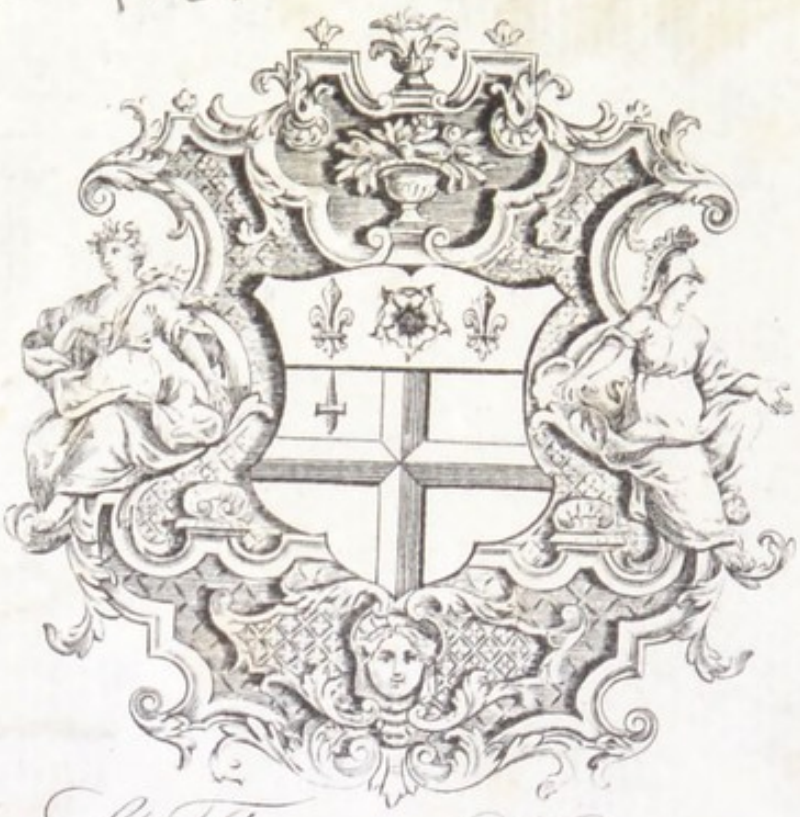
Observations on the comparative prevalence, mortality, and treatment of differnent diseases : illustrated by abstracts of cases which occurred to the author at St. Thomas's Hospital, and in his private practice, embracing a period of twenty years / by Sir Gilbert Blane.

BLANE'S

HISTORY OF

S.T THOMAS'S HOSPITAL



OBSERVATIONS

ON

THE COMPARATIVE

PREVALENCE, MORTALITY, AND TREATMENT

OF

DIFFERENT DISEASES;

ILLUSTRATED BY

ABSTRACTS OF CASES

WHICH OCCURRED TO THE AUTHOR AT ST. THOMAS'S HOSPITAL,

AND

IN HIS PRIVATE PRACTICE,

EMBRACING A PERIOD OF TWENTY YEARS.

By Sir GILBERT BLANE, Bart. M.D. F.R.S.

PHYSICIAN TO THE PRINCE REGENT.

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By Sir GILBERT BLANE, Bart. M.D. F.R.S.

PRESIDENT OF THE SOCIETY.

Read July 27, 1813.

THE history of diseases in different ages as a branch of general knowledge deeply interesting to the human race, would be sufficiently important to command the attention of the intelligent part of mankind, independently of its application to professional purposes. A little reflexion, however, will shew that such knowledge is highly conducive, and even indispensable to the cultivation of practical medicine, and the regulation of medical police.

It is a remark of M. de Buffon in the preface to his Natural History, that all our observations on nature are suggested by comparison. He might

have added, that all practical deductions, whether in common life or in physical science, are grounded upon it, corrected and extended by it. As all practical researches ought to be built on an induction of facts, single objects or events are of little value but in so far as they stand related to others: and when numerous objects and events present themselves in uniform combination, it is only by varying them and comparing them with others that useful inferences can be drawn from them, and that the relation of cause and effect can be distinguished from casual coincidence or simple succession. Those physical agencies, on the discovery of which all practical knowledge is built, and those analogies in which all suggestions and rational conjectures originate, can only be ascertained by an enlarged view of nature, which, by enabling us both to elicit new truths and to adapt means to ends, may be considered as at once the instrument and the light by which we work.

It could easily be shewn how much more applicable these remarks are to medicine than to any other art or science, from the peculiar intricacy and complexity of the objects about which it is conversant, and the more numerous * sources of

* The like sentiment is happily expressed by Bacon, in the following passage; "Subjectum istud Medicinæ (corpus nimirum humanum) ex omnibus, quæ Natura procreavit est maximè capax remedii, sed vicissim illud remedium maximè est obnoxium errori.

fallacy and error incident to it, no less from the superstition and credulity of rude ages, and of the ignorant and vulgar in all ages, than from those hypothetical and spurious reasonings engendered by false physiology and pathology, and by the perverted application of general science, in the learned ages.

But as abstract disquisition does not belong to this place, and as I have elsewhere * attempted an outline of this subject, I shall pass to the proper matter of this communication.

Impressed with a high opinion of the advantages derivable to the art of physic from comparative views, I have endeavoured to bring an humble contribution to the medical history of this age and country, by giving some account of one of the largest hospitals in this metropolis, to which I was physician for twelve years; and having kept notes of all the cases that occurred to me during the greater part of that time, and also in my private practice at all times, I propose to submit to this Society some of the principal results of the former from 1784 till 1794, and of the latter from 1795 till 1805.

errori. Eadem namque subjecti subtilitas et varietas, ut magnam medendi facultatem præbet, sic magnam etiam aberrandi facultatem." *De Augmentis scientiarum,* liber iv. cap. ii.

* See Preface to the third edition of Observations on the Diseases of Seamen.

But with a view to comparison it will be necessary to carry back our researches into former times; and for this purpose I shall endeavour, from such imperfect lights as professional writings, historical records, and the bills of mortality afford, to make a brief recital of the most remarkable diseases which have arisen and have since disappeared in this country in the course of time, of those which have arisen but have not disappeared, and also of those which have prevailed with various degrees of frequency and fatality at different periods; concluding with an enumeration of those that have been more prevalent in our times than in former ages.

To the first description belong the leprosy and the sweating sickness. The leprosy became general all over Europe in the twelfth century, and was supposed to have been imported by the crusaders. It became extinct, and was again imported into England, but has not been known in Europe, since the beginning of the sixteenth century.

The sweating sickness was supposed to have been imported by the army which invaded England under Henry VII. It prevailed from 1485 till 1551, and in some years during one month in Autumn, with a fatality approaching to that of the plague.

To the second description belong small-pox,

measles, and perhaps all the other specific contagions, and the venereal disease; and though the exact periods of the origin of each of these cannot be ascertained for want of historical records, there is every reason to believe that there was a time when none of them existed.

To the third description belong the plague, the dysentery, intermittent fevers, typhous fever, the small-pox, the venereal disease, the scurvy, and the rickets. It is doubtful whether the plague ought not to be referred also to the former list, for though it resembles the plague of the ancients in point of fatality, its characters are quite different from those described by Thucydides and other authors, so that it was perhaps generated in the middle ages.

The first mention of the plague in the English history is in the year 430. The last year in which it was epidemic here was in the year 1665, and the last year in which mention is made of it in the bills of mortality is 1679. With regard to dysentery and intermittent fevers, there is the most incontrovertible evidence from the bills of mortality, from professional and other writings, of the great and rapid decline of these diseases. It appears from the bills of mortality, that the annual deaths from bowel complaints, of which dysentery was the principal, fluctuated from one thousand to two thousand, some years amounting to upwards

of four thousand in the seventeenth century; that they fluctuated from one thousand to one hundred in the first part of the eighteenth century, and from one hundred to twenty in the latter half of it. And I find, from inspecting those bills for the first ten years of the present century, that the number of annual deaths under this head has been on an average 22.8. The bills of mortality are justly chargeable with great want of discrimination; but the differences here are so wide, and the reduction of numbers so regular, that there can be no doubt of this, as a general truth.

With regard to agues, the bills do not afford us satisfactory information, this disease being blended with continued fevers, till the beginning of the eighteenth century. But we learn, both from the writings of physicians and others, that they were extremely prevalent in London in the seventeenth century. They have continued to decline through the eighteenth century; but their mortality during this period is not to be considered as so fair a test of their prevalence as in former ages, for we must presume that the introduction of the Peruvian bark as a remedy has had a sensible effect in reducing the number of deaths. In 1728, the number of deaths from this disease is reported at forty-four; in 1729, at twenty-seven; in 1730, at sixteen. During the first ten years of the present century, the number of deaths under this head has been, at a medium, only four.

The typhous fever, by which is understood that which takes its origin from accumulated filth and want of ventilation in jails, hospitals, ships, the habitations of the poor, and the close buildings of great cities, has probably been in all ages and nations, at least in cold and temperate climates, the most frequent form of continued fever*. But these causes being interwoven with the common habits and occurrences of life had escaped the observation† of medical authors till about the middle of the last century. The facts relating to this subject were first clearly stated by Pringle and Lind. No example more convincing than this can be adduced of the substantial benefit of the lights of knowledge; for the measures which have been successfully taken for the prevention of this disease, and which are peculiar to our own times, have been founded on the knowledge of its remote cause.

The mitigation of the venereal disease must be ascribed to superior habits of cleanliness and superior

* It seems to be a general law of animal nature at least among the *mammalia*, that the accumulation and stagnation of the exhalations of the living body produce disease. The glanders of horses arise only in large stables, and the distemper of dogs, only in kennels. During the American war, it was proposed to send live sheep from England across the Atlantic. In a few weeks, in consequence of being crowded in a ship, they all died of a febrile disorder.

† This is founded on the principle stated in the first page of this article.

skill in the cure; that of the small-pox to inoculation and vaccination.

With regard to the scurvy, by which I mean a disease having the characters of the sea-scurvy, a considerable mortality is assigned to it in the London bills of the seventeenth century. From the ambiguity of the term which is loosely applied also to cutaneous affections, we should be at a loss to know, whether it is the sea-scurvy or not; but in the first place, it is not likely that cutaneous diseases should be liable to so much mortality*, and next, we know from the description which Willis has given of it, that a disease having the genuine characters of the sea-scurvy, did prevail in London in that age, though now entirely extinct. The scanty supply† of fresh vegetable food for man, and winter fodder for cattle, which made it necessary to slaughter and salt them for winter use; the greater uncleanness and dampness of the streets and

* The deaths under the head of scurvy, in the seventeenth century were seldom under fifty, frequently as high as ninety, and in the year of the plague they amounted to one hundred and five. They declined rapidly at the end of that century, and may be said to have vanished ever since.

† Towards the beginning of the sixteenth century, the art of gardening in England was in so low a state, that Queen Catharine of Arragon could not procure a salad until a gardener was sent for from the Netherlands to raise it. It appears that the most common articles of the kicthen-garden, such as cabbages, were not cultivated in England till this reign.—See Anderson's History of Commerce.

houses, accounts for the existence of it in those times. It is now nearly as rare at sea as at land; in consequence of the improved diet, cleanliness, and the general supply of lemon-juice in the navy.

With regard to the rickets there is much ambiguity, for though it is first described by Glisson, and though it first appeared in the bills of mortality in 1634, there is great reason to believe, that it existed before that time, and the name of it in the bills is probably blended with other denominations of disease. There is no doubt, however, of the great decrease of it in common with the other complaints of childr n, which rendered the mortality so much greater among them formerly than at this time.

To the last description, namely, those which are more prevalent in modern times than formerly, belong the scarlet fever, consumption, gout, dropsy, palsy, apoplexy, lunacy, and generally all those diseases of which the brain and nerves are the seat, and of which the increased prevalence in this country in our times, is owing to there being a much greater proportion of the population who live independent of bodily labour than in any former age; and perhaps, something may be ascribed to the general use of tea and coffee. The scarlet fever has been known in all ages. It is described exactly by Paulus Ægineta, and there are several distinct notices of it in the more early mo-

dern authors; but in as far as we can gather from the records of Physic, it is only in the last seventy years, that it has prevailed epidemically in different countries of Europe and in America. In this country it generally arises and prevails most in seminaries of education, and it is perhaps to the greater extent to which this mode of education has been carried in our times, that we are to ascribe its greater frequency and prevalence, and its being a disease of which subjects under puberty are peculiarly susceptible, is in favour of this opinion. The other diseases under this head, are plainly referrible to the increased means of luxury, the improvements in commerce, civilization, and the refinements of life.

The diseases chiefly incident to savage and barbarous nations are * fevers, fluxes, and rheumatisms. One cause of their being exempt from many diseases, is, probably, the loss of all those children in infancy who are weak and sickly, whereas, in civilized times, those who are saved by good nursing and medical skill, become the victims of other diseases in more advanced life. This may be one cause, at least, of the modern increase of consumption†.

* See Rush on the Diseases of the American Indians.

† For the proofs of the increase of consumption, the reader is referred to the able and ingenious work of Dr. Woolcombe, intitled, Remarks on the Frequency and Fatality of Different Diseases. London, 1808.

But upon the whole, I believe the present generation may congratulate itself on its improved condition with regard to those great sources of human misery, epidemic and endemic disorders.

The remote causes of all predominant disorders may be referred to three general heads, the vitiated exhalations and secretions of the living human body, the noxious exhalations of the earth, and depraved habits of life. The first includes the plague, the specific contagions, typhus, dysentery, leprosy, and the venereal disease; the second consists of intermittent and remittent fevers*; the third comprehends palsy and other nervous affections, gout, dropsy, scurvy, and rickets.

There are many complaints of which we are at a loss to make a comparative statement for want of records. As there are no works, except such as are of a modern date, which profess to give a general account of all diseases, and as there is a great chasm of information in the dark ages, we are at a loss to know whether certain diseases prevailed or

* The several species of morbid matter generated by the living body, and that which is exhaled from the earth, may be viewed in the light of poisons; and, as the same person must frequently be placed under the influence of both at the same time, certain modifications and varieties of disease must arise from this combined influence. This might be plausibly illustrated by reference to the nature and causes of several diseases, but it would lead into too wide a field of speculation and conjecture to dilate now upon this subject.

not in different periods and countries, and at what exact æra new diseases arose*. It is enough to know practically, that all the three remote causes, namely, contagion, noxious exhalations of the soil, and depraved habits of life, are by their nature very much subject to human controul. This affords us great encouragement in our endeavours to combat them. The counteraction of typhus by means of cleanliness and ventilation; of the small-pox by vaccination in our times; and of agues in the country by the draining of marshes, and in town by the construction of sewers and the cleansing of the streets in the seventeenth and eighteenth centuries, are undeniable proofs of the power of human art in preventing and extinguishing diseases. The counteraction of the third class of causes consists in resisting the propensities to intemperance, sensuality, indolence, and effeminacy, by good moral habits and self-command.

The only other important particulars that remain to be noticed, regarding the artificial means of maintaining health in modern times, is the use

* There are obscure notices respecting certain diseases which make us regret much the great want of medical records in the darker part of the English history. For example: there is a fragment of an Act of Parliament preserved of the 8th of Henry the Second, (A.D. 1162) for regulating the stews in which it is ordained, among other things, that no stew-holder shall keep a woman who has the perilous infirmity of burning. See *Stow's Survey, v. 2. p. 7. and Howel's Londinopolis, p. 337.*

of linen and soap, the greater facility of procuring fuel, and the more ample supply of water. Body-linen was not in common use till the eighteenth century. Soap was not manufactured in London till the year 1554. What was used before that time was brought from abroad or from Bristol, where a coarse sort was manufactured*. There was no regular supply of coals† to London till the reign of Charles the First. It is almost needless to mention, how much an ample supply of fuel is conducive to health, not merely for warmth and for culinary purposes, but by promoting ventilation, which it does not only by the change of air necessarily induced by the current of air up the chimney, but by enabling the poor to admit fresh air in cold weather. It is in the winter season, from want of fuel, that typhus infection is most apt to arise, and to spread.

A plentiful supply of water promotes health in a great city, not only by its application to various household purposes, but by cleansing the gutters

* See Anderson's History of Commerce, and Howel's Letters.

† The prejudice entertained against pit-coal as an article of fuel pernicious to health, was at one period so strong, that a law was passed, making it a capital offence to burn it within the city, and only permitting it to be used in forges in the vicinity. The late Mr. Astle, keeper of the records in the Tower, informed me, that he there discovered a document, importing, that a person had been tried, convicted, and executed for this offence in the reign of Edward the first.

and common sewers. The original supply of water was by conduits conducting it from the adjacent fields. The water-works at London-bridge were first erected by a German engineer in 1581, but the supply was scanty till the formation of the New River in the reign of James the First. Other sources of supply have since arisen, as the metropolis increased, and the powerful and ingenious machinery of the steam-engine has at length been applied for conveying and raising it to the tops of the highest houses in all situations, and for extinguishing fires, affording a degree of abundance and accommodation in this article of life hitherto unknown. The watering of the streets is also of importance to health*. The foreigners† who visited England in the sixteenth century, draw a most disgusting picture of the uncleanly habits of the inhabitants of London, and of the filth of its streets. In the reign of Charles the First there was considerable improvement; but it appears from cotemporary English writers, and still more from the accounts of foreigners‡, that heaps of

* Dr. G. Fordyce was of opinion that the dust of the streets of London was of serious detriment to health, by exciting pulmonic disorders. See *Transactions of a Society for the improvement of Medical and Chirurgical Knowledge, v.* 1, *p.* 252.

† Almost all our information on this subject is derived from foreigners; another proof that observation is suggested by comparison. See Erasmus's Epistles, Hentzell's Travels in England in the time of Q. Elizabeth, Davila's History of the Civil Wars of France, Book 3d.

‡ See Sir W. Davenant's Works, page 351. London, 1673.

the most noisome filth were allowed to accumulate in the streets at assigned spots, called laystalls. It appears also, that the streets were then extremely narrow and ill paved, the buildings very crowded, and the sewers very imperfect.

It was not till after the Restoration, that those regulations and practices were introduced, which have led to the present salubrity of this city, and to those accommodations and elegancies which are peculiar to this age. It was not merely the rebuilding of that part of the metropolis which was consumed by fire in 1666, on a better plan, which effected the extinction of the plague and the diminution of some other infectious disorders. This was seconded by new and energetic measures, adopted by the legislature* as well as by the magistracy of London, for the removal of filth, the improvement of the common sewers, the widening and paving of streets. It was not till the next century that the cleansing of the streets was still

* See Statutes at Large, 19th of Charles II. chap. 3, sect. 20 and 22, and 23d of Charles II. chap. 17; also Acts of Common Council, copied into Hughson's History of London, vol. 1. pages 242 and 259. The thinning of the population since that time, must have had the most beneficial effects upon health. It is remarked, in the Parliamentary Report of the enumeration and Parish Registers of 1811, part 2, p. 199, that the population of the ancient city of London had diminished by more than three fifths in the course of the last century, though the total population of the metropolis had nearly doubled in that time. See more on this subject in the 3d vol. of these Transactions, p. 37.

further promoted, by its becoming a source of revenue, instead of being an article of expence; for the mud, and all manner of offensive and putrid substances, were found, (in consequence of the progress of agricultural skill and industry), to be very valuable to the cultivators of the land.

It is to the rapid increase of science and natural knowledge, which began in the latter part of the seventeenth century, that we are to ascribe not only this, but many other triumphs over the ignorance*, superstition, and barbarism of former ages; and it must be highly pleasing to every cultivated and well-disposed mind, to contemplate the useful and liberal lights of knowledge, and the energies of industry, advancing hand in hand, lending mutual

* The principal information on these subjects, in the beginning and middle of the seventeenth century, is derived from the writings of Howel and Davenant; and as a proof of the prevailing ignorance and superstition of that age, it may be remarked that the former, though one of the most eminent writers of that time, and Historiographer to the King, not only maintains an argument in favour of the existence of witchcraft, but mentions with approbation the numerous trials and executions of the wretched beings accused of that imaginary crime, in 1646. Might not these strange delusions have been properly enough enumerated with the leprosy and sweating sickness, in the list of diseases which have disappeared? Some of those who have been accused of witchcraft, believed themselves to be guilty of it, and might not they, as well as others who believed it, be stated, without a metaphor, as labouring under a species of epidemical insanity?—The passage in Virgil, so apposite to this point, will naturally occur to every classical reader: *Felix qui potuit*, &c.

assistance to each other, and conferring on mankind the most substantial and practical benefits, none of the least of which is the improvement of health.

The only other general causes influencing health are the climate and the fluctuation of the seasons. There has probably been but little change in the temperature of the atmosphere of this island since the ages in which it was overgrown with wood*. But this is by no means certain, there being no records on this subject on which to found a comparison, till the invention of philosophical instruments in modern times. As it is in our power to gratify posterity on this subject, by affording them the means of comparison, it becomes us not to forego this claim to their gratitude.

There are five circumstances belonging to the seasons of this climate which affect health. 1st. It is found that, in a severe winter, a much greater number of aged people die, also of those who labour under chronic affections of the lungs, palsy,

* It appears from history that wood when generally diffused over a country has a very sensible effect in rendering the atmosphere colder than it would otherwise be. The air being a pellucid body is not warmed by the rays of the sun, except by the effects of refraction not worth estimating, but derives all its sensible heat from the surface of the earth, and it is evident how wood must interrupt this operation of nature. See an article in the Phil. Trans. vol. lviii. p. 58. by the Hon. Daines Barrington; also Robertson's History of America, vol. i. note 30.

and dropsy, and of young children*. 2dly. There is a greater tendency to pulmonic inflammation in the spring months, in proportion to the prevalence of the north-east wind periodical at this season. 3dly. There is greater tendency to *cholera morbus* in the end of summer and beginning of autumn, and this in proportion to the heat of the preceding summer. 4thly. There is a greater tendency to bowel complaints in general during all the autumn months. 5thly. The strength of the wind has an influence on health. Wind is the great ventilator of nature, and its effects have, perhaps, not been sufficiently appreciated. It is mentioned in Maitland's History of London, that for several weeks before the plague broke out in London, in 1665, there was an uninterrupted calm, so that there was not sufficient motion in the air to turn a vane. Baynard, a cotemporary physician, confirms this fact; and the like circumstance is mentioned by Diemerbroeck†, in giving an account of the plague at Nimeguen. It is evident that calms must favour the concentration of human effluvia, particularly in a crowded and uncleanly population; and by the concurring testimony of all authors, it was always among the poor and squalid that the plague made its first appearance, and among whom it was most prevalent and fatal. It seems a well-established fact‡, that the

* See Heberden on the Influence of Cold, Phil. Trans. 1796.

† De Peste, L. 1. Cap. 6.

‡ This principle is well illustrated in Dr. Heberden's work on the Increase and Decrease of Diseases, page 94. See also Observations

same morbid effluvia which produces typhous fever, gives a susceptibility or predisposition to the attack of other febrile contagions: and after such diseases have been produced, it is evident how windy weather must retard, and calm weather favour, their propagation. As the plague existed more or less every year about that time, it is clear that the presence of infection alone is not sufficient to render it epidemic, and that some other cause or causes must concur. These, I conceive, chiefly to have been the accumulation of impure effluvia, favoured by calm weather, and concurring with a certain pitch of atmospheric temperature; for it never appeared as an epidemic but in one season of the year.

During the twenty years which form the period of these observations, the only remarkable deviations from the ordinary course of nature, with regard to the weather, were in 1795, 1799, and 1800. The months of January and February, 1795, were colder than for many years before, or any year since*. Dr. Heberden remarks, that the mortality of January, 1795, exceeded that of January,

servations on the Diseases of Seamen, *passim*, and the 3d vol. of this work, page 3, where an instance occurred of dysentery proceeding from the want of cleanliness and care at Flushing.

* The mean height of the Thermometer for these two months in 1795 was 30°5. The mean height for the same months of the preceding five years was 40°6. and of the following five years 39°.

1796, by 1352 *. The mortality of the whole year was 21,179, which is greater than that of any year since, except 1800; or for eighteen years before, except 1793, in which year there was a great increase of mortality from small-pox, and a considerable increase from fever. It appears from the parliamentary returns, that there was considerable increase of mortality in 1795 all over England.

The summer of 1799† was uncommonly wet and cold, and that of 1800 uncommonly dry, no rain having fallen in London from the 4th of June to the 19th of August, except a very few partial showers. In both these years the crops failed greatly, so as to occasion distressful scarcity; but there was no increase of mortality in London imputable either to the weather or to the scarcity: for though the mortality of 1800 was considerably above the

* Phil. Trans. vol. lxxxvi.

† The mean height of the Thermometer this year was 47. 9. The mean of five years immediately before and after this year was 50. 6. which may be considered as somewhat under the general average of this climate, for the year of the cold winter, 1795, of which the mean was 49.7. is included in this calculation. The mean temperature of the three summer months of this year, was to that of the same months for five years before and after it, as 57. 3. to 59. 6. All these calculations are taken from the register of Mr. Six's Thermometer (which indicates the highest or lowest point during the absence of the observer) without doors, in the Philosophical Transactions. The other Thermometer generally reports the means three or four tenths of a degree higher. See some interesting observations on this subject in the 5th vol. of Phil. Transactions of Edinburgh, p. 193, by Professor Playfair.

average, it is fully accounted for by the increased mortality occurring that year from small-pox. It appears, however, from the Parliamentary returns, that the increase of mortality all over England was so great, that it is difficult to account for it in any other way than from the scarcity, which was much more severely felt by the kingdom at large, and particularly by the rural population, than by the metropolis, where the wages of labour are so much higher. The reported mortality of the whole kingdom that year was 185,970, which is greater than any year in the century except 1795, in which it was 188,232. The average of the four intervening years was 169,575; so that the mortality of the year of the cold winter exceeded this medium by 18,657, and that of the year of scarcity exceeded it by 16, 395. It is evident why the effect of scarcity should not be felt till the year 1800; for the pressure of the short crop of 1799 could only be felt for a short time towards the end of the same year. A fair comparison cannot be instituted with the following years; for the abstract of the parishes' registers in the reports delivered in 1801, comprehended 612 parishes fewer than that of 1811.

There is an observation deducible from these reports, which, though not strictly belonging to this subject, I cannot help stating as a curious and striking proof of the influenc of moral causes on the physical condition of man. In the year 1800,

and 1801, the number of marriages was considerably diminished in the metropolis, and still more in the kingdom at large. The average of marriages for the five preceding years was 67,713; in 1800, they were 63,429; and in 1801, they were 63,840. The number last stated sets the matter in a still stronger light, when it is recollected that the calculation is formed from an amount including 612 additional parishes. This was evidently owing to the great discouragement to marriage that arose among the labouring order, from the difficulty of maintaining a family under the scarcity and high price of provisions. The number of baptisms is also considerably under average in these two years, and also in 1802, for an obvious reason. And the marriages in the two years after the scarcity were considerably above the average, for reasons equally obvious.

There has been no prevailing epidemic deserving of mention, exclusive of small-pox, during this period of twenty years, except a catarrh in the spring of the year 1803.

It appears upon the whole, that, except in the case of extraordinarily cold winters, of which only one has happened in the above-mentioned series of years, the fluctuations of the weather in this climate do not much affect health in this age: and this affords a further presumption, that those fluctuations, called by Sydenham constitutions, do

not, as he conceived, depend on any mysterious and inscrutable changes in external nature, but on the compound effect of the state of the weather, and the concentration of human effluvia which was more incident to that age than the present. This last was entirely overlooked by Sydenham, as well as by Mead and Huxham, who lived still later. They referred the whole to the state of the atmosphere, or to mineral exhalations.

What has hitherto been said relates to preventive medicine, and it has appeared that in this there is much reason to be satisfied with the efficiency of art. It becomes a question, whether curative medicine possesses equal powers. This will best appear from what is to follow.

St. Thomas's Hospital was originally an almshouse, attached to a convent of friars; but was founded as an institution for the reception of sick and maimed by King Edward the Sixth, at the Reformation, and endowed, like the other Royal Hospitals from the spoils of the Romish church. Its funds were greatly augmented by King William and Queen Mary, who are considered as its second founders, and by private subscriptions and benefactions, which began in the same reign, and have continued ever since. It is situated in Southwark, on a track of ground on the south bank of the Thames, which from Greenwich to Lambeth was originally swampy, and no doubt aguish; but the

parts which have been built upon have long lost that character *. The soil upon which this and the other ancient parts of the metropolis are built is artificial, consisting of the rubbish of ages, which being hard and dry materials, must be favourable to health. But the situation being flat, and in the midst of a pretty close population, the perflation is not so perfect, nor the external air so pure, as would be desirable in chusing a site for an hospital. There is accommodation for 433 patients. All the beds are generally full, except ten or twelve, which are reserved for sudden casualties. There were formerly near five hundred beds; but about thirty years ago, when I was elected, febrile infection prevailed so much, that my two immediate predecessors, and one of the surgeons, beside several of the menial attendants, had died in the course of the preceding year of fever caught in the hospital, upon which the number of patients was reduced, and new methods of cleanliness and ventilation were adopted. All the wards have ever since been annually white-washed; the strictest attention has been paid to the cleanliness of bed and body clothes, washing, sweeping, and other means of removing all offensive matter.

Iron bedsteads had been adopted before this time, as less likely to contract and retain infection than those made of wood.

* See the first article of the 3d vol. of the Transactions of this Society.

The new methods of ventilation consisted in making apertures at the tops of the windows, for the more free admission of the air. This was done by constructing the upper sash so that it could be drawn down, and by a board playing on a hinge immediately under this aperture, which being generally set at an angle to the horizon of about 45 degrees, prevented the cold air from blowing on the patients.

The main principle of ventilation consists in admitting the fresh air somewhere near to the ceiling; and if an issue is provided for the foul air at the ceiling itself, by means of a trunk carried to a certain height in the open air, and fitted with what is called a cowl to traverse with the wind, the ventilation will be perfect; for the sick are thereby sheltered from direct streams of cold air, and the recent and vitiated exhalations from the living body having, by their warmth, a tendency to ascend, are effectually dissipated. In consequence of these precautions, no medical attendant has since been affected with the hospital fever; nor could I ascribe more than three or four deaths of nurses and patients to this cause during the whole time of my incumbency. It is further to be remarked, that besides the generation and retention of infectious matter from defective ventilation, recoveries in all classes of patients are retarded by impure air.

This is especially remarkable with regard to severe injuries, and the capital operations of surgery. It is a remark of Mr. Howard, in the account of his visitation of prisons and hospitals, that at the hospital at Leeds no case of compound fracture nor trepan survived, till the ventilation of the wards was improved.

The like remark may be made with regard to lying-in women and infants. If pure air is necessary to preserve the health of the most hale and robust, how much more must it be so, when the powers of nature are weak, or under severe trials? In short, without pure air, the purposes of such institutions would be entirely frustrated. The utmost professional skill, and the most appropriate means of relief, would be unavailing; and not only this essential end, but the secondary, though very important end of hospitals, as schools of experience and instruction, would also be defeated.

There are at this hospital nine wards for men, and six for women, besides two for men and one for women afflicted with the venereal disease.

The number of females who apply, and are admitted, is considerably smaller than that of the other sex. This seems to be owing to the former being less exposed to the exciting causes of sickness, such as cold, fatigue, and intoxication, and also from there being a less proportion of destitute

strangers of this sex, as a smaller number of them resort to the metropolis, whether by sea or land. This may be one reason why the majority of patients in dispensaries are females.

The portion of cubic space allowed to each person is from seven hundred to a thousand feet. As far as I can ascertain, from my observations on civil, naval, and military hospitals, six hundred cubic feet is the smallest portion of space that ought to be allotted to each person, in calculating the arrangements of an hospital. If it fall much below this, it will be found impossible, consistently with safety from cold, to maintain a due purity of the air.

There were about fifty persons admitted, and about as many discharged, every week. The number of medical and chirurgical patients admitted were nearly equal; but as a smaller number of the latter is discharged on account of the more protracted nature of the cases, the majority of patients actually in the hospital was chirurgical.

The admissions and discharges are made only one day in the week, with the exception of accidents, for which there is at all times ready admission, without petition or recommendation. This regulation is well adapted to the commodious administration of the hospital, and does not seem materially to interfere with the humane purposes

of the institution, except with regard to fevers. As the cases of this kind belong to the most indigent and squalid part of the population, it is clear that they are not only the most proper objects of relief individually, but with a view to the protection of the community, and they should be speedily admitted, in order to prevent the accumulation and diffusion of infection. Such cases are always most curable when taken early; and the utmost danger and distress may result to the individual, as well as his family and neighbours, by waiting for the return of the weekly day of admission. Acute cases also admit of more relief, and are a charge to the hospital for a shorter time than chronic affections. I have been told, that there are hospitals in which it is a rule not to admit fevers. It is difficult to conceive what idea the authors of such a regulation could form of an hospital as a beneficent institution, the end of which is the alleviation of human misery. Most probably the dread of introducing infection gave rise to it. If so, I beg most confidently to assure them, from very extensive experience in the public service, that fevers brought from the most infected situations become quite innocuous to those who approach them, provided care is taken, immediately on their admission, to cleanse their persons by stripping and washing them, and cutting off their hair, and provided the hospital is as well ventilated as St. Thomas's has been for many years.

With a view to remedy these defects in hospitals, and to extinguish febrile infection when prevailing in large towns, institutions, called houses of recovery, have been formed in London and other large cities, and they have been attended with the most beneficial effects, particularly in Chester, Liverpool, and Manchester.

The comparative mortality of different hospitals is a most fallacious test of the success of practice, unless the nature and intensity of the several diseases are taken into the account. A large mortality may even be considered as a presumption of an hospital being well conducted, in as far as it indicates that the most severe disorders had been admitted, or, in other words, that the most judicious selection of cases had been made. But, in one and the same hospital, and administered on the same principle, the same objection does not lie, and the comparative statement at different periods may be more fairly admitted in proof of the merits of its management. It is mentioned in some of the old chronicles, that the number entertained in the hospital at its foundation by Edward the Sixth, was two hundred and sixty *; but there is no account of the mortality till 1689, of which year the printed annual report has been preserved; and it appears that the number discharged in the pre-

*See Hughson's History of London, vol. iv. p. 464.

ceding twelve months was one thousand, six hundred and fifty-four; the number buried, two hundred and three; and the number remaining under cure was two hundred and forty-two. The mortality therefore was about one in ten. The next printed report extant is that of 1721; but the in-patients being blended with the out-patients, in the account of the admission and discharge, no judgment can be formed of the rate of mortality. The number under the head of deaths applies only to in-patients, and that was three hundred and forty. As the hospital had great addition made to its funds at the end of the preceding century and at the beginning of the next, and was about the same time rebuilt on a larger scale, the numbers became nearly double of what they were originally. The annual report of 1741 is preserved in manuscript, in which the in-patients and out-patients are stated separately, and it appears that the number of the former discharged was two thousand, four hundred and seventy-one; the number buried, two hundred and ninety-six; and the number remaining, four hundred and forty-six: this makes the proportion of deaths one in 10.9. The printed reports do not state the two classes of patients separately till 1764. There was no increase of mortality in 1740, the year of the great frost, though there was a very sensible increase of it in the community at large, as appears from the bills of mortality. The reason of this, no doubt, is that few

of the patients belonged to those classes who suffer from cold winters, that is, the very old, the very young, and the consumptive.

It has been remarked, that about the year 1783, some improvements were made with respect to cleanliness and ventilation. In order to judge whether this made any sensible difference in the mortality, I compared the average of the ten preceding years with the same number of subsequent years. I found the former to be in the proportion of one to fourteen, the latter of 1 to 15.6. The average rate of mortality for the next ten years was 1 to 14.2; but in the last ten years, that is, from 1803 till the present year, 1813, it has been 1 in 16.2. The average for the last fifty years, that is, from 1764, at which time the accounts of in-patients and out-patients were kept distinct, has been one in fifteen. The mortality among the medical patients was considerably above the general average, as might naturally be expected from the more fatal tendency of sickness than of injuries and local affections. The mortality of those under my care was in the proportion of 1 to 9.8. In the tables of private practice the deaths are stated under each head; but no inference can be drawn from this with respect to the success of practice, except in the acute cases; for in chronic cases it very frequently happens, that a physician's attendance is broken off, before

the termination of the case, whether in recovery or in death.

As both these tables are intended to exhibit the different degrees of prevalence in different diseases in these times, it is necessary to state certain exceptions to this. Neither of these tables shews the fair proportion of small-pox, nor of the venereal disease, nor of lunacy. The first are excluded from the hospital, and in private practice only a small number fall under a physician's care; for the casual small-pox has for many years been almost unknown among the upper ranks of society, who chiefly employ physicians, and the inoculated small-pox is, for the most part, so slight as not to require the attendance of a physician.

The great majority of venereal cases falls under the care of surgeons, both in hospitals and in private practice.

With regard to lunacy, there are hospitals appointed exclusively for this malady, and private practitioners who devote themselves to the care of it, so that only a small proportion falls under the care of general practitioners.

The hospital tables convey no information with respect to the relative prevalence of children's complaints, nor of consumption, these classes for

obvious reasons not being admitted, except as out-patients.

I have placed small-pox in the list of those diseases which have been mitigated in this age. This effect cannot justly be ascribed to inoculation, for it has been * satisfactorily ascertained, that the partial benefit of it to those who undergo it has been overbalanced by its favouring the casual propagation of it. But it is fairly due to vaccination, for the benefit derivable from it, whether partial or general, is without abatement or alloy. Though the discovery of this was made in England, and though it is so highly interesting as a natural fact, and still more so by its influence on the destinies of the human species, yet it has made less progress here than, perhaps, in any other country. It was first practised about the year 1798, but it had no sensible effect in reducing the mortality of this city till 1803. In order to appreciate its effects, I shall state its mortality from the bills ten years immediately preceding its introduction, and compare this with that of the last ten years, ending at Christmas 1812. The total deaths by small-pox, according to the London bills of mortality, from 1788 till 1797, both years included, amounted to eighteen thousand, five hundred and thirty-eight; and the total of those from 1803 till 1812, both included, amounted to eleven thousand, five hun-

* See Evidence at large respecting Vaccine Inoculation, p. 32. London, 1805.

dred and thirty-two, making a difference of seven thousand and six, which may be considered as the number saved by vaccination. But when we reflect that there are countries which, by availing themselves to the utmost of this discovery, have entirely eradicated the small-pox, it is matter of regret that so many should have perished unnecessarily; and it affords such a humiliating example of the power of popular prejudice, as could hardly be expected in an enlightened age.

By comparing the number of the several diseases in the hospital list with those of the private list, it will be discovered which of them are most prevalent in the different ranks of society. Those which stand most prominent for this prevalence among the lower ranks are intermittent fevers, rheumatism, dropsy, and continued fever. One twentieth of the whole number on the hospital list were intermittent fevers, whereas * only one in one hundred and twenty-two belong to this head in the private list †. Rheumatism constitutes one fifth part of the hospital list, but only one twenty-sixth of the private list. One case in nineteen of all the hospital list is a dropsy, but only one in fifty-nine of the private list. The difference here,

* In making this calculation, I have subtracted about five hundred from the total amount of private cases; for consumptions and small-pox are excluded from the hospitals, and a number of the catarrhs, children's complaints, and other cases are such as would not have found admission as in-patients of the hospital.

† See the first article in the Third Volume of these Transactions.

as well as in the last mentioned, is clearly traceable to the habits of life. It is evidently imputable to the greater propensity of the lower orders to intoxication, particularly from the use of ardent spirits. Neither dropsy of the breast nor of the brain enter into this calculation. Of continued fevers there are about one in eight of the whole number on the hospital list, and about one in eleven and a half in the private list. This may be easily accounted for from what has already been said of the usual origin of continued fevers.

The diseases which stand most prominent for their prevalence among the upper classes of society, are gout, disorders of the stomach, and liver complaints. With regard to gout, there is not a single case of it to be found on the hospital list, whereas there are in the private list a hundred and thirty, constituting about a twenty-sixth part of the whole. No disease affords so strong a proof of the power of habits of life over-health.

Disorders of the stomach constitute about a ninth part of the private list, but no more than a thirty-fifth part of the hospital cases. The reason of this is so obvious, and the fact itself so instructive as to need no comment.

The proportion of the diseases peculiar to the female sex in the hospital, is the same as in the private cases, from which it would appear, that the

unfavourable influence of indolent habits, excessive delicacy and sensibility of mind and body in the upper ranks, compensates for the bad effects of hard labour and various privations in the lower orders, producing that equalization of human happiness and misery observable in other aspects of human life.

Of liver complaints, about one in forty-three belong to the private list, and one in a hundred and thirty-three to the hospital list. This is partly owing to the greater proportion of the better sort, who come from tropical climates, and partly from jaundice and gall-stones, being complaints of more frequent occurrence in sedentary and indolent than in active and laborious life. It appears from the tables, that there is a considerably greater proportion of apoplexies and palsies among the hospital than among the private cases: this is what we should not at first sight expect, for it is matter of the most ordinary and superficial observation, that a much greater proportion of persons who live at their ease, especially of the male sex, are attacked with hemiplegia, particularly where it proves suddenly fatal, than of the laborious part of the community. One cause of the great proportion of them among the poor may be, that exposure to cold and wet in their necessary occupations is a frequent occasional cause of it among them, as I found by questioning them at their admission. Another cause of this great proportion of them being found in the hospital may be that these cases

are so severe, so sudden and helpless, that they are all sent as speedily as possible to an hospital in the manner of accidents, and this is so true, that at St. Thomas's Hospital, an exception is made with regard to such cases, they are allowed to be considered as accidents, and are immediately admitted. Some cases of hemiplegia occur in full habits; some in spare and exhausted habits. The former being most incident to the luxurious and indolent, most frequently occur in private practice, and among the upper ranks of life. The latter occur more among the laborious classes, and among such of the rich as are addicted to exhausting pleasures *.

With regard to the two sexes, there appear to be certain diseases exclusive of those peculiar to each, which are more incident to the one than to the other. The proportion of the total females to the total males in the hospital tables, is not quite two thirds; allowance being made for this, it will appear by inspection, that there is a considerable majority of males under the heads of intermittent fever, pulmonary complaints, bowel complaints, rheumatism, hemiplegia, other palsies and dropsy. The only large head of disease in which there is a majority of females is cutaneous diseases. The cause of the great majority of intermittent fevers has been mentioned in the first article of the last Volume of these

* See Lecture of Muscular Motion, page 29, read before the Royal Society, 1788, by Sir Gilbert Blane, M.D. F.R.S.

Transactions. The reader will readily trace the causes of most of the other differences to the different constitutions and habits of life of the two sexes. With regard to the private cases, the number of each sex is not specified; but I find upon reviewing my notes, that they may be considered as equal. The diseases of which the great majority belong to the male sex, in the private list, are gout, pneumonia, asthma, rheumatism, palsy, especially that form of it called hemiplegia, the other species of palsy being nearly equal. There is a majority of male cases under dropsy, but much smaller than in the hospital list. I find the number of cutaneous cases equal in the two sexes, in my private notes, and am unable to assign any probable cause for the great proportion of such cases among the females at the hospital.

The practical application of these comparative views to the regulation of life, as conducive to health, is too obvious to require comment.

It is very desirable that such views should be made available to the purposes of curative, as well as prophylactic medicine. Let us try whether any useful deductions of this kind can be drawn with regard to the head of disease which stands foremost in the subjoined tables.

Continued fever may be considered as the principal source of mortality, and therefore the most

important to be considered; and the first point to be ascertained with regard to its treatment is to satisfy ourselves how far the powers of nature are equal to its cure.

The powers of restoration essentially inherent in the animal œconomy, are perceivable in most diseases, and in none more than in fever. This does not preclude the interposition of art as an auxiliary to the efforts of nature, which are frequently inadequate.

The only question is, how much is due to each? It appears obvious, with regard to this and all other diseases; that unless we can calculate with some degree of precision the extent of the powers of nature, we shall find it impossible to assign what is due to these, and what to the agency of medicine in framing our experience with regard to the treatment of diseases; so that for want of such discrimination we may not be able to satisfy ourselves, whether recoveries have been effected by *virtue* of medicine, or in *spite* of it; and from such indefinite and equivocal views, we must frequently run the risk of congratulating ourselves on a great *cure*, where there may have only been a happy *escape*. With a view to resolve this important problem, it would be desirable sometimes to leave nature to her own struggles, as a standard for observation in comparing the result with that which occurs under the use of artificial means.

In the present circumstances of society, practitioners would hardly find it either prudent or warrantable to institute such experiments. Facts bearing on this subject, are most likely to be met with in the infancy of the art, before the discovery of the numerous artificial remedies with which we now find ourselves armed, and which we think ourselves bound to employ. Accordingly, there is to be found, in the very cradle of physic, some highly interesting and satisfactory information on this subject. In the first and third sections of the works of Hippocrates, there are forty-two cases of acute disease, in which the patients are particularised by name, and the symptoms, progress, and termination of their respective disorders, are related with the utmost clearness and the most exemplary candor. Of these, there were thirty-seven cases of continued fever without local affection. In the other five, there was inflammation on vital parts. Of the former, there died twenty-one; of the latter, four. Among the former, are included four cases of child-bed fever, all of whom died; and two, consequent on abortion, both of whom also died. Of the five cases of local inflammation, one was of the brain, one of the throat, one of the lungs, one of the bowels, and one of the liver. None of the subjects of these cases survived, except that of the lungs. The proportion of deaths therefore on the whole number, was twenty-five in forty-two. In continued fever without local affection, including

the cases of childbed and abortion, it was twenty-one in thirty-seven; exclusive of these, it was fifteen in thirty-one; and we have seen that, of local inflammations, four died out of five.

This statement is extremely instructive as well as curious; for it does not appear that any medical treatment was employed, except glysters and suppositories in a few, and blood-letting in one.

Little notice is taken of air or diet, and only one of the fatal events is imputed to mismanagement. This was the inflammation of the liver, in which it was alleged that the severity of the complaint was owing to the patient not confining himself in due time, and to his having eat animal food and drunk milk during his illness. The only active remedy mentioned in any of these cases, is that of letting blood at the arm in the pleurisy; and this is the only case of inflammation in a vital part which did not terminate fatally.

This record of remote antiquity, while it proves that near one half of those who are attacked with some of the most dangerous diseases incident to humanity may recover by the unassisted efforts of nature, furnishes us certainly, at the same time, with a powerful argument in favour of artificial means of relief; for the mortality far exceeds the proportion, not only in the annexed tables, but

in any other modern statement* with which I am acquainted, at least in temperate climates. It is even greater than the mortality at Jamaica in 1808, which is stated at 200 in 494. The rate of mortality, both in the hospital and private prac-

* There are two modern statements which seem at first sight to militate against this assertion. The first is in the 11th volume of the Medical Commentaries of Edinburgh for 1787, page 228, in which it is stated, that 89 persons were seized with fever in the Orphan Hospital of Edinburgh, all of whom recovered by no other means than an emetic in the beginning, and great attention to cleanliness and diet in the progress of this complaint. But of that number only four were adults; and on this it must be observed, that the febrile affections of children are less violent and more tractable than those of adults. One of the principal circumstances also to which the success was imputable, seems to have been the early attention paid to the patients in their first attack; for the danger is, in most cases, proportional to the neglect of early confinement, and of other immediate means of relief. This, however, is an instructive piece of information; for it may fairly be inferred from these cases, as well as those of Hippocrates, that medical means are not always requisite; that they are so, in various degrees, in various circumstances; that there are circumstances in which the powers of nature alone are sufficient, and in which the use of active remedies might not only be superfluous, but injurious.

The other statement is met with in the Edinburgh Annals of Medicine for 1803, page 293. The author endeavours to disprove the efficacy of medicine in interrupting the course of fever, and shortening its duration. This argument, however, does not seem to bear upon the question; for the point is, not what interrupts the course, or shortens the duration, but what mitigates the symptoms, and prevents a fatal termination of fever. If medicine performs this last, it effects all that is required of medicine. As far as my own observation goes, I should say, that unless the course of fever is interrupted in *limine*, (like the early extinction

tice, as exhibited in the annexed tables, is one in seven, and in several cotemporary statements, published by public institutions, it is still less.—There is no modern statement of private practice that I know of, by which a comparison may be instituted with the ancient, except what is here presented.

When I first formed the design of composing this article, it was my intention, in conformity to its title, to have given some practical details, but it has already been drawn out to too great a length. I trust, however, I have not laboured in vain in attempting to prove and elucidate my main position, that the comparative views exhibited by medical history are highly useful, and even indispensable, in eliciting truths applicable to the prevention and cure of diseases*. And I hope the

extinction of a fire which has caught a building) that is, in the first day, or the second at farthest, it will go through the stated process assigned by nature; but with very different degrees of severity and danger, according to the constitution of the patient and the treatment employed.

* For further information on the subject treated of in this article, the reader is referred to Dr. Heberden's two Tracts already quoted—an article by the late Dr. G. Fordyce, in the first volume of the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, entitled, "An Attempt to improve the Evidence of Medicine,"—a Tract by Dr. Woolcombe, of Plymouth, already quoted—a Work by Dr. Robert Willan, entitled, "Reports on the Diseases of London"—a Tract by Dr. C. Stanger, entitled, "Remarks on the Necessity and Means of suppressing Contagious Fever in the Metropolis, London, 1802" —a Work

same track will be pursued by others who possess more ample means and more adequate abilities, through the channel of a Society now becoming the principal centre for the collection, diffusion, and perpetuation of medical knowledge.

—a Work entitled, "A Collection of Papers, intended to promote an Institution for the Cure and Prevention of Infectious Fever, by John Clark, M. D. Newcastle, 1802."

ABSTRACT OF PATIENTS

Taken in and treated by me at St. Thomas's Hospital, from October, 1783, till April, 1794, with the exception of absences, amounting in all to six months; so that the whole time was ten years.

NAMES OF DISEASES.	ADMITTED.		DIED.	
	Men.	Women	Men.	Women.
Continued Fevers -	288	205	37	32
* Intermittent Fevers -	159	33	7	0
Pulmonary Complaints	231	90	51	19
† Bowel Complaints -	189	75	29	9
‡ Rheumatism -	547	204	10	3
Inflammatory Sore Throat	15	6	2§	0
Scarlet Fever -	1	2	1	1
‖ Chronic Sore Throat -	5	4	1	0
Hemorrhoids -	6	11	0	1
Small-Pox -	18	11	10	2
¶ Erysipelas -	14	4	1	0
Stomach Complaints	70	40	8**	2
Carried forward	1543	685	157	69

* There were eighty-three tertians, sixty-six quotidian, thirty quartans, and thirteen not specified. The deaths were all from dropsy, consumption, and flux.—† Of these there were thirty cases of painter's cholic, none of whom died.—‡ Two of the deaths were occasioned by flux, one by phthisis pulmonalis, one by sudden grief, one by convulsions. There were very few of them acute cases.—§ One of the deaths was sudden, and could not be accounted for; the other was occasioned by phthisis pulmonalis.—‖ Some of these were probably cases of Cynanche Laryngea, with the nature of which I did not become acquainted till afterwards by meeting with them in my private practice.—¶ Many cases besides occurred in the hospital supervening on other complaints.—** One died of concussion of the brain, one of a mortification of the leg, two of pectoral complaints, one of a lientery attended with *aphthæ*.

NAMES OF DISEASES.	ADMITTED.		DIED.	
	Men.	Women.	Men.	Women.
Brought forward	1543	685	157	69
Vertigo, Chronic Headach, and Gutta Serena	46	15	2*	0
Epilepsy -	16	17	0	0
Palpitation of the Heart	2	1	0	0
Insanity - -	2	4	0	0
† Locked Jaw -	8	1	4	0
St. Vitus's Dance -	7	1	0	0
‡ Spasms -	3	0	0	0
§ Tremors -	6	3	0	0
‖ Hemiplegia -	47	21	4	1
¶ Other Palsies -	48	19	1	0
** Palsy from Lead and other Metals -	7	0	0	0
Dropsy -	126	76	44††	33
Carried forward	1861	843	212	103

* One of the deaths was occasioned by a mortification in the hip, after erysipelas in the face; the other was that of a boy with a large head.—† Much benefit seemed to arise from opium, given in a cautious, gradual, and measured manner, also from the warm bath, and from anodyne and stimulant cataplasms. I have seen bad effects from opium, given hastily and to excess.—‡ One of these cases consisted in general spasms brought on by working in cold clay; another, in painful cramps without any ascertainable cause; the third proceeded from working in lead.—§ One of these cases was that of a man, in whom it was brought on by working in quicksilver.—‖ There were more seizures in the left side than in the right, in the proportion of about three to two.—¶ Some were universal, some confined to the upper, some to the lower extremities, some alternate.—** One of these was a worker in brass, five were workers in lead, one became affected by handling printers' types while they were hot.—†† One of the deaths was occasioned by the epigastric artery being punctured in tapping.

NAMES OF DISEASES.	ADMITTED.		DIED.	
	Men.	Women.	Men.	Women.
Brought forward	1861	843	212	103
Jaundice -	9	6	2*	1
Inflammation of the Liver	11†	3	4‡	2
Scrophula -	35	10	2§	0
Cutaneous Complaints	84	93	2	1‖
Sea Scurvy -	4	0	0	0
Pemphigus -	1	0	0	0
Ophthalmia, Lippitudo and Leucoma -	15	5	1¶	0
Diabetes -	2	0	0	0
Other Urinary Complaints	39	15	3**	2
Venereal Complaints	137	65	1	2
Hydrophobia -	2	0	2	0
Hydrocephalus -	1	0	1	0
Tape Worm -	0	1	0	0
Diseases peculiar to Women††	0	256	0	18
Anomalous, obscure, and complicated cases	205	132	21	9
Total	2406	1429	251	138

* In one of these there was dropsy; in the other, a cancerous affection of the stomach attended with adhesions which obstructed the gall-ducts.—† Most of these were from the East Indies.—‡ In two of these, there were abscesses found in the liver: they were both from the East Indies.—§ One died of a continued fever; the other of a palsy.—‖ She died of a bad ulcer.—¶ This death was from continued fever.—** One of these deaths was from continued fever.—†† One of these was a case of menses from the navel.

ABSTRACT OF CASES

Occurring in private practice, from 1795 till 1806.

NAMES OF DISEASES.	Number of Cases.	Deaths.
Continued Fevers	267	38
Intermittent Fevers	25	1
Pulmonic Inflammation	145	25
Phthisis Pulmonalis	129	65
Spitting of Blood	36	3
Catarrh	271	0
Asthma	63	1
Hoarseness	9	0
Hooping Cough	31	5
* Palpitation of the Heart and Angina Pectoris	21	4
Aneurism of the Aorta	1	1
Rheumatism of the Thorax	3	0
Anomalous Cough	3	0
Abscess of the lungs from an old injury	1	1
Ossification of the Trachea	1	1
Peripneumonia Notha	10	1
Rupture of the Heart	1	1
Chronic Inflammation of the Larynx	1	1
† Sudden and severe pain of the Pectoral Muscle of one side	1	0
Loss of Appetite, Acidity and Flatulence in the Stomach	118	0
Hypochondriasis	57	0
Acute Pain of the Stomach	92	0
Laborious Digestion	2	0
Vomiting of Blood	10	0
Vomiting and Nausea	43	1
Inflammation of the Stomach	6	2
Water Qualm *(Pyrosis)*	12	0
Cancer of the Stomach	3	3
Carried forward	1362	154

* In one of these cases there was an extreme distress of breathing for five years, and the pulse fluctuated from twenty to thirty-two, never falling below the former point nor exceeding the latter. Nothing gave material relief. Leave was not obtained to open the body after death.—One was cured by mercury, digitalis and arsenic.—† Cured by bleeding and antiphlogistic treatment. The blood was sizy.

NAMES OF DISEASES.	Number of Cases.	Deaths.
Brought forward	1362	154
Inordinate Appetite	1	0
Dull Pain of the Stomach suspected to be Rheumatic	1	0
Inflammation of the Bowels	29	6
Dysentery	38	5
Cholera Morbus	67	4
Ileus	4	0
*Diarrhœa	101	5
Colic	12	0
Intestinal Hæmorrhage	30	0
Piles	27	0
Cœliac Passion	6	2
†Obstructed Mesentery	94	2
Flatulence of the Bowels	4	0
Constipation	9	0
Lientery	1	0
Ulceration of the Bowels	1	1
Fecal Congestion	2	0
Griping Pain and Diarrhœa after meals	1	0
Painter's Colic	2	0
Palsy of the Bowels	1	1
Acute Rheumatism	44	1
Chronic Rheumatism	75	1
Gout	130	7
Rheumatic Gout	5	0
Common Sore Throat *(Cynanche Tonsillaris)*	51	0
Quinsy *(Cynanche Pharyngea)*	11	0
Mumps *(Cynanche Parotidea)*	3	0
Bronchocele	2	0
Croup *(Cynanche Trachealis)*	3	0
‡Cynanche Laryngea	3	2
Chronic Thrush	1	0
Angina pustulosa	1	0
Lumbago	2	0
Sciatica	3	0
Carried forward	2127	191

* A considerable number of these were children.—† These were chiefly children.—‡ This was an acute case, and ten years afterwards the same complaint returned in Ireland, and proved fatal; being the same individual whose case is related in this Volume by

NAMES OF DISEASES.	Number of Cases.	Deaths.
Brought forward	2127	191
* Chronic Headache	39	1
Vertigo	28	0
† Mania	24	2
‡ Epilepsy	16	2
Hemiplegia	36	19
Local Palsies	19	0
Paraplegia	4	0
Palsy from Lead	1	0
Catalepsy	2	0
Inflammation of the Brain	3	2
Lethargy	3	0
Tinnitus Aurium	5	0
Intolerance of Touch on the whole Skin	1	0
Hemicrania	3	0
Neuralgia, or Tic Douleureux	4	0
Gutta Serena	1	0
Tremors	3	0
§ Excessive Sensibility to Cold	2	0
Convulsions	8	2
Poisoned by Opium	1	1
¶ Chronic Suppuration of the Frontal Sinuses	1	0
Carried forward	2331	220

Dr. Perceval. I have since met with two chronic cases, both of which proved fatal, after a long series of suffering from threatening suffocation. They were both inspected after death, and *pus* was found in all the interstices of the muscles and bones of the larynx, the organization of which was considerably impaired.

* See the fatal case related in the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, Vol. II. Art. 16.—† See one of the fatal cases related *ibid.*—‡ In one of the cases, which proved fatal, the epidermis of the feet and hands came off from time to time in form of a glove.—§ In one of these there was no other symptom of indisposition; in the other there was a rheumatic affection. The first was treated with chalybeates, opiates, and strong aromatics, under which he recovered. The other was treated with arsenic, and recovered under the use of it.—¶ The matter was discharged by the nose. After 15 years, there came on irregular hemiplegia and stupor.

NAMES OF DISEASES.	Number of Cases.	Deaths.
Brought forward	2331	220
Spasms	4	0
Raphania	1	0
Spasms of one side of the Neck	3	0
Small-Pox	15	3
Measles	32	3
Scarlet Fever	39	10
Chicken-Pox	2	0
Swine-Pox (Pemphigus)	1	0
Erysipelas	91	2
Cow-Pox	8	0
Inflammation of the Liver	15	1
Jaundice	25	2
Obstruction of the Liver	12	1
Gall-Stones	12	2
Redundant Secretion of Bile	5	0
Vitiated and Redundant Secretion of Bile	2	0
Swelled Spleen	1	0
Inflammation of the Kidneys	9	1
Stone and Gravel	48	1
Dysuria and Ischuria	20	0
Diabetes	5	1
Scanty Urine	1	0
Irritable Bladder	1	0
Ulceration of the Bladder	3	1
Incontinence of Urine	2	0
Bursting of the Urethra in Perinæo	2	0
Impotency	3	0
Emissio inconscia Seminis	2	0
Priapismus sine Libidine	1	0
Gonorrhœa Benigna	2	0
Excess of Venery	3	0
A peculiar species of Hectic Fever from Irritation of the Urethra*	3	3
Fluor Albus	46	0
Hysteria	97	0
Obstructed Menses	67	1
Profuse Menses	43	0
Carried forward	2957	252

* This was brought on by the repeated application of caustic, acting on infirm and irritable constitutions.

NAMES OF DISEASES.	Number of Cases.	Deaths.
Brought forward	2957	252
Scanty Menses	23	0
Pale Menses	5	0
Uterine Hemorrhage	1	0
Painful Menstruation	5	0
* Flatus per Vaginam	1	0
Vomiting of Blood, vicarious to Menstruation	3	0
Irregular Periods of Menstruation	3	0
Extra Uterine Fœtus	1	0
Cancer of the Womb	7	4
Cancer of the Mamma	4	2
Child-bed Fever	1	1
† Chlorosis	23	0
Induration of the Os Uteri	3	0
Cancer of the Mouth	1	1
Venereal Disease	32	0
Ascites	23	11
Anasarca	28	0
Hydrothorax	37	14
Hydrocephalus	15	11
Dropsy of the Ovarium	2	0
Encysted Dropsy of the Groin	1	0
Impetiginous Affections	160	0
Carbuncle	3	1
‡ Shingles	5	0
Petechiæ sine Febre	2	0
Carried forward	3346	297

* A communication between the rectum and vagina had been produced by ulceration.—† One of these was a male of seventeen, who had all the characters of this disease except that which is peculiar to the female sex. He was treated like the others, and recovered under the use of carbonated iron and aloes. —‡ In one of these cases, the patient, after recovery, was for the remainder of her life, which extended only to a few years, almost incessantly tormented with a severe pain in the abdomen, in which nothing gave relief. On inspecting the body after death, it was found that immediately under the spot on the right side of the abdomen, which had been the seat of the shingles, and to which the subsequent pains had been referred, adhesions had

NAMES OF DISEASES.	Number of Cases.	Deaths.
Brought forward	3346	297
Pruritus Pudendi	2	0
* Sea-Scurvy	4	0
Nettle Rash	1	0
Scrophula	37	2
Rickets	4	0
Teething	2	0
Ophthalmia	15	0
Lippitudo	2	0
Excessive Secretion of Tears	1	0
Deficient Secretion of Tears *(Xerophthalmia)*	2	0
Tape Worm	3	0
Lumbrici	2	0
Ascarides	12	0
Old Age †	5	4
Anomalous, Obscure, and Complicated Cases	375	77
	3813	380

taken place, and no doubt remained that these pains had been occasioned by the mechanical dragging of these attachments.

* In none of these cases, except one, was the disease occasioned by a life at sea, but arose from some peculiar propensity of constitution, under ordinary diet and habits of life. They were all cured by lemon juice.—† The most common symptoms characterising the disease of mere old age were frequent rigors, frequent and long-continued jactitations, producing a state of considerable suffering and wearing out of the residue of life, by a sort of hectic fever. Their ages were from 80 to 99.

*** In constructing these Tables, the author has, perhaps, exposed himself to criticism, in point of technical nosology. If so, it has not been from want of a due sense of the utility of methodical precision, for he sets a high value on nosology, not only as it assists in discriminating and ascertaining the nature of diseases, but as it contributes to improve and enlarge those comparative views of them which it has been the principal end of this communication to recommend and apply. He has accordingly had regard to it in these Tables. But as they were originally drawn up for his own private satisfaction, and as he deems the *phænomena* of the human body in a state of disease to be the most anomalous branch of nature, he neglected the niceties of classification, and in offering them to the public, he feels more studious of that perspicuity and fidelity which may render them intelligible and available to the plain and practical reader, than to strain them into a conformity with system.—They were drawn up before the learned and luminous work of Dr. Young on Nosology was published.

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SUPPLEMENT.

SUPPLEMENT.

HAVING at page 35 stated the great advantages derivable to society from vaccination, it gave me concern to find, from a work which appeared while this work was in the press, that there were reasons, upon new grounds, for questioning whether these advantages were so great, as the evidence in favour of that practice seemed to establish.

Dr. Watt, of Glasgow, the well-known author of a treatise on diabetes, and himself a great promoter of vaccination, brought out a work on Hooping-Cough about three months ago, to which an Appendix is subjoined, consisting of remarks on the relative mortality of small-pox and measles, and affording some singular results. In the course of his researches into Parish Registers, in order to ascertain some points respecting hooping-cough, he found, to his great surprise and mortification, that the number of deaths of subjects under ten years of age had not been diminished since the introduction of vaccination; though the mortality

from small-pox had, for the last ten years, been reduced to a fourth part of what it had been in the preceding ten years. Anxious to discover the cause of a fact so unexpected, he entered upon a laborious examination of all the parish registers of that city, from which it appeared that since the extensive practice of vaccination, ten times more children had died of the measles than formerly, which fully accounted for the stationary state of mortality of those under ten years of age.

On these grounds the author finds himself constrained to infer that there is some change produced in the living system by small-pox, which predisposes it to be affected by the measles in a much milder degree than when they are caught by those who have not undergone small-pox.

This is too serious an inference to be hastily admitted, but in case the researches of others should confirm Dr. Watt's positions, we ought not to shut our eyes against the light.

Vaccination has not been carried to near so great an extent in London as in Glasgow, but as the mortality of small-pox has, on the average of the last ten years, been diminished in the former to almost one half; we may expect some influence from it on the mortality of measles, if Dr. Watt's allegations are founded on nature. With a view

to this, I have put it to the test of an arithmetical statement, as exhibited in the annexed table.

Every reader will judge for himself; I own that I think it will be difficult to account for the great increase of the mortality of measles in the last series of years, as shewn in the table, without admitting the truth of the discovery alleged to have been made at Glasgow. It appears by the London bills that this mortality is more than double of either of the preceding series. And I find, upon inspecting the same bills, as far back as the year 1700, that, during the whole of the last century, the annual mortality from measles exceeded 400 only in seven instances; whereas, it appears by the annexed table, that they have exceeded that number eight times in the last ten years.

It is observable under the column of "Mortality from all Diseases," that there is a diminution of about 14,500 in the last series compared with the former. About one third only of this reduction of mortality can be imputed to vaccination, if the increased mortality of measles is admitted to depend on this; for if the diminished mortality of the former, and the increased mortality of the latter, are brought to account, it would make a diminution of about 5000 only, and it would follow that the diminution of general mortality is principally referable to the increasing causes of salubrity in the metropolis.

We have a farther proof of the improved salubrity, from inspecting and comparing the number of births and deaths. In the course of the last century the burials exceeded the christenings very considerably, particularly in the beginning and middle of it. It was not till the year 1790 that the number of births exceeded the deaths; and this occurred again only twice before the expiration of the century, namely, in the years 1797 and 1799; whereas, in the twelve years of this century which have already elapsed, there appears a majority in favour of the births every year but two.

But, in order to appreciate fairly these statements, it is necessary to ascertain what difference has taken place in the population.

It appears by the parliamentary enumeration of 1801, that the population of the parishes included in the * bills of mortality, amounted to 777,000, and by the enumeration of 1811 to 843,000, making a difference of 66,000.

With respect to the mortality, the increase of population, when taken into account, presents a

* Some of the most populous parishes and the most increasing, such as Marybone and St. Pancras, are not included in the bills of mortality. The population of the parishes out of the bills of mortality, amounted, in 1801, to 123,000, and, 1811, to 162,000. See Parliamentary Report of the National Enumeration for 1811. Part II. p. 199.

still more favourable view of its diminution than the comparison of the numbers in the respective series imports; for, in consequence of this additional population, the deaths would have been increased in the last series by an eleventh part, instead of being diminished, had there not been some countervailing causes favourable to human life. If the mortality had been in the same ratio to the population in the series ending 1811 as in that ending 1801, it would have amounted to 213,532, that is, about 19,000 more than it stands in the tables.

With regard to the births, their increase in the last ten years, calculated according to the increased population, would have been 202,560, a number so near to what stands in the tables, that we may fairly impute the difference between the ratio of deaths and births in the last series, compared to the former, to the diminution of the deaths, and not to the increase of births.

With regard to the question before us, I am unwilling to believe that there are yet sufficient *data* to decide finally upon it. Could not these instances of extraordinary mortality from measles, be accounted for by conceiving them to be subject to local and temporary fluctuations, like scarlet-fever, which, in some circumstances of time and place not yet ascertained, is much more fatal at particular periods and in particular districts? An

ingenious friend of mine has remarked to me in conversation, that some light is thrown on this subject by considering that whichever of the epidemic maladies attack children first, it will be the most fatal; inasmuch as all of feeble constitutions will fall in its way, while the stronger will be left to encounter the attacks of the others; and that the small-pox, owing probably to the greater abundance and rankness of their *effluvia*, are generally caught in a casual way before measles, hooping-cough, and scarlet fever, and are therefore reckoned more fatal than any of these. But a new field of research being opened, the numerous readers and contributors to this work will, no doubt, be excited to examine such registers as are within their reach; and also in future to watch in their own practice, whether they find that the majority of the fatal cases of measles have occurred in those subjects who have not undergone the small-pox; also, whether small-pox are milder where measles have preceded them; also, whether there is any difference in the casual and inoculated small-pox, with regard to their influence on measles, and to decide upon other questions which may arise out of this new and important subject. In the mean time, it is necessary to remark, that though this fact should be found to be universally true, it ought not to discourage vaccination; for it appears from what is stated, with regard to this metropolis at least, that though the mortality of measles has been dou-

bled in the last ten years, while that of small-pox has been reduced to one half, yet the absolute number of the latter being much greater, there still remains a balance of 5000 in favour of human life.

The measles is also a disease less loathsome and painful, and is not followed by such serious consequences as the other, such as deformity and loss of eye-sight.

I shall conclude with adverting to some false inferences, which have been deduced from certain abstract principles of political œconomy, tending to depreciate the importance of such questions. For if it is true that population must be limited by the stock of subsistence, and that the physical power of procreation is adequate, not only to uphold population at all times as high as the stock of subsistence will bear; but, from the indefinite extent to which it may be carried, to repair, in an incredibly short time, the utmost ravages of disease; it seems to follow that such a saving of human life as is within the reach of vaccination, or any other medical means, can be of little value to the great interests of society. To this I would answer, that, though I am well convinced that these principles* are founded in truth and nature, and may safely be admitted as maxims of political science; it is,

* See Essay on Population, by Mr. Malthus.

nevertheless, equally well founded in truth and nature as a principle of moral science, that the dependence of individuals on each other is such, that neither social institutions, nor even the human species under any form, could exist without the operation of the kind affections, and of practical beneficence, which are, at the same time, the main constituents of all that is understood by the name of virtue, and of whatever is amiable and excellent in the human character. It seems, therefore, hardly necessary, and almost impertinent, in addressing men of cultivated minds and correct principles, such as those who compose the professions of physic and surgery, to refute the fallacious reasoning above-mentioned; and to remark that it is our paramount duty, and ought to be our unceasing study, to preserve the lives and to alleviate the sufferings of all those who seek our assistance.

*** Since this Supplement was sent to the press, Dr. STANGER, Physician to the Foundling Hospital, has stated to the Society, that he had ascertained by an examination of the records of that hospital, that out of a hundred and thirty-one patients who had undergone vaccination, and had afterwards had the measles, two only had died. It appears from the same records that out of a hundred and thirty-one cases of measles in children, who had previously had small-pox, eleven proved fatal. This evidence is conclusive, to the extent that it goes, that small-pox produces no predisposition to pass through measles in a milder way, and that vaccination has at least no prejudicial influence.

Year.	Deaths from all Diseases.	Christenings.	Deaths from Small-Pox.	Deaths from Measles.	Deaths under 10 years of age.
1783	19029	17091	1550	185	9178
1784	17828	17179	1750	29	8123
1785	18919	17919	1999	20	8519
1786	20454	18019	1210	783	9638
1787	19349	17508	2418	84	8881
1788	19697	19559	1101	55	8307
1789	20749	18163	2077	534	9973
1790	18038	18980	1617	119	8573
1791	18760	18496	1747	156	9023
1792	20213	19348	1568	450	9456
Total	193036	182262	17037	2415	89671

Year.	Deaths from all Diseases.	Christenings.	Deaths from Small-Pox.	Deaths from Measles.	Deaths under 10 years of age.
1793	21749	19108	2382	248	9456
1794	19241	18689	1913	172	9441
1795	21179	18361	1040	328	9216
1796	19288	18826	3548	307	10512
1797	17014	18645	512	222	7139
1798	18155	17927	2237	196	8719
1799	18134	18970	1111	233	7645
1800	23068	19176	2409	395	10058
1801	19374	17814	1461	136	8301
1802	19379	19918	1576	559	9176
Total	196581	187434	18189	2796	89663

Year.	Deaths from all Diseases.	Christenings.	Deaths from Small-Pox.	Deaths from Measles.	Deaths under 10 Years of age.
1803	19502	20983	1202	438	8222
1804	17038	21543	622	619	7481
1805	17565	20295	1685	523	8229
1806	17938	20380	1158	530	8256
1807	18334	19416	1297	452	8190
1808	19954	19906	1169	1386	9388
1809	16680	19612	1163	106	7608
1810	19893	19930	1198	1031	9133
1811	17042	20645	751	235	7398
1812	18295	20404	1287	427	8198
Total	182441	203114	11532	5747	81103

The author of this article having been prevented, by a most afflicting event in his family, from duly superintending the press, subjoins the following list of omissions and corrections.

Page 7, line 21.—After 1679, add, "the period at which it was most prevalent was about the middle of the fourteenth century. In rude ages, habitations and clothing are so simple as not to generate infectious *effluvia*, and in polished ages their bad effects are counteracted by ventilation and cleanliness. The period abovementioned, which may be styled semi-barbarous, is at that distance from both these extremes in which we might naturally expect the most pernicious effects of bodily filth and foul air. Dr. Robertson, in his View of Society, introductory to the reign of Charles V., makes the like remark with regard to the moral habits of mankind."

Page 9.—At the end of the first note, add, "In the expedition to Quiberon, in 1795, several horse transports had their hatches shut for a length of time in a storm, by which means eight horses were suffocated. Those which survived became affected with the glanders soon after they landed. Professor Coleman, of the veterinary college, saw twenty of them under this disorder; a considerable number had been previously destroyed."

Page 13, line 6.—For "three" read "four;" at line 8, *dele* "and," and after "life" add "and the vicissitudes of the seasons." At line 14, add, after "rickets," "the diseases connected with the seasons are either those endemics which occur annually, or those which are aggravated by irregular seasons." In the note, add, after "diseases," in line 7, "such as yellow fever and dysentery."

Page 18, note, line 9.—After "1646," add, "200 persons were condemned and executed for witchcraft at the assizes for Essex and Suffolk, in that year."

Page 19, line 5.—Instead of "the only other," read, "the fourth general head of."

Page 20, line 12.—After "nature," add, "and what is artificial ventilation but an imitation of this?"

Page 22, line 5.—In the note, after "calculation," add, "The mean temperature of this climate may therefore be stated at 51°."

Page 34, line 8.—After "Lunacy," add, "nor of childbed and chirurgical cases." Line 23,—after "practitioners," add, "the like may be said of childbed cases."

Page 36, line 10.—After "vaccination," add, "in the last ten years."

Page 44, line 4.—After 494, let there be a reference to a note, as follows: "See Edinburgh Medical Journal, vol. V. p. 492."

Page 45, line 13.—For "attempting," read, "in my attempt."

Page 50, line 15.—Make a reference from this line to the following note: "This case ought, perhaps, rather to have been stated as a chronic inflammation of the *trachea*. The patient had for many years been subject to tedious intractable catarrhs. The only other morbid appearance was a preternatural density in some portions of the lungs, the cells being filled with a sort of bloody serum. It is evident that expectoration, in such cases, must be very difficult and imperfect, the rigidity of the *trachea* not permitting that diminution of the area of the tube by means of the muscles which constrict it, so as to give a greater *impetus* to the air in the act of coughing. I have lately met with a similar case, but the density of the lungs was more extensive, and seemed

to have a greater share in its fatal termination. It may be remarked that the inner surface of the *trachea* in these two cases, did not, as in acute inflammation, exhibit the exsudation of coagulable lymph, though there was every other character of inflammation."

Page 50, line 18.—*Dele* the whole of this line.

Page 51, line 30.—For "3," read, "1," and for "2," read, "8."

Page 52, line 1.—In the notes, for "two," read, "three," and for "both," read, "all." Line 3, of the same note, for, "they were both," read, "two of these were."

Page 53, line 20.—A reference and note as follows: "Before the period of this series of cases, I met with a case of distinct and severe *Ischuria renalis*, in which electricity was of instant and striking benefit, producing an immediate flow of urine, and effecting a complete recovery. This, I believe, is a very rare disease; I never happened to meet with any other case clearly characterised." Line 26, for "0," read, "1."

Page 54, after line 25, insert a line expressing one case of spontaneous gangrene which proved fatal.

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