life Table, and the other Tables, now in preparation, are completed, I hope to have an opportunity of referring again to the finance of Life Insurance. The Tables of the mortality at the several ages during seven years in 324 parts of England, each inhabited, on an average, by 50,000 persons, will furnish Life Offices and the public with the data indispensably required to come to a sound satisfactory arrangement. For neither the limited experience of offices,—the returns from two English towns,—nor the facts from foreign nations, are an adequate basis for the doctrine of Insurance in its application to all classes of society.

The task of rectifying the complicated errors and repairing the inveterate injustice running through the premiums, valuations, distribution of profits, and allocation of bonuses, in offices that have used an erroneous Table, is great, laborious, and difficult; but it is not beyond the powers of the body of actuaries now attached to the companies engaged in this scientific branch of finance and enterprise. An equitable adjustment of existing claims is not impracticable, and future embarrassment will be prevented by using correct Tables.

I have bestowed more time on the Table in common use than some persons will think was required—from a deep sense of the importance of the subject, of the caution required, and of the propriety of throwing every possible light on the principles which affect not only the distribution of vast sums of money, but the economy of the most prudent class of the community, and the equity as well as the stability of the most valuable commercial institutions of the empire.

I have the honour to be, Sir,

Your very obedient and humble servant,

WILLIAM FARR.

THE NORTHAMPTON TABLE OF MORTALITY.

The *Northampton Table of Mortality* is a Table which professes to show how many out of 11650 persons, born at the same time, attain the ages of 1, 2, 3 years, and every year of age up to 96, when it terminates with the death of the last liver. It was framed by Dr. Price from the accounts kept at Northampton during the 46 years 1735–1780, of the ages at death of 4689 persons who were buried in the parish of All Saints. The late Mr. William Morgan, in 1783, calculated from it “with incredible care and accuracy,” Tables of the values of life annuities, of insurances on single and joint lives, and of annuities “payable on the survivorship of one life beyond another.” These Tables, adopted by the Equitable Society, which was founded in 1762, have since 1783 not only formed the “basis of the business of that Society,”¹ but are now used by the Alfred, the Atlas, British Commercial, Hand-in-Hand, Hope, Imperial, Law, Palladium, Rock, Royal Exchange, Union, Westminster, Globe, the Scottish Equitable, the Scottish Widows’ Fund, and other English as well as Scotch insurance offices. The *Northampton Table* has been the basis of calculations for Friendly Societies; the Government, at one time, sold annuities to a large amount on its terms; and legacy duties are still levied by it under 36 Geo. III. cap. 52. It is impossible to form an estimate of the amount of money which has been and is daily received and distributed by this Table, in the shape of premiums of insurance, life annuities, bonuses, fines, and life-interests in estates. The Equitable Society alone stood engaged on January 1, 1840, for the payment of 7¼ million pounds in the ensuing 10 years.

¹ Price’s Works, by W. Morgan, 7th edit., vol. i., pp. 174–192.

It is a law of nature that of 11650, or any other large number of persons born, a certain number die in every year of age; that any one may die at any time; that few or none survive a century; and that the average durations of the lives of considerable numbers, varying in different, are the same in similar circumstances. This is the ground upon which life annuities are granted. According to Dr. Price, the people of Northampton live on an average 25 years. Assuming this to be true, and that the same rule applies to mankind generally, it is evident that £25, put, at the birth of each person, into a board or a bank at no interest, would provide a life annuity of £1 for every contributor. This would in fact be equivalent, if they *all lived 25 years*, to making a deposit at once of £25, and taking £1 a-year from it for each person until the deposit was exhausted; nor would the result be different, though some received only 1, 2, or 3 annual payments, and others 70, 80, or 90 payments, provided that the average number of payments to all, one with another, were 25. If the annuitants lived on an average only 20 years, there would be a surplus. If they all lived 37 years, the deposit providing but 25 payments for each, it is evident that the annuity would cease, and leave the last 12 payments unmet; or, as it happens in nature that some die young, and others attain old age, the former class would receive what they expected, an annuity for life, the latter class would be left without any provision at the close of their career. A society which receives deposits that will pay £25, and finds itself, in fine, called upon to pay £37, will be insolvent, and ultimately fall to ruin. By Dr. Price’s Northampton Table, if the money were put out at 3 per cent. interest, and nothing were allowed for expenses, £12·270, or £12 5s. 5d. would be the value of an annuity of £1 for life; if people lived so long as 37 years, about £17·085 (£17 1s. 9d.) would provide the same annuity.

Upon the other hand, if instead of a man making a deposit, and taking a portion of it at the end of every year, a sum called a premium, say £1, be paid at the beginning of every year, the amount be allowed to accumulate, and at his death a sum equal to the average sums paid in premiums, say £25, be granted to his representatives, it is equivalent to the operation of life insurance, if there are no expenses, and the money bears no interest. An office which made its calculations on the assumption that it would receive 25 premiums while the insured lived, and actually received 20 or 37 premiums, would, in the former case, become insolvent; in the latter, take 12 premiums more than it had a right to anticipate. The excess of premiums in a proprietary life office would be profit. In a mutual insurance office, if the members paid 32 premiums on an average, when they were expected to pay 28, and only the sum that 28 would provide were paid to the heirs of those who died in the first stage of its existence, a large surplus would be left for the thrice-fortunate survivors.

If 1000 or any given number of persons be taken at the age of 20, and be followed to the end of life, the years which they live added together and divided by 1000, or by the number of persons, is generally, but incorrectly, called the *expectation of life*¹. I shall call it the *afterlifetime* at 20. So of any other

¹ *Expectation of life* is an incorrect term: the time which it is *expected* a person will live is the time which it is an even chance he will live; it is the *vie probable* of the French, and is correctly expressed by “probable lifetime.” The *afterlifetime* can only be the same as the probable lifetime on Demoisire’s hypothesis—that the surviving form an arithmetical progression. The term “expectation of life,” first used by Demoisire, is correct, on that supposition, which is, however, in itself quite erroneous. The idea intended to be expressed by “expectation of life” is the *mean time* which a number of persons at any instant of age will

age. The *afterlifetimes* at 20, 40, and 60, by the Northampton Table of Dr. Price, are 33, 23, and 13 years;¹ the offices that use it expect to receive 33 premiums from men of 20, 23 from men of 40, and 13 from men of 60; if they receive 40 from men of 20, 25 from men of 40, and 12 from men of 60, they therefore receive 7 more premiums than they expect from the men of 20, 2 more than they expect from the men of 40, and *one less* than they expect from the men of 60. A mutual life office which called the excesses paid at the earlier ages profits, and divided them equally among the members of all ages, would make a distribution of the property of its members bearing no proportion to their investments. Annuities are purchased to commence at advanced ages, or after the death of one or two other persons, and insurances have to be effected on the death of the first of two lives, so that in a mutual life office it is impossible to employ a false table of mortality—wrong in different degrees at different ages—without committing extensive injustice, to say nothing of the transactions of proprietary offices, in which the public may be called upon to pay less or more than is sufficient to meet the expenses, risks, and common profits of business. Whether regard be had to the employment of the Northampton Table for the sale of life annuities, the valuation of life interests in estates and reversions, fixing premiums of insurance, or adjusting claims for chances of survivorships, by the great insurance societies, friendly societies, private persons, or the Government, the importance is incontestable of determining whether that Table represents correctly the chances of life, whether the hypothesis upon which it was constructed gives an approximation to the truth, or is entirely false, and never represented the mortality of Northampton, of the inhabitants of All Saints' parish, of lives insured, or of any other portion of mankind.

The prevailing opinion respecting the Northampton Table seems to be, that the mortality which it expresses is higher than the mortality of mankind generally; that it was correctly constructed, and did represent the mortality of the people of this country when the data were collected on which it was based;

live after that instant: it is the French *vie moyenne*; and this technical idea is strictly and shortly expressed by *afterlifetime*, a pure English word, formed on the same analogy as *afterlife*, *aftertimes*, *afterage*, *afterhours*. See the words in Johnson. Among the examples he quotes are,—

"What an opinion will *afterages* entertain of their religion?"—*Addison*.

"So smile the heavens upon this holy act,

That *afterhours* with sorrow chide us not."—*Shakespeare*.

"You promised once a progeny divine

Of Romans, rising from the Trojan line,

In *aftertimes* should hold the world in awe,

And to the land and ocean give the law."—*Dryden*.

Todd adds "*afterlife*" from *Dryden*, *Heywood*, and *Butler*. "*Afterlife*: the remainder of life."

"All of a tenor was their *afterlife*,

No day discolored with domestic strife."—*Dryden*.

The *afterlifetime* of men at the age of 30 is 33 years by the English Life Table: 33 years is not the precise time probably that any one of that age will live, but the average time that a number of men of that age will live, taken one with another. $\text{Age} + \text{afterlifetime} = \text{lifetime}$. At 30 this is $30 + 33 = 63$, the average age which men now aged 30 will attain. At birth this is $0 + 40 = 40$; when *lifetime* and *afterlifetime* are the same thing. The *lifetime* simply, without the addition *at a given age*, will serve to express in one word what is often improperly called the *expectation of life at birth*: thus the *lifetime* of males in England is 40 years, the *lifetime* of males in Manchester is 24 years. Those who from habit prefer "*expectation of life*," can always substitute it for *afterlifetime*; from the use of which in this paper no ambiguity can arise.

¹ Price, vol. ii., p. 313.

but that the discrepancy between this "Table" and other Tables,—between it and the "experience" of the Equitable and other Offices, arises from the "selection of healthy lives only" for insurance, from taking "the rate of mortality in one particular town as a criterion for that of the whole country," or "from the improvement of life which has taken place" in the present century.

The Northampton Bills of Mortality were commenced in 1735, and have been continued down to the present day. The Bill gives for each year ending December 21, the diseases, &c., fatal in All Saints, and the numbers, without distinction of sex, buried in that parish, under 2 years of age, at 2-5, 5-10, 10-20, 20-30, &c., in decennial periods to 100. It states also the gross numbers of males and females christened and buried at the four churches—All Saints, St. Sepulchre, St. Giles, St. Peter—and nine chapels or burial-places. We have the ages of those who were buried (1831-40) returned by the minister of All Saints' parish to the Census Commissioners; similar returns from the Annual Bills of Mortality, 1838-44; and the Registrar's returns of deaths in the 7 years 1838-44. The subsequent Table I. exhibits in the upper part the facts returned from the three sources, in juxtaposition with those on which Dr. Price states that he framed the Northampton Table. The lower part of Table I. is an outline of four tables of mortality, constructed in the old way, which would be true, and show the numbers out of 4689, 1344, 957, and 1282 born who attain each age, the chances of living at each age, and the *afterlifetime*—if the population had been stationary—the mortality uniform for the 90 or 100 previous years. Table II. exhibits the same facts reduced to a common scale, starting from 5132, the numbers living at the age 20 in Dr. Price's Table. The facts derived from the four sources can thus be compared; and it will be observed, that notwithstanding the smallness of the numbers, the intervention of cholera, and other disturbing causes, the cols. 2, 3, 4, 5, that is, the facts returned in 7 or 10 years of the present, and those returned for 46 years in the past century, agree very remarkably. Thus Dr. Price infers from the latter returns, that out of 5132 persons living at the age of 20, 2857 will live to 50; while upon the same hypothesis 2857 out of the same number will live to 50, if the registration returns (1838-44) be made the basis of calculation. Under the age of 20 there is indeed a discrepancy; the returns of the present day (cols. 3, 4, 5) agree closely together, and with Dr. Price's Northampton Table (col. 2 A, Table II.); but they differ from a table (col. 2, Table II.) deduced directly from Dr. Price's facts.

Before proceeding to consider the new and correct Northampton Table, it will be convenient to advert to a new table which I have framed on the same plan, and after the model of Dr. Price's table. Here, however, it is necessary to inquire, first, "*How the old Northampton Table was constructed by Dr. Price?*" This he has only explained indirectly in his works; and the extent of the deviations from the facts is nowhere stated. The general principles of his method are laid down in the "Observations on the proper method of constructing tables for determining the rate of human mortality, the number of inhabitants, and the value of lives in any town or district, from bills of mortality, in which are given the numbers dying annually at all ages."¹ He exhibits the alterations in the London Tables (XIII., XIV., XV., XVI. of his work); delivers the data from which the Northampton Table was derived; and says, "the XVIIth Table in this volume is framed in the same manner" with Table XV. for London: and this is the *genuine Table of Observations*

¹ Second Essay, vol. ii., p. 73, of Works by Morgan, 7th edition.

TABLE I.—Return of Deaths or Burials at twelve periods of Life in All Saints' Parish, Northampton; Burials from Bills of 46 years, 1735-80, and of 7 years, 1838-44; Burials of Clergy Returns for 10 years, 1831-40; Deaths registered in 7 years, 1838-44.

1	2	3	4	5
Age.	Price's Facts. Burials in All Saints' Parish.	Burials. Clergy Return. Bills.		Registration Returns. Deaths in All Saints' Parish.
	1735-80	1831-40	1838-44	1838-44

Numbers dying at each age, and under the age following:—

0	1529	434	331	469
2	362	205	111	129
5	201	63	41	65
10	189	79	58	64
20	373	96	58	78
30	329	83	78	94
40	365	78	57	73
50	384	82	58	75
60	378	96	63	108
70	358	88	77	91
80	199	37	23	31
90	22	3	2	5

Numbers dying at each age and upwards. If the population had been stationary, these would be the numbers living at each age to the births against 0:—

0	4689	1344	957	1282
2	3160	910	626	813
5	2798	705	515	684
10	2597	642	474	619
20	2408	563	416	555
30	2035	467	358	477
40	1706	384	280	383
50	1341	306	223	310
60	957	224	165	235
70	579	128	102	127
80	221	40	25	36
90	22	3	2	5
100	0	0	0	0

The Table is read thus:—*Upper Part*,—of 4689 persons buried in All Saints in 1735-80, there were 1529 under 2 years of age, 362 aged 2 and under 5, &c. &c. *Lower Part*,—of 4689 persons who died, 3160 died at the age of 2 and upwards, 2798 at the age of 5 and upwards, 2597 at the age of 10 and upwards, &c.

TABLE II.—Deduced from Table I., and showing, to 5132 living at the age of 20, and dying at that age and upwards, the proportions at other ages:—

1	2	2A	3	4	5
Age.	Table from Facts which Dr. Price had for first Northampton Table.	Northampton Table of Dr. Price.	Church Ministers' Returns, 1831-40	Northampton P. O. Bills, (Burials.) 1838-44	Registration Returns of Deaths, 1838-44

Numbers dying at each age and under the age following:—

0	3265	4367	3956	4083	4337
2	772	1034	1869	1370	1193
5	428	574	574	505	601
10	403	543	720	716	592
20	795	747	875	716	721
30	701	750	757	962	869
40	778	778	711	703	675
50	818	819	747	715	694
60	806	806	875	778	999
70	763	763	802	950	841
80	424	423	338	283	287
90	47	46	27	25	46

Numbers dying at each age and upwards. If the population had been stationary, these would be of the born against 0, the numbers attaining 2, and each successive age:—

0	10000	11650	12251	11806	11855
2	6735	7283	8295	7723	7518
5	5963	6249	6426	6353	6325
10	5535	5675	5852	5848	5724
20	5132	5132	5132	5132	5132
30	4337	4385	4257	4416	4411
40	3636	3635	3500	3454	3542
50	2858	2857	2789	2751	2867
60	2040	2038	2042	2036	2173
70	1234	1232	1167	1258	1174
80	471	469	365	308	333
90	47	46	27	25	46
	0	0	0	0	0

According to Dr. Price's Northampton Table, out of 11650 children born alive, 5132 attain the age of 20, the whole dying at the several ages shown in the *upper part* of this Table, col. 2. The numbers against the age 20 in Table I., namely, 2408, 563, 416, and 555, raised to 5132, and the other numbers in Table I., raised in the same ratio, constitute Table II.; that is, cols. 2, 3, 4, 5, in Table I. were multiplied by $\frac{5132}{2408}$, $\frac{5132}{563}$, $\frac{5132}{416}$, and $\frac{5132}{555}$, to form the corresponding columns Table II.

“for Northampton, from which may be calculated the true probabilities and “values of lives in that town.”¹ “The Bills,” he adds in a note, “give the “numbers dying annually between 20 and 30 greater than between 30 and 40; “but this being a circumstance which does not exist in any other register of “mortality, and undoubtedly owing to some accidental and local causes, the “decrements were made equal between 22 and 40; preserving, however, the “total of deaths between 20 and 40, the same that the Bills give them. The “Bills giving only the totals of deaths under 2 years of age, and between 2 “and 5, the proportions of deaths for every particular year between 2 and 5, “and for every *quarter of a year* after birth till 1 year of age, were made the “same nearly that the Chester Register makes them.” A comparison of the col. 2, Table I., with the cols. 2 and 2A of our Table II., will show the three steps of the process employed by Dr. Price. He probably deduced the lower series from the upper of col. 2, Table I.; the first number 4689 was raised to 10000, and all the following terms of the series in the same ratio, which gave the numbers 6735, 5963, 5535, 5132, 4337, &c., &c., of col. 2, Table II.² He lastly added 1650 (nearly one-sixth part, or $\cdot 1650$) to the original radix 10000; made corresponding alterations at the subsequent ages up to 20; and to render the series more uniform took from the deaths returned at the age 20-30 to add to those at 30-40. The following is a summary view of the alterations Dr. Price introduced in the Table:—

1	2	3	4	1
Age.	Probably Dr. Price's Original Table.	Dr. Price's Altered Table.	Differences.	Age.
0	10000	11650	1650	0
2	6735	7283	548	2
5	5963	6249	286	5
10	5535	5675	140	10
20	5132	5132	.	20
30	4337	4385	48	30
40	3636	3635	.	40
—	This column is derived directly from the observations given by Dr. Price.	This column is a part of what Dr. Price called “the genuine Table of Observations for Northampton.”	The excess in the 3rd column is nearly 1-12th at the age of 2, 1-20th at 5, 1-40th at the age of 10.	—

Dr. Price intended the additions to the Table under the age of 20 to be a correction of the original Table, for the immigrants who, he assumed, entered Northampton at the age of 20. Dr. Price's interpolation was a simple business, as the decrements from the age 21 to 40 were made uniform, and those

¹ Vol. ii., p. 97.

² The col. 2, Tab. II., was deduced from col. 2, Tab. I., by multiplying the numbers by $\frac{5132}{2408}$; and $4689 \times \frac{5132}{2408} = 9993$; but the first number has been made 10000 for the sake of clearness of exposition. The 5132 is the number living at 20, in Dr. Price's Northampton Table.

numbers attaining each age from 40 to 70 differ little from the terms of an arithmetical progression. Table III., cols. 2, 3, 5, 6 (pp. 332-3), contains the old and new Northampton Tables, both constructed from the deaths alone on the same assumption, that the population was stationary, and both erroneous to the extent of any error involved in this assumption.

The new Table from the deaths alone, col. 2 of Table III., was constructed from the outline Table, col. 5, Table II. The interpolation was effected by the method of differences, the application of which to this purpose will be elsewhere explained. The number 5132 against the age 20 in Dr. Price's Table, was made the starting point: in the process of interpolation this became 5143. In all other respects the Table was constructed and interpolated without any reference whatever to Dr. Price's Table. As no addition was made under 20 for immigrants, the general agreement is remarkable. The probabilities of living a year differ chiefly after 63. The *afterlifetime*, or expectation of life, the present values of annuities, and the premiums of insurance at each age, have been calculated by the new Table, and are found to agree closely with Dr. Price's Table.

Age.	[Mean] Afterlifetime.		Interest of Money, 3 per Cent.					
	Price.	By New Table from Deaths alone.	Present Value of Annuity of £1.		Annual Life Premiums to insure £100 at Death.		Single Premiums to insure £100 at Death.	
			Price.	By New Table from Deaths alone.	Price.	By New Table from Deaths alone.	Price.	By New Table from Deaths alone.
0	25.18	24.88	£. 12.270	£. 12.169	£. 4.623	£. 4.681	£. 61.349	£. 61.642
10	39.78	39.54	20.663	20.615	1.704	1.714	36.903	37.044
20	33.43	33.40	18.638	18.702	2.179	2.163	42.801	42.616
30	28.27	28.15	16.922	16.961	2.667	2.655	47.801	47.686
40	23.08	22.85	14.848	14.859	3.398	3.393	53.842	53.809
50	17.99	17.49	12.436	12.275	4.530	4.620	60.866	61.334
60	13.21	11.91	9.777	8.949	6.366	7.139	68.610	71.021

The annual premium at the age 30 to insure £100, is £2 13s. 4d. according to the Table deduced from the returns of the last century (1735-80); and £2 13s. 1d. according to the Table now deduced from the returns of the 7 years 1838-44. The *afterlifetime* at 30 is 28.27 years, and 28.15 years by the same Tables.

The two Tables, which are almost identical, may be both correct or both erroneous. They can only be correct if the population of All Saints, Northampton, was stationary for nearly two centuries. I proceed to describe another New Northampton Life Table, constructed by a method not subject to any such condition; I do not say, with Dr. Price, "subject to no errors,"—but certainly subject to errors of no magnitude to be compared with those that may arise from the hypothesis on which he constructed the Old Northampton Table.

¹ Tables formed from data of this kind "are subject to no errors. They must be correct, whatever the fluctuations are in a place, and how great soever the inequalities may be between the births and the burials."—Price, Works, vol. ii., p. 251.

We have returns of the deaths all over England for the 7 years 1838-44, as well as the ages of the population of each parish in the middle of the 7 years, (June 6-7, 1841); and have therefore the means of constructing a correct Life Table for the county, or town, or any parish of Northampton. To test the old Table now in general use, and the new Table constructed on the same plan, I have made the returns for the parish of All Saints the basis of the correct Table. The town of Northampton contains the county infirmary, the lunatic asylum, and the union workhouse; neither of them situated in All Saints' parish. As the deaths of persons sent sick out of a parish are properly a part of its mortality, I have obtained returns of the ages of the parishioners of All Saints who died in the infirmary, workhouse, and lunatic asylum, during the 7 years 1838-44, and the ages of those resident in 1845.¹ The numbers are few, but the deaths could not have been neglected without understating the mortality.

Tables IV., V., VI. (pp. 334-6), show the population of All Saints, the deaths at different ages, and the births for the 7 years 1838-44. The new Table from the deaths alone corresponding with that of Dr. Price, was framed from the facts in the *last column* of Table V. The Life Table with which we have at present to do was constructed from the births, the deaths, and the living enumerated at each age; and chiefly from the last columns of Table IV. and of Table V. It was not attempted to make separate Tables for males and females.

The 333 children who died under 1 year of age in the 7 years 1838-44, must all have been born in the 8 years 1837-44; and the aggregate number of children born alive out of which the deaths took place, would be correctly represented by the births in the 7 years from the middle of 1837 to the middle of 1844. All the births are probably not registered; but there can be little error in substituting the 1953 births registered in 1838-44 for the number in question. Of 1953 children born alive in All Saints, therefore, 333 died in the 12 months after birth, and 1620 survived; the number out of 10000 born, who live to see the first anniversary of their birth, is obtained by the rule of proportion thus:—

$$1953 : 1620 :: 10000 : 8295$$

So 1705 of 10000 die in the first year, and 8295 enter on the second year of age. Here the enormous error in the hypothesis on which the new Table from the deaths alone was constructed becomes apparent. The deaths at all specified ages were 1283, out of which number of children born alive by the said hypothesis the 333 children died; whereas it has been just shown that the children out of whom these deaths occurred were at least 1953 in number. According to the false hypothesis 2598 die, and only 7402 survive a year, out of 10000 born alive.

Proceeding to determine the mortality in the second year of age, we find by the Census 184 children living against the age 1; that is, aged 1 and less than 2 years of age, in the middle of the 7 years 1838-44, when 136 children died of the same age, that is, 19.43, or nearly 19 annually. If 19 died pretty nearly at equal intervals in the second year of age, 193.5 would be alive at the beginning, 184 in the middle, and 174.5 at the end of the second year of age;

¹ I am indebted to James Mash, Esq., House-surgeon to the Infirmary, to W. Tomalin, Esq., and to Mr. Wm. Cornfield for these particulars. The numbers and ages of the parishioners of All Saints, in the public institutions, 1841, could not be procured; no error of any consequence arises from substituting the numbers found in them in 1845.

the numbers out of 8295 entering on the second year, who live to the end of it and enter on the third year, will be obtained by a second proportion:—

$$193'5 : 174'5 :: 8295 : 7481$$

So that, according to the law of mortality in All Saints, 7481, or more exactly (taking all the decimals into account), 7463 of 10000 children born alive, live to see their second birth-day. The same process carries us to the fifth birth-day. The numbers living and dying are henceforward given in quinquennial ages, and of 847 living, 65 die in the 7 years, or nearly 9 annually: the number 7463 is reduced at the age 5 to 6765, which multiplied by the fifth power of

the fraction $\frac{842 \cdot 36}{851 \cdot 64}$ will give the numbers that live through the next 5 years

to the age of 10. The same method may be pursued when the living and dying are taken in decennial ages, 20-30, 30-40, &c., to obviate the irregularities from errors in the ages, and in the small numbers. The probabilities of living in the middle of every 5 years up to 20, and every 10 years afterwards, were thus obtained, and the probabilities of living through each intermediate year were interpolated: thus the Life Table was framed. The results by other methods of construction which were tried are nearly the same. The Table (p. 348) is one of the outline tables worked out in logarithms, and ready for interpolation. The mortality at the several ages obtained by simply dividing the dying in the 7 years 1838-44 by the living, enumerated in 1841, is shown in the annexed Table:—

All Saints, Northampton: Mortality in the 7 Years 1838-44.

Age.	7 times the living in 1841.	Died in 7 Years.	Annual Mortality per Cent.	Age.
0-1	1568	333	21.237	0-1
1-2	1288	136	10.559	1-2
2-3	1442	74	5.132	2-3
3-4	1211	32	2.642	3-4
4-5	1127	23	2.041	4-5
0-5	6636	598	9.011	0-5
5-10	5929	65	1.096	5-10
10-15	5607	27	.482	10-15
15-20	6335	37	.584	15-20
20-30	11179	78	.698	20-30
30-40	7756	94	1.212	30-40
40-50	5327	73	1.370	40-50
50-60	3465	75	2.165	50-60
60-70	2044	108	5.284	60-70
70-80	889	91	10.236	70-80
80-90	168	31	18.452	80-90
90	7	5	71.429	90
All Ages	55342	1282	2.317	All Ages

The mortality, as is always the case, rapidly decreases from birth to the age 10-15; it then increases slowly to 50, but more than doubles afterwards every 10 years. The decennial divisions from 15-25, 25-35, &c., in Table (p. 321),

probably give more correct results. The mortality of All Saints is higher than the mortality of England, and higher than the mortality of the other parishes of the same sub-district.

We may now revert to Table III. (pp. 332-3). The columns 4 and 7 of that table are a true Northampton Life Table, constructed from the correlative returns for 1838-44 of the numbers living and dying at each age. The Table from the deaths alone in the same period (and which is the counterpart of Dr. Price's) is altogether erroneous; while the errors of its indications vary at different periods of life, as will be apparent from the following examples. To distinguish it from the other, it may be called the False Table.

The following is a summary view of the true and of the two false Tables; the starting point being the numbers living at the age 20:—

Age.	The old Northampton Table, by Dr. Price.	Graduated False Table of Mortality deduced from the Deaths, 1838-44	Life Table deduced from Population, 1841, and Deaths, 1838-44	Age.	The old Northampton Table, by Dr. Price.	Graduated False Table of Mortality, deduced from the Deaths, 1838-44	Life Table deduced from Population, 1841, and Deaths, 1838-44
		Dying.				Living.	
0	4367	4337	2145	0	11650	11855	8456
2	1034	1193	590	2	7283	7518	6311
5	574	601	302	5	6249	6325	5721
10	543	581	287	10	5675	5724	5419
20	747	737	364	20	5132	5132	5132
30	750	745	457	30	4385	4406	4768
40	778	755	600	40	3635	3661	4311
50	819	760	759	50	2857	2906	3711
60	806	972	1349	60	2038	2146	2952
70	763	841	1055	70	1232	1174	1603
80	423	287	487	80	469	333	548
90	46	46	61	90	46	46	61

By the True Table it is an even chance that a child born alive will live more than 41 years; for of 10000 born, 5036 live to, and 4964 die before attaining the 42nd birth-day. The probable lifetime at birth is $41\frac{1}{2}$ years; that is the age which it is an even chance will be attained.

The False Table makes the probable lifetime at birth only $7\frac{1}{2}$ years; for in it 11855 children born alive are reduced to 5992 in 7 years, or to 5928, half their original number, in $7\frac{1}{2}$ years.

It is probable that a person of 20 will live to the age of 63 or $43\frac{3}{4}$ years; the False Table makes his prospect of life only 34 years and $\frac{3}{4}$ of a year.

At 60 the two tables nearly agree; the probable lifetime is $10\frac{1}{4}$ years by the True Table, and $10\frac{1}{4}$ years by the False Table; that is, nearly 11 years by both tables.

The afterlifetime at several ages, the values of life annuities, and the premiums to insure £100 at death by the true and the false Tables, are contrasted in the following Table. The interest of money is taken at 3 per cent. per annum; and in the money calculations and examples no allowance is made for expenses, fluctuations, or profits.

Age.	Afterlifetime at 7 Ages.		Values of Life Annuities of £1, at 7 Ages.		Annual Premiums to be paid for Life to insure £100 at Death.		Single Premiums to insure £100 at Death.	
	By True Northampton Table.	By False Table, which agrees with the Northampton Table in common use.	By True Northampton Table.	By False Table, which agrees with the Northampton Table in common use.	By True Northampton Table.	By False Table, which agrees with the Northampton Table in common use.	By True Table.	By False Table.
			£.	£.	£.	£.	£.	£.
0	37.57	24.88	17.085	12.169	2.617	4.681	47.324	61.642
10	47.57	39.54	23.396	20.615	1.186	1.714	28.946	37.044
20	39.93	33.40	21.412	18.702	1.549	2.163	34.717	42.616
30	32.59	28.15	19.081	16.961	2.067	2.655	41.506	47.686
40	25.49	22.85	16.296	14.859	2.869	3.393	49.625	53.809
50	18.76	17.49	13.055	12.275	4.202	4.620	59.054	61.334
60	12.27	11.91	9.155	8.949	6.935	7.139	70.424	71.021

The answers to a few of the questions asked every day, and solved by Life Tables, will still further illustrate the errors of the False Table.

What is the mean lifetime or the duration of life?—Answer 37.57 years, or nearly 37½ years in Northampton. Answer by False Table 24.88 years.

What is the afterlifetime at 20, or the average number of years that persons of 20 live after that age?

Answer by True Table 39.93, or nearly 40 years.
 Answer by False Table 33.40, or nearly 33 years.

What is the afterlifetime at the age 50?—18.76 years by True Table, and 17.49 years by False Table.

B. wishes to purchase an annuity of £100 on the life of a child just born, what sum should he pay for it, reckoning the interest of money at 3 per cent., and no profits?

Answer by True Northampton Table £1708 10
 Answer by False Northampton Table 1216 18
 Difference £ 491 12

John Edwards, aged 30, has an annuity of £1000 on his life, what is its present value?

Answer by True Northampton Table £19081
 Answer by False Northampton Table 16961
 Difference £ 2120

How much should Thomas Godwin, aged 60, pay for an annuity of £1000?

Answer by True Northampton Table £9155
 Answer by False Northampton Table 8949
 Difference £ 206

Edwin Gray, aged 20, desires to insure his life for £1000, what annual premium should he pay, leaving out of consideration any charge for expenses?

Answer by True Northampton Table £15 9 10
 Answer by False Northampton Table 21 12 7
 Answer by Northampton Table in common use 21 15 10

What annual premium should James Just, aged 30, pay to insure £10000 at his death?

Answer by True Northampton Table £206 14
 Answer by False Northampton Table 265 10
 Answer by Dr. Price's Northampton Table 266 14

What annual premium should Evan Lewis, aged 60, pay to insure £1000 at death?

Answer by True Northampton Table £69 7 0
 Answer by False Northampton Table 71 7 10
 Answer by Dr. Price's Northampton Table 63 13 4

An annuity of £1000 is left in a legacy to a child aged 10, what is the duty? The value by the True Northampton Table is . . . £23396
 The value by the False Northampton Table is . . . 20615

The duty, reckoning it at 10 per cent. on the value, is £2339 12s. by the True Table; £2061 10s. by the False Table; and £2066 6s. by Dr. Price's Table. Taking the interest of money at 4 per cent. per annum, the value of the annuity by Dr. Price's Table is £17523; the legacy duty at 10 per cent. is £1752.3. At the same rate of interest the legacy duty by the English Table is £1924.77. The legacy duty is still levied under 36 G. III. c. 52; in which the elaborate series of Tables of the values of annuities on single and joint lives are derived from the Northampton Table, reckoning interest at 4 per cent.

What sum paid down by John Jones, aged 20, will provide him a deferred annuity of £10 the first payment to be made, if he be alive, at the age of 61?

Answer by True Northampton Table £16 2 10
 Answer by False Northampton Table 11 8 11

A child just born is to enter at the age 21 on an estate in which he has a life interest of £2000 a-year; what is the present value of his interest?

Answer by True Northampton Table £13742
 Answer by False Northampton Table 8524

Here it is assumed that the first annual rent is received on his 22nd birth-day. The present value of £100000, contingent on a child just born living to the age of 21, is £32415 by the True Table; £22989 by the False Northampton Table; and by the Table of Dr. Price, in common use, £23348!

A person aged 30 lays by £100 at 3 per cent. compound interest, and the same sum at the beginning of every year, so long as he lives, to what will accumulations of this kind amount on an average? Formula $\frac{N_{30}}{M_{30}}$.

¹ Formula: $\frac{N_{x+1+y}}{D_x}$.—See Table, pp. 344-5; and Sixth Annual Report, 8vo., p. 594.

Here $x = 20 =$ age at which the annuity is granted; and $y = 40 =$ time for which the annuity is deferred.

The formula becomes $\frac{N_{61}}{D_{20}}$.

Note.— N_x in the English Table, and in the other Tables arranged by me, corresponds with N_{x-1} in Griffith Davies's Tables.—See the reason of this in Appendix to Registrar-General's Sixth Annual Report.

Answer, by True Northampton Table	£ 4838
Answer, by English Life Table (Males)	4869
Answer, by False Northampton Table	3767

What is the value of the next presentation to a church living of £1375 a year, net income, the age of the present incumbent being 60?

Assuming that the age of the person to be appointed will be 30, and the interest of money 3 per cent. only, the present value will be £18477 by the True, and £16564 by the False Table.

The present value of £10000, receivable on the death of a child just born, is £4732 by the True, and £6164 by the False Table.

For an insurance of £1000, at the age of 40, the single premium is £538.42 by Dr. Price's Table, and £496.25 by the True Northampton Table.

John Williams, aged 30, insures his life for £1000, by engaging to pay an annual premium of £26.55 (or £26 11s.): he pays 10 premiums (£265.5), and when the 11th falls due, wishes to dispose of his policy. What is its value?

The question has two sides, according as we look to the past or to the future. He entered into a contract with the society at the age of 30, under which he has paid £26.55 a-year, or £265.5 to their exchequer: the society, under the same contract, incurring the risk of paying £1000 in the event of his death during the 10 years. In reference to this past period, he has paid the society more than has sufficed to cover the risk. Estimating the risk by the True Northampton Table, the excess, invested at the rate of 3 per cent. compound interest, amounts, at the end of 10 years, to £212.57.¹ In fact, a premium of £9.615 a-year would cover the risk.²

Looking forward to the future, he has engaged to pay the society £26.550 a-year for his life; the present value of which, at the age of 40, is £459.209. The life annuity is worth 16.296 years' purchase, to which adding 1 for the premium to be paid instantly, we have 17.296, to multiply into £26.550, which gives £459.209, or the sum in question. But the present value of £1000, at the death of this person, is £496.250. It is the actual value of his claim on the society, and is only £37.041 more than £459.209, the present value of his future premiums. If both parties, by mutual consent, dissolve the contract, the society only owes John Williams £37.041, regard being had to the future payments; while, if regard be had to the past, it has actually £212.57 in its possession to refund to the claimant. £26.55 is the annual

¹ Formula: $H_{x+y} = \frac{\pi N_{x|y} - s M_{x|y}}{D_{x+y}}$ = the sum to which the excess of any annual premium π , over that required to cover the risk commencing at age x of paying $\mathcal{L} s$, will amount in y years. The investigation of this formula will be given elsewhere.—See pp. 330-1.

Putting $s = 1$, and $\pi = \frac{M_x}{N_x}$ = the precise annual premium required to insure £1 on a life of the age x , we have the formulæ in common use:

$$H_{x+y} = \frac{M_{x+y}}{D_{x+y}} - \frac{M_x}{N_x} \cdot \frac{N_{x+y}}{D_{x+y}} = \frac{N_{x+y}}{D_{x+y}} \cdot \left(\frac{M_{x+y}}{N_{x+y}} - \frac{M_x}{N_x} \right)$$

$$= 1 - \frac{D_x}{N_x} \cdot \frac{N_{x+y}}{D_{x+y}} = 1 - \frac{1 + A_{x+y}}{1 + A_x} = (1 + A)(P - p),$$

the formula demonstrated by Mr. Milne (Treatise on Annuities and Assurances, vol. ii. sect. 501-509.)

² Formula $\frac{M_{x|y}}{N_{x|y}}$.

premium required to insure £1000, according to the False Northampton Table; and the conflicting results of the two methods of estimating the value of the policy arise from the annual premium being £5.88 higher than the premium (£20.67) by the True Table.

If the correct premium (£20.67) only had been paid, the excess of the premiums paid over the premiums actually required to cover the risks of 10 years would have amounted to £138.75; the amount of which sum payable at the death of a person now aged 40, is £279.6: this, added to £720.4, the amount of the future annual premiums at death, makes the £1000 insured at the failure of the life. Whether the valuation turn on the past or on the prospective payments, the policy is found in both ways to be worth the same sum of £138 15s.

By the methods in common use, the value of the policy, by Dr. Price's Table, is £115.73; by the False Table, £117.06. Both the valuations are manifestly erroneous.

The single premium to insure £1000 on a life at the age of 30, is £476.86 by the False Table, and £478.01 by Dr. Price's Table; at the end of 7 years, age 37, the policy is worth but £470.54 by the True Northampton Table.

These examples serve to show the enormous errors in the valuations of policies—and consequently of profits—involved in the use of the False and common Northampton Tables. I reserve the further discussion of these important, but somewhat intricate subjects, for another Report.

It has been shown that results deduced from the False Northampton Table, and from Dr. Price's Table, now in common use, are almost identical. It has also been shown that these Tables differ from the True Northampton Table in a degree that affects most extensively all the money transactions of which they are the basis. On comparing the values derived from the True Northampton Table with those set forth by Mr. Morgan,¹ it will be found that the experience of the Equitable Society indicates a somewhat lower mortality

Age.	Afterlifetime.		Value of Life Annuities of £1.		Single Premium to Insure £100.		Annual Premium to Insure £100.	
	True Northampton Table.	Equitable Experience.	True Northampton Table.	Equitable Experience.	True Northampton Table.	Equitable Experience.	True Northampton Table.	Equitable Experience.
			£.	£.	£.	£.	£.	£.
20	39.93	41.11	21.412	21.572	34.717	34.246	1.549	1.517
30	32.59	34.08	19.081	19.493	41.506	40.299	2.067	1.967
40	25.49	26.95	16.296	16.854	49.625	47.984	2.869	2.687
50	18.76	19.80	13.055	13.481	59.054	57.799	4.202	3.992
60	12.27	13.63	9.155	9.846	70.424	68.389	6.935	6.306

among the members than that on which the New Northampton Table is constructed. The annual premiums by the New Table would, according to the Equitable experience, insure £106 between the ages of 30 and 40, when the greatest number of lives are insured. The premiums, at these ages, by Dr. Price's Table insure £131, and at the age of 60 barely insure £100, according to Mr. Morgan's interpretation of the Equitable experience. It is probable that at the earlier ages, from the effect of selection, the mortality of the members of the Equitable Society was lower than the mortality of the class to which

¹ Appendix to second edition of "A View of the Rise and Progress of the Equitable Society," by William Morgan, Actuary to the Society.

they belonged. This was the opinion of Mr. W. Morgan. "Under the age of 8," he says, "no assurances are made, and very few under the age of 20. A Table, therefore, deduced from the experience of the Equitable Society, for all ages, from birth to the extremity of life, must be entirely hypothetical under the age of 20, not much to be depended upon from that age to 30, and to a certain degree rendered incorrect by the continued addition of *new assurances on lives* from the age of 30 to 50. For reasons already explained (see page 42), the probabilities of life in the society, after the age 50, approximate to those in the Northampton Table [of Dr. Price]; and from the age of 60 and upwards they agree so nearly, as to prove the accuracy of both, and to make it a matter of no consequence from which of them, at that advanced period of life, the annual premiums are computed." The population of towns is kept up by healthy immigrants from the country, chiefly at the ages 15-35; it is a kind of selection, and has precisely the same effect in depressing the mortality, as the selection of the life offices at corresponding ages. Hence it is that the True Northampton differs from the Equitable experience pretty nearly to the same extent at all ages. It will be seen hereafter, that the *inequality* in the errors of the Old Table, referred to by Mr. Morgan, is the chief cause of the injustice of its use in mutual insurance societies.

Annual Life Premiums to Insure £100.

Age.	English Table.		Northampton True Table.	Carlisle (Milne.)	Equitable Experience.	Northampton Table of Dr. Price.	False Northampton Table.
	Males.	Females.					
	£.	£.	£.	£.	£.	£.	£.
20	1.597	1.555	1.549	1.494	1.517	2.179	2.163
30	2.054	1.963	2.067	1.952	1.967	2.667	2.655
40	2.731	2.575	2.869	2.599	2.687	3.398	3.393
50	3.873	3.627	4.202	3.622	3.992	4.530	4.620
60	6.129	5.734	6.935	5.790	6.302	6.366	7.139

The premiums of insurance by the New Northampton Table are a little higher than those deduced from other Tables, but the errors are on what the offices would consider the safe side.

The comparisons hitherto made, have been between the premiums of insurances for the whole term of life. The errors of the False Table, and of Dr. Price's Table, are still more striking in the premiums for short terms.

The premiums to insure £100 in the event of a life failing in the following year are as follows, at the ages 20, 30, 40, 50, and 60:—

Age.	By True Northampton Table.	By Equitable Experience (Morgan).	By Dr. Price's Northampton Table.	By False Northampton Table.	Age.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	
20	0 12 6	0 13 7	1 7 3	1 7 7	20
30	0 16 6	0 16 10	1 13 3	1 12 7	30
40	1 3 7	1 0 0	2 0 7	1 19 9	40
50	1 16 3	1 11 5	2 15 1	2 10 9	50
60	2 15 8	3 4 11	3 18 2	3 12 5	60

The Northampton Table of Mortality, by Dr. Price, does not express the mortality of All Saints' parish, of the town of Northampton, of the county of Northampton, nor of any other town or county either in the past or the present century. It was constructed, as has been already stated, upon the hypothesis

that the population of All Saints' parish was stationary in the 17th and 18th centuries. In rapidly tracing the growth of this small, but important inland town, we shall examine the grounds of this hypothesis, and, perhaps, be able to account for the errors of Dr. Price's Table, as well as to determine how far the New Northampton Table can be relied upon as a guide in insurance transactions.

NORTHAMPTON.

Northampton lies on the south slope of the uplands from which the Avon, the Charwell, and the Nene flow down to the Severn, the Thames, and the Wash of Boston. The rise of the town is involved in as much obscurity as the origin of these waters. Its site was the border of two British tribes—in front of a vast forest extending to the Welland. The Saxon Chronicle first calls it Hampton in the time of Edward the Elder, Alfred's son. "In 917, after Easter, the army of Danes rode out of *Hamtune* and Leicester." Hampton was a chief station of the Danes who had penetrated Mercia. A mound south of the town marks their camp. The road through Leicester kept open a communication with the Northmen beyond the Humber; East Anglia was near; the Nene flowed down to Peterborough, but was not then navigable. In 918, Earl Thurkytel, the "captains," and almost all the first men that belonged to Bedford, and many of those that belonged to *Hamton*, submitted to Edward. In 921 the army in Hamton and Leicester broke their parole; they unsuccessfully assailed Towcester, previously fortified by Edward. The "army" was defeated at Bedford and Maldon; and Earl Thurferth, the captains, and all the force that "owed obedience to Hamton, as far north as the Welland, submitted to him, and sought him to be their lord and protector."¹ The population of the town was probably mixed. For Edward commanded Nottingham to be repaired and occupied as well by the English as by Danes in 922. "And all the people who were settled in *Mercia, as well Danish as English*," says the Saxon Chronicle, "submitted to him."² Sweyn, in 1010, burnt Hamton, and carried away the spoils of the surrounding country. Canute traversed the county in 1015. In 1065, the Northumbrians, exasperated by the oppression of Tosti, marched under Morcar to Hamton, where they were joined by Edwin, his brother, a body of the men of his earldom, and many Britons. They here encountered Harold, who, though Tosti's brother, after a vain attempt to effect a reconciliation, came to terms with the insurgents, married Morcar's sister, and obtained from Edward the Confessor the government of Mercia for Edwin. Whilst Harold was away "on their errand," the Northmen, aided, no doubt, by the exasperated Britons, did much harm at Hamton; slew men, burnt houses and corn, took thousands of cattle, and led away hundreds of men with them; so that not only the shire, but others near it, were the worse for many winters.³ When the country north of the Humber had been subjugated by William the Conqueror, Waltheof, Gospatrik, Morcar, and Edwin submitted; the brave Waltheof, son of Siward, became Earl of Northampton and Huntingdon, and, at the same time (1070), married Judith, the niece of the Conqueror. Waltheof, after the revolt of the Norman barons, in which he got involved, was executed in 1076. He left two daughters by

¹ Sax. Chron., an. 921. ² Sax. Chron., an. 922.
³ Saxon Chronicle, by Ingram, under the years 917, 918, 921, 1065; Henry of Huntingdon; Roger de Hoveden. Thierry's Conquest of England, by Hazlitt, vol. i. pp. 142-43; and 230-31.
 [8.]

Judith; the eldest, Maude, married Simon de St. Liz [Senlis],¹ who was one of two brothers, the sons of Raundoel le Ryche, valiant knights, who had come over with William the Bastard. Garner, the first-born, on the death of Raundoel, returned to France, and obtained the inheritance of his father. William wished Waltheof's widow to marry Simon; she scornfully rejected him because he was lame; and the king gave him her daughter Maude in marriage, with the whole honour of Huntingdon. Simon and his young wife, [18 Will. I., or 1084,] that "they might not at the day of judgment, before all bystanders, appear with empty hands," granted the church of All Hallows, and the other 9 churches of the town (villa), with their appendages, an estate of 3 carucates in the same town, 3 meadows, a holm (hulmum), and some houses (hospites), 20 shillings of the farm of the town, &c., to St. Andrew's Priory, which Simon, called the founder henceforward, submitted in perpetuity to the House of St. Mary de Caritate, on the Loire. In the time of Henry I. Simon went to the Holy Land, died, and was buried on his return at the Caritatem.² Henry gave Maude to the patriot David, subsequently King of Scotland, and the brother of Edith, who was afterwards called Matilda, Henry's Saxon Queen. David, then Earl of Northamptonshire, succeeded Alexander in May, 1124; and retained the English earldom.³

The town is called Northantone, and contained 330½ houses at the time of the Domesday survey (about 1084); when 35½ of the houses were empty, 295 inhabited. Of 60 burgesses in the time of Edward the Confessor having so many messuages (mansiones), 46 remained, the houses of 14 lay waste; besides these, 40 in the new town held of King William; 41 inhabited and 6 waste belonged to the warlike Bishop of Constance and 6 more ecclesiastical proprietors; Earl Morton had 35 inhabited houses, 2 waste; William Peverel, the Conqueror's natural son, who married Adelisa, and founded the Abbey of St. James for black canons, had 29 inhabited houses and 3 waste; the Countess Judith, William's niece, who married and betrayed Waltheof, had 15 houses inhabited, one waste. The majority of the houses belonged to proprietors of apparently Norman origin; leaving only a few inhabited and uninhabited houses, the property of proprietors of Saxon or Danish name. The annual value ranged from 4*d.* to 16*d.*; from 1*s.* to 4*s.* in weight of silver. Exclusive of the burgesses' 86 houses, the rent of 230½ houses, of which 21½ were waste, and 2 paid nothing, was 211 shillings and 8 pence; which is equal in weight of silver to nearly 3 shillings a house of our present coin. A sheep and its fleece would have paid the rent of 2, a quarter of wheat of 3 houses. One house was in the hands of Angsger, the King's chaplain, "of which the King ought to have the soke;" and 1, at a rent of 16*d.*, was held in fee of Robert de Toden, by *Durand*, the bailiff. Nearly all the houses were probably of wood or of waling, plastered over with clay, without chimneys or glass windows. The uninhabited houses soon fell into ruins; in the Domesday they are said to be waste (vastae). The little labour they cost and the frail construction of the Saxon towns may be inferred from the haste and ease with which they were erected. Edward the Elder took Bedford in the year 919; he staid there four weeks, and commanded the town to be built, before he went thence, on the south side of the river. His enemies assailing him from the north, it was his policy to have a friendly population south of the river. Before Midsummer, 920, he

¹ Camden's *Britannia*, by Gough, p. 169, under Northampton.

² Dugdale's *Monasticon*, vol. v. p. 190. Carta Simonis primi comitis.

³ Saxon Chron., 1124.]

built and fortified Maldon.¹ In 921 he repaired and rebuilt Huntingdon; and built the town of Gladmouth. In 922 he went to Stamford, and commanded the town to be built on the south side of the river; the people subject to the northern town sought him to be their lord. He commanded the wall to be built, Manchester to be repaired, in 923; went with his forces to Nottingham in 924, and "commanded the town to be built on the south side of the river, over against the other; and the bridge over the Trent, between the two towns; then went into *Peakland* to Bakewell, and there commanded a town to be built and "manned."² The facility with which towns were destroyed and burnt down is evidence to the same effect. The force of the high winds was "apparent in all woods and towns."³ The burgesses of Northampton paid £30 10*s.* (= £88 9*s.* in weight of our present money) yearly to the sheriff for the farm of the town. The Countess Judith had £7 issuing from the profits of the borough. The bailiff *Durand*, the profits of the borough, and the payment for the farm of the town to the sheriff, imply certain municipal arrangements, if not institutions; and the town shortly after and probably now contained All Saints, and 9 other churches.⁴

Simon de St. Liz not only founded the Priory of St. Andrew, but surrounded the town with walls, and what proved of more importance in its history, built a castle, with a large keep, hard by the West Gate.⁵ Henry I. was at Northampton in 1106, (now called *Norþ hamtune*, in the Saxon Chronicle, for the first time, as it appears South-hampton, hitherto also called Hamton, had risen to some importance). Robert, the king's brother, came here from Normandy; and because the king would not give back what he had won from him in Normandy, they parted in hostility.⁶ In the same year Robert was carried a captive to Cardiff Castle. After the loss of his son in the *Blanche Nef*, Henry revisited Northampton (1122 ?), and there celebrated with great pomp the festival of Easter. At a Parliament assembled by him in 1131 the barons swore homage to his daughter Matilda. The son of Simon de St. Liz, however, followed the interest of King Stephen, who held a council here in 1136. The son of Simon died in 1152-3. He was a young man, Camden says, guilty of every irregularity and impropriety.⁷ His son Simon succeeded him. Henry II. summoned Becket to the council held at Northampton (1164). The Saxon archbishop, pronounced by king, lords, and prelates a perjurer and traitor, but favoured by many townsmen and clergy, was entertained at St. Andrew's Priory, whence he withdrew privately, and would not hear the sentence pronounced on him by the king and council for refusing to submit to the Constitutions of Clarendon. A beautiful spring in the town is known to this day as Thomas à Becket's Well. Anketil Mallore, the Constable of Leicester, one of the partisans of Prince Henry, advancing to Northampton at the head of a force, defeated the burgesses with the king's troops, and besides the killed, carried off 200 of the inhabitants prisoners.⁸ The king suppressed the rebellion: William, King of Scotland, taken prisoner at Alnwick, was brought here; and Roger de Mowbray, Earl Ferrers, the Bishop of Durham, Anketil Mallore, and William Dive, Constables of the Earl of

¹ Saxon Chronicle, an. 919.

² Saxon Chronicle, an. 1123.

³ See Charter of St. Andrew's, and Confirmation by the Bishop of Lincoln, in Dugd. *Monasticon*, vol. v. p. 190.

⁴ *Historia Ingulphi*, an. 1075, v. i. p. 73, *Ret. Anglic. Scrip. Chron. Johannis Bromton*, an. 1075. *Leland's Itinerarium*.

⁵ Saxon Chronicle, an. 1122.

⁶ *Britannia*, by Gough, under Northamptonshire, p. 169.

⁷ *Chron. Johannis Bromton*, an. 1174.

⁸ Saxon Chronicle, an. 919-923.

Leicester, attended to surrender the several castles which they held against the king (1174). Councils sat at Northampton in 1176 and 1177: in the latter, where the assembly was mixed and numerous, Henry restored to the Earl of Leicester his forfeited lands.¹ A convention of barons and prelates (1180) was held, to amend and enforce the Constitutions of Clarendon. The kingdom was divided into 6 circuits, each to be visited by three judges (1179).² In 1185 the burgesses suffered a fine of 200 marks (£386 of our coin), to hold of the king in capite; and it is believed obtained a charter. In the first year of his reign Richard Cœur de Lion granted a charter to the burgesses of Northampton (1189). He conceded that none of them should plead without the walls of the borough except pleas of outholdings; that they should be quit of toll and lastage throughout all England; and enjoy all the free customs and liberties of citizens of London. He granted them the town of Northampton, with all its appurtenances, in fee farm, at an annual rent of £120 (= £349) a-year.³ A hundred years before, at the Domesday Survey, the farm of the town was £30. The pound of silver, at both periods, bore about the same proportion to the pound of the present time, or nearly 2.906 to 1; and after the Conquest a mark was 2-thirds of the pound = £1.937 of our coin.

Richard, soon after his return from captivity (1193), kept the Easter at Northampton, where he entertained King William of Scotland.⁴ A mint existed in the town. On his death (1199), the barons assembled there and swore allegiance to John,⁵ who, 10 years after, removed his exchequer from London to Northampton. The burgesses, in 1200, gave 241 marks and 2 palfreys, worth 10 marks, for the farm of the town and for the confirmation of their liberties. The king paid, among other items in 1201, 5 marks for the repair of his houses in the castle, and 6s. to the serjeants who brought the heads of 6 outlaws; 9d. a-day to the engineer, and 30s. for a robe for the engineer's wife. In a charter granted by John, the burgesses were allowed to elect a *reeve*. At the Council of Northampton, John was excommunicated by Pandulph and Durand (1211), the Papal Legates. The barons laid siege to the castle; and after 14 days, expended in a fruitless attempt to take it, retired: it was, however, one of the castles placed in their custody on the signing of Magna Charta (1215). In the bloody reaction, and the war at the close of John's reign, the enmity of the town and castle broke out; the townsmen killed many of the garrison under the command of Fulk de Breant, then a resolute royalist.⁶ The soldiers, in retaliation, burnt a great part of the town (1215).⁷ In the second year of Henry III., the king was entertained here by Fulk de Breant, who had the year before plundered St. Albans. In 1224 Henry hanged William, Governor of Bedford, the brother of Fulk, who had thrown the itinerant justices into prison. Fulk himself was soon after sent out of the country, and sworn never to return. In the 11th year of this reign, 1226-7, Henry exacted, by way of aid, 5000 marks from London, and 1200 marks (£2324 of our coin) from the burgesses of Northampton, besides the fifteenth generally levied. He allowed the town (1238) to purchase lands to the value of £40 a-year (£116); he celebrated Christmas at the castle in 1245,⁸ and presented the inhabitants with 10 marks (£19½), to purchase books

¹ Conciles—*Art de Vérifier les Dates*, 1176, 1177; and Sir H. Nicolas—*Chron. of Hist.*, p. 249.

² Bridges, vol. i., pp. 422, 433.

³ Abstract of Charters of Northampton, in the Report of Commissioners of Inquiry into Municipal Corporations.

⁴, ⁵, ⁶, ⁷ Leland, *Collect.*, vol. ii. p. 322; vol. i. p. 295; and Bridges. See also Hartshorne, p. 37, and 124-128.

⁸ 30 Henry III. (1245).

for a library. In 1252 the Sheriff of Northampton was ordered to have white glass, painted with the story of Dives and Lazarus, placed in the castle windows.¹ The town had charters from the king in the 11th, 23rd, 39th, 41st, and 52nd years of his reign. The *mayor* was made escheator, and had the returns, to the exclusion of the king's sheriffs and bailiffs.² The fair, which had been held in All Saints' Church and church-yard, was ordered to be held in some other place, 1235-6. In this reign the men at the Universities of Oxford and Cambridge quarrelled. A Welsh student in Oxford shot a servant of the Pope's Legate dead in 1238; quarrels subsequently arose between the scholars and the town, between northmen and southmen; many scholars left Oxford, and went to Northampton, where they fought bravely against the king, when he invested the place. Some Cambridge scholars subsequently joined them about 1258, and they began a University, with the leave of the king. Fuller commends "their judgment in the choice of so convenient a place, "where the air is clear, yet not over sharp; the earth fruitful, yet not over "dirty; water plentiful, yet far from any fennish annoyance; and wood " (most wanting now of days), conveniently sufficient in that age. But the "main is, Northampton is near the centre of England; so that all travellers "coming thither from the remotest parts of the land, may be said to meet by "the town in the midst of their journey, so impartial is the situation of it in the "navel of the kingdom." The king believed the university would improve the town; but Oxford, the centre of the royalist forces, and only 30 miles away, was alarmed, and complained of the injury (*quod * * non mediocriter læderetur*); to avert which, Henry, four years afterwards, by letters patent, addressed "Majori et civibus suis," ordered the Northampton university to be abolished, and the scholars to quit.³

The civil wars had broken out again in 1263, and the Royalists made the first attack on Northampton, which was defended by Simon de Montfort (son of the Earl of Leicester), with many of the principal barons of that party. Henry invited them to a parley from the walls; and in the meantime near St. Andrew's Monastery, possessed by alien monks, a breach being made in the walls by Philip Basset and some pioneers, the place was carried by assault, and both the governor and the garrison were made prisoners, 1263-4.⁴ After the defeat of Henry and Prince Edward at Lewes, by the Earl of Leicester, the castle was retaken (1264); and the Montforts there celebrated a brilliant tournament.⁵ Burgesses were now summoned to parliament. "The earliest writs of summons "to cities and boroughs of which we can prove the existence are those of Simon "Montfort, bearing date 12th of December, 1264."⁶ Edward held a parliament at Northampton in 1266; some rebellious barons were deprived of their estates; and Simon de Montfort was banished. Prince Edward on Midsummer Day, in the 52nd year of his father's reign (1267-8) with upwards of a hundred knights, here assumed the Cross before his departure for the Holy Land. The Jews of Northampton were fanatically accused in 1279 of having crucified a boy on Good Friday. Two citizens from London, and twenty other towns, including Northampton, were summoned by Edward I. to the parliament of Acton Burnell (1283-4). In 1298 the burgesses of North-

¹ Rot. Liberat. 36 Hen. III. m. 15.

² Report by Commissioners on Municipal Towns, App. ii. p. 1965; Parl. Paper.

³ Fuller's History of University of Cambridge, p. 24, edit. 1840. The King's Letter, quoted by Fuller from the Close Rolls, is dated Feb. 1, 49 Hen. III., or 1265. See also Bridges History of Northampton, pp. 425-6.

⁴ Hume, A.D. 1263. Henr. de Knyghton.

⁵ Lewis, Topograph. Dict. 1265.

⁶ Hallam, Middle Ages, c. 8, Part 3.

ampton were commanded by writ to choose two representatives to meet King Edward in York. Edward I., in 1294, took all the estates of the *alien priories* into his hands, allowing each monk 1s. 6d. (= £. 217) a-week, on which Fleetwood supposes a monk might then live tolerably well. Edward I., and Margaret, his queen, kept their Christmas at Northampton in 1300; parliaments were there assembled in 1317 by Edward II.; in 1338 by Edward III., represented by the Black Prince; on 5th November, 1380, by Richard II. The last parliament held in Northampton passed the poll-tax of 3 groats, which led to Wat Tyler's rebellion. It is said to have met in the chancel of All Saints' Church.¹ This parliament sat 33 days; the knights of the county received 4s. a-day, which was equal in our coin to £. 515, or nearly 10s. 4d., and would then purchase half a quarter of wheat; those of Bedford and Buckingham received the same pay for 35 days; those of Lancashire had pay for 48 days; those of Northumberland for 51 days. In 2 Edward III. parliament sat 20 days; the knights of Norfolk and burgesses of Norwich had 28 days' wages; those from Cornwall 32 days, of which 12 were for going and returning: burgesses were allowed 2s. a-day.

By a charter of 8th Rich. II. (1384-5), the assize of bread, wine, and beer, the survey of the weights and measures, and the cognizance of forestallers and regraters were confided to the mayor.²

An Act of Parliament (the 9th Henry VI.) was obtained for paving the town at the expense of the inhabitants.³ 23rd Henry VI. (1444-5); the town obtained its first charter of *incorporation*,⁴ under the title of the mayor, bailiffs, and burgesses. The burgesses had power to elect one of their co-burgesses as mayor. Simon Bardfield was sworn into office in the town in 1478. In the same year a conduit supplied by pipes from a spring in the field east of the town, was erected southward of the market-place. The mayor, John Fox, was charged by a woolman, Richard Stormesworth, with favouring the doctrines of Wickliffe when they were first promulgated, and with harbouring James Collyn in his house, the first maintainer of Lollardy in Northampton (16th Rich. II. 1392-3).⁵ A great battle was fought on July 10th, 1460, between Henry VI. and the Yorkist army, under March, Warwick, and Falconberg; Henry was taken prisoner; Buckingham, Shrewsbury, Beaumont, Egremont, and 10000 men were slain. In 1469-70, Earl Rivers and Sir John Woodville, the father and brother of the queen, were captured in the county, and beheaded at Northampton. The Duke of Gloucester, afterwards Richard III., met Earl Rivers and Lord Gray here in 1483, and obtained possession of the young king, then thirteen years of age.

With the civil wars the power of the castle—with the progress of opinion the influence of the priory—declined, and Richard's affectation of popular measures, if it did not secure the support of the north and Northampton, left them unaffected to his successor Henry VII. Morton had, in the opening of Parliament, 1487, said: "His Grace seeth that it is not the blood spilt in the field that will save the blood in the city; nor the marshal's sword that will set this kingdom in perfect peace; but that the true way is to stop the seeds of sedition and rebellion in their beginnings; and for that purpose to devise laws against

¹ Bridges, vol. i. p. 429.

² Parl. Pap. Report of Commissioners on Municipal Corporations, p. 1996.

³ Rot. Parl. 9th Hen. VI., c. 23, cited by Bridges, vol. i., p. 431.

⁴ Parl. Pap. Report of Commissioners on Municipal Corporations, App. Part III. Northampton.

⁵ Bridges.

riots and unlawful assemblies of people, and all combinations and confederacies of them, by liveries, tokens, and other badges of factious dependence; that the peace of the land may by these ordinances, as by bars of iron, be soundly bound in and strengthened, and all force, both in court, country, and private houses, be suppressed."¹ An insurrection broke out in the north; the Duke of Northumberland was killed: it was suppressed, and the leaders were hanged at York. Leicester and Northampton had shown symptoms of disorder; and advantage was taken of it to alter the popular constitution of the boroughs. It appears to have been the design to supply the place of the castle and the priory by a burgess aristocracy, with exclusive privileges. In the fourth year of the king's reign (1488-9), a mandate was directed to the mayor, reciting that "at every election of a mayor or a burgess of the parliament, or at assessing of any lawful imposition, the commonalty of the said town, as well poor as rich, have always assembled at the common hall; that such persons be of *little substance or reason, and not contributors*, or else fall little to the charge sustained in such behalf, and have had great interest through *their exclamations and hedyngness*, to the subversion, not only of the good policy of the said town, but likely to the often *breach of the peace*, and other inconveniences increasing, and causing the full misery and decline of our said town, and to the great discouragement of some of the governors there."² The popular constitution was annulled for nearly the same reasons as 50 years before were alleged in the preamble of the Acts which disfranchised all but the 40s. (= £3.874) freeholders;³ that is, freeholders possessing land worth four or five quarters of wheat a-year.

The inhabitants were greatly dissatisfied; and at the next election, after the promulgation of the decree, insisted on their former privileges in a tumultuous way. The decree was in consequence enforced by an Act of Parliament, which enacted that the mayors, bailiffs, and other officers should be elected, and all charges assessed by the mayor, such persons as had been mayors and bailiffs of the town before, and 48 other persons nominated by the mayor, and his brethren who had before been mayors. Before this period the mayor and bailiffs were elected by all the freemen, in St. Giles's Churchyard.⁴

Henry VIII., a little before the dissolution of religious houses, despatched his librarian, Leland, on a tour of inspection through England. His commission was dated the 25th of the King's reign (1533-4). He visited Northampton, and left these Notes in his Itinerarium:⁵—"The towne of Northampton stondesth on the north side of the Avon Ryver [the Nene],⁶ on the browe of a meane Hille, and risith still from the south to the north. *At the old Building of the towne was of Stone, the new is of Tymbre.*

"There be in the walls of Northampton four Gates.

"The Castle stondesth hard by the West Gate, and hath a large Kepe. The area of the residew is very large, and bullewarkes of Yerth be made afore the Castelle Gate.

"Paroche Churches in Northampton withyn the waulles be 7; whereof the

¹ Bacon, Henry VII.

² P. 1892 of Report of Commissioners on Municipal Corporations, Part III.

³ 8th Hen. VI., cap. 7, and 10 Hen. VI., cap. 2, A.D. 1429-32.

⁴ Parl. Pap. Report of Commissioners on Municipal Corporations, App. Part III. Northampton; and Bridges, p. 433.

⁵ Edit. Hearne, vol. i. pp. 9, 10.

⁶ Tacitus mentions the rivers Antona, Aufona, and Sabrina. The first, believed by some to be the Nene, is retained in the name used in Domesday—"Northantone."

Church of Al-Halowes [All Saints] is principale, standing yn the Harte of the Toune, and is large and welle builded.

"There be in the Suburbes 2 Paroche Churches, whereof I saw one yn the west Suburbe as I rode over the weste Bridge, fairly archid with Stone, under the which Avon itself, not yet augmented with Wedon water, doth ren.

"There is a Chapelle of St. Caterine sette in a Cemiterie in the toune, longing to the Church of Al-Hallowes, where that paroch dooth byri. And I saw the ruins of a large Chapelle withoute the north gate."

Leland mentions "St. Andreas" the late [priory] of Black Monks, White Friars, and Grey Friars; the Hospitals of St. John and St. Thomas. "The Gray Freres House was the best builded and largest House of all the places of the Freres."

St. Andrews, the great house of Cluniac Friars, looked on with no friendly eyes by Dr. Layton, is thus described in a letter to Lord Cromwell:—"At Saint Androse in Northampton, the Howse is in debt gretly, the lands sold and mortgagede, the fermes let out, and the rent received beforehand for 10, 15, or 20 years. Chantreys fownded to be paid out of the lands, and great bonds of forfaitures thereupon for non-payment. The House is 400 pounds in revenewes. Jhan *Petie*, the prior now, is a bachelor of divinitie, a gret husbonde, and a good clerke, and petie it is that ever he came there. If he were *promoted to a better thing*, and the king's grace would take it into his hands, so might he recover all the lands again, which the prior shall never."¹

The quiet play on *Petie's* name, the politic way in which the head of the house was to be gained over, and the cogent reasons for seizing the possessions, are characteristic of the times and the men; but the mismanagement, improvidence, and anticipation of the revenues are easily conceived, as they have been perpetuated more or less in the English Church down to the present day. The priory was surrendered in 1538, and the prior was made first Dean of Peterborough Cathedral. Thus fell, probably without great regret on the part of the town, this house of friars, which had been founded and peopled nearly 500 years before by the Count de St. Liz and Maude; which held all the churches of Northampton under grant, and innumerable possessions besides. Its revenues were rated, on its surrender, only at £263 clear. The lease of the edifice, with one watermill, &c., was renewed at survey by the Commissioners 29 Henry VIII. (1 March, 1536) at £4, a field of 6 acres at 8*d.* an acre, and others at the same rate.² The house and the demesne lands, of nearly 700 acres, were granted by Edward VI. to Sir Thomas Smith. It was in this way "the lands were recovered again." The House of Grey Friars, founded 1245-6, and supported by the town; the House of the White Friars, founded 1271, by Simon de Montfort, with Thomas Chetwood; and the House of the Dominicans, founded about 1240, by John Dalynngton, were also surrendered in 1539. Five guilds and fraternities are mentioned in the Survey of 1548.

Northampton, as well as several other places, had fallen into decay, either in consequence of its ceasing to be a resort of the Court, or of the Civil Wars, or of Henry VIIIth's interference with the free government of the town, which was now vested in a self-elected body. Leland remarked that the old buildings were of stone, the new of wood. A worse state of things is depicted in the preamble of an Act of Parliament, 27 Henry VIII. c. 1 (1535-6). "Forso-moche as dyvers and many Howses, Messages, and Tenementis of Habitations

¹ Dugdale's *Monasticon*, vol. v. p. 187.

² Book of the Demaynes of St. Andrew's,—Dugdale's *Monasticon*,

in the Towns of Notingham, Shrewsbury, Ludlowe, Brydgnorth, Quynborowe, Northampton, and Gloucester, now are, and of long time have bene in great ruin and decay, and specially in the principal and chief streets there being, in the which streets have been beautiful dwelling houses there well inhabited, while at this day much part thereof is desolate and void groundis, with piteous cellars and vaults lying open and uncovered, very perilous for people to go by in the night without jeopardy of life." * * *

The Act proposes a strong measure, which throws light on the tenures of that time. "For remedy whereof be it enacted, that if the *owners* within 3 years after proclamation by the mayors, sheriffs, or bailiffs, do not sufficiently re-edify and build the *houses*, it shall be to the *lords* of whom such vacant ground is holden to enter immediately, and have it to them and their heirs for ever." If the said lords do not re-edify the building on the vacant ground within 3 years, the mayors, sheriffs, bailiffs, or commonalty of the towns are to have and to hold it for ever, clearly discharged of all rents going out of the same; if the mayor, &c., do not build, then the ground is to return to the first owner. Granting that this measure was calculated to increase the number, it was not likely to improve the quality of the houses.

Henry VIII. had an opportunity of seeing Northampton in 1540, when he passed through the town on his way to York. It was settled by the corporation, in 1550, that every shoemaker, who set up a shop in the town, should pay 3*os.*, namely, 2*6s.* 8*d.* to the mayor and chamberlain, 3*s.* 4*d.* to the fraternity.¹ Queen Elizabeth visited the town in 1564, and was received in state. She was presented with £26 by the magistrates on her departure. The people spent the rest of the day in bull and bear baiting. The town has still a *Bearward-street*.

When it was enacted that the Church of England should no longer be subject to the Pope, Thomas Cromwell was appointed the King's Vicegerent for Ecclesiastical Jurisdiction; and in that capacity issued certain injunctions to the clergy in the year 1538. The minister of every church was to keep a book, and to register births, deaths, and marriages. In 1547 (1 Edw. VI.), visitors enforced this among other injunctions. Under Elizabeth, the clergy had to make a protestation, in which they promised to keep the Register Book in a proper manner. The canons, which date their authority from 1 James I. (1603), prescribe very minutely in what manner entries are to be made in the parish registers, and order an attested copy to be transmitted annually to the bishop of the diocese or to his chancellor. Mr. Rickman states that 812 of the registers of English parishes commence in 1538; 1822 from the year 1538 to 1558; and 2448 from 1558 (when Elizabeth's "protestation" was brought into operation) to 1603. From this latter period the Northampton Registers date; the parish of St. Giles from 1559; of All Saints from 1560; of St. Sepulchre (marriages) from 1566, (baptisms and burials) from 1571; St. Peter from 1578 for burials and marriages, 1596 for baptisms.²

Northampton gave birth to Fletcher the dramatist, S. Parker bishop of Oxford, Thomas Cartwright bishop of Chester, William Shipley, projector of the Society of Arts, Manufactures, &c. It was also the birth-place of Brown, the founder of the Brownists. Robert Brown, the son of Antony Brown, of Tolthorpe, in Rutland, was born in Northampton.³ His family was ancient,

¹ Rev. C. H. Hartshorne's *Historical Memorials of Northampton*, p. 66.

² Rickman, *Preface to Enumeration Abstr.* 1831, vol. i., p. xxvii.-xxix.; and vol. iii. *Parish Register Abstracts*, under Northampton.

³ Collier, *Hist. Dict.*

and he was nearly allied to Lord Treasurer Cecil. He studied at Cambridge; fell into the opinions of Cartwright, the bitter enemy of hierarchies;¹ re-fined upon Cartwright's opinions, and inveighed against the Church of England. He first preached in Norwich in the year 1581, where many Dutch Anabaptists had settled. He was convened before the Bishop of Norwich and imprisoned. Lord Burleigh wrote to the bishop on behalf of his kinsman, suggesting that he was actuated by zeal rather than malignity. Brown was liberated, and placed in the hands of Archbishop Whitgift; a slight impression was made on him, and he was sent home with a letter from the Lord Treasurer, who, however, shortly after, in another letter to the father, sanctioned the repudiation of a son who would no longer be a son of the Church. Brown published a Treatise on *Reformation without waiting* in 1582. He wandered up and down the country, was committed to more than thirty prisons, in some of which "he could not see his hand at noon day," and enduring great hardships, went at length to live at Northampton, where he met with sympathy and support. He was industriously labouring to establish his sect, when Lindsell, Bishop of Peterborough, sent him a citation to appear before him, which Brown refused to obey. He was excommunicated. This last stroke produced such an effect on his mind that he was induced about 1590, at the instance no doubt of his noble kinsman, to accept the rectory of Achurch, Northamptonshire. "His parsonage," says Fuller, "he freely possessed, allowing a sufficient salary for one to discharge the cure; and though against them in his judgment, was contented, and perchance pleased, to take the tythe of his own parish."²

It is perhaps the only instance in which the founder of a religious sect has been the first apostate from its ranks; for such men do not often find a statesman of Lord Burleigh's insight, power, and perseverance to take an equal interest in their orthodoxy. The same overruling policy that by keeping Elizabeth a virgin queen, imprisoning Mary, and bringing her to the block at Fotheringay, made her son a Protestant, and placed the crown of England and Scotland on his head, pursued Brown; first by kind personal interference, Whitgift's eloquence, paternal influence; then by persecution, imprisonment, starvation, the terrors of excommunication—the allurements of a quiet church living: and finally triumphed over the founder of a sect which one day was to number among its members Cromwell, Milton, and the Independents.

The Brownists ridiculed the questions put to infants in baptism, denounced the promises made by godfathers and godmothers, and would not allow any children to be baptized whose parents were not "members of the church." They insisted that the churches were independent, and should have the choice and the power of dismissing their own pastors;³ they allowed laymen to take

¹ Fuller slyly traces this to a slight passed on Cartwright by Elizabeth, who, in the Philosophy-Scholar Act, favoured his rival disputant, Preston, "with her looks, words, and deeds," calling him her scholar—*scholare suum*. Preston was "a handsome man," and "had dealt with the Graces"—Cartwright with the Muses. Cartwright's preaching, however, filled St. Mary's Church; and once, at evening prayer, "all the scholars, save three, cast off their surplices, as an abominable relic of superstition."—Fuller, *Univer. Cambridge*, anno 1567.

² Fuller, who says he was born near Brown's residence, introduces as usual a good deal of antithetical raiillery in the life: thus—"He had in my time a wife, with whom for many years he never lived, parted from her on some distaste; and a church wherein he never preached, though he received the profits thereof."

³ *Episcoporum tantum autoritate et potestate ministri non sunt creandi; multò minus in musæo aut loco quopiam clanculario; sed ab ecclesia electio fieri debet*: was one of the propositions set down by Cartwright, when summoned by Vice-Chancellor Whitgift to give an

a part in the ministry. Brown lived to the age of 80, and though driven into a living, his life was a stronger argument than any he had written in favour of his doctrine. He also died the first *rate*-martyr. His godson, the constable of the parish, called upon him one day, and somewhat rudely required the payment of a rate. Brown refused to pay it, and was carried before a neighbouring justice, who, in return for some mild expostulation, only received abuse. The infirm fiery old man was carried on a feather bed in a cart to Northampton Gaol, where he soon sickened and died¹.

The Puritans, in the reign of Elizabeth, had many abettors both in the town and county of Northampton, disaffected to the doctrine and liturgy of the Church of England. They had frequent conferences here relating to the *Book of Discipline* and other matters.² The town was a stronghold of the Independents and Baptists in the seventeenth century.

Camden, in 1607, after remarking that Northamptonshire is a plain well-peopled county, adorned with the seats of nobility, and full of towns and churches, says, "the town itself seems to have been built entirely of stone, has handsome buildings, is large, and surrounded by walls from which one has a prospect of a spacious plain every way."³ Camden refers to the depopulating effects of enclosures; and this year the country people rose, and attempted to destroy the enclosures of the commons of the county, without exercising any other kind of outrage. Reynolds, the leader of these "levellers," called Captain Pouch, was hanged.

Plague, which ravaged London in 1636, where 23359 persons died, appeared the year following in Northampton, when 500 persons perished in 5 months.^(?)

Northampton in the civil wars sided with the Parliament. In 1642 it was garrisoned under Lord Brooke; the walls were repaired, the fortifications strengthened. Saltpetre collected out of the old cellars in the town was converted into powder at the mill on the brook in Cowmeadow.^(?) The county raised £5000 and 300 horse, and, on the approach of the Cavaliers, the fortress "played against them"; with two pieces of ordnance. The Earl of Essex arrived on September 9, 1642, at the general rendezvous in Northampton, where 15000 men were assembled. Lieut.-General Cromwell was here, with a good body of horse and foot, in March, 1645. His foot marched through without shoes and stockings in 1648; the town readily sent 1500 pairs of its useful staple after him to Leicester. Fairfax, at the head of 6 regiments and 500 dragoons, carried through the town £200000 to the Scotch army in 1647.⁴ The military levellers, after the beheading of Charles, with two troops of horse, under the command of one Thomson, seized the ordnance, magazines, and monies lodged at Northampton, where many joined them in 1649. They were speedily subdued by Cromwell. In 1662, by the King in Council, the walls of Northampton were ordered to be demolished; part of the castle was taken down and the site was sold. The priory and the castle raised by the feudal baron of the Conqueror were destroyed by the Crown. To make all things new, one catastrophe was wanted.

Leland, in 1535, states that the old houses were of stone, the new of wood; to Camden, in 1607, "the town itself seemed to have been built entirely of

account of his opinions at Cambridge. The ecclesiastical historians trace Brown's doctrines to the Donatists.

¹ Ninth Book of Fuller's Church History; and History of the University of Cambridge. Collier's Eccles. History, by Barham, vol. vii. p. 1—3. Collier's Hist. Dict., and Art. R. Brown, in Biograph. Britan.

² Bridges, vol. i., pp. 430-1. ³ Camden's Britannia, by Gough. The edition of 1607.

⁴ Fairfax MS., late in the possession of John Newington Hughes, Esq., Winchester

stone;" and the secretary of Cosmo, the third Grand Duke of Tuscany, who visited the town in his travels (1669), describes the streets and buildings as in a respectable style of architecture, the greater part built of stone and earth, and a good deal ornamented.¹ A writer in 1675 says, "Northampton might well contend with the best inland city or town that is not seated upon a navigable river, for sweet and wholesome air, pleasantness of situation, plenty and cheapness of corn and butchers' meat, good ancient buildings, dry and commodious cellarage, broad and cleanly streets, a spacious market-hill, fine and profitable gardens and orchards within the walls, while it was beautified and honoured with their standing." This was its "figure and situation as it stood and flourished."

Shortly after noon, on Monday, the 20th of September in that year (1675), the cottage of a "common woman," who lived in a lane at the upper end of St. Mary's Street, took fire. The street was full upon the wind, far from help, and from the principal part of the town, "which was to be the theatre of judgment," and consisted of the poorer sort of houses, thatched with straw. The hideous cry of "Fire! Fire!" came up post to town; but when some heard that it was so far off, and in meaner dwellings, they made light of it. Within an hour the last house at the opposite eastern quarter of the town was in flames; the owners of the wares and goods, which covered the spacious market-hill, were enclosed by a wall of fire, and narrowly escaped through a small door in the only house of the square left standing. In six hours the chief part of the place was consumed. The mayor passed the night under a shed: next morning the town lay reeking and burning everywhere, and apprehensions were entertained of a fresh outbreak, when *three* rainbows appeared in the heavens, the harbingers of a great shower which fell and quenched the fire. Six hundred houses, in which 700 families dwelt, All Hallows Church, and the market cross, were burnt down. The trades-people had laid in a larger stock than usual from London and from Stourbridge fair; their goods fed the flames. Eleven lives were lost. The property destroyed was given in at £128000 odd money, besides the church, valued at £50000.²

The Earl of Northampton, who, as well as his father, had distinguished himself in the civil wars, was recorder, and took an active part in relieving the sufferers on the spot. And subsequently, at Westminster, on the King coming to the House to prorogue Parliament, he prevailed upon His Majesty to wait awhile, till a Bill could be prepared to receive the Royal Assent for rebuilding the town. His Majesty, it is said, expressed on this occasion some surprise at his generous regard for a place which had offered great indignities to him, and to the earl his father.³ A noble generosity was one of the few things which could surprise this Prince; who, however, was himself as ready to forget injuries as services. Charles gave the town 1000 tons of timber out of Whittlewood Forest, and remitted the chimney-money for seven years; which is duly commemorated on the tablet under his statue over the portico of

¹ Travels of Cosmo III., pp. 245-6.

² The State of Northampton from the beginning of the Fire, *Sep.* 20, 1675, to November 5, by a Country Minister, also Bridges; vol. i., p. 432. Dr. Conant says the fire broke out September 23. See in the Life of Dr. Conant—a letter to his cousin on the fire.

³ Bridges, vol. i., p. 440. "After a short combat near Stafford, between the Earl of Northampton and Sir John Gell, the former, who commanded the King's forces, was killed, while he fought with great valour; and his forces, discouraged by his death, though they had obtained the advantage in the action, retreated into the town of Stafford."—Hume, an. 1642. This was Spenser, Lord Compton, Earl of Northampton. His son James is referred to in the text. The title of Northampton had become extinct in the families of St. Liz, Bohun, Parr, Howard. William, the second Baron Compton, was created Earl of Northampton in 1618. The

All Saints' Church. £25000 were collected by briefs and private charity. The judges, the justices of the county, the mayor of Northampton, and eleven others, were made a Court of Record, to decide cases of dispute, and to make rules in respect of form, party-walls, and buildings. The houses were to be covered with lead, slate, or tile. A person not free, building a house worth £300, was to have his freedom; places not built on in three years, were to be disposed of—a reminiscence of the Act of Henry VIII.¹ With the exception of floods, and two shocks of earthquakes, on September 30, 1750, and October 28, 1776, the Chronicles of Northampton have since had no natural phenomena, nor any political convulsions of importance to record.

A charter, granted 1663, placing the government in the hands of a mayor, bailiffs, ex-mayors, ex-bailiffs, and a common council; "the company of 48," was included in a pretty general forfeiture, and a new one was issued (1683), appointing only 40 burgesses, and reserving to the Crown the power of placing or displacing the members. This impracticable charter was declared void, and the former charter was in force till 1795.

In the beginning of the 18th century education made some progress in Northampton. John Dryden gave the famous George Inn for the endowment of the Blue Coat School in 1710; Mrs. Becket and Mrs. Sargeant founded a girls' school in 1738. The *Northampton Mercury* was established in 1720, and the publication has been continued ever since by the same family. One of the early numbers contained an advertisement announcing that the house of Sir Arthur Haselrigg was to be let, and "with it, if desired, the Castle of Northampton, and two large orchards planted with young fruit-trees, and very good and convenient pasture-ground for horses and cows, useful to a family; and also a very commodious kennel for a pack of hounds, situate in the said castle orchard."

As the learned nonconformist ministers who first separated from the Church advanced in years, or died, the Dissenters began to feel the want of institutions for the education of their pastors. Dr. Watts was consulted; and an academy which had been commenced by Mr. Jennings at Kibworth, in Leicestershire, was re-organized on a comprehensive and scientific basis, by Dr. Doddridge, and established at Harborough, in the house of Mrs. Jennings, whose daughter married Dr. Aikin, and was the mother of Mrs. Barbauld. Dr. Doddridge had "a call" from the *Castle-hill* congregation, which was "very numerous;"² and went with his academy to Northampton in 1729, where it remained till his death, when it was removed in 1752 by the trustees, and placed under Dr. Ashworth at Daventry.³ Such a man as Doddridge could not be 22 years at the head of an academy, and educate 200 "young men" in a small town without giving some impulse to the intellect and benevolence of the members of the Church, as well as to the Dissenters. Among the results of this and of the other movements in the town the most important for our purpose are the accounts kept since 1735, in the parish of All Saints, "containing the greater part of the town, of the ages at which all have died there; and since 1741, of the number of males and females that have been christened and buried, *Dissenters included*, in the whole town." A census was taken as early as 1746.

"In 1746, an account," says Dr. Price, "was taken of the number of houses,

present noble marquis is the tenth of the family which has enjoyed the dignity of earl or marquis in eight generations, through 229 years.

¹ 22 Ch. II., 1675.

² Diary and Correspondence of Dr. Doddridge, vol. ii., p. 510.

³ The academy was afterwards removed to Northampton and to Wymondley in Hertfordshire. It is now near University College, London. I am indebted for a part of the information to Mr. Baker, the author of the County History, who has sacrificed his health and fortune on that work.

and of inhabitants in the town. The number of houses was found to be 1083; and the number of inhabitants 5136. In the parishes of All Saints and St. Giles, the number of male and female heads of families, servants, lodgers, and children, were particularly distinguished. The heads of families were, 707 males; and 846 females. Children, males 624; females 759. Servants, males 203; females 280. Lodgers, males 137; females 287. In St. Peter, males 99; females 129. In St. Sepulchre, adults 638; children 427. In the last parish the sexes were not distinguished."

"The christenings and burials in the whole town for 40 years, from 1741 to 1780, have been as follows:—

Christened	{ Males 3218 Females 3108 }	6326.	Annual medium 158.
Buried	{ Males 3757 Females 3823 }	7580.	Annual medium 189½.

"In the parish of All Saints, from 1735 to 1780, or 46 years:—

Christened	{ Males 2152 Females 2068 }	4220.	Annual medium 91¾.
Buried	{ Males 2377 Females 2312 }	4689.	Annual medium 102.

The census of 1746 may be put more conveniently in a tabular form:—

	Males.	Females.	Males and Females.
Heads of families	707	846	1553
Children	624	759	1383
Servants	203	280	483
Lodgers	137	287	424
All Saints and St. Giles	1671	2172	3843
St. Peter	99	129	228
St. Sepulchre	463?	602?	1065
St. Peter and St. Sepulchre	562	731	1293
Northampton	2233?	2903?	5136

The Bills are presented annually to the mayor, and the rest of "the worthy inhabitants of the town of Northampton," by the parish clerk of All Saints. The Bill closes with an admonitory piece of poetry addressed to the inhabitants who have not quitted "the Nen's barge-laden wave."¹—(See a specimen of the Bill, page 328.)

A general infirmary was founded in 1747. It was first opened with 40 beds for in-patients in George Row. In 1750 it was enlarged so as to ac-

¹ Cowper, who resided at Weston, was the author of the stanzas for the years 1787-93, "composed for John Cox, parish clerk of Northampton." He gives a graphic description of his first interview with Mr. Cox:—"On Monday last, Sam brought me word that there was a man in the kitchen who desired to speak to me. I ordered him in. A plain, decent, elderly figure made its appearance, and, being desired to sit, spoke as follows: 'Sir, I am clerk of the parish of All Saints, in Northampton, brother of Mr. C., the upholsterer. It is customary for the person in my office to annex to a bill of mortality, which he publishes at Christmas, a copy of verses. You will do me a great favour, sir, if you would furnish me with one.' To this I replied, 'Mr. C., you have several men of genius in your town, why have you not applied to

commodate 60 in-patients. In 1784 the in-patients were increased to 70. In 1789, lands, formerly part of the property of the St. Andrew's priory, were purchased for £1000; and a new hospital, which cost £11833, was opened in 1793 for the admission of patients. In 1803 vaccination was introduced. A library of 3000 volumes, a museum, and convalescent ward, are attached to the infirmary.

The town "ever laboured under a scarcity of water;" this was felt sensibly at the fire. An attempt was made to supply it with water in 1722 from a place half-a-mile distant. After the expenditure of "some thousand pounds, by William Wykes, Esq., one of our late candidates," says the *Northampton Mercury*, "this was happily effected by the force of an engine." The works were abandoned in 1753. An engine and two reservoirs were constructed in 1837; whence the water readily reaches every part of the town. The navigation of the Nene was extended to Peterborough, under an Act of 12 Anne, and another in 1725; to Oundle, Thrapstone, Higham Ferrers, Wellingborough, in 1726; and to Northampton in 1762; and in 1815, the river received an accession of traffic by a branch of the Grand Junction Canal from Blisworth.

In a sunken ground called Potter's Field, close to the Grey Friars, a kiln was recently found, with fragments of a yellow and a red pottery, and some covered with a green glaze.¹ According to tradition, the Londoners formerly sent their cloths to the Scarlet Well, to be dyed scarlet, "wherein this spring excelled all others in the kingdom: upon the discovery of the scarlet grain [cochineal] it became neglected."² The men of Northampton, in the reign of John, paid £10 that they might be able to buy and sell dyed cloth as they had been accustomed to do in the time of King Henry. A cotton mill was attempted at an early date, but did not succeed. Stockings were formerly made here; and it is stated that Alsop, from this county, introduced the stocking-frame into Leicester in 1680. Lace-making was carried on at an early period, but has latterly been deprived of due remuneration by rivals who have had the command of machinery. Fuller says that it was famous in his day for saltpetre and pigeons. In one of the most useful arts to which machinery has never yet been applied, Northampton now stands, and has long stood, unrivalled. As, for reasons which cannot be readily explained, Worcester manufactures gloves, Leicester stockings, Nottingham lace, Coventry ribbons, Kidderminster carpets, Sheffield knives—shoes are the staple of this town. It is an old saying, that "you may know

some of them? There is a namesake of yours in particular, Cox, the statuary, who, everybody knows, is a first-rate maker of verses; he, surely, of all the world, is the man for your purposes.' To which the clerk replied, 'Alas! Sir, I have heretofore borrowed help from him, but he is a gentleman of so much reading, that the people of our town cannot understand him!'

"I confess to you, my dear, I felt all the force of the compliment implied in this speech, and was almost ready to answer, 'Perhaps, my good friend, they may find me unintelligible too, for the same reason.' But, on asking him whether he had walked over to Weston on purpose to implore the assistance of my muse, and on his replying in the affirmative, I felt my mortified vanity a little consoled, and, pitying the poor man's distress, which appeared to be considerable, promised to supply him. The waggon has accordingly gone this day to Northampton, loaded in part with my effusions in the mortuary style. A fig for poets who write epitaphs upon individuals! I have written one, that serves two hundred persons."—Letter to Lady Hesketh, Nov. 27, 1787, in Cowper's Works, ed. by Grimshawe, vol. iii., p. 271.

¹ Wetton's Guide, pp. 48, 84, 41.

² Morton, Hist. of North. So early as the eleventh and twelfth centuries the *English scarlet* cloth is mentioned. The Emperor Henry III., about the year 1050, conferred Nimeguen upon the Count of Cleves on condition of his delivering to him yearly three pieces of English scarlet cloth—*tres pannos scarlatinos Anglicanos*. Another passage is quoted by Beckman: *pannos scarlacos bene rubeos Anglicenses ardentis coloris*.—Hist. of Inventions, Art. Kermes. Mag. Rot. Pip. 4 John, Rot. ii. 6.—Hartshorne.

when you are within a mile of Northampton by the noise of the lap-stones." So early as the reign of Edward VI., regulations were made which show that the shoe trade was an important branch of the business of the town.¹ The army, the colonies, London, and the principal markets, are now supplied with shoes from Northampton. Immense contracts have been made, and the demand during the war was perhaps the first cause of the rapid progress of the population. In 1831, 1322 males, aged 20 and upwards, were returned as boot and shoemakers; in 1841, the numbers had increased to 1821; at the same time there were 442 males under 20, and 346 females classed under the same trade in a population of 10655 males and 10587 females. The males aged 20 and upwards were 5756, so that nearly 1 in 3 of the men in the town is a shoemaker. "The town is well built and clean," say the Municipal Boundaries Commissioners; "with the exception, however, of a few of the principal streets, the houses present a uniform appearance, and are almost entirely occupied by journeymen shoemakers, and the other workmen employed in the trade." The proportion of shoemakers in the county is 5237 in 52369, or 1 in 10; the proportion in all England is 144601 in 3897336, or 1 in 27 males of the age of 20 and upwards. In the town of Stafford 899 in 2704, or 1 in 3 men are shoemakers; in Carlisle only 205 in 5784 are shoemakers; in Bedford 212 in 2272 at the same ages.

There were three iron foundries in Northampton;² and 99 males above the age of 20 were returned as iron-founders or moulders in 1831, and 67 in 1841.

It would be wrong to look upon the town as a mere place for the manufacture of shoes. It is the centre of a flourishing agricultural county. It is the mart at which the agricultural produce of Northamptonshire is exchanged for furniture, clothing, books, and articles of foreign commerce; the residence of surgeons, lawyers, and other professional men, whose sphere of action extends over a wide circle; the place of re-union for the gentry, freeholders, farmers; and the site of the county institutions. It is thus that the existence of the numbers following the various occupations returned at the census can be accounted for. In 1841 there were returned at the age of 20 and upwards in the town, 1 barrister, 24 attorneys, solicitors, and law-students, 4 physicians, 25 surgeons, 21 schoolmasters, 52 schoolmistresses and governesses, 23 booksellers, 83 grocers, 65 drapers, 180 tailors, 88 curriers, [1821 boot and shoemakers], 190 masons, statuarys, plasterers, paviours, bricklayers, 165 carpenters and joiners, 30 whitesmiths, 59 painters, plumbers, and glaziers, 60 blacksmiths, 85 innkeepers and beer-shop keepers, 14 of whom were women. Situated on the great north road, its inns were, at an early period, of considerable note. The Peacock had galleries round the open yard, into which the pack-saddle horses were driven, to be unloaded in security. The brewers in 1841 were 23, butchers 92, bakers 87, gardeners 121; 345 were returned labourers, 59 agricultural labourers, 183 male servants at the age of 20 and above, 109 under 20; 550 female servants of the age of 20 and upwards, 368 under 20; 133 men and 320 women were returned as persons of "independent" means; 160 persons, chiefly adults, slept there in barns and tents on the night when the census was taken (June 6-7), 236 in boats and barges. There were 163 lunatics in the asylum, 168 prisoners in gaols.

Northampton contains the four parish churches, All Saints, rebuilt in 1780, and the ancient structures of St. Giles, St. Peter, and St. Sepulchre. St. Katherine, with 1200 sittings, was erected by public subscription in 1838;

¹ Extracts from the Chamberlain's Book of Minutes. Historical Memorials, by Rev. C. A. Hartshorne, pp. 86-89.

² Report of Commissioners on Municipal Boundaries, p. ii.

St. Andrew, a church of the same size, in the same way, in 1841. A new church of St. Edmund is already endowed. The site of old St. Edmund is a cherry-orchard; that of St. Bartholomew was known as Lawless (for Lawrence's) churchyard; St. Margaret's church was in St. James's-end, in the parish of Duston; near the Inn of St. Mary's a few arches are hidden in a cellar of St. Mary-street. There is no trace of St. Martin's in the street of that name. St. Michael's gave its name to a lane which is now called Wood-street.

The following 14 Dissenting *chapels* are in the parish of *All Saints* :— The Old Baptist Chapel, College-street; ¹ the Independent chapels in King-street and Commercial-street; Particular Baptist, Kingswell-street; Wesleyan, Gold-street; Primitive Methodist, Horsemarket; Wesleyan Association, King-street; Unitarian, King-street. In *St. Sepulchre's parish*, the new Wesleyan chapel, Todd's-lane; Mount Zion, Baptist chapel, Grey Friar-street; Roman Catholic chapel (new), Leicester-road. Near is a small Catholic seminary, and a community of nuns from Belgium has been lately introduced. In *St. Giles's parish*, Providence Chapel (Calvinist), St. Giles's-street; the Friends' Meeting-house, Wellington-street. In *St. Peter's parish* is the Old Independent Chapel at which Dr. Doddridge ministered.²

Besides the Free Grammar School, recently restored, and the Girls' School, the All Saints' Parochial School, in connexion with the National Society, will hold 600 children. The British Schools were built in 1845. A Mechanics' Institute, established in 1832, is flourishing; it has 7500 volumes, a lecture-room, and a museum. The General Library was established in 1800. Wetton's Library and News-room is opposite the Post-office. A building for a Temperance-hall and public rooms has been recently built in Newland. An Agricultural Book Society was recently established: a Protection Society was commenced in the year 1844; also an Architectural Society. There are 20 religious societies. Two newspapers are published at Northampton; the *Mercury* since 1720, the *Herald* since 1831. Freemasons, Odd Fellows, Foresters, and Free Brothers have lodges in the town. There is also a Poor Allotment and an Artizan Society. A Benevolent Loan Fund was established in 1840, and has been found a most valuable institution, especially in seasons of sickness or depression of trade; since its commencement, £15000 have been lent to 4000 persons, in sums varying from £1 to £15, and the total loss up to 1847 has been less than £5. St. John's Hospital is (or ought to be) governed by a master and two co-brothers or chaplains, who are appointed by him. The master himself is appointed by the bishop, and has a house in the adjoining grounds: the house is allowed to go to ruin, the master not being resident. Eight poor people, appointed by the master, were maintained here, with lodging and firing in the common hall, and an allowance of 1s. 1d. weekly. At the survey in 1535, the revenues, clear of all deductions of salaries, &c., were valued at £57 19s. 6d. The rents are stated to be very productive, but unfortunately the recipients of the charity feel but little benefit from that source. The charity is now said to be in Chancery. The Bishop of Lincoln being visitor, the Charity Commissioners had no power over it when they held their visitation in the town.³ St. Thomas's Hospital, founded in 1450, has apartments for 20 poor women, who are allowed a weekly stipend of 4s., and

¹ Dr. Ryland was the pastor for 30 years in the 18th century.

² Letter from Mr. W. Cornfield, registrar.

³ Editor of Wetton's Guide.

£1·375 annually; 50 out-pensioners have each £8 yearly; one who has been a householder has £60 a-year in the hospital. The income is £858, the charges £723: the surplus is accumulating (1834) to provide a more comfortable and healthy dwelling.¹ For benevolent purposes there is, besides the General Infirmary, the Royal Victoria Dispensary, opened in 1845; it has 1800 members, and is conducted on the provident principle. The members are entitled to attendance by a medical officer, if necessary, at their own homes. The members pay 1*d.* a-week, or 2*d.* a-week for a man, wife, and all children under 14. About £1300 were raised for the buildings, &c.; and subscriptions of £200 a-year are required for drugs and other matters. The remuneration appears to be inadequate. There are Public Baths in the same building. The *Lunatic Asylum* and 24 acres of land cost £35000, raised by legacies and donations; it was opened in 1838, and will hold 240 inmates. Its income is drawn from the contributions of the inmates. The Union Workhouse, erected in 1836, will contain 304 paupers. At the census it contained 136.

The average amount of money annually raised and expended for the relief of the poor in the 7 years, 1838–44, was £4168 within the borough: namely, £2214 in All Saints, £1954 in the other parishes; which is £·196 a head in the borough, £·280 a head in All Saints, £·146 in the other parishes. The rent of the houses of the borough was £68782: the rate on this house-rent was £·060, and somewhere about £·012, or less than 3*d.* in the pound, on the income of the inhabitants.

NAMES OF PARISHES.	Amount Expended for the Relief of the Poor.							For 7 Years.	
	1838	1839	1840	1841	1842	1843	1844	Total.	Average.
All Saints . . .	£. 1959	£. 1840	£. 1816	£. 1925	£. 2960	£. 2511	£. 2484	£. 15495	£. 2214
St. Peter . . .	93	85	105	68	83	114	116	664	95
St. Giles . . .	738	1173	685	692	796	954	1027	6065	866
St. Sepulchre . .	857	831	1156	755	1029	1200	1125	6953	993
	3647	3929	3762	3440	4868	4779	4752	29177	4168

NAMES OF PARISHES.	Total Number of Paupers Relieved during the Quarters ended Lady-day.							For 7 Years.	
	1838	1839	1840	1841	1842	1843	1844	Total.	Average.
All Saints . . .	342	376	321	385	590	541	669	3224	461
St. Peter . . .	17	28	30	18	41	46	38	218	31
St. Giles . . .	148	152	118	175	225	206	203	1227	175
St. Sepulchre . .	229	213	165	192	430	295	306	1830	261
	736	769	634	770	1286	1088	1216	6499	928

This table was supplied by Mr. Hodgkin, of the Poor Law Commission.

Before the year 1675 the Castle was used as a County Gaol; and here likewise were kept the two Courts of Justice.

For the purposes of justice and police there are now the *Town Hall*, in

¹ Commissioners of Inquiry into Municipal Corporations, Part 3, 1834.

which the business of the Borough Sessions and of the Small Debts' Court is transacted, and in which the Corporation hold their meetings: the *County Hall*, in the Palladium style, has courts in which the Assizes, Quarter Sessions, and County meetings are held. The County Gaol, rebuilt "on the model system," at an expense of £25000, is calculated to receive 150 prisoners. The prisoners under confinement June 6–7, were 127. The former gaol cost £16000 in 1794, and was on Howard's plan. The Town Gaol is on the separate system; it will hold 80 prisoners, and cost, in 1846, £12000, besides £5000 for the land. On the petition of the inhabitants in 1793, barracks were erected in 1796.

There are two banking establishments; the Northamptonshire Banking Company and the Union Bank. There is a savings' bank. Money orders are granted at the post-office, by which there are two deliveries of letters daily. The London road to Leicester and York, and the road from Daventry to Peterborough and Cambridge cross in the town, and have become the principal streets. There are two bridges. The canal to Blisworth connects the town with the Grand Junction. The London and North Western Railway passes to the west of the town; the branch to Peterborough and the Eastern Counties to the south. Wednesday is the market day for vegetables chiefly; Saturday is the market day for cattle, sheep, pigs; the corn market is also numerously attended in the Market Square. Fairs are held in every month, except July and October; cheese is sold in September; a fair for wool has been opened latterly in July.

The races in March, the cricket club, the winter county assemblies, the theatre, and the billiard rooms, are the principal public amusements.

The poplars of the *New Walk* made by the corporation in 1783 were cut down; the avenue, extended towards the river, is now called the Victoria Promenade, in commemoration of Her Majesty's visit; the ditch which defended the town on the south side was filled up and planted as far as Cow Lane. A general cemetery, extending over nine acres, and laid out with taste, was commenced in 1846. The town, by a local Act, is watched, lighted, and paved, under the management of commissioners. Gas is supplied by a company established in 1823; another company (1837) supplies the town with water. These with the dispensary, the medical relief under the Poor Law, and the hospitals, are all the sanatory arrangements of which we have any notice. Before the corporations were reformed throughout the kingdom, the control of these public arrangements, which appear to belong so naturally to the town councils and the Crown, was suffered to fall into the hands of commissioners, established by local Acts. The self-elected councils had, it appears, lost the confidence of the rate-payers, who would have viewed with suspicion any extension of their powers; on the other hand, men old in office, with fixed salaries, were perhaps not anxious to see their duties extended without any certain prospect of rewards equivalent to their own estimate of additional services.

The Report of the Commissioners of Inquiry into Municipal Corporations furnishes the following additional information respecting the borough:— Charters were granted by James I., Charles II., and George III. (1796). Under the last, the governing body was composed of the mayor, aldermen (17), the bailiffs and ex-bailiffs, and the 48 common councilmen, elected for life. When the corporation was visited, the officers of the corporation were, a recorder, a deputy-recorder, a town-clerk, two coroners, a chamberlain, a warden, a treasurer, a mace-bearer, four serjeants-at-mace, a town-crier, and a

hall-keeper. Till the passing of the charter in 1796, restrictions on trade existed in favour of the freemen of the borough; but, on the granting of that charter, the restraining enactments were omitted at the desire of the corporation.

The annual rental of the property of the corporation was £1449: namely, £1039 from lands and tenements; £120 from meadows depastured by freemen; £90 for stall-ground at the market; and £200 from the tolls of the town.¹ The assessed taxes for the year ending April 5th, 1831, were £4122. The number of houses rated at £10 and upwards in 1831, was 691; worth £10 and upwards, 1087. The right of voting, prior to the Reform Act, was in the inhabitant householders occupying a distinct dwelling-house six months previous to voting, and not having received alms for twelve months. The number of electors registered in 1832 was 2497.

A freeman has right of common over about 200 acres for six head of cattle or horses; fee 6s. for a horse, 5s. for a cow. Season of depasture from the time grass is fit till Old Candlemas.

The income of the corporation . . .	£ 1449
The expenditure	1244
	£ 205

For costs incurred in a toll-case, the corporation owed £2000.

The following charges were brought against the corporation by the commissioner:—

- (1.) The election of members of the corporation has been conducted on the strictest principle of political exclusion. The mayor has never known an instance in which a person opposed to the politics of the corporation had been elected into that body. Dissenters are very numerous in the town. Scarcely any of the master manufacturers engaged in the staple trade of the town are members of the Established Church; yet since the repeal of the Test and Corporation Acts, no Dissenter has been admitted into the common council. The excluded portion is the most numerous, and of equal wealth and intelligence with the corporation party.
- (2.) The corporation have interfered largely in elections. In 1826 they voted £1000 from the corporate funds towards paying the expenses of a ministerial candidate. The costs of two law-suits in which the magistrates were involved, amounting to £350, were paid out of the corporation funds.
- (3.) They have made the charities and patronage subservient to party purposes. Sir Thomas White's Charity, a fund of £15497, is directed to be lent out to young men of "good name, fame, and condition, in Northampton." A ninth part of it is lent out in sums of £100 every year. It furnishes more than 17 loans (18?) annually. No discrimination has been shown in the distribution of the loans. They have been granted to persons settled in trade; to men advanced in life; and sometimes to persons in opulent circumstances. In a recent instance, a loan was granted to an attorney in good practice, who was said to have a good establishment, and to keep his hunters.

¹ Tolls:—2d. on every loaded waggon or cart; 2d. on every beast; 1d. on every 20 sheep; 8d. every ram; 4d. every bull; 4d. every horse; every new set of wheels shod with iron, 4d.; not shod with iron, 2d. The tolls taken at market were £10 to £12.

The town under the Municipal Reform Act of 1835 was divided into three wards, and is governed by a mayor, six aldermen, and eighteen councillors, a third of whom go out of office annually. The corporations of the nineteenth like the monasteries of the sixteenth century, had no doubt performed much good, as well as the evil brought to light by the Commissioners: let us hope that their vices will be remembered by the reformed councils only to be avoided, and the zeal of party spirit only to be surpassed in legitimate works of usefulness.

Spencer Perceval, whose portrait adorns the Town-hall and statue All Saints Church, was, in the reign of the old corporation, member for Northampton until he was assassinated in the lobby of the House of Commons. The Right Hon. R. Vernon Smith (since 1831) and Mr. Raikes Currie (since 1837), two "Liberals," are the present members; returned in 1847 by 840 and 898 votes out of 2057 registered electors. The politic institution of a burges oligarchy by Morton and Henry VII., though it did not prevent Northampton from taking an active part in the parliamentary and revolutionary cause, yet in more auspicious times effected for a long time the purposes for which it was projected.

Progress of the Population of Northampton.

The censuses trace the slow growth of Northampton through more than seven centuries.

Years.	Houses.		Population.			Decennial Increase of Population in the period preceeding	Time in which the Increase took place.	Years.
	Inhabited.	Un-inhabited.	Males.	Females.	Total.			
1084	295	35½	..	..	1475?	?	Indefinite	1084
1746	1040	43?	2233?	2903?	5136	55	662 years	1746
1801	1322	49	3244	3776	7020	343	55 "	1801
1811	1576	24	3974	4453	8427	1407	10 "	1811
1821	2023	30	5200	5593	10793	2366	10 "	1821
1831	3091	120	7619	7732	15351	4558	10 "	1831
1841	4138	357	10655	10587	21242	5891	10 "	1841

Year 1084. The houses are enumerated in the Domesday Survey. The population is estimated by assuming five inhabitants to every inhabited house. Some of the inhabitants had probably been carried off by the Northumbrians in 1065 (*vide ante* p. 295), and others had been driven away by the seizure of property after the Conquest, of which Domesday furnishes such ample evidence. A few inmates of religious houses should perhaps be added to this estimate. The existence, in 1108, of one church to every 30 houses and 148 inhabitants, is no proof of the inaccuracy of the Domesday census. Churches were no doubt small, and were frequented by the whole of the inhabitants. In London and all the Saxon towns the churches—with religious houses, the only public institutions of the age—were numerous. The church-rate, poor-rate, and tithes were collected under one head, as tithes. The priest had to keep a school, minister to the poor, provide for the stranger and wayfarer in a building near the church, keep standard weights and measures, and measure

field labour.¹ The priesthood (clerus) included the whole learned class; the church was a church, school, almshouse, inn, library, benevolent and scientific institution, all in one. The churchyard, we have seen, was once the market-place and the polling booth. The town churches, within the walls for security, were also no doubt used by the people of the surrounding country.

1675. 600 houses, out-houses, &c., containing 700 families, were burnt down in this year (*vide ante*, p. 304). The Rebuilding Act says "*the greater part*" of the town was burnt; Brydges repeats this with the variation, Northampton was "almost consumed." Both are sufficiently vague. Calculated on the rate at which inhabited houses increased from 1746 to 1801, the houses in 1675 must have been about 800, of which 763 were inhabited. It is difficult to suppose them more, if 600 houses and out-houses made the "greatest part of the town."

1746. The 1083 "houses" returned probably included "uninhabited houses," which, for the sake of comparison, it has been assumed were 43. The proportion of males and females in St. Sepulchre, stated to contain 1065 inhabitants, was estimated from the 1770 males and 2301 females returned in the other parishes.

1801, 1811, 1821, 1831, 1841. The censuses do not include military.

If the population had increased uniformly in arithmetical progression, the seventh column shows that the numbers added to the town were 55 every 10 years for 662 years (1084-1746), 343 every 10 years for 55 years (1746-1801), and so on. The population did not quite quadruple in the first 662 years (1084-1746); in the next 75 years (1746-1821) it doubled; it nearly doubled again in the 20 years 1821-41. If the population increased uniformly in geometrical progression during each period, the rate of increase, deduced from the houses, was 0.191 per cent. annually (1084-1746), and 0.426 annually (1746-1801); and, deduced from the population, 2.81 annually from 1801 to 1841. At the three dates the population would double in 364, in 159, and in 25 years.² The females were much more numerous than the males in the earlier censuses of 1746, 1801, 1811; in 1841 the males slightly exceeded the females, to be ascribed probably to the rapid progress of the staple trade. Shoemakers increased from 1831 to 1841 more rapidly than the general population in England, and much more rapidly than the population of Northampton.

Annexed is a detailed return of the population of the four parishes at the last five censuses:—

¹ Thorpe, *Ancient Laws and Institutes*, vol. i., p. 342; Lingard, *Hist. Anglo-Saxon Church*, pp. 189, 119.

² Let $r = 1 +$ annual rate of increase, then the logarithms of r for the three periods are—

Inhabited Houses,

$$\begin{aligned} 1084-1746 \quad \lambda r &= \cdot 0008266 \\ 1746-1801 \quad \lambda r &= \cdot 0018451 \end{aligned}$$

Population,

$$\begin{aligned} 1746-1801 \quad \lambda r &= \cdot 0024675 \\ 1801-1841 \quad \lambda r &= \cdot 0120215 \end{aligned}$$

The period of doubling (x) is deduced from the formula—

$$x = \frac{\lambda 2}{\lambda r}, \text{ or } \lambda x = \lambda(\lambda 2) - \lambda(\lambda r).$$

Houses and Population of the Four Parishes in the Borough of Northampton.

PARISHES.	HOUSES.										POPULATION.				
	Inhabited.					Uninhabited.					Total.				
	1801	1811	1821	1831	1841	1801	1811	1821	1831	1841	1801	1811	1821	1831	1841
All Saints	786	919	1114	1453	1559	29	13	12	41	130	Not returned.	22	7	11	1
Saint Giles	238	296	408	609	779	7	3	5	30	50	..	..	12	4	11
Saint Peter	54	59	76	129	198	3	..	3	10	32	..	..	..	1	3
Saint Sepulchre	244	302	425	900	1219	10	8	10	39	123	..	..	14	12	11
Priority of St. Andrew or town part in 1841 . . . . .	..	..	..	..	383	..	..	..	..	22	..	..	..	..	22
	1322	1576	2023	3091	4138	49	24	30	120	357	23	33	28	48	48
PARISHES.	Males.					Females.					Total.				
1801	1811	1821	1831	1841	1801	1811	1821	1831	1841	1801	1811	1821	1831	1841	
All Saints	1917	2300	2802	3636	3994	2096	2571	2998	3697	3904	4013	4871	5800	7333	7898
Saint Giles	571	653	1012	1454	1866	765	786	1120	1571	2032	1336	1439	2132	3025	3898
Saint Peter	168	210	256	381	512	205	183	220	325	517	373	393	476	706	1029
Saint Sepulchre	588	811	1130	2148	3112	710	913	1255	2139	3012	1298	1724	2385	4287	6124
Priority of St. Andrew ¹ or town part in 1841 . . . . .	..	..	..	..	1171	..	..	..	..	1122	..	..	..	..	2293
	3244	3974	5200	7619	10655	3776	4453	5593	7732	10587	7020	8427	10793	15351	21242

¹ The Priory of St. Andrew, extra-parochial, consists of lands formerly belonging to the Priory of St. Andrew, a great portion of which has been formed into streets, which adjoin the parishes of St. Giles, St. Sepulchre, and Kingsthorpe. The return includes the General Infirmary and the General Lunatic Asylum, containing respectively 120 and 157 persons.

The mortality at all ages in Northampton was about 3·388 per cent., or 1 in 29·5, at all ages, in the 40 years 1741-80, and much higher among males than females.

—	Years.	Persons.	Males.	Females.
Population enumerated	1746	5136	2233?	2903?
„ estimated from enumerations in 1746 and 1801	1761	5593	2432	3161
Burials registered at Church and Dissenting Burial Grounds in 40 years	1741-80	7580	3757	3823
Burials registered annually . . . . .	..	189·5	93·9	95·575
Annual mortality per cent. . . . .	..	3·388	3·863	3·023
Or one death to nearly . . . . .	..	30	26	33 living.

The annual value of real property in Northampton increased more rapidly than the population. The rent of the houses not held by the king, the farm of the town, (including, among many other royal perquisites, the rent of the burgesses,) and the profits of the borough appropriated to Judith may be fairly set down as much more than the annual value of the lands and houses. In the coin of the present day it did not exceed £140 of revenue, which would then purchase about 140 quarters of wheat, for it is probable, from the few prices of wheat quoted by historians, that silver equal in weight to £1 of our coin would purchase a quarter of wheat.¹

	Nominal Rent.			Value in Coin of the present day.	
	£.	s.	d.	£.	
Rent of 230½ houses	10	11	8	× 2·9 =	30·691
Farm of Town, with Rent of 86 houses	30	10	0	× 2·9 =	88·450
Payment to Judith	7	0	0	× 2·9 =	20·300
Profits, &c.	48	1	8	× 2·9 =	139·441

The annual value of the real property assessed under the income tax in 1815 was £21731, which was equivalent to 4515 quarters of wheat at £4·813 a quarter—the price ruling from 1811 to 1815.

The annual value of the real property in *houses* and *lands* only assessed under the income tax for the year ending 5 April 1843, was £74416; which was equivalent in value to 23046 quarters of wheat at £3·233 a quarter, the average price in the 5 years 1838-42.

In Canterbury, a city from immemorial time and the centre of the English church, *eight* acres of meadow land (*prati*) at the Domesday Survey yielded 15s. rent, 1000 acres of unproductive woodland (*sylva infructuosa*) 24s.; that is for the meadow 22½d. (in weight of silver 5s. 5d.) an acre; for the woodland a farthing and a fifth (£·0012) an acre. Such appears to have been the range of rents after the Conquest. A meadow near Northampton, called Estecroftes, yielded some years afterwards 16s. 4d. rent.² The commissioners in 29 Hen. VIII. (1536) let the land of St. Andrew's Priory at 8d. an acre,³ equal in weight of silver to 11d. of the present day. Wheat fluctuating from

¹ See Fleetwood's Chronicon Preciosum.

² Dugdale's Monasticon, vol. v., Northampton—St. Andrew's Charters.

³ Dugdale's Monasticon, Book of the Demaynes of St. Andrew.

6s. to 30s. was on an average about 10s. a quarter in the first half of the 16th century;¹ the rent of the land in wheat was = $\frac{3}{4}$ (or ·74) of an imperial bushel, = ·092 of an imperial quarter.

In 1834, Gobion's manor, a farm-house, homestead, and 3 allotments of 133 acres of land, was let by the corporation for £598 a year; which is £4·496, or nearly £4 10s. an acre. A field of 3a. 3r. 9p. let for £31 a year; £8·192, or nearly £8 an acre. The area of the town is stated by Mr. Rickman to be 1520 acres; assuming that the houses, with the streets and bits of ground, stand on 320 acres (this will be about 14 houses to an acre, while in the densest parts of London there are 24 houses to an acre) 1200 acres will remain as an approximation to the "lands" valued at £5634 under the income tax. $\frac{£5634}{1200} = £4·695$ the rent per acre of the lands immediately

round the buildings of the borough. Excluding the borough, the annual value of the 18346² remaining acres of land in the Northampton Union was £39999, or £2·180 an acre; the county, exclusive of the Union, containing 630374 acres, some of it woodland and waste, was valued at £927089, on an average £1·471 an acre. The rent of an acre of land rises from £1·471 to £2·180, £4·695, and £8·192, as from the surrounding county we approach the centre of the town. Looking at the third number, the rent of the town land rose from 11d. to 94s. an acre in the interval from 1536 to 1842. In the first period the rent was equivalent to three quarters of a bushel of wheat, in the latter period to 11·6 bushels imperial. The *produce* of an acre of land increased considerably, if it did not increase in an equal ratio.

The average rent of land in Northamptonshire has risen in the present century. It was £1·070 in 1810-11; £1·301 in 1814-15; £1·494 in 1842-43; nearly 21s., 26s., and 30s. an acre at the three periods. The price of wheat was £4·813 in the 5 years ending 1815, and £3·233 in the 5 years ending 1842; the rent in wheat at the average price was equivalent to 2·162 bushels in 1814, and 3·697 bushels in 1842.³ The annual values of land in the income tax return include the rent of farm-houses and buildings.

The average annual value of a house in Northampton at the Domesday Survey was, as has been seen, about 3s. The houses inhabited in 1841 were 4138, uninhabited 357; in October, 1842 (that is, in the middle of the year ending April 5, 1843), when the annual value of houses was £68782, the inhabited houses were probably about 4269. The rent was on an average £16 a house. This is nearly 6s. a-week. The house-rent per head was £3·139 a year; £·060 a week; £·0086 a day. An unusual proportion of houses (357) was uninhabited in 1841; if we divide 68782 by the total number of houses uninhabited as well as inhabited, it makes the rent £15·3 on an average. The nominal value in silver had increased more than 100 fold since the Conquest; it could scarcely have been less than 30 fold in wheat. How much the houses had improved in comfort and quality it is impossible to calculate. For an estimate 100 fold would scarcely be too much.

¹ Smith's Wealth of Nations, by M'Culloch, p. 117.

² The area of the Northampton Union is stated in the Thirteenth Annual Report of the Poor Law Commissioners (App. 172), to be 19866 acres. Moulton Park, of the annual value of £679, is not in the Union, it being extra-parochial. It is not included in the area of 19866 acres.

³ M'Culloch says that the valuable return from which the facts for the two first periods were taken, was supplied by Mr. Wood, the Chairman of the Stamps and Taxes: Statistical Account of British Empire, vol. i., p. 531.

There is no return of the annual income of the whole population of Northampton. It can scarcely be less than 4 or 5 times the rents of the houses, 4 or 5 times £68782 = £275128, or £343910. In 1084, if the income of a family was 21s., or 6 or 7 times the rent of the house, it would purchase little more than a quarter of wheat; in 1842, if the income was £64, or only 4 times the rent, it would purchase 20 quarters of wheat at the average price. In meat the disparity, though less, would still be great. In 1084 mutton, for instance, was perhaps not worth $\frac{1}{2}d.$ per lb., 21s. would purchase 504 lbs.: in 1842 at 6d. a pound £64 would purchase 2560 lbs., or five times the quantity. The price of clothing and of all above the bare necessities of life was high in 1084; and it is evident that the townspeople must have lived hardly on inferior meat, fruit, and grain.

No trace of this town is discovered in the early British history. The Romans have left no monuments—no name to mark Northampton; whether the place was planted by Saxon families, or seized by their warriors from the Britons when princes, Druids, bards, and people were driven to the west, is unknown, but it was a town long before history shows it to us as the camp of hostile Danish troopers. For two centuries it lived in the excitement, perils, and vicissitudes of war; it was burnt down by Sweyn; once a great part of its people was carried away captive. The Conqueror divided its lands and houses between himself and his followers; it was armed without by walls and a baronial castle, within by a Norman priory. From this period—when it had 1475 people in 330 houses worth perhaps £50 to £100 a year, and 1500 acres of land yielding the same rent—we have seen it increase to 21242 inhabitants, with 4495 houses worth £68000—land valued at £5600 a year; and the increase in people and wealth is chiefly the creation of a quiet, useful industry. Approachable at first through by-roads of difficult access—it is now connected by roads, canals, railroads, and English shipping with the extremities of the world. It furnishes Australia with shoes.

The life of man bears a certain proportion to its happiness. A miserable life is soon extinguished; violent lives end abruptly; the life of a good wise people approaches its natural term. In the last century the people here lived on an average about 30, now they live 37 years. In earlier times their life must have been shorter. Then the community had no skilful physician, no surgeon: an infirmary, a dispensary, a lunatic asylum, and from 20 to 30 educated medical men, are evidences that more care and skill are now devoted to the preservation of life. The poor were, many of them, slaves; their masters took some care of them: the clergy and monasteries had subsequently charge of the indigent. For one eighty-third part of their income the inhabitants have now some of the advantages of a Poor Law. Justice had its sword; it has now its judges, magistrates, bar, courts, and gaols. The skill of the workman in nearly all arts has increased, and embraces a greater variety of objects. Reading, writing, arithmetic, and other branches of knowledge have been more generally diffused by paper, printing, and schools. Science has made incalculable progress. The tenure of life and of property was insecure; at times it was only recognized by the strong for their own benefit. Property and liberty now uphold each other. At first the burgesses appear not to have had the *allocation* of the rents, tolls, and taxes at their own disposal: they gradually substituted the mayor for the sheriff, and gained political power, which was then thrown into the hands of a few, and is now more justly distributed among the artizans and householders. Northampton had

long no connection with the supreme government, except through its baron: two burgesses were summoned to meet Edward I. in parliament at Acton Burnel. The influence of towns was sensibly felt in the reign of Henry VII.; became paramount in the rebellion; and was settled on a wiser, less unequable basis by the Revolution and the Reform Bill. At the opening of its history, we find the disciple of Odin and the Saxon Christian in Northampton. The saints and the Saxons subjugated the war-gods; and Leland, on "Avon's" bridge, saw ten churches: numerous priests, interspersed with grey, white, and black friars, then crossed each other in the streets; the Reformation drove away the friars, the Reformers seized the land of the religious houses; the Protestant clergy and nobles were installed in the church livings; Brown set in motion the anti-hierarchic principle, which was allied to Puritanism, and triumphed for a moment with the Independents; now Independents, Baptists, Methodists, Unitarians, Catholics, and Quakers enjoy nearly equal rights with the members of the Established Church. We have little evidence, but who can doubt that the faith of the people is sounder; their conceptions of God worthier, holier, grander; their love to their neighbour warmer; their justice firmer; their conduct less the slave of low habits and criminal passions than at the time of the Conquest? In some instances foul superstition may only have been replaced by frantic fanaticism, outrage by vice; in others both have given way to wisdom and righteousness. The intellect and sentiment have been improved, the spiritual life of the people exalted. Yet there is immense room for improvement. Existence is cut short, health neglected, education imperfect.

Every one must be struck with the small place an English county-town has in history, compared with the city-states of Italy and Greece. Yet the population of Florence, Venice, Genoa, and once of Rome, of Sparta, Corinth, Athens, and Thebes, either did not equal, or scarcely exceeded, that of some English cities and counties. The History of England itself is, however, in truth the history of its towns and counties, of which the aggregate is the kingdom. Northampton took its part in the struggle between the Saxons and Danes; in the conflict between the Montforts and Henry; in the Wars of the Roses; it was the head-quarters of the parliamentary army; and had, doubtless, men at Naseby: it sent its quota of money and men to Crecy, Agincourt, Blenheim, Trafalgar, Waterloo; in peace and in war it shared with all others in the achievements and glory of the kingdom. The councils and the parliaments, the great political decisions and events, are dwelt on by the local historians; who have also recorded not only important acts but the mere presence of kings or great men, in such a way as to connect the local with the general life and history of the country. In this course we have followed them. The deeds of the day, the thoughts, the passions of the hour, attach themselves to localities, and live in everlasting remembrance. The home becomes the shrine of genius. The presence of a flourishing place that has records of eight centuries revives the past events of its history; the river, the streets, the sites of old churches, the country, involuntarily recall the crowd of great or royal characters that have passed that way: Sweyn, Harold, and Tosti; Henry I., Henry II., and Becket; Richard the Lion-hearted, John, and the great Barons; the Montforts, Prince Edward and his hundred Crusaders, the Black Prince, and Richard the Assassin; Henry VIII., Elizabeth, and Burleigh; Charles I., Fairfax, and Cromwell; and in the latter days, Victoria. Sweyn, with his predatory band, the first of the long procession of warriors, statesmen, and princes, burnt the town to the ground; Victoria,

the queen of a mighty empire "on which the sun never sets," gave her name to a dispensary for the relief of the sick and suffering. The two acts, the two persons—the relentless chief and the beneficent princess—characterize the epochs.

ALL SAINTS, NORTHAMPTON.

Dr. Price's Table is derived exclusively from the deaths in All Saints' Parish; it may, therefore, be more correctly described as the All Saints' Table than as the Northampton Table of Mortality. I shall, however, with this explanation, retain the name used by Dr. Price, and now notice a few circumstances respecting All Saints' Parish, on which the New, like the Old Table, is, for the sake of comparison, constructed. "The parishes of All Saints and St. Giles," say the Commissioners on Town Boundaries and Wards, "contain the principal portion of the respectable classes of society. St. Peter is a small parish, containing principally the inferior tradespeople and working classes. St. Sepulchre is an extensive parish, but chiefly occupied by inferior tradespeople and the labouring classes. In All Saints about 35 per cent. of the houses are worth £10 a-year and upwards; in the other parishes less than 22 per cent. had the same value."¹ The parishes of St. Giles and St. Sepulchre contain much unenclosed space; St. Peter and All Saints are more densely peopled. The area of the borough is given by Mr. Rickman as 1520 acres, nearly 2½ square miles, on which in 1841 there were 21242 inhabitants. All Saints increased more rapidly than the rest of the borough from 1801 to 1811, and it had probably done so for many years, as the population of St. Giles and All Saints together increased from 3843 to 5349 in the 55 years 1746–1801, which was at the rate of 0·603 per cent. annually,² while the population of the whole borough increased at the rate of 0·570 per cent. annually. In the 10 years 1831–41, the growth of All Saints was arrested; the increase of 565 was less than the excess of the births (1953) over the deaths (1230) registered in the 7 years 1838–44. The building-ground becoming covered in old parishes, no further increase of their population can well take place.

The burials in All Saints' parish during the 46 years 1735–1780 were 4689, or 101·93 annually on an average. The population of All Saints was 4013, of St. Giles 1336, in 1801; the population of both parishes together was 3843 in 1746; deducing the population of All Saints in the middle of the 46 years, namely 1758, from the rate of increase in the two parishes, the mortality of All Saints is found to be 3·289 per cent., or 1 in 30·4, a little less than the mortality of the rest of the town. This is probably not far from the truth.

The Registration District of Northampton comprises the Borough and the surrounding country parishes. The three sub-districts comprise 17 parishes and 2 extra-parochial places:—

(1.) *St. Giles*.—Great Billing, Little Billing, Weston Favell, Moulton-Park (extra-par.), Abington, St. Giles, Priory of St. Andrew, or town part (extra-par.), St. Sepulchre.

(2.) *All Saints*.—All Saints, St. Peter, Kingsthorpe, Dallington, Duston.

(3.) *Bugbrooke*.—Upton, Harpole, Kisingbury, Bugbrooke, Nether Heyford, Upper Heyford.

The following Table (a) presents a comparative view of the mortality,

¹ Vide Report on Boundaries, under Northampton.

² All Saints and St. Giles, $\lambda r = \cdot 0026109$; Borough, $\lambda r = \cdot 0024675$.

deduced from the population at each age, 1841, and the deaths during the seven years 1838–44 in All Saints' Parish; in the Northampton districts; in Northamptonshire; in the Midland Counties, among which it is included; in England and in London. It will be observed that the mortality of All Saints under 25 agrees pretty closely with that of London; afterwards the mortality of London is considerably higher. Under 10 and above 45, the mortality is higher than the mortality of the kingdom generally. Under 10 and above 35, the mortality is much higher than in the county of Northampton.

DISTRICT OF NORTHAMPTON.				(a).—Mean Annual Mortality per cent. of the Population in All Saints, Northampton, compared with the Mean Mortality of Males and Females in the districts of Northamptonshire, the South Midland Division, England and London. Deduced from the returns of Population, 1841, and the Deaths registered in the 7 years 1838–44.				
Mean Annual Mortality per cent.				1 All Saints Parish (Northampton.)	Northamptonshire.	South Midland Division.	England.	London.
Age.	Males.	Females.	Mean.					
0	8·452	7·416	7·934	8·940	5·983	5·955	6·558	8·653
5	·975	·787	·881	1·088	·779	·810	·913	1·189
10	·489	·743	·616	·478	·528	·531	·527	·474
15	·803	·831	·817	·635	·814	·816	·820	·690
25	·927	1·147	1·037	·845	1·010	·973	·991	·996
35	1·421	1·496	1·459	1·199	1·122	1·143	1·247	1·583
45	2·103	1·679	1·891	1·836	1·393	1·453	1·664	2·361
55	3·973	3·537	3·755	3·615	2·748	2·755	2·964	4·302
65	8·190	7·576	7·883	8·316	6·003	6·107	6·252	8·493
75	14·763	15·732	15·247	11·959	13·822	14·184	13·796	17·293
85	37·207	45·675	41·441	39·685	35·001	30·545	28·603	31·100
95 and upwards	..	..	..	..	..	47·119	41·734	38·731
All Ages	{ 2·489 1 in 40·2	{ 2·396 1 in 41·7	{ 2·443 1 in 40·9	{ 2·298 1 in 43·5	{ 2·107 1 in 47·5	{ 2·091 1 in 47·8	{ 2·189 1 in 45·7	{ 2·522 1 in 39·7

The District of Northampton includes the large Lunatic Asylum and the County Hospital; the deaths in which raise the mortality in the middle periods of life. The data from which all these tables are derived appear with the Mortality Tables of all the districts of the Kingdom. The Tables are corrected for the ages of the living and dying unspecified; and the population is raised from what it was on June 6–7 to what, at the rate of increase in 1831–41, it would be in the middle of 1841.

The counties in the South Midland Divisions are, Middlesex (extra-metropolitan part of), Hertfordshire, Buckinghamshire, Oxfordshire, Northamptonshire, Huntingdonshire, Bedfordshire, Cambridgeshire.

The Table is read thus:—Out of 100 persons under 5 years of age in All Saints' parish, 8·940 died annually; out of 100 (50 males and 50 females) in Northamptonshire under 5 years of age, 5·983 died annually, &c. &c.

The *sub-district* of All Saints comprises the two parishes of All Saints and St. Peter in the town, and the three parishes Dallington, Duston, and Kingsthorpe, of 5080 acres, in the country. To a population of 7898 in All Saints, 1230 died in seven years; in the same time only 538¹ died to a population of

¹ The population and deaths in the Workhouse, Infirmary, and Lunatic Asylum, of persons belonging to these parishes, are included in Table (a), but excluded from the following Table (b). Nor is there in Table (b) any correction for increase of population. This will not, however, affect the comparative results.

3702 in the country, including the town parish of St. Peter, which is probably as insalubrious as All Saints. The defect of proper sanatory arrangements in the parish is measured by the excess of deaths in the Table (b).

(b).

Age.	Sub-district of All Saints. ¹				Annual Mortality per Cent.		Excess of the Mortality in All Saints.
	All Saints' Parish.		Parishes of St. Peter, Dallington, Duston, Kingsthorpe.		All Saints.	St. Peter, &c.	
	Population, 1841.	Deaths, 7 Years, 1838-44.	Population, 1841.	Deaths, 1838-44.			
0—5	937	592	554	248	9.026	6.395	2.631
5—10	832	63	474	25	1.082	.753	.329
10—20	1692	61	754	25	.515	.474	.041
20—40	2691	160	1063	61	.849	.820	.029
40—60	1245	140	593	51	1.606	1.229	.377
60—80	411	180	240	99	6.257	5.893	.364
80 and upwards	24	33	24	29	19.643	17.262	2.381
Not stated	66	1	..	..	..	..	..
Total	7898	1230	3702	538	{ 2.242 I in 45 }	{ 2.076 I in 48 }	.166

The proportion of shoemakers in All Saints is less than in the borough; their total number in 1841 was 601, of whom 488 were of the age of 20 and upwards. The mortality at the several ages in the seven years 1838-44 was as follows:—

Ages.	Shoemakers in All Saints enumerated in 1841.	Deaths of Shoemakers in 7 Years, 1838-44.	Annual Mortality per Cent. of Shoemakers in All Saints.	All Saints' Parish.	Country Parishes of the Subdistrict.
10—20	112	7	.893	.515	.474
20—40	304	25	1.175	.849	.820
40—60	141	13	1.317	1.606	1.229
60—80	42	18	6.122	6.257	5.893

At the age of 20-60, the shoemakers constitute about one-ninth part of the whole population, which, however, includes their wives and families. The mortality among shoemakers up to the age of 40 is considerably higher than in the rest of the parish at corresponding ages. Of 69 deaths, 31 were by consumption, 8 by heart disease, to both of which maladies these useful artisans appear to be particularly liable.

Excess of Births over Deaths in All Saints.

In the seven years 1838-44, while there were 1230 deaths, there were 1953 births registered; hence there were 176 deaths and 279 births registered annually, or an excess of 103 births annually on a mean population of 7898. The births are 3.5 per cent. of the population, the deaths 2.2 per cent., the excess 1.3 per cent. annually.

¹ Vide Note, p. 321.

Immigration and Emigration.

There is a constant influx into and efflux from towns; the excess of the former over the latter is an addition to the fixed population of the place. A part of the fixed population is maintained by births and a part by immigration. The last census distinguished the persons "born in the county;" this heading is unsatisfactory, for in such a case as the present it leaves in the dark the important immigration from the rest of the county of Northampton into the borough of Northampton. If the persons "born in the parish" of All Saints had been distinguished, it would also have left in the dark a great part of the movement of migration, which can only be correctly traced by a registration like that of births and deaths. The following Table is, however, highly interesting; it has been framed from the Census Schedules, and shows the number of males and females, at each quinquennial period, "born out of the county," and consequently out of the parish of All Saints. Immigrants enter in considerable numbers under 5 years of age (children with their parents); they still continue flowing in slowly from 5 to 15; but the greatest influx takes place at the age of 15-25; few enter between 25 and 35, after which age a considerable number of the immigrants appear to leave the town, for it is only thus, or by a sudden immigration at 15-25, that the numbers at the age 25-35, namely, 513, can be reduced, or appear to be reduced, to 325 in the next 10 years 35-45.

Persons enumerated in All Saints' Parish, Northampton; exclusive of 142 Persons in the County Gaol, and of 66 Persons whose ages were not stated.

Age.	Total Persons in All Saints.	Born in the County.	Born out of the County.			Age.
			Persons.	Males.	Females.	
0	223	210	13	7	6	0
1	179	168	11	3	8	1
2	205	193	12	3	9	2
3	172	156	16	9	7	3
4	157	136	21	12	9	4
5	936	863	73	34	39	5
10	788	668	120	67	53	10
15	887	685	202	132	70	15
20	888	625	263	155	108	20
25	642	384	258	146	112	25
30	635	380	255	143	112	30
35	438	283	155	83	72	35
40	466	296	170	87	83	40
45	269	169	100	52	48	45
50	319	228	91	47	44	50
55	161	109	52	25	27	55
60	174	116	58	33	25	60
65	110	72	38	14	24	65
70	81	59	22	12	10	70
75	40	29	11	7	4	75
80	19	13	6	1	5	80
85	4	2	2	..	2	85
90	1	1	..	..	..	90
All Ages	7690	5708	1982	1089	893	All Ages.

The Table does not show the true proportion of the inhabitants supplied by immigration; for a considerable part of the population, such as female servants, is recruited from the surrounding villages, and the rest of the county. Hence, from the age of 15 to 35, the number of females is less than the number of males "born out of the county." The number of female immigrants is understated to a greater extent than the number of males.

Upon the other hand, many persons born in All Saints' parish emigrate, and die in other parts.

Age.	Persons enumerated.	Born in the County.	Born out of the County.			Age.
			Persons.	Males.	Females.	
5—	1620	1394	226	118	108	5
15—	1775	1310	465	287	178	15
25—	1277	764	513	289	224	25
35—	904	579	325	170	155	35
45—	588	397	191	99	92	45
55—	335	225	110	58	52	55
65—	191	131	60	26	34	65
75—	59	42	17	8	9	75
85—	5	3	2	0	2	85

The Table is read thus:—Of 1277 persons, aged 25 and under 35, in All Saints, 764 were born in the county, 513 born out of the county, &c.

We can now explain, to a certain extent, the errors of Dr. Price's Table:—

(1) The mortality of All Saints was about 1 in 30·4 from 1735 to 1780; it is now 1 in 43·5. A considerable part of this difference *may be* the result of different proportions in the numbers living at the several periods of life; but it is almost certain that the mortality of the population, and particularly of children, was higher in the last century than it is in the present day. In all the calculations hitherto made, the *lifetime* lies between the *mean age at death* and the *number living out of which one dies annually*. Two-thirds of the difference *plus* the mean age at death = lifetime nearly. As 1 in 30·4 of the population died annually, and the mean age at death was 28·8 years, it is exceedingly probable that in 1735–80 the *lifetime* in All Saints was 30 years, which is between 7 and 8 years less than the lifetime in the present day.

(2) Dr. Price assumed that the population had been for a long time stationary, probably because the burials in his time slightly exceeded the christenings. In the whole town the burials exceed the christenings, but fall far short of the births of the present day. In All Saints the *christenings* at the church and at Dissenting chapels returned in the Bills, 1841–4, were 689, but the *births registered* were 1082. This is explained by the number of *Baptists* who entirely repudiate infant baptism, and of Dissenters, who do not use it; by the indifference of the poor, by the fees of the church, and by the Baptist opinions floating about. Mr. Cornfield, and the Minister of the Baptist Chapel, who did me the favour to consult the register, state that the members of the Baptist church were very numerous when Dr. Price's returns were made. Dr. Price's opinions on the question of the "decline of the population" probably prevented him from taking this into account, or from procuring the more accurate information with which his Dissenting friends could have furnished him. If the *births* had borne the same proportion to the *baptisms*

as at present, there would have been in All Saints 144 annual births to 102 deaths during the years 1735–80.¹

(3) Dr. Price assumed that the town population was kept up by immigration, and that all the immigrants entered at the age of 20. In all his long speculations on the effect of immigration into towns on the mean age at death, he left out of sight one important element: he assumed the annual immigrants to be a constant number, while it is probable that they increased more rapidly than the births, but for the same reason—a local increase in the demand for labour, and the means of living. Assuming the law of mortality to be invariable, and to be the same in the *advenæ* as in indigenous inhabitants, the following propositions may be laid down:—

(a.) If the births are more than the deaths in a town, and increase gradually for many years, the number of young persons will be in excess; the mean age of those who die will be less than the *lifetime*, or what is incorrectly called the expectation of life at birth.

(b.) If immigrants enter at all ages, and in the *same proportions*, at each age respectively, as the resident population, they do not alter the mean age of the living or the dying.

(c.) If immigrants enter the town (a) in larger proportions as age advances, they may compensate for the excess of births, and the excess of those living at the earlier ages. The result may be a complete correction of the error caused by the increase of births; the population at the several ages be in the normal proportions of a life-table, the mean age at death be the lifetime.

(d.) As the immigrants into growing towns enter in greatest numbers at the age fixed on by Dr. Price, the general result is a partial correction of the nature noticed in (c). There is a compensation by older immigrants for the excess of young persons produced by the increasing births; the mean age at death is higher than it would otherwise be, and approaches nearer the *lifetime* than it would if there were no immigration. Dr. Price's "correction" had merely the effect of neutralizing this natural correction; it increased the error, or extended it from the age of 20 down to the beginning of life. The *lifetime* deduced directly from the facts was 28·83 years; the true lifetime probably 30 years; Dr. Price made it 25·18 years, which agrees with the mean age at death in the present century, when births and immigration have increased much more rapidly than in any period before Dr. Price wrote. Dr. Price had not the data for constructing a true Northampton Table. For this reason he failed.

It is certain that the tables in this paper contain the *data* for framing a correct life-table for All Saints, Northampton; it is equally certain that Dr. Price's Table is erroneous to an enormous extent. Whether the explanation of its errors be admitted or not is of less consequence.

$$1 \quad \text{Baptisms. Births.}$$

$$\frac{1082}{689} \times 91\frac{1}{2} = 144.$$

NORTHAMPTON; from Domesday Book.

		Houses.			Rent.
		Total.	Waste.	Inhabited.	
Tempore Regis Edwardi, fuerunt in NORTHANTONE, in dominio regis LX burgenses, habentes totidem mansiones. Ex his sunt modo XIII vastæ. Residua sunt XLVII. Præter hos sunt modo in novo burgo XL burgenses in dominio regis Willielmi.	In King Edward's time there were in Northampton in demesne of the king 60 burgesses, having as many messuages. Of these, 14 are now waste. Those which remain are 47 (Query, 46?). Besides these, there are now in the New Town (<i>which Brady thinks was the castle or its precinct</i>), 40 burgesses in demesne of King William.	60 40	14 —	46 40	— —
In ipso burgo habet Episcopus Constantiensis XXIII domos, de XXIX solidis et III denariis.	In the burgh itself the bishop of Constance has 23 houses, at a rent of 29 shillings and fourpence.	23	—	23	29 4
Abbas de S. Edmundo I domum de XVI denariis.	The Abbot of St. Edmund, one house at 16 pence.	1	—	1	1 4
Abbas de Burg XV domos de XIII solidis et VIII denariis; duæ sunt vastæ.	The Abbot of Burgh, 15 houses at 14 shillings and 8 pence; two are waste.	15	2	13	14 8
Abbas de Ramesy I domum de XVI denariis.	The Abbot of Ramesy, one house at 16 pence.	1	—	1	1 4
Abbas de Couentreu III domos de XII denariis; tres sunt vastæ.	The Abbot of Coventry, 4 houses at 12 pence; three are waste.	4	3	1	1 0
Abbas de Euesham I domum vastam.	The Abbot of Evesham, one house waste.	1	1	—	—
Abbas de Salebi II domos de XXXII denariis.	The Abbot of Saleby, 2 houses at 32 pence.	2	—	2	2 8
Comes Moritoniensis XXXVII de XLV solidis et VIII denariis; duæ sunt vastæ. De IX domibus harum habet rex socham.	Earl Morton, 37 (houses) at 45 shillings and 8 pence; two are waste. Of these, the king has soke of nine.	37	2	35	45 8
Comes Hugo I domum de III denariis.	Earl Hugh has one house at 4 pence.	1	—	1	0 4
Comitissa Judita XVI domos de XII solidis; una est vasta.	The Countess Judith has 16 houses at 12 shillings; one is waste.	16	1	15	12 0
Robertus de Todeu III domos de III solidis; una est vasta.	Robert de Todeu, 4 houses at 4 shillings; one is waste.	4	1	3	4 0
Henricus de fereires VIII domos de IX solidis et III denariis.	Henry de Fereires, 8 houses at 9 shillings and 4 pence.	8	—	8	9 4
Ansgerus capellanus regis I domum, de qua rex debet habere socam.	Ansgar, the king's chaplain, one house, for which the king ought to have soke.	1	—	1	—
Willielmus peurel XXXII domos de XXVIII solidis et VIII denariis; tres ex his sunt vastæ.	William Peverel has 32 houses, at a rent of 28 shillings and 8 pence; three of them are waste.	32	3	29	28 8
Willielmus filius boselini II de feudo episcopi baiocensis et comitissæ Juditæ; reddit XVI denarios.	William, son of Boselin, 2 houses in the fee of the bishop of Bayeux and the Countess Judith; he pays 16 pence.	2	—	2	1 4
Willielmus inganie I domum de Roberto de boci, et nil reddit.	William Ingany has one house of Robert de Bocy, and pays nothing.	1	—	1	—
Wido de Rainbudcurt III domos de LXIII denariis.	Wido de Rainbudcurt, 4 houses at 64 pence.	4	—	4	5 4

NORTHAMPTON; from Domesday Book.

		Houses.			Rent.
		Total.	Waste.	Inhabited.	
Walterus flandrensis X domos de VIII solidis; una est vasta.	Walter of Flanders, 10 houses at 8 shillings; one is waste.	10	1	9	8 0
Winemarus XII domos de III solidis; ex his III sunt vastæ.	Winemar, 12 houses at 3 shillings; four of these are waste.	12	4	8	3 0
Ricardus inganie III domos de III solidis.	Richard Ingany, 4 houses at 4 shillings.	4	—	4	4 0
Robertus de Alvers I domum de XII denariis.	Robert de Alvers, one house at 12 pence.	1	—	1	1 0
Rogerus de bosnorman I domum de XVI denariis.	Roger de Bosnorman, one house at 16 pence.	1	—	1	1 4
Goisfridus de Wirce III domos de III solidis.	Goisfrid de Wirce, 4 houses at 4 shillings.	4	—	4	4 0
Goisfridus alselin et Radulfus nepos ejus II domos de II solidis.	Goisfrid Alselin, and Ralph his grandson, 2 houses at 2 shillings.	2	—	2	2
Gilo frater Ansculfi III domos de XXXII denariis.	Gilo, brother of Ansculf, 3 houses at 32 pence.	3	—	3	2 8
Gunfridus de Cioches VIII domos de VIII solidis; tres sunt vastæ.	Gunfrid de Cioches, 8 houses at 8 shillings; three are waste.	8	3	5	8 0
Sigar de Cioches I domum de XVI denariis.	Sigar de Cioches, 1 house at 16 pence.	1	—	1	1 4
Suain filius Azur XXI domos de X solidis, pertinentes ad Stoches.	Swain, son of Azur, 21 houses at 10 shillings, belonging to Stokes.	21	—	21	10 0
Ansfridus de ualbadon II domos de II solidis, de feudo episcopi baiocensis.	Ansfrid de Valbadon, 2 houses at 2 shillings, in the fee of the bishop of Bayeux.	2	—	2	2 0
Balduinus dimidiam mansionem vastam.	Baldwin has half a messuage waste.	$\frac{1}{2}$	$\frac{1}{2}$	—	—
Lefstanus I domum de II denariis.	Lefstan, one house at 4 pence (?).	1	—	1	0 4
Osbernus gifard I domum de III denariis.	Osbern Gifard, one house at 4 pence.	1	—	1	0 4
Goduinus (pbr.) I domum de XII denariis.	Godwin (presbyter), one house at 12 pence.	1	—	1	1 0
Durandus præpositus I domum de XVI denariis, de feudo Roberti Todeu.	Durand, the bailiff, one house at 16 pence, in the fee of Robert Todeu.	1	—	1	1 4
Dodinus II domos de XX denariis. Una est de comitissa Judita; altera de Winemaro.	Dodin, 2 houses at 20 pence. One is held of the Countess Judith; the other of Winemar.	2	—	2	1 8
Hugo de Widuile II domos de XXXII denariis.	Hugh de Widvile, 2 houses at 32 pence.	2	—	2	2 8
Burgenses de Hantone reddunt vicecomiti per annum XXX libras et X solidos. Hoc pertinet ad firmam ipsius.	The burgesses of Hampton pay to the sheriff 30 pounds and 10 shillings annually. This belongs to his farm (<i>i. e., the farm of the county?</i>).	—	—	—	—
Judita comitissa habet VII libras de exitibus ejusdem burgi.	The Countess Judith has 7 pounds from the revenues of the same burgh.	—	—	—	—

Mansiones et domus, 330½; waste, 35½; occupied, 295. Amount of specified rent of 207 inhabited houses (not in the royal demesne), 211 shillings and 8 pence; average rent, nearly 1 shilling. Of the 230½ houses not in the royal demesne, 21½ were waste; two paid no rent.

TO THE WORSHIPFUL
WILLIAM TURNER, ESQ., MAYOR,
The Aldermen, Municipal Councillors,

AND THE REST OF THE
 WORTHY INHABITANTS of the TOWN of NORTHAMPTON,
This Dearly Bill of Mortality
 IS PRESENTED BY THEIR MOST OBEDIENT HUMBLE SERVANT,
 JOHN WRIGHT.

The Bill of Mortality

Within the Parish of All Saints, from the 21st December, 1840, to the 21st December, 1841.

DISEASES, &c., IN THE PARISH OF ALL SAINTS.

Aged . . . 19	Brain Fever . . 2	Cancer . . . 1	Fits 6	Suddenly . . 1
Abscess . . . 2	Consumption . 28	Dropsy . . . 4	Inflammation . 19	Teeth . . . 2
Apoplexy . . 1	Convulsions . . 8	Drowned . . . 1	Insane 2	Water in the
Asthma . . . 3	Croup 4	Fevers 3	Measles . . . 11	Head . . . 4

WHEREOF HAVE DIED,

Under Two Years old 51	Ten and Twenty . . 7	Forty and Fifty . . 11	Seventy and Eighty. 14
Between Two & Five 13	Twenty and Thirty . 5	Fifty and Sixty . . 7	Eighty and Ninety . 2
Five and Ten . . . 3	Thirty and Forty . . 5	Sixty and Seventy . 2	Ninety and a Hundred 1

	CHRISTENED.			BURIED.		
	Males.	Females.	Total.	Males.	Females.	Total.
ALL SAINTS	79	49	119	67	54	121*
ST. SEPULCHRE	49	53	102	81	62	143
ST. GILES	67	54	121	61	46	107
ST. PETER	5	10	15	9	10	19
St. John's Hospital . . . . .	..	..	..	..	1	1
Independent Chapel in King Street (All Saints)	..	1	1	..	6	6
Independent Meeting in St. Peter's Parish, (formerly Doddridge's)	1	1	2	7	8	15
Baptist Meeting in College Street (All Saints); Old Baptist Chapel	..	..	..	6	10	16
The Friends' Burying Ground (St. Giles).	..	..	..	..	1	1
Methodist Chapel (All Saints)	11	14	25	6	7	13
Unitarian Chapel (All Saints)	..	..	..	3	1	4
Independent, Commercial Street Chapel (All Saints)	3	4	7	2	5	7
Baptist Mount Zion Chapel, Newland (St. Sepulchre)	..	..	..	3	6	9
In the whole Town	215	177	392	245	217	462
Decrease, from last year's Bill . . . . .	..	..	55	..	..	15

* 15 christenings and 5 interments at St. Katherine's are included in the totals of All Saints.

Is it not sweet to think, hereafter,
 When the Spirit leaves this sphere,
 Love with deathless wing shall waft her
 To those she long hath mourned for here?
 Hearts from which 't was death to sever,
 Eyes this world can ne'er restore,
 There as warm, as bright as ever,
 Shall meet us and be lost no more?
 When wearily we wander, asking
 Of earth and heaven where are they
 Beneath whose smile we once lay basking
 Blest, and thinking bliss would stay?
 Hope still lifts her radiant finger
 Pointing to the Eternal Home,
 Upon whose portal yet they linger,
 Looking back for us to come.
 Alas! alas!—doth Hope deceive us?
 Shall Friendship,—Love,—shall all those ties
 That bind a moment and then leave us,
 Be found again where nothing dies?

Oh! if no other boon were given
 To keep our hearts from wrong or stain,
 Who would not try to win a Heaven,
 Where all we love shall live again?
 THOMAS MOORE.

SONNET.

Methought I saw the footsteps of a throne,
 Which mists and vapours from mine eyes did shroud—
 Nor view of who might sit thereon allow'd;
 But all the steps and ground about were strewn
 With sights, the ruefullest that flesh and bone
 E'er put on; a miserable crowd,
 Sick, hale, old, young, who cried before the cloud,
 "Thou art our king, O Death! to thee we groan."
 Those steps I mounted, while the vapours gave
 Smooth way; and I beheld the face of one
 Sleeping alone within a mossy cave,
 With her face up to Heaven, that seemed to have
 Pleasing remembrance of a thought foregone—
 A lovely Beauty in a summer grave!

WILLIAM WORDSWORTH.

* 9 buried from the parish of All Saints at the parish of St. Sepulchre, 1 ditto at the parish of St. Giles, 2 ditto at the parish of St. Peter.

Extract from a Letter of Mr. Cornfield, Commercial Street, Northampton, 9th June, 1845.

"I beg now to forward you Bills of Mortality, published yearly by the parish clerk of All Saints, for the years 1831 to 1840, most of which I had by me, and those which were deficient I have had some difficulty to procure. They will, I think, supply you with answers to the first part of your inquiry better than any other sources, as all the original registers kept by Dissenters are deposited at the Non-Parochial Register Office, copies of them not being kept, except only in one or two instances. As these Bills of Mortality do not include the Catholic Chapel, I have obtained from the resident clergyman the number of baptisms registered there.

"Mr. Brown has kindly assisted me in examining the record of members belonging to the Old Baptist Chapel in this town, which commences in 1733, and appears to be a continuation of a former book. We do find that the numbers registered therein are very considerable during the period you mention, 1736 to 1776, including many persons not resident in the town, but from the adjacent villages. I can recollect that when I was a little boy, many persons had used to come regularly to the chapel every Sunday from many villages within the distance of five or six miles, some more; but, as at several of them there are now chapels built, the numbers from such are inconsiderable, although there are still a few. The congregation at the Old Chapel is large at the present time, and the number of registered members I should say near 300; notwithstanding there has been an off-shoot, and another large Baptist Chapel (Mount Zion) built within a few years. The members of the church at College Street (as is the congregation) are a mixed community as to principles, many regular hearers, and some members being Independents, which the constitution of the society admits of. I believe there are many of the latter persuasion who do not have their children baptized; and such also is the case with the Unitarians, as I am informed by Mr. Jones, their minister.

"I have not the slightest doubt that there are numbers of children born in Northampton who have never been baptized, either at church or chapel, in which opinion I am confirmed by the testimony of several ministers, and the parish clerk of All Saints; and that there are now great numbers, of the working classes particularly, omitted, and would be even more, but that the clergy at the churches refuse to bury any unbaptized person, especially children, with regard to whom the fact is easily ascertained; and it is this reason alone, I fully believe, that induces some of them to conform to the rite of baptism.

"WILLIAM CORNFIELD, Registrar."

Baptisms at the Roman Catholic Chapel, and not included in the Northampton Bills:—

Year.	No.	Year.	No.	Year.	No.
1831	25	1835	15	1838	31
1832	33	1836	28	1839	16
1833	18	1837	25	1840	17
1834	28				

"There are chapels now in Northampton:—Three Independent, viz., King Street (or King's Head Lane), Castle Hill, Commercial Street. Three Baptist, viz., College Street, Mount Zion, Kingswell Street, small. Two Wesleyan, viz., Gold Street, large chapel, and congregation large; Todd's Lane, recently built. Primitive Methodist, small; Wesleyan Association; Unitarian; Providence Chapel, Calvinist (do not baptize infants); Roman Catholic, a new chapel just finished, the old one being converted into a school; The Friends' Meeting House."

Extract from an unpublished Paper on Insurance Finance, referred to p. 290.

CASE 4.—The sum of π is paid by each of l_x persons, and by the l_{x+1} , l_{x+2} . . . l_{x+n} survivors at the beginning of every subsequent year, into a fund which invests money at compound interest; s is paid out on the death of each person at the end of the year in which the death occurs; what is the amount in the fund at the end of n years? What is the share of this amount falling to each of the l_{x+n} survivors?

Let the interest of money be convertible annually; the amount of £1 in a year $1+i$; the present value of £1 payable at the end of a year $\frac{1}{1+i} = v$.

Then the rate of mortality being such that the survivors are l_x, l_{x+1} . . . l_{x+n} ; the annual deaths $d_x = l_x - l_{x+1}$, $d_{x+1} = l_{x+1} - l_{x+2}$. . . ; the amounts paid into the fund will be $\pi l_x, \pi l_{x+1}$. . . πl_{x+n-1} ; the amounts paid out of the fund will be $s d_x, s d_{x+1}$. . . $s d_{x+n-1}$.

πl_x is paid into the fund; at interest it amounts to $\pi(1+i)l_x = \pi v^{-1}l_x$ at the end of the year, and after subtracting $s d_x$ paid out for deaths, the sum of $(\pi v^{-1}l_x - s d_x)$ is left; which at interest amounts in a year to $v^{-1}(\pi v^{-1}l_x - s d_x) = \pi v^{-2}l_x - s v^{-1}d_x$; add $\pi v^{-1}l_{x+1}$ for the premiums paid in at the beginning of the second year, subtract $s d_{x+1}$ paid out on policies at the end of the second year, and the amount in the fund is then $\pi v^{-2}l_x + \pi v^{-1}l_{x+1} - s v^{-1}d_x - s d_{x+1}$.

The same reasoning applies to future years, and the amount in the fund at the end of n years is evidently—

Eq.	Year.	
(30)	0	πl_x .
(31)	1	$\pi v^{-1}l_x - s d_x$.
(32)	2	$\pi v^{-2}l_x + \pi v^{-1}l_{x+1} - s v^{-1}d_x - s d_{x+1}$.
(33)	3	$\pi v^{-3}l_x + \pi v^{-2}l_{x+1} + \pi v^{-1}l_{x+2} - s v^{-2}d_x - s v^{-1}d_{x+1} - s d_{x+2}$.
(34)	n	$\pi v^{-n}l_x + \pi v^{1-n}l_{x+1} + \pi v^{2-n}l_{x+2} \dots + \pi v^{-1}l_{x+n-1} - s v^{1-n}d_x - s v^{2-n}d_{x+1} \dots - s d_{x+n-1}$.

Let $\frac{1}{m}$ be the m th part of a year, and the amount in the fund at the end of the $(n + \frac{1}{m})$ year, after the policies lapsing in the fractional part of the last year have been paid, will be—

$$(35) \left(1 + \frac{i}{m}\right) \left\{ \pi (v^{-n} l_x + v^{1-n} l_{x+1} + v^{2-n} l_{x+2} \dots + l_{x+n}) - s (v^{1-n} d_x + v^{2-n} d_{x+1} \dots + d_{x+n-1}) \right\} - \frac{s d_{x+n}}{m}$$

The number of survivors is $(l_{x+n} - \frac{d_{x+n}}{m})$; and the share of each survivor is therefore—

$$(36) \frac{H_{x+n+\frac{1}{m}}}{l_{x+n} - \frac{d_{x+n}}{m}} = \left(1 + \frac{i}{m}\right) \left\{ \pi (v^{-n} l_x + v^{1-n} l_{x+1} \dots + l_{x+n}) - s (v^{1-n} d_x + v^{2-n} d_{x+1} \dots + d_{x+n-1}) \right\} - \frac{s d_{x+n}}{m}$$

Multiplying all the terms by $v^{x+n} = v^x v^n$, the equation, without changing its value, becomes—

$$(37) H_{x+n+\frac{1}{m}} = \left(1 + \frac{i}{m}\right) \left\{ \pi (v^x l_x + v^{x+1} l_{x+1} \dots + v^{x+n} l_{x+n}) - s (v^{x+1} d_x + v^{x+2} d_{x+1} \dots + v^{x+n} d_{x+n-1}) \right\} - \frac{s v^{x+n} d_{x+n}}{m} \frac{v^{x+n} l_{x+n} - \frac{v^{x+n} d_{x+n}}{m}}$$

If a life table has been framed correctly expressing the facts, and the usual columns D, N, C, M, have been tabulated, the last equation (37) may be conveniently represented by the following:—

$$(38) H_{x+n+\frac{1}{m}} = \left(1 + \frac{i}{m}\right) \left\{ \pi (D_x + D_{x+1} \dots + D_{x+n}) - s (C_x + C_{x+1} \dots + C_{x+n-1}) \right\} - \frac{C_{x+n}}{v m} \frac{D_{x+n} - \frac{C_{x+n}}{v m}}{v m}$$

$$(39) = \left(1 + \frac{i}{m}\right) \left\{ \pi N_{x|n+1} - s M_{x|n} \right\} - \frac{C_{x+n}}{v m} \frac{D_{x+n} - \frac{C_{x+n}}{v m}}{v m}$$

Making m infinite ($m = \infty$) the equation becomes—

$$(40) H_{x+n} = \frac{\pi N_{x|n+1} - s M_{x|n}}{D_{x+n}} = \text{the value of a share in the fund immediately after the } (n+1)\text{th premium has been paid.}$$

Subtracting D_{x+n} from Eq. 38, and making m infinite as before, we have—

$$(41) H_{x+n} = \frac{\pi N_{x|n} - s M_{x|n}}{D_{x+n}} = \text{the value of a share in the fund immediately before the } (n+1)\text{th premium has been paid into it.}^*$$

Putting $s = 1$; $\pi = a \frac{M_x}{N_x} = \pi_x$; Π_{x+n} = the single premium which at the age $(x+n)$ will insure £1 at death; and making the required substitutions and reductions, we have—

$$(42) H_{x+n} = \Pi_{x+n} + \frac{M_x}{D_{x+n}} \left(a - 1 - a \frac{N_{x+n}}{N_x} \right)$$

And if $a = 1$; Π_x = the exact annual premium which will insure £1 at death; $H_{x+n} = \Pi_{x+n} - \pi_x A_{x+n}$, which is the formula in common use; and only applicable when the true premium has been paid from the first. Here $A_{x+n} = 1 + A$ of Mr. Milne at the age $x+n$; and π_x = the precise annual premium, which, if commenced at the age x , will insure £1.

* I was not aware before the folio edition of the Report containing this important formula appeared, that it had been previously given under the article "Reversion" in the Penny Cyclopædia, or I should have mentioned the fact. In writing the article on the Northampton Table, the formula was required, and not finding it in the standard works of Bailey, Milne, Morgan, De Morgan, Jones, &c., I entered on the investigation given above; with which I should not have troubled the reader, had it been given in the article "Reversion" referred to: which is by Professor De Morgan, to whom the science of insurance is on many accounts so much indebted.

The following Tables exhibit the True and Erroneous Northampton Tables in juxtaposition. The logarithms given are those most useful to statisticians and actuaries, who may wish either to use or to ascertain the general results derivable from the True Northampton Table.

TABLE IV.—Population of All Saints, Northampton.

Age.	Population enumerated in All Saints' Parish, June 6-7th, 1841.			Persons belonging to All Saints' Parish, in the Workhouse, Infirmary, or Lunatic Asylum, 1845.			Sum of Males and Females.
	Males.	Fem.	Persons.	Males.	Fem.	Persons.	
0	112	111	223	1	..	1	224
1	87	92	179	2	3	5	184
2	97	108	205	1	..	1	206
3	96	76	172	1	..	1	173
4	78	80	158	1	2	3	161
5	400	432	832	7	8	15	847
10	424	364	788	9	4	13	801
15	475	429	904	..	1	1	905
20	449	477	926	..	..	..	926
25	344	321	665	2	4	6	671
30	333	320	653	1	..	1	654
35	224	223	447	2	5	7	454
40	232	243	475	..	5	5	480
45	142	134	276	2	3	5	281
50	164	164	328	..	1	1	329
55	78	88	166	..	..	..	166
60	90	86	176	..	3	3	179
65	47	66	113	..	..	..	113
70	33	48	81	2	..	2	83
75	18	23	41	3	..	3	44
80	8	11	19	..	1	1	20
85	2	2	4	..	..	..	4
90	1	..	1	..	..	..	1
95	..	..	..	..	..	..	..
100	..	..	..	..	..	..	..
Not stated	60	6	66	..	..	..	66
Total .	3994	3904	7898	34	40	74	7972

TABLE V.—All Saints, Northampton, Deaths in 7 Years, 1838-44.

Age.	Deaths (registered) in All Saints' Parish.			Deaths of Persons belonging to All Saints' Parish, in the Workhouse, Infirmary, or Lunatic Asylum.			Total Deaths at each Age.
	Males.	Fem.	Persons.	Males.	Fem.	Persons.	
Months.							
0	54	48	102	..	..	..	102
1	27	17	44	..	..	..	44
2	17	9	26	..	1	1	27
3	39	23	62	..	..	..	62
6	32	23	55	2	1	3	58
9	25	15	40	..	..	..	40
Total under 1 Year	194	135	329	2	2	4	333
1	64	70	134	..	2	2	136
2	36	38	74	..	..	..	74
3	18	14	32	..	..	..	32
4	11	12	23	..	..	..	23
5	39	24	63	2	..	2	65
10	9	17	26	..	1	1	27
15	16	19	35	1	1	2	37
20	20	20	40	3	2	5	45
25	12	21	33	..	..	..	33
30	13	27	40	5	1	6	46
35	25	22	47	1	..	1	48
40	11	17	28	2	1	3	31
45	20	18	38	3	1	4	42
50	19	18	37	..	..	..	37
55	19	18	37	1	..	1	38
60	16	29	45	5	..	5	50
65	20	36	56	1	1	2	58
70	18	32	50	7	..	7	57
75	11	18	29	..	5	5	34
80	9	8	17	1	2	3	20
85	7	4	11	..	..	..	11
90	2	1	3	..	..	..	3
95	..	2	2	..	..	..	2
100	..	..	..	..	..	..	..
Not stated	1	..	1	..	..	..	1
Total	610	620	1230	34	19	53	1283

TABLE VI.—All Saints, Northampton, Births and Deaths.

Births registered in All Saints, Northampton, 7 Years, 1838-44.				Deaths registered in All Saints, Northampton, 7 Years, 1838-44.				Excess of Births over Deaths.
Years.	Males.	Females.	Males and Females.	Years.	Males.	Females.	Males and Females.	
1838	146	129	275	1838	89	91	180	95
1839	135	168	303	1839	92	92	184	119
1840	160	133	293	1840	92	87	179	114
1841	150	114	264	1841	94	75	169	95
1842	137	132	269	1842	67	81	148	121
1843	152	137	289	1843	83	83	166	123
1844	122	138	260	1844	93	111	204	56
Total	1002	951	1953	Total	610	620	1230	723

TABLE VII.—CORRECT and INCORRECT NORTHAMPTON TABLES, contrasted in their applications to the purposes of LIFE INSURANCE.

Age.	Afterlifetime, or Expectation of Life.		Value of a Life Annuity of £1.		Single Premiums to Insure £100.		Annual Premiums to Insure £100.		Age.
	False Table	Dr. Price's Table.*	False Table.	Dr. Price's Table.†	False Table.	Dr. Price's Table.‡	False Table	Dr. Price's Table.§	
0	24.88	25.18	12.169	12.270	61.642	61.349	47.324	4.681	0
1	32.43	32.74	15.934	16.021	50.677	50.424	38.209	2.993	1
2	36.77	37.79	18.156	18.599	44.205	42.915	32.594	2.308	2
3	39.41	39.55	19.576	19.575	40.070	40.072	30.078	1.948	3
4	40.16	40.58	20.073	20.210	38.623	38.223	29.131	1.802	4
5	40.50	40.84	20.371	20.473	37.753	37.457	28.554	1.744	5
6	40.69	41.07	20.604	20.727	37.075	36.717	28.279	1.690	6
7	40.70	41.03	20.757	20.853	36.630	36.350	28.200	1.663	7
8	40.52	40.79	20.817	20.885	36.456	36.255	28.258	1.671	8
9	40.14	40.36	20.771	20.812	36.589	36.469	28.425	1.657	9
10	39.54	39.78	20.615	20.663	37.044	36.903	28.946	1.704	10
11	38.89	39.14	20.424	20.480	37.600	37.437	29.493	1.743	11
12	38.23	38.49	20.220	20.283	38.194	38.009	30.049	1.786	12
13	37.55	37.83	20.002	20.081	38.829	38.598	30.613	1.831	13
14	36.88	37.17	19.789	19.872	39.450	39.206	31.185	1.878	14
15	36.23	36.51	19.580	19.657	40.059	39.832	31.749	1.928	15
16	35.62	35.85	19.383	19.435	40.632	40.478	32.321	1.981	16
17	35.03	35.20	19.199	19.218	41.167	41.112	32.916	2.033	17
18	34.47	34.58	19.030	19.013	41.661	41.710	33.503	2.084	18
19	33.93	33.99	18.864	18.820	42.144	42.270	34.114	2.133	19
20	33.40	33.43	18.702	18.638	42.616	42.801	34.717	2.179	20
21	32.87	32.90	18.540	18.470	43.087	43.289	35.344	2.223	21
22	32.35	32.39	18.375	18.311	43.567	43.754	35.980	2.266	22
23	31.82	31.88	18.207	18.148	44.057	44.228	36.625	2.294	23
24	31.30	31.36	18.039	17.984	44.545	44.710	37.279	2.310	24
25	30.77	30.85	17.868	17.814	45.043	45.201	37.960	2.355	25
26	30.25	30.33	17.694	17.642	45.551	45.702	38.635	2.403	26
27	29.72	29.82	17.516	17.467	46.069	46.212	39.338	2.452	27
28	29.20	29.30	17.335	17.289	46.597	46.731	40.053	2.502	28

* Price, on Reversionary Payments, vol. ii., p. 813. † Price, on Reversionary Payments, vol. ii., p. 314-315. ‡ Davies, on Life Contingencies, Table XVI. (except the 7 first years, which were calculated from the Annuities). § Davies, on Life Contingencies, Table XVI. (except the 7 first years, which were calculated from the Annuities).

TABLE VII.—Correct and Incorrect Northampton Tables, &c.—continued.

Table with 12 columns: Age, Afterlifetime, or Expectation of Life (False Table, True Table), Value of a Life Annuity of £1 (False Table, True Table), Single Premiums to Insure £100 (False Table, True Table), Dr. Price's Table (False Table, True Table), Annual Premiums to Insure £100 (False Table, True Table), Dr. Price's Table (False Table, True Table), True Table, False Table, Dr. Price's Table, True Table, Annual Premiums to Insure £100 (False Table, True Table), Age.

Table with 12 columns: Age, Afterlifetime, or Expectation of Life (False Table, True Table), Value of a Life Annuity of £1 (False Table, True Table), Single Premiums to Insure £100 (False Table, True Table), Dr. Price's Table (False Table, True Table), Annual Premiums to Insure £100 (False Table, True Table), Dr. Price's Table (False Table, True Table), True Table, False Table, Dr. Price's Table, True Table, Annual Premiums to Insure £100 (False Table, True Table), Age.

* Price, on Reversionary Payments, vol. ii., p. 313. † Price, on Reversionary Payments, vol. ii., p. 314-315. ‡ Davies, on Life Contingencies, Table XVI. (except the 7 first years, which were calculated from the Annuities). § Davies, on Life Contingencies, Table XVI. (except the 7 first years, which were calculated from the Annuities).

TABLE VIII.—TRUE NORTHAMPTON TABLE.

Table with 9 columns: Age, Cx, Dx, Px, Qx, vMx, vx+1.Cx, vx Dx, and vNx = Σ (vx Dx). Rows represent ages from 0 to 53.

TABLE VIII.—TRUE NORTHAMPTON TABLE—continued.

Table with 9 columns: Age, Cx, Dx, Px, Qx, vMx, vx+1.Cx, vx Dx, and vNx = Σ (vx Dx). Rows represent ages from 54 to 96.

TABLE XI.—FALSE NORTHAMPTON TABLE, agreeing with that of DR. PRICE in common use.

Table with columns: Age, Cx., Dx., Nx., V*.Dx., vNx., λ Dx., λ (V*.Dx.), λ vNx., and λ (vNx+1) / (V*.Dx.).

Table XI.—False Northampton Table, &c.—continued.

Table with columns: Age, Cx., Dx., Nx., V*.Dx., vNx., λ Dx., λ (V*.Dx.), λ vNx., and λ (vNx+1) / (V*.Dx.).

DISTRICT NORTHAMPTON.—ALL SAINTS PARISH.—PERSONS.

Living out of 10000 Persons born, deduced from the Population enumerated in All Saints Parish, Northampton, June 6-7, 1841; the Births and the Deaths registered in the 7 Years, 1838-44.

Years.	m.	I + 1/2 m.			I - 1/2 m.			λ (I + 1/2 m).		λ (I - 1/2 m).		λ Ds.	Living.*		Decrements.	Years.
		Highest Readings from one Observation daily.	Of the Lowest Readings from one Observation daily.	Difference in Degrees.	Mean Reading from 12 Observations daily.	Dew Point.	Self-Registering.	In the Water of the Thames at Greenwich, by Self-Registering Thermometers read once a day.	Mean of the greatest in each Month.	Mean of the least in each Month.	Difference between the Mean Temperature and the Average Temperature of 25 Years.		General Direction.	Greatest Pressure during the Year.			Mean Pressure.	Ds.	Cs.
0	21070	110535	89465	00434999	9516532	9081533	9188128	10000	1705	0	40000000	6776	359	5		
1	10476	105238	94762	0221736	9766342	9544616	9544616	8295	826	1	39188128	6417	151	10		
2	05091	02546	97454	0109188	9887997	9778809	9778809	7469	371	2	38732744	6566	385	15		
3	02622	01311	98669	0056566	9942687	9886121	9886121	7098	183	3	38511553	5881	477	25		
4	02025	01012	98988	0043730	9955825	9912095	9912095	6915	139	4	38397674	5404	610	35		
5	01088	00544	99456	0023562	9976310	9952748	9763740	6776	359	5	38309769	4794	804	45		
10	00478	00239	99761	0010367	9989608	9979241	986205	3990	1211	10	38073509	3990	1211	55		
15	00635	00317	99683	0013745	9986211	9972466	974660	2779	1570	15	37969714	2779	1570	65		
25	00845	00423	99577	0018332	9981590	9963258	9632580	1209	844	25	37694374	1209	844	75		
35	01199	00599	99401	0025938	9973908	9947970	9479700	365	300	35	37326954	365	300	85		
45	01836	00918	99082	0039687	9959948	9920261	9202610	65	..	45	36806654	65	..	95		
55	03615	01808	98192	0077820	9920761	9842941	8429410	..	..	55	36009264	..	..	..
65	08316	04158	95842	0176927	9815559	9638632	6386320	..	..	65	34438674	..	..	..
75	11959	05980	94020	0252202	9732202	9479963	4799630	..	..	75	30824994	..	..	..
85	39685	19843	80157	0786127	9039415	8232288	2532280	..	..	85	25624624	..	..	..
95	..	..	..	..	..	..	..	..	..	95	18157504	..	..	..

Births in 7 years, 1838-44 1953
 Deaths in 7 years, 1838-44, 0-1 year of age 333
 Births in 7 years minus Deaths in ditto 1620
 32095150
 19188128

* This column, though not constructed in the same way, agrees closely with the D. column in the True Northampton Table.

On the Meteorology of the Years 1841 to 1847, compiled from the published Greenwich Magnetical and Meteorological Volumes, and from the Weekly Tables furnished by the Astronomer Royal to the Registrar-General, by James Glaisher, Esq., of the Royal Observatory at Greenwich.

YEARLY METEOROLOGICAL TABLE.

YEAR.	THERMOMETER.										WIND.				Rain in Inches.	
	Mean Reading of the Barometer from 12 Observations taken daily reduced to 32° Fahrenheit.	Highest Reading during the Year.	Lowest Reading during the Year.	Mean.	Difference in Degrees.	Mean Reading from 12 Observations daily.	Dew Point.	Self-Registering.	In the Water of the Thames at Greenwich, by Self-Registering Thermometers read once a day.	Difference between the Mean Temperature and the Average Temperature of 25 Years.	General Direction.	Greatest Pressure during the Year.	Mean Pressure.	The Mean Amount of Horizontal Movement of the Air in each Week.		Mean Amount of Cloud 0-10.
1841	29.687	82.8	4.0	58.5	43.7	14.8	48.7	43.7	107.0	74.1	12.0	37.2	..	..	6.7	33.3
1842	29.832	90.5	23.2	57.9	43.0	14.9	49.6	45.0	121.2	72.2	12.5	35.4	..	..	6.3	22.6
1843	29.765	89.8	20.3	57.7	43.5	14.2	49.4	45.7	110.8	70.9	7.0	35.0	..	..	6.9	24.5
1844	29.776	87.6	18.8	57.3	42.4	14.9	48.6	43.7	115.0	70.7	7.9	34.6	..	800	6.7	25.0
1845	29.742	86.0	7.7	56.2	41.5	14.7	47.6	43.2	111.6	67.4	6.0	34.5	..	900	6.7	22.3
1846	29.733	93.3	18.8	61.1	44.8	16.3	51.3	46.2	116.5	75.4	9.0	38.1	10.9	860	7.0	25.3
1847	29.811	86.0	12.0	56.7	42.7	14.0	49.5	43.8	114.8	73.0	9.0	35.1	12.0	870	7.0	17.6

ON THE YEAR 1841.

The mean reading of the Barometer for the year 1841 was remarkably low. The lowest mean daily reading during the year was 28.741 inches, and the highest was 30.341 inches, and consequently the range of the mean daily readings was 1.691 inches. The highest reading during the year was 30.388 inches, and the lowest was 28.697 inches; the range of the simple readings was therefore 1.691 inches.

On January 3rd there was a remarkable thunder storm, for some time the roar of thunder was one continuous roll, and the lightning was incessant; the reading of the barometer was as low as 28.806 inches. This was a travelling storm, passing from north to south, at the rate of about 60 miles per hour, and it was nearly 100 miles in breadth; its time of continuance at each place was nearly the same, and in every place it was preceded by a gale of wind, and accompanied with a heavy fall of rain, hail, and snow.

The temperature of the air for the year was somewhat below the average, its range during the year was 78°.8 being greater than usual, owing however, to the very low reading of 4° in January. The year was not distinguished by any high temperatures. The average monthly range of temperature was 38°.3; that in January, amounted to the very large value of 49°.

The forces of the north and south winds during the year were nearly equal in value; the prevailing winds were S. W.; S. S. W.; and W. S. W.

One hour out of 7 hours 40 minutes was calm during the day.

One hour out of 4 hours 10 minutes was calm during the night.

There were 7 days during which the sky was cloudless, and there were 29 days during which the sky was wholly covered by clouds.

Rain to the depth of 33.3 inches was collected in the gauge placed on the ground.

,,	28.2	,,	24 feet above the soil.
,,	18.6	,,	50 feet above the soil.

ON THE YEAR 1842.

The mean reading of the Barometer for the year 1842 was high. The highest mean daily reading during the year was 30.419 inches, and the lowest was 28.799 inches, occurring on the 18th and 25th of November, respectively. It is remarkable that the two days on which the mean barometer reading was highest and lowest during the year, were separated by seven days only. The highest and lowest simple readings during the year were 30.470 inches, and 28.587 inch respectively.

The greatest daily range in the readings of the barometer, was 1.376 inches on March 10.

The mean daily range in Spring was 0.185 inch; in Summer was 0.145 inch; in Autumn was 0.207 inch; in Winter was 0.185 inch; and for the Year 1842 was 0.181 inch.

On one day in 3, the difference of readings of the barometer during the day, was less than 0.2 inch.

,,	6	,,	was greater than 0.2 inch and less than 0.3 ditto.
,,	10	,,	,, 0.5 ,, 0.5 ditto.
,,	60	,,	,, 0.5 ,, 0.6 ditto.
,,	80	,,	,, 0.6 ,, 1.0 ditto.
,,	in the year	,,	1.3 ,,

The temperature of the air for the year was about the average value, its range during the year was 67°.3. On one day the temperature reached 90°. The highest mean daily value was 74°.3, and the lowest was 28°.3.

The mean daily range of temperature in Spring was 14°.6; in Summer was 20°.1; in Autumn was 11°.3; in Winter was 8°.3; and for the year was 13°.6.

The mean temperature for Spring was 47°.6; for Summer was 62°.8; for Autumn was 48°.2; and for Winter was 39°.6.

On one day in 13 the difference of temperature during the day, was less than 5°.

,,	4	,,	greater than 5 and less than 10
,,	4	,,	,, 10 ,, 20
,,	12	,,	,, 20 ,, 25
,,	14	,,	,, 25 ,, 30
,,	100	,,	,, 30 ,, 35

The water mixed with the air was such that its average weight balanced a column of mercury to the height of 0.326 inch. Its greatest mean daily value was represented by a column of mercury, of 0.601 inch in height, and its least by one of 0.141 inch in height; on the former day there were 6.6 grains of water in a cubic foot of air, and on the latter day there were 1.7 grains only.

The prevailing wind was S. W., and the next in order of prevalence were W. S. W.; S. S. W.; W.; N.; N. N. E.; S., &c. The mass of air passed from the remaining directions was small in amount.

One hour out of 5 hours 4 minutes was calm during the day, and

One hour out of 2 hours 48 minutes was calm during the night.

There were 18 days that were considered cloudless, and there were 47 days that were overcast throughout the day.

Rain to the depth of 22.6 inches was collected on the surface of the soil.

,,	20.0	,,	at the height of 25 feet.
,,	12.6	,,	at the height of 50 feet.

ON THE YEAR 1843.

The mean reading of the Barometer for the year 1843 was about its average value. The highest mean daily reading was 30.415 inches, and the lowest was 28.460 inches. The lowest and highest simple readings were 28.096 inches, and 30.437 inches respectively, and these occurred on January 13th and on January 19th; the former of these readings took place during a heavy gale of wind from the S.W. This storm was remarkable for its long continuance, and it extended over a large portion of the earth's surface. In the accounts from most places the minimum reading was preceded by lightning and thunder, and the direction of the wind was S.W. The minimum reading occurred first at southern places, and afterwards at northern; thus, the minimum occurred at Greenwich at 0 hours 53 minutes, P.M.; at Cambridge it was at 1 hour 35 minutes, P.M., the reading being 28.136 inches, the height of the cistern of the barometer above the level of the sea being about 88 feet; at Manchester it took place at 2 hours, P.M., and was 28.02 inches. The difference at Greenwich between the readings within 5 days 21 hours was 2.341 inches.

The greatest daily range was 0.857 inch.

The mean daily range in Spring was 0.166 inch; in Summer was 0.147 inch; in Autumn was 0.210 inch; in Winter was 0.198 inch, and for the year was 0.180 inch.

On two days out of 3 the difference of reading of the barometer was less than 0.2 inch.

On one day in	5	„	greater than 0.2 inch and less than 0.3	„
„	10	„	0.3	„ 0.5
„	60	„	0.5	„ 0.6
„	100	„	0.6	„ 0.9

The temperature of the air for the year was about the average value, its range during the year was 69.6 . On one day the temperature nearly reached 90 . The highest mean daily value was 71.5 and the lowest was 24.8 .

The mean daily range of temperature was 14.2 in Spring; 15.7 in Summer; 13.5 in Autumn; 7.3 in Winter, and 12.7 for the year 1843.

The mean temperatures for these four periods were 47.4 ; 59.8 ; 50.5 ; and 40.0 , respectively.

On one day in 12 the difference of temperature during the day was less than 5 .

„	4	„	greater than 5 and less than 10
„	3	„	10
„	4	„	15
„	10	„	20
„	100	„	25
„	in the year.	„	30

The water mixed with the air was such, that its average weight balanced a column of mercury 0.338 inch in height. On one day it balanced a column of mercury 0.590 inch in height, and its least daily value thus estimated was 0.136 inch.

The prevailing wind was W. S. W., and the next in order of prevalence were W. S. W.; S. S. W.; E. N. E.; W.; N. N. W.; S., &c. The circumstance of the E. N. E., being so prevalent is unusual.

One hour out of 5 hours 51 minutes was calm during the day, and

One hour out of 2 hours 41 minutes was calm during the night.

There was not one day during the whole year that the sky was free from clouds, there were, however, four nearly so; and there were 66 days that the sky may be considered to have been covered by clouds all day.

Rain to the depth of 24.5 inches was collected on the surface of the soil.

„	22.5	„	at the height of 25 feet above the soil.
„	14.9	„	at the height of 50 feet above the soil.

On August 9 of this year, a great hail-storm occurred at Cambridge, and visited Northamptonshire, Berkshire, Buckinghamshire, Dorsetshire, Gloucestershire, Kent, (at Rochester,) Leicestershire, Lincolnshire, Monmouthshire, Nottinghamshire, Oxfordshire, Rutlandshire, Worcestershire, Yorkshire, &c.; but at Cambridge it was most violent. [For a description of this storm see the Greenwich Magnetical and Meteorological Observations for the year 1843, page (268).]

ON THE YEAR 1844.

The mean reading of the Barometer for the year 1844 was about its average value. The highest mean daily reading was 30.378 inches, and the lowest was 28.669 inches. The lowest and highest readings from single observations were 28.525 inches, and 30.418 inches; the former took place on February 26, at 1 hour 20 minutes, immediately after a long and heavy gale of wind.

The mean daily range in Spring was 0.170 inch; in Summer was 0.144 inch; in Autumn was 0.175 inch; in Winter was 0.204 inch; and for the year was 0.173 inch.

On one day out of 3 the difference of reading of the barometer, was less than 0.1 inch.

„	3	„	greater than 0.1 inch, and less than 0.2	„
„	6	„	0.2	„ 0.3
„	10	„	0.3	„ 0.4
„	30	„	0.4	„ 0.5
„	80	„	0.5	„ 0.6
„	150	„	0.8	„ 0.9

The greatest daily range in the year was 0.874 inch on February 24th.

The temperature of the air for the year was below its average value. Its range during the year was 68.8 . Its highest mean daily value was 71.3 , and its lowest was 25.7 .

The mean daily range of temperature was in Spring 17.2 ; in Summer was 17.2 ; in Autumn was 11.7 ; in Winter was 8.2 ; and for the year was 13.6 .

The mean temperature for these four quarterly periods were 48.7 ; 59.9 ; 50.1 ; and 35.8 respectively; the value for winter is much below the average for that period.

On one day out of 11 the difference of temperature during the day, was less than 5 .

„	4	„	was greater than 5 and less than 10
„	4	„	10
„	5	„	15
„	8	„	20
„	14	„	25
„	in the year	„	33

The water mixed with the air was such in quantity, that its average weight balanced a column of mercury of 0.315 inch in height. On one day it balanced a column of mercury of 0.565 inch in height, and its least daily value thus estimated was 0.135 inch.

The prevailing wind was the S. W. The next in order of prevalence were W. S. W.; W.; S. S. W.; N.; N. E.; and N. N. E. During this year the N. and E. winds were more than usually prevalent, and the compounds of the west wind were less prevalent than usual.

One hour out of 6 hours 31 minutes was calm during the day, and
One hour out of 3 hours 9 minutes was calm during the night.

There were two days in the year that the sky was cloudless, and nine others, during which the amount of cloud was so small that they may be considered as cloudless. There were 61 days in the year that the sky may be considered as having been quite cloudy.

Rain to the depth of 23·2 inches was collected on the surface of the soil.
 ,, 22·9 ,, at the height of 25 feet above the soil.
 ,, 14·6 ,, at the height of 50 feet above the soil.

ON THE YEAR 1845.

The mean reading of the Barometer for the year 1845 was about its average value. The highest and lowest mean daily readings were 30·406 inches and 28·755 inches. The highest and lowest readings in single observations were 30·445 inches and 28·659 inches. The extreme highest reading was less than usual, and the extreme lowest reading was greater, so that the yearly range was less than usual.

The mean daily range in Spring was 0·144 inch; in Summer was 0·151 inch; in Autumn was 0·195 inch; in Winter was 0·260 inch, and for the year was 0·188 inch.

On one day out of 3 the difference of the reading of the barometer, was less than 0·1 inch.
 ,, 3 ,, greater than 0·1 inch, and less than 0·2 inch.
 ,, 6 ,, ,, 0·2 ,, 0·3 ,,
 ,, 10 ,, ,, 0·3 ,, 0·4 ,,
 ,, 26 ,, ,, 0·4 ,, 0·5 ,,
 ,, 40 ,, ,, 0·5 ,, 0·6 ,,
 ,, 60 ,, ,, 0·6 ,, 0·9 ,,
 ,, in the year. ,, 1·0

Therefore, there was a greater number of large changes than usually take place in one year. In fact the variations of the reading of the barometer were greater in amount, more numerous, and frequently very different from those of other years.

The temperature of the air was much below its average value. Its range during the year was 78°·3, this large range was attributable to a minimum reading of 7°·7 in February. The highest mean daily temperature was 71°·6 and the lowest was 19°·2.

The mean daily range of temperature in Spring was 14°·0; in Summer was 16°·0; in Autumn was 13°·3; in Winter was 8°·3; and for the year was 12°·9.

The mean temperature for these four quarterly periods were 43°·6; 59°·3; 49°·9; and 37°·6; the value for Spring is much below its average value, and that for Winter is also below the average.

On one day out of 29 the difference of temperature during the day, was less than 5°.
 ,, 3 ,, was greater than 5 and less than 10
 ,, 3 ,, ,, 10 ,, 15
 ,, 5 ,, ,, 15 ,, 20
 ,, 12 ,, ,, 20 ,, 25
 ,, 29 ,, ,, 25 ,, 30

The water mixed with the air was such in quantity, that its average weight balanced a column of mercury of 0·309 inch in height. On one day the quantity was such as to balance a column of mercury of 0·588 inch in height, and its least daily value thus estimated was 0·106 inch.

The prevailing wind was the S. W. The next in order of prevalence were W. S. W.; S. S. W.; N.; W.; N. W.; N. N. W.; S.; N. E., &c.

One hour out of 6 hours 56 minutes was calm during the day, and One hour out of 4 hours 0 minutes was calm during the night.

There were nine days in the year during which the sky was considered cloudless, and there were forty-eight days during which it was covered by clouds.

Rain to the depth of 22·3 inches was collected on the surface of the soil.
 ,, 19·0 ,, at the height of 25 feet above the soil.
 ,, 11·6 ,, at the height of 50 feet above the soil.

On the Period between 1844, October 16, and 1845, March 20.

It will have been observed that the mean temperature of the air during the Winter period of 1844 and the Spring period of 1845, was much below its average value. In the Greenwich Magnetical and Meteorological Observations of 1845, at page 254, are my remarks upon this period, and the following is copied from the Greenwich volume for the Year 1845.

"The period of time between 1844, October 16, and 1845, March 20, was very remarkable for several unusual phenomena, but more particularly on account of the mean temperature of the air being very different from that of the average for the season, the amount of the departure from the average temperature being at times very great and very continuous.

"From 1844, October 1 to 15, the temperature of the air was about that of the average. Between October 16 and November 7, it was below the average every day, and its mean amount of departure was 3°.

"Between November 8 and 20, the temperature was high, the departure from the average being in excess (except on November 11, when it was 3° below the average), the mean amount of which was 6°.

"Between November 20 and 21 a great change took place; on the former day the mean temperature of the air was 7° in excess, and on the latter day 5° in defect; this great change took place suddenly. On November 21 at 2 hours A. M. the temperature was 45°·5, and at 4 hours A. M. it was 41°·7, and from that time it continued to decline. This was the beginning of a remarkable period of cold, which continued till December 27; the mean temperature of every day during this period being below the average by quantities varying from 1° to 15°; the mean departure for the period was 7°; the interval of time between December 8 and 14 was the most severe, the mean departure from the average being 12°.

"From 1844, December 28, to 1845, January 3, the mean temperature was very nearly that of the average, and on January 4 a period of warm weather set in, and continued till January 27, the excess above the average, being from 1° to 11°; the mean excess during this time being 3°. During the evening of January 27 the cold set in again with increased severity, and from this time till March 20 the temperature was always below the average, with one solitary exception, viz., the 26th of February, whose mean temperature exceeded that of the average by 3½°. The amount of this defect from the average was at times very great. On February 7 and 8 it was 11° on each day; on the 11th it was 14°; on the 12th it was 20° (for observations on this remarkable day see p. 24, foot note on p. 25, and also the

“ observations on pages 256 and 257*;) on February 20 it was 13°; on March 4 it was 14°; and on the 5th; 6th; 7th; 12th; 13th; 14th; 15th; 17th; and 18th days of March it was 14°; 16°; 10°; 11°; 20°·5; 20°; 16°; 15°; and 13° respectively. It would seem therefore that the cold from the beginning of March was more remarkable than at any other time during the winter for its steadiness and its unusual intensity. Between January 28 and March 20 the mean temperature of the air was 8°·5 in defect; in the cold weather of December the temperature fell from 38° on the 1st, to 22° on the 6th; but the temperature from the 5th of February declined much more rapidly and to a much lower point. On Wednesday, the 12th of February, the lowest thermometer reading was 7°·5 at the Observatory: at my residence, which is within one mile of the Observatory, and S. S. W. of it, the minimum was—1½°; this unusually low reading was very remarkable as occurring at this part of the country. The temperatures in March were not less remarkable: between March 3 days 4 hours P. M. and 7 days 8 hours A. M., and again between 12 days 6 hours P. M. and 17 days at noon the temperature was at or below 32°. The temperature on March 13 was perhaps more remarkable than any other; at noon on this day the thermometer reading was 23°; this occurring so near to the vernal equinox is worthy of especial notice, and it is without a parallel on record. The readings of thermometers placed on different substances were also very remarkable; the following are some of these—a self-registering minimum thermometer placed on grass and read every morning at 9 hours, showed that on 1844, December 5, the minimum was 13°·7; on the 6th, it was 7°·9; on the 7th 8°·9; on the 8th, 14°·9; on the 12th, 13°·0. On 1845, January 3, it was 17°·0; and on the 30th, 13°·4; on February 1, it was 12°·7; on the 3rd, 12°·0; on the 7th, 10°·9; on the 8th, 9°·7; on the 9th, 13°·0; on the 12th—6°·0; (*i. e.* six degrees below zero); on the 13th, 9°·0; on the 17th, 13°·6; on the 19th, 13°·3; on the 20th, 7°·7; on March 5th, 6th, 8th, 13th, 14th, 15th, 18th, and 21st, it was 11°·0, 5°·9, 13°·8, 8°·9, —0°·2, 7°·5, 6°·7, and 7°·2 respectively; and on many other nights it was less than 20°, showing the very low temperature to which vegetation was subjected during the winter. The lowest thermometer reading within the period was—12°·5, being that of a thermometer placed on flax, and read on the morning of the 12th of February, 1845.

“ The direction of the wind on 1844, November 27, was S. W.; between this day and December 26, it was N. E.; a period of calm succeeded and continued till December 29; the N. E. wind then prevailed till 1845, January 2; on this and the following days the direction was S. W. then N. E. till February 2; on this day the direction was S. W. being the first time, except January 2, 3, and 4, that the wind had passed from this quarter since 1844, November 27; a very unusual circumstance in this country. Between February 2 and 19, the direction was S. or S. W., and it was generally N. E. from February 19 to March 20.”

NOTE.—In these Meteorological Returns—

Spring	means the months of March, April, and May.
Summer	June, July and August.
Autumn	September, October, and November.
Winter	December, January, and February.

At the Royal Observatory at Greenwich the cistern of the Barometer is considered to be 159 feet above the level of the sea.

* Of the volume for 1845.

INDEX

TO THE EIGHTH ANNUAL REPORT.

- Afterlifetime, 279-80; *et seq.* TABLE VII., 337-339.
- Agricultural counties, fluctuations of marriages (1812-22), 14; (1822-26) with wheat fluctuating at rather low prices the marriages varied little, 18; increase (1829-33), 24; fall (1834-7), 24.
- All Saints parish, (Northampton), 320-324, 286; sub-district, 322; population, deaths, mortality *per cent.* in parishes, compared, *ibid.* Census in 1746 of All Saints and other parishes, 305-6. TABLES IV., V., VI., 334-6. Mortality in 7 years (1838-44), 286.
- Amiens, peace of, 14.
- Annuities (on false hypothesis), 284; by true and false tables, 288, *et seq.*; according to the Equitable, 291. TABLE VII., 337, 9; X., 344, 5; XI., 346, 7. 286.
- Austria, &c. mortality in, 43. *See* Foreign States.
- Bank Restriction Acts (effects of), 13, 18.
- Banns, marriages by, 104-123.
- Baptisms (1795-8), 12; increase of (1813-15), 14; (1812-22), 16; (1823-28), 17.
- Barometer, height of, in years 1841-7, 349. In 1841, 1842, 350; in 1843, 351; in 1844, 353; in 1845, 354. In the quarters of two years, (1844, 5), 45.
- Birmingham, marriages at, 9; (1782-92), 10; “Church and King riots,” *ibid.*; distress of buckle-makers, 10, 11; immense increase (1802-3), 12; rise and decline (1815-22), 14; (1816-22) marriages stationary and trade dull, with resumption of cash payments, 18; increase (1822-26) with fall of wheat, 18; fall in 1826, 18; rise in 1842-5, 26.
- Births (1838-45), 1; (in quarters of 8½ years), 3; (in 1845), 36; proportion to population, *ibid.*; (in different counties), 36, 37, and 63, 64; illegitimate, 36, 38; proportion of sexes, 37, 38.
- BIRTH TABLES. Annual births (7 years), proportion of, to population, in divisions and counties, Table A, 63; Table AA (*i. e.* former table arranged in order of mortality), 64; proportion to population in each of years 1839-45, in divisions and counties, males and females, Table C, 71; total male and female births in 7 years, with sexual ratio, 72. BIRTHS in each of 7 years (1839-45), males and females, in divisions and counties, 124-5; the same in quarters, 126-7. TOTAL BIRTHS (male and female) of 6 years, 1839-44, in divisions, 187; in counties, 188-191; in districts, 192-213. Births in each of the 6 years, in divisions, 214-217; the same in counties, 218-239. Sexual ratio of legitimate and illegitimate, in 2 years (1842 and 1845), 72; legitimate and illegitimate in 1845, and proportions of illegitimate per cent. on total births (each year, 1842 and 1845), 73; the same in districts, 74, 77; the same proportions of illegitimate in each of the 2 years, arranged in the relative illegitimacy of 1845, 78-80. BIRTHS of 1845, in quarters, and divisions and counties, 128-9; the same in districts, 130-141, ILLEGITIMATES of 1845, males and females, in quarters (divisions and counties), 142-3; the same (in districts), 144-155. TWIN births of 1845, males and females, legitimate and illegitimate (in divisions and counties), 156; the same in districts, 157-164; TRIPLE and QUADRUPLE births, 165. Births of 1845, male and female, in divisions, 240-1; the same in counties, 242-245; the same in districts, 246-267.
- Births and deaths in All Saints, 336; excess of births over deaths, 322.
- Births, deaths, and marriages, in France, Austria, Prussia, 47, and proportions to population, compared with England, *ibid.*
- Bristol (increase of marriages at, 1784-91-2), 10; (1813-15), 14, 17.
- Brown, founder of the sect which bears his name, account of, 301-3; Independents, their opinions, 302.
- Buckle-makers, distress of, 10, 11.
- Camden's remarks on Northampton, 303-4.
- Carlisle Table (annual premiums according to), 292.
- Cartwright and other distinguished natives of Northampton, 301, 2.
- CENSUS of Northampton in 1746, 305-6; in 1084, 1746, &c. 313-316; Shoemakers and other trades, in 1831 and 1841, 308. Census of All Saints, 322-324.
- Chapels registered for marriages, 98-9; chapels in Northampton, 309, 329; marriages in chapels, &c., 31-33. Tables of marriages in chapels, &c., for 1845, 104-5, and 106-123.

Chatham's administration, 8, 9, 27.
 Church and King riots, 10.
 Churches, chapels, institutions in Northampton, 308-10; proportion of, to population in twelfth century, 313.
 Cornfield, Mr., (letter from) 329.
 Corporation of Northampton, before and after Municipal Reform Act, 311-3.
 Cosmo's visit to Northampton, 304.
 Cowper's interview with the parish clerk of Northampton, 306-7.
 Currency, history of, from 1797 downwards, 13, 15, 18, 21, 24.

Deaths (1838-45), 1; (in quarters of 8½ years), 3; to per cent. of population, 39, and 63-4; (in 1845), compared with previous years, 38; reduction of mortality consequent on prosperity, 39; extract from Quarterly Returns, 40, *et seq.*

DEATH TABLES. Annual proportion of deaths to population (7 years), in divisions and counties, Table A, 63; Table AA (*i.e.* former table arranged in order of mortality), 64; Table D, proportion of male and female deaths (1838-45) to population, in divisions and counties, 81.

DEATHS in 1838-45 (males and females), in divisions and counties, 166-7; in quarters, 168-171. DEATHS in 7 years (1838-44) at different ages (males and females), in divisions and counties, 187-191; the same in districts, 192-213. DEATHS in each of the 7 years, males and females, at different ages (distinguishing months), in divisions, 214-217; the same in counties, 218-239. Deaths in 6 years (1839-44) under 1 year, distinguishing months and sex, 268. Deaths in London in 1845, at different ages, from 95 causes, males and females, 82-89; the same for 1846, 90-97. DEATHS in quarters of 1845 (males and females), in divisions and counties, 172-3; the same in districts, 174-186. DEATHS in 1845 at different ages (distinguishing months and sex), in divisions, 240-1; the same in counties, 242-245; the same in districts, 246-267.

Demoivre's hypothesis, 279, *note.*

Diseases fatal in London (in 1845) 82-9; (in 1846) 90-7.

Dissenters' chapels registered, 98-9; marriages therein, 31-3; 104-23.

Doddridge's Academy at Northampton, 305.

Doomsday survey, 294-5, 313; (transcript from), 326-7.

Equitable Society, 278; amount of its engagements in 1840, 278; its experience, 291-2.

Expectation of life, 279, 280. *See* After-lifetime.

Exports (in 1781), 10; (in 1795, 1798), 12; (1827-37), 23; (in 1837-41), 24, 25.

False Northampton Tables, 282-284, compared with True, 287-8, *et seq.* TABLES III., 332-3; XI., log. 346-7.

Farr's, Mr., Letter to Registrar General, 277 *et seq.*

Female population, and proportion of wives, widows, and spinsters, in Ireland, and some continental states, 100.

Fire at Northampton, 304.

Fluctuations of marriages. *See* Marriages.

FOREIGN STATES (returns from) 100. Naples, 44. France, Austria, Prussia, 47. Marriages of former years in various European countries, 62. France in 1844 (movements of population), births, legitimate, illegitimate, still; deaths, from accident, suicide, small-pox, other epidemics, &c., 270-275. Sweden: Stockholm, population, deaths, mortality per cent. (1821-40), 276.

FRANCE (returns from), 47; also in 1844, 270-275; marriages in former years, 62.

Glaisher's, Mr., Meteorological Report, 349 *ad fin.*

Gobion's manor, 317.

Hanover and Holland, female population and proportion of wives, &c., 100.

Hardwicke's Act 6, 7.

Houses and population of Northampton since 1084, 313-4; of the four parishes of Northampton at five Censuses, 315; annual value of houses at Northampton, 317.

ILLEGITIMATE BIRTHS, 36; in divisions, 38; (proportions of), 72-3, 74-7, 78-80. Illegitimates of 1845, 142-155. Twin illegitimate, 156-164; in France, 270.

Imports (of wheat in 1801-3), 13; (of cotton and wool in 1793-1803), 13; (of cotton in 1812), 15; (1812-14), 16; great decrease in 1816, 16; except in cotton, *ibid.*; (immense importation of wheat in 1817-8), 18; (increase of cotton and wool in 1824-5), 20; (wheat in 1829-36), 22; (cotton, wool, silk, 1829-37), 23; (wheat, 1838-42), 24; other importations, 25.

Independents, their opinions, 302.

Ireland, female population and proportion of wives, &c., 100.

Italy, mortality in, 43. *See* Foreign States.

Lancashire and Cheshire, fluctuations of marriages (1812-22), 14; increase steady (1829-36), 24; fall in 1837, 24; fall in 1841-2, 24.

Leeds, marriages, 9, 11; great increase of marriages (1802-3), 12; (1822-26), 17; fall in 1826, 18; rise (1842-5), 26.

Leland's visit to Northampton, and observations, 299, 300.

Letter to the Registrar-General, Mr. Farr's, 277, *et seq.*; Mr. Cornfield's, 329.

Licence, cost of, 31, and marriage fees, 32.

Marriages by licence or banns, &c., Tables, 104-123.

Life-insurance, 277-8; proprietary offices, 279; mutual, *ibid.*; insurance founded on false and true tables, 337-9.

Life (value of) in last and present centuries, 318.

Liverpool, sudden increase of marriages (1797-8), 11; increased exports, 12; increase of marriages (1802-3), 12; (1822-5), 17; rise (1842-5), 26.

London, marriages at (1757-63), 9; (1840-5), 26.

Manchester, fluctuations of marriages (1757-63), 9; (1781-93) rapid increase, 11; decrease (1793), 11. Suffering (1795), *ibid.* Immense increase of marriages (1802-3), 12; fluctuations (1813-22), 14; (1822-6), 18; fall (in 1826), 18; rise (in 1842-5), 26.

Manufactures of Northampton, and trades, 307-8.

Marriages (1756-1845), 8; *fluctuations* of, 6, 8, &c.; (with prices, consols, railways, 1839-45), 6; rise (1757-64), from scarcity to abundance, war with France, conquest of Canada, &c., 8, 9; comparative increase of same period at particular places, 9; *fluctuations* (1782-87), 9; peace restored, Pitt's plan for extinction of national debt; his commercial treaty with France, rise in the funds, 9, 10 (also 29); exports increased, 10; *rise of marriages* (1788-1792), fall of wheat, rise of funds, accumulation of capital, interest low, canals, 10; *decrease of marriages* (1793-5), check in speculation, fall of the funds, bankrupts more than doubled, issue of Exchequer bills, France declared war, rise of provisions, great distress, 10, 11; *increase of marriages* (1796-8), conjointly with rise and decline of wheat, fall of the funds, increase of taxation, war, mutiny, rebellion in Ireland, suspension of cash payments, but employment of the people greatly augmented, as shown by exports; poor-relief extended, expenditure increased, labour market improved by the war, 11, 12; *declension of marriages* (1799-1801), *sudden rise* (1802-3), being the greatest fluctuation on record, 12, caused by previous unseasonableness of weather, scarcity, high prices, and subsequent abundance and cheapness, with rise of wages, *ibid.* and 13, 14; manufactures, importations, and tonnage continued to increase rapidly in the same period, 13; rapid increase of inconvertible notes and speculation, 13; depression and revival aided by change of political events, 14; *marriages varied little* (1804-11), 14; *great fluctuation* (1812-15), concurrent with decline of wheat

from 129s. to 66s.; having been 157s. in Aug. (1812), 15; increased consumption of malt, 14; increase of inconvertible paper; transition from dull trade, riots, war, to peace and new commercial advantages, 15 (giving for 5 marriages in 1812, 6 in 1815, 14); *decline of marriages* (1816-17) coincident with deficient crop, rise of prices, with fall of revenue, repeal of income-tax, reduction of malt tax, fall of wages, &c., 16; *increase of marriages* (1818-21) with fall of prices from importation and rich harvest, diminished charge of poor-law, 16, 17; check to speculation, pressure of war-debt, riots, agitation, also other historical events indicating distress and slow recovery, (of the period 1816-21), 17; *fluctuations of marriages* (1822-8) considerable in towns, inconsiderable in country, 17, 18, with wheat rising and falling between 45s. and 69s.; *rise* in particular towns, 17; *increase of marriages* in 1825 with artificial prosperity, and fall in 1826, with collapse in the market, 21; prices high at this period, 20, 21; *increase of marriages* (1827-8), and recovery from depression, 21; *decrease of marriages* (1829), with depression and riots, 23; *continuous rise of marriages* (1830-4), with partial distress at the commencement of the period, but overcome by good wages, abundant crops, thriving trade, manufacturing and mining prosperity towards the end of it; fall of wheat from 64s. in 1830 to 46s. in 1834; increase of exports from 60 million in 1830, to 73 million in 1834; increase of imports, 22, 23; *fluctuation of marriages* (1835-7), trading prosperity, speculation, multiplication of joint-stock banks, fall of commercial credit, 23; marriages of 1835-6 checked by new poor law, 23, 24; *decrease of marriages* in 1837 with rise in bread, depression, decline of exports from 85 million in 1836, to 72 million in 1837, and similar fall of wool import, *ibid.*; *increase of marriages* (1839), with gradual declension to 1842, while provisions fell, 24; general strike of cotton-spinners (1842); expenditure in excess of revenue (1837-43); *great fluctuation of marriages* which rose in the period (1842-5), with new tariff and improved revenue; principally in Western Division, where employment on railways was most active, 26; general observations, 26-31, on the marriage returns, as affected by cessation of war, abundance or scarcity of food, extension of works, 26, 27; wages, speculation, political movements, 27; opening of new territories, 29; steady progress, 30.

Marriages (1838-45), 1; (in the quarters of 8½ years), 3; (in divisions and counties,

- with proportion to population, 1839-45), 4, 5, 63-5; (fluctuations of), 4, 6, *et seq.*; observations on the proportion of marriages to population, from earliest records to 1845 (with tables), 30, 31; marriages under 21 years (in 1844), 69, 70; (in 1845), 70.
- MARRIAGE TABLES.** Eleven divisions of England (1754-1837, 1839-1845), Table II., 48, 49; in counties (same years), Table III., 50-55; metropolitan counties, Portsmouth, Plymouth, Bristol, Bath, Birmingham, Manchester, Liverpool, Leeds, Newcastle, Hull, York (in same years), Table IV., 56, 57. The same returns in divisions, counties, particular places, repeated in periods of 5 and 10 years, Table V., &c., 58, *et seq.*; (counties) Table VI., 59, 60; (in particular places) Table VII., 61. Persons married in certain countries of Europe, 62. Annual marriages (7 years) (proportion of, to population) in divisions and counties, Table A, 63; Table AA (being former table of counties arranged in order of mortality), 64; proportion of marriages to population in each of the years (1839-45), in divisions and counties, Table B., 65; mark-signatures, in divisions and counties (1839-45), 66; (proportion of, to the married), 67, 68; in 1844, proportion of married under 21, of remarriages, of marks in divisions and counties, 69; the same for 1845, 70; dissenters' chapels registered, 98-9. **MARRIAGES** (1839-45) in divisions and counties, 101; the same in quarters, 102-3. **MARRIAGES** of 1845 in accordance and non-accordance with Established ritual, in the chapels of Roman Catholic and other denominations, by licence, banns, &c. (in divisions and counties), 104-5; the same in districts, 106-123; marriages in quarters (1845) 104-123; bachelors, widowers, with spinsters, widows (in divisions and counties), 104-5; the same in districts, 106-123. (1845) Remarriages, minors married, mark-signatures, 104-5; the same in districts, 106-123.
- Marriages, according to rites of the Church or otherwise, 31, 32, 33; after banns or licence, 31.
- Marriage Act, Lord Hardwicke's, 6, 7.
- Married in former years, in certain European States (numbers of persons), 62.
- Marks, signing by, 32-3; considered as educational test, *ibid.*; proportion of mark-signatures in counties (1839-45), 35. **TABLES**, 66-8; in 1844, 69; in 1845, 70, and 104-123.
- Meteorology in four quarters of 1844, 5, 45; of the years 1841-7, 349; of the years 1841-2, 350-1; of 1843, 351-2; of 1844, 353-4; of 1845, 354-5; of the period between 16th October, 1844, and 20th March, 1845, 355-6. *See also* extracts from Quarterly Returns for 1845, 40-46.
- Middlesex and Surrey, marriages in (1764-92), 10; (1799-1803), 12; (1813-15), 14; (1822-6), 17; fall in 1826, *ibid.*; steady increase (1829-36), 24; fall in 1837, 24.
- Mining schemes, 19, 20.
- Minors and persons of age (1843-5) married, 34; minors in 1844, 69; in 1845, 70; in divisions, 104-5; in districts, 106-23.
- Morgan's tables of life-annuities, 278; the same on the experience of the Equitable, 291-2.
- Mortality in Austria, Italy, and France, 43; at Naples, 44, 47. *See* Foreign States.
- Mortality in Northampton (in 1741-80), 316; All Saints (in 1838-44), 335-6. *See* Northampton bills of mortality.
- NAPLES**, births, marriages, deaths, population, 44. *See* Foreign States.
- Newcastle, marriages, 9; progressed slowly (1763-95), 11; great increase (1802-3), 12; rise (1842-5), 26.
- Northampton bills of mortality, history and description of, 281-301, 305-6; more correctly described as All Saints' Table, 320; improved by elegiac effusions, 306-7; average life at Northampton, according to Price, 279; average life improved within a century, 318.
- Northampton true table, how constructed, 285-6; old table, how constructed, 281-4. Table I. exhibiting deaths from four returns, and reduced (in Table II.) for comparison, 282; Price's table, and another on the same model, both right if the population were stationary, 284; true and false tables compared, 287-93. **TRUE AND FALSE TABLES**, annuities, premiums, &c., III., VII., VIII., IX., X., XI., 330-47.
- Northampton, history of, 293-320; its site, 293; mentioned in Saxon chronicle, 293; burnt by Sweyn, 293; devastation by Northumbrians, 293; Earl of Northampton married to Judith, 293; church grants of Simon, a provision against the day of judgment, 294; his fortifications, 295; number and value of houses (*from Doomsday*), 294; Easter and Christmas celebrated, 295-6; Becket summoned to Northampton, 295; constitutions of Clarendon, 295-6; Richard I.'s charter, 296; John's charter, 296; Henry III.'s charters, 297; Richard II.'s charter, 298; charter of incorporation, 298-9; other charters, 305, *see also* 311. Contribution levied by Henry III., 296; present for the purchase of books, 296; University founded here, and Fuller's commendation, 297; the town defended by Simon de

- Montfort against the Royalists, 297; parliament at Northampton in 1266, 297; last parliament there, 298; payment of members, 298; paving act of Henry VI., 298; water pipes, 298; other water-works, 307; Lollardy in Northampton, 298; measures recommended by Morton for securing the peace, liveries, &c., 298-9; popular constitution of the borough repealed, 299; Leland's visit to Northampton and notes, 299; church lands mortgaged, and thereupon Petie's advice to the king, 300; surrender of religious houses, 300; Henry VIII.'s act, providing for repair of the town, 301; guild fees, 301; town visited by Henry VIII. and Elizabeth, 301; Robert Brown, founder of the Brownists, 301-3; puritans in Northampton, 303; Camden on enclosures: the levellers, 303; plague, 303; Northampton in the interest of Parliament in the civil wars, 303; described by Leland, Cosmo, &c., 303-4; great fire, 304; act for rebuilding, 304-5; Doddridge's academy and other educational institutions, 305; hospitals, libraries, museums, &c., 309; dispensary, asylum, workhouse, &c., 310; infirmary, 306; ancient pottery, 307; scarlet well, 307; cotton, stocking, shoe manufactures, 307-8; census of shoemakers and other trades, 308, 314; churches and chapels, 308-9; lodges, friendly society, charities, &c., 309-10, also 306; relief of the poor, 310; courts of justice, &c., 310, 311; banks, traffic, fairs, 311; public amusements and accommodations, 311; municipal powers in the hands of commissioners, 311; report of commissioners of inquiry into corporations, 311, 12; corporate property, assessed taxes, municipal and political rights, 312; municipal reform act, 313; progress of the population and houses of Northampton, 313-316; mortality (in 1741-80) and annual rate, 316; increased value of real property, 316-7; increase of annual income and price of provisions, 318; improved value of life in last and present centuries, 318; summary review, and contrast of past and present, 318-20; dispensary named by Victoria, 320; parish of All Saints, and Registration district, 320; mean annual mortality per cent. (in 1838-44) compared with that of England, &c., 321; mortality of All Saints' parish compared with that of adjoining parishes, 322; mortality of shoemakers in All Saints, &c., 322; excess of births, 322; emigration, 323; extract from the last census of All Saints, 323-4; sources of error in Dr. Price's table, 324-5; Doomsday Book (extract from), 326-7; reprint of a bill of mortality, 328; letter from Mr. Cornfield, 329; children not baptized, 329; baptisms at the Roman Catholic chapel, 329; chapels now in Northampton, 329.
- Northampton, town of, described by Leland, Camden, Cosmo, and a writer in 1675, 303-4. Notes of the first, 299, 300.
- Norway, female population and proportion of wives, &c., 100.
- Peel's Act (of 1819), 18.
- Petie, the prior, recommended for promotion, 300.
- Pitt's administration, 9; treaty with France, 9; plan for extinction of national debt, 9; observations on parish relief and multiplication of children, 12; effects of his advice, *ibid.*
- Plague, its ravages in London and Northampton, 303.
- Plymouth and Portsmouth marriages, 9; (1783), 10; (1823-5), 17.
- Poor-relief, sums expended (1783-5, 1801), 12; mitigations of the Act, *ibid.*; increase of poor-law expenditure (1815-18), 17; decrease (1820-21), 17; (1831-7), 42.
- Population of Great Britain (1787) referred to by Pitt, 9 (*note*); of England in 1761, 31; of France (1784, 1800-1), *ibid.*; relative increase of the two nations, 30.
- Population, property (progress of), in Northampton, 313, *et seq.* **TABLE IV.**, 334.
- Premiums (on false hypothesis), 284; by true and false tables, 288, *et seq.*; according to the Equitable, 291-2; according to Carlisle, 292. **TABLE VII.**, 337-9; X., 344-5; XI., 346-7.
- Prices (*see fluctuations of marriages*) affected by change of currency, 18; enhanced by speculation, 20; fluctuations of, in connexion with imposition or remission of taxes, 24, 25; prices and income at Northampton, in eleventh and nineteenth centuries compared, 318.
- Price's table constructed on false hypothesis, 277; involving enormous errors, 287-293; sources of error, 324-325.
- Priest, duties performed by, in former times, 313-4.
- Probable lifetime, 279 (*note*); by true and false tables, 287.
- Prosperity, two kinds of, 28; wherefore followed by depression, 29; steady progress of the nation through all vicissitudes, 30.
- Prussia, female population, and proportion of wives, &c., 100.
- Quarterly Returns for 1845, 39-46; compared with complete Returns, 46.
- Rates of marriage, birth, and death; connexion between, 2.
- Real property, annual value of, at Northampton at different periods, 316-7.

- Registration of baptisms, deaths, and marriages, Act providing for, 25; dates of registers, *ibid.*; its commencement in 1538, and subsequent history, 301.
- Registration, expense of, 31; might be defrayed by charge for licence, *ibid.*
- Remarriages in 1844, 69; in 1845, 70; in 1845, 104-5; the same in districts, 106-123.
- Rent of houses and land at Northampton, increase of, since the Conquest, 316-7.
- Roman Catholic marriages, 104-23; chapels registered, 99.
- Saxony female population and proportion of wives &c., 100.
- Scarlet well, 307.
- Shoemakers of Northampton, 307-8; increase of shoemakers, 314; mortality of (in All Saints), 322.
- Simon de St. Liz, his family and grants 294-5.
- Smallpox (in 1845,) 41, 42, 43; vaccination *ibid.*
- Soldiers and sailors (discharge of), increasing marriages, 10, 15, 16.
- Speculation (in 1824), joint stock companies, bubble-act, 19, 20, 21; (in 1835), 23; observations on, 27.
- Specimen of Northampton bills of mortality, 328.
- SWEDEN, population, deaths, 276; marriages in former years, 62; female population, and proportion of wives &c., 100. *See* Foreign States.
- Taxes imposed or remitted in connexion with fluctuations of prices, 25.
- Temperature in four quarters (of 1844-5,) 45; of the years 1841-7, 349; in 1841, 350; in 1842, 351; in 1843, 352; in 1844, 353; in 1845, 354; of the period between October 16th, 1844, and March 20th, 1845, 355-6. *See* also Extracts from Quarterly Returns, 40-6.
- True Northampton Table, 284-292; construction explained, 285-6. TABLE III., 332-3; VII., 337-9; VIII., 340-1; log. IX., 342-3; log. X., 344-5.
- Twins and triplets: twins in 1845, 156-164; triple and quadruple births in 1845, 165.
- Victoria's dispensary, 310; 319-20.
- Wages (1790-1810), 13, 15; fall of weavers' and labourers' wages (1816-29), 16, 17; reduction of wages, 22; increase of wages (in 1833), 22; reduction causing general strike, 25.
- Widowers, widows, remarried (1842-5), 33; proportions of, in divisions, 34; (in 1844), 69; (in 1845), 70. *See* 104-23.
- Wigmakers, &c., distress of, 11.
- York, marriages, 9; progressed slowly (1760-95), 11; great increase (1802-3), 12; rise (1842-5), 26.
- Yorkshire, steady increase of marriages (1829-36), 24; fall in 1837, 24.

[The Marriages, Births, Illegitimate Births, Twin Births, Deaths in each quarter, and Deaths at different ages, are given in a series of Tables. The following index furnishes a reference to the number of each District in any of these Tables, the numbers running consecutively from 1 to 324. In forming the alphabetical arrangement, the principle is adopted of placing compound names in the order in which they are pronounced.]

- Aberayron, 311
- Abergavenny, 302.
- Aberystwith, 312.
- Abingdon, 70.
- Alcester, 201.
- Alderbury, 126.
- Alnwick, 291.
- Alresford, 65.
- Alston, 299.
- Alton, 65.
- Altrincham, 234.
- Alverstone, 59.
- Amersham, 78.
- Amesbury, 126.
- Amphill, 93.
- Andover, 63.
- Anglesey, 324.
- Ashborne, 226.
- Ashby-de-la-Zouch, 207.
- Ashton-under-Lyne, 256.
- Askrigg, 280.
- Aston, 200.
- Atcham, 176.
- Atherstone, 205.
- Auckland, 283.
- Axbridge, 157.
- Axminster, 133.
- Aylesbury, 80.
- Aylsham, 119.
- Bakewell, 227.
- Bala, 318.
- Banbury, 84.
- Bangor, 320.
- Barnet, 74.
- Barnstaple, 135.
- Barrow-on-Soar, 208.
- Basford, 221.
- Basingstoke, 65.
- Bath, 160.
- Battle, 51.
- Beaminster, 132.
- Bedale, 280.
- Bedford, 92.
- Bedminster, 161.
- Belford, 291.
- Bellingham, 293.
- Belper, 226.
- Berkhampstead, 77.
- Bermondsey, 24.
- Berwick, 292.
- Bethnal Green, 18.
- Beverley, 274.
- Bicester, 84.
- Bideford, 136.
- Biggleswade, 93.
- Billericay, 100.
- Billesdon, 210.
- Bingham, 220.
- Birmingham, 199.
- Bishop Stortford, 75
- Blaby, 206.
- Blackburn, 244.
- Blandford, 129.
- Blean, 40.
- Blofield, 117.
- Blything, 112.
- Bodmin, 146.
- Bolton, 249.
- Bootle, 299.
- Bosmere, 110.
- Boston, 214.
- Bourn, 212.
- Brackley, 86.
- Bradfield, 69.
- Bradford, (Wilts), 125
- Bradford, (York), 264.
- Braintree, 106.
- Brampton, 294.
- Brecknock, 314.
- Brentford, 72.
- Bridge, 43.
- Bridgend, 305.
- Bridgnorth, 181.
- Bridgwater, 156
- Bridlington, 274.
- Bridport, 132.
- Brighton, 54.
- Bristol, 162.
- Brixworth, 87
- Bromley, 37.
- Bromsgrove, 185.
- Bromyard, 174.
- Buckingham, 81.
- Builth, 314.
- Burnley, 242.
- Burton-upon-Trent, 192.
- Bury, 248.
- Bury St. Edmunds 113.
- Caistor, 217.
- Calne, 123.
- Camberwell, 29
- Cambridge, 96.
- Camelford, 145.
- Canterbury, 44.
- Cardiff, 305.
- Cardigan, 311.
- Carlisle, 295.
- Carmarthen, 308.
- Carnarvon, 319.
- Castle Ward, 290.
- Catherington, 60.
- Caxton, 95.
- Chapel-en-le-Frith, 229.
- Chard, 155.
- Cheadle, 193.
- Chelmsford, 104
- Chelsea, 1.
- Cheltenham, 168.
- Chepstow, 301.
- Chertsey, 33.
- Chesterfield, 228.
- Chester-le-Street, 284.
- Chesterton, 95.
- Chichester, 56.
- Chippenham, 122.
- Chipping Norton, 85.
- Chipping Sodbury, 164.
- Chorley, 246.
- Chorlton, 253.
- Christchurch, 62.
- Church Stretton, 175.
- Cirencester, 165.
- Clebury Mortimer, 181.
- Clerkenwell, 13.
- Clifton, 163.
- Clitheroe, 239.
- Clun, 175.
- Clutton, 159.
- Cockermouth, 297.
- Colchester, 103.
- Congleton, 232
- Conway, 320.
- Cookham, 67.
- Corwen, 318.
- Cosford, 108.
- Coventry, 204.
- Cranbrook, 46.
- Crediton, 135.
- Crickhowell, 314.
- Cricklade, 122.
- Croydon, 34.
- Cuckfield, 53.
- Darlington, 281.
- Dartford, 37.
- Daventry, 86.
- Depwade, 116.
- Derby, 225.
- Devizes, 124.
- Dewsbury, 262.
- Docking, 121.
- Dolgelly, 318.
- Doncaster, 270.

- Dorchester, 131.
Dorking, 35.
Dover, 42.
Downham, 114.
Driffield, 274.
Droitwich, 185.
Droxford, 60.
Dudley, 188.
Dunmow, 105.
Durham, 282.
Dursley, 164.
- Easington, 281.
Easingwold, 277.
East Ashford, 45.
Eastbourne, 52.
East Grinstead, 53.
Easthampstead, 67.
East London, 15.
East Retford, 218.
Eastry, 41.
East Stonehouse, 143.
East Ward, 300.
Ecclesall Bierlow, 257.
Ecclesfield, 257.
Edmonton, 71.
Elham, 43.
Ellesmere, 178.
Ely, 98.
Epping, 105.
Epsom, 33.
Erpingham, 119.
Eton, 78.
Evesham, 183.
Exeter, 138.
- Falmouth, 150.
Fareham, 60.
Faringdon, 70.
Farnham, 36.
Faversham, 40.
Festiniog, 318.
Flegg, 119.
Foleshill, 205.
Fordingbridge, 62.
Forehoe, 115.
Freebridge Lynn, 121.
Frome, 159.
Fylde, 239.
- Gainsborough, 217.
Garstang, 239.
Gateshead, 287.
Glanford Brigg, 217.
Glendale, 293.
Gloucester, 169.
Godstone, 35.
Goole, 269.
Grantham, 213.
Gravesend, 38.
Great Boughton, 235.
Greenwich, 31.
Guildford, 36.
Guilford, 116.
Guisborough, 279.
- Hackney, 9.
Hailsham, 52.
Halifax, 263.
Halstead, 106.
Haltwhistle, 293.
Hambledon, 36.
Hardingstone, 87.
Hartismere, 110.
Hartley Wintney, 65.
Haslingden, 243.
Hastings, 51.
Hatfield, 75.
Havant, 60.
Haverfordwest, 310.
Hay, 314.
Hayfield, 229.
Headington, 82.
Helmsley, 277.
Helston, 151.
Hemel Hempstead, 77.
Hendon, 74.
Henley, 82.
Henstead, 117.
Hereford, 173.
Hertford, 75.
Hexham, 290.
Highworth, 122.
Hinckley, 206.
Hitchin, 76.
Holbeach, 214.
Holborn, 12.
Hollingbourn, 45.
Holsworthy, 136.
Holywell, 323.
Honiton, 133.
Hoo, 38.
Horncastle, 215.
Horsham, 53.
Houghton-le-Spring, 284.
Howden, 271.
Hoxne, 110.
Huddersfield, 261.
Hull, 272.
Hungerford, 69.
Hunslet, 265.
Huntingdon, 91.
- Ipswich, 109.
Isle of Wight, 58.
Islington, 8.
- Keighley, 266.
Kendal, 300.
Kensington, 1.
Kettering, 89.
Keynsham, 159.
Kidderminster, 186.
Kingsbridge, 141.
Kingsclere, 63.
Kings Lynn, 121.
Kings Norton, 185.
Kingston, 32.
Knaresborough, 268.
Knighton, 315.
- Lambeth, 27.
- Lampeter, 313.
Lancaster, 240.
Langport, 155.
Launceston, 145.
Ledbury, 172.
Leeds, 265.
Leek, 193.
Leicester, 209.
Leigh, 251.
Leighton Buzzard, 94.
Leominster, 174.
Lewes, 52.
Lewisham, 37.
Lexden, 102.
Leyburn, 280.
Lichfield, 192.
Lincoln, 216.
Linton, 97.
Liskeard, 144.
Liverpool, 236.
Llandilofawr, 307.
Llandoverly, 307.
Llanelly, 307.
Llanfyllin, 317.
Llanrwst, 321.
Loddon, 117.
London (City), 16.
Longtown, 294.
Loughborough, 208.
Louth, 215.
Ludlow, 175.
Luton, 94.
Lutterworth, 206.
Lymington, 62.
- Macclesfield, 231.
Machynlleth, 317.
Madeley, 180.
Maidstone, 47.
Maldon, 101.
Malling, 49.
Malmesbury, 122.
Malton, 277.
Manchester, 254.
Mansfield, 219.
Market Bosworth, 207.
Market Drayton, 179.
Market Harborough, 210.
Marlborough, 123.
Martley, 182.
Marylebone, 6.
Medway, 39.
Melksham, 125.
Melton Mowbray, 210.
Mere, 128.
Meriden, 201.
Merthyr Tydvil, 304.
Midhurst, 57.
Mildenhall, 113.
Milton, 40.
Mitford, 115.
Monmouth, 301.
Montgomery, 316.
Morpeth, 291.
Mutford, 112.

- Nantwich, 233.
Narberth, 309.
Neath, 305.
Newark, 220.
Newbury, 69.
Newcastle in Emlyn, 313.
Newcastle under Lyme, 194.
Newcastle upon Tyne, 289.
Newent, 171.
New Forest, 62.
Newington, 26.
Newmarket, 97.
Newport (Monmouth), 303.
Newport (Salop), 179.
Newport Pagnell, 81.
Newton Abbot, 140.
Newtown, 316.
Northallerton, 280.
Northampton, 88.
North Aylesford, 38.
Northleach, 167.
Northwich, 232.
North Witchford, 98.
Norwich, 118.
Nottingham, 223.
Nuneaton, 205.
- Oakham, 211.
Okehampton, 137.
Oldham, 256.
Ongar, 105.
Ormskirk, 238.
Orsett, 100.
Oswestry, 178.
Otley, 266.
Oundle, 89.
Oxford, 83.
- Pancras, 7.
Pateley Bridge, 268.
Patriington, 274.
Pembroke, 309.
Penkridge, 198.
Penrith, 299.
Penzance, 152.
Pershore, 183.
Peterborough, 90.
Petersfield, 65.
Petworth, 57.
Pewsey, 123.
Pickering, 277.
Plomesgate, 111.
Plymouth, 142.
Plympton St. Mary, 141.
Pocklington, 275.
Pontefract, 269.
Pont-y-pool, 302.
Poole, 130.
Poplar, 22.
Portsea Island, 59.
Potterspurty, 86.
Prescot, 251.
Prestegne, 315.
Preston, 245.
Pwllheli, 319.
- Radford, 222.
Reading, 68.
Redruth, 149.
Reeth, 280.
Reigate, 35.
Rhayader, 315.
Richmond (Surrey), 32.
Richmond (York), 280.
Ringwood, 62.
Ripon, 268.
Risbridge, 107.
Rochdale, 247.
Rochford, 101.
Romford, 100.
Romney Marsh, 46.
Romsey, 62.
Ross, 172.
Rothbury, 291.
Rotherham, 259.
Rotherhithe, 30.
Royston, 76.
Rugby, 202.
Runcorn, 234.
Ruthin, 321.
Rye, 51.
- Saddleworth, 257.
Saffron Walden, 106.
St. Albans, 77.
St. Asaph, 321.
St. Austell, 147.
St. Columb, 146.
St. Faith, 117.
St. George, Hanover Square, 2.
St. George in-the-East, 20.
St. George, Southwark, 25.
St. Germans, 144.
St. Giles, 10.
St. James, Westminster, 5.
St. Ives, 91.
St. Luke, 14.
St. Martin in the Fields, 4.
St. Neots, 91.
St. Olave, 23.
St. Saviour, 23.
St. Thomas, 139.
Salford, 255.
Salisbury, 127.
Samford, 108.
Scarborough, 278.
Scilly Isles, 152.
Sculcoates, 273.
Sedbergh, 267.
Selby, 269.
Settle, 267.
Sevenoaks, 49.
Shaftesbury, 123.
Shardlow, 224.
Sheffield, 258.
Sheppey, 40.
Shepton Mallet, 158.
Sherborne, 131.
Shiffnal, 181.
Shipston on Stour, 183.
- Shoreditch, 17.
Shrewsbury, 177.
Skipton, 267.
Skirlaugh, 271.
Sleaford, 213.
Solihull, 201.
Southam, 202.
Southampton, 61.
South Molton, 135.
South Shields, 286.
South Stoneham, 62.
Southwell, 219.
Spalding, 214.
Spilsby, 215.
Stafford, 197.
Staines, 73.
Stamford, 212.
Stepney, 21.
Steyning, 55.
Stockbridge, 63.
Stockport, 230.
Stockton, 281.
Stoke Damerel, 143.
Stokesley, 279.
Stoke-upon-Trent, 195.
Stone, 196.
Stourbridge, 187.
Stow, 110.
Stow-on-the-Wold, 167.
Strand, 11.
Stratford-on-Avon, 202.
Stratton, 145.
Stroud, 166.
Sturminster, 129.
Sudbury, 107.
Sunderland, 285.
Swaffham, 114.
Swansea, 306.
- Tadcaster, 275.
Tamworth, 192.
Taunton, 154.
Tavistock, 137.
Teesdale, 283.
Tenbury, 182.
Tending, 102.
Tenterden, 46.
Tetbury, 165.
Tewkesbury, 171.
Thakeham, 55.
Thame, 82.
Thanet, 41.
Thetford, 114.
Thingoe, 113.
Thirsk, 280.
Thornbury, 164.
Thorne, 270.
Thrapston, 89.
Ticehurst, 50.
Tisbury, 128.
Tiverton, 134.
Todmorden, 243.
Torrington, 135.
Totnes, 141.
Towcester, 86.

Tregaron, 313.
 Truro, 148.
 Tunbridge, 48.
 Tunstead, 119.
 Tynemouth, 288.

Uckfield, 50.
 Ulverstone, 241.
 Uppingham, 211.
 Upton-on-Severn, 182.
 Uttoxeter, 193.
 Uxbridge, 73.

Wakefield, 260.
 Wallingford, 70.
 Walsal, 190.
 Walsingham, 121.
 Wandsworth, 28.
 Wangford, 112.
 Wantage, 70.
 Ware, 75.
 Wareham, 130.
 Warminster, 128.
 Warrington, 252.
 Warwick, 203.
 Watford, 77.
 Wayland, 116.
 Weardale, 283.

Wellingborough, 87.
 Wellington, (Salop) 180.
 Wellington, (Somerset) 153.
 Wells, 157.
 Wem, 178.
 Weobly, 174.
 West Ashford, 45.
 Westbourne, 57.
 West Bromwich, 189.
 Westbury-on-Severn, 170.
 Westbury, 125.
 West Derby, 237.
 West Ham, 99.
 West Hampnett, 57.
 West London, 15.
 Westminster, 3.
 West Ward, 306.
 Weymouth, 132.
 Wheatenhurst, 170.
 Whitby, 279.
 Whitechurch, 63.
 Whitechapel, 19.
 Whitehaven, 298.
 Whittlesea, 98.
 Wigan, 250.
 Wigton, 296.
 Williton, 153.
 Wilton, 126.

Wimborne, 129.
 Wincanton, 158.
 Winchcombe, 167.
 Winchester, 64.
 Windsor, 66.
 Winslow, 81.
 Wirrall, 235.
 Wisbeach, 98.
 Witham, 104.
 Witney, 85.
 Woburn, 94.
 Wokingham, 67.
 Wolstanton, 195.
 Wolverhampton, 191.
 Woodbridge, 111.
 Woodstock, 84.
 Worcester, 184.
 Worksop, 218.
 Worsley, 253.
 Worthing, 55.
 Wortley, 257.
 Wrexham, 322.
 Wycombe, 79.

Yarmouth, 120.
 Yeovil, 155.
 York, 276.

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