

Observations medical and political: on the small-pox and inoculation; and on the decrease of mankind at every age, with a comparative view of the diseases most fatal to London during ninety years. Including an attempt to demonstrate in what manner London may save near two thousand ... lives annually ... / [William Black].

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OBSERVATIONS
MEDICAL AND POLITICAL:
ON THE
SMALL-POX AND INOCULATION;
AND ON THE
DECREASE of MANKIND at every AGE,
WITH A
Comparative VIEW of the DISEASES most fatal
to LONDON during ninety YEARS.

INCLUDING AN
ATTEMPT to demonstrate in what Manner LONDON
may save near *two Thousand*, GREAT-BRITAIN and
IRELAND between *twenty and thirty Thousand*, and
EUROPE about *three Hundred and ninety Thousand*
LIVES Annually.

By W. BLACK, M.D.

L O N D O N:

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ERRATA:

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| 3 | 8 | for designs, <i>read</i> signs. |
| 25 | 19 | for 1717, <i>read</i> 1715. |
| 37 | 6 | <i>read</i> preceding year. |
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| 73 | 28 | for to be buried them, <i>read</i> to be buried in a. |
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| 84 | 11 | <i>read</i> , makes not quite two hundred. |
| 87 | 21 | <i>dele</i> annually. |
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| 112 | | -last <i>dele</i> , five. |
| 136 | | -last <i>read</i> , beneath the standard of the burials:
Amongst them J. |
| 139 | 7 | <i>read</i> , marriages in the country one with. |
| 154 | 3 | <i>read</i> , from time to time. |
| 161 | 8 | for flux, <i>read</i> flox. |
| 167 | 11 | for 1763, <i>read</i> 1773. |
| 167 | 25 | for numbers in, <i>read</i> numbers to. |
| 183 | 26 | for discountenanced, <i>read</i> reprobated. |
| 186 | | -last for borough, <i>read</i> burrow. |
| 189 | 4 and 5 | <i>read</i> more distinctly noted by Pliny, as
affecting the Roman army. |
| 196 | 6 | for would effect have the same <i>read</i> , would have
the same effect. |
| 198 | 3 | <i>read</i> to by medical men. |

OBSERVATIONS

MEDICAL AND POLITICAL.

CHAP. I.

The Origin of the Small-pox and Measles: the Treatment of the former Disease by the Arabians and East Indians: the Transportation of the variolous Infection to America: Inoculation when introduced into Europe: its Advantages stated: the proportion who die in Natural and Inoculated Small-pox: the Controversy stated, whether general Inoculation in London and other great Cities, at the private Houses of the Inhabitants, would be beneficial or hurtful to the Community at large: Baron Dimsdale's different Publications on this interesting Topick examined, and as the Author conceives refuted: an Attempt to demonstrate in what manner London may save near to two Thousand, Great-Brittain and Ireland between twenty and thirty Thousand, and Europe about three Hundred and ninety Thousand Lives annually.

THE Roman Empire in Italy and the West, was finally overturned by the Northern Barbarians in the sixth century of the Christian era: from that event literature

and arts lay for many centuries after, buried in the ashes of Rome. To the crash of this immense colossus, another memorable catastrophe soon succeeded; a new religion appeared in the East, the Arabians under Mahomet, (p. c. 622) sallied forth sword in hand to propagate his religious doctrines; and several great kingdoms and provinces gradually bowed to the Mahometan yoke.

THREE new diseases, the Small-pox, Measles, and Spina ventosa, are first described by the Arabians: the two former diseases had never before been seen in any part of the globe, frequented by Europeans; at least no history is found of them in any ancient medical author, poet, or historian of either Greece or Rome. Mahomet's followers are said to have exported those two specific poisons from the deserts of Arabia. The most remote traces or mention, which I can find of Small-pox, is in Egypt, during the reign of Omar, Mahomet's successor. Variolous poison was soon spread by the Mahometans through Palestine, Syria, Egypt, Persia, Spain, and wherever they carried their victorious arms. Many centuries after, the crusades or holy wars were instrumental in diffusing

sing them more widely over Europe; and since that time, both those diseases have committed incredible havock amongst the human species.

RHAZES (P. C. 900) and Avicenna, both give a correct history of the distinct and confluent Small-pox, of the diagnostic and prognostic, the favourable and bad designs, and the method of cure. Rhazes was by birth a Persian, and practised at Bagdat.

His treatise on the Small-pox and Measles, is translated from the Arabic, by the care of Dr. Mead, and may be seen entire in the latter's works. He appears in many instances to have treated them judiciously, and recommends the cooling regimen to a degree which physicians, practising in northern climates, might not unreasonably think bordering on excess.

If the feverish heat and symptoms ran high, Rhazes directed plentiful blood-letting before the eruption, and even after it, if the fever had not abated. When the fever was moderate, and the pulse and breath not considerably disturbed from the natural state, blood was drawn sparingly. In imitation of

Galen, young persons under fourteen years of age were cupped only: water cooled with snow was given for drink in large draughts; and if this did not pass off by urine or sweat, or the fever decrease, he directed that it should be forced up again by vomiting. To promote the eruption of pustules, the sick person was wrapped up in clothes, his body rubbed all over, and cold water given for drink; for the same purpose, two basins of hot water were placed, one before, the other behind, and the body covered only with a shirt: the hot vapours ascending, were expected to soften the skin, and to facilitate the eruption. This vapour was not suffered to cool upon the body, but wiped off with great diligence.

SEVERAL applications were prescribed to defend the eyes, if redness and itching indicated a crowd of pustules coming upon those tender organs. He also took great care to protect the throat from numerous pustules by gargles; if great hoarseness and straitness of breathing threatened future suffocation, blood was drawn, even after the eruption. Where the skin is hard, as in the legs and feet, they were bathed in warm water, and sometimes poultices applied. To ripen the Small-pox, basins of warm water were employed as before

fore described. Pustules in the legs that were large and matured, he directed to be opened with an incision-knife. Should the pustules be large or numerous, he says they must be dried up, or the fluid contained in them soaked up with fine cotton. To dry up the pustules, he recommends several astringent and absorbent applications, such as alum, bole, dragon's blood, and liniments compounded of similar substances. When the Small-pox abounded with moisture, the sick were directed to lie on powdered roses, rice-meal, or a mattress stuffed with those ingredients.

ALL flesh meat, fish, hot and high seasoned things, and milk were forbid: barley water mixed with sugar, or decoction of raisins, figs and fennel seeds were given for drink, and in violent fever, the cooling juice of acid pomegranate seeds, boiled with sugar, and a small portion of gum arabic; the chamber was also kept cool. He describes the composition of many syrups and oxymels, given in Small-pox; they were a mixture of the juices of several acid fruits and vegetables, to which vinegar and sugar were superadded; and sometimes a small quantity of camphor made one ingredient in the cooling syrups and electuaries.

I shall

I SHALL now, so far as facts and history enable me to proceed with any probability, endeavour to investigate the origin of the Small-pox and Measles; two distempers which have unpeopled more of Europe than the fiercest wars. Doubts and controversies have arisen whether or not those pests of mankind were engendered in the Arabian deserts. If they had been known in Greece, Rome, Alexandria, in any of the wide dominions of the Roman Empire, or even in Persia, we must conclude that the Greek and Roman physicians, who described every disease down to the most minute, would not have omitted the history and cure of two so conspicuous and fatal. Rhazes and Avicenna, notwithstanding, treat of them as diseases familiar in their time, and without any intimation of novelty: the earliest Arabian accounts convey no suspicions of this nature. Rhazes, who entertained a profound reverence for Galen, says that, although that author left no description of, nor regular practice in Small pox, yet he supposes, that Galen alludes to this disease under the name of pestilential carbuncle and confluent inflammation: this more probably meant putrid sore throat and scarlet fever; and Physicians are at present universally agreed,

that

that neither the Greeks nor Romans have taken the least notice of Small-pox or Measles.

WE cannot but consider it as a most extraordinary and even a miraculous circumstance, that two diseases, whose infection is so extremely contagious, especially that of Small-pox ; the poison of which adheres to cloaths, woollen, cotton and porous materials during a long time, and has in this way been conveyed to very distant kingdoms ; that such a disease could have been circumscribed, and its ravages confined for several thousand years to a small corner of the globe, not divided by sea, from the rest of Asia, is altogether unaccountable. If Small-pox had distilled its venom upon Arabia alone, until the era of Mahomet, that kingdom must have had very little or no communication with the rest of its neighbours ; and it is one proof that Arabia and its inhabitants had not undergone many revolutions. The intercourse of distant nations was then certainly rare and difficult, and I conceive they stood in that unsociable relation, at least to Arabia, from the creation ; but whether the existence of the universe is dated fix, or sixty thousand years back in antiquity, it is inexplicably singular, that Small-pox did not much earlier find a vent from Arabia, to
disembogue

disembogue its virulence upon the bordering nations.

DR. Mead thinks, that Small-pox were first generated in the hot climate of Ethiopia, and together with the plague, transplanted from thence across the narrow channel of the Red Sea, into the opposite continent Arabia ; this is weak conjecture, unsupported by proof or probability. If Small-pox had been a common disease in Ethiopia, there were various opportunities for its being carried down the Nile into Nubia and the heart of Egypt, countries bordering on Ethiopia, and of the remotest antiquity in arts and cultivation. The Greek philosophers many centuries before the birth of Christ, had sailed up the Nile, above the second cataract : Herodotus even gives a rude geographical chart of Ethiopia.

Sesostris, one of the Egyptian Kings, made himself master of Ethiopia, and left behind him several stone statues and monuments of his power ; he also conquered Palestine and Scythia. Sabacon, one of the Ethiopian Kings, in the early periods of Egyptian history, is said to have conquered the latter country, and to have reigned

reigned over it fifty years. Cambyfes, the son of Cyrus, after fubduing Egypt fent Ambaffadors, or rather fpies into Ethiopia : he failed up confiderably beyond Thebes, and fet out to invade Ethiopia ; a fcarcity of provifions, it is true, obliged him to return back without penetrating acrofs the deferts ; but he conquered fome of the Ethiopian provinces bordering on Egypt. When Herodotus made the tour of Egypt, he was informed that feveral of the natives had travelled into the heart of Ethiopia.

IT is ftill as marvellous, that the difeafe fhould not have burft over the boundaries of Arabia. The northern Arabian princes had waged war with the Egyptians, the Perfians, and the kings of Affyria. Cyrus, Cambyfes, and afterwards Alexander the Great, reduced fome of the northern Arabian provinces, to a temporary fubjection. In the reign of Auguftus, before Celfus wrote, and one century and a half before Galen, Arabia to the north was fubjected to Rome. Auguftus' generals penetrated even into Arabia felix, and into Ethiopia. In the fecond century, the fleets of Trajan ravaged the coafts of Arabia, bordering on the Red Sea : in his reign, feveral of the

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northern

northern provinces were tributary to Rome: besides, the Romans, in the height of their glory, and after the conquest of Egypt, carried on a considerable trade with Arabia and India. One hundred and twenty vessels sailed annually down the Red Sea, traversed the Arabian coasts, and arriving at the Malabar shores in India, and the island of Ceylon, returned from thence loaded with cinnamon, pepper, ginger, silk, pearls and diamonds. Writers say that the Arabians and Egyptians still earlier, had pursued that traffic. Mecca too, the Mahometan prophets birth place, stands on the borders of the Red Sea. The queen of Sheba, who came to visit Solomon at Jerusalem, one thousand years before Christ, and who brought presents of gold, and rich spices, is generally thought to have travelled from Ethiopia or Arabia. Throughout all this intercourse, variolous infection seems not to have dispersed itself over any other country.

— ON whatever side we cast our eyes, to explore the parentage of Small-pox and Measles, we behold a boundless ocean of surmises and conjectures. Let us now direct our enquiries and researches to India, for some additional rays of light to illuminate this dark subject.

MR. Holwel, a gentleman of respectable rank and character in the Company's service, and who resided great part of his life in India, (Indoستان,) published some years ago, a very sensible treatise on the practice of Inoculation, and the medical treatment of inoculated Small-pox in that country. It is believed, says he, in India, that Small-pox raged there time immemorial, and that the Bramins or Priests, time out of mind, have practised Inoculation. In confirmation of this, he quotes the Gentoo Code of Laws, and their scripture, which, according to the Bramins, has been now promulgated three thousand, three hundred and seventy-one years, by their original lawgiver Brama. In this code there is a form of divine worship and prayers, instituted to be offered up to the *Goddeſs of Spots*, a supposed female divinity. These ceremonies and religious practices, are still faithfully observed during the continuance of Small-pox, Measles, and other epidemical diseases accompanied with eruptions on the skin; and certain it is, that no people upon earth have adhered so uniformly and scrupulously through a revolution of ages, to the established ceremonies and institutions of their great prophet, as the East Indians.

SUSPICIONS and difficulties still start up in our progress to evolve, this not only curious, but interesting subject from obscurity. In the first place, chronology, which depends upon oral tradition, is not to be received without many doubts and scruples. The Goddess of Spots is also a vague term: the spots might signify any eruptive or cutaneous diseases. On the other hand, Mr. Holwel says, that Inoculation in India is a practice, the origin of which is too remote to be traced back: this likewise probably rests upon the imperfect and dubious records of tradition. We know that in England, Inoculation is just sixty years introduced, and at that time it had been but forty years known at Constantinople. The Turks again ascribe the origin of the practice to Circassia, one of the Asiatic provinces of Turkey. Enquiry hitherto has been pushed no further back; but perhaps it is to India that Europe is originally indebted for this important discovery, through the medium of the Circassians.

NEITHER Rhazes, Avicenna, nor any of the Arabian physicians make the least mention of Inoculation. Had variolous poison been transported from India to Arabia, the physicians of the latter nation could not have remained

remained ignorant of a practice, according to Indian tradition, so universal and ancient, and attended with such happy consequences: at least, we may fairly presume that the Arabian writers would not have observed a profound silence upon Inoculation, if they had heard of its use in any part of the world.

THE question therefore remains to be determined, whether Small-pox and Measles were first engendered in the climates of Arabia or India, or whether both countries did not give birth to those scourges of the human race. We know that the disease is not bred in the human frame, but that it is propagated from one to another by contagion: America, neither in the cold nor torrid regions, had ever known Small-pox, until they were carried to that continent by Europeans. Thousands in this island, and in other countries who keep out of the sphere of variolous infection, live to a great age, without undergoing the disease.

RHAZES when recommending cooling syrups in Small-pox, adds, "Perhaps the syrup of pearls, which the *Indians* describe, and of which they boast more than they could have experienced, may be more powerful; for they say, that if any one drinks of that syrup, though

though *nine pustules* have already appeared, there will not come out a tenth." If Indians mean the people of Indostan, which is highly probable, this is rather in favour of Mr. Holwel's idea as to the antiquity of Small-pox in India : but let it be considered, that Rhazes lived in Persia above two hundred years after it was subdued by the Arabians; and in that time the contagion might have been disseminated amongst the inhabitants of India.

SUPPOSING for a moment, that Small-pox and Inoculation were as ancient in India, as the Bramins and Mr. Holwel give out; we are extremely puzzled to conceive how the disease could have raged from the time of Brama, above two thousand years, without ever being heard of in Europe, or ever crossing over into Persia : there was no sea, nor obstacle to prevent the communication between the two nations ; and the kings of Persia possessed a small portion of India : much of Asia, says Herodotus was discovered in the reign of Darius ; he sent ships, which sailed down the river Indus into the Indian Ocean ; this historian describes several provinces of India to the South of Persia ; he calls it the remotest part of the habitable world.

DARIUS we are assured received a larger annual tribute from the different parts of India subject to Persia, than from any other of the twenty great Satrapies, or governments into which he divided his immense Empire. Alexander (a. c. 356) conquered some of its northern provinces, and sailed down the whole course of the Indus with a large army.

ALL the knowledge which I have been able to extract out of books, and all the reflections I am capable of making upon this subject, are now laid before the reader. I can only answer for myself, and confess, that many of my doubts are still unsatisfied ; without new materials, which I have neither leisure nor opportunity to collect, my opinion must remain in suspense. Some of our Oriental travellers, and Antiquarian correspondents, may possibly favour us with additional lights that will conduct to the original source of variolous poison ; for I conjecture, that the disease though until then a stranger to Europe, was much more ancient than the era of Mahomet. The Indian practice in Small-pox, and the manner in which Inoculation is performed there, as described by Mr. Holwel, is not undeserving of medical attention.

INOCULATION

INOCULATION in India is performed by a particular tribe of Bramins, who are delegated annually for that purpose, and make a tour or separate circuits in travelling parties to Inoculate all the distant provinces. They arrive at the place of their destination a few weeks before the usual return of the natural disease. The inhabitants who mean to have themselves, or children Inoculated, know the time of their arrival, and abstain according to established rules of the Bramins, for one month before the Inoculators periodical visitation from fish, milk, and a kind of butter made of Buffalos milk: this is the invariable and only preparatory regimen.

UPON reaching the place of destination, the Bramins proceed from door to door to Inoculate; going down one side of the street and returning up the other side. The fee for each person is about a penny, and they are constantly employed from morning until night. They Inoculate generally on the outside of the arm, the males about the middle, betwixt the wrist and the elbow; the females betwixt the elbow and shoulder. The operator first rubs the part with a dry cloth, during

ring eight or ten minutes ; then with a small instrument made like a crow-quill, and sharp at the point, he makes, in a small space, which might be covered with a silver groat or six-pence, several slight scratches, so that the smallest appearance of blood may be perceptible : a pledget of cotton impregnated with variolous matter is then applied, after being a little wetted with water from the *Ganges*, (every country has its superstitious follies) over all a bandage is rolled ; six hours after the bandage is removed, and the cotton left to fall off of its own accord.

VARIOLOUS matter taken from Inoculated Small-pox of the preceeding year is generally used for Inoculation ; but is never received nor preserved from natural Small-pox, however mild and distinct. There are many instances of the variolous matter entangled with cotton, and kept close stopped from the air in a bottle during five or six years, at the end of this period proving active.

THE same prohibitory regimen in diet is continued through the disease, as before Inoculation : but what will appear still more singular, and to us at first sight rash, every

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morning

morning before Sun-rise, and every evening after Sun-set, the patients after Inoculation are stripped naked, and sluiced over the head and body with buckets of cold water. This cold bathing is continued until the eruptive fever comes on, which by such means is rather hastened, and commences about the close of the sixth day after Inoculation. Then they desist from cold bathing a few days during the eruptive fever, least fermentation should be interrupted, and at that particular time they conceive that the blood should not receive any additional commotion: but on the eruption coming out, which is generally in three days, they again resume the cold water and continue it to the end of the disease, in order to expel all the remains of noxious matter from the internal parts.

MR. Holwel affirms, from his own experience in India, that when pustules have sunk, and the sick appeared in the most imminent danger, he has seen marvellous effects from a few gallons of cold water thrown over the head: the pustules which had subsided filled again suddenly by this simple remedy, as if by enchantment. In cases of Measles, which did not come out freely, and where there seemed great anxiety and proneness to faint,

Rhazes

Rhazes advised immersion in cold water and frictions. In India, the water is poured out of buckets by servants without intermission, and at the distance of six or twelve inches above the head. Its shock and severity in this mode of application is said to be much greater than by immersion of the whole body in a cold bath. The Bramins suppose that the sudden shocks hasten fermentation, and by increasing the motion of the heart, drive all offensive particles from the internal parts to the surface and extremities.

THE variolous pustules when ripe, are all opened with a small pointed thorn. The Bramins persevere with astonishing patience and diligence in this work for several hours at one time ; opening by degrees all the pustules, whether the disease be mild or otherwise, and whilst the matter is in a fluid state. This evacuation, they say, prevents inflammations, weakness of the eyes, boils, and other eruptive disorders, which frequently follow Small-pox ; it also prevents, or at least mitigates the danger of secondary fever in the height and turn of the disease. In the confluent Small-pox it is observed, that the pustules often fill repeatedly after being opened *five, six*, and even to *eight* times : by this aper-
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ture

ture they are successively emptied, and room allowed for what remains to discharge by the outlets which nature points out. Every pustule is considered as a small abscess or boil that has reached the point of maturation, and whose matter should be drained off, by an external opening. About a dozen pustules are opened at one time, then the matter is absorbed with a linen or cotton rag dipped in warm water and milk; in this way they proceed over the whole body, face, and extremities. The slender conical thorn is preferred to a broader instrument, because the external air is not admitted through so small an orifice, to close up the excretory vessels, and the further secretion of variolous matter. If the pustules were rudely opened, a violent inflammation might be excited. In the confluent Small-pox, the pustules often fill again before the operator has half finished, but he suffers a few hours to elapse before repeating the operation.

A COOLING diet is prescribed through the disease. The Inoculated are forbidden to confine themselves to the house, and are exposed to every wind that blows; all the fruits with which the climate abounds are permitted, such as plantain, sugar-cane, and water melons;

melons ; and cold water, or rice gruel, used for common drink. The number of pustules from Inoculation in that country, are generally from *fifty* to *two hundred*. A discharge from the scarified part where the various poison is inserted, generally follows throughout the disease ; but even if this running ensues with a few pustules about the wound, yet none upon the rest of the body, the person need have very little apprehension of being ever again seized with the disease. This exactly corresponds with the observations of European Inoculators.

INOCULATION in India, Mr. Holwel informs us, has to encounter prejudices as in Britain, but almost all recover ; and he assures us, that though the infection is multiplied by means of Inoculation, yet, that the disease is very little spread from that cause in the natural way ; nor does this accumulation of poison add to the malignity of natural Small-pox, which in India are exceeding fatal.

THIS ingenious gentleman during twenty-eight years, in which he resided in India, and in the province of Bengal, observed that every *seven* years, Small-pox returned periodically, and always proved of a malignant kind.

kind. If the septennial recurrence should be found after a longer trial, a century for instance, to be a constant law, it would be an additional circumstance in favour of the Pythagorean or harmonic number. During the hot season in March, April, and May, this periodical virulent Small-pox rages with unbridled fury amongst natives and foreigners, until the rains in June abate its fury. For this reason the Inoculators usually begin their work in February, before the return of the natural disease is expected, and that disposition of the air favourable to rouse the dormant venom into activity. In the rainy season there, Mr. Holwel has seen a malignant Small-pox, which killed numbers, so early as the second or third day. He has remarked in this pestilential species, that turkeys, capons, fowls, poultry, and other species of the feather'd tribe were seized with the infection and died in considerable numbers, as in cases of the plague. A parrot that died of this disease he opened, and found the intestines lined with pustules. Authors have mentioned some few instances in England, where a highly malignant Small-pox infected poultry and pigeons.

LETTERS written by some missionaries of Rome, who had embarked for China, on the
fruitless

fruitless errand of converting that nation to christianity, relate, that Inoculation was practised there one hundred and forty years ago, and consequently before its introduction into this island, but posterior to India. The Chinese method was to roll up in cotton, a few of the dried scabs that had fallen off from the variolous pustules; small pledgets of these were put up the nostrils, and in that way the disease communicated: or the dried scabs powdered and snuffed up the nose, answered the same purpose. Dr. Mead, 1721, made the experiment of Chinese Inoculation upon one of seven condemned criminals in Newgate, and of the Turkey practice upon the other six, all of whom by that means obtained a pardon. The Brain in the former case, was found to be dangerously affected; and in all probability, the Chinese practice will not hereafter be revived nor imitated by any nation.

THE Crusades undertaken by the Christians in the eleventh and twelfth centuries, in order to expel the Saracens from the Holy Land, had been the means of introducing Arabian science and books into Europe: Rhazes, and Avicenna the two earliest writers of repute on Small-pox, together with a few Arabic translations of the Greek and Roman authors were then imported.

1492 Hispaniola, an island situated at the western verge of the Atlantic, was discovered by Columbus, and by other adventurers in succession, the rest of the extensive continent of America. In Hispaniola, Columbus's sailors caught the Venereal disease from the Indian females, and imported it to Europe, where such a distemper had never before been heard of, nor in any other part of the old world. A general exchange of diseases, remedies, and natural productions soon ensued between Europe and the new discovered continent of America. In return for the venereal disease, the Europeans *first* communicated that dreadful scourge of the human race, Small-pox to the American Indians, There at different intervals it committed such inexpressible carnage amongst the unseasoned natives, as had nigh depopulated that continent. In 1520 the infection was carried into Mexico by a negro slave of Spain, when half of those infected died of the distemper: in 1588 it was carried into Peru, and still later into Paraguay, where Small-pox are said to have proved more fatal than in any other part of the world, hardly any recovering from the disease.

EUROPE and America were but lately supplied with the only safe and defensive shield,
worthy

worthy of divine original, against this inveterate enemy. Our earliest information in Britain of Inoculation, and its utility in surprisingly diminishing the mortality of Small-pox, was from Emanuel Timoni, a Greek physician, in a letter to Dr. Woodward, and dated at Constantinople, 1713. In 1715, in another epistle from the same author to the Royal Society, he says that, forty years before the above date, Inoculation had been introduced into the capital of Turkey, from two of the Asiatic provinces bordering on the Caspian Sea, Circassia and Georgia. Another eye witness of Inoculation in Turkey, Kennedy, an English surgeon, in the same year with Timoni, published some observations on the subject. Pylarini's account of Inoculation, by a Greek woman in Constantinople, where he then practised medicine, was published at Venice, 1715. The Turks, as Mahometans and fatalists, and obstinately attached to the dogmas inculcated in the alcoran, which command them not to fly even from the plague, rejected Inoculation, and it was adopted only amongst the Greeks, Armenians, and Christians. At Egypt, Tunis, Algiers, Tripoli, and other provinces

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subject

subject to Turkey, Inoculation had been long known: probably the practice was carried to these countries, by the provincial soldiers sent from Circassia.

BESIDES the security afforded by Inoculation, we learn that the Circassians and Georgians were induced to this practice by an additional and powerful motive, avarice, in order to preserve the beauty of their female children, and to sell them at higher prices to the rich Turks and Persians as mistresses. The variolous matter they transferred by several scratches made in different parts of the body, dipping the point of the needle into a ripe pustule, or into a nutshell full of variolous poison. Many Greek women at Constantinople, exercised the function of Inoculators. They also, unnecessarily, made four or five scratches, resembling, in most respects, the Circassian method: a plaster was laid over these punctures, and after seven or eight days, a slight fever or sickness ensued, succeeded by an eruption of pustules; but seldom or ever any violent symptoms or secondary fever, so fatal in the natural Small pox at their height, were observed to accompany the Inoculated. Timoni reports, that they were in-

different

different whether the variolous infection was engrafted from natural, or artificial pustules.

IN 1717, Lady Mary Wortley Montague, the elegant letter-writer, and wife to the English Ambassador at Constantinople, had her son Inoculated in that Capital, by Maitland, an English surgeon. On this Lady's return to England in 1722, her daughter, Miss Montague, was Inoculated by a single and slight incision on the arm, and is the first person of any rank Inoculated in this island. A few months after, the young Princess Royal, and some of the royal family followed this example. In the preceeding year it had been successfully tried upon seven condemned malefactors in Newgate, who on that account received a pardon.

FEARS and strong prejudices still prevailed against a practice so novel. Several physicians wrote against Inoculation: they condemned it as a hazardous experiment, as tending to multiply infection, and, as they argued, the number of deaths: they also alledged, that in the small portion of variolous poison, other hereditary diseases might be communicated. Many divines and foolish bigots, inflamed with a mistaken zeal, preached against the practice as impious, and an

insult to the divine decrees ; they exclaimed that it bore a stronger resemblance to magic than to physick; and to crown this fiery rhapsody, that the devil had Inoculated Job. Others with ignorant effrontery asserted, that Inoculation would not prevent the attack of the natural disease. A variety of other objections and falsehoods were invented to depreciate this important discovery. In 1723, a considerable mortality happened in London by Small-pox, which the opponents ascribed to Inoculation ; but Dr. Jurin proved, that the mortality by this disease was in January and February, and that no person was Inoculated before the twenty-seventh of March, and then a very small number. The severity of this natural epidemic notwithstanding contributed with the causes before mentioned, to increase the public distrust, and to turn Inoculation into discredit.

Dr. Jurin, from 1723 to 1727, published several detached papers in the Philosophical Transactions, comparing the mortality of natural Small-pox, and the numbers lost by Inoculation. From a great mass of materials, and many thousands of sick in different parts of England, he found that one of five or six, at a medium, died by the natural disease ;

disease ; this is the general result of later and more enlarged calculations. In Turkey, in the northern parts of Europe, and in Africa, Small pox is still more fatal : In several instances it has been so virulent, as to kill nearly one half of the infected.

AGAIN, of those then Inoculated, one of fifty, died : but amongst them were included young infants, many of whom are cut off by convulsions, which was laid to Inoculation ; and some aged persons, pregnant women, and valetudinarians. Besides, a very few trials only had been made of its success : Jurin's list of all the Inoculated in London, and other parts of England, from 1721 to 1727, amount only to seven hundred and sixty four. Inoculation was carried to Boston in North America, in 1722, and attended with the same happy effects as in London, amongst the handful who had resolution enough to intrust their lives to that protection.

I SHOULD not omit to mention, that in a part of our island called Wales, a custom prevailed before the introduction of Inoculation from Turkey, of engrafting the Small-pox, and sometimes with superstitious practices. A small wound or scratch was made with a pin,

a pin, or the point of a knife, and the variolous matter rubbed in ; now and then the pocky scabs were merely rubbed in the hollow of the hands. Dr. Williams, a physician of Pembrokehire in Wales, first informed Dr. Jurin by letter of this practice ; it was there a very ancient custom amongst several individuals, and could not be traced back to its origin by the oldest persons : the same fact is well authenticated by collateral evidences. A similar custom prevailed in some parts of Denmark in the last century, and is related by Bartholine ; but the bulk of both nations, and medical men universally seem to have been entirely ignorant of, or to have overlooked this domestic practice : it appears to have been very seldom exercised, and its peculiar advantages over the natural disease, concealed from the world until we received illumination from Turkey.

INOCULATION from 1727, languished in England until 1738, when it was again revived, and this island had the courage and good sense to set the example to the rest of Europe. In 1738, of two thousand Inoculated in the counties of Suffex and Hampshire, but two died ; and in the same year of one thousand Inoculated at all ages in North America, but
eight

eight died. Middleton Inoculated eight hundred, and lost but one. Other Inoculators lost one out of three and four hundred. In the Island of St. Kitt's, of three hundred negroes Inoculated, not one died. Ranby Inoculated a thousand and without one blank. In 1746, a small charitable Hospital was erected at Pancras, in the environs of London, for the double purpose of Inoculation, and to receive during their sickness, persons of indigent circumstances who should be seized with natural Small-pox. Of eighteen hundred Inoculated in this hospital in the course of several years, but eight died. At another period, of four hundred and ninety-six Inoculated at this asylum, but one was lost. In the year 1759, the numbers Inoculated at Pancras were, five hundred and ninety-three, and many of those adults, yet but one died. The Suttons of late years, by their own computation, Inoculated throughout London, and many parts of England about forty thousand, and as they assert did not lose one hundred.

In one thousand, seven hundred and forty-eight, Inoculation was introduced into Amsterdam : in 1752 and 54, it was admitted into Italy and France. In Italy, a
malignant

malignant Small-pox was then committing severe ravages amongst the inhabitants ; on this distressing occasion, several mothers dreading the destruction of their whole family, from the uncommon mortality of the natural epidemic, Inoculated their children when sleeping, and with the desired success. Mr. Condamine's different papers read before the French academy, on the great advantages resulting from Inoculation, contributed essentially to its reception into France. In 1755 they began to Inoculate at Stockholm, the Capital of Sweden. Haller and Tissot near the same time laboured strenuously to introduce the practice into Switzerland : on the other hand, De Haen of Vienna, and physician to the royal family, wrote impetuously against the innovation, and was ably replied to by Tissot. Of one thousand two hundred Inoculated, (1764.) in Sweden, not one died. In Pensylvania and other provinces of North America, of eight thousand Inoculated, only nineteen died, or one of four hundred and sixty-seven. Dr. Gatti, a professor of medicine, in the university of Pisa, in Italy, Inoculated one thousand, and without a single miscarriage. At this day it is an easy matter to multiply piles of similar examples, according

According to the immature calculations of Jurin, of those Inoculated *one* of *fifty*, and of Dr. Mead *one* of *every hundred* died ; but by the accounts of later date, collected by practical Inoculators and Physicians, on an average, only *one* of every *five hundred* Inoculated die : from the general tenour of Mr. Holwel's pamphlet, this last proportion would seem to hold good also in India, and in support of this calculation, a variety of facts have been laid before the reader.

THOUGH the success of Inoculation is astonishing, and the mortality of Small-pox by that means almost miraculously lessened ; yet long habits, ignorance, and superstitious prejudices obstructed its admission for a long time ; it had to encounter in every kingdom an host of opponents, and by very slow degrees got a footing. The practice even at present is far from being so universally authorized and encouraged as it merits. I shall hereafter demonstrate, that in England, but more particularly in London, Inoculation is unfortunately by no means so general as writers have supposed.

AMONGST the vague objections urged against Inoculation, it was affirmed that the natural disease might afterwards return.

Maitland and all the writers who were acquainted with the practice in Turkey, flatly contradict this loose assertion. The veracity of the few rare cases of that kind produced, are extremely suspicious, and do not probably amount to one in a hundred thousand: some equally singular cases are related of persons undergoing the natural disease a second time; but they both happen so seldom, as to be trifling exceptions to a general law. It has often been tried in Turkey, and other kingdoms of Europe, by a second Inoculation, and by putting them into a bed with persons ill of natural Small-pox, but in either way found impracticable to renew the disease. Others surmised that some hereditary disease might be instilled together with variolous infection: universal experience proves this to be a chimerical conjecture, and in the natural disease there is greater danger of such imaginary combination of Infections; for in choosing variolous matter it is easy to select it from healthy constitutions. Experiments have been made with variolous matter taken from persons labouring under the venereal disease, yet the latter infection was not ingrafted with Inoculated Small-pox.

INOCULATION

INOCULATION seldom or ever fails to convey the disease. The pustules are in general few; and although only one or two should appear, the person is ever after seasoned against that disease. In Europe and India, there have been numerous instances where no pustules appeared, but only a slight inflammation, and afterwards a suppuration of the scarified part, in which the variolous matter was ingrafted; yet no Small-pox have afterwards ensued.

EXCLUSIVE of the immediate havock by this direful disease in the natural way, numbers who survive are disfigured; in multitudes of others, the disease is followed by complaints of the breast and consumptions, and a considerable number too annually in this island are deprived of their eye sight. No bad symptoms of this kind follow Inoculation; seldom any considerable sickness or secondary fever attend it. Infection has been taken from a virulent malignant Small-pox, and in the way of Inoculation produced a mild disease.

CALCULATIONS make but a small share of adults to have escaped the attack of Small-pox: in great cities perhaps fewer live to mature age,

and resist variolous infection. In them especially it is prudent to anticipate surrounding danger and certain hazard. Entire families have frequently been exterminated, and crushed in one general ruin by this distemper : certainly both sexes who are arrived at the age of puberty, and who have not passed over this perilous abyss, cannot but feel on many occasions uneasy sensations of apprehension and dread. A superstitious argument has been used by weak bigots to dissuade the world from Inoculation, because a few happen to die under the artificial disease ; but this argument is much more powerful against matrimony and population, for about three of every two hundred women die in childbed, or of diseases attending that state.

In the precise mode of ingrafting variolous infection, Authors and Inoculators are not agreed : the Bramins and several of the European professed Operators make only one simple incision ; others with us make one gentle incision on each arm, to be sure of conveying the poison, and to prevent a possibility of miscarriage. Cotton is used by some, by others a thread, each impregnated with matter from a ripe pustule ; these are laid on the scratch or wound, and over all a plaster.

plaster. Some again dip the point of a lancet, others a needle or pin into a pustule, and by a slight scratch in both arms convey the disease : this may be done to children during sleep, and no plaster is required. The Bramins use the artificial matter of the preceding preserved in a bottle close stopped ; Inoculators with us generally employ fresh matter, and taken indifferently from natural or artificial pustules. Some prescribe elaborate and complicated preparation by diet, mercurials and purges, previous to inserting the variolous infection. Dr. Gatti, before mentioned, and who wrote a sensible treatise on this subject remarks, and I believe justly, that the more simplicity is used in transferring the disease artificially, the practice and publick benefit are likely to be more universal. Several of our European Inoculators often, with officious industry, exercise a superfluous preparatory parade of professional and scientific craft : young children especially may dispense with many of these redundant ceremonies.

THE introduction of Inoculation into England, and into other parts of Europe, the controversies maintained for and against the practice, together with its success, may be learned from Dr. Jurin's papers, from Dr. Kirkpatrick's

Kirkpatrick's History of Inoculation, and from "Histoire de l' Inoculation, par Mr. de La Condamine." An alarm has been lately created against general Inoculation in London and other great cities; and it is represented as big with danger to the public safety: I hope effectually to answer all those objections.

THE London Bills of Mortality show, that within the last hundred years, in this city alone, upwards of two hundred thousand persons have been cut off by one single disease, Small-pox. As in all other epidemical diseases, so in Small-pox, there is a fluctuation in the deaths, some years they are high and in others lower; but examine the London Bills so far back as 1629, when the diseases of those who died were first inserted, you will not find in all the interval from that down to the present time, that deaths by Small-pox in any one year, ever amounted to four thousand. 1772, which is the highest rise, they stand at three thousand, nine hundred and ninety-two. "communibus annis" about two thousand annually are destroyed in London by this unrelenting foe.

WE are to remember, that in several populous parishes the births and deaths are not registered,

gistered, otherwise the London catalogue of funerals would appear considerably greater; and that from 1629 to 1733, twenty large parishes have been added to the original bills: to judge fairly therefore of the effects of Inoculation in London, we should not go far back into those records. Comparing the deaths now with the bills when first instituted, has misled many eminent physicians and calculators, who proceeded to draw erroneous deductions respecting the increase or diminution of mortality by the modern practice of Inoculation.

LET it be supposed, that two thousand annual deaths by Small-pox fall out of six hundred thousand inhabitants in London, and contained within the bills. I only mean to settle gross proportions, and to come near the truth; and computing the inhabitants rather more numerous than what some calculators will allow, is for our purposes a safe error. If out of six hundred thousand inhabitants, two thousand die annually of Small-pox; then throughout *nine* millions in Britain and Ireland, *thirty* thousand annual deaths may be set down to this disease. Numbers without doubt in the country live and die at an advanced age, without undergoing this distemper; place the entire

tire

tire national loss of the two kingdoms at a half, or even diminish it if you think proper to a third, still it will be obvious, that by constantly operating, more of the inhabitants of a nation are swept away by Small-pox alone, than by the most bloody wars, which break out at distant intervals only, after a hollow truce of several years pacification.

BARON Dimsdale had the honour to be sent from England in order to Inoculate the present illustrious Czarina of Russia. He there published a treatise on the benefits of Inoculation; and since that it has been reprinted in London with the Barons additional annotations. This Author says, page 15th, “ we see that even in London, where the climate is temperate, the disease well known, “ and the treatment of the sick very ably “ conducted, this *single disease destroys more “ than the eighth part of the Inhabitants*” and in page 16th, he proceeds thus: “ If “ therefore in London which enjoys the many advantages already recited, *more than “ two thousand persons die annually of Small-pox*, we may surely suppose that the loss “ which Russia in its whole extent sustains “ in

“ in the *same space of time* amounts to *two*
 “ *millions of souls.*”

THE Baron's last proposition is manifestly erroneous, it is an exaggerated calculation, repugnant to fact and reason. Allowing that through Great-Britain and Ireland, the mortality of Small-pox keeps pace with London, and that out of nine millions of inhabitants, thirty thousand fall annual sacrifices to this disease ; how many can we rationally conclude would be the total mortality throughout Europe in the same period ? Mr. Voltaire, if I recollect right, calculates the inhabitants of Europe at one hundred and seven millions ; probably one hundred and twenty millions, the number formerly said to be contained in the Roman Empire under Trajan and the Antonines, will be a more exact estimate. On this supposition, and taking Britain and Ireland as a radix, the annual deaths by Small-pox throughout all the kingdoms of Europe, will amount only to *four hundred thousand.*

RUSSIA by several calculations contains fourteen millions of inhabitants : no authentic enumeration that I have consulted makes the subjects of that Empire to exceed sixteen millions ; and in these are included all who inhabit the extensive and inhospitable deserts

of their Asiatic dominions in Siberia. It is therefore impossible that *one eighth* of those, or two millions, can be annually cut off by all the diseases put together: 1 of 32, embracing Town and Country, is nearer the usual decrease. There is no kingdom in Europe comparatively, that suffers one third, very few one fourth of the annual waste by every deadly disease, which Baron Dimisdale assigns to Small-pox alone in Russia. An "actual Counsellor of State", a title annexed to Baron Dimisdale's Russian honours, should be a little better informed in history, and political arithmetick, and particularly in the number of the Russian inhabitants; but "*one of the Body Physicians to her Imperial Majesty*" stands inexcusable in promulgating such wandering notions of subjects intimately connected with his own profession.

I CAN readily grant, that in Russia the disease is more fatal than in Britain; but yet when we reflect upon the wide and dreary extent of the Russian Empire, the small proportion of inhabitants, their imperfect communication and difficult intercourse, and that many parts are rude and uncivilized; great numbers must be supposed to live and die without being visited by variolous contagion. I am willing to make every concession in favour

vour of Baron Dimfdale; let Small-pox in Russia be as inhuman as he chuses, and armed with the most incredible ferocity; if one eighth or two millions of the inhabitants are annually destroyed by it, then in the short space of a single year, all other diseases sweeping away the remaining seven parts, every human soul in the Czarina's dominions would be entirely exterminated, the country reduced to a desert, and over run with wild beasts,

GENERAL INOCULATION

IN

C I T I E S.

A QUESTION of infinite magnitude and importance to mankind, now remains to be discussed, whether by Inoculation in London and other great Cities at the private houses of the Inhabitants contagion is not more likely to be dispersed, and upon the whole the community at large to be more injured than benefited by the practice?

LATELY this subject has been canvassed in printed publications by medical gentlemen of great professional abilities. One side has recommended general Inoculation throughout Town and country, and a Dispensary has been erected upon those humane motives, in order to render the effects more extensive. All the Poor who chuse to apply for themselves or families are to be Inoculated gratis, and where the case is attended with any danger, they are to be furnished with medicines and medical advice at their own habitations.

THIS

THIS scheme dictated by benevolent humanity and disinterested patriotism has been opposed by Baron Dimisdale, and unfortunately for the publick with too much success; the attempt is calumniated by him with considerable heat, and passionate zeal. Public appeal has been made. Baron Dimisdale has printed several pamphlets on the back of each other, to represent the general Inoculating institution as “rash, inconsiderate, and highly dangerous.” He arraigns his medical antagonists with “urging artful untruths, and notorious falsehoods; he accuses them of wanting common honesty and humanity.” In some of his latest pamphlets, he suggests as a “simile in point, “that an action of damages would lie against a person who by Inoculating *horned cattle* for a contagious disease, should spread it in the neighbourhood.” We are to observe, that Baron Dimisdale’s interdictions are “solely directed against Inoculating the poor, laborious, and middling classes of people at their own houses,” for in all his publications he allows that the “*rich and gentry may secure their families by timely Inoculation.*” Indeed it is a principal part of his own practice in London.

I SHALL

I SHALL endeavour to state with equal candour, and with as much brevity as possible the arguments advanced by each of the disputants. Of all the publications upon this controversy, I shall exhibit to view but two, that of Baron Dimfdale, and another the joint production of two very learned Physicians, Dr. Watkinson, and Dr. Sims ; the two gentlemen who first recommended a Dispensary, and offered their services without fee or reward, to render Inoculation more general and useful to London and to the Nation.

BARON Dimfdale, the leading and ardent champion against general Inoculation in London, “ at the houses of the laborious poor, “ and middling trades people” rests his opposition upon the following principles: I give the abstract and substance in his own words. I must also do the Baron the justice to say, that seemingly, he has urged, and exhausted every shadow of argument on that side of the dispute.

“ THOUGH the loss under Inoculation is
 “ very inconsiderable, *almost the whole* of those
 “ that are Inoculated recovering, yet by
 “ spreading the disease, a greater proportion
 “ take it in the natural way: *more lives* are
 “ now lost in London than *before Inoculation*
 “ commenced.

“ commenced, and the community at large sus-
 “ tains a greater loss: the practice therefore
 “ is more *detrimental* than *beneficial* to soci-
 “ ety. In the last four years preceeding
 “ 1776, the London Bills from Small-pox
 “ arose at a medium to two thousand, five
 “ hundred and forty-four: this increase is
 “ truly alarming.” The disease by general
 “ Inoculation throughout London, spreads by
 “ visitors, strangers, servants, washer-women,
 “ doctors and inoculators; by means of Hack-
 “ ney Coaches, in which the sick are sent out
 “ to take the air, or by sound persons ap-
 “ proaching them in the streets.”

“ THE poor in London are miserably
 “ lodged; their habitations are in close alleys,
 “ courts, lanes, and old dirty houses: they are
 “ often in want of necessaries, even of bed-
 “ ding. The Fathers and Mothers are em-
 “ ployed constantly in laborious occupations
 “ *abroad*, and cannot attend the inoculated sick;
 “ should they neglect their occupations, food
 “ and necessaries would be deficient, and the
 “ medicines and diet ordered by the physicians
 “ would not be regularly complied with.
 “ The air in their houses is impure: they
 “ have neither areas, gardens, nor *carriages*
 “ for

“ for the convenience of ventilation, and
 “ taking fresh air.

“ Sailors and sea-faring people, many of
 “ whose lodgings are miserable in the little
 “ houses bordering on the river, would be
 “ liable to catch the distemper, and either to
 “ fall sick there without friends or assistants,
 “ or perhaps being infected on shore, to car-
 “ ry it to sea in their contaminated cloathes,
 “ and afterwards falling sick without care or
 “ attendance, might spread the disease in fo-
 “ reign climates.”

“ COUNTRY people coming to town for
 “ markets, visits, or pleasure, would all be
 “ subject to the danger of infection. Persons
 “ coming from the sick to the general (Inocu-
 “ lating) Dispensary, for medicines or ad-
 “ vice, by intermixing in the streets, the *public*
 “ danger from their infected apparel would be
 “ *great* and inevitable: the whole neigh-
 “ bourhood would be exposed, and in immi-
 “ nent danger, by having the Small-pox
 “ brought to their doors. The gossiping
 “ disposition of the poor will spread it fur-
 “ ther, and after the sick recover falling
 “ forth in their infected cloathes, is certain
 “ to add to the mischief. The children who
 “ are able to run about will intermingle in
 “ the

“ the streets, immediately upon their recovery,
 “ ry, with their play-fellows : the success
 “ therefore derived from general Inoculation
 “ will be beneficial to a *few* only, but involve
 “ a great number of others in danger,
 “ which they would otherwise be less exposed
 “ to.”

As a remedy against all those inconveniences and dangers from Inoculating the poor and middling trades people at their own houses ; Baron Dimisdale addresses himself “ to
 “ the legislature of Great-Britain, and to the
 “ charitable contributions of the rich and
 “ humane, to enlarge the Inoculating Hospital
 “ at Pancras, adjoining to the city.”
 This Hospital at present (if I am not misinformed) makes only *one hundred beds*, and none are admitted under seven years of age.

“ THE *rich* (continues Baron Dimisdale) availing
 “ themselves by timely *Inoculation*,
 “ *secure their families*, but the loss falls
 “ chiefly on the offspring of inferior trades
 “ people, and the labouring poor. To encourage
 “ partial Inoculation amongst them
 “ would be only spreading the disease amongst
 “ their neighbours, and encreasing the evil.
 “ In Country Towns, large Hospitals will
 “ not be required : It will be *necessary only* to
 H “ obtain

“ obtain the *unanimous consent* of all the inha-
 “ bitants of a town, district or parish to be
 “ Inoculated at one and the same time: for
 “ if some only are Inoculated, and others
 “ excluded, the disease will spread through
 “ the vicinage, and be fatal to many. In
 “ London and other great cities, such *general*
 “ *consent* of those who have not undergone
 “ Small-pox, cannot be had to submit to
 “ Inoculation.” This the Baron justly consi-
 ders as an impracticable chimera, and never
 to be accomplished. “ He adds, that before
 “ Institutions of this kind (the Inoculating
 “ Dispensary) should be tolerated: the le-
 “ gislature ought first to be consulted.”

THE danger of multiplying and spread-
 ing variolous infection by general Inocu-
 lation, is obviously the main pillar, and
 prop, upon which Baron Dimisdale builds
 all his arguments and rhetorick. To
 obviate this suppositious danger the gentlemen
 who patronize general Inoculation amongst
 the poor and laborious orders at their own
 houses assert, “ that the instances are ex-
 “ tremely rare, where the disease is spread
 “ from Inoculated persons so as to excite
 “ Small-pox in the natural way”: to prove
 this

this they appeal to facts and experience ; they quote a number of eminent Authors, practical Inoculators, and other vouchers of reputation not only in Britain, but in different parts of Europe, all of whom expressly maintain, “ *that from the Inoculated, few if any catch the disease in the natural way.*” Mr. Holwel’s observations in India where Inoculation is very general, corroborates this proposition.

In reply to those proofs, Baron Dimisdale from his *own authority*, and instances which fell under his personal inspection contradicts their facts, and affirms, that infection may be communicated by Inoculated persons, and excite the natural disease. The Circassians or East Indians, would be good evidences to this point of dispute. The gentlemen further say, and are confirmed by the testimonies of all experienced Authors, “ that a certain disposition of the air (not well understood) is necessary to give the contagion of Small-pox activity, and to propagate infection in the natural way. They say too, “ that from an Inoculating Hospital, the remedy proposed by Baron Dimisdale, children under seven years of age can derive no advantage ; and that in large

“ Hospitals the air is rather more impure
 “ than in the meanest private houses.”

THERE never was in my opinion since the origin of physick, a medical controversy agitated of more consequence to mankind. It is not only a medical, but also a political, and a great national question. Intellectual wars without number have been waged in Literature, Philosophy, Medicine and Metaphysics, from which few, except perhaps Booksellers, have reaped any active benefit. The present subject is not a matter of mere speculation ; abundant evidence has been laid before the reader of the immense carnage made by natural Small-pox, and of the inconsiderable number lost by Inoculation ; but if in cities, none but the *rich* are to partake of the benefits of timely Inoculation ; if it is not tolerated to the children of the poor and laborious ranks, until they reach seven years of age, and even then in a large Hospital, its advantages must be partial, and limited to a very small share of the community. For all these reasons the enquiry should be conducted with candour and seriousness ; no bigoted attachment to pre-conceived hypothesis, no jealousy, rancour of party, selfish interest, nor stubborn pride, should be suffered to exasperate our temper,
 and

and to pervert our judgment. If the sentiments delivered by me in vindication of general and universal Inoculation, can be controverted by facts, and sound criticism, I should not be ashamed publicly to retract and to confess my error.

I shall endeavour to answer all Baron Dimfsdale's objections one by one, in doing which, I trust to prove, beyond contradiction, that his ideas of this subject are capricious and short sighted, and that his scheme is crude and exceeding faulty. All great cities in Europe are deeply interested in the decision of the utility, or injury from general Inoculation; the arguments which apply to London are equally valid, in every metropolis and in lesser towns. The reader is here to sit in judgment, and to give his opinion upon a contest, which is in its public determination and general consequences, involves the dearest concerns of thousands.

“ THOUGH the loss (says Baron Dimfsdale)
 “ under Inoculation is very inconsiderable,
 “ almost the whole of those that are Inocu-
 “ lated recovering; yet by spreading the dis-
 “ ease a greater proportion take it in the na-
 “ tural way, *more lives are now lost in London*
 “ *than*

“ *than before Inoculation commenced, and the*
 “ *community at large sustains a greater loss ;*
 “ *the practice therefore is more detrimental*
 “ *than beneficial to society.*”

SUCH were the terrors held out to dissuade every nation from encouraging Inoculation amongst them, upon its first introduction from Turkey. If the argument is good for any thing, it must militate in every case against Inoculation in private houses, particularly in London and other cities, and even in the country, whether rich, gentry, or poor ; because, according to Baron Dimisdale, the infection is in that way spread, and the publick loss greater. Why therefore it may be asked, does Baron Dimisdale labour all in his power to increase the dispersion of variolous infection, and to injure the community at large, by Inoculating all rich persons in London and its vicinity, who employ him ? Do not his actions flatly contradict his ostensible cares for the public safety ? I am hurt at being under the necessity of descending from the dignity of my subject, and bringing home an argument rather personal ; but the reader will perceive it is entangled in the dispute, it is extorted from me and inevitable. When Baron Dimisdale stood forth the medical Goli-
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ah against Inoculation in London, he should have foreseen that men would be confounded with such glaring inconsistency upon being told, that few physicians Inoculated so many at private houses in this city, and its neighbourhood, as himself.

“ IN the last four years preceding 1776,
 “ the London Bills from Small-pox arose at
 “ a medium to two thousand, five hundred and
 “ forty-four : *this increase is truly alarming.*”

Baron Dimisdale lays this increase at the door of general Inoculation disseminating variolous infection. As an effectual answer to this aspersions, I refer the reader to the London Bills of mortality *four* years immediately preceding 1720. In 1715, Inoculation had been mentioned in a letter to the Royal Society ; but for several years after, no persons submitted to the practice in London, nor in England. Now the deaths by Small-pox in these *four* years amount to eleven thousand, seven hundred and forty-one, or nearly to three thousand annually, before Inoculation commenced. Go still further back into the bills, and before Inoculation was heard of in England ; in some years Small-pox deaths swell to two, and even to three thousand : In 1710, they amount to three thousand, one hundred and thirty-eight,
 1686,

1686, to two thousand, four hundred and ninety-six, 1681, to two thousand, nine hundred and eighty-two, 1674, to two thousand, five hundred and seven. In 1721, so cautious and fearful were they of Inoculation in London, that in that year experiment was made of its effects upon six condemned malefactors in Newgate, who by that means redeemed their lives. From 1722 to 1727, Dr. Jurin could collect but seven hundred and sixty-four persons Inoculated in all that interval, including London and other parts of England; and from that time to 1738, the practice fell into disuse; yet notwithstanding in twelve years only, from 1715 to 1728, small pox deaths in London amount to twenty-seven thousand, three hundred and sixty-seven. These facts surely are sufficient to exonerate Inoculation from adding to variolous mortality in the metropolis.

FOUR years besides is too short a period to erect substantial conclusions upon: there is an ebb and flow in natural Small-pox as in all other diseases, especially of the febrile class; those left behind in former years are often in the succeeding swept away. Epidemical and particularly contagious diseases, cannot be expected to keep upon an annual equality. In
some

some years of the London bills the burials have been double the births ; here is more real reason for *alarm* : nor does Small-pox keep pace with the general mortality : in 1745, the annual burials were, thirty-two thousand, one hundred and sixty-nine, and in this number Small-pox but one thousand, nine hundred and seventy-seven. In many other diseases, both acute and chronic, the mortality of each varies in some degree annually : it cannot be expected to be quite so regular as the motions of time, or the revolutions of the planets.

LONDON inhabitants fluctuate, which may occasion some difference : besides, in the last *twenty* years the total annual mortality has considerably decreased, and this is one reason why Small-pox appear in the four years picked out by Baron Dimisdale *comparatively* greater than formerly, amounting, as he says, to one eighth of the deaths. From 1720 to 1759, the proportion of deaths by Small-pox to all other annual deaths in London, were as 1 to 11, 12 and 13. Forty years is a better foundation to build upon than four. One to 13 and 14 is also the proportion of Small-pox mortality in Paris.

AGAIN, when two thousand, five hundred and forty-four have died in one year by Small-pox in London, it is demonstrable that the greatest number of the sick must have been seized with the natural Infection; for out of *one million* Inoculated, rating the blank at one of five hundred, agreeable to the modern, and broadest calculation, so many deaths would not have happened. Now attend to the deduction from this proposition. The deaths being two thousand, five hundred and forty-four, and one out of six dying of natural Small-pox, which is the usual average in Britain; in this case fifteen thousand, two hundred and sixty-four, or near to that amount, underwent the distemper each year, in the natural way in this city. This is nearly equal to the annual births in the same register. How many more were Inoculated, I cannot pretend to alledge. Such a multitude of variolous sick could not possibly be confined to the new annual recruits, and as the majority of those emigrants are advanced near the age of puberty, or have passed that period, we may infer that numbers of them have already escaped through the perils of Small-pox. Therefore, where fifteen thousand,

sand,

land, or even twelve thousand have in one year been infected with natural Small-pox, without adding the Inoculated; is there not a copious magazine of contagion in London to spread the disease? During one hundred and fifty years, that is since the diseases were first marked in the bills, London has never been *one* year free from variolous infection. Baron Dimfsdale, in his anxious sollicitude and alarming apprehensions lest the poor Inoculated at their own houses should disperse the infection, seems entirely to overlook those fifteen thousand persons labouring annually under natural Small-pox; their families, friends, visitors and acquaintances, probably amount to treble or quadruple this number: here is a large army to propagate variolous infection; they cannot be smuggled into a narrow corner, or penn'd up in a few streets.

BARON Dimfsdale speaks of Small-pox in London, as if the infection was either imprisoned in the variolous Hospital; or as if he carried the whole poison in his waistcoat pocket, enclosed in a small box or vial, and envelopped in a little cotton or thread for the use of private Inoculation amongst cer-

tain ranks of the inhabitants : cannot the contagion find any exit from the house of a rich man amongst the rest of the community ? Or will any rational person consider variolous infection in this city in the same light as an Egyptian plague just landed, and confined to a single bale of goods ? In fact the numbers required to be Inoculated in London, would not considerably exceed those who now undergo the disease in the natural way ; and when we reflect upon the small proportion of pustules in the Inoculated compared with the natural disease, so far from variolous infection being multiplied in absolute and gross quantity by general Inoculation, it would be greatly diminished.

CERTAINLY there is every year in London, abundant variolous infection to diffuse the disease over the universe, provided the communication was open, and the intercourse general : the enemy is in every corner of the city, and leaves behind melancholy marks of his visits, at least no obstacle prevents the infection from being daily scattered through the metropolis amongst sound persons, by all the luxuriant train of carriers expatiated upon, and painted with such strong poetical colouring by Baron Dimfsdale ; “ by visitors, strangers,

“ gers,

“ gers, doctors, inoculators, servants, washer-
 “ women, by servants in the streets in search of
 “ doctors or medicines, or employed in other
 “ necessary avocations, by hackney coaches
 “ in which children take the air, by children
 “ on their recovery mixing with their play-
 fellows”, &c. The danger in this case is
 much greater to the public, from the infection
 of natural Small-pox being dispersed, than if
 it had been emitted from Inoculated.

“ THE poor in London are miserably lodg-
 “ ed ; their habitations are in close alleys,
 “ courts, lanes, and in old dirty houses ; they
 “ are often in want of necessaries, even of
 “ bedding ; the father and mother are em-
 “ ployed constantly in laborious occupations
 “ abroad, and cannot attend the sick : should
 “ they neglect their occupations, food and
 “ necessaries would be deficient”.

To this I reply, that few in London of the
 laborious classes are so poor as to be totally
 destitute of the necessaries of life and bed-
 ding. I mean that a very small number die
 in the year, immediately at least, from that
 cause. In my third table of the London
 bills during fifteen years, the number starved
 amount

amount only to seventy-eight, and in the fourth table, an equal period, to sixty-four.

By this observation I have no intention to insinuate that the laborious poor live so comfortably as should be wished. It would give me sincere pleasure if every man in England could sit down daily to roast beef and a tankard of ale, but my wishes are of no consequence. Luxury and necessaries likewise in different ranks of life, have very different significations ; nor do the sick of young children, such as those proposed to be Inoculated, require any expensive food ; their diet in fevers, and in health is simple and not costly.

The parents cannot both be employed abroad in labour, if they have any young children ; the mother must remain at home to nurse, and to cook victuals: neither is it probable that they would be destitute of necessaries and food, though once in a child's life-time the mother gives it constant attendance during the illness of Small-pox. After one week, or at most a fortnight, all danger from Inoculated Small-pox will be over. If this argument was of any real force, “ poor women, and middling trades people's wives” who annually bring forth children, and are usually confined to
bed,

bed, or at least prevented from doing any laborious work for three weeks or a month should all be starved ; it would frustrate the first law of nature, and a principal intention of society. I should not hereafter be surprized to see some medical accoucheur of our lying-in hospitals, “ apply to the legislature, and charitable contributions of the affluent and humane”, to enlarge such buildings, and gravely to assert that all the wives of the laborious and middling trades people will run imminent risk of famine, should they lie in at their own houses. When two or three children of a family are Inoculated at one time, all danger and expence will be over in two or three weeks ; but in the natural Small-pox the family generally fall ill alternately, and if numerous, linger some months in affliction : here the apprehensions of starving are much more serious and better founded.

“ MEDICINES and diet ordered by the
 “ physicians would not be regularly complied
 “ with : the air in their houses is impure :
 “ they have neither areas, gardens, nor car-
 “ riages for the convenience of ventilation,
 “ and taking the air.”

VERY

VERY few of the poor can afford to consult physicians, those only excepted, whom public Dispensaries, or private humanity may send to their aid. A physician's fees, unless they attended as Dr. Sims and Watkinson generously propose, gratis, would make a compleat famine in a poor man's house for several months. Great delicacies, and a heap of medicines are very seldom necessary in Inoculated Small-pox. In Circassia the mothers are the Inoculators and physicians to their families.

WITH respect to the impurity of the air in their houses, and their being destitute of gardens and open areas, so are several hospitals in this city; and I apprehend that the poor in sickness would prefer their own dirty houses, unless the disease should happen to be lingering and protracted to a great length of time, or in sudden accidents which require expert surgical assistance. The modern public Dispensaries which humanely supply the poor with medicines and advice, and when necessary, attendance at their own habitations are much more cordially resorted to, than large hospitals. Poor persons may not possess the means of purchasing all the necessaries and delicacies suited to their
weakly

weak and sick appetites, yet they will be more contented to remain in their domestic cells with their families and friends, than to be placed under the care of old callous nurses, exposed in the open wards of an hospital, disgusted often with offensive sights, and perhaps loathsome diseases, and disturbed by the groans of twenty other sick in the same apartment. If Inoculation is to be withheld in London from the poor until they get “gardens, and areas to their houses, and *coaches* “to take the air”, they may wait to the day of judgement.

CUSTOM has powerful effects both in air, food, and manner of life; when persons are advanced a short way in years. At all events bad impure air will be more hurtful in natural and malignant Small-pox. The impurity of London air is also equally strong through infancy; particularly until children reach seven years of age. Some thousands before this period are annually poisoned by the London atmosphere, who would have survived, had they been nursed in the country with equal tenderness and attention. London children after arriving at that stage are tolerably seasoned and habituated to their

native element. This is obvious by consulting all the following tables of comparative mortality at different ages, and the decrease of life in city, town and country.

“ SAILORS and sea-faring people, many of
 “ whose lodgings are miserable, in the little
 “ houses bordering on the river, would be
 “ liable to catch the distemper, and either to
 “ fall sick there without friends or assistants,
 “ or perhaps being infected on shore, to carry
 “ it to sea in their contaminated cloathes;
 “ and afterwards falling sick without care
 “ or attendance, might spread the disease in
 “ foreign climates.”

SAILORS are not the poorest class of people; their owners and captains will always be ready to supply them with money in this short sickness, and to provide them with nurses and medical advice: besides their lodgings on the side of the river would have one excellent advantage in being airy, and constantly ventilated by the tide. As to the falling sick afterwards at sea, the danger is rather imaginary; I know of no instance, (and I have read not a little upon that subject) since the general introduction of Inoculation into this country, where either a British army, or grand fleet suffered any considerable mortality

mortality by Small-pox, although that disease has broke out in a virulent degree, amongst a small number in camps, and on board ships of war.

PRINGLE and Lind, two standard medical authors upon army and navy diseases, never mention Small-pox as one of the principal epidemic causes of mortality ; and we may presume it could not have been kept a profound secret from gentlemen of their knowledge and penetration. Lind gives a catalogue of diseases, (not deaths,) in the naval hospital at Portsmouth, during two years : out of five thousand, seven hundred and forty-three sick seamen, only fifty-three are set down as infected with Small-pox. To some of the North American troops, in which country great prejudices still prevail against Inoculation, and until lately the contagion was guarded against as a plague ; this disease has during war, proved more fatal. It is another extraordinary argument to express such fears about sailors carrying the disease to foreign climates : pray what kingdom or climate is free from variolous contagion ? The Baron is under great anxiety lest a sailor, or a merchant vessel should transport, and spread the disease in foreign climates ; but in Lon-

don, where twelve or fifteen thousand have annually been ill of the natural infection, he talks of the public danger as great and inevitable should the poor be Inoculated at their own houses.

“ COUNTRY people coming to town for
 “ markets, visits, or pleasure, would all be
 “ subject to the same danger: persons coming from the sick to the general Dispensary for medicines or advice, by intermixing in the streets, the public danger from their infected apparel would be great and inevitable: the whole neighbourhood would be exposed and in imminent danger, by having the disease brought to their doors”.

COUNTRY people coming to London will undoubtedly be more exposed to contagion; but even in country villages, I imagine that very few are grown up to the age of twenty, who either have not had the Small-pox, or have not been several times exposed within the sphere of variolous effluvia. Again, if Inoculation was general in the early parts of life, all danger of spreading the disease to this description of persons, and to every other denomination arrived at maturity, would subside: it is because Inoculation is yet partial that the public safety is in danger.

IF there is any meaning in Baron Dimf-
dale's terrible apprehensions, " that the pub-
lick danger would be great and inevitable,"
&c. it implies that by general Inoculation
at private houses, London would be in immi-
nent danger of being ravaged and depopulated
as by a true pestilence, in which one, some-
times two thousand have perished in a single
day : the interpretation may admit of a mil-
der construction, but yet something analo-
gous, and possibly inferior in virulence. This
alarm I believe is advanced without mature
consideration. I build my opinion upon the
two following reasons : Small-pox in the
course of the last hundred years, has de-
stroyed at a medium in London, about two
thousand annually ; consequently at least
six times two or twelve thousand (or pro-
bably more) were every year afflicted with
the natural disease, and a small number
comparatively remained behind untouched ;
many of the new settlers must also have pas-
sed over this danger before their arrival in the
capital : my second reason is, that in the
space of one hundred and fifty years, in all
which time London has never been one year
exempt, from Small-pox ; the annual deaths
by this disease have not amounted to four
thousand,

thousand, although during sixty years of this time Inoculation has been known.

Mr. Condamine and other writers remark, that at Rome, in the year 1754, a highly mortal and malignant Small-pox raged, and that four thousand died of the disease: 1 out of 3 are said to have been the victims of this malign Small-pox, and of course about twelve thousand underwent the disease. The total annual deaths at Rome then, and for many years after stand at five, six, and seven thousand: (Mr. Condamine has underrated the burials.) In London it has never been so fatal in any one year. At the Cape of Good Hope, in Brazil, Mexico, Peru, Paraguay, and in a few districts of the northern parts of America, Small-pox has tyrannized with the virulence of a true plague, because none of the inhabitants were seasoned, or had passed through that disease. In London and other great cities of Europe, the case is totally different.

“ THE gossiping disposition of the poor
 “ will spread it further, and after the sick
 “ recover fallying forth in their infected
 “ cloathes is certain to add to the mischief:
 “ the children who are able to run about will
 “ intermix in the streets immediately upon
 “ their

“ their recovery with their play-fellows : the
 “ success therefore derived from general Ino-
 “ culation would be beneficial to a *few* only,
 “ but involve a great number of others in
 “ danger which they would otherwise be less
 “ exposed to.”

UPON the gossiping visitors of rich and poor houses, I shall presently say a few words. Dr. Watkinson and Dr. Sims, I apprehend intended that general Inoculation should take place a short time before children begin to cut teeth, provided they are healthy and strong ; or immediately after cutting the first set, between two and four, and at the utmost five years of age. The younger class of these persons will not be liable to spread the disease in London streets amongst their play-fellows. Children carried to the Dispensary to be Inoculated, could not possibly convey the distemper until after the eruption, which will be from nine to eleven or twelve days after the infection is engrafted ; besides, the children recovering from natural Small-pox, sally forth, and intermix with their play-fellows, and disperse the infection in all degrees of virulence. That *general* Inoculation should be beneficial to a *few* only, and involve a great number of others in danger,

to

to which they would otherwise be less exposed is to me a paradox. What class or proportion of the inhabitants of a kingdom would be involved in danger, if Inoculation was general in the early parts of life? In London where we are constantly enveloped in variolous contagion, such arguments are futile and absurd: In great cities no persons can reasonably flatter themselves with hopes of escaping the disease: the voracious foe incessantly keeps possession, and sooner or later is sure to prowl through every street, lane and alley.

BARON Dimisdale next “ addresses himself
 “ to the legislature, and to the affluent and
 “ charitable to enlarge the Small-pox hospital.” This is the publick Asylum which he assigns to the poor and middling trades people to secure them from the deplorable desolation made by Small-pox. To me the remedy appears extremely reprehensible: it is a paltry temporizing palliative totally inadequate to the magnitude of the evil; or if the Baron will indulge me to use a few of his own softest and emphatical phrases, “ it is
 “ rash and inconsiderate, it would be beneficial
 “ to

“ to a *few* only, and involve a great number
 “ of others in danger.”

PARIS has great reason to curse its enormous hospital, the Hotel Dieu, that seminary of corruption and disease. Another unanswerable objection to a variolous hospital is, that under seven years of age no children are admitted, before which period Small-pox will have made its principal depredations amongst the native progeny of London. Should infants at the breast, or under three years old be admitted, the mothers or nurses must also be taken in ; the young families at home would be then deserted during three weeks or a month, and the expences of the hospital multiplied. Very few mothers would give their consent to entrust their young children to the care of strange nurses, at least without being permitted to visit them in sickness, and by this means the disease might be conveyed in their infected apparel to passengers in the streets, to gossiping neighbours, &c. nor would one fourth of the laborious inhabitants, and middling trades-people, submit to have their children crowded into an Inoculating Hospital, to be buried them in a hot bed of variolous infection and diseased exhalations.

“ LARGE hospitals will not be required in
 “ country towns : it will *be necessary only* to
 “ obtain the unanimous consent of all the
 “ inhabitants of a town, parish, or district,
 “ to be Inoculated at one and the same time ;
 “ for if some only are Inoculated, and others
 “ excluded, the disease will spread through
 the vicinage, and be fatal to many.”

THIS *only* seems to signify, that it is an extremely easy matter in country towns, or large districts of open country, to obtain the unanimous consent of all the inhabitants to be Inoculated at one and the same point of time. A considerable number possibly would permit the infection to be conveyed to their children ; many grown up persons who had hitherto escaped, would fly away ; others from various scruples and prejudices would refuse their assent ; and for my own part, so far from thinking the proposal would readily and unanimously, without many “ veto’s,” be complied with at one and the same time, that I should expect with as much facility, by turning a preaching missionary, to convert the nation to one religion. Baron Dimisdale boasts of his having successfully Inoculated two towns in the neighbourhood of London, Hertford and Ware, but this is a reproach to
 his

own pretended humanity, and a flat contradiction to his system: for what could prevent the infection from being spread amongst the adjacent villages, and to be dispersed by the numerous daily passengers, stage coaches and travellers through London, and every country town of England.

“ THE wealthy and rich availing themselves of *timely Inoculation* secure their families; but the loss falls chiefly on the offspring of the inferior trades-people, and the labouring poor: to encourage partial Inoculation amongst *them*, would be only spreading the disease and increasing the evil.”

IN the name of common sense and humanity, why are not the *poor* to secure their families by *timely Inoculation* equally with the rich? why is Baron Dimfdale so active in Inoculating the latter in London, in rendering Inoculation *partial* and spreading the evil. Are there no gossipers, visitors, doctors and attendants to disperse infection from the houses of rich persons? If he is serious in considering *partial* Inoculation as injurious to the community, it is highly criminal in him to be one of the most active instruments in their destruction. Partial Inoculation he

exclaims is rash, inconsiderate, it endangers the publick safety : good God, that men can be so blind and partial to their own actions ! Invective and ill humour are quite foreign to my disposition, but I will tarry so long in this disagreeable and thorny path to observe, that Baron Dimfdale's fiery zeal in condemning Inoculation in London, reminds me of a hacknied story related of a clergyman, who in the midst of a sermon, and with uplifted hands, was pouring forth a torrent of anathemas against gaming ; when unluckily a pack of cards dropt out of the sleeve of his cassock, and unmasked the hypocrite.

WHILST the opulent classes in London are permitted to practise Inoculation, others will imitate them. It is natural for every parent, rich or poor, it is their duty to aim at preserving the lives, and even the beauty of their children. I can see no reason why poor persons or middling trades-people should hazard the lives of a young family, because his neighbour has scruples against Inoculation, and obstinately persists to reject that certain means of security. So long as Inoculation is confined to a few, so must its benefits : we mean it to be universal. The Baron in this
last

last paragraph, without being sensible of the contradiction, is evidently pleading the cause of general Inoculation.

WHERE the inhabitants of country towns are all Inoculated at one and the same time, unquestionably the neighbourhood and travellers will be less exposed to danger, and the disease may not return back again to that vicinage until several years have elapsed: but in London we are never without an immense magazine of poison from natural and Inoculated Small-pox, a very small spark of which is sufficient to kindle up the disease, and to multiply itself in a favourable disposition of the air. The case mentioned by Baron Dimf-dale, but copied from Dr. Mead, is one of many other proofs to this effect, and is as follows.

“ IN 1718, two or three children had
 “ caught the infection of Small-pox in the
 “ East Indies, and on the voyage were taken
 “ ill: the disease was violent: the linen
 “ which they wore in sickness was put
 “ into a box unwashed, and landed at the
 “ Cape of Good Hope, where it was sent
 “ on shore to be washed by the natives. On
 “ opening the box, the infection was com-
 “ municated:

“ municated: Small-pox broke out, spread-
 “ ing into the country, and carried off vast
 “ numbers of the inhabitants, so that the
 “ country was almost depopulated.”

It was mentioned in a former part of this work, that a single negro slave first carried variolous infection amongst the Mexicans, who had until then been strangers to the disease, and by which incredible multitudes of the inhabitants were exterminated. In India, I said, upon Mr. Holwell's authority, that the matter of Inoculation has been preserved seven years entangled in cotton, and close stopped up from the external air; after that interval of time it will convey the infection by the artificial mode. The maxim of Celsus, that medicine is a circle, often strikes me very forcibly. To take a comprehensive survey of this subject, we should examine the nature of different specific contagions, of plague, jail infection, and of variolous poison; the length of time they can be preserved in woollen or porous materials, and the remote distance to which they have sometimes in this way been transported.

TAKE what precautions we can in London to prevent communication of variolous contagion, it will be impossible and nugatory, where twelve or fifteen thousand are annually
 ill

ill of natural Small-pox, which has been the case one hundred years without interruption; adding to them their families, friends and visitors, amounting in all to treble or quadruple the number of sick, and to whose cloathes or persons infection may adhere, what fears should London inhabitants have of general Inoculation? To prevent variolous contagion in Dr. Dimisdale's plan from being transported through London, the inhabitants should have their doors baricadoed, old cloathes men, retailers of rags, and those who hawk about old woollen apparel through the streets, should all be hanged, or sent to the gallies; Inoculators and doctors should suffer the same punishment, or be avoided as a pestilence, and, like Cain, some distinguishing mark should be set upon them; stage coaches and post-chaifes filled with passengers that go out and return every day, from all the parts of the kingdom, should be put a stop to, none should enter, nor go out of town without bills of health; goods and merchandize should all be subjected to inspecting officers, and detained, and guards should be posted at every avenue. This would be treating Small-pox somewhat similar to plague, but it would establish a medical tyranny

ranny more rigorous and horrible than the religious inquisition of Spain; every office of society would meet with intolerable interruption, the London inhabitants would drag through a miserable life of slavery, under everlasting terrour and quarantine. At present ten thousand avenues are daily left open for the merciless invader, and I can see no certain security or retreat in this city, but to render ourselves invulnerable by early, and universal Inoculation.

“ Before institutions of this kind (the Inoculating Dispensary) are tolerated, the legislature ought first to be consulted.”

No legislature that is not arbitrary and unjust, can in this case presume to make one rule for themselves, and another for the poor and middling trade-people; at least without a flagrant encroachment on the rights of mankind, they cannot interfere to prevent them from Inoculating their children, if it is permitted to the higher and opulent ranks in London.

I CAN perceive but three or four ways, in which the legislature could possibly intermeddle in laying any restraint, or enacting regulations respecting Inoculation. One way is

is either to prohibit the practice in London amongst the rich and poor, and to tolerate it in the country alone, or in Small-pox lazarettos built for that use at some distance from the capital. In this mode, the opulent class retiring to their country houses, would disperse infection according to Baron Dimsdale's system over the kingdom, and in what inconsiderable degree Small-pox lazarettos could secure the laborious inhabitants of London from danger, I shall soon demonstrate. Another way, in which the legislature might interpose their authority is, by ordaining that general Inoculation in London should only be performed in certain seasons of the year, in imitation of the Bramins in India during two or three months, that afterwards all afflicted with this disease, rich and poor, should be removed and immured as in cases of plague, their infected goods and apparel washed, and purified by fire and smoak. Banishing Inoculation alone from the capital, or from the kingdom, would not banish Small-pox; we have many centuries uninterrupted experience of the contrary. The legislature might also enact a law, to oblige separate

M parishes

rishtes to defray the expences of Inoculating the indigent poor at their own houses, and in country towns, and open districts it might be practised every two or three years, or even sooner, should natural Small-pox break out in the neighbourhood. Of all these different modes, the practice of the Bramins, and supporting the poor during Inoculation, are alone entitled to any serious consideration.

HAVING now replied to all Baron Dimfsdale's objections, I have yet in reserve, facts and mathematical evidence, which I conceive must alone overfet the whole superstructure of the Baron's argumentative opposition, to general Inoculation at the private dwellings of the poor and middling trades-people. I deny that an Inoculating Hospital is the effectual means to lessen the publick danger and mortality in London, from natural Small-pox. The reader will be so indulgent to favour me here with his particular attention. I shall take up the matter in the most favourable point of view for Baron Dimfsdale. Suppose therefore that by the bounty of the legislature and private contributions, an Inoculating Hospital large, and endowed with every necessary, is erected in this city; that Baron Dimfsdale is enthroned supreme superintendent

dant and dictator, that upon his single authority, all the poor and middling tradespeople have refrained from Inoculating their families until they are *five* years old, when as many as survive shall be taken into this lazaretto : how many lives now from five to twenty years of age, could in this way be annually saved to the metropolis ? This Baron Dimsdale must allow to be liberal ; it is giving in two important additional years of infancy from five to seven, and stating the argument as strong as possible against myself.

PLEASE to turn to the following chapter towards the middle, and look out a small bill of comparative mortality, at all ages in London during fifteen years, by Dr. Short : annexed to which, and to the same effect, is another of thirty years by Birch. The annual medium too of deaths in Short's bill were greater than at present, amounting in all to twenty-seven thousand ; out of this number more than twelve thousand died annually under five years of age, but from five to twenty in the same time, not nineteen hundred, including every death and mortal disease. In this case, following even Baron Dimsdale's overcharged calculation, if one *eighth* died of

Small-pox out of nineteen hundred, then in London from five to twenty years of age there would die annually, even of the natural Small-pox, but about two hundred and forty.

BUT this small decrease is overrated, for of late years the annual deaths in London are, (it is not necessary to be exact) we shall say twenty-two thousand : from five to twenty, the annual deaths about 14 or 15 hundred : one *eighth* deducted for Small-pox, makes two hundred not to die in London, in this long interval of life of the natural disease. One *eighth* I remarked was too large a proportion for Small-pox ; it was formed upon four years only of the bills, selected by Baron Dimsdale ; one tenth or twelfth was the average during forty years. This therefore still detracts from the inconsiderable number of Small-pox deaths in this stage of life, from *five to twenty*. That the Inoculating Hospital had no effect whatever in diminishing the proportion of deaths in this fifteen years period of Short's bill is evident, because that hospital was not erected until 1746.

I DO not wish to substitute the least conjecture in this proposition ; nor do I venture positively to assert, that Small-pox will bear an exact ratio of one eighth or twelfth to all other

other diseases in the fifteen years, from five to twenty: sure I am, that no person in his senses will pretend to alledge, that all who die in London in this interval of life, perish by Small pox alone; and were we to admit such a ridiculous supposition, their intire numbers are greatly inferior to variolous mortality. In fact, without adding a large portion of Small-pox deaths, we cannot possibly by all the other diseases commonly incident to young children, account for the mortality under five years of age in London.

PERSONS born in London, who have continued from birth to twenty, to resist the impressions of variolous infection, though encircled daily in this poison, will not in all probability at that age enter into an Inoculating Hospital: their numbers as I have already represented cannot be very considerable. Those more stricken in years, and the aged, who have also escaped, will trust as usual to providence. Again, all that die under seven years of age, are shut out of the pale of the Inoculating Hospital; they are interdicted by Baron Dimsdale, from being Inoculated at their own houses, unless their families are rich and wealthy; unless they have gardens, areas, coaches, and a variety of other luxuries; they are exposed to the ravenous fury
of

of natural Small-pox, and thousands of them doomed to certain destruction.

NONE, says Baron Dimisdale, should be Inoculated in London and other great cities, at the private houses of the poor, laborious and middling trades-people ; as many of their children as have waded through danger seven years are to be received into an Inoculating Hospital : in country towns and open districts too, all must consent at one and the same time to receive the infection, otherwise it will be spread through the neighbourhood, do infinite mischief, and should not be attempted. So that upon the whole, as the inhabitants of cities and towns, are in proportion to those in the country, as one to three and an half, and Inoculation in both clogged with so many difficulties, interdictions and impracticabilities, that by Inoculating even country villages, there is imminent risk of spreading the disease, and propagating the natural infection in the neighbourhood, that at private houses in cities, it is tolerated only to a handful of the rich and affluent ; I appeal to the understanding of sensible and impartial men, whether Inoculation is not effectually restricted and fettered from operating as a great national benefit or diminution of mortality.

DAVENANT's estimation, rated the houses in England and Wales at one million, three hundred thousand, near the beginning of the present century : the cottages then were five hundred thousand : now they are both greatly decreased in number. We have probably at this time, a more plentiful proportion of rich and opulent inhabitants in this island, than any other kingdom of Europe. In 1777, the houses that paid for seven windows, and consequently the window tax, are rated by Dr. Price at one fourth of the others. Even in this country we must see, that the laborious and middling trades-people, make up the great hive of the nation. All their families are to be incarcerated in London during Inoculation, by Baron Dimisdale's orders, or to be debarred its advantages. If poverty is made a mighty objection against Inoculation at private houses, it will be ten times stronger at Paris, where one third die annually in their publick hospitals : it would damn not only Inoculation, but also propagation throughout all the lower and laborious ranks in Scotland and Ireland, numbers of whose miserable peasantry are condemned to subsist during a
great

great part of the year, principally upon oat-meal gruel, or potatoes and salt.

To a small number of indigent persons and their children, exceeding seven years of age; to a few strangers destitute of money and friends, who may happen to be seized in London with the natural Small-pox, a various hospital will during their sickness, prove a useful Asylum. Of those likewise who are Inoculated in that receptacle, the blanks and prizes will be in the ordinary proportion; but cannot as a national saving from five, and much less from seven to twenty, amount to above one, or at the utmost, two hundred annually. What proportion of the new annual settlers have had Small-pox, and how many are so poor as to make it necessary for them to enter into an hospital, are equally uncertain. If the whole had come to London without previously undergoing the Small-pox, it would not for that reason be incumbent on the London inhabitants, to neglect the safety of their own families, lest the new settlers might catch the disease from Inoculated infection. Dr. Price thinks, that a great number of the new emigrants are cut off by the foul air, vices,

vices, and debaucheries of London, he says nothing of Small-pox: I am induced by various considerations to believe, that whatever share of Small-pox mortality takes place in London amongst persons turned of twenty years of age, is almost solely confined to the new annual settlers or recruits, the majority of whom arrive in the capital from twenty to forty years of age.

IF London, by births and recruits, is supposed to require an annual supply of twenty-nine thousand to repair the loss by deaths, and if all those were inoculated each year, according to the old calculation of 1 to 100, then 290 would be the decrease by Small-pox; but by the more enlarged and modern calculation of one to five hundred, out of twenty-nine thousand inoculated, fifty-eight deaths only would ensue. Extend this calculation to Great Britain and Ireland; by Davenant's estimate, the annual births amongst 9 millions of inhabitants in these two islands will amount to about three hundred thousand: a few thousands more is immaterial for our gross valuation: if all these three hundred thousand were to live to be inoculated, and one out of five hundred die, the nation, instead of thirty thousand Small pox deaths annually, in this and her sister island, would lose but

six hundred : And expanding the same calculation to all Europe, the blanks would amount to about eight thousand : consequently three hundred and ninety-two thousand lives would be annually preserved.

SHOULD Inoculation take place universally, amongst the inhabitants of Great Britain and Ireland in the early parts of life, that is under five years of age, and all beyond that stage have undergone the disease by the same precautions, in this predicament the infection, however virulent, could not extend itself in the natural way, but to a diminutive number of the community ; for out of nine millions of inhabitants, those under five years of age will not exceed fourteen hundred thousand, and probably not one half of these are, in one year, fit subjects for the operation.

UPON the first introduction of Inoculation, physicians, divines, and innumerable other writers cried out, that the infection would be spread, and the community suffer a greater loss ; but after sixty years experience, we should expect those arguments, as well as the writers, had all died away, and that at this day, the same stale dregs of ignorance and obstinacy would not be again retailed.

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To traduce general Inoculation, to increase the prejudices of the lower orders, and bulk of the community, against the practice, is in my idea neither wise, politic nor humane. The general notion of all illiterate persons is a kind of irresistible fatality, and they are too apt, in diseases, to commit all to God, as the stupid Turks do the plague, without taking timely precautions to secure their families." Possibly many years must yet elapse, before the whole kingdom will be awakened to a just sense of its interest and safety; before custom and prejudice are done away, and ignorance enlightened.

EVERY life saved by this practice is so much solid treasure and strength added to the nation. There is no disease where we have it so much in our power and command to lessen mortality, as in the Small-pox by Inoculation. It is a bridge, furnished by Providence, to pass over a yawning gulf, a raging whirl-pool, in which millions of the human species have been shipwrecked. Baron Dimsdale's humanity is shocked at permitting liberty to travellers, of every rank and description, to escape by this secure rout. His tour to Russia may have taught the Baron strange notions of humanity, and reve-

rence for rich persons; the commonalty, and middling trades-people in this metropolis will not probably thank this Imperial physician for such exotic sentiments. If Baron Dimsdale is candid and ingenuous, he should desist from Inoculation in London, and in villages contiguous to the capital; he should return all his fees to some charity, as a small expiation for the public injury he must already, according to his professed creed, have committed in the exercise of that vocation, and as an unequivocal proof of his sincerity, and contrition for wilfully besmearing his hands with human sacrifices. His arguments, if they were of any real validity, would seal the final doom of Inoculation in every case and situation, whether in city, town or country.

WHEN men's actions or writings seem fairly and honestly directed for the public good, and without any sinister bias, I can pardon their grossest errors, or animadvert upon them with mild censure, and without displeasure. In this tender and indulgent light, I can smile at the proposal of an old pragmatical Greek philosopher, who, observing many diseases follow from changes in the temperature of the air, exhorted mankind

kind to live in dens and caverns under ground, where the sun beams and changes of the air could not pierce: in one of which gloomy abodes he is said to have lived many years: had he proposed to bury the poor, laborious, and middling classes in such subterraneous cells for the benefit of their constitutions, and have left the rich and himself above ground, to bask in snug houses, I should have spurned, if not with indignation, at least with contempt at the philosophy and philosopher.

BARON Dimisdale hints “ that an action
 “ of damages would lay against a person who,
 “ by inoculating *horned cattle* for a contagious disease, would spread the infection
 “ in the neighbourhood.” The plain interpretation of this polished remark is to recommend Dr. Watkinson and Dr. Sims as objects deserving of prosecution, and as criminals who should be punished by the laws. In this enlightened nation, I am not under the least apprehension for their fate, and let Baron Dimisdale beware, lest another person should in this ordeal be convicted as the principal culprit. I will also suggest to the Baron this friendly admonition; that before he consigns over these two physicians to dungeons and gibbets, to read the story of the celebrated

brated Galileo, who, as all men of literature know, was imprisoned by the ignorant monks of the inquisition, and threatened to be burnt alive, for having asserted the rotatory motion of the earth. It is very singular, that Baron Dimsdale makes use of many of the same phrases formerly employed by Wagstaff, who wrote strenuously against Inoculation upon its first introduction, and with libellous invectives inveighed against its patrons. Wagstaff called the Inoculators public murderers, and with outrageous acrimony invoked the legislature to punish them.

To the reader and to the publick I humbly submit the final decision of this important controversy, in which the interest and security of mankind are so materially involved: a state of indifference and neutrality is incompatible with sound policy and humanity. I wish my arguments to be deliberately weighed, and after mature examination and severe scrutiny, to be received or rejected, as they are built upon facts, supported by specious or solid reasoning, and as they appear to conduce to the safety and benefit of the nation. I flatter myself with having laid those spectres which Baron Dimsdale conjured up, to affright the metropolis, and the nation from general Inoculation. No man has so often
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thrown down the gauntlet in that cause and braved defiance, as the Baron: he is in truth (what a witty author said of the metaphysicians) a furious gladiator, that fights hood-winked, and with a bandage bound fast over his eyes.

A QUESTION of momentous importance with which I shall close my observations upon this subject, starts to view. Would it not be possible and adviseable to eradicate the Small-pox from Europe, to banish it to its original birth-place in either Arabia or India, and to set up barriers against its return and communication, as in cases of plague? Should the contagion be once exterminated, and no remains of the specific "nidus" left behind, there certainly appears no power in the climate, soil or air of Europe, again to regenerate such a disease. To make this proposition clear and intelligible, I should treat of specific contagions; but Medical and professional men are no doubt sufficiently well informed on that head.

If Small-pox had seized upon a person more than *once* in life, and the body afterwards, as in cases of other infectious fevers and of plague, had still been susceptible of receiving the variolous infection; either the human species would have presented a fright-
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ful spectacle of corroded scars, and mangled deformity, or what is more probable, the greatest part would, long before this time, have perished by Small-pox ; but to prevent such deplorable consequences, mankind would have been under the necessity to unite with one general consent, to oppose and chain down this inexorable foe.

THERE is no prospect of our ever getting rid of variolous poison, unless some general, or rather universal league of this nature should be entered into. To save four hundred thousand lives annually slain in the European region alone by a single enemy, is an object which merits the attention of all the different legislators, and philosophers of Europe. One kingdom singly could not, consistent with propriety, and for obvious reasons attempt such a critical experiment. Either Inoculation should be universal in the early parts of life, or (if practicable) the disease, like the plague, plucked up by the roots. The last I throw out merely as a loose idea, and a subject not unworthy of future investigation. I find that I have insensibly run to a much greater length than at first setting out I either expected or wished.

C H A P. II.

Bills of Mortality : when established in Europe : their Defects : of the Mortality at different Ages in City, Town, and Country : of the Comparative Numbers of the two Sexes, and their respective Mortality : of the Numbers alive at different Ages in any Nation ; and the Proportion between City, Town, and Country Inhabitants : various Tables in Illustration of the Comparative Mortality, and of the Decrease of Mankind at every Age in City and Country : of Great Cities, and the Principal Causes of Depopulation in them ; exemplified by London.

THE births, genealogies, and deaths of Adam's descendants, down to Noah, and the Patriarchs are recorded in Scripture : some chapters of Genesis are plain registers of births and mortality. The Israelites were at distant intervals mustered and numbered by Moses and his successors ; and in a few uncommon pestilences the devastation is ascertained in the Jewish history. The descent and pedigree of Kings and other great men, have also been kept in most nations

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who had made any progress in civilization ; but general annual registers of births, diseases and deaths, are modern establishments, and were unknown to the ancients.

ON the continent registers were instituted, fifty or a hundred years before their introduction into England : bills of weddings, christenings and burials were kept in the churches of several villages and country parishes in this island, so early as 1538. At first they seem, both in Germany and in England, to have been designed to prove the birth, death and descent of private persons, and the right of inheritance in property or lands. About 1603, bills of mortality for London were instituted, but the plague was the only distemper then taken notice of. 1629, the different diseases and casualties of those who died, together with the distinction of sexes were added 1728: and not sooner, the different ages of the dead were ordered to be specified in the London bills. Upon first establishing the distinction of diseases and casualties in the bills, the primary intention I believe, was to discover the numbers destroyed by the plague, and to detect concealed murders. At Vienna and Berlin, registers are kept similar to those in London : Edinburgh, Norwich, Northampton, and some other towns of this island, have also copied

copied and imitated such wise and useful examples.

Publick records of births and mortality are now partly become the rules of political arithmetic ; but unfortunately for Politicians and Medical men, they are yet too incorrect and imperfect. Registers of diseases and deaths should be entrusted to more skilful heads than to a couple of ignorant old women, called in their districts, parish searchers : at present they consider the “ ultimatum ” of their commission and duty, is merely to prevent private funerals and concealed murders. The whole business in London is conducted in the following inaccurate manner. Upon hearing the bell toll, and inspecting the books kept in the different churches, the searchers are apprized, from whence notice has been sent of a death, in order that a grave may be opened : the two matrons then set out to examine that no violence has been committed upon the dead, of which they are sworn to make a true declaration, and afterwards negligently enquire from the relations the name of the disease, adding the age and sex. These records, together with the christenings, in the latter of which the searchers have no concern, are deposited with the respective clerks of each pa-

rish church, and by them carried once every week to a general hall in the city : on the following day the weekly bill, comprehending all the parishes so returned is made out, printed and published.

FROM bills placed upon a better footing, physicians and statesmen might both draw ample sources of information. If, as Dr. Price, and as Voltaire, and many other writers have observed nearly to the same effect, every seventh year, an account was taken under the direction of government, through every town and parish in the kingdom, and conducted upon a large scale, the forces, strength, population, increase, decrease, resources, trade, and health of the inhabitants might be known. It should comprize a numerical list of every rank and order ; of the married, unmarried, widows, widowers, ages, sexes, weddings, christenings, &c. In the medical columns should be given, the state of the weather and seasons in that year, and in the dreary columns of deaths, the specific diseases which destroyed life, annexed to each disease, should be the numbers dying at different ages of that malady. Males grown up to maturity who die, should be distinguished either as married, widowers, or batchelors; and females either as married

ried, widows, or virgins. From such an authentic magazine of facts and materials, national health, mortality, the diseases most fatal to a nation, their growth or declension, the effects of diet, drinks, of medical practice, the ratio of population, and a multitude of other political and medical questions still entangled in doubts and intricacy, might be evolved.

A PLAN so general, individual industry alone however indefatigable, cannot accomplish without ministerial power, and assistance to carry it into execution: the church, or a few useless state sinecures, might without any inconvenience spare a sufficient revenue to carry it into effectual practice. In London, and indeed in all the large towns throughout the kingdom, no intermission should take place in the bills, as in the case of septennial periodical registers: numerous parishes, church-yards, and dissenting religious sects, hitherto excluded, should be comprehended in the annual bills, both in respect to births and burials, and the function of searchers committed to medical men with moderate salaries. At present we have, even in London, but partial and confused views of the slaughter by diseases. We must too frequently distrust
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the report and capacity of the searchers in discriminating the cause of mortality.

THE detached observations of physicians confined perhaps to a small town or parish; a little detail of village remarks, afford in many instances a foundation too slight to erect any general conclusions, or permanent medical principles. To determine upon the respective mortality by various diseases, upon the general effects either of diet, drink, modern luxuries, and new manners, we should extend our views far beyond the narrow bounds of a parish, or even of a province. Physicians have made and published many positive assertions, branding cyder as a principal cause of engendering stone complaints in the cyder counties, but upon a late review, which I shall at a proper opportunity introduce, it appears, that in the other counties of England, where this liquor is not drank, stone diseases are equally numerous. Some physicians have extolled, and others in direct opposition to them have condemned almost every food, drink and delicacy, that a man puts into his mouth: tea, coffee, wine, ale, and refined spices, have all in their turn been anathematized. Very few of these propositions are founded upon a broad basis;

basis ; they do not embrace sufficiently large groups and classes of mankind.

CALCULATIONS of human propagation, existence and mortality, derived from a prodigious mass of observations and registers in various parts of Europe, have been published by several eminent philosophers, and mathematicians. The prospects of life and death are now reduced almost to a certainty, and calculated for all ages, with as much exactness and probability by the annuitant and insurance offices, as the chances on dice, or the blanks and prizes in a lottery wheel. Graunt about 1676, first wrote a treatise on the London bills of mortality, and was followed in the same century, by Petty and Davenant. This I apprehend was the epoch of a new science in politicks, philosophy, and medicine. Graunt had many difficulties to encounter in this unprecedented attempt ; and from a scantiness of authentic vouchers, and materials wanders frequently into random guesses. The present century has produced a number of excellent treatises upon this subject. The most celebrated are Dr. Halley's, De Moivre's Tables, Sufmilch's calculations : Sympson's select exercises, some essays in the philosophical transactions, abridged, Short's observations on the bills of mortality,

ality, Dr. Price's Effays, Birch's collection of the London bills to 1759, and lastly, to the original sources, the bills of large capitals, and smaller towns.

It is necessary to premise, that the tables of mortality in different countries, and collected at distant periods disagree considerably, and of course the calculations drawn from such materials, are at variance. We cannot treat the subject with that accuracy which its extensive importance requires; but to enumerate all the reasons for our inability would be too tedious, and even voluminous. For medical purposes indeed it is not indispensibly necessary to bring the matter to the same mathematical nicety, with the insurance offices for lives and annuities. In the subsequent disquisition however defective, I should not omit to acknowledge obligations to Dr. Price's excellent treatise.

CALCULATIONS of the following nature and extent, which measure the annual ratio of mortality, in every period of town and country life, enlarge the physicians ideas respecting diseases and mortality; without them prognostics must be very imperfect. In the next chapter, an attempt is made to form a gross estimate of the proportional havock by different diseases; these interesting facts will naturally

naturally lead to a variety of reflections upon the probable means of diminishing mortality, upon medicine, and medical practice. Physical writers have in general neglected, or at most, barely skimmed the surface of these subjects: the publick registers of births, diseases and deaths, are shamefully overlooked by all the great modern systematic authors. They leave us equally ignorant of the actual and comparative force of those fiends, which haunt and ravage the world. In the course of many years attendance upon medical lectures, I never once heard the bills of mortality mentioned.

VERY few of the human species die of old age, or natural decay; by far the greatest proportion are prematurely cut off by diseases. In London, and all the vast capitals of Europe, upon an average, one half of the children born, die under three years of age; at Vienna, by the bills half die under two years old; but in country towns and in villages, the proportion of infant mortality greatly decreases. At Manchester, a country town of England, half of the children die under five years of age: at Norwich, half die under six; and at Northampton, a country town, smaller than

either of the two former, half the infants born survive to ten years of age. London therefore will have lost a number in the intermediate space from three to ten, or will have fewer at that stage than Northampton by about ninety, in every thousand.

ATTEND next to the small proportion of infant mortality in country districts. By Dr. Short's bills, in several small country villages of England, the major part born live to 25 : 27 : 33 : and even to 40. In many country parishes and open districts, half the inhabitants born, live to mature age, to 40 and 46, and to beget families of children : in some country districts of Switzerland, similar observations have been made. Here is an astonishing disparity between the duration of town and country life ; but particularly, let it be engraved upon the memory, in the early stages of infant existence : life then is extremely brittle : infants in cities resemble tender, delicate plants, excluded from fresh air, or fish confined in muddy stagnant water ; they perish before acquiring a solidity and seasoning to endure the adulterated quality of city atmosphere.

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WHAT will be the annual decrease, out of any given number, one thousand, or fifteen hundred, for example: from birth to a hundred years old, in cities and country districts, appears distinctly in the ten tables inserted near the end of this chapter. The mortality amongst infants in the first year after birth, is greatest of all, and continues during several successive years to diminish; upon reaching the third year in great cities, infants are somewhat seasoned, and the mortality abates: there is not afterwards out of equal capitals, that prodigious disproportion of deaths between city, town and country, they approach gradually nearer to a par. From five to twenty, in city, town and country mortality is very small: from twenty up to sixty deaths again swell. After passing the meridian, and in the evening of life the seasoned inhabitants of cities seem rather to have the advantage of the country in health and longevity. That is to say, the numbers alive in the country, at sixty-five, seventy, and eighty years of age, are greater proportionally than in cities; but the latter class arrived at those years in London, have surer expectations of life. In both the few survivors at ninety years of age, out of every

thousand, will have lost almost all their fellow travellers in the journey long before reaching that goal. Since the days of Moses, human existence has been circumscribed within the same narrow bounds. In the London bills of mortality, during a period of thirty years, that is, from 1728 to 1758, the total deaths amount to seven hundred and fifty thousand, three hundred and twenty-two; and of all this number, two hundred and forty-two only reached beyond a hundred years of age; one of whom arrived to the age of one hundred and thirty-eight.

WHEREVER the number of inhabitants in any kingdom, city, or village continues the same without increase or decrease; it is evident that there the annual births and deaths will be equal, and the supply proportioned to the waste. If any town just supports itself by procreation only, as many will die at all ages in the year, as are born in that year. In all the large cities of Europe, in London, Paris, Vienna, Rome, Augsbourg, Breslaw, Dresden, Berlin, Amsterdam, Edinburgh, Dublin, and in all country towns of considerable size, the total burials annually exceed the births; but in country parishes, small villages, and open districts of country, the annual

annual births exceed the burials : from the latter, a recruit is furnished for the consumption of cities, armies, navies, war, extraordinary epidemical sickness, colonization, and other contingencies : the country surplus prevents depopulation. It is calculated, that in London within the last one hundred and fifty years, about one million more of the human species have been wasted beyond what were raised by its own original growth and procreation. On the contrary, in the little fertile island of Madeira, according to Dr. Heberden, the inhabitants double themselves within eighty-four years. In North America, if Dr. Franklin's calculations are authentick, the inhabitants in a few of the southern provinces, have doubled themselves in the short space of fifteen years, and in some of the more northern provinces of that continent in twenty-two and twenty-five years.

TAKING the whole aggregate number of inhabitants in different great cities, from birth to one hundred years and upwards, they are computed to die in the following annual proportion to the living. In London, one of $20\frac{3}{4}$: Rome 1—23 : Vienna 1— $19\frac{1}{2}$: Berlin 1—26 : Amsterdam 1—21 or 22 :
Dublin

Dublin 1—22. This is Dr. Price's calculation ; but Sufmilch and Dr. Halley, make only 1—24 to 29 to die annually in great cities. In Edinburgh although containing not more than fifty thousand inhabitants, yet the deaths through the different stages of life, agree nearly with London: *ceteris paribus*, the mortality in cities will bear a proportion to their size; but the inhabitants of Edinburgh are crowded into a very small space, many families dwell together in the same house ; these, with some other inconveniences and uncleanness, render it unwholesome to young infants. In Norwich, which contains about thirty-six thousand inhabitants, the annual average of deaths is 1—24 : Northampton 1—26 : smaller Towns 1—30. In several provinces and country villages of European kingdoms, the proportion of annual deaths to the living, is estimated from 1—32 and 33 to 45. In the island of Madeira, to 1—50. Within those different short intervals of time, will have died in the respective cities and country places alluded to, a number equal to the total amount of the inhabitants. One out of thirty-two, thirty-three, and up to thirty-five, is supposed to be near the decrease of a society at large

large throughout Europe, comprehending together cities, towns, and country, “that is, “mankind enjoy amongst them from about “32, 33 to 35 years each of existence.”

THE Abbe Reynal, that elegant and philanthropic French historian, calculates that 1-7th of the African negroes die annually in the West India islands, which he ascribes not so much to the climate, for that certainly is preferable to Africa, but to the oppression of their masters. He computes, that out of nine millions of those injured men, dragged by violence from their own country to eternal slavery in America, and the West India Islands, and compelled like horses or mules to exhaust their blood and sweat, to pamper avaritious tyrants in idleness and luxury, scarce one million and a half, now survive. This astonishing decrease, with deference to that amiable author, I believe is principally to be imputed to doubts and prejudices entertained by the planters, whether it would not be more profitable to import grown-up negroes, than to propagate the breed in their different plantations. From this inhuman and barbarous policy, fewer wretches now survive to linger in misery.

POVIDENCE has wisely ordered, that through the various nations of the world, at least of Europe, more males should be born than females, on account of the waste by wars, intemperance, and other casualties to which they are exposed : more males likewise are brought forth still born ; and throughout all the periods of infancy, childhood, puberty, and the marriage state, at least until after middle age, the deaths of males exceed those of females. In Dr. Arbuthnot's table in the philosophical transactions, of the difference of sexes born, in forty-six years were baptized of males three hundred and twenty-nine thousand, seven hundred and forty-two, of females three hundred and eight thousand, six hundred and forty-four.

CONSIDERING the perils of childbearing, and many other vexatious diseases to which the female sex are subjected by their particular formation, we might hastily conclude, that the chances of living longest was in favour of the husband ; but the contrary is the fact. Susmilch in a review of several kingdoms and principalities of Germany found, that three married men died to two married women, and consequently that widows were much more numerous than widowers :

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SHORT also found by several German registers, that forty-six married men were buried for twenty-nine married women. Dr. Price estimates the chance in favour of the wife, as three to two; and upon this calculation, the society of clergy in Scotland established funds to support their widows. From a return of the clerical widows and widowers, in that part of the island, the latter were only in the proportion of twelve to twenty, which shews, that more husbands have died. Davenant makes the widows in England still more numerous, compared to the widowers. At marriage it is true, there is generally a disproportion of years; the man is commonly from six to twelve years older than the woman.

UPON a survey of Edinburgh, and some other cities it appeared, that the total of living females were more numerous than the males, as four to three. Davenant's calculation for London, makes the females exceed the males, as thirteen to ten, and in other cities and towns, as nine to eight. At Berlin and Northampton, by accurate accounts, the females also constitute the majority.

AT Berlin, calculators remarked, that more married women were alive at great ages,

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than those who continued single. I observe in a late history of Iceland, by Van Troil of Sweden, that in this island too, the women are said to live to a greater age than the men, and those especially who have had many children. Philosophers suggest with good reason, that following the salutary dictates of nature, and uniting in matrimony, contributes to the health and longevity of the female sex.

Dr. Halley thinks the number alive in any kingdom under sixteen years of age, constitute about one third of all living above that standard. Dr. Price supposes nearly an equal proportion living, under sixteen, and above that age, but that the latter are the most numerous: other calculators, as Davenant, fix the mean about twenty: I should imagine, that in great cities where there are comparatively fewer breeders, and children than in open country districts, Dr. Halley's or Davenant's calculation is more exact.

DAVENANT says, if the inhabitants in this part of our island called England, are supposed at five million, five hundred thousand, the total yearly births at one hundred and ninety thousand, the sundry ages of all those inhabitants will be as follows: under one year old
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are living one hundred and seventy thousand : under five years old, eight hundred and twenty thousand : under ten years old, one million, five hundred and twenty thousand : under sixteen years old, two millions, two hundred and forty thousand : this is not one half of the inhabitants. Above sixteen years old are three millions, two hundred and sixty thousand : of which last number he reckons six hundred thousand to have passed sixty years of age. It is easy to extend this calculation to nine million of inhabitants. On this large scale, if the aggregate annual deaths are not somewhat inferior to the births, it is plain the kingdom would depopulate ; an adequate supply of foreign emigrants could alone prevent that event.

SUSMILCH collected with great care a multitude of materials in several kingdoms of the continent, to enable him to determine with probability, the proportion between the inhabitants residing in town and country. If the result of his enquiries can be depended upon as a general rule for other European nations, the inhabitants of the country exceed those in cities and towns, as $3\frac{1}{2}$ to 1.

GREAT-Britain and Ireland contain about nine millions of inhabitants at all ages. Half

of those are females, at least we shall set them down as such to avoid fractions ; remain then four millions and a half of males, young and old : of this last lot, one half are under sixteen, or at most twenty years of age ; those on the other side amounting to two millions and a quarter may be called fighting men ; but out of them must be deducted for aged, infirm, diseased, and cripples, for a diversity of trades, arts, and manufactories ; for agriculture, merchandize, and commerce ; for literary professions, such as divines, physicians, surgeons, medicasters, and lawyers ; for idle gentlemen, and men of independent fortune : how many able fighting men in the vigour of life after all deductions, could such a nation support in her armies and navies for any considerable time, without greatly injuring trade, and depopulating the two kingdoms. Soldiers and sailors do not contribute to the general procreative stock in any degree, equal to husband men and mechanics. Graunt and Davenant have some curious schemes and calculations of this nature ; they are chiefly of a political tendency, though not altogether foreign to medical enquiries.

I HAVE presented in two short tables, the proportion of mortality throughout every age
in

in London, At birth, the London infant has but an equal chance of living to three years old; but in the country, half arrive at full grown maturity: after reaching five years of age, life is much more sure in London, and the chances of surviving a great number of years prodigiously increased in the child's favour; it has then escaped the wide chasm which swallowed up so many of its fellow travellers. From both those tables it is manifest, that more die in London under two years old, than from two to upwards of forty; and more under five years old, than from five to between fifty and sixty: yet under five, there are but an inconsiderable number alive, compared to those above that age; the deaths are greatly disproportioned to the living numbers or capitals. From eight to sixteen years of age, 1 out of $70\frac{3}{4}$ of the Christ School Boys are said to die annually; Davenant states the decrease in those years at 1 per cent. From twenty to thirty, the bills swell in London, and in all other large cities; more die in that interval than in the fifteen preceeding years, from five to twenty. After twenty, by the Breslaw tables, 3 per cent die annually: De Moivre estimates only 2 per cent decrease even at thirty-six

years of age. One principal reason of the great swell in the London bills from twenty to forty is, that within this interval of life, the majority of new settlers or recruits arrive, and consequently raise the deaths from twenty to forty, considerably beyond their due proportion. The same cause operates more or less, in all towns, where there is an excess of burials above the births.

We are not to suppose, that in every instance there will be annually a regular arithmetical diminution in the exact proportion, adjusted by calculators, for city, town and country mortality: some years, fewer may happen to die, and in other years a greater number.

DR. Short's Table, from JANUARY 1st. 1728 to 1743, a period of fifteen years died by the London bills at all ages, taken at a medium in the following proportions.

Years	{ died under 2 years old	from 2 to 5,	5 to 10,	10 to 20,	20 to 30,
Numbers	9910	2411	980	851	2060
Years	30 to 40,	40 to 50,	50 to 60,	60 to 70,	70 to 80,
Numbers	2471	2510	2231	1675	1200
	80 to 90,	90 to 100,			
	634	117			

Total annual medium of deaths in this period, 27058.

A TABLE of thirty years, taken from the London bills, beginning with 1728, and ending with 1757, shewing the *total* number of deaths and decrease in this period at every age.

Years	{ died under 2 years old	from 2 to 5,	5 to 10,	10 to 20,	20 to 30,
Numbers	272903	64745	25912	22891	58474
Years	30 to 40,	40 to 50,	50 to 60,	60 to 70,	70 to 80,
Numbers	71502	73258	59872	47269	33679
	80 to 90,	90 to 100,	100 to 138,		
	16948	496	242		

Total deaths in this period at all ages, 750322.

I AM

I AM uncertain whether all the casualties are added to the burials in the foregoing table, which is taken from Birch's collection.

A TABLE of Dr. Price's, from the bills of one parish, in the small country town of Northampton, beginning with 1735, and ending with 1770; a space of thirty-six years. In this interval were christened 3242, buried 3690.

Years	died under 2 years old	from 2 to 5,	5 to 10,	10 to 20,	20 to 30,
Numbers	1206	276	155	155	297

Years	30 to 40,	40 to 50,	50 to 60,	60 to 70,	70 to 80,
Numbers	257	297	300	298	285

80 to 90,	90 to 100,	} Total 3690.
155	14	

THE following ten Tables are selected from several authors, but may be found in Dr. Price's works, intermixed with a mass of other calculations, chiefly relative to annuities and pecuniary transactions: their medical utility in illustrating the ratio of mortality in cities, towns and country, will be evident at first view.

Shewing the Probability of the Duration of Life
in LONDON, deduced by Mr. *Simpson* from ob-
servations on the Bills of Mortality in LONDON
for 10 years, from 1728 to 1737.

Ages	Persons living,	Deer. of Life	Ages	Persons living,	Deer. of Life	Ages	Persons living,	Deer. of Life
0	1000	320	27	321	6	54	135	6
1	680	133	28	315	7	55	129	6
2	547	51	29	308	7	56	123	6
3	496	27	30	301	7	57	117	5
4	469	17	31	294	7	58	112	5
5	452	12	32	287	7	59	107	5
6	440	10	33	280	7	60	102	5
7	430	8	34	273	7	61	97	5
8	422	7	35	266	7	62	92	5
9	415	5	36	259	7	63	87	5
10	410	5	37	252	7	64	82	5
11	405	5	38	245	8	65	77	5
12	400	5	39	237	8	66	72	5
13	395	5	40	229	7	67	67	5
14	390	5	41	222	8	68	62	4
15	385	5	42	214	8	69	58	4
16	380	5	43	206	7	70	54	4
17	375	5	44	199	7	71	50	4
18	370	5	45	192	7	72	46	4
19	365	5	46	185	7	73	42	3
20	360	5	47	178	7	74	39	3
21	355	5	48	171	6	75	36	3
22	350	5	49	165	6	76	33	3
23	345	6	50	159	6	77	30	3
24	339	6	51	153	6	78	27	2
25	333	6	52	147	6	79	25	
26	327	6	53	141	6			

Shewing the *true* Probabilities of Life in LONDON
for all Ages. Formed from the Bills for 10
years, from 1759 to 1768. By Dr. Price.

Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.
0	1518	486	31	404	9	62	132	7
1	1032	200	32	395	9	63	125	7
2	832	85	33	386	9	64	118	7
3	747	59	34	377	9	65	111	7
4	688	42	35	368	9	66	104	7
5	646	23	36	359	9	67	97	7
6	623	20	37	350	9	68	90	7
7	603	14	38	341	9	69	83	7
8	589	12	39	332	10	70	70	6
9	577	10	40	322	10	71	70	6
10	567	9	41	312	10	72	64	6
11	558	9	42	302	10	73	58	5
12	549	8	43	292	10	74	53	5
13	541	7	44	282	10	75	48	5
14	534	6	45	272	10	76	43	5
15	528	6	46	262	10	77	38	5
16	522	7	47	252	10	78	33	4
17	515	7	48	242	9	79	29	4
18	508	7	49	233	9	80	25	3
19	501	7	50	224	9	81	22	3
20	494	7	51	215	9	82	19	3
21	487	8	52	206	8	83	16	3
22	479	8	53	198	8	84	13	2
23	471	8	54	190	7	85	11	2
24	463	8	55	183	7	86	9	2
25	455	8	56	176	7	87	7	2
26	447	8	57	169	7	88	5	1
27	439	8	58	162	7	89	4	1
28	431	9	59	155	8	90	3	1
29	422	9	60	147	8			
30	413	9	61	139	7			

The reader may find in Dr. Price's works a separate essay on the proper method of constructing tables for determining the rate of mortality.

Shewing the Probabilities of Life at VIENNA,
formed from the Bills for eight Years, as given
by Mr. SUSMILCH, in his *Gottliche Ordnung*.

Age.	Living.	Decr.	Age.	Living.	Decr.	Age.	Living.	Decr.
0	1495	682	31	364	6	62	129	6
1	813	107	32	358	5	63	123	7
2	706	61	33	353	6	64	116	7
3	645	46	34	347	7	65	109	8
4	599	33	35	340	8	66	101	8
5	566	30	36	332	8	67	93	8
6	536	20	37	324	8	68	85	7
7	516	11	38	316	9	69	78	7
8	505	9	39	307	9	70	71	6
9	496	7	40	298	8	71	65	5
10	489	6	41	290	7	72	60	5
11	483	5	42	283	6	73	55	4
12	478	5	43	277	6	74	51	4
13	473	6	44	271	7	75	47	5
14	467	6	45	264	8	76	42	5
15	461	6	46	256	9	77	37	5
16	455	7	47	247	9	78	32	5
17	448	6	48	238	9	79	27	4
18	442	6	49	229	9	80	23	3
19	436	6	50	220	8	81	20	2
20	430	5	51	212	7	82	19	2
21	425	5	52	205	7	83	16	2
22	420	5	53	198	7	84	14	2
23	415	6	54	191	7	85	12	2
24	409	6	55	184	8	86	10	2
25	403	6	56	176	8	87	8	2
26	397	6	57	168	9	88	6	2
27	391	7	58	159	8	89	4	1
28	381	7	59	151	8	90	3	1
29	377	7	60	143	7	91	2	1
30	370	6	61	136	7	92	1	1

Shewing the Probabilities of Life at BERLIN, formed from the Bills from 4 Years; from 1752 to 1755, given by Mr. SUSMILCH, * in his *Gottliche Ordnung*.

Age.	Living	Decrs.	Age.	Living	Decrs.	Age.	Living	Decr.
0	1427	524	33	361	7	65	112	6
1	903	151	34	354	7	66	106	7
2	752	61				67	99	7
3	691	73	35	347	8	68	92	6
4	618	45	36	339	9	69	86	6
			37	330	10			
5	573	21	38	320	10	70	80	6
6	552	15	39	310	10	71	74	6
7	536	13				72	68	6
8	523	9	40	300	10	73	62	5
9	514	7	41	290	9	74	57	5
			42	281	8			
10	507	5	43	274	7	75	52	5
11	502	4	44	266	7	76	47	5
12	498	4				77	42	5
13	494	4	45	259	7	78	37	5
14	490	4	46	252	7	79	32	4
			47	245	7			
15	486	4	48	238	7	80	28	4
16	482	5	49	231	7	81	24	3
17	477	5				82	21	2
18	472	5	50	224	7	83	19	2
19	467	6	51	217	7	84	17	2
			52	210	7			
20	461	6	53	203	8	85	15	2
21	455	6	54	195	8	86	13	2
22	449	6				87	11	2
23	443	7	55	187	8	88	9	2
24	436	8	56	179	8	89	7	1
			57	171	8			
25	428	9	58	163	9	90	6	1
26	421	9	59	154	9	91	4	1
27	412	9				92	5	1
28	403	9	60	145	8	93	3	1
29	394	9	61	137	7	94	2	1
			62	130	6			
30	385	9	63	124	6			
31	376	8	64	118	6			
32	368	7						

* This writer has also given the bills of the parish of St. Peter's at Berlin, for 24 years; and a Table formed from them, agrees nearly with this.

Shewing the Probabilities of the Duration of
Life, as deduced by Dr. *Halley* from Observa-
tions on the Bills of Mortality of BRESLAW.

Ages.	Living.	Decr.	Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.
0	1000	145	31	523	8	61	232	10
1	855	57	32	515	8	62	222	10
2	798	38	33	507	8	63	212	10
3	760	28	34	499	9	64	202	10
4	732	22	35	490	9	65	192	10
5	710	18	36	481	9	66	182	10
6	692	12	37	472	9	67	172	10
7	680	10	38	463	9	68	162	10
8	670	9	39	454	9	69	152	10
9	661	8	40	445	9	70	142	11
10	653	7	41	436	9	71	131	11
11	646	6	42	427	10	72	120	11
12	640	6	43	417	10	73	109	11
13	634	6	44	407	10	74	98	10
14	628	6	45	397	10	75	88	10
15	622	6	46	387	10	76	78	10
16	616	6	47	377	10	77	68	10
17	610	6	48	367	10	78	58	9
18	604	6	49	357	11	79	49	8
19	598	6	50	346	11	80	41	7
20	592	6	51	335	11	81	34	6
21	586	7	52	324	11	82	28	5
22	579	6	53	313	11	83	23	4
23	573	6	54	302	10	84	19	4
24	567	7	55	292	10	85	15	4
25	560	7	56	282	10	86	11	3
26	553	7	57	272	10	87	8	3
27	546	7	58	262	10	88	5	2
28	539	8	59	252	10	89	3	2
29	531	8	60	242	10	90	1	1

Shewing the Probabilities of Life at
NORWICH. By Dr. PRICE.

Age.	Perf. living.	Decr. of Lif.	Age.	Perf. living.	Decr. of Lif.	Age.	Perf. living.	Decr. of Lif.
0	1185	320	32	392	6	63	174	9
1	865	160	33	386	6	64	165	9
2	705	60	34	380	6	65	156	9
3	645	32	35	374	6	66	147	9
4	613	23	36	368	6	67	138	9
5	590	20	37	362	6	68	129	9
6	570	16	38	356	6	69	120	9
7	554	13	39	350	7	70	111	9
8	541	11	40	343	6	71	102	8
9	530	9	41	337	6	72	94	8
10	521	7	42	331	6	73	86	8
11	514	6	43	325	7	74	78	8
12	508	6	44	318	7	75	70	8
13	502	5	45	311	7	76	62	7
14	497	5	46	304	7	77	55	7
15	492	5	47	297	7	78	48	6
16	487	5	48	290	7	79	42	5
17	482	5	49	283	7	80	37	5
18	477	5	50	276	7	81	32	4
19	472	5	51	269	7	82	28	4
20	467	6	52	262	7	83	24	4
21	461	6	53	255	8	84	20	3
22	455	6	54	247	8	85	17	3
23	449	6	55	239	8	86	14	3
24	443	6	56	231	8	87	11	2
25	437	6	57	223	8	88	9	2
26	431	7	58	215	8	89	7	2
27	424	7	59	207	8	90	5	2
28	417	7	60	199	8	91	3	2
29	410	6	61	191	8	92	1	1
30	404	6	62	183	9	93	1	1
31	398	6						

Shewing the Probabilities of Life at NORTH-
AMPTON. By Dr. Price.

Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.
0	1149	300	31	428	7	62	187	8
1	849	127	32	421	7	63	179	8
2	722	50	33	414	7	64	171	8
3	672	26	34	407	7	65	163	8
4	646	21	35	400	7	66	155	8
5	625	16	36	393	7	67	147	8
6	609	13	37	386	7	68	139	8
7	596	10	38	379	7	69	131	8
8	586	9	39	372	7	70	123	8
9	577	7	40	365	8	71	115	8
10	570	6	41	357	8	72	107	8
11	564	6	42	349	8	73	99	8
12	558	5	43	341	8	74	91	8
13	553	5	44	333	8	75	83	8
14	548	5	45	325	8	76	75	8
15	543	5	46	317	8	77	67	7
16	538	5	47	309	8	78	60	7
17	533	5	48	301	8	79	53	7
18	528	6	49	293	9	80	46	7
19	522	7	50	284	9	81	39	7
20	515	8	51	275	8	82	32	6
21	507	8	52	267	8	83	26	5
22	499	8	53	259	8	84	21	4
23	491	8	54	251	8	85	17	4
24	483	8	55	243	8	86	13	3
25	475	8	56	235	8	87	10	2
26	467	8	57	227	8	88	8	2
27	459	8	58	219	8	89	6	2
28	451	8	59	211	8	90	4	2
29	443	8	60	203	8	91	2	1
30	435	7	61	195	8	92	1	1

Shewing the Probabilities of Life in the District of
VAUD, SWITZERLAND, from the Registers of 43
Parishes, given by Mr. *Muret*, in the First Part of
the BERN Memoirs for the Year 1766.

Age.	Living	Decr.	Age.	Living	Decr.	Age.	Living	Decr.
0	1000	189	31	558	5	62	286	12
1	811	46	32	553	5	63	274	12
2	765	30	33	548	4	64	262	12
3	735	20	34	544	5			
4	715	14				65	250	14
			35	539	6	66	236	16
5	701	13	36	533	6	67	220	18
6	688	11	37	527	7	68	202	18
7	677	10	38	520	7	69	184	16
8	667	8	39	513	7			
9	659	6				70	168	15
			40	506	6	71	153	13
10	653	5	41	500	6	72	140	11
11	648	5	42	494	6	73	129	10
12	643	4	43	488	6	74	119	10
13	639	4	44	482	6			
14	635	4				75	109	11
			45	476	7	76	98	13
15	631	5	46	469	8	77	85	14
16	626	4	47	461	10	78	71	13
17	622	4	48	451	10	79	58	12
18	618	4	49	441	10			
19	614	4				80	46	10
			50	431	9	81	36	7
20	610	4	51	422	8	82	29	5
21	606	4	52	414	8	83	24	4
22	602	5	53	406	9	84	20	3
23	597	5	54	397	9			
24	592	5				85	17	3
			55	388	11	86	14	3
25	587	5	56	377	13	87	11	2
26	582	5	57	364	16	88	9	2
27	577	5	58	348	17	89	7	1
28	572	5	59	331	17			
29	567	4				90	5	1
			60	314	15			
30	563	5	61	299	13			

Shewing the Probabilities of Life in a Country
Parish in BRANDENBURG, formed from the Bills
for 50 Years, from 1710 to 1759, as given by
Mr. SUSMILCH, in his *Gottlicke Ordnung*.

Age.	Living.	Decr.	Age.	Living.	Decr.	Age.	Living.	Decr.
0	1000	225	31	482	5	62	260	12
1	775	57	32	477	5	63	248	12
2	718	31	33	472	5	64	236	12
3	687	23	34	467	5	65	224	11
4	664	22	35	462	6	66	213	11
5	642	20	36	456	6	67	202	12
6	622	15	37	450	6	68	190	12
7	607	12	38	444	6	69	178	12
8	595	10	39	438	6	70	166	13
9	585	8	40	432	5	71	153	15
10	577	7	41	427	5	72	138	16
11	570	6	42	422	5	73	122	15
12	564	5	43	417	5	74	107	14
13	559	5	44	412	6	75	93	13
14	554	5	45	407	6	76	80	12
15	549	5	46	400	6	77	68	9
16	544	5	47	394	6	78	59	8
17	539	4	48	388	7	79	51	7
18	535	4	49	381	7	80	44	6
19	531	4	50	374	7	81	38	6
20	527	5	51	367	8	82	32	6
21	522	5	52	359	8	83	25	6
22	517	5	53	351	8	84	21	5
23	512	5	54	343	9	85	15	4
24	507	5	55	334	10	86	11	3
25	502	4	56	324	10	87	8	2
26	498	3	57	314	10	88	6	2
27	495	3	58	304	11	89	4	1
28	492	3	59	293	11	90	3	1
29	489	3	60	282	11	91	2	1
30	486	4	61	271	11	92	1	1

Shewing the Probabilities of Life in the Parish
of HOLY - CROSS, near SHREWSBURY, formed
from a Register kept by the Rev. Mr. *Gorsuch*,
for 20 years, from 1750 to 1770.

Age.	Living	Decr.	Age.	Living	Decr.	Age.	Living	Decr.
0	1000	178	31	481	5	62	253	10
1	882	60	32	476	5	63	243	10
2	762	45	33	471	5	64	233	10
3	717	35	34	466	6	—	—	—
4	682	23	—	—	—	65	223	10
—	—	—	35	460	6	66	213	10
5	659	23	36	454	7	67	203	10
6	636	18	37	447	7	68	193	11
7	618	14	38	440	7	69	182	11
8	604	9	39	433	7	—	—	—
9	595	6	—	—	—	70	171	10
—	—	—	40	426	8	71	161	10
10	599	4	41	418	8	72	151	9
11	585	4	42	410	9	73	142	8
12	581	4	43	401	8	74	134	8
13	577	4	44	393	7	—	—	—
14	573	4	—	—	—	75	126	7
—	—	—	45	386	7	76	119	7
15	569	4	46	379	7	77	112	7
16	565	5	47	372	7	78	105	7
17	560	5	48	365	6	79	98	8
18	555	5	49	359	6	—	—	—
19	550	5	—	—	—	80	90	9
—	—	—	50	353	6	81	81	10
20	545	6	51	347	7	82	71	10
21	539	7	52	340	7	83	61	10
22	532	7	53	333	7	84	51	10
23	525	7	54	326	8	—	—	—
24	518	6	—	—	—	85	41	9
—	—	—	55	318	8	86	32	8
25	512	6	56	310	9	87	24	7
26	506	5	57	301	9	88	17	6
27	501	5	58	292	9	89	11	4
28	496	5	59	283	10	—	—	—
29	491	5	—	—	—	90	7	2
—	—	—	60	273	10	91	5	1
30	486	5	61	263	10	92	4	1

OF THE CAUSES OF
DEPOPULATION
IN
GREAT CITIES.

GREAT cities, if we exclude Rome and Constantinople, are of modern date in many kingdoms of Europe. In the ninth century, a few had been built in Germany ; but in England corporations, and considerable towns, are posterior to the Norman conquest. Even in the reign of Harry the second, London contained only forty thousand inhabitants. Cities, associated communities, and towns, during the religious fever of Crusading, and after the termination of this epidemical distemper, were Asylums from Aristocratic tyranny ; they are now the graves of young infants. Standing in several European nations, in the relation of city and town inhabitants to those of the country, as 1 to $3\frac{1}{2}$, they are drains of the human species. The

first great and universal cause must be imputed to the foul and turbid atmosphere of cities, and its poisonous effects upon infants ; to close streets, alleys, lanes, and habitations of the poor, where free ventilation and circulation of the air is obstructed. In the construction of these human hives, health and population has been criminally overlooked ; but no one cause alone will account for their depopulation, we can trace it to a multitude of sources. In attempting therefore some illustration of this subject, my few desultory observations will be pointed to the British metropolis.

LONDON bills by no means give an exact register of births and mortality : Jews, Quakers, Papists, and Protestant Dissenters, are not included in the yearly births, and great numbers of their burials, and of burying places, not only of the dissenting, but likewise of the established church, are omitted, of the former thirty-two, and of the latter thirty-three, according to Short's list ; the large parishes of Pancras and Mary-le-bone, in one of which stands the Foundling Hospital, are excluded from the bills. Maitland discovered one hundred and eighty one religious congregations whose christenings were not published in the annual registers. Six hundred abortive
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and still born, who have arrived at an age, thought deserving of burials, are set down to the deaths, but omitted in the list of births. Dr. Price rates the annual deficiency of the London burials at six thousand, and of the births somewhat greater, neither of which are brought to account in the public registers: so that every year there is, upon an average, an excess of deaths above the births, in this metropolis, of at least five or six thousand: in the last ten years, this waste seems by the bills a little abated. The materials, alas! for forming such calculations are exceeding confused.

LONDON BILLS at a medium annually.

Years	Christenings	Burials
From 1671 to 1781	12325	19144
1681 to 1691	14439	22363
1691 to 1700	14938	20770
<u>1700 to 1705</u>	15758	21091
1706 to 1710	15489	21832
1711 to 1715	16204	22178
1716 to 1720	18019	25641
1721 to 1725	18828	26513
1726 to 1730	17578	28472
1731 to 1735	17517	25491
1736 to 1740	16145	27494
1741 to 1745	14419	25351
1746 to 1750	14496	25351
1751 to 1756	15119	21080
<u>1759 to 1768</u>	15710	22956
1770 to 1780	17218 nearly about	21000

DAVENANT calculated the number of houses in the metropolis and the county to be more numerous in the year 1690, than Dr. Price will admit them to be at present.—If London, before the beginning of this century, consisted of so many distinct though small, compared to the present houses, with separate families, amounting on an average to about five in each family; (the usual cal-
cula-

culatation for country towns, and for some parishes in the capital) and at this time, the number of houses are decreased ten, fifteen, or twenty thousand, with an *equal* number to each house, then without doubt, contrary to the evidence of our senses, we must believe the metropolis itself to have been more populous eighty or ninety years ago. The truth seems to be, that the London inhabitants are now much more widely dispersed, and to an immense extent, in small villages, retirements and country-houses over all the different surrounding counties.

COMPARE the London births and burials of the last thirty years, with the thirty preceeding ; the deaths of late are greatly decreased in proportion to the births. Might not therefore this alleged diminution of population, from finding a decrease in the burials, be accounted for, by supposing that formerly the city was close confined and unhealthy, especially to infants, that then too perhaps proportionally more breeders supported the metropolis. Fifty other reasons may be assigned : London streets are now widened, the inhabitants live less crowded together, the houses stand upon double or treble the ground which they formerly occupied, ventilation is freer, the city is more plentifully

tifully supplied with water and fuel, both extremely necessary in preserving health, in preventing sickness and infectious fevers originating from foul stagnant air, filth and uncleanness ; the streets are better paved, and have all flagged foot paths ; sewers and drains are made to carry off moisture and corruption ; there are many more country houses and agreeable outlets, if not in the county, in the vicinity of London, where families and children may enjoy fresh air and exercise ; the high roads round the capital, and throughout the kingdom, are greatly improved, and invite more to exercise ; academies for the education of children are increased in the environs, and in the country ; the better and middling classes of people at least, drink less than formerly. In vain we look for any compliment to the standing forces of Esculapius, to modern discoveries and improvements in medicine : calculators reecho the decay of population and of inhabitants ; they are nevertheless pleased to allot some subordinate degree of merit, to bricklayers, commissioners of sewers, street paviours, and scavengers.

BESIDES the pernicious effects of foul city atmosphere upon young infants, and in a smaller degree upon grown-up persons, particularly in sickness ; other causes conspire to sink the births beneath the the standard of the burials

them I include fewer breeders in cities. Our own senses and observation may here be consulted in lieu of doubtful calculations. In proportion to the easy means of acquiring a moderate subsistence for children, the population in general will be greater: this was lately the exact case with our North American colonies. Another reason which tends to increase country population is, that there, in the unmarried condition, life is a languid pilgrimage, and for a variety of reasons, they enter into the state of wedlock with fewer scruples; but in large and populous cities, men (and women if they chuse it) have unmolested opportunities of revelling in dissipation and vice; in their younger days they are seduced by the deceitful allurements of courtezans, and until the fire of youth is somewhat blunted, are more averse to early matrimony than those placed in remote parts of the country; in these tranquil abodes, the mind is less debauched, and fewer opportunities present to indulge in licentious gratifications. The expenses of a household, and the prospect of increased burthens, in providing handsomely for a family, the difficulties again amongst the lower and laborious orders in cities, of sub-

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sisting, as the necessaries of life rise in price, with the easy means of gratifying the sensual passions, all contribute their share in London, and other great capitals to discourage matrimony. Even amongst the higher and middle orders where taxes are enormously multiplied, where shows, public amusements, extravagance, and dissipation are fashionable, and one of the darling objects of gratification, numbers of both sexes are frightened from wedlock, and population is checked.

LONDON and Paris contain multitudes of maids, batchelors, and professed courtezans, useless drones, who add no increase to the common stock, in respect of procreation. The increase of the army and navy, of law, commerce, and private fortunes, and the commodious agreeable manner of travelling, draw numbers now to the British capital for pleasure, business or curiosity ; more foreigners visit us ; the number of large houses in London are multiplied, where we may find a long train of unmarried domesticks ; all those different descriptions of persons, which probably are rather augmented, will have some effect in detracting from the annual proportion of births. Probably, likewise in cities, from the dissipation, and incontinence of
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the married state, fewer children are produced than by country marriages ; but the principal reason I imagine is, that in the latter, they enter earlier into matrimony, and afterwards perhaps, have fewer cloudy apprehensions of overstocking their house with children.

“ Country marriages, one with another,
 “ seldom produce less than four children
 “ each, generally between four and five, and
 “ sometimes above five ; but in towns seldom
 “ above four, generally between three and
 “ four, and sometimes under three.”

HIGH refinement and large cities are obstacles to population, so is a wild state of nature. A few tribes of American Indians with difficulty find subsistence in a large tract of woody uncultivated country ; the husbands are cold insensible mortals ; the allurements of dress and education are also wanting to give a spur to the passions. In North America, the infants of the Indians are suckled several years, and after nursing two or three children, the period of propagation is almost finished : the fatigues and perils which they are obliged to undergo in procuring subsistence, would not permit them to support two or three young infants at the same time. A medium state between high refinement and

rude savageness, is most favourable to population : in the country, and particularly in the back settlements of North America, they bundle and marry when young, and breed a numerous progeny,

I FIND upon many occasions, the propriety and force of Celsus's maxim, that medicine is a circle. An attempt fully to explain the causes which may with probability be concluded as necessary to the diminution of mortality in London, is warped with medical questions, and with a general survey of diseases. We should examine the effects upon different ages of a foul atmosphere, of animal effluvia, of uncleanness, of contagion, whether bred in jails or hospitals, or by filth in private houses, of moist vapours emitted from the earth, and of the diet and liquors now consumed. Before the beginning of the present century, very few vegetables were eat in London, and scarce any public gardens to rear vegetables had been planted round the city, the surge and decrease of diseases, the state of medicine, and discovery of new remedies, should all be taken into the account : this inquiry will lead into a wide ocean, and is more closely connected with the matter of the following Chapter.

FRESH

FRESH air next to food, seems to be an element, the purity of which materially conduces to the health and life of young infants. The fatal consequences of city atmosphere upon their delicate constitutions, are universally notorious in great cities, even amongst nations conspicuous for sobriety. This general law demonstrates, that raw spiritous liquors drank often by suckling mothers and nurses, upon which calculators who have written upon the London bills lay so much stress, are but secondary evils, and far inferior to the former. The laborious class cannot afford time to carry their infants out daily to the open areas and suburbs, to breathe a little wholesome air, or even to enjoy a necessary degree of exercise; they pine away like young plants, buried in a noisome cellar. Perhaps too in great cities, more comparatively of the parents of young infants, have injured their constitutions by precipitate irregularities and debauchery; their offspring we may conceive will be more debilitated and frail, than those of strong healthy parents, accustomed to industry, sobriety, and regularity. The recovery of infants from diseases, such as small-pox, measles, or any other sickness, will be greatly checked

checked by a foul atmosphere, and rendered more hazardous.

NEXT to the mortality of infants, Dr. Price assumes it as an established proposition, “ that the *second* great cause of depopulation “ in London, takes place amongst the new “ *annual settlers*, to whom the air, modes “ of life, and debaucheries of the metropo- “ lis, are particularly hurtful and pernicious, “ and that (exclusive of their greater num- “ bers) this is one of the principal reasons “ why the bills swell in the city after twenty “ years of age.

THE annual waste of London requires about five or six thousand recruits. The new settlers Dr. Price supposes to arrive chiefly from twenty to forty years of age, and this afflux it is evident must swell the burials in that interval of life, by adding to the number of inhabitants, and raising the deaths above the due proportion, when compared to the mortality before twenty. Certain it is, that numbers come from the country to London under twenty years of age, to serve apprenticeship’s in trade, law, mechanical professions, and as servants, but Dr. Price is of opinion, that they are more than counterbalanc’d, by those sent out of the metropolis

polis under puberty for education, to schools and universities : yet in this case, the polluted air of London should exert its pernicious effects upon the young strangers, much more than upon the original and half seasoned inhabitants arrived at the same years. A large part likewise of the annual recruits composed of natives and some foreigners, we must imagine have been born and reared in cities and towns, either as artizans, mechanics, or idle people. I am inclined to think, that Small-pox has some share in increasing the mortality of the new settlers.

WHEN we attentively reflect upon the excess of infant deaths under five years of age in London, and the small number of breeders, a great surplus of deaths by new recruits will not be required to account for the London waste. The majority of the new settlers will probably be unmarried persons, who do not so soon form matrimonial connections, as if they had remained in their original habitations with their friends and acquaintances. The small portion of breeders I before observed, was a principal cause why out of nine millions of negroes exported to America, and the West Indies, one million and a half now only survive.

LONDON

LONDON atmosphere and debaucheries, I shall not deny, are fatal to a small number of the new recruits ; but after a year or two, men become habituated to great changes and diversity of climate ; within that time, Europeans are tolerably well seasoned, even in the East and West Indies. I apprehend that from twenty to forty is universally a more mortal period, than from ten to twenty, though in a less severe degree in the country than in large cities ; and in this respect, the bill of a parish in a small country town Northampton, given by Dr. Price, corresponds with London. From eighteen to thirty-five is the principal consumptive age amongst both sexes, debaucheries and irregularities are then most prevalent ; in all pulmonary complaints likewise, and indeed in sickness of every denomination, pure country air contributes greatly to the recovery.

NUMEROUS cities, towns and harbours, have been built upon low unhealthy situations, surrounded with hills or morasses ; most cities seem to have grown up by time, accident and chance, the streets are irregular, and the inhabitants crowded into too small a space ; all these are objects of the first legislative magnitude in every nation. Few great capitals in Europe can be compared to London in healthy

thy situation and other conveniences ; yet we may remark, that the comparative proportion of its burials rather exceed those of Amsterdam, which stands in the midst of slime, mud and morasses. Custom and habit we know season men to unwholsome climates and stations : but besides, there are fewer people in Amsterdam, the streets are more regular and open to ventilation than the old buildings of London ; there is also less luxury, licentiousness and profligacy to diminish population.

DAVENANT calculates, that before the beginning of the present century, England and Wales contained one million, three hundred thousand houses and cottages. Dr. Price estimates the houses now, rather under one million. This certainly indicates an alarming depopulation in the kingdom. The subject is of a political nature, and of infinite extent ; it is connected with the state of government, of religion, of foreign colonization, of emigration to remote parts of the Empire, with trade, agriculture, and the inclosure of commons ; with the frequency of wars, the increase of taxes, luxury and refinement in the higher and middling classes, and with all the causes before enumerated, which more or less diminish the national stock.

C H A P. III.

The Diseases which annoy, and occasion the Principal Mortality amongst Mankind, and an Attempt to form a gross comparative Estimate or probable Ratio of the Numbers destroyed by each: a few Tables, each of equal Periods, shewing by the London Bills, the Diseases, Casualties and Deaths at every age, during ninety Years in this Metropolis, and which exterminated above two Millions of the Human Species: Critical Reflections upon those Diseases, and the Bills.

IN the preceding chapter it has been confirmed by mathematical demonstration, that an inconsiderable handful of mankind survive to seventy or eighty years of age; a few it is true have reached one hundred, or even one hundred and fifty, Jenkins lived to one hundred and sixty-five. It is also observable, that those who enjoyed such uncommon longevity, had no general settled systematic rules of diet. In Bacon, Lord Verulam's history of long livers, both males and females, their climate, diet, manner of life, appetites, studies, passions, habits and dispositions were exceeding

exceedingly dissimilar. Through all the climates of Europe, Africa, Asia and America, the rich, the poor, the inhabitants of town and country, with very different climate, nourishment, soil and conveniences, all seldom exceed the usual term of life allotted in holy writ to man. Seventy or eighty is mentioned by Moses, in the 90th Psalm, as the ultimate goal of human existence. The term is very short, and we are all hastening to the brink of our earthly duration. It would be unjust and fruitless to repine, “ seeing that so many who
 “ set out with us in the journey have been cut
 “ off. The awful period advances by slow and imperceptible degrees : universal ruin
 “ and the last blow will come and close us up
 “ in the grave.”

I PROPOSE now to lay out, and to review in one great map, the enormous brood of diseases which disgorge their virulence over the earth, and wage incessant hostilities with mankind : by this means we shall, to use a military phrase, reconnoitre more distinctly our enemies, and be led to make the best disposition and preparation for defence where the greatest danger is apprehended, and the most

formidable assaults to be sustained. Armed with diseases, the grim king of terrors appears in the most hideous aspect : under these various morbid forms, I shall track him grappling with mankind, and with his tremendous scythe mowing down generations.

DR. Price and many other philosophers, “ consider diseases not as the original intention of nature, but that they are without doubt in general, of our own creation. That were there a country where the inhabitants led lives entirely natural and virtuous, few of them would die without measuring out the whole period of present existence allotted to them, pain and distempers would be there unknown.” This proposition may be useful to encourage morality, but it will not bear a medical scrutiny.

IN the rude state of science and medicine, it was usual to ascribe most diseases to the immediate resentment of some invincible demon, or to divine displeasure and chastisement: early philosophy soon discarded such supernatural agents. Others again, equally err in supposing diseases to be unsteady motions of the human machine, excited by something hurtful :

hurtful : they are each beyond dispute presented to us over and over again, in nearly the same form and shape : the diseases delineated two thousand two hundred years ago, by Hippocrates in Greece, at this day retain the same essential marks and prominent features : in degree and violence, there unquestionably are gradations and shades which may vary the picture. This popular error seems to originate from confounding diseases themselves, with the practice of physick.

INFANT deaths from the foul atmosphere of great cities, furnish a vast supply to the gloomy realms of Pluto. Their diseases in the bills are principally accumulated into two aggregate heaps, Convulsions and Teething ; upon which I shall presently animadvert.

PHYSICIANS have unanimously agreed, that the febrile class of diseases, comprehending all the different genera in one cluster, are the most universal and fatal ; but throughout all countries, in epidemical diseases there are barren and fruitful years, when they are more or less prevalent. Great national calamities from epidemical distempers are rare, none are ever diffus'd over a whole kingdom, (catarrh in a few rare instances, and cases of general famine excepted) they sometimes
spread

spread from province to province, but all are never attacked at once, nor probably are large populous kingdoms ever totally exempted from them. Fevers of different generic forms, as agues, remittent fevers, dysenteries, malignant and infectious fevers, putrid sore throat, small pox, measles, &c. may be local and circumscribed to one city, or district, whilst others in the vicinity continue healthy, the disease dissipating its force within a small boundary.

DR. Short, from one hundred and fifty five different parish registers, calculates that in a certain period some have had from eight to fourteen sickly years, whilst others in the same interval have had but one. Five, six, and eight years distance he estimates as a common period for the visitation of epidemical sickness, even in remote country parishes. In one of those intervals it is usual for Small-pox and Measles, exclusive of some other epidemics to make their periodical circuits. By the country registers it appears, that a few parishes have had the good fortune to escape from any unusual mortality, during ten, twelve, and some few twenty, and even thirty years. In all the sickly seasons of country parishes, the burials exceed the christenings, and according to the nature

nature of the epidemic, and morbid state of the season, the mortality varies in degree. In the London bills we frequently observe, that in certain weeks or months the deaths rise double or treble above equal periods of the same year. In town and country, the mortality of the winter months is also greater than that of the summer.

UPON comparing the annual average of deaths in a sickly year of London and other great cities, with sickly years in country parishes, Dr. Short finds, that cities and towns in this respect have the advantage of the country. In large open country places where fatal epidemics broke out, according to this author, more died in one year, than during six, ten, twelve, or even fifteen years of health ; whereas in London and such cities, seldom above a third, fourth, or fifth beyond the ordinary consumption are carried off. (Plague is certainly now and then an exception to this proposition,) the Dr. adds, that mortality is more constant and regular in cities, and not so many destroyed “ per saltum” from sweeping epidemics as in the country. In pure open air he suggests, that contagion or other adulterated effluvia are more virulent ; or perhaps he should have said, that in cities where

where the atmosphere is charged with a load of heterogeneous vapours, emitted from fires and other effluvia, epidemical poisons may be blunted, decomposed or annihilated. In cities too, human bodies may be more seasoned and habituated to noxious impressions from this source : Small-pox and Measles in particular, are constant residents in great capitals, and consequently the decrease from these diseases is more equal than in the country, where several years intervene between their periodical invasions. At present I studiously shun any deeper discussion of causes.

THE principal and most general epidemics which infested England during two entire centuries, are enumerated in a short syllabus, by Dr. Short. They are either plagues, agues, remittent fevers, spotted putrid fevers, slow fevers, dysenteries, pestilential and contagious peripneumonies, small-pox, measles, fatal spring pleurisies, peripneumonies, and epidemical catarrhs, all of the febrile class. De Haen computes, that out of two thousand sick taken into the hospitals at Vienna, seven hundred laboured under acute diseases, fevers of various kinds. Out of five thousand, seven hundred and forty-three sick, taken into Haslar Hospital, at Portsmouth, by Dr. Lind's account, about three thousand
were

were ill of fevers. Cleghorn estimates the summer fevers of Minorca to constitute 3-4ths of all the diseases in that island. Lind calculates, that of all the numerous Europeans who visit the sultry climates of Africa, America, the East and West Indies, nineteen out of twenty who die in those regions are carried off by fevers and fluxes ; and probably he should have subjoined, or of chronic diseases, the consequence of those fevers.

THE plague, a febrile demon, cannot at present be called one of the general and mortal epidemics of Europe, except in the South East extremity possessed by the Turks. The two greatest pestilences on record happened in the sixth and fourteenth centuries of our era, when millions over the globe were overwhelmed in one general deluge of putrefaction. In London before the great conflagration, in 1666, the plague was very frequent ; since that event, or at most two or three years after, it is extinguished and unknown in this city. From 1562 to 1665, the plague had raged more or less in London, including together the different periods of its duration upwards of twenty-five entire years: in 1665, the deaths amounted to very near one hundred thousand. Registers in other parts of Europe shew, that this disease has com-

mitted direful havock. At Marseilles, they reckon up twenty general plagues which have time to time desolated that populous city. Many cities and towns in different nations of Europe have severely smarted by pestilence, since our emancipation from this formidable tyrant. In the mediterranean ports they are, from fatal experience, extremely vigilant to guard against infection. So late as 1743 and 4, the beautiful city of Messina, in Sicily, was almost entirely depopulated: seventy thousand inhabitants were in a short time exterminated by the plague, which had been introduced by a few bales of infected goods clandestinely landed from a ship in the harbour.

TRUE plague is chiefly confined to Grand Cairo, and Alexandria, the two hot-beds and nurseries of pestilence, to many parts of Syria, to the European and Asiatic Coast, bordering on the Archipelago, to Constantinople, and to some maritime towns of Arabia and Persia, which traffick by the Red sea. About two years ago, Constantinople lost one hundred thousand inhabitants by this single disease. Their ignorance of philosophy and stupid notions of irresistible predestination, subjects the Turks more than any other

other mediterranean nation to pestilential contagion. The plague now seldom gains admittance into other European sea-ports, and even if imported, the wise precautions and regulations adopted by quarantines, check its irruption: this is a most important improvement in the police of modern states, for the original institution and rough draft of which about three hundred years ago, we are indebted to the Venetians. Fortunately for mankind, the infection of plague spreads to a very small distance through the air, without some contact or adhesion to infected goods and porous materials, or by personal communication of the sound inhabitants with the diseased: a neighbour shutting himself up at a few yards distance from an infected house, may escape unhurt. If the contagion of plague could be so suddenly and widely scattered over a kingdom, as epidemical catarrh or influenza, the earth in a few months would be converted into an enormous church yard, and filled with dead corpses.

AMONGST the universal febrile maladies, are those intermittent and remittent fevers, of unwholesome tropical climates, particularly in

the rainy seasons: in the hot sultry autumnal seasons of Europe, in low and marshy situations, these are also the prevailing epidemics: armies in camps are at that time often grievously infested with them, and the dysentery generally accompanies them. Over all the middle regions of the earth, from cancer to capricorn, intermittent and remittent fevers, and dysenteric fluxes are the most general, and perhaps fatal epidemics. They destroy not only numbers immediately, particularly of the new European settlers, but when improperly treated often terminate in chronic complaints, such as dropies, jaundice, visceral obstructions, swellings and scirrhus of the liver, and broken constitutions: relapses into them are frequent upon premature exposure to cold, hardships, or irregularities in living. Since the discovery of antimonials and bark, few now die of this fever compared to the number of sick; but except consumptions, small-pox, and perhaps an infectious fever which I shall soon mention, it may be doubted, whether any other single genus of disease, destroys more of the human species.

AUTHORS have given various appellations to those intermittent and remittent fevers which are in essence the same, and cured nearly by
 similar

similar remedies : they are denominated tertian, semitertian, double tertian, triple tertian, hæmitritæa, amphimerina, autumnal epidemic fever, pestilential tertian, marsh fever, camp fever, bilious, and gall sickness, remittent fever of warm and tropical climates, tertian fever, accompanied with several irregular symptoms, and from the symptoms most predominant and urgent, the fever has received different names.

ANOTHER fever varying often considerably in symptoms and violence, is widely dispersed over the earth ; it may arise at all seasons of the year, whether hot or cold, and like the plague or small-pox, is frequently communicated by contagion, from one person to another, either by approaching too near the sick, or through the medium of infected goods, cloathes and moveables. It is frequent in jails abounding in filth, and where free ventilation is excluded, in large hospitals crowded with sick, and on board ships, squadrons and large fleets, particularly when hastily fitted out : in cities we can frequently trace it to the prisons, to the houses of the poor, to filth, rags, poverty, and adulterated air. Cities and towns also for obvious reasons, seem to be more exposed to it than the country. Authors call it

it jail fever, putrid malignant fever, spotted and petechial fever, infectious fever, &c. Some not without foundation have surmised, that slow nervous fevers are in general derived from the same origin. The ignorance of the searchers in medical matters prevent us from determining the precise mortality by this genus of fever in London.

THE sweating sickness has long disappeared from England and from Europe, and cannot therefore be now considered as an epidemic cause of mortality. Somewhat more than three hundred years ago, this singular disease broke out, for the first time, in the army of Harry the 7th, on his return to Milford Haven in Wales, from an expedition against France : in four hours sickness, numbers were snatched off ; but if they kept warm in bed under profuse sweats, and survived twenty-four hours, the danger was usually surmounted. It returned back again to England at several subsequent intervals ; but happily its greatest devastation was always of short duration.

PUTRID sore throat is another species of malignant infectious fever. It has been called plague, with carbuncle in the throat resembling buboes in the groin. Its mortality is not confined

confined to any particular season of the year ; but although the fever is precipitate, and often fatal to those whom it seizes, particularly children, it seldom extends over a large tract of country ; a single city or a province at most bounds its malignity. The revolutions of this infectious disease are irregular and uncertain. In 1748, a considerable number in this country, fell victims to putrid sore throat : scarlet fever is very generally connected with it. In the London bills I suspect they rate its mortality too low, and I imagine it is confounded with putrid, scarlet, spotted, and malignant fevers.

SIMPLE inflammatory fever is another genus of the febrile class, whose mortality is trifling compared to some of the preceding fevers. Pringle observes that in military camps, pleurisies and peripneumonies, fevers accompanied with local or topical inflammations in the breast and lungs, are the most frequent forms of inflammatory fever, and next to those acute rheumatisms, the majority of which originate from colds, and prevail most in the winter and spring.

Two other fevers arising from specific infection, small-pox and measles, and their relative mortality, will best appear in the following tables. In these tables and the comments, are presented the diseases, acute, and chronic,
which

which destroyed upwards of two millions in London. Criticisms will afterwards be with more propriety introduced upon the different diseases and their respective fatality. With certain exceptions and precautions, we may in some degree make the diseases and casualties of London serve as a morbid barometer to the whole nation.

I COULD have exhibited tables with the diseases and mortality of the last century, from 1629 ; but for a great part of that time the metropolis was insignificant in size, compared to its present magnitude, twenty new parishes have since been gradually added to the annual registers. Again, London until 1665 and 66, was infested with the plague, which disease previous to that date, seems to have been one primary object of the bills : after the great pestilence in 1665, London must have required some years to recruit, and to adopt Graunt's and Dr. Short's sentiments, the registers were then, from various political and religious obstacles, very negligently managed. For these and many other reasons, I formed four regular tables only of diseases in the present century, when London is more stationary in numbers, and more populous than at any preceding period of equal duration : the actual and comparative magnitude, rise, or declension of different diseases will

will therefore be more conspicuous in each table.

HAD I attempted to form similar tables for the last century, the reader would have been embarrassed to no purpose, and drowned in figures. For example, in one and the same title, are often intermixed in the registers of mortality, flux, small-pox and measles; consumptions and tiffick; cancer, canker and thrush, and sometimes wolf, cancer, gangrene and fistula, or cancer, gangrene, fistula and mortification: gout and sciatica; vapours and water in the head; quinsy and thrush; sores, ulcers, bruised and broken limbs; cough, cold, and chin-cough are additional specimens of their absurdity. Notwithstanding this rabble of diseases, in commenting upon the the bills of the present century, I have referred back, and have contrasted them with the bills of the last thirty years, in the preceding century; so that as near as the imperfection of the materials would admit, the diseases and mortality of ninety years in London are exhibited, and in a compass which cannot perplex with figures and calculations. Where no considerable difference appeared in the diseases and mortality of each fifteen years interval of the thirty in the last century, I added the two together to prevent unnecessary arithmetical multiplication, and it is easy to half them.

THE Diseases, Casualties and total Deaths, by the London Bills, during fifteen years, beginning from 1701, and ending with 1716.

Chrisoms	850	Cholick -	1360	Rifing of the	
Head mould		Twisting in		Lights -	1219
shot -	386	the Guts	125	Spleen -	42
Water in the		Worms -	697	Vapours -	11
Head -	223	Bloody Flux	133	Child-bed	3560
Convulsions	91660	Gripes in the		Evil -	1020
Teeth -	18478	Guts -	12183	Leprosy -	19
Infants -	315	Looseness -	181	French-pox	917
Thrush —	839	Vomiting -	161	Scurvy ---	83
Chin-cough	63	Flux ---	178	Rash ---	77
Rickets -	3916	Bleeding --	87	Scald Head	9
Small-pox	22219	Diabetes -	37	Inflamma-	
Measles -	1972	Apoplexy	1154	tion -	8
Ague ---	86	Suddenly	1074	Imposthume	790
Fever -	49189	Lethargy -	105	Mortification	937
Purples -	189	Megrims -	13	Gangrene	136
Spotted Fe-		Palsy ---	332	Bursten -	75
ver —	1498	Headach -	21	Ruptures -	235
Scarlet Fever	54	Lunatic -	412	Fistula -	360
Malignant		Dropsy —	11420	Sores and Ul-	
Fever -	15	Tympany -	206	cers -	695
Consumpti-		Jaundice -	1261	Cancer -	1041
ons —	42541	Liver grown	76	Canker -	138
Asthma --	424	Gravel and		Wen -	5
Tifick -	4666	Strangury	66	Swelling -	6
Congh -	56	Stone ---	721	White Swel-	
Pleurisy -	384	Gout ---	313	ling ---	5
Quinfey --	226	Stoppage of			
Rheumatism	368	the stomach	4139		

THE probable number of abortives, and aged, and of casualties in this period, will be sufficiently understood by consulting the second, third and fourth tables. Amongst the casualties, Self-murder amounts to 445, and Murdered to 135.

THE Diseases, Casualties and total Deaths,
by the London Bills during fifteen years, be-
ginning from 1727, and ending with 1742.

Head mould shot, and Water in the Head 1839	Rheumatism 349	Rising of the Lights - 320
Convulsi- ons - 119095	Cholick, Gripes, and twisting of the Guts 5126	Spleen and Vapours - 33
Teeth - 11959	Worms - 222	Miscarriage 56
Thrush - 1294	Bloody-flux 202	Child-bed 3644
Cough and Hooping Cough - 1570	Vomiting and Looseness 339	Evil - 494
Rickets - 1171	Bleeding - 60	Leprosy - 74
Small-pox 30870	Diabetes - 27	French-pox 1743
Measles - 3108	Apoplexy 3213	Scurvy - 24
Ague - 148	Lethargy - 125	Rash - 51
Fever, malig- nant Fever, spotted, scar- let and pur- ples - 61527	Palsy - 564	Scald-head - 22
Consumpti- ons - 63077	Head-ach - 14	Itch - 34
Asthma and Tiflick - 9433	Lunatic - 590	Inflammation 452
Pleurisy - 842	Falling sick- ness - 9	St. Anthony's Fire - 42
Quinsey - 255	Dropsy and Tympany 15896	Imposthume 397
Sore-throat 8	Jaundice - 2009	Mortification 3359
	Livergrown 98	Cancer - 821
	Gravel, stone, & strangury 770	Canker - 161
	Gout - 743	Sores and Ul- cers - 460
	Stoppage of the stomach 2751	Fistula - 110
		Bursten and Ruptures 283
		Swelling 37

CASUALTIES in the above period.

Self-murder 749	Scalded 38	Overlaid 1392
Killed by falls and other accidents 729	Smother'd and Suffocated 40	Died for want and starved 89
Fractur'd skull 30	Burnt - 69	Excessive drink- ing - 658
Broken limbs 83	Bit by mad dogs and cats - 10	Surfeits - 61
Drowned 1430	Poisoned - 7	Found Dead 696
Murdered 150	Frighted - 7	
Stabbed - 5		

Abortives and still-born 9067. Aged 20985.

THE Diseases, Casualties and total Deaths, by the London bills of mortality during fifteen years, beginning from 1743, and ending with 1758.

Head mould		Cholick,		Stoppage of	
shot -	1034	Gripes, and		the stomach	565
Convulsi-		Twisting of		Rising of the	
ons —	87295	the Guts	1647	Lights -	41
Teeth -	14862	Worms -	125	Miscariage -	55
Thrush -	1555	Bloody flux	118	Childbed -	2846
Cough and		Flux -	294	Evil —	221
Hooping-		Vomiting, &		Leprosy -	29
cough -	2193	Looseness	166	French-pox	1010
Rickets -	292	Bleeding -	72	Scourvy -	52
Small-pox	29042	Diabetes —	13	Rash -	52
Measles -	2483	Apoplexy &		Itch —	41
Ague -	103	suddenly,	3279	Inflammation	849
Fever malig-		Lethargy -	103	St. Anthony's	
nant Fever,		Palsy —	986	Fire -	45
scarlet, and		Lunatics -	1054	Imposthume	251
purples	48241	Dropsey -	14301	Mortification	3309
Consumpti-		Tympany -	31	Cancer -	989
ons -	63041	Liver-grown	25	Canker -	76
Asthma and		Jaundice -	1831	Sores and Ul-	
Tiflick	6236	Gravel, stone		cers —	278
Pleurisy -	459	and stran-		Fistula —	91
Quinsey -	221	gury -	412	Bursten and	
Sore-throat	74	Gout —	814	Ruptures	190
Rheumatism	194			Swelling -	52

CASUALTIES in the above period.

Self-murder	581	Scalded —	49	Excessive	
Killed by falls		Suffocated -	44	drinking	280
& other ac-		Burnt -	139	Surfeits —	37
cidents -	857	Bit by mad		Starved —	78
Broken limbs	113	dogs -	17	Found Dead	457
Drowned -	1578	Poisoned -	27	Executed	—
Murdered -	76	Frighted -	17		
Stabbed -	12	Overlaid -	563		

Abortives and still born 8378. Aged 26335.

THE

THE Diseases, Casualties and total Deaths,
by the London Bills of Mortality during fif-
teen years, beginning from 1758, and ending
at 1773.

Head mould shot, and water in the Head 331	Quinsey - 170	Gout - 976
Convulsions 88975	Sore-throat 158	Stoppage of the stomach 168
Teeth - 12115	Rheumatism 131	Rising of the Lights 15
Thrush - 1081	Cholick, Gripes, & twisting of the Guts 786	Miscarriage 49
Cough and Hooping Cough 4149	Worms - 63	Child-bed 3330
Rickets — 118	Bloody-flux 99	Evil — 172
Small-pox 35708	Flux - 340	Leprosy - 25
Measles - 3657	Vomiting & Looseness 134	French-pox 1038
Swine and Chicken-pox 13	Bleeding - 101	Rash — 39
Ague — 112	Diabetes - 17	Scurvy — 42
Small Fever, Malignant Fever, Spot- Fever, and Purples 48757	Apoplexy & Suddenly 3343	Itch — 11
Consumpti- ons - 66550	Palsy — 994	Scald-head 13
Asthma and Tiflick - 6276	Lethargy - 83	Inflammation 1353
Pleurisy - 359	Lunatics - 1135	St. Anthony's Fire - 81
	Head-ach - 17	Imposthume 86
	Grief — 82	Mortification 3027
	Dropsy - 13802	Cancer - 670
	Liver-grown 16	Canker - 56
	Jaundice - 2001	Sores & Ulcers 242
	Gravel, stone & strangury 420	Fistula - 128
		Bursten and Ruptures 145
		Swelling - 37

CASUALTIES in the above period.

Self-murder 518	Stabbed - 12	Suffocated 65
Killed by falls and other accidents 1011	Scalded - 39	Excessive drinking 78
Broken limbs 31	Bruised - 35	Surfeits - 30
Drowned 1708	Burnt - 116	Starved - 64
Murdered 73	Bit by mad dogs 5	Found Dead 131
	Poisoned - 8	Executed —
	Overlaid - 119	

Abortives and still-born 10580. Aged 22843.

CON-

CONVULSIONS form a dreary catalogue of astonishing magnitude in the funerals. Convulsions and Teething are terms too indefinite. Every infant disease, not immediately obvious to the senses, is thrust into those two articles by the ignorant searchers. Infants in cutting teeth often die convulsed ; and from diseases of their stomach and intestines, which are extremely irritable, convulsions frequently ensue. If we consider the term scientifically, convulsions in numerous cases convey no more intelligence of the disease, than if they had said the child died from want of breath. Christoms and infants (who die in the first month after birth) since the year 1726, are intirely left out of the bills, and are now ingulphed in convulsions.

By comparing the absolute number of deaths set down to Convulsions and Teething, we cannot by that alone determine, with any precision, on their augmentation or decrease for if more are born, more necessarily should be expected to die in infancy. In the second table, the total aggregate births, during fifteen years, are 238965, and in the third table, 219512 ; so that the third has fewer births than the second by twenty-eight thousand, and convulsions and teething in the
third

third are also fewer by no less than thirty thousand. What is still more singular, the use of spirituous liquors and gin, prevailed most in London in 1750 and 51, the middle of the third table or period, as can easily be proved by the Excise books. In the fourth table, the total births are more numerous than the third, by twenty three thousand, but convulsions and teething in each are nearly on an equality: consequently in the last thirty years preceding 1763, there is a gradual decrease of mortality by those two diseases.

• WHETHER the increased consumption of spirituous productions, from our West India Islands and other countries, and swallowed undiluted by many of our laborious ranks of suckling mothers or nurses, has operated to the great extent usually imagined, in augmenting infant mortality and convulsions, may on other accounts be doubted. The French, Italians and Spaniards, both men and women, are remarkably sober nations, yet upon due examination, infant deaths in Paris, Rome, or Madrid, would probably be found not far inferior in proportion to their numbers in London. Tea in this country at present is an article not merely of luxury, but of ordinary diet; more also of that malt liquor, called
porter,

porter is ingurgitated in London: has the general propensity for these two articles no effect in diminishing dram drinking and convulsions? I lament and acknowledge the indecency and inhumanity of the practice: my meaning is only to represent it as an evil, vastly subordinate in its noxious effects to the poisonous atmosphere of cities.

ANOTHER circumstance overlooked, so far as I know by the different calculators and critics on the subject of infant diseases in London is this: Cholick and Gripes of the guts in the first table, amount to 2185: in the second table they decrease above one half of that number; in the third table they dwindle to 1647; and in the fourth table to 786. What is understood by this complaint, gripes of the guts; is it dysentery? Bloody-flux we observe, makes a separate article in the bills. Are the two diseases confounded together in the searchers reports? May we not suppose, that several infant diseases and deaths were formerly crowded into cholicks and gripes? I am aware that in reply it will be said, that drains, sewers, drier lodgings, less damp, and change in diet, have diminished dysenteric diseases in this city; that Dr. Sydenham likewise describes an autumnal dysentery

annually, prevailing in London, and about two months in duration, during the years 1670, 71 and 72 : still I suspect that a number of infant deaths have been crammed into this article ; for going back into the bills of the last century, the deaths under this title are enormously great : proceeding backwards from 1700 to 1685, in fifteen years, gripes of the guts amount to 28226, and from 1685 back to 1670, fifteen years also, to 41573. In each of these last intervals too, bloody-flux, scowering, and flux make separate titles, and amount in thirty years to 1690, and cholick and wind to 2374. Now we know that acidities in the stomach and griping of the guts are very frequent and tormenting diseases of infants, from which they often die convulsed. I cannot think that dysentery alone destroyed altogether so many in London ; and if my suspicions are well founded, infant mortality in the two last tables or periods, whether from gripes or convulsions, will comparatively sink still lower : it will also detract from the ostensible magnitude of convulsions in the present century, in which article many deaths formerly laid to gripes in the guts, are probably swallowed up, and have deceived calculators.

How many of the mortal Thrush cases affected infants, and adults ? In all probability, infants were the greatest sufferers. In some rainy years, and in marshy countries during a wet summer this disease is more epidemical and frequent : when of a malignant sort, numerous round ulcers cover the tongue, and line the mouth and intestines, terminating in successive layers of tenacious shining crusts.

COUGH and hooping-cough have increased; is the Croup added to chin-cough ? are any other different pulmonary complaints, under the title of cough, intermixed with this teasing disease, so peculiar to infancy and childhood ? luckily, like small-pox and measles, it attacks the same person but once in life.

RICKETS are on the decline : in the last table of fifteen years, they shrink into 118, whereas from 1670 to 1701, ricketty deaths amounted to 11415. Does not this in one respect indicate more maternal attention to the suckling and rearing of infants ?

THE deaths from Measles are generally to those of small-pox, in the ratio of 1 to 10, 11, and 12. Sydenham long ago observed, that the measles if skilfully treated, are attended with little danger : I think he should have added immediate danger ; for in their future consequences, measles, especially

especially in cities, are not without hazard.

VERY few now die of Ague in London: towns in general are less harrassed with this disease than country places. Pringle remarks, that during the campaigns of the British troops in those marshy countries of Flanders and Holland, where agues and remittent fevers from moist and putrid vapours are so frequent, the soldiers quartered in towns kept freer from those diseases, than the troops detached in country cantonments: the fires, sewers, drains, and paved streets, prevented an exuberance of moisture; and if the men slept in the upper part of the house, they were more secure from sickness.

FROM 1699, Fever, Malignant, Scarlet, Spotted fevers and Purples, are all promiscuously included in one title; formerly they were kept more distinct. It is now impossible from this complex title to determine the specific nature or genus of those febrile diseases. In the preceding century, ague and fever were joined together, and spotted fever and purples in a separate parcel: their proportion in thirty years is as follows: ague and fever 87645: spotted fever and purples 5744. In the third and fourth tables of the present century, the torrent of deaths from malignant spotted fevers,

vers, &c. seems to be stemmed : for this, many reasons might be assigned, but the investigation would lead into too wide a field ; I must then treat of contagion, of jail infection, I should speak of bark, antimonials, perhaps of blisters, and of other improvements, either tending to prevent such diseases, or to mitigate their ravages. It is now discovered and well known, that jail infection, or even that of Small-pox, is annihilated by fire and smoak, confined a proper length of time ; the heat of a baker's oven continued twelve hours, extinguishes these noxious poisons when concentrated in woollen or other porous materials.

CONSUMPTIONS make an awful appearance in the funerals : how many of the true pulmonary consumption are included in this catalogue, is difficult to guess ; but from the concurrent testimony of physicians and of experience, we may affirm a very considerable number : there are few families, in this kingdom especially, whom it has not one time or other plunged into tears and distress, and deprived of friends and relations, multitudes of them blasted at the entrance into, or in the meridian of puberty and beauty. Consumptions and coughs are terms so general, that there is room to mix with them a promiscuous assemblage

assemblage of diseases. Every hectic wasting and emaciation of the body from infancy to old age, the consequence of Small-pox and Measles, and of various febrile or chronical distempers, are without doubt indiscriminately heaped into consumptions. Exclusive of hereditary constitution, neglected colds, scrophulous lungs, narrow chest, sanguine plethora, and hemoptoe, or inflammations of the breast ill cured, which give birth most generally to the true pulmonary phthisis, various complaints of the fair sex, originating from obstructions, or a contrary fault, terminate frequently in this disease. Coughs, emaciation and other consumptive symptoms, as they are called, do not by any means always show a disease situated in the breast; they may indicate a wasting, drooping habit: Sydenham observed, that such symptoms often follow tedious fevers, where in such cases, he found wine and generous diet the best remedies. Has not the increase of law and mercantile transactions, and consequently of young writing clerks, added to the consumptive list? Strong whale-bone stays, and tight-lacing are justly reprehended by writers on the phthisis.

CATARRH and influenza are irregular affailants, and do not form a distinct article in the bills. No other epidemick spreads so sudden

sudden and universally over a kingdom: in 1743, it passed over Europe. In no other epidemick do so few die in proportion to the number of infected. Its continuance is generally short, and what inconsiderable depre-dations it commits, are principally upon decli-ning, consumptive and asthmatic persons, upon worn out constitutions, and those whose lungs are nearly consumed. In such forlorn com-plaints, catarrh hastens the final dissolution so-ner than it would otherwise have happened. Persons too, recovering from agues and other fevers, upon catching influenza, have often suffered relapses.

ASTHMA and Tiflick form rather a confused combination of diseases; formerly it was Consumption and Tiflick, without any men-tion of asthma. Whether the whole are true asthmatick cases accumulated in this formi-dable group, I cannot undertake to unravel.

SIMPLE inflammatory Quinsy, if treated with any moderate degree of skill, deprives very few of life: are any cases of Putrid fore throat confounded with it: I imagine, that more perish by the latter disease, than are recorded under the title of sore throat: perhaps they are thrown into malignant, scar-let and spotted fever.

RHEU-

RHEUMATISM may be supposed to comprehend every species of this disease, whether acute or chronic; it is rather a painful anguish than dangerous to life.

I HAVE already ventured a few new conjectures upon that obscure medley of diseases, called cholick, gripes and twisting of the guts. The devastation under that title appears in the two last tables very inconsiderable ; but what shares should be apportioned to children and adults, to dysentery, to the true Ileus or inflammation of the bowels, excited by volvulus of the intestines, and by other obstructions in that canal, I confess my inability to solve.

WORMS infest children more than grown-up persons ; in all the tables the disease decreases. Is it now set down amongst gripes and cholicks ? I am persuaded that the bills are defective in assigning the due share of mortality to worms. In the thirty years preceding the present century, the mortality by worms, amounted nearly to fourteen hundred: possibly hectic emaciations and consumptions may now comprehend several true worm cases.

VERY few comparatively seem to die in London of the Bloody-flux, Vomiting, Looseness, or of Bleeding ; but I am well satisfied that the bills rate deaths from hemorrhage and bleeding, greatly too low. Most of the
fatal

fatal hemorrhages or floodings from the uterus in the advanced state of pregnancy, or shortly after delivery, I presume are carried to Childbed and a few to miscarriages : even from the lungs alone I should have thought hemorrhages more fatal ; indeed for the most part spitting of blood, before the tragical catastrophe, terminates in a consumption.

DIABETES is omitted in the bills until 1684, and in the succeeding sixteen years, twenty-seven only appear to have died of that distemper. I suspect, that formerly the diabetes was thrown into hectic or consumptions, which is commonly the fatal issue of this disease.

APOPLEXY is generally a disease of mature and old age. From 1671 to 1701, Apoplexy and Suddenly stands at 3010, Lethargy at 488, and Megrims or Vertigo now discontinued at 45. Many sudden deaths are also thrown in amongst the truly apoplectic. Apoplexy is usually said to have increased by more immoderate indulgence in spirituous liquors ; but the four tables of the present century do not show any alarming surge. Drunkenness and beastly intoxication is not in this island, an increasing vice of the high and middle ranks of life: besides, Apoplexy in many instances is brought on by plethora, either from habitual evacuations suppressed, or from sloth, indulgence

indulgence and luxurious living, by intense contemplation and study, and by local disorders of the head : corpulency, a short neck, gluttony, and passions of mind will act either as predisposing or exciting causes of a fit: the same event has followed scorching insolation, and exposure to the confined vapour of charcoal. Lethargy and Palsy are nearly allied to apoplexy: strokes of apoplexy not immediately fatal, too often terminate in palsy, which in the three last tables is increased. From 1671 to 1701, the mortality by palsy is but six hundred and thirty. Probably the mechanical arts, where either lead or quicksilver are employed, whose fumes are so poisonous to the human nerves, may have some share in the rise of paralytic diseases. A species of palsy called the Barbiers, often occurs on the Malabar coast of India.

TO LUNATICK deaths, it is painful to observe, are more than doubled in the two last tables. Such dismal objects must be numerous in London, when so many are reported in the registers of mortality. The disease insanity of itself, does not necessarily endanger life, at least not immediately ; numbers survive in that mortifying condition to an old age. We should reflect that the largest Lunatick Hospital in Europe, stands in this metropolis, exclusive of some private mad houses in the suburbs,

suburbs; and that mad persons are sent from various remote parts of the kingdom, to receptacles of confinement in London, at a distance from their friends. Perhaps too, those whom nature originally, or disease branded as ideots, are enrolled amongst the true melancholick and maniac lunaticks. In the preceding century, distracted and lunatick was the joint title in the bills, the former is now left out. The coroner's inquest generally returns suicides as lunaticks, after however reciting the manner of their death : the searchers and the bills of mortality have invariably ranged lunatick and self-murder, under two distinct heads. From 1671 to 1701, distracted and lunatick are in the bills five hundred and fifty-four.

DEATHS by Epilepsy and falling sickness, from 1670 to 1700, amount only to thirty-five, and in the first forty-five years of the present century, are dwindled to thirteen : of late years the title and disease is totally excluded. Is this horrible convulsion no more inimical to the springs of life ; is it merely a lingering torture ; or any epileptic deaths confounded with lunatick, as both are considerably under the lunar influence ? Violent and long continued epileptic fits often end in idiotism or lunacy. In infants and children, epilepsy when mortal is probably cast into convulsions. The Jews could only ascribe epilepsy and demoniac madness to the malicious rancour of an infernal devil.

The

The locked jaw is a singular spasm which seldom happens in this country, but in the sultry tropical regions after amputations and wounds it suddenly destroys numbers.

DROPSY stalks with obstinate desolation throughout all the tables : this too, like consumptions is the final termination of many acute and chronic distempers, and of broken constitutions, besides many internal derangements which I do not here propose to expatiate upon. Tympany is a very rare disease compared to the former. From 1671 to 1701, the mortality by dropsy and tympany is twenty-three thousand, three hundred and sixty-six, and liver grown four hundred and eighty-eight. The principal, and most general collections of water, called dropfies are, that in the breast, that in the abdomen, that in the external cellular membrane the anasarous: what deadly share, each had singly, or the several "genera" in conjunction, is concealed in profound obscurity.

FROM 1671 to 1701, the mortality by Jaundice is two thousand, one hundred and sixty-nine: if the bills therefore can be depended upon, the disease increases. Jaundice is a frequent consequence of diseases in the liver, of obstinate agues, and remittent fevers, and particularly of stones, sand, or other obstructions in the biliary ducts.

DEATHS from Stone, Calculus, and Strangury are diminished, is this to be ascribed to more successful methods of performing the operation of lithotomy, or to a decrease of calculous cases? Or as strangury is included in the same title, are diseases and obstructions of the urethra from venereal gleans, or other causes more skilfully relieved by modern bougies? With respect to lithontriptic medicines, we seem to have approached as near the discovery of dissolvents, as the chymists have to the philosophers stone. In the preceding century, the bills mark the mortality alternately under these fluctuating titles, cut of the stone and stone, stone and strangury, stone, cut of the stone, gravel and stone, and generally strangury in a separate title. From 1670 to 1701, the deaths under these different heads are one thousand, seven hundred and ninety-six: they may also be supposed to comprize all fatal nephritic paroxisms, and inflammations of the kidneys, ureters, and bladder. An intelligent physician of Liverpool, Dr. Dobson lately collected a list of persons cut for the stone in different county hospitals through England: out of one hundred and ninety-two thousand, three hundred and ninety-four sick of various diseases, medical and surgical, four hundred and thirty underwent the operation of lithotomy. When we revolve in our mind, that the majority of stone cases, are persons advanced beyond

beyond child-hood, and upon the number of diseased and sick compared to stone complaints, we may be satisfied that it falls to the lot of an inconsiderable portion throughout the kingdom, annually to undergo this operation. Upon this general survey it was not found that the counties where cyder is drank in great abundance, had more calculous complaints than other counties, where they seldom taste of this liquor. We may likewise conclude, that most of those who enter into hospitals, are of the lower and indigent orders, many of whom perhaps never drank a single quart of wine.

THE Gout rather gains strength, and for this small addition we may find sufficient cause in the growth of indolence and luxurious living, in the increase of hereditary infirmities, and in some degree of literati, of studious sedentary professions, or of men immersed in other mental lucubrations. It is almost superfluous to remark, that the regular paroxysms of this disease, in its infancy, are very seldom attended with danger, unless unskilfully treated : the irregular assaults chiefly of chronic gout storming some of the internal and important organs, can be supposed to make up the funeral catalogue. In the last century, gout was confounded with sciatica.

STOPPAGE of the stomach so far as I know, indicates no specific disease, but is a symptom

symptom of many : it is a vulgar name sometimes for indigestion and rejection of food. I enquired from two of the searchers what they meant by this phrase, but they honestly confessed that they knew nothing of the matter. It is not what medical men call “dysphagia” or difficulty in swallowing, a rare disease arising from different obstructions in the œsophagus, and sometimes from spasmodic, or from paralytic affections of that tube. In the last thirty years of the preceding century, Stoppage of the stomach is rated at the amazing number of twelve thousand and forty-six, and Rising of the lights in the same interval, at three thousand, eight hundred and forty. The mortality in the last or fourth table compared to the former, is not 1-70th part so great. It would baffle the ingenuity of an antiquarian to decypher the true import of these two terms ; severe sickness, or the word abracadabra, would be full as intelligible : what proportion of infants, of adults, and of the two sexes, are crowded into these two immethodical articles ? are any cases of hystericks comprehended under either of them ; or is this teasing convulsion, peculiar to the fair sex, rarely attended with any immediate danger to life ?

FROM twenty-four years of the London bills, and from several country registers in
England

England and Germany, Dr. Short calculates, that upon an average, one of sixty women die in child-bed ; others upon better foundation, make the proportion three of two hundred. Every person may satisfy himself respecting the validity of this estimation, by comparing the deaths in child-bed, and in miscarriages throughout the four tables, with the births and abortives in the same interval ; making allowances at the same time for greater omissions of births and miscarriages in the publick registers. Another circumstance to be taken into consideration is, that amongst such a multitude of women, a small part must be supposed to have died annually, independent of the pregnant state and its dangers. What were the several diseases before and after delivery, which occasioned this mortality amongst the female sex, and how many died from mere difficulty in labour, we cannot learn from the bills. From difficult and laborious births, where instruments are directed, or at all required, I venture to assert, a very diminutive part of this lot perished : this is consonant to all the best modern accocheur treatises, in which instruments and rude violence are more and more discountenanced. Profuse floodings may precede, accompany, or follow the efforts of labour : milk fevers, and sometimes inflammations
of

of the womb, or other dangerous diseases, such as miliary fever; and in rare instances a malignant infectious fever, may succeed delivery. Particular years also appear to be more fatal to breeding women than others. “Fœtus’s” in their delicate rudiments in the womb, are sometimes like vegetable blossoms easily blighted: early miscarriages from the second to the fourth or fifth month, though not recorded in the public registers, are much more numerous than in the latter months of pregnancy, but happily they are infinitely less hazardous to women: the mature Abortions and Still-born are alone thought deserving of burial, or noticed in the bills. It is probable, that a part of the still-born had arrived at their full time and growth, and perished during tedious labours, or by the rash practice of midwives.

BRAZILIAN women are said in Smollet’s collection of Voyages to be very fruitful, and to have so easy labours, that immediately after delivery the woman rises up, walks to a neighbouring river, and there purifies herself; the husband in the mean time goes to bed in her place, and is nursed with as great tenderness, during the first twenty-four hours, as our European women when lying in. By Mr. Brydone’s description of the Sicilian women, they suffer very little in delivery, and

next day the established etiquette, which in England would be considered as very indelicate, is to receive visits in their bed-chamber, from all their male and female acquaintances.

I SHOULD rejoice to see a few schools established for the instruction of female midwives, where in one years time they might be taught all the necessary rudiments of the profession. In almost every clumsy mechanical art, it is thought indispensibly requisite to be initiated by a regular apprenticeship, and it is the extreme of absurdity to suppose, that the accoucher art can be learned by inspiration. Nature undoubtedly is the principal operator and physician in labour but she may want assistance, or by ignorance, is much oftener unnecessarily disturbed and exhausted. Child-bed fevers are frequently kindled by officiously harassing, or over heating women with cordials, and by stewing them in close rooms, where they are suffocated in foul effluvia.

THE Evil or Scrophula apparently decreases throughout the four tables : I believe this disease often terminates fatally in consumptions. From 1671 to 1701, deaths by the evil amounted to two thousand, two hundred and sixty-one. Has the more general use of vegetables in diet any effect in repressing this grandular and hereditary depravity ?

LEPROSY is now almost eradicated and worn out. In the thirty years preceding the present century, the mortality by this disease amounts only to thirty-three. During and after the Crusades of the twelfth century, Europe was deluged with this filthy judaical scurf imported from Palestine : lazaretto's for the confinement of the unclean, abounded in several kingdoms, in France alone stood two thousand. At present, in the cold Northern Island, Iceland, a sort of *lepra arabum* is congenial to the natives from their diet, climate and manner of life.

IT is not quite three hundred years since the first discovery of America, and the importation of the Venereal disease into the old world. Before the discovery of the Indian remedy the decoction of *guaiacum*, and a few years still later, of mercurial unction, Europe was alarmed with universal consternation at the hostile inroads of this disease : multitudes perished under the corroding ulcers, presenting before death horrid spectacles of cadaverous corruption and deformity.

FRENCH pox is even at present more baneful, at least to London, than medical men acquainted with the infallible remedy and mode of cure would suspect. For this, two probable reasons may be alledged : the swarms of ignorant vermin called Quacks, who borough themselves

themselves in all large cities, and the increasing multitude of common prostitutes, who disseminate the infection, many of whom from negligence, poverty, or application to those insidious assassins, disguised under the mask of M. D's, and surgeons, perish miserable victims to this disease. Credulity has made murder a profitable traffick, and his Majesty's letters patent, prostituted by his servants to common sale, give an additional encouragement to the venders of every trash and poison ; they lay their snares in every thoroughfare, and kill the unwary with as much indifference, as undertakers afterwards carry them to the church yard.

WOULD it not be possible to cut up this American poison by the roots through the kingdom ? Some possibly may consider it in the light of a penal statute against vice and debauchery, but I am not satisfied that morality could be in the least endangered by its radical extermination. Should this not be found practicable or adviseable, would not two distinct hospitals, sufficiently large to contain male and female venereal poor, rescue numbers from the artifices of impostors, and from ruinous destruction ? Separate apartments might be laid out for others, not altogether in indigent circumstances, and who, upon entrance

should pay down a small sum for their maintenance and cure. Many of the young laborious class (I speak of the female sex) not yet hardened in profligacy, are plunged into irretrievable distress, in consequence of catching this distemper. Many constitutions of our dissolute young men, might probably by this means be protected and preserved from venereal depredation. The numbers who died in London, in the thirty years preceding the present century, of French-pox, were two thousand, three hundred and sixty.

TRUE Scurvy is seldom ever mentioned by any writer, before the long voyages first begun three centuries ago by the moderns ; that is, on the discovery of the passage to Asia, by the Cape of Good-Hope, and the discovery of America : then, in consequence of living long on salted and gross diet, and the want of fresh vegetables or fruits, this disease made severe havock amongst naval squadrons. The ancient navigators who seldom ventured out of sight of land or capes, and who probably were not under the necessity of subsisting long on salted food, do not appear to have suffered by, nor even to have known the disease. Hippocrates is by many supposed slightly to allude

allude to scurvy under the name of large spleen, accompanied also with putrid spungy gums and offensive breath: it is still more distinctly noted by Strabo and Pliny, as affecting Cæsar's army when encamped on the banks of the Rhine.

THROUGH all the Northern kingdoms of Europe, and particularly in Holland, amongst those who fed chiefly on salted fish and gross diet, who drank bad waters and dwelt either in morasses or near the sea coasts, scurvy in the two last centuries made cruel ravages. Several armies and besieged garrisons in Germany, intercluded from fresh vegetables were devoured by scurvy: numbers of the new settlers in the Northern colonies of America, and at Newfoundland were cut off by this disease. The North Americans were taught by the Baltickers and Swedes, the sovereign benefit of drinking spruce beer, which is an excellent substitute when fresh vegetables cannot be procured: the industrious Dutch made drains and canals to carry off water, and trusted the rest of the cure or prevention to sour crout: in some of the Northern kingdoms of the continent acidulated bread, and a sour drink used by the Russians, powerfully resist scurvy. By these and other precautions, this foe is now much less formidable on land; but

sea, no other is so inimical to navigators : on that element it is yet the sea monster and tyrant : the effectual antidotes are now so well known, that I dare to maintain multitudes of the lives lost by this disease at sea, are sacrificed to gross negligence, or to impolick and inhuman œconomy.

FROM 1671 to 1686, the deaths by Scurvy are in the London bills nine thousand, four hundred and fifty-one, and in the succeeding fifteen years, five hundred and sixty-nine only. It is common I know for persons ignorant of medicine, often to call various cutaneous foulness of the skin, by the name of scurvy. Whether all those therefore died of the genuine scurvy, I cannot decide. Another suspicion of some weight with me, is this : the theory of the last century imputed many diseases to this specific "cacoethes" as they called it ; perhaps this theory and prevalent opinion may in some degree have influenced the searachers report. The scurvy, the liver and the nerves, have been convenient hiding places for pompous ignorance. In the present century, scurvy has destroyed very few in London, and even of this small number set down in the bills, the disease in several may have been bred at sea ; in London, the lodgings

ings are now dry; animal meat is eat fresh; vegetables, though perhaps not universally consumed in sufficient quantity, are certainly in great abundance; beer, fermented liquors and tea are drank by all ranks: these in conjunction powerfully resist the tendency to scorbutick corruption.

What proportion of Inflammations, Imposthumes, and Mortifications, were external or internal, is left in the dark by the bills.

SHALL we never be so fortunate as to discover any remedy for that deplorable and excruciating disease, the Cancer, which sets medicine, and too often that dreadful alternative of surgery, the knife, at defiance? Shall we never be able to blunt this caustick poison in the body, as certainly and successfully as we do the scurvy or the venereal disease? The female sex are most annoyed by this venomous scorpion, particularly in their breasts, and not unfrequently in the uterus.

BURSTEN and Ruptures decrease throughout all the tables. From 1671 to 1701, they had swelled to nine hundred and seventeen. Are we indebted to modern steel trusses for having lessened the number of victims to this disease? Perhaps too, though in a diminutive degree, to more skilful methods in relieving desperate intestinal protrusions.

SELF-murder, a peculiar gloomy passion and propensity of the English, as they allege
on

on the continent, has increased in the present century, and surpasses the number of those sacrificed at that infamous human slaughter-house, Tyburn. From 1671 to 1701, the bills have rated those who hanged, and made away with themselves, at five hundred and fifty-six: they are now doubled. In a treatise published not many years ago by Sir S. Theodore Jansen, he estimated the wholesale carnage of human flesh at Tyburn, at six hundred and seventy eight, in the space of twenty-three years. It is rare for either of those violent and shocking dissolutions to happen before puberty.

THE numbers Drowned from 1671 to 1701, were two thousand, one hundred and eighty-two. Drowned persons formerly were often suspended by the legs, or placed in a prone posture, with the face and head downwards, and rolled over a cask or cylinder, from an erroneous idea, that the stomach and lungs were filled with water. These rude methods tended to load the head with blood, and answered no good purpose.

THE most important and effectual directions on such sudden accidents, first published and inculcated by the Dutch, and lately in imitation of them by the Humane Society in London, are, instantaneously to strip off all the

the drowned persons cloathes, to wipe him dry, and to place him in a heated bed between several layers of warm blankets, using afterwards incessant friction with heated flannels alternately on the breast, back, belly, and over all the extremities: Volatile Salts, or in defect of them any other strong stimulants, should be frequently applied to the nose and temples; bottles of warm water or heated bricks repeatedly renewed and laid to the soles of the feet; air blown in at the mouth or nostrils to inflate the lungs; heated fumes of tobacco, if convenient, may be once or twice blown up the anus, and blood if practicable drawn from the arm, but with caution and not too lavishly. The attendants are to persevere without intermission, in the labour of friction and applying heat, and if the drowned person has not lain too long under water, they are not to despair of reviving the circulation and the vital powers, though to all appearance extinct, until after at least two or three hours ineffectual exertions. Many who had lain under water a quarter, a half, a few three quarters, and as they report even a full hour, were by this means happily respited from the grave.

THE Murdered from 1671 to 1701, were four hundred and thirty-two. It is with pleasure that, in the last tables, we behold this dreadful crime on the decrease. Are we indebted for this in some degree to the streets and suburbs being better lighted and watched, and to the former being widened and better paved? Or are the lower class also now less barbarous? At present our robberies are seldom accompanied with cruelty. That modern and magnificent establishment the Foundling Hospital, for the reception of young deserted infants, has perhaps rescued many infants from violent deaths.

FREQUENT conflagrations, of houses in London will account for those Burnt.

THE Overlaid are greatly decreased: is this owing to more care of nurses and mothers, or to erroneous reports formerly of the searchers respecting the cause of infant deaths, or to what other cause? I confess my ignorance.

SURFEITS in the last century make an enormous article in the chronicle of deaths: from 1670 to 1690, they amount annually to three and sometimes to four hundred: in the last table of fifteen years, they sink down

to

to thirty : yet good eating and gormandizing are certainly not worn out of fashion in this city. Medical men know that surfeits and intemperance are often merely predisposing or occasional causes of diseases ; they may on some occasions rouse up latent disorders, or dispose the body to receive noxious impressions from without : the searchers therefore, as I suspect, have formerly made many of their reports from the ostensible cause which they supposed gave birth to the disease and to the mortality. At the same time I am not contending for the delicacy and moderation of our fore-fathers appetites ; they were unquestionably in the last century, more carnivorous in their diet, than the present London generation. From frequent surfeits and repletions, and that filthy disease gluttony, I fear that many lives are shortened.

EXCESSIVE Drinking is not mentioned in the bills before the year 1700 : was it until then included under surfeits, or totally omitted ? in the first twenty-seven years, the deaths were one hundred and ninety : but from 1728 to 1743, in fifteen years they amount to six hundred and fifty-eight ; in the following fifteen years, they decrease to one hundred and eighty ; and in the last

table to seventy-eight: yet in that period, when two hundred and eighty died, the consumption of spirituous liquors and gin were then at their height in London. Malt liquor I own drank to intemperate excess, would effect have the same, though less suddenly and mischievously.

IN this last instance may we not doubt whether so great a change took place in national manners and potations, as to occasion this sudden flux and reflux in the mortality by excessive drinking. A continued round of intoxication, in its ruinous consequences, I am convinced sends infinitely more to their graves than are specified in the last tables: these, I presume, are so many instances merely of precipitate deaths from brutal inebriety. Our libations are become more temperate and decent, as we advance in civilization and refinement: with more rational variety in our employments and entertainments, has not tea also contributed its share to the sobriety of the nation, and partly to expel these gothic customs? The southern nations of Europe, (the Swiss excepted) the French, Italians, Portuguese, Spaniards and Turks are all noted for sobriety; but in several northern kingdoms of the continent, and perhaps in a contiguous

tigious island, Ireland, many thousands are destroyed by this beastly intemperance. Numbers of the North American Indians have been cut off by their unbounded rage for strong spirits : a savage there would never voluntarily stir from the dram bottle. Our barbarous ancestors the Germans, as described by the elegant pen of Tacitus, filled up the languid interval of war in the savage luxury of disorderly drinking, feasting and gaming : after wallowing days and nights in all the extremes of gluttony, and coarse inebriation, their noisy feasts generally terminated in battles and bloodshed. There are few good things which some men do not abuse : notwithstanding the impotent interdictions and dull cant of four bigots or affected writers, mankind, I believe, may without any injury indulge in the moderate use of those exhilarating friends, whether extracted from the grape, from the apple, or from malt, provided they are unadulterated.

THOSE set down as found Dead, are now much less numerous : whether this in some degree is to be ascribed to better regulations respecting the poor, or to what other causes I leave to the reader to discuss and settle.

HEAD-ACH and Grief are two diseases which I have hitherto passed over without
any

any remark. The cure or ease of the former frequent and tormenting pain appears to me too little attended to medical men. Grief, and the various melancholy or corroding passions of mind, especially if too strong and long continued, and unremittingly rivetted upon a single object, though slow in operation, are immensely more fatal than the bills point out; but to treat this subject with accuracy, would require a separate dissertation. To mental sources originally may be traced many cases of madness and self-murder, many stomach, hypochondriacal and nervous disorders: we should find them in many instances weakening and wasting the nervous and muscular vigour, disturbing the hours consecrated to rest, impairing the appetite and digestion, by degrees deranging the other wheels of the human machinery, and at length breaking down the constitution.

IN large civilized and polished societies, the various groups and orders of mankind, that is those advanced beyond the age of childhood, are kept more or less employed by three principal spurs, dire necessity, avarice and ambition, or from a mixture of these incentives to corporeal and mental exertions: a lust for pleasure of one kind or other seems to be

be a passion common to every degree ; but in all, there are innumerable shades and gradations. The passions are more acute, and exert their sickly tyranny more severely over the middle, and especially the higher ranks of life : from their independent or affluent circumstances, they are sometimes cloyed with satiety, or preyed upon by listless inactivity ; in other cases the restless fervency of the mind, incessantly bent upon one pursuit, is often not withdrawn, nor its tide and force diverted and broke by bustling and providing for immediate necessities or moderate luxuries, nor by any other official and active employment. Intense application of mind, and deep meditation over books, without any relaxation, from whatever motives, are equally noxious to the stomach and nerves, and often give rise to the hypochondriacal complaint. In all the above mentioned cases relating to the passions, and to ardent contemplation or study, it must be remembered that a sedentary life will much sooner give them root and energy ; they also for the most part exercise their noxious and malignant sway after the years of puberty. A licentious and dissolute excess in venereal dalliance is an early and a late passion, by

by which numberless constitutions are injured, and many ruined.

AMONGST the wealthy and elevated classes, many diseases are engendered from their own vices, intemperance, or indolence: to explore them thoroughly would lead into a prolix disquisition: exclusive of the gnawing passions, they are entangled with other considerations. Thus, indolence, late hours, luxurious living, want of sufficient exercise and studied effeminacy of pampered mortals, will account for many cases of gout, of hypochondriacal, and hysterical infirmities, of vapours and female relaxations.

WE are not to estimate the relative number, frequency or proportion of certain diseases compared to others by the absolute mortality of each. For instance, Apoplexy has killed rather more annually in London than Measles, but the latter disease is infinitely more general and diffused amongst the community, and consequently less dangerous to life. Cancerous and venereal cases are widely different in the annual number which are afflicted with each, although in the bills, the deaths are nearly upon an equality. This observation will apply to a great many other diseases; but I am fearful of satiating the reader by
superlative

superlative minuteness, and unnecessary prolixity.

Six hundred thousand inhabitants within the bills of mortality, Dr. Price considers as too large an allotment ; but in regard to a curious proposition I am about to advance, to make the London inhabitants more numerous than what he allows is erring on the safe side; and enables us to form a convenient numerical radix. If the inhabitants of Great-Britain and Ireland including London, amount to nine millions, and if diseases, deaths and casualties were equally diffused and fatal to the whole community, then in this case the London bills would serve as a scale, or index of mortality to both nations : as many would die *annually* of every disease and casualty throughout nine millions, as are cut off in fifteen years in London ; because six multiplied by fifteen, gives nine millions : but we are sensible, that in London infant deaths under five years of age, far exceed those of the country, and the city has proportionally fewer breeders : again in the fenny countries, agues abound more than in the metropolis : with these and some other exceptions which will occur to medical men, and to gentlemen of reflection, were the mortal diseases of London correctly discriminated, some distant guess and probable conjecture might be formed of the annual

proportion destroyed by similar afflictions throughout Great-Britain and Ireland. At present, medical men must deplore the defects and inaccuracy of the bills : the data from them in numerous instances are so dubious and perplexed, that it is impossible to form beyond probable calculations and propositions.

F I N I S.