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ON THE HEALTH OF LONDON, DURING THE SIX MONTHS TERMINATING MARCH 30th, 1850.

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[*Read before the Westminster Medical Society, April 13, 1850.*]

BELIEVING that some observations on the Health of London, during the last six months, in continuation of those which were previously brought before the Westminster Medical Society,¹ may be interesting, I have prepared this paper. During the period from the 29th September, 1849, to the 30th March, 1850, the health of the metropolis has been, on the whole, very satisfactory. The number of deaths from all causes has been below the ordinary average, and less than those which occurred during the corresponding months of the years 1848-49; the mortality for the last-named period having amounted to 30,160, and that for the corresponding six months just ended being 26,096. The latter season thus exhibits a diminution of 4,064 deaths, or about 13½ per cent. In the first three months of the current year, 2,219 fewer deaths have occurred in London, than during the same quarter of 1849. This favourable aspect of the public health has been due both to various causes to which I shall hereafter refer, but chiefly to the diminished mortality of several diseases which were very prevalent and fatal during the years 1848-49.

DISEASES WHICH HAVE EXHIBITED A DIMINISHED RATE OF MORTALITY. Scarletina, which carried off 2,541 individuals during the two quarters ending the 31st March 1849, proved fatal to only 685 patients in the corresponding months of the recent season; being a decrease of 1,856 deaths. Typhus has exhibited a mortality of 962 in place of 1,582; being a diminution of 620 deaths. Small-pox has likewise proved much less fatal than previously; only 194 persons having died from it in the two quarters just ended, instead of 641 during the parallel six months of 1848-49; being a decrease of 447, or more than two-thirds.

Cholera was very fatal during last summer and autumn, and did not subside till towards the close of 1849; 494 persons having died in London from it during the fourth quarter of that year; while, in the corresponding three months of 1848, the deaths, from the same cause, were only 26 fewer. But during the first quarter of the current year, the contrast has been marked, and highly satisfactory; not more than eight persons having died of cholera since the 1st of last January, instead of 516 during the first three months of 1849. The fact now stated is highly important, and may, I hope, be taken as an indication that cholera will not prove so epidemic and pestilential during next summer and autumn, as it was last year.

Influenza, which, in the six winter and spring months of 1847-48, carried off 1,739 persons, proved fatal to only 77 in the same period of 1848-49, and to 87 in 1849-50. Hence this malady, which prevailed almost like a pestilence two years ago, has since been a comparatively mild complaint.

¹ LONDON JOURNAL OF MEDICINE for 1849, pp. 992 and 1063.

Diseases of the chest, including phthisis, which always prove so common and fatal during cold and inclement weather in this climate, have lately been less so, especially during the last quarter; 4,428 persons having died from diseases of the respiratory organs, instead of 4616 during the corresponding three months of 1849; being a difference of 188 deaths.

Diseases of the brain and nervous system, which are also usually prevalent and fatal, have shown a comparative diminution; 3,092 persons having died of these affections within the last six months, being 60 fewer than the number of deaths (3,152) which occurred in the corresponding period of 1848-49.

Hooping-cough has proved fatal in 715 cases; being a decrease of 652 cases upon the number (1,377) registered in the corresponding period of last year, or nearly one half.

The diseases of the puerperal state exhibit a smaller mortality than in the two corresponding quarters ending 30th March 1849. During the last-named period, 339 females are reported to have died from these causes; whereas, during the six months just terminated, the number of deaths from the same diseases has been only 242; being a decrease of 97, or of upwards of one-fourth. This fact seems worth mentioning, as the danger attending parturition sometimes becomes much augmented, in a town population; and especially in lying-in institutions, where terrible epidemics have so often prevailed.

DISEASES WHICH HAVE EXHIBITED AN INCREASED RATE OF MORTALITY. Notwithstanding the general salubrity of London, and the aggregate diminution of deaths from all causes, some of the ordinary diseases have exhibited an opposite feature.

Measles have proved more fatal in the last six months, than during the corresponding period of 1848-49; 641 persons—chiefly infants and children, having died lately from that complaint, as compared with 391, during the winter and spring of 1848-49. There has thus been an excess of 250 deaths from measles in the six months just past.

Diarrhoea and dysentery have exhibited very little difference, although there has recently been a slight increase in the number of deaths from these causes. During the last six months, 811 persons have died of these maladies, the number for last year being 775, or 36 fewer deaths than recently.

DISEASES EXHIBITING AN UNIFORM RATE OF MORTALITY. Diseases of the heart and blood-vessels, during the two quarters ending 30th March 1849, were fatal in 1,002 cases; while the deaths from these causes, during the corresponding period of 1849-50, have amounted to 1010. The rate of mortality of these complaints may then be said to have been almost identical during both periods.

One case of hydrophobia has recently occurred in London. Formerly, this intractable disease was more frequent than of late years; and it appears, from the early Reports of the Registrar-General, that twelve persons died from it in the year 1838. Subsequently, up to 1847, from one to four individuals are reported to have been its victims each year. Since that period, the disease has happily proved fatal in only two instances; one in January 1848, and the second in February of the

present year, Both patients were young. The most recent case was a girl aged 4, who is stated to have been bitten by a rabid dog a hundred and one days previously, as appeared from the evidence given at the inquest, when it was stated, that the patient was bitten on the 15th of November 1849, and died on the 24th of the following February; hence the poison must have remained latent in the system much longer than is commonly supposed. This fact is interesting, and seems to show, that a patient must not be considered wholly free from the super-vention of canine madness, although forty days may have elapsed since the infliction of the bite of a rabid animal.

The recollection of the former frequency of hydrophobia, which, indeed, seems to have been at one time so common, that the weekly average of deaths from this cause was stated to be much higher than at present, renders its diminution the more gratifying. This disease has always baffled the skill of medical practitioners, notwithstanding the vaunted reports occasionally put forth in some countries, that a cure had actually been discovered. It would be of much benefit, if these assertions were realized; and whether the specific come from a remote province of Russia, or the more distant wilds of Abyssinia, humanity must rejoice at such a discovery. But until we have better evidence than mere assertion, we can only trust to immediate excision of the wounded part, and the subsequent application of cupping-glasses: by these measures alone, which should be used whenever any suspicion exists, the safety of an individual bitten by a rabid dog can be guaranteed.

The present rarity of hydrophobia is mainly to be attributed to the operation of the Act of Parliament, brought in by Mr. Fox Maule; whereby dogs are not now allowed to draw any vehicle in London. One of the reasons assigned for passing the above-mentioned judicious measure was, that the canine race, when employed in drawing vehicles, particularly in hot dry weather, often get so excited as to become rabid, and then to communicate the disease, not only to other dogs and animals, but also to man. Since the prohibition became law, hydrophobia has almost disappeared from London, or, at least, is a very rare disease; and this happy result is, I think, so much owing to Mr. Maule's exertions, that it would be desirable to make the measure general throughout the whole empire—for the malady prevails elsewhere more frequently than in the metropolis, to which alone, the Act now referred to applies.

Hydrophobia is still a prevalent disease in many parts of Europe, especially throughout the northern provinces of the continent. For instance, in Prussia, this dreadful malady annually causes the death of 70 or 75 persons: as is shown by the fact, that during fifteen years ending 1834, according to the Government Mortality Tables, 527 males and 546 females, making a total of 1,073 individuals, fell victims to hydrophobia. Having resided some time in Berlin, and made inquiry on the subject, I can testify to the prevalence of this affection in the Prussian states. It is also worthy of remark, that the medical practitioners, resident in those districts, ascribe the frequency of canine rabies to the number of famished and sometimes rabid wolves, which come from the forests and deserts of Poland during severe weather, in search of food; when they bite domestic dogs, and thus give rise to the propagation of hydrophobia among the inhabitants.

MORTALITY AMONG CHILDREN. It appears that, of the 13,219 deaths from all causes, registered during the first quarter of the current year, 5,484, or about 41½ per cent., occurred in persons under fifteen years of age. Having already alluded to several of the diseases which usually prove fatal, especially to children, as scarlatina, measles, and pertussis, it would be superfluous to notice them again. Hydrocephalus and convulsions, however, demand some attention. Convulsions are reported to have been the cause of death in 482 persons during the past quarter, only three of whom had reached the age of fifteen. From hydrocephalus, 370 individuals, of whom only three had attained the age of puberty, have died during the quarter just ended. These facts are interesting and instructive, as they unequivocally demonstrate that these two diseases are almost exclusively confined to infancy and childhood. The danger attending them seems to bear a direct ratio to the youth of the patient; and the prognosis will be most unfavourable in infants, or in those of tender years and feeble constitutions. The large number of children who annually lose their lives from accidents is deserving of notice. Not fewer than 79 young persons under fifteen years of age have died from burns and scalds during the last three months.

Privation of breast-milk proved fatal to forty infants. This circumstance is most significant; and when it is also known, that during the years 1848 and 1849, no fewer than 947 infants died from a similar privation, the statement now made deserves serious consideration. This large mortality is, without doubt, chiefly owing to the practice, so prevalent among many of the middle and upper classes, of employing wet-nurses to suckle their infants, instead of following the dictates of nature, which enjoins each mother to feed and nourish her own offspring. Further, as the milk of a recently delivered woman is more serous than afterwards, it is more fit for her new-born infant, than that of another female who has been nursing for a longer period. Moreover, the human milk progressively becomes more nutritious, and is better adapted to support and strengthen the growing infant. It should also be remembered, that the child of the person employed to act as wet-nurse, being frequently fed by hand, and very generally neglected, if not starved, often falls a sacrifice. All circumstances being considered, it may be emphatically said, that, excepting in cases where the mother is unable to afford sufficient or proper nourishment to her own offspring, the custom of employing wet-nurses should be discountenanced, not only on physical, but on moral grounds.¹ It is no answer to assert that parents, especially

¹ The practice of employing wet-nurses is not only contrary to the laws of nature, and of an injurious tendency both to mother and child, but also holds out a premium to immorality. Hired nurses are liberally paid for their services, always well fed, and often luxuriously pampered in a manner quite at variance with their previous position: hence, especially if unmarried, they are tempted to again become qualified for obtaining a similar situation. That this is not an overdrawn picture, may be proved from the experience of medical practitioners. It is also astonishing to observe the encouragement which this demoralizing custom receives from persons who are frequently most charitable, and otherwise desirous of improving the condition, both moral and religious, of the lower orders. If the subject were carefully considered in all its bearings, much beneficial alteration would be accomplished. Antiquity might, perhaps, be cited in favour of wet-nursing; but it should be remembered that the custom was, even then, strongly condemned. Thus, Tacitus complains of the degeneracy of the Roman matrons, who too frequently entrusted

in the fashionable world, are unable to suckle their infants, and frequent society at the same time. Most assuredly these are incompatible: but this only strengthens the argument against wet-nursing, as mothers employed in suckling their own children, could not frequent hot rooms, mix in crowded assemblies, keep late hours, or join in any species of dissipation. They would have to remain more at home, to take care of their own health and of that of their infants; which would greatly conduce to the benefit of all parties.

The great mortality among children, from all diseases, demands most serious attention. If the chief causes can be pointed out, which produce such a disastrous influence, a great step will then be made towards their mitigation. Unquestionably, improper feeding, defective clothing, and exposure to the vicissitudes of weather, in this variable, though otherwise healthy climate, materially contribute to the production of disease, and to the consequent augmentation of mortality, amongst infants and children, even in the wealthy classes, or those in comfortable circumstances; but still more so among the poor and dissolute. Hygienic measures, and judicious medical treatment, greatly diminish the mortality among all classes, but especially in infants and children; whilst greater attention to the clothing and diet of children would certainly give a more favourable aspect to the mortuary tables of London.

MORTALITY AMONG THE PAUPER POPULATION. A few general remarks may now be made upon the large mortality among the inmates of hospitals, workhouses, and prisons, nearly one-fifth of the whole deaths having taken place in these establishments. Thus, of the whole 13,219 deaths during January, February, and March of the present year, 2,353, or 17 $\frac{3}{4}$ per cent. were individuals supported, or at least medically treated by the public, or by unpaid medical officers. The number now mentioned does not comprise the deaths among dispensary patients, out-door parish paupers, or the numerous persons frequently attended gratuitously by medical practitioners. At least one-third of the deaths recorded were of this description.

INFLUENCES WHICH HAVE CONTRIBUTED TO THE IMPROVEMENT OF THE PUBLIC HEALTH. The chief features characterizing the sanitary condition of London during the last six months, show that the public health has been, on the whole, satisfactory, as compared with the corresponding period of 1848-49; and more especially so, if contrasted with the six summer and autumn months immediately preceding, viz., from the 1st of April to the 30th September 1849. During the later period, the mortality was enormously augmented by the great prevalence of cholera and diarrhœa, 40,117 persons having died from all causes during this period, and only 26,006 in the more recent period. But the difference appears

the care of their infants to Grecian girls, or other inferior domestics. Pliny notices the advantages attendant on the nursing of children by their own parents; and other authorities, both ancient and modern, might be quoted. Van Swieten also informs us, that one of the queens of France, who suckled her own infant, having ascertained that a lady of the court had surreptitiously given the royal child her breast, was so much offended on hearing of the fact, as to excite vomiting by introducing her finger into the infant's mouth, being unwilling that her son should receive any nourishment but from herself.

even more extraordinary, when the three months of July, August, and September of last year, are compared with October, November, and December. In the former period, the total deaths from all diseases were 27,109, but in the latter they decreased to 12,877, being a diminution of more than half, or 54 per cent. Cholera and diarrhoea continued to prevail throughout October and November of last year, though in a rapidly decreasing ratio, so that 976 individuals died of these diseases during the entire quarter; nevertheless, this period, and the first three months of the current year, have proved, as formerly stated, more healthy than the corresponding period for several previous years.

The chief influences which have contributed to produce this favourable result are—1. The improved physical condition of the population: 2. The abundance of good and cheap provisions: 3. The less variable, and hence more salubrious, condition of the atmosphere: 4. The increased attention recently given to sanitary measures: 5. The greater care paid by individuals to their own health, in consequence of the alarm experienced during the previous pestilence: and, 6. The removal, by the recent epidemic, of a large number of the debilitated, dissipated, and diseased portion of the population, so that there remained less *pabulum morbi* as compared with former years; while the survivors were also better able to resist the inroads of disease.

Most of the circumstances above alluded to, as influencing public health, are so obvious, as to require little or no comment. Although much has been recently said respecting sanitary measures, and a few judicious improvements have been commenced, very little advance in the right direction has as yet been made. As I have previously adverted to this subject, and shewn its importance, it is unnecessary for me to repeat my arguments; but I would now again assert as strenuously as formerly, that all nuisances, whether public or private, must be abated. Vested rights, and individual interests, must yield to the health of communities. On this point, *salus reipublica est suprema lex*; and, as on such question there can be no mistake, there ought assuredly to be no compromise.

The removal of food for disease by the cholera epidemic of last year, and its consequent influence in producing a diminished rate of mortality, is analogous to what has been formerly experienced. Similar results followed the disappearance of influenza, which prevailed so severely during the winter of 1847-48. In the quarter ending June 30, 1848, the number of deaths was 3,510 fewer than in the preceding three months. Again, after the cessation of scarlatina, which was unusually prevalent and fatal during the winter of 1848-49, the aggregate mortality decreased; the deaths from all causes registered in the quarter ending June 30, 1849, being 2,422 fewer than those in the three months ending 31st March. Hence, it may be generally predicted, with some confidence, that whenever any epidemic malady prevails, and removes numbers of the population, the subsequent season or year will probably be more healthy, and fewer deaths will occur than under other circumstances. This arises much from the removal by the previous epidemic of the subjects most liable to disease; but there may be also other evident causes in operation, although it is often impossible to point out, and

still less to define precisely, the association of every influence, however consistent the results may seem with general experience.

EXCESS OF BIRTHS OVER DEATHS. The remarkable excess of Births over Deaths, which has taken place in London during the last two quarters, is worthy of notice; particularly as history informs us, that increased fecundity is the ordinary sequence of a pestilence. In the first three months of the above period, 4819 more persons were born than died in London; and during the second quarter, the excess was 5,428, thus making a total of 10,237 more births than deaths in six months. And if to that number we add the 4,067 fewer deaths registered during that period, as compared with the corresponding six months of 1848-49, the vacuum made by the cholera will be found already fully filled up; the excess of deaths during July, August, and September 1849, as compared with the same months of 1848, amounting to 13,606, having been replaced by 14,304 persons—10,237 more births and 4,067 fewer deaths. In fact, excluding immigrants from the provinces, who may be set off against emigrants to the colonies or elsewhere, there are 698 more human beings now resident in London than after the devastating disease of last autumn. This fact is highly consolatory, and tends to shew the compensating power of the laws of nature, at the same time that it indicates the power and care of our beneficent Creator.

ATMOSPHERIC INFLUENCE. In describing the peculiar weather prevalent during the most unhealthy period of last summer, I especially directed attention to the oppressive and ungenial feeling produced by the London atmosphere; which was then hazy, and, at times, appeared like a thick mist, the air being, at the same time, generally very dry. Scarcely any wind prevailed; and when it did, it was often south-west or southerly, with diverging currents. But the most remarkable phenomenon observed at that season, in reference to the atmosphere, was the frequent and daily very extensive fluctuations exhibited by the thermometer; the lowest temperature of the month of August, when so many deaths occurred by cholera, being 42, the highest 82; thus making a difference of 40 degrees. In some nights, there was even so great an alteration as 30 degrees between the warmth of the night and day time. These interesting and instructive facts are again mentioned, in order to illustrate the influence which the weather and peculiar state of the atmosphere then exerted upon public health, during the prevalence of cholera and diarrhoea; and, as many of the atmospheric phenomena have been of quite a different character, throughout the three months ending the 30th of March in the present year, when London has otherwise proved healthy, it becomes more important to notice the principal features exhibited recently, as they evidently influenced the improved sanitary state of the metropolis. During the last three months, when 2,219 fewer deaths have been registered than in the corresponding quarter of the previous year, the temperature, although low, has neither been very cold, nor subject to great fluctuations. The range of the thermometer has proved unusually small, especially throughout the first half of the quarter, never having exceeded 20 degrees in one day; and very frequently, the difference between the temperature of the day and night time was much less, being often only four or five degrees,

sometimes from seven to nine, or up to thirteen degrees. Towards the end of the quarter, but especially during the latter part of March, the variation of temperature, between the day and night time, became much greater than previously: the extent being then frequently twenty-two degrees, occasionally twenty-three; and on one night, the variation reached twenty-four degrees, which proved the most extensive range of the thermometer remarked in one day, during the whole quarter.

Throughout the entire three months, the lowest point observed was 22°, on the 8th January, the mean temperature of the week being then 30·3°; whilst the highest elevation registered was 58°, on the 2nd of February, when the average heat of the week was 41·8 degrees. Again, during the whole quarter, although cold, the weather was not inclement, the sky being generally cloudy or overcast. The wind, in the early part was often south-west or southerly. Electricity was positive; there was moderate rain and snow occasionally. About the middle of the quarter much rain fell, and in the sixth week the wind was always south-west, at first very stormy, the sky overcast, and electricity absent. This was also the case during the seventh week, the weather being then very rainy and cloudy, whilst the wind was still south-west.

The range of the barometer should be likewise noticed, in conjunction with other phenomena, as its elevation or depression always exerts considerable influence upon public health, even in salubrious seasons. During last winter, the atmospheric pressure generally ranged high, especially in the first three months of the current year, although it was less elevated in January than subsequently. In the four weeks of this month, ending the 26th, 4,388 deaths took place in London, the barometer being then always under 30 inches. On the other hand, during the four weeks ending the 16th of last March, when the range of the barometer generally varied from 30 1-10 inches to 30 4-10 inches, the metropolis became particularly healthy, only 3,649 deaths having then occurred; thus making a diminution of 739, or nearly one-sixth. The influence which atmospheric pressure exerts upon the health of individuals, seemed still more apparent when the weather became calm, and the barometer ranged under 30 inches. This was noticed during the last two weeks of March, when the mortality again increased, the deaths being then 2,193, or exactly at the same rate registered in the month of January. During the fortnight now mentioned, the atmosphere was generally cloudless, although sometimes it became overcast; the wind was generally north or east; and in six of the above fourteen days, the weather continued calm; the electricity seemed slight; very little rain fell; but in the last week, on three different days, there was some snow and sleet, afterwards followed by showers.

These particulars tend to explain the salubrity of the recent season, especially towards the middle of the quarter, when the atmospheric phenomena were different from those noticed at the early or latter parts. During the first-named period, the thermometer exhibited very moderate variations of temperature between the night and day time. But the investigation becomes even more instructive, when collateral circumstances are also considered. Thus, according as the weather got more dry or calm, and the wind assumed a southerly direction, whilst the electricity was slight, and the barometer low, the number of deaths

augmented, and sickness became more prevalent than previously. As an additional illustration, it may be mentioned, that during the four weeks ending the 30th of last March, (at which period the weather was generally cloudless, or more clear than ordinary, also calm, dry, and at the same time exhibited considerably greater variation between the heat of the day and night time, than throughout the four weeks immediately preceding), the total deaths in London amounted to 4,035; whereas, during the period, also comprising four weeks, terminating on the 2nd of March, the number of fatal cases from all causes did not exceed 3,702, making a diminution of 333 deaths, or 9 per cent. in favour of the month of February as compared with the subsequent March. During the former month, the weather was of a different description; whilst, throughout the night and day time, the thermometer indicated a much smaller variation of temperature.

The peculiar features of the recent season, and the marked increase of mortality consentaneous with some of the changes in the atmospheric phenomena, are important, as they account, in my estimation, very much for the great alteration noticed in the amount of deaths recorded at the different periods above quoted. Indeed, according to the views I entertain respecting the influence of such agents, but which I have only adopted after careful observation during several years, and more especially of late, I think that we may correctly conclude that, whenever the variation between the day and night temperature is unusually great, with cloudless, or even hazy weather, or if a calm, or only slight southerly winds prevail; and further, should the amount of electricity be small, and the quantity of moisture so inconsiderable as to make the air particularly dry, with a low barometric pressure,—then sickness will most probably abound, and more deaths be registered in consequence, than when the opposite atmospheric phenomena prevail.

The influence of atmospheric phenomena on health and disease is, doubtless, a very difficult subject to investigate, and one on which it may seem premature to give a decided opinion in the present state of our knowledge. Yet, I consider that the conclusions now enunciated are borne out by the facts brought forward. Further investigation is desirable; and I feel convinced, that if practitioners will carefully note the changes in the atmospheric phenomena during various consecutive seasons, conjointly with any decrease or augmentation of disease, and with the concurrent rate of mortality, a series of accumulated observations will thus be made, from which useful practical deductions may be derived.¹

¹ Even in the earliest ages, eminent writers discussed the questions now mooted; and amongst such authorities, Hippocrates and Aristotle may be cited as having paid considerable attention to the subject. The latter philosopher, although not a member of the medical profession, in his *Problems*, particularly the section headed *Iatrica*, examines, besides meteoric phenomena, the effects produced by rains, droughts, cold, heat, wind, vapours, and many other influences, such as food, drink, or locality, which may produce or modify disease. In addition, I would mention the works of Galen, Aretæus, and others, as containing information on these subjects. The examples of Hippocrates and Aristotle among the ancients, and especially that of Sydenham among more modern observers, are worthy of imitation by every practitioner. If this were done, much valuable knowledge might be obtained, which could not prove otherwise than highly useful in the study of the origin, nature, and treatment of epidemics, as well as of many ordinary diseases.

The influence which particular states of the atmosphere exert upon the action of remedies employed in the treatment of disease, is also an important subject for consideration. Mercury produces a much more powerful and rapid effect upon the human frame, and hence proves more efficacious in the treatment of diseases, in mild weather, if the air be moist, the wind south-west, the barometer low, and the temperature equable, than in dry frosty weather, with a north wind and a rising barometer. Purgatives, likewise, act more effectually in the former condition of the atmosphere. But tonic remedies seem to have their action promoted by atmospheric influences of a quite contrary nature. If prescribed in dry, cold, or frosty weather, with a high barometer, and northerly wind, they become more efficacious than under an opposite condition of the atmosphere. Bleeding, again, depends much on the state of the weather for its beneficial influence in inflammatory complaints; whilst depletion may be employed to a greater extent at one time than at another. As a general rule, it may be affirmed, that patients bear bleeding better in cold dry weather, with a northerly wind, and high barometric pressure, than under other circumstances; and in all inflammatory diseases, requiring venesection, it will prove more beneficial in these conditions, than when the weather is moist, the wind southerly, the barometric pressure low, the temperature elevated, and the atmosphere clear. I might extend these remarks to other classes of remedial agents; but enough has now been said to shew the influence which the state of the weather and atmosphere exert in modifying the action of remedies upon the human constitution.

CLIMATE. The state of the barometer, hygrometer, and thermometer, should be always examined, especially in connexion with any prevailing epidemic, as well as the direction of winds, the electrical condition of the atmosphere, and the aspect of the air, whether clear, overcast, or cloudy. Much important information may be thus obtained, which will prove of the greatest value both to the philosopher and the practical physician. Indeed, I would assert, that the utility of such inquiries can hardly be rated too highly.

The effects of climate in modifying the type, and determining the mortality of diseases, admits of many illustrations, from the changes which take place in the same country in different seasons, and from the special characters which it presents in certain regions of the globe. The relation, also, which temperature and meteorological conditions of the atmosphere bear to the suitability of various medicines and articles of diet, is an interesting study, teeming with practical lessons in connection with the great subject of public hygienics. For example, in the north of Europe, mercury is more safely given in large quantities than in the south; alcoholic stimulants are less baneful in Russia than in Italy; whilst animal food is more essential in Lapland than in Spain.

The effects of certain *Winds* upon health are well known. In Great Britain, the dread of the *East-wind* is as universal as it is just: in the smiling regions of Provence, and the south of France, the *Mistral* is as great and as dreaded a foe to health and life: and in Italy, so much over-lauded for its climate, a continuance of the *Sirocco* seems to annihilate the energies both of body and mind.

Madrid, perhaps, furnishes more striking illustrations of the effects

of winds and temperature than any other place in the whole world. There, the *Solano*, or south-east wind, produces most powerful and sudden changes in the health of the *Madridéños*; and the icy northern blasts from the Guadarrama mountains, give rise to acute inflammatory affections of the lungs, which rapidly cut down thousands of the people. In the winter of 1829-30, the deaths from *pulmonia*¹ are stated to have been about thirty thousand. Dr. Cormack, of Putney, has kindly shown me his MS. diary, written in the Spanish capital during the winter of 1839-40, in which he notices the hospitals being suddenly crowded with cases of pneumonia, as a result of the piercing north winds, which were then, for weeks, continually whistling through the streets and common-stairs. The same gentleman also informs me, that palsies and apoplexies, notoriously so common in Madrid, occur with greatest frequency when the wind blows from the snow-clad Guadarrama mountains. From the want of trees and other topographical peculiarities, the air of Madrid is generally dry and searching, which has given birth to the well-known Castilian proverb—

“ El aire de Madrid es tan sutil,
Que mata á un hombre, y no apaga á un candil.”²

This piercing air, while it is most lethal to the acclimated, is still more deadly to strangers, who are slow to learn that in Madrid, in all seasons, it is needful to be provided with the ample cloak, as a shield from the arrows of death. I cannot help thinking that, in our country, all classes are strangely reckless in their winter clothing.³

The great alternations of temperature which prevail in Madrid, and also in large districts of Spain, explain the common custom of the Spaniards, wrapping themselves in cloaks, even in the middle of summer,—*embozandose en las capas*, to use the popular phrase; and this custom is fully justified by the truthful couplet already quoted.

From various causes, but particularly from those alluded to, Madrid is the most unhealthy capital in Europe, the population being sustained by constantly absorbing the inhabitants of the provinces. The average mortality is at least one death in every twenty-eight inhabitants; whereas

¹ The term usually applied to the pulmonary inflammations, which, like an epidemic pestilence, so often desolate this city, having about 200,000 inhabitants.

² Thus translated:—The air of Madrid is so subtle, that though it will not put out a candle, yet it will extinguish a man's life.

³ The following interesting passage I have much satisfaction in quoting from Dr. Cormack's diary, as it bears out the above remarks. “20th January, 1840. The miserable look and melancholy cry of the *Aguadors* (without partaking of their beverage), has made me shiver all day. What can the loungers at the *Puerta del Sol* mean in such weather, by drinking tumblers of cold water? The air is most cutting. It reminds me of the ‘*east haars*’ of Edinburgh; for, like them, it makes me feel as if being dried and flayed, outside and inside. In the streets of Madrid, the people wisely avoid breathing, except through the folds of a handkerchief or veil, or both. The chest, too, is well protected, particularly by the men, whose ample cloaks are doubled across their breasts and brought up over the throat to the mouth. The women, I observe, have generally the head ill-covered; but they never expose the throat and chest, like the ladies of England, so scornful of health in their devotion to an unseemly fashion. The scanty covering of the heads of the *Madridéñas* is certainly surprising. In ordinary weather, they go out with merely a fold of the slight veil (*mantilla*) embracing their hair. A few, but I am told an increasing number, have the *mantilla* so constructed, as to afford a warm cover or hood to the head. At night, and in very cold weather, it is common to tie a handkerchief round the head, under the *mantilla*.”

in London, it is only one in every forty-two persons, or, in other words, actually less by one-third. The difference between the temperature of the day and night, and even between different sides of the same street, are causes of mortality, which well illustrate some points in our own vital statistics, and which are applicable to the explanation of many sudden variations in the rate of mortality, and prevalence of disease. In Madrid, the Manzanares is often covered with ice at night, which disappears during the day; and in summer, when the Solano blows, the city is a furnace, the thermometer being often above 90° F., whereas in winter, it frequently falls below 32° F. During the forenoon of the same day, there sometimes prevails so much as twenty degrees of difference in temperature between the two sides of one street!

Speaking generally, in reference to the salubrity of different climates, very erroneous notions are frequently entertained on the subject, particularly by non-medical observers. Opinions are too often formed from the sensations made upon the individual's own physical frame, not from well-founded and enlarged experience. An agreeable climate is not always the most salubrious, although the animal feelings are certainly often thereby more gratified than in countries where the atmospheric impressions seem of a different description; whilst good health and longevity are more frequent in the latter than in the former. Take the south of France or even Italy, so much esteemed as salutary retreats for invalids. Having visited both these regions, and made inquiry among the inhabitants, into their greatly over-lauded climates, I soon satisfied myself that the views commonly entertained, were founded on exaggerated reports. The conclusion I came to was adopted after much personal communication with the medical practitioners of many parts of Italy, and after attendance in various Italian hospitals and visits to the cemeteries, where foreigners, but English chiefly, were laid in their lonely graves. It is indeed sad to think how many of our countrymen, who cross the Alps in search of health, in place of it find only a tomb in the reputed Elysium of Italy. The climate, especially of the southern districts, is no doubt delightful; and visitors, if in health, enjoy its balmy breezes, splendid sky, and exhilarating atmosphere; at the same time that surrounding nature seems, in many places, like an earthly paradise. Nevertheless, diseases are here quite as serious as elsewhere, are generally more rapid in their course, and often equally uncontrollable by treatment; whilst the average limit of human life is, by no means, prolonged to the same term of years, which we so frequently meet with in the more northern and bleaker countries of Europe. Animal life seems far more rapid in the Italian peninsula, and the physical frame becomes quicker developed; but it decays sooner than in England, where longevity is much oftener observed amongst the inhabitants than in the former country.

TYPE OF DISEASE. The common type, or diathesis, of most diseases during the last six months, has proved, as has been commonly observed for several years, asthenic; and accompanied in many cases with great debility and exhaustion. So much has this been marked, that the patients have often required support and tonic treatment, although the symptoms have appeared to partake of such an inflammatory character, as to warrant antiphlogistic measures. This feature, though mani-

fested in a very large proportion of the cases met with during the recent season, has been less observed than in the period immediately preceding, when almost every form of malady assumed, if not in its early stage, at least soon afterwards, a decided asthenic character. This result was especially noticed when influenza proved so prevalent and fatal, more than two years ago. Again, a similar peculiarity was perceived in the malignant epidemic of scarlatina, which occurred in the winter of 1848-49. Lastly, the same feature was exhibited, but in a still more remarkable degree, in the cholera, diarrhoea, and dysentery, which prevailed during the months of July, August, and September of last year, and carried off 15,512 persons. Thus was produced a much larger comparative amount of mortality than had ever been previously recorded in London, since the great plague, upwards of 184 years ago; at which time, as in last autumn, infinitely more deaths were reported, than, it is fervently hoped, will be ever again witnessed in this mighty metropolis of England, now teeming with its 2,300,000 inhabitants,—the emporium of intellect, the centre of civilization, and forming the largest mart for commerce which exists, or ever has existed, in the universe.

24, Brook Street, Grosvenor Square,
April 1850.