decision of the impartial part of the profession, whether the important question, the dissimilarity or non-identity of syphilis and gonorrhœa, be not pathologically established. If this has been done, the object of this paper has been attained. If it has not, it will form the subject of a more extended investigation at an early opportunity.

ART. III.—*Notes on the Climate and Diseases of the City of Cork.* By JOHN POPHAM, A.B., M.B., Physician to the Cork North Infirmary. (Dublin Journal of Medical Sciences, Volume Fifteenth, p. 290. May 1853.)

The city of Cork lies in an irregular valley, which is open to the east and west, but is confined by hills at the north and south sides. On the west it is connected with the fertile valley of the River Lee, which, rising from the secluded mountain lake of Gougane Barra, so well known for its romantic scenery, flows in a devious course through a country of unexampled beauty until it reaches the city of Cork, where, receiving a large tidal accession, it is rendered navigable to its mouth for vessels of considerable burden. When the Lee is about a mile west of the city it divides into two channels which gradually diverge, but re-unite again, thereby insulating a considerable tract, upon which the main part of the city is built. This tract is not free from the defects natural to its low position, and being permeated by some small streams from the main branches, inundations occur when the river is swollen by heavy rains and high tides, especially when the latter are driven in by an easterly wind. From this cause the city anciently derived its not very flattering name; Corcagh signifying a morass. Before the marshes were drained, the city was small, occupying chiefly the present north and south suburbs, so that when Dr Gerard Boate, physician to Cromwell's army, published in 1642 his *Natural History of Ireland*, he assigns the *town* of Cork but the fifth or sixth place, ranking it with Londonderry, and after Dublin, Galway, Waterford, and Limerick.¹ Since then art has remedied many of these disadvantages, and places within the arms of the river have been rendered eligible sites for streets, some of them, strangely enough, retaining their popular name of Marshes. The smaller inosculating channels have been arched over; the river has been confined by handsome quays to its two divisions, and the main branches have been deepened, so that the tide rises to an elevation varying from six-

¹ Boate's *History of Ireland*, p. 6.

teen to twenty-one feet at the bridges, thus allowing the large Channel steamers to load and unload in the midst of the city. Most of these changes have been effected within the last century.

The excellence of Cork harbour for its security, and the facilities for trade which it affords, have produced slow but certain effects. Still, regarding Smith's estimate in his History of Cork as correct, namely, that the city trebled itself in the forty years preceding 1749,¹ when he wrote his work, and taking his return of 7366 houses in 1732, with a probable population of seven to a family, or 55,769 persons;—the ratio of the progress of Cork in size and population does not seem, according to the last census, to have been proportionate.

If, however, we take up Smith's map of the city, published in 1750, we shall obtain juster notions; the whole aspect of Cork, with the exception of the churches, having become so changed, that without these landmarks it could now be scarcely recognised.

The insular extent embraced by the north and south channels being fully occupied, presents limits rather detrimental to the commercial development of the city. There are no sites, either, for handsome squares, such as are seen in other cities. The rising grounds, therefore, north and south of the river have been availed of for terraces and villas, delightfully open to the sun, and affording many of the advantages of a more genial climate; several of these are occupied by merchants, who convert their shops or warehouses in the flat of the city to purposes of business. That part of the northern hill which is to the west of the city constitutes the delightful locality of Sunday's Well, the Montpelier of Cork as it was called, once so famous for the health and amusements of the citizens, and now covered to the water's brink with seats and gardens. The continuation of this hill below the city, and leading to Glanmire, has also been largely built on, though the houses have not much uniformity; so that, viewed from the river, it looks like a distant city, and may be justly named New Cork. These picturesque terraces, forming the background to the charming scenery of the Cork river, have added much to its effect, giving the grouping and colouring of art to the graceful outline of nature. The northern hills swell abruptly in some parts from the river, and are fringed to the top with trees, and spotted with villas, some on a scale of almost princely magnificence. The green richness of the plantations in summer, and their mellow tints in

¹ Smith's Cork, vol. i., p. 401.

autumn, afford views which are unrivalled, and make the fame of the Cork river no idle boast. The road leading to Glanmire skirts the margin of the river for nearly three miles, and forms a most agreeable resort. The river runs due east for this distance, and at Blackrock Castle it bends to a south-east direction, forming the grand expanse of Lough Mahon. Some of the beauty of the river near the city has been sacrificed to utility. It used to spread itself over a large space, looking, when the tide was full, like an extensive inland lake; but the channel became choked with the alluvial deposit rolled down by the current, and required a large amount of labour and expense to keep it navigable. An embankment was thrown out for the space of a mile, separating the bed of the river from the part covered by the tide; and this ground has been lately reclaimed and set apart for a city park, along which the Passage Railway winds its course.

The *physical features* of the vicinity of Cork require a few observations. A valuable paper has been written by Mr Weaver on the Geological Relations of the South of Ireland. He observes, that high mountain chains commence in the western borders of Kerry, and extend thence in an eastern direction to the county of Cork, between the Rivers Lee and Blackwater, giving the picturesque appearance which distinguishes the scenery of these rivers. These chains are not so continuous as to present an unbroken range, but send off various lateral elevations, running nearly parallel to them, and intersected by glens. Between the two principal parallel chains, wide and deep valleys lie in a longitudinal direction, and form the channels of streams and rivers. The height of these mountains in Kerry is considerable: that of Gurrane-Tuel, the highest point in Ireland, is 3410 feet above the sea-level; but this elevation declines gradually to a few hundred feet. The hills at the north and south of the River Lee form part of these mountain ranges.

The *geological character* varies at different sides of the river. The north side consists of graywacké and slate; the sandstone is of a deep red and coarse structure; it is in parts very hard and difficult to be worked, but varies from the hardest grit to clayey rubble. In boring the tunnel of the Great Southern and Western Railway, much greater difficulty was experienced in working this than was expected. It was curious, that the very great hardness frequently yielded to the chemical influence of the atmosphere,—some kinds, when long exposed, becoming totally disintegrated. This graywacké formation extends along Glanmire. An isolated

limestone strip, about two miles long, is found at Blarney, containing but few organic remains.¹

The southern hill of the Lee consists of limestone of the transition series, and forms a continuation of a band varying in width from five miles to half a mile. It commences easterly at Youghal Bay, occupies the smaller islands of Cork harbour, then appears at the peninsula of Blackrock, and continues to keep the southern bank of the Lee until its junction with the Bride, when it leaves the former river, and keeping to both sides of the Bride for a short distance, ceases at the left bank, but continues at the right to Castlemore Castle, fifteen miles from Cork. This is flanked by by more or less elevated ridges of graywacké and slaty rocks, with which it interstratifies at their confines. The angle in which the strata are inclined to the horizon approaches at times near the vertical, but is chiefly between 70° and 80° , dipping to the south.

The organic remains of the Cork limestone were mostly determined by the careful scrutiny of the late Mr Samuel Wright of Cork, aided by Mr Sowerby. He derived them from the quarries of Evergreen, close by the city, and Ballinlough, on the south of the Lee. Of Invertebrata there are found;—of the crustacea, some undescribed trilobites; of mollusca, cephalopoda, comprising some orthoceratites and nautili; of conchiferæ, various species of productæ and spiriferæ, also some polyparia and crinoidea. Traces of Vertebrata also have been found. Casts of the vertebræ of fish were discovered by Miller. In the Blackrock quarries some beautiful specimens of amethyst have been dug up. Wavellite has long been found at Tracton Abbey, a few miles from this city, in sufficient quantity to supply the London mineralogical market; and, during the last year, a very pure silica, fitted for the manufacture of the choicest porcelain, has been discovered at Rostellan, on the eastern side of the harbour.

The difference of the soil at both sides of the river was noticed by Smith. "The north side," he says, "being coarse and hilly, is not so well cultivated as the opposite, which, being a fine limestone soil, affords plentiful crops to the industrious farmer.² The earth of the north side is mostly a yellow, gritty mould, which requires lime. Clay for bricks and potteries is found in abundance near Douglas, two miles from Cork.

¹ Transactions of the Geological Society of London, Second Series, vol. v.: "On the Geological Relations of the South of Ireland," by Thomas Weaver, Esq., F.R.S.

² Smith's Cork, vol. i., p. 354.

In the vicinity of the city, the numerous valleys which lie parallel to the hilly ranges, or cross them, are frequently overflowed, forming large bogs. In the basin of the Lee, to the west of the city, a vast marshy tract exists, extending to the very margin of the city, and in winter, when much rain has fallen, lying submerged for days and even weeks. In very high floods, the Dyke Walk and houses are inundated. Another of these large boggy tracts extends for miles between Blarney and Cork; and at the south side a deep and almost impassable morass, called the Ballyphehane bog, reaches from Evergreen to Douglas, and is crossed by the Bandon Railway, in forming which peculiar engineering difficulties were experienced from the yielding nature of the soil. Besides these fresh-water marshy tracts, there are others to the east of the city partly saline, being exposed to the tides; to them belongs the ground lately reclaimed from the river. The constant evaporation from these large humid surfaces must keep up a peculiar hygrometric condition of the atmosphere.

Indeed, the city of Cork has obtained a degree of *notoriety for rain* much more than it deserves. A Cork mist, like a Killarney shower, is a common jest with travellers. This charge of perpetual humidity, brought against the climate, may certainly receive some countenance from the miry streets, which strike female tourists with dismay. It is, unfortunately, a question as yet unsettled, though affording scope every year for much civic eloquence, whether it is the duty of the private citizens, or of the public commissioners, to keep our *trottoirs* clean.

On making a careful examination of the registry of the weather, taken at the Royal Cork Institution by Mr John Humphreys, the Librarian, I find that the average annual fall of rain for twenty-five years, to the end of 1852, as determined by the pluviometer, amounts to 38·096 inches; this high average being caused by the six years from 1846 to 1851, both inclusive, in which it rose to the very large amount of 51·542 inches. For the twelve years ending in 1839, the annual average did not exceed 34·212 inches. The extremes of variation are very great,—from 25·438 inches in the year 1844, to the unprecedented quantity of 60·375 in 1848. The difference of rain, in inches, between the years 1845 and 1846 is very remarkable, there being an increase of twenty inches in the latter, which was the year of the potato blight; the rains in 1845 being 32·783, and in 1846, 52·553 inches. From 1846 it continued to increase to 60 inches in 1848,—a period in the annals of this country terribly distinguished for famine and fever, from which year it has declined to

37·653 in 1852,—affording thus a rational expectation of the return of the seasons to their ordinary average. It is curious, that the end of the year 1852, in which so much rain fell in other places, was not characterised in this part of the country by an amount more than usual, though the number of rainy days was considerable. In the month of May 1844, we find the least monthly amount only 0·144; and in December 1847, the greatest, being 16·171 inches; in January 1851, 14·561 inches fell. In dividing the annual quantity of rain by the seasons, we find, in the year 1852, for winter (including the months of December, January, and February), 12·832 inches; for spring, 5·413; for summer, 8·030; for autumn, 11·372; the quantity of rain during the winter season is rarely less than one-third of the whole annual amount, and usually exceeds it; the least quantity is in the spring.

In calculating the fall of rain in Cork, I wish to state, that the Royal Cork Institution, where it was estimated, lies on the borders of the river, in the flat of the city, and the rain-gauge is kept at a height of about twenty feet above the sea-level. Recent observations have elicited the curious fact, that nothing is more variable than the quantity of rain falling in places near each other in horizontal distance, but of different degrees of elevation, local causes exercising a considerable influence. This variation was found by Colonel Portlock to exist in Cork. In an interesting paper, read before the Cuvierian Society, the quantities noted at the Cork Institution and the barracks, in the year 1848, were respectively 48·613, and 33·410 inches,—thus making the amount which fell in the flat of the city one-third greater than at the barracks, which are built at a considerable elevation above the city, but less than half a mile in horizontal distance. “The elevation of the barracks places them,” he observes, “in a drier stratum of air, and the form of the hill on which they stand allows air charged with moisture to spread easily and descend.” Whether this reasoning be founded on correct principles, I cannot say; but it is curious that a conclusion opposite to it is arrived at by Mr Miller, who gives, in a paper printed in the Philosophical Transactions for 1849, the results of his interesting experiments on the fall of rain at various heights in the lake district of Cumberland and Westmoreland. His theory is, that the degree of humidity increases with the elevation, arriving at its maximum at about 2000 feet above the level of the sea.¹

¹ Philosophical Transactions, vol. cxxxix., p. 73.

The number of rainy days in Cork is not so great as might be anticipated from the annual amount of rain. In the register kept at the Cork Institution, the fall of the one-fiftieth part of an inch is considered to constitute a rainy day. Of these the number during twelve years, from 1841 to the end of 1852, gives the yearly average of 134, which is less than in many other localities. The extremes are indeed very distant, varying from 96 in 1843, to 172 in 1848, the latter number being in correspondence with the large amount of over 60 inches which fell in that year. Distributed among the seasons, the average of the twelve years gives for winter, 39 days ; for spring, 30 ; for summer, 29 ; for autumn, 36. The maximum monthly number of wet days was 25 in January 1851 ; the minimum, one day in May 1844. The month of January afforded the greatest average number of rainy days, the mean of twelve years being fifteen days. The months of June and July gave the minimum of about nine days. The months of October, November, and December of 1852, and January of this year, have been unprecedented for the number of rainy days, which amounted to 80 in the four months.

But though the mean number of rainy days is comparatively small, the amount of variable weather is considerable, there being an average of 70 days in which showers, mists, or fogs occur, but not yielding an amount of water appreciable by the rain-gauge. Snow is rarely seen more frequently than three or four times a year ; in the month of February of this year, when Dublin was visited by such heavy falls, Cork had it very lightly. Frost occurs about twenty-four times in the course of the year. The average of seven years, from 1846 to 1852 inclusive, gave but twenty-four nights in which the self-registering thermometer descended to 32°, or below it. In the order of the years, the numbers were 34 for 1846 ; 29 for 1847 ; 39 for 1848 ; 14 for 1849 ; 24 for 1850 ; 19 for 1851 ; and 10 for 1852. Hail rarely falls more frequently than five or six times in the year ; on May 9, 1851, hailstones fell equal in diameter to the $\frac{7}{16}$ ths of an inch ; but this storm was general in Ireland, having done great mischief in Dublin. Thunder and lightning sometimes happen but once, seldom more frequently than four times in the year. Meteoric phenomena are very unusual ; a note in the registry on September 4, 1851, states that a funnel-shaped cloud, like a waterspout, approached at 12 o'clock at noon very near the ground, rain following two hours after. We possess little information of any exactness upon the state of the climate before our own time. In Dr Roger's Essay on the Epidemic Diseases of the City of Cork,

published in 1734, we find some tables of the weather, but too loosely noted to be much depended on. For twelve months from 1st May 1721 to 30th April 1722, his observations were the following:—Rain, 80 days; mist and showery, 119; fair, 139; snow, 4; hail, 3; days not given, 20.¹

The *variability of the atmosphere in density* is such as may be expected in so changeable a climate. The results of the barometric tables for the seven years between 1st January 1845 and 31st December 1851, are the following:—The highest point of elevation which the barometer reached in that period was on February 11, 1849, when it rose to $30^{\circ} 88'$; the lowest point of depression for the same period was on January 15, 1851, when the mercury fell to $28^{\circ} 61'$; thus giving for the seven years an absolute range of $2^{\circ} 27'$. The mean of the absolute maximums of *each* of the seven years was $30^{\circ} 60'$; the mean of their absolute minimums was $28^{\circ} 71'$, yielding thus a mean absolute range of $1^{\circ} 89'$, and differing by $38'$ from the total absolute. The mean of the highest monthly pressure for seven years was 30.37° , the mean of the lowest, 29.27° ; the mean annual pressure, 29.85° . The monthly range for seven years gave for January an interval of $1^{\circ} 33'$ between its highest and lowest points; for February, 1.17° ; March, 1.33° ; April, 1.13° ; May, 1.07° ; June, 0.94° ; July, 0.86° ; August, 0.81° ; September, 1.18° ; October, 1.24° ; November, 1.43° ; December, 1.41° . We find thus, that the months of November and December afford the greatest range, while those of July and August afford the least. The mean of the whole is 1.16° . The time when the pressure was greatest occurred in the autumn and winter months, and the times of least pressure at variable periods in the same seasons, the extremes approximating in spring and summer.

The *comparative frequency of particular winds* is an important element in climatic descriptions, especially in their bearing on health and disease. In examining the registry, the great preponderance of the westerly winds over the easterly is remarkable. I have computed the duration of each wind for nine years,—viz. from 1844 to 1852, both inclusive, and have found that the average annual constancy of each at a given period of the day was the following, taken in order of frequency:—The north-west, the most constant, blew for 75 days; the west, for 72; south-west, 63; south-east, 37; north, 32; east, 30; north-east, 28; south, 27. As to the prevailing wind of each month it is very variable. In the months of January and February, the north-west, west, and

¹ Essay on the Epidemic Diseases of Cork, by J. Rogers, M.D.

south-west, contend for predominance, the former more frequently recurring than the others. In March it sometimes happens that the north-west blows for a continuance, but it is varied by a run of easterly and north-easterly gales, these occasionally, but not always, being the prevailing winds. In April the north-west blows for about seven days, the east and south-east sometimes taking the lead, and more rarely the westerly. In May the south-west prevails, but in some years, biting easterly gales occur. In June and July the south-west and west are the chief, the latter blowing about eight days. In August we again meet the north-west, diversified with the west and south-west. In September the easterly breezes again make their appearance, the three points of east, north-east, and south-east, often occupying more than half the month. In October the prevalence is disputed by the easterly points and the north-west, but the latter is the more usual. In November the westerly winds blow frequently, but sometimes in this month, and in December, northerly winds blow for several days in succession; the north-west is usually the chief. The south wind is the least frequent of all our winds, seldom blowing in any month more than four or five times, and preferring, contrary to what is popularly supposed, the colder to the warmer seasons.

The *mean annual temperature* of Cork for the three last years amounts to 51.5° ; distributed among the seasons, we have for winter a mean of 42.4° ; for spring, 50.6° ; for summer, 62.3° , and for autumn, 50.5° . The mean temperature of each month is as follows:—January, 40.2° ; February, 44.3° ; March, 46.3° ; April, 51.3° ; May, 55.3° ; June, 61.3° ; July, 63.8° ; August, 62° ; September, 58.6° ; October, 50.2° ; November, 43° ; December, 42.8° . The difference of the mean temperature of the winter and summer seasons is 19.9° , and of January and July, the coldest and warmest month, is 23.6° . The difference of the mean temperature of the successive seasons is, of winter and spring, 8.2° ; of spring and summer, 11.7° ; of summer and autumn, 11.8° ; and of autumn and winter, 8.1° ; shewing that the transition from the extremes of temperature is gradual and not sudden. This is still further shewn by the difference of the mean temperature of the successive months. Thus, between January and February we have a difference of 4.1° ; between February and March, of 2° ; March and April, 5° ; April and May, 5° ; May and June, 6° ; June and July, 2.5° ; July and August, 1.8° ; August and September, 3.4° ; September and October, 8.4° ; October and November, 7.2° ; November and December, 0.2° . Here the maximum differences are at the period of transition

of spring to summer, and the months of autumn. The mean monthly range for three years gives us 27° as the interval in January, between the maximum and minimum temperatures of 53° and 26° ; in February, 21° , between the extremes of 55° and 34° ; in March, 21° , between 57° and 36° ; in April, 28° , between 64° and 38° ; May, 31° , between 71° and 40° ; June 26° , between 75° and 49° ; July, 28° , between 78° and 50° ; August, 28° , between 76° and 48° ; September, 24° , between 72° and 48° ; October, 28° , between 64° and 36° ; November, 22° , between 59° and 37° ; December, 27° , between 56° and 29° .

The absolute range of the thermometer must be greater in proportion to the length of the period examined up to certain limits, but, estimating it during seven years, we can fairly conclude that we have very nearly reached the highest and lowest extremes which the mercury undergoes in this part of Ireland. The extremes, as given by the self-registering thermometer, were, for the highest degree, 84° on 14th June 1846, and the lowest, 20° on 17th January 1850; thus giving an absolute range of 64° . This range does not, however, occur in any one year. For instance, in the year 1850, with its lowest extreme of 20° , the absolute range was 59° ; in 1851 the range was 54° ; and in 1852 it was 53° . Thus it would not give an accurate estimate of this subject to judge by so small a period as three years.

The daily range of temperature in the several months, for the twenty-four hours, gives for January the maximum variation of 21° , and the minimum of 7° ; for February, 19° and 4° ; for March, 20° and 5° ; for April, 26° and 7° ; May, 27° and 12° ; June, 22° and 11° ; July, 23° and 8° ; August, 20° and 10° ; September, 22° and 8° ; October, 19° and 6° ; November, 23° and 6° ; and December, 18° and 6° .

The general appearance of a country is to be received as evidence of its climate, and the effects of the open air on *vegetation*, especially on that of the less hardy species of plants, allow us to form probable conclusions as to its influence on animal life and comfort. The aspect of our fields and gardens testifies amply to the mildness of the climate of the south of Ireland. If our fields are less luxuriant in summer than in less equable climates, they are in winter clothed with a perpetual green. The myrtle thrives in the open air with us almost as freely as in Portugal; though we are told by Meyen,¹ "that it perishes when so exposed in Berlin," which is nearly in the same latitude as Cork. The

¹ Geography of Plants, by F. J. Meyen, M.D., Professor of Botany in the University of Berlin. Ray Society, p. 13.

moisture of our climate, and the constant presence of clouds, prevent the atmosphere from being so much heated in the day, and cooled in the night, as in the drier and more transparent air of inland countries, thus affording a more equable temperature. It must, however, be remembered, that the physiognomy of a country depends not merely on conditions of climate, such as winds, heat, moisture, and the like, but on artificial culture; and the higher degree of cultivation usual in the neighbourhood of larger cities, if not allowed for, might mislead us. We have surer data to proceed on in the bloom of our gardens, and the number and nature of our indigenous plants. It is rare, indeed, to find a winter so severe with us as not to provide a bouquet for the florist; and one of our local celebrities¹ presented the Cork Cuvierian Society with a December wreath of forty-seven flowers, culled from his parterre, grown, with little protection, in the open air, and many of them regarded as tender plants in the parts of Ireland north of Munster. With respect to our indigenous botany, I refer, with much pleasure, to the Flora of Cork, published by Dr Power.² According to his catalogue, the number of plants in the county of Cork amounts to 1820; of which 885 are phænogamic, and 935 cryptogamic. This list has been much extended since its publication in 1845, and patient research would doubtless extend it still more. It is still below the number found in higher latitudes, Denmark having 1034 phænogamous, and 2300 cryptogamic plants.³ The great majority of our plants are to be found in a radius of a few miles from this city. The *Nymphæa* adorns the still waters of the far-famed Blarney Lake, with its spreading leaves and beautiful white flowers just rising above the level of the water. The *Pinguicula grandiflora* is found near the city. The *Trichomanes speciosum*, the elegant Bristle fern, has been met along the Lee, that classic ground of the botanist. Among the "plantæ rariores" may be mentioned, the *Medicago maculata*, *Trifolium arvense*, *Dianthus deltoides*, &c.; but it would occupy us too much to give any further illustrations.

Any thorough inquiry into the sanitary state of Cork should embrace a number of considerations. We must premise that this city was formerly the great depot of the navy

¹ Botanical Illustrations of Climate, a paper read before the Cork Cuvierian Society, by Alderman Dowden.

² Fauna and Flora of the County of Cork, by Drs Harvey and Power, and Mr John Humphreys.

³ Meyen, p. 3.

provision trade, and though something is still done in this line, the adversity with which the whole country has been overwhelmed, and the many rivals which free trade has encouraged, have rendered it no longer her staple export. In the north outlets of the city were situated the abattoirs, and the ill consequences to health resulting from these slaughter-houses have been often deprecated. The lanes and alleys along the old Blarney road were and are still the depositories of the offal in every state of putrefaction, and the hand of reform is yet unraised to abate this Augean nuisance. Hence, though this suburb is delightfully situated for health and enjoyment, it is disgraced by every species of contamination ; and whatever progress the rest of the city may have made, this portion continues,—as it was described by Dr Rogers in 1720,—uncleansed, and by consequence unhealthy. In every epidemic we find it severely visited, and in the late fatal epidemic fever it supplied the hospitals with most of their patients.

Another impediment to the progress of sanitary measures arises from the influx of peasants from the rural districts resorting to the city for relief, or for emigration. The latter classes of persons coming to Cork for embarkation, and having little surplus money, flock into the cheap lodging-houses, already centres of contagious disease, and thus spread the evil. No limit can satisfy the cupidity of the owners of these miserable abodes. Some of them are cellars, with no possible ventilation ; while in others, more favourably circumstanced, the crowding together of numbers in a space vastly disproportioned, produces like dangerous effects to health. Hence these houses have been long notorious as dens of moral and physical disease, and the public voice has often called, but with little effect, for a remedy. Whether the new Lodging-house Act will meet the evil, remains to be proved.

Another cause, promoting an insalubrious state of the city, is found in the intra-urban interments. The graveyards of the churches are of very limited space, and, being nearly all situated in the centre of poor and populous parts of the city, they cannot but exercise an injurious influence. One of the chief medical establishments of the city, the North Infirmary, is built on the skirts of a graveyard, and, independently of the depressing effects naturally arising from the associations of such a place on the imaginations of the sick, a still greater evil arises from the malarious influence resulting from the continual dredging up the unctuous soil for fresh interments. This was found so great a nuisance during the late fever

epidemic, that the General Board of Health had to command the graveyard to be closed against new burials. It is to be regretted that the vested rights of individuals, and the want, though urgent, of a suitable cemetery without the city, prevent the redress of this grievance.

In one essential article of health, *good water*, a great advance has been made of late years. The waters of the Lee, brackish from the tide, were formerly in use among the poor, and caused various abdominal diseases. Public fountains have been lately constructed in all the populous districts, affording a sufficient supply. The water used by the more affluent citizens is particularly free from impurity. An analysis of the pipe-water made by Professor Davy, of the Royal Dublin Society, yielded only 7·20 grains of solid matter in the imperial gallon, being in the proportion of $\frac{7}{9745}$ to the whole, chiefly consisting of the carbonates of lime and iron, but in quantity so small as not to interfere with common use. When we compare this amount with the quantity of solid matter in the water supplied to London, the purest of which contains $13\frac{1}{2}$ grains, or double the amount, we have reason to be content with our local superiority in this important auxiliary to health.

Before speaking of the *endemic diseases* of Cork, we may say a few words on the epidemics which have, from time to time, visited the city. A general history of epidemics is still a desideratum in medical literature; but the recent establishment of the Epidemiological Society of London promises to do much in this wide field. It is probable that, in the writings of the old annalists, such contagious maladies as were rapid and deadly in their effects were called "plagues," otherwise we must suppose our western isles to be more frequently visited by oriental pestilences than is at all probable. The earliest of these epochs is the year 548¹, when we are told that "Munster was afflicted with a great plague." Whether this was the terrible pestilence which depopulated the earth in the reign of Justinian, A. D. 542, lasting for fifty-two years, and so graphically described by Gibbon,² we cannot say. The years 664 and 685 witnessed also fatal plagues. Recurrences of these pestilences are chronicled as occurring in 1348, 1361, 1370, and 1383. These dates correspond with the four great epidemics of the "Black Death," that terrible pestilence of the fourteenth century, which desolated the known world. "Ireland," says Hecker, "was much less

¹ Bede, Hist. Eccles., lib. ii., cap. xxvii.

² Decline and Fall of the Roman Empire, chap. xliii.

heavily visited than England.”¹ The next epidemic pestilence noticed in our annals, occurred in 1504; but whether this was the petechial fever which then, for the first time, began to attract notice in Spain and Italy, it is difficult to say. In 1528 we find it recorded that “a malignant disease, called the sweating sickness, raged in Cork.”² We may take the opportunity here of correcting an error into which Hecker falls, in stating that this hidrotic disease “did not extend westward to Ireland.”³ In the British Isles, he observes, neither Irish nor Scotch suffered; and he endeavours to explain it by some peculiarity in the English constitution, or “their gluttony and rude mode of life!”⁴ He concludes hastily that historians are silent about the extension of so calamitous an event to Ireland.

In the years 1535, 1547, and 1607, dreadful visitations of pestilences are recorded, of the nature of which we can form no idea. In 1650, plague is again noted, probably the epidemic dysentery, so fatal during Cromwell’s visit to Ireland. From this to 1708 we have no account of any epidemic; but the last date, and that of 1718, are assigned by Dr Rogers, in his work on the Diseases of Cork, as remarkable for typhus fever and malignant dysentery. The same author cites 1731 as a fatal year from smallpox, and 1740–41 from fever and dysentery. The years 1762 and 1782 were notable for a widespread and fatal epidemic of influenza. The last year of the past century was a famine year, and the present century opened disastrously with famine, and its not uncommon sequela, typhus fever. Over 4000 persons, writes Dr Milner Barry,⁵ were attacked in Cork, of the poor; so that, in 1802, it was judged necessary to open a district fever hospital in the city.

In 1803 another very severe outbreak of influenza occurred, and in 1810 contagious fever became again general; great destitution existing among the poor. This returned, in 1814, in a mitigated form; but a scanty harvest occurring in 1816, typhus broke out the following year, and over 8000 cases of it were met with in Cork and its vicinity.⁶ This epidemic prevailed all over Ireland, and also in Great Britain; and in 1818, a Bill passed the Legislature to establish Fever Hospitals in Ireland. In 1822 and 1826, a return of

¹ Hecker’s Epidemics of the Middle Ages. Sydenham Society Ed., p. 27.

² Vide Smith’s Cork, vol. ii. p. 35.

³ Hecker’s Epidemics of the Middle Ages. Sydenham Society Ed., p. 247.

⁴ Ibid., page 294.

⁵ Report of Cork Fever Hospital, in the Edinburgh Medical and Surgical Journal, vol. xiv. p. 117.

⁶ Practical Observations on Typhus Fever, by A. Callanan, M.D.

fever took place in Cork, as well as other parts of Ireland, and has been described by the able pen of Dr Graves.¹ In 1832 a new pestilence visited us in the form of that fearful epidemic, the Asiatic cholera, in its slow but certain progress through the world. In 1837, one of the most fatal and universal epidemics of influenza within our memories occurred, followed the next year by an outburst of fever. In 1841 and 1842, a violent epizootic swept off thousands of cattle; and in 1846 and 1847 occurred that fatal period in our history, when, to the miseries of want and despair, from the failure of the potato crop, were added the ravages of a widely diffused and mortal epidemic of typhus fever. In March 1849, we were again visited by the cholera. But since this period our country shews some sign of recovery from her almost exhausted vitality, and general health and public prosperity seem settling on a more stable foundation.

Such is a succinct account of the chief epidemics occurring in the city of Cork from the earliest record to the present time; and there are few countries in the world where these terrible national scourges commit such havoc as in ours, from the improvident recklessness of the people. The celebrated historian, Niebuhr, has alluded, with his usual acumen, to the singular influence which fatal epidemics exercise over the character of nations, whole periods of history being explained by their appearance or disappearance. All great epochs of moral degradation are connected, according to him, with great epidemics. In the succeeding generation every thing perishes, and barbarism returns. His observations have much truth, for when men get reckless of life they care little for the means of preserving it; and when, on the other hand, the fear of death absorbs all the thoughts, the framework of society is broken. To trace the effects of these epidemics in our own countrymen would afford a painful interest. Ireland, in the late epidemic, seemed like some "city of the plague" in the middle ages. Terror was in every breast, the dark robe of mourning was seen in every family, and country districts, once populous, now appalled the heart by their loneliness. Hordes of human beings, enfeebled by sickness and attenuated by want, rushed into cities for an asylum, meeting their fate with a resignation like the apathy of despair.

¹ See his Clinical Lectures, edited by Neligan, vol. i. Lecture vii. The Irish School of Medicine has, alas! to deplore the recent loss of this accomplished physician, one of its brightest luminaries. "Quando ullum inveniet parem?"

Of *endemic diseases* we may begin with Fever, as always lurking in this city, liable to be drawn out on any violation of the laws regulating health. It would almost appear that the Irish constitution has a greater affinity for fever than that of other nations, as no sanitary measures can wholly extinguish this disease, which smoulders on until some spark kindles it into a flame. It follows the Irish labourer even to other countries, and Glasgow and Liverpool trace their fevers to the quarters of the Irish, and cast on them the stigma of originating the disease. It must be admitted that most of the stimuli which quicken the seeds of fever exist among the lower classes of Irish,—deficient and bad food, intemperate habits, neglect of personal cleanliness, and the *effluvia accumulated from numbers herding together, like gregarious animals, in ill-ventilated dwellings*. These hurtful habits the Irishman does not leave behind him when he emigrates. The evil effects of over-crowding were fatally evident from the pressure on the different workhouses during the famine, shewing that, of all the auxiliaries to health, pure air is that which can be least neglected with impunity. It is to be feared that, unless due precautions be taken, the practice which prevails in this city and elsewhere, of congregating hundreds of young females in industrial establishments, where confined space and a not healthy occupation are combined, will lead to evils which are likely to lessen the utility of these institutions.

Among diseases which appear to travel in cycles, *Intermittent Fever* may be included. It was, as might be expected from the marshy nature of the district about Cork, at one time one of our most common affections, and “the fever and ague” were as familiar words in this city as in the swamps of the Mississippi. It is curious that, without any obvious cause, this disease, for a number of years, totally disappeared among us, so that during my connection with the North Infirmary, as physician, the only instances I witnessed for more than ten years, occurred among sailors coming to this port in corn vessels from Galatz, and other places along the Danube; and some of our medical pupils passed their noviciate without witnessing a case of the disease. The first indications of its return were seen in March 1850; but the persons attacked were from particular localities. It continued till July and August, when it disappeared until the March of the following year. Males were much more frequently affected than females. No age escaped, from the infant at the breast to the threescore and ten, but chiefly it seized on persons in the prime of life. Some of the cases

came from the high and dry grounds and the sandstone formations, such as the Fair Hill; others from the humid soil and limestone of Evergreen and Blackrock.

Many of the lanes in the suburbs had it, and persons residing along the river quays did not escape, though it was capricious in its selections. In the Cork Union Workhouse, situated near a bog, a number of cases occurred, and the districts of Killeen, Whitechurch, and Ballincollig, were largely attacked. The type was chiefly tertian; some cases of quotidian were met; quartan was rare. It was very amenable to quina; but unless the remedy was long continued, the disease relapsed.

Another disease, once frequent in Cork, then disappearing almost totally, and lately returning with great severity, is *Dysentery*. In our annals, dysentery held the second place for fatality among the "*leaguer sicknesses*" of Ireland. In 1796 it committed great ravages in the ranks of the Irish Brigade quartered in Cork; it was an autumnal disease, and followed generally in the wake of fever. It continued for a few years after; but the next account of it, as an epidemic, is to be found in Dr Cheyne's valuable paper in the Dublin Hospital Reports.¹ According to the late Dr Milner Barry, of this city, it occurred among the poor chiefly after a wet summer, and carried off one in every three attacked. It was supposed by Dr Barry to have been caused by bad water; and he states that in the old Cork Barracks the troops had been supplied with brackish water from the Lee, and were attacked with dysentery, but Surgeon Bell had a supply of pure spring water brought to the Barracks, which caused the disease to disappear. The decline of dysentery in Cork was, perhaps, too hastily concluded by Dr Barry to be due to the erection of public fountains, and a better supply of good water. It certainly so far declined, that for a number of years it had scarcely an existence in the city. In a statistical report of the diseases admitted into the North Infirmary, during five years from 1838 to 1843, which I drew up for the Medical Section of the British Association, at its Cork meeting, I found that but seven cases of this diseases had been received into the hospital.² But the potato failure in 1846 and 1847 brought back the disease in all its virulence, and in a highly contagious form, being united with continued fever. Since the cessation of the epidemic, dysentery has remained in this city as an endemic, though, as we have

¹ Dublin Hospital Reports, vol. iii. p. 11.

² Report of the British Association for the Advancement of Science, for 1843, p. 84.

seen, the want of good water is no longer a cause. The dietary of workhouses has certainly a tendency to promote the disease, and it is one of the chief causes of death in these institutions, chiefly among the very young, and the aged and infirm. Of 1101 deaths which occurred in the Cork Union Workhouse, from February 1852 to February 1853, 131, or one-ninth, were caused by dysentery, besides those cases where it complicated and hastened the issue of other diseases. But it would be wrong to conclude that all these persons were first attacked while in the workhouse; a great number were brought in from the electoral districts in a hopeless state. The change of diet has been too sudden and too absolute for the poor; they do not understand the mode of preparing the Indian meal for food, and have not the means of cooking it properly. Besides, they are obliged to use an article of inferior quality.

Another disease resuscitated after the potato failure was *Scurvy*. The disease of higher latitudes had become almost unknown until the year 1847; the only cases in our hospitals being of sea scurvy among sailors, chiefly of guano vessels, the continued exposure to the vapour of ammonia in these ships appearing to act as a determining cause. We could assign no obvious cause for the epidemic of land scurvy; in some the excessive use of tea or coffee was assigned by them, but this is no rare abuse. It prevailed very much in the workhouse, and attacked females more than males,—individuals, moreover, frequently in the prime of life and strength. The gums were generally first affected, and then stiffness of the joints came on, and pains of the legs, and the symptoms declined in the same order. This disease has been so well described by the late Dr Curran, in this Journal,¹ that I have nothing to add to his observations. The epidemic passed away as suddenly as it came, and has not since returned.

Diseases of the Chest hold a prominent place in our catalogue, as they do in other parts of Ireland. Of these, bronchitis senilis and phthisis are the most important. The results of hospital experience afford ample proof that the latter of these diseases is not constant in its prevalence, but of an intercurrent character, long periods sometimes occurring which are comparatively free from it. Our cases of very acute phthisis are rare, the disease seeming very much prolonged with us, especially among the higher classes, who can guard against undue exposure to weather. Of the 1101

¹ Dublin Quarterly Journal, N. S., vol. iv., p. 85.

deaths from all diseases in the workhouse, during the past year, 57 were from consumption.

The *diseases peculiar to workhouses* would form an interesting inquiry. In every epidemic the first cases usually occur there, so that the physicians of these institutions can see before others the coming storm. Some diseases may be called indigenous,—such is that fruitful cause of death which is called in workhouses the *house-decline*,—a kind of cachexia nosocomiensis,—in which the patient, chiefly a child, droops day by day, with no pain, no expression of regret or repining, and but little evident disease. Another of these diseases is *purulent ophthalmia*, which commits terrible havoc among all ages, but chiefly the young, running its course with great rapidity. It is a disease of the end of spring and the summer, and seems more closely connected with foul air in heated wards than with other causes,—ablutions with impure water also help to produce it. In some cases it could be traced to lime rubbed to the eyes, or the juice of the *euphorbia helioscopia* dropped into them, by children who did not wish to be sent to an auxiliary workhouse away from their mothers.

Of *diseases rarely met with* in Cork may be mentioned calculus of the urinary bladder. Very few cases of this disease present themselves at the hospitals, though the operations which have taken place have been very successful. Bronchocele is another unfrequent disease, considering the marshy nature of the country. Colica pictorum is a disease almost unknown. I recollect of but one case of wrist-drop from this cause. Delirium tremens has declined with us of late years, though the enthusiasm of the advocates of total abstinence has abated. It has been observed, that when temperance societies are in full operation, outbreaks of this disease are met, which are unusual at ordinary times. The drunkard then throws off all shame, and drinks deep rather than taste not. The chief advantage of these societies seems to be, that they have struck at that monstrous evil which prevailed formerly among all classes of society in Ireland, which made drinking to excess a popular and venial indulgence. It is a remarkable trait of the Irish character that, under the late pressing evils of destitution and sickness, *suicide* has been so rare. The unhappy outcast has lain down in the streets or fields to die, perfectly resigned to his fate, but never seeking to hasten it. The sense of injury, much more than the feeling of privation, hurries on the Irish peasant to commit crimes; and to take away the life of another is but a light matter compared with the act of shortening his own. They have truly little thought for the morrow; hope is rarely

extinct, and their agricultural habits and feelings of religion keep them from yielding to sudden acts of despair.

I have to say, in conclusion, that in reviewing this paper I am sensible of many omissions and defects which I cannot now rectify. I have in the Tables followed the mode adopted by Sir James Clarke, in his excellent work on Climate. I have endeavoured to do, upon a small scale, for the city of Cork, what Dr Scott has so ably done for Queenstown.¹ The results only of long and troublesome Tables have been given, as the calculations would be tiresome. Their accuracy, however, can be depended on. Any person who has made similar calculations well knows the exhausting trouble attendant on them, and will, I feel certain, make allowance for many deficiencies.

ART. IV.—*Case of Inflammation of the Brain, terminating fatally. Pericarditis; Gastritis.* By EDWARD D. DE VITRE', M.D., Physician to the Lancaster Dispensary and House of Recovery.

Mr C., an architect, aged 46, a strong, though spare man, who by intense application and perseverance, from being a common stone-mason, ultimately attained a high degree of proficiency in his profession, of temperate habits, and who had previously enjoyed excellent health, with the exception of being occasionally subject to a disordered state of the bowels, is the subject of the following case.

May 4, 1833.—I was requested to meet in consultation along with Mr Foxcroft, who had charge of the case for some time previously. Mr C. was then labouring under the symptoms of chronic *bronchitis*; cough troublesome, mucous expectoration, breathing not much hurried, pulse 145, soft and regular, skin hot, thirst, anorexia, and bowels slightly constipated. He complained of no pain whatever, even on violent coughing, but experienced a constant degree of constriction across the lower part of the sternum, and occasionally slight palpitations of the heart. The posterior portion of the left side was a little dull on percussion, and the only stethoscopic sign indicative of thoracic disease, consisted in the mucous rattle which was very audible down the side of the spine; notwithstanding, the respiratory murmur was not extinct. A slight degree of dulness on contraction of the auricles was the only sign furnished on exploring the heart.

A large blister was applied over the lower part of the ster-

¹ Dublin Journal of Medical Science, O. S., vol. xiii., p. 55.